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AN EMPIRICAL ANALYSIS OF NEW ZEALAND BANK CUSTOMERS' SATISFACTION

A thesis
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of the requirements for the Degree of Master of
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by
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By Jing Wei

It is important that banks deliver quality services which in turn results in customer satisfaction in today's competitive banking environment. Within the New Zealand financial service market, competition is deemed to be strong given that there have been new entrants into the market as well as mergers and acquisition and exits over the last ten years (Chan, Schumacher, and Tripe, 2007). In order to retain the customers, customer satisfaction becomes a crux issue to bank management.

This research identifies and examines the factors influencing bank customer satisfaction in New Zealand's banking industry. Specifically, the goal of this study is to identify the dimensions of perceived service quality; and examine the relationships between bank customer satisfaction and service quality, and perceived value and corporate image. The effects of demographic factors on the constructs are also investigated.

The data was collected from a convenience sample of individual bank customers who bank with a local commercial bank. The results indicate that service quality has the most influence on bank customers' satisfaction compare to value and corporate image. The results also provide support for the moderating effect of value on the relationships between service quality and customer satisfaction, and the moderating effect of corporate image on the relationships between service quality dimensions and service quality. In addition, the results also reveal that the perceptions of the constructs are primarily affected by age and ethnicity of customers.

Keywords: multi-level model, customer satisfaction, service quality, banking industry

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CHAPTER 1: INTRODUCTION

1.1 Introduction and Customer Satisfaction

Customer satisfaction has been fundamental to the marketing concept for over three decades (Parker and Mathews, 2001). It is widely recognized in the good and service sectors that customer satisfaction as the main performance indicator and the key to success for any business organization (Mihelis, Grigoroudis, Siskos, Politis, and Malandrakis, 2001). However, the intangible nature of customer satisfaction make the term hard to measure. Therefore, many researchers attempt to discover the antecedents and consequences of customer satisfaction in order to provide a better understanding of customer, increase market share and profitability, reduce cost and enhance product or service performance as well as internal quality control (Anderson and Sullivan, 1993; Ndubisi and Chan, 2005). Sprowls and Asimow (1962) contrast and discuss customer behavior model and reported that customer satisfaction result in repeated purchase and emphasize the importance of customer satisfaction for the organization. In early 1970s, Anderson (1973) and Olshavask and Miller (1972) investigate customer satisfaction based on the expectation and perceived product performance. Churchill and Suprenant (1982) study identify the antecedent and construct measurement of customer satisfaction based on disconfirmation paradigm.

Previous studies define customer satisfaction as “disconfirmation paradigm” (Churchill and Suprenant, 1982), which is a result of confirmation/disconfirmation of expectations that compare product (or service) performance with their expectations and desire (Spreng, MacKenzie, and Olshavsky, 1996). Boulding, Kalra, Staelin, and Zeithaml (1993) conceptualized customer satisfaction into transaction specific and cumulative (Anderson, Fornell and Lehmann, 1994). The transaction specific viewed customer satisfaction as evaluative judgement after a specific buying process (Hunt 1977; Oliver, 1993). However, cumulative customers’ satisfaction emphasizes more on the total evaluation based on total consumption over time (Johnson and Fornell 1991; Fornell 1992). Other researchers consider the term customer satisfaction as an attitude or evaluation formed by customers who compares pre-purchase expectations about the outcome of a product or service from the actual performance they received (Oliver, 1980; Fornell, 1992).

Banking is a service that encapsulates all the characteristics of service (Chakrabarty, 2006). In retail banking, most of the customers' evaluation models have focus on a comparative judgment of expectations versus perceived performance resulting in customers' satisfaction (Murphy, 1996; Smith, 1992). This concept has been frequently applied in the retail banking sector (Lewis and Mitchell, 1990; Smith, 1992). For example, Chakrabarty (2006) identify the determinants of bank customer satisfaction by comparing customers' pre-consumption expectations to actual performance they received. The authors identified four satisfaction factors: in-branch satisfaction, economic satisfaction, remote satisfaction and ATM satisfaction that constitute bank customer satisfaction in retail banking in the UK (Chakrabarty, 2006).

Bank customer satisfaction could be regarded as bank fully meeting the customers' expectation (Bloemer, Ruyter, and Peeters, 1998). It is the feeling or attitude formed by bank customers after service, which directly link to the various purchasing behaviour (Jamal and Naser, 2002). Previous research in bank customers' satisfaction suggest that customers' satisfaction lead to a better retention of customers, more profit, and increase customers' loyalty with banks. It also encourages banks to improve service quality, provide innovative products, and efficient bank management (Anderson, Fornell and Lehmann, 1994; Cohen, Gan, Yong, and Choong, 2006). Therefore, bank customer satisfaction has been widely accepted as one of the key factors for banks' survival in a global financial competitive market. It is critical that banks deliver quality services which in turn result in customer satisfaction in today competitive banking environment. Within the New Zealand financial service market, competition is deemed to be strong given that there have been new entrants into the market as well as mergers and exits over the last ten years (Chan, Schumacher, and Tripe, 2007). The following section views the overview of New Zealand banking industry.

1.2 The New Zealand Banking Sector

Since the first trading bank opened in 1840, banks have been servicing the financial needs of New Zealanders for over 160 years. Until 1987, the banks in New Zealand have been restricted by government legislation (New Zealand Bankers' Association, 2006). Those legislations include the requirement of establish a bank and the services

it could provide. For example, trading banks were restricted to provide service of financial needs to businesses and cheque accounts for individuals, while savings banks were restricted to provide services of other financial needs to individuals.

The Reserve Bank of New Zealand (RBNZ) was established in the mid 1930s. As a supervision government agent, the RBNZ uses monetary policies to control and monitor the availability and conditions of credit provided by financial institutions to promote sound and healthy economic growth in New Zealand. Because of the heavy legislation and regulation posed by government and RBNZ, the level of competition within banking industry was strictly limited. As a result of monopoly power in the banking industry, bank customers suffered poor service quality and more expensive services. Since 1950, non-bank financial institutions began to grow strongly in niche service areas in which the banks were restricted (for example, building societies, finance companies, and merchant banks). In 1960, finance companies only accounted for 1% of total deposits, but by the end of 1984 this increased to 20%. (New Zealand Bankers' Association, 2006)

From 1957 to 1984, New Zealand government slowly reduces the restrictions on financial institutions. The rapid growth in financial markets in early 1980s made the legislatively-imposed categories of New Zealand financial institutions increasingly outdated. This inevitably led to extensive deregulation of the financial industry in mid 1980s (Tripe, 2004).

The main purpose of the deregulation was to abolish the legislations that split financial services market and remove the restrictions within the financial services sector. Deregulation enables banks and other financial institutions to freely develop their own strategies and programmes to best meet the customer needs. For example, banks and other financial intuitions can be innovative in pricing strategies and customer care programme, as well as marketing of new financial service products (New Zealand Bankers' Association, 2006).

The deregulation also increases the competition in New Zealand banking industry. This forced banks to focus on their customers and the range of services they provide.

Banks have to be competitive to retain existing customers and attract new ones. Increasing globalization on the New Zealand financial service sector enables individuals and business to enjoy services that are comparable with those elsewhere in the world (Gan, Cohen, Clemes, and Chong, 2006).

The increased competition also led to an on-going restructuring of banks in New Zealand in order to remain profitable and competitive under the deregulated environment. Such restructuring include the spread of internet and telephone banking, Automatic Teller Machines (ATM) and Electronic Funds Transfer at Point of Sale (EFTPOS). In addition, deregulations have removed the entry barriers for foreign banks which in turn increase the probability of merger and acquisition among banks. This directly improved the motivation and the accountability of bank management to better serve the customers. For example, with free entry of foreign banks into the New Zealand, less than 2% of the total tangible assets of the banking sector are held by New Zealand-owned registered banks. Australian banks have a major operation in New Zealand and owned 90% of the total assets in New Zealand banking market.

One of the main benefits of deregulation is that the banking industry is free to perform its role as one of the most vital service industries in the economy (New Zealand Bankers' Association, 2006). Deregulation in the banking industry has made New Zealand banks more competitive, flexible and service-oriented. Therefore, it forces the bank management to focus on quality service delivery and enhances customers' satisfaction to increase their competitive position to survive in the market (Gan et al., 2006).

As a result of deregulation and the free entry of foreign banks into the New Zealand banking market, less than 2% of the total banks' tangible assets are held by New Zealand registered banks. More specifically, deregulation boost the financial service market, at the same time the over-capacity in supply led to an on-going restructuring of banks by merger and acquisition (New Zealand Bankers' Association, 2007). Over the last 20 years, Australian banks which owned 90% of the total bank assets became a major financial player in New Zealand banking industry (Matthews, 2004).

The deregulation and globalization of New Zealand financial service sector increased the competition of the banking sector. Therefore, it prompted the banks to focus on deliver quality service and enhance customer satisfaction to increase their competitive advantages (Gan et al., 2006) to survive in the market.

1.3 Research Problem Statement

Numerous researches relate to customer satisfaction studied in context of New Zealand banking industry highlighted the importance of customer satisfaction for commercial banks in New Zealand (Colgate, 1997, 1999; Cohn et al., 2006, Gan et al., 2006). However, researches in banking have place more emphasize on bank switching behaviour and retention (Lees, Garland, and Wright, 2005; Gan et al., 2006). There is a lack of publication in regards to the fundamental factors that affect customers' satisfaction in New Zealand's banks. This research investigates the factors influencing bank customers' satisfaction in New Zealand's banking industry.

The purpose of this study is to provide an insight on the constructs and relationships of customers' satisfaction and service quality in the New Zealand banking industry. More importantly this study will identify the dimensions of customer perceived service quality which impact bank customers' satisfaction in New Zealand. The relationship between bank customers' overall satisfaction and some influential factors such as image and perceived value will be investigated. The result will help bank managers and marketing practitioners a better understanding of bank customers in New Zealand.

The objectives of this study are:

- To identify the primary dimensions of service quality and their relative importance as perceived by customers in the New Zealand banking industry.
- To determine if perceived value plays a moderating role between service quality and the customer satisfaction as perceived by customers in the New Zealand banking industry.
- To determine if corporate image plays a moderating role between service quality and the service quality dimensions as perceived by customers in the New Zealand banking industry.

- To examine the effects that Service Quality, Value (price), and Corporate Image have on Customer Satisfaction in the New Zealand banking industry.
- To examine the effects of demographic characteristics on bank customers' perceptions of the service quality dimensions, customer satisfaction, and the related constructs that affect customer satisfaction.

1.4 Research Justification

Several researches on customer satisfaction in the New Zealand banking industry have identified several important factors in bank customers' satisfaction (Colgate, 1997, 1999; Cohen et al., 2006, Gan et al., 2006). For example, Colgate (1999) suggests increased levels of customer satisfaction and loyalty are positively linked to the firm's return. The satisfied customers will likely recommend their banks to their friends and relatives. The author suggests the overall customer service, close relationship, and competitive fees and charges are the top three drivers for New Zealand bank customers' satisfaction (Colgate, 1999).

Gan et al. (2006) investigate the relationship between bank customer switching behavior, loyalty and customer satisfaction. Their study examines the impact of five service quality dimensions (convenience, reliability, features and facilities, staff who deliver the service and tangibles) on customer satisfaction. The authors' result revealed the level of customers' satisfaction is closely connected to perceived value and corporate image. Their results also support the view of positive relationship between customer satisfaction, perceived value, and customer behavioral intentions. However, the authors argue that higher levels of customer satisfaction do not necessary lead to customer loyalty in New Zealand banking market (Gan et al., 2006).

Previous researches on customer satisfaction in the New Zealand banking industry primarily focused on the relationship between customer satisfaction, loyalty, and repurchase behaviour. Very few studies seek to uncover the constructs of customer satisfaction and the relationships amount those constructs. Customer satisfaction and service quality are complex construct that involved human's perceptions (Carman, 1990). For example, Carman (1990) claimed service quality dimensions can be divided into various sub dimensions. Dabholkar, Thorpe, and Rentz (1996) suggested

the usefulness of multilevel and multidimensional model to solve such complex and confusing construct. The authors used a multi-level and multi-dimensional structure to conceptualize customer satisfaction and service quality in retail service setting. This study adopts Dabholkar, Thorpe, and Rentz's (1996) framework where service quality perceptions are multilevel and multidimensional, because such structure account the best complexity of human's perceptions (Dabholkar, Shepherd, and Thorpe's 1996).

This study will contribute to the marketing literature in the banking industry. From the academic point of view, this research will examine the service marketing constructs in the banking industry. The findings of this study would enhance the current understanding of customers' satisfaction and its relative constructs such as service quality perceptions, other influential factors and future behavioural intentions in the New Zealand banking industry. From the practical perspective, this study will benefit bank management in the New Zealand banking industry. The research findings will provide information about different customer characteristics and backgrounds which affect their evaluation of service quality and other satisfaction constructs. The research findings may help the bank managers and marketers to develop and implement marketing strategies and policy to deliver quality services to their bank customers.

1.5 Structure of the Thesis

Chapter Two reviews the literature on customer satisfaction and service quality and the empirical research in the banking sector. The chapter also reviews the literature on influential factors about customer satisfaction and their future banking behavioral intentions. Chapter Three presents the conceptual model based on the literature review and hypotheses development. Chapter Four details the methodology and data used to test the hypotheses. Chapter Five presents a discussion of the empirical results and findings. Chapter Six provides conclusions of the research findings, policy implications, limitations, and recommendations for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter outlines the relevant literature on customer satisfaction and the conceptualization of service quality. The model constructs such as perceived value and corporate image are also discussed. Further, service quality in the context of banking industry is reviewed.

2.2 Customer Satisfaction

Researchers have studied customer satisfaction since the early 1960's. For example, Sprowls and Asimow (1962) developed a customer behavior model and revealed that customer satisfaction resulted in repeat purchase. Cardozo's (1965) laboratory experimental study suggested that customer satisfaction for a product was influenced by the degree of effort to obtain the product and the customer's expectation about that product. Numerous researchers have identified the antecedents and construct measurement of customer satisfaction. For example, Churchill and Surprenant (1982) define customer satisfaction as "disconfirmation paradigm" which is a result of confirmation/disconfirmation of expectation that compares a product's performance with their expectation and desire.

Boulding et al. (1993) conceptualize customer satisfaction as transaction specific. However, Anderson, Fornell and Lehmann, (1994) conceptualize customer satisfaction as a cumulative consumption experience. The transaction specific conceptualization views customer satisfaction as an evaluative judgement following a specific buying process (Hunt 1977; Oliver 1977, 1980, 1993). However, for cumulative customer satisfaction, the emphasis is more on the total evaluation based on total consumption over time (Johnson and Fornell, 1991; Fornell, 1992).

2.3 Service Quality

Quality research in the goods sector was established long before it was established in the service sector (Gummesson, 1991). Bandyopadhyay (2003, pp. 187-188) claimed that quality in goods sectors is "commonly defined as the product's fitness for its

intended use, which means how well the product meet the needs and the expectations of its customer”. Garvin (1983) referred to the product oriented quality approach as ‘objective quality’ (Clemes, Gan, and Kao, 2007). However, understanding quality in the goods sector is inadequate for understanding service quality because of the fundamental difference between the two terms (Parasuraman, Zeithaml, and Berry, 1985). Parasuraman, Zeithaml, and Berry (1985, pp. 42) suggest that service quality is ‘performance based’ rather than objects, therefore “precise manufacturing specifications concerning uniform quality can rarely be set”.

Service quality is intangible, heterogenic, and inseparable, which makes service quality difficult to measure and understand (Parasuraman et al., 1985). In the past decades, researchers (Carman 1990; Garvin 1983; Parasuraman et al, 1985, 1988) have defined and measured service quality by examining the attributes of service quality, while others (Bitner and Hubbert 1994; Iacobucci, Grayson, and Ostrom, 1994; Oliver, 1993; Oliver and DeSarbo, 1988; Parasuraman, Zeithaml, and Berry, 1994) focused on the application in services to conceptualize the relationship between service quality and customer satisfaction. Therefore, a combination of the service quality and customer satisfaction literature has formed the foundation of service quality theory (Clemes et al., 2007; Parasuraman et al., 1985, 1988).

The conceptualization and measurement of service quality is one of the most debated topics in service marketing literature (Brady and Cronin, 2001). Several researchers pointed out that service quality is difficult to measure as it is an elusive and abstract construct (Carman 1990; Garvin 1983; Parasuraman et al., 1985, 1988). Shostack (1977) described the intangibility of service that can only be rendered or experienced but not change the physical ownership after consumption.

In addition, Parasuraman et al. (1985) argue that service quality involves not only the outcome but also the delivery process. The authors described service quality as a form of attitude that results from the comparison of consumer expectations with service performance delivered. Furthermore, service quality relates to satisfaction but the two are not the same (Cronin and Taylor, 1992; Parasuraman et al., 1985).

The previous literature suggests that the evaluation of quality in services is more difficult than goods (Parasuraman et al., 1985) and that delivering quality services is increasingly recognized as the key to success for service providers (Cronin and Taylor, 1992). However, “perceived service quality has proven to be a difficult concept to grasp” (Brady and Cronin, 2001, pp.34). Hence, Rust and Oliver (1994) suggest that it is necessary for firms to improve the understanding of customers’ perceptions of service quality.

2.4 Service Quality Models

Service quality is usually conceptualized in multiple dimensions in the service marketing literature. For instance, Gronroos (1982) conceptualize service quality in terms of functional and technical quality. Rust and Oliver’s (1994) three dimensional model measures service quality in terms of the service product, service delivery, and service environment. Parasuraman, Zeithaml, and Berry’s (1988) five dimensional model includes the tangibles, reliability, responsiveness, assurance, and empathy aspects of service quality. The following section reviews and discusses service quality models and the findings of prior research on service quality.

2.4.1 Perceived Service Quality Model: Two Dimension Model

Researchers in the early 1980s recognized a customer’s evaluation of service quality involved comparing their expectations with the actual performance received (Lewis and Booms, 1983). Following this conceptualisation, Gronroos (1982, 1984) conceptualized service quality in terms of two dimensions: functional quality and technical quality (see Figure 2, Panel A).

Gronroos (1982, 1984) defined functional quality (subjective in nature) as customers’ perceptions of interactions during the service delivery process, that represented the delivery process, and the technical quality (objective in nature) that was the actual outcome that customers’ received. Hence, the functional quality conceptualizes how service is offered, and the technical quality conceptualises what is offered (Caceres and Paparoidamis, 2005). Moreover, Gronroos’s (1984) model measured service quality by comparing the perceived service with the expected service (Gronroos 1982,

1984; Caceres and Paparoidamis, 2005). Gronroos' two dimensional model that views service quality as functional and technical quality is referred to as "Nordic" perspective in the literature (Brady and Cronin, 2001).

2.4.2 The SERVQUAL Model

Parasuraman et al. (1985) measured service quality based on the disconfirm paradigm (see Figure 2, Panel B). The authors originally identified ten dimensions (tangibles, reliability, responsiveness, communication, credibility, security, competence; courtesy, knowing customer, and access) to conceptualize the nature and the determinants of perceived service quality. Parasuraman et al. (1988) used their 1985 study as a basis and reduced the original ten dimensions to five, tangibles, reliability, responsiveness, assurance, and empathy. Parasuraman et al. (1988) referred this multiple item scale as SERVQUAL measurement instrument to conceptualise perceived service quality.

Parasuraman et al. (1988) suggested that the SERVQUAL instrument was applicable for a wide range of service and retail firms to assess customers' expectations and perceptions of service quality. In the marketing literature, the measurement of service quality from a functional point of view (eg, Parasuraman et al. 1985, 1988), is usually referred to as an "American" perspective.

2.4.2.1 Problems and Argument of SERVQUAL Scale

The SERVQUAL instrument has been applied extensively among different industries since 1980s, but there has been extensive debate on the SERVQUAL methodology (Williams, 1998). Criticisms include: the use of different scores, applicability, dimensionality, lack of validity, etc. (Miguel, Silva, Chiosini, and Schutzer 2005). Cronin and Taylor (1992) highlighted the conceptual and operational issues associated with the SERVQUAL scale, especially the expectation-perception gap scores.

Drawing from extensive prior research on SERVQUAL and service quality, Bettle (1996) criticizes SERVQUAL's drawbacks on two aspects:

First, SERVQUAL focused on the service delivery process (functional quality which is subjective in nature) but does not emphasize the outcome of service (technical quality which is objective in nature), and the service environment when a service is rendered. Second, SERVQUAL's dimensions are not universal and they may change across different industries (Buttle, 1996). Coulthard (2004) also reviews and critiques SERVQUAL in regard to its conceptual, methodological, and interpretative problems, and concludes further developments in new approaches are required to measure service quality.

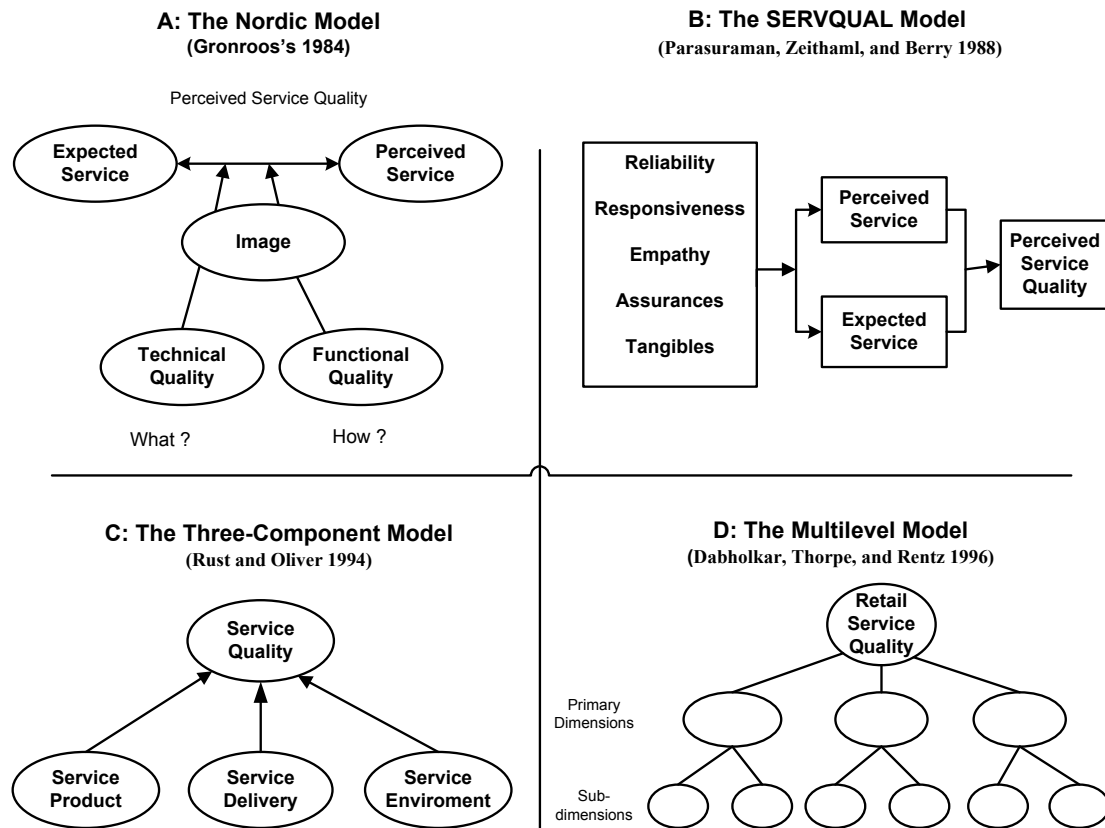
2.4.3 The Three-Component model

Rust and Oliver (1994) offered a three-component model which confirmed the findings of Gronroos (1982, 1984) two-factor conceptualization of perceived service quality, and suggested the service environment component as another important dimension to measure service quality (see Figure 2, Panel C). McDougall and Levesque (1994) and McAlexander, Kaldenberg, and Koenig (1994) used Rust and Oliver (1994) three-dimension model in different service industries and found similar results.

2.4.4 Retail Environment Multi-level Model

Based on the extensive literature on the SERVQUAL model and the relevant replication studies, Dabholkar et al. (1996) argued the SERVQUAL model involving "pure" service setting is not enough to measure the retail store environment. The authors proposed the retail environment hierarchical factor structure (see Figure 2, Panel D) that consists of 3 different levels (an overall level, a dimension level, and a sub-dimension level), 5 service quality dimensions (physical aspects, reliability, personal interaction, problem solving, and policy) and 28 items (17 drawn from SERVQUAL and 11 drawn from previous literature). This hierarchical structure scale is suitable for retail businesses, which offers a mixture of goods and service to measure service quality (Dabholkar et al., 1996).

Figure 2
 Conceptualization of Service Quality from Previous Literature



Adopt from Brady and Cronin (2001), pp 35.

2.4.5 Service Quality Hierarchical Approach

2.4.5.1 The Service Environment Hierarchical Model

Brady and Cronin (2001) proposed a hierarchical model to conceptualize service quality perceived by customers in service environment. In the process of developing their model, the authors adopted Carmen (1990) and Dabholkar et al.'s (1996) view that service quality perceptions are multilevel and multidimensional in nature. Brady and Cronin (2001) also include Rust and Oliver's (1994) view of service quality perception that is based on interaction quality (service delivery/ fictional quality), outcome quality (service product/technical quality), and physical environment quality (service environment). Brady and Cronin (2001) found that the service quality construct conformed to the structure of a third-order factor model that consisted of

three primary dimensions: interaction quality, environmental quality, and outcome quality. Each of the primary dimensions consisted of three corresponding sub-dimensions: (a) interaction quality: attitude, behaviour, and expertise; (b) physical environment quality: ambient conditions, design, and social factors; and (c) outcome quality: waiting time, tangibles, and valence. Brady and Cronin (2001) tested this conceptualization of service quality in four service industries: fast-food, photograph developing, amusement parks, and dry-cleaning. The empirical result confirmed use the hierarchical structure to conceptualize service quality.

2.4.5.2 A Hierarchical Model of Higher Education Service Quality

To measure service quality in higher education sector, Clemes et al. (2007) developed a hierarchical model to reflect service quality perceptions in the higher education industry. In Clemes et al.'s (2007) hierarchical model of higher education service quality, three primary dimensions were identified: interaction quality, physical environment quality and outcome quality. Each primary dimension was composed of at least three sub-dimensions. Similar to Brady and Cronin (2001) and Dabholkar et al. (1996), the results of Clemes et al.'s (2007) empirical study supported the use of a hierarchical factor structure to conceptualize and measure service quality. However, Clemes et al., (2007) noted that the three primary dimensions may not be generic for all service industries outside of the education sector due to the cultural differences.

2.4.5.3 A Hierarchical Model of Hotel Industry Service Quality

To understand service quality and customer behavioural intentions in hotel industry, Clemes, Wu, Hu, and Gan (2009) developed a multi-level model to measure Taiwan hotel customers' perception of service quality. Based on the findings from the qualitative research and the service quality literature, Clemes et al. (2009) proposed a multi-dimensional model in which quality was a higher order factor identified by three primary dimensions that consist of twelve sub-dimensions. The three primary dimensions were interaction quality, physical environmental quality, and outcome quality. Interaction quality consisted of five corresponding sub-dimensions: (a) interaction quality: employees' conduct, employees' expertise, employees' problem-solving and customer-to-customer interaction; (b) physical environment quality: décor

and ambience, room quality, availability of facility, design, and location; and (c) outcome quality: valence, waiting time, and sociability. The authors concluded that the result increases support for the use of a multi-level structure developed by Brady and Cronin (2001) and Dabholkar et al. (1996), to conceptualize and measure service quality (Clemes et al., 2009).

2.4.5.4 A Hierarchical Model of Health Service Quality

In order to increase the understanding of service quality in the health service industry, Dagger, Sweeney, and Johnson (2007) developed a hierarchical model to reflect service quality perceptions in the health care industry. In Dagger, Sweeney, and Johnson's (2007) hierarchical model, four primary dimensions were identified for health service quality: interpersonal quality, technical quality, environment quality and administrative quality. Each primary dimension was measured by at least two sub-dimensions. Dagger et al.'s (2007) findings support the view of using hierarchical structure approach to measure service quality perceptions in health service industry.

2.5 Service Quality Studies in the Banking Sector

Increasing competition as a result of deregulation in the financial industry (Sureshchandar, Rajendran, and Anantharaman 2003), and the similarity of retail banking products forces customer service quality to emerge as a principal factor for banks to survive in such a competitive environment (Avkiran, 1994).

2.5.1 The Application and Development of SERVQUAL Scale for Banking Studies

The SERVQUAL scale has been one of the popular models applied in banking industry to measure perceived service quality.

Arasli, Katircioglu and Smadi (2005) adapt the SERVQUAL scale to analyze and compare commercial banks' service quality and customers' satisfaction for small island economy Cyprus. The findings indicate that tangibles, reliability, assurance, and empathy dimensions are the most significant factor affect bank service quality perceptions. Safakli (2007) replicates the SERVQUAL instrument to examine service

quality for the banking sector of Northern Cyprus. In Safakli (2007)'s model, they drop the assurance and responsiveness dimensions from the original SERVQUAL instrument, and adds a new dimension, customer orientation to measure bank service quality in Northern Cyprus.

Marsha and Adlaka (1992) use modified Delphi method to generate good or poor service quality attributes from a group of MBA university students. The authors identified 12 attributes of service quality and converted them into scales to analyze students' service quality perceptions in five service industries (physician service, retail banking, auto maintenance, colleges/university, and fast food restaurants). Knowledge of service, thoroughness/accuracy, consistency/reliability; reasonable cost; willingness /attitude to correct errors and timely/prompt service are found to be the top six attributes to "good" service quality. Furthermore, the authors conclude that the 12 attributes identified by the MBA students are similar to the five service quality dimensions measured in SERVQUAL model developed by Parasuraman et al. (1988).

Following Churchill (1979) and Parasuraman et al., (1988) procedure in developing a service quality measurement instrument, Avkiran (1994) developed a utilitarian multi-dimensional instrument BANKSERV to measure Australian retail branch banking customers' service quality perceptions. In order to customize the instrument for banking, Avkiran (1994) used Parasuraman et al.'s (1988) SERVQUAL scale as the starting point, and then refine the measurement by adding items extracted from a separately conducted qualitative study about bank service quality. BANKSERV consists of four dimensions and 17 items used to measure bank service quality. The dimensions were:

- 1 Staff conduct represents the bank's personnel service manner and presentation that cause customers to form a positive or negative image about the bank. The sub-dimension of staff conduct includes willingness to help, promptness of service, greeting, expression of genuine concern, politeness, neat appearance, and apology for mistakes.
2. Credibility represents the trust relationship between bank staff and customers. Credibility consists of staff keeping customers informed, rectifying mistakes make by staff, and customers feeling secure during the service process.

3. Communication represents the verbal and written communication between bank staff and customers. The sub-dimensions attributes in communication are staff knowledge about bank services and products, helping customers to learn how to reduce costs, the quality of advice, informing customers about the availability of accounts and investments, and informing customers about servicing time.
4. Access to teller services represents adequate staff to serve the customers during bank operating hours. The sub-dimensions include the number of tellers and staff serving customers during busy times.

The author concluded that staff conduct, credibility, communication, and access to teller services were the most important dimensions to measure bank service quality (Avkiran, 1994).

To test the appropriateness of BANKSERV developed by Avkiran (1994), Pont and McQuilken (2002) employed confirmatory factor analysis to test the fit of the BANKSERV. The results suggested that the BANKSERV model did not adequately fit the data collected when using a perception-only measurement of perceived service quality. The authors referred to this performance-based measurement scale as BANKPERF. They argued that the BANKPERF (performance based measure) had stronger theoretical support than BANKSERV (perception-expectation based measure). BANKPERF was also found to be more stable and efficient in measuring bank service quality than BANKSERV (Pont and McQuilken, 2002).

2.5.2 Application of Gronroos' Conceptualization of Service Quality in Banking Context

Some of the empirical studies attempt to measure bank service quality by replicating or adapting the SERVQUAL scale, whereas some other researchers incorporate Gronroos' two-dimensional model (functional and technical aspects) to measure perceived service quality (Brady and Cronin, 2001).

Hoecroft (1993) adopted Gronroos' two-dimensional conceptualization of service quality and used focus groups consisting of bank employees to identify their understanding of bank "quality customer service." A total of 29 measurement items

were identified and categorized in terms of functional and technical performance aspects. The result of Hoecroft's (1993) study support Gronroos' (1984) view that functional and technical qualities are important dimensions of perceived service quality.

Ennew and Binks (1999) studied the relationship between bank customers' (small business segment) and employees' participation in bank service provision. The authors conceptualized bank service quality from a functional and technical perspective as suggested by Gronroos (1984). The service quality dimensions: perceived price, core product, staff knowledge, advice offered, efficiency in operation and accessibility were found to affect consumer service quality perceptions (Ennew and Binks 1999).

In order to develop a new instrument to measure retail bank customers' service quality perceptions, Aldlaigan and Buttle (2002) use Gronroos' (1984) framework and conduct both qualitative and quantitative studies using multi-phase and multi-sample studies and analysis. The 21 item-4 dimensional instrument, SYSTRA-SQ (system and transactional service quality) scale was developed to measure service quality in the banking sector. The four dimensions were:

1. Service system quality represents the attributes at the organizational level rather than individuals within that organization. It is comprised of mixed items that relate to both functional (e.g. listening to customer, ease of availability and accessibility, speed of response, and organizational appearance) and technical quality (e.g. quality of advice, flexibility and customized service solutions, promise fulfillment, employee empowerment, and updating customer on services) measurements.
2. Behavioral service quality represents the employee performance during service delivery. It consists of functional quality, behavioral attributes and employee's attitude (e.g. politeness, courtesy, friendliness, helpfulness, and positive attitudes).
3. Machine service quality represents machine and equipment quality, which include the machine quality itself and output performance quality (e.g. reliable cash machine).

4. Service transactional accuracy represents the accuracy of the transaction system and employees during the transaction. It includes system-output and employee-output quality (e.g. accuracy, noticeable mistakes, and noticeable errors).

Aldlaigan and Buttle (2002) found that bank customers evaluate service quality, at both the organizational service level and the transactional performance level.

2.5.3 Service Quality Related to Banks' Automated Services and Service Quality

The rapid growths of information technology and network systems in the past decade have introduced major changes in the global economy and the business environment (Qureshi, Kamal, and Wolcott, 2008). For example, in the banking industry, information technology development has accelerated the communication and transactions between banks and clients (Booz et al., 1997). The quality of service has improved with technological innovations leading to time savings for bank customers (Qureshi et al., 2008). In order to remain competitive, banks are increasing their technology-based service options to deliver their regular services to consumers (Al-hawari et al., 2005; Fitzsimmons and Fitzsimmons, 1997). Zhu and Chen (2002), and Dabholkar and Bagozzi (2002) found that banks adopted technology delivered services, to reduce costs, create value-added services for customers, facilitate employees' jobs, and provide self-service options for consumers.

More importantly, as one of the fastest growing technologies in the banking industry, Internet banking has become an indispensable part of modern day banking services (Qureshi et al., 2008). However, Al-hawari, Hartley, and Ward (2005) argue that there was less service quality research in banks' e-commerce environment than there is in personal interaction environment. There are many studies identifying the key service quality factors in the traditional face-to-face banking environment, but few studies have investigated automated service quality attributes in banking (Al-hawari et al., 2005). Al-hawari et al. (2005) developed a conceptual model of automated service quality, as perceived by customers, with specific emphasis on the banking service sector. The result suggests that automated service quality in banks can be conceptualized as a five-factor structure consisting of ATM service quality, telephone

banking service quality, internet banking service quality, core service quality and price quality (Al-hawari et al., 2005).

Meuter, Ostrom, Roundtree, and Bitner (2000) conceptualized the bank's self-service technologies (SST) into four types of interface: 1) telephone-based technologies and various interactive voice response systems; 2) direct online connections and internet-based interfaces; 3) interactive free-standing kiosks; and 4) video or compact disc technologies. Meuter et al. (2000) then investigated the factors that are important when customers demand services through technological interface, such as telephone banking, online financial transactions and ATMs. The research findings showed that the "Save time" and "Easy to use" attributes were most important when customers use SST (Meuter et al., 2000).

Joseph and Stone (2003) identified three major factors involved in customer evaluations of service in electronic banking in the United States. The authors claimed that ATM, online banking, and telephone banking are the three categories that have the most influence on electronic banking services. The first categorization was related to consumer technology, which was the customer's ability to use existing technology, such as the ATM. The second categorization was related to location, where the service has to be delivered. For example, at the firm's physical surroundings, in homes, or in offices using personal computers. The third categorization involves the different level of contact customers received during service delivery, such as traditional direct face-to-face communication and indirect telephone banking. Joseph and Stone's (2003) empirical results showed that improving service quality on a personal interaction and using electronic banking improves the overall perceived service quality offered by individual banks (Joseph and Stone, 2003). In addition, better service quality delivered via technology (electronic banking), will in turn result in higher customer satisfaction. Joseph and Stone (2003) suggested that banks should focus on design, and deliver a personalized, user-friendly and efficient technology system to increase the service quality in both traditional and electronic banking services. Table 2 summarizes the empirical research in service quality attributes.

Table 2 Empirical Findings in Service Quality Attributes

Interaction Quality	<p>Personal interaction (Ennew and Binks, 1999; LeBlanc and Nguyen, 1988; Hoecroft, 1993)</p> <p>Staff knowledge (Avkiran, 1994; Ennew and Binks, 1999; Marsha and Adlaka, 1992)</p> <p>Attitudes (Aldlaigan and Buttle, 2002; Avkiran, 1994; Marsha and Adlaka, 1992)</p> <p>Accessibility (Avkiran, 1994; Aldlaigan and Buttle, 2002)</p> <p>Quality of advice (Aldlaigan and Buttle, 2002; Avkiran, 1994; Ennew and Binks, 1999; Marsha and Adlaka, 1992)</p>
Physical Environment Quality	<p>Technology driven system (Aldlaigan and Buttle, 2002; Hoecroft, 1993; Sureshchandar et, al. 2003; Sudhahar, and Selvam, 2007)</p> <p>Equipment and machinery (Aldlaigan and Buttle, 2002; Blanchard and Galloway, 1994; Hoecroft, 1993; Sureshchandar et, al. 2003)</p> <p>Bank layouts (Angur, Nataraajan, and Jahera Jr, 1999; Sudhahar, and Selvam, 2007)</p> <p>Banks' physical facilities (Angur, Nataraajan, and Jahera Jr, 1999; Arasli, Katircioglu, and Mehtap-Smadi, 2005; Safakli, 2007)</p> <p>Banks' neat appearance (Angur, Nataraajan, and Jahera Jr, 1999; Safakli, 2007; Sudhahar, and Selvam, 2007)</p> <p>Convenient locations (Paswan, Spears, Hasty, and Ganesh, 2004; Sudhahar, and Selvam, 2007)</p> <p>Ambient conditions such as temperature, ventilation, noise, odour (Sudhahar, and Selvam, 2007)</p>
Outcome Quality	<p>Charges clearly explained (Blanchard and Galloway, 1994)</p> <p>Relevant direct mail (Blanchard and Galloway, 1994)</p> <p>Transactional accuracy (Aldlaigan and Buttle, 2002; Newman, 2001)</p>
Network Quality	<p>24 hour access of internet banking (Howcroft, Hamilton, and Hewer, 2002; Lockett and Littler, 1997)</p> <p>User-friendly internet banking service (Tan and Teo, 2000; Yang, Cheng and Luo, 2009)</p> <p>Safe and secure internet banking (Joseph and Stone, 2003, Jun and Cai, 2001)</p> <p>Easy access of telephone banking (Howcroft, Hamilton, and Hewer, 2002, Barczak, Ellen, and Pilling, 1997)</p>

2.6 Constructs Related to Customer Satisfaction

2.6.1 The Relationship between Satisfaction and Service Quality

Increasing competition in the banking industry during the past two decades made practitioners and marketers realize high service quality results in customer satisfaction (Yavas, Benkenstein, and Stuhldreier, 2004). However, research in the causal relationship between customer satisfaction and perceived service quality remains ambiguous (Bahia, Paulin, and Perrien, 2000).

Some researchers describe service quality as an outcome of satisfaction (Yavas, Benkenstein, and Stuhldreier 2004). Oliver (1981) argues that satisfaction is transaction-specific in nature, whereas service quality is measured as attitude. Parasuraman et al. (1988) depicted service quality as a form of attitude, which is a long-run global judgment, and satisfaction was related to a specific transaction. Parasuraman et al. (1988) claimed that satisfaction causes service quality perceptions.

Many researchers have questioned Parasuraman et al.'s (1988) conceptualization, and argued that service quality was a causal antecedent of customer satisfaction (Anderson and Sullivan, 1993; Cronin and Taylor, 1992; Parker and Mathews, 2001). Cronin and Taylor (1992) note that service quality should be measured as an attitude. The results of their study theoretically and empirically proved that service quality was an antecedent of customer satisfaction (Cronin and Taylor, 1992).

Anderson and Sullivan (1993) conducted a study in Sweden, and found the level of customer satisfaction increased with the level of perceived service quality. Bank customers were included in the sample. The authors finding is consistent with Cronin and Taylor's (1992) view that service quality leads to customer satisfaction. In order to increase the understanding of service quality and customer satisfaction, Parker and Mathews (2001) attempted to provide a better understanding and conceptualization of customer satisfaction. Parker and Mathews explored what customer satisfaction means to the general public and concluded that service quality was an antecedent of satisfaction. This conclusion was shared by Spreng and Mackoy (1996) where service quality perceptions were major determinants of customer satisfaction and that service quality leads to satisfaction.

Several customer satisfaction studies conducted in the financial service industries supported the views that service quality contributed to customer satisfaction (Yavas, Benkenstein, and Stuhldreier, 2004). In the banking industry, Jamal and Nasser (2002) investigated the impact of the service quality dimensions on bank customer satisfaction. Their findings suggested that the core and relational service quality dimensions have a positive impact on customer satisfaction, thus service quality was seen as a causal antecedent of customer satisfaction (Jamal and Nasser, 2002). Yavas, Bilgin, and Shemwell (1997) studied bank customers in Turkey. The authors conceptualized bank customer satisfaction as a multidimensional construct, which predicted the overall customer satisfaction (a general measure) and the individual (technical and functional) dimensions of customer satisfaction. Yavas, Bilgin, and Shemwell's (1997) empirical results support the view that bank service quality leads to customers' satisfaction. Similarly, Lassar, Manolis, and Winsor's (2000) research measured bank perceived service quality drawn from two different views of conceptualization from previous studies (view from Parasuraman et al.'s 1988, Gronroos, 1982). In Lassar, Manolis, and Winsor's (2000) research, the data were collected from customers of an international private bank across United of America States and South America. The authors concluded that the service quality offered by bank affect the level of overall bank customers' satisfaction (Lassar, Manolis, and Winsor, 2000).

2.6.2 Value (price)

Research on the relationship between value/pricing and customer satisfaction has been widely conducted. Matzler, Wurtele, and Renzl (2006) described the role of price as the determinant during the purchase and after the purchase process. Prior research in value (price)-satisfaction relationships include pricing policy, money-back guarantees (Heskett, Sasser, and Hart, 1990), low and fixed prices (Ortmeyer, Quelch, and Salmon, 1991), and fair and honest pricing (Ayres and Nalebuff, 2003). These studies have similar results, where "good" value (price) causes increases in customer satisfaction. This casual relationship was also confirmed by other researchers in a number of empirical studies across various industries. For instance, Fornell, Johnson, Anderson, Cha, and Bryant (1996) investigated the impact of value (price) and

perceived quality on overall satisfaction in seven major economic sectors in the United States (including the financial and insurance sector). Both value (price) and perceived service quality were found to affect customers' overall satisfaction. To examine customers' evaluation of services in four different service industries, Ostrom and Iacobucci (1995) found value (price) had a significant effect on customers' evaluation of service and satisfaction.

Varki and Colgate (2001) studied the perceptions of value (price) in the banking industry in the United States and New Zealand. The authors' results showed that value (price) perceptions directly influence customers' satisfaction. Matzler, et al. (2006) arrived at similar results in their study on retail banking and concluded that price satisfaction positively influenced bank customers' overall satisfaction. Leverin and Liljander (2006) suggested that bank customer satisfaction was influenced by factors such as the price of services, or the number and severity of negative critical incidents. Similarly, Levesque and McDougall (1996) study showed bank charges and interest rates determine the overall satisfaction level of the customers.

2.6.3 Corporate Image

Image has been described as subjective knowledge (Boulding, 1956), as an attitude (Hirschman, Greenber, and Robertson, 1978), and as a combination of product characteristics that are different from the physical product but nevertheless identified with the product (Erickson, Johansson, and Chao, 1984). Gronroos (1984) argued that image was critical to service firms, and to a greater extent, determined by customers' assessment of the services they receive. The author conceptualized customers' perceived service quality from three aspects that included image. According to Chen et al. (2005), service quality was found to be positively affected by brand image. Bloemer, Ruyter, and Peeters (1998) also found image of a bank had a clear positive influence on the service quality perceptions. Nguyen and LeBlanc (1998) collected data from 1,224 customers in the banking industry and found that bank customers who received a higher level of service quality form a favorable corporate image. Che-Ha and Hashim (2007) assert brand aroused feelings as one of the important factors in explaining customer satisfaction. Similarly, Mihelis, Grigoroudis, Siskos, Politis, and Malandrakis (2001) measure bank image by credibility (name, reputation),

technological excellence, and ability to satisfy future customers' needs. Mihelis et al.'s (2001) findings confirmed the significant contribution of bank image to customers' satisfaction.

2.7 Chapter Summary

This chapter reviewed the relevant literature on satisfaction and the model related constructs such as service quality, image and value (price). The conceptualization and measurement of service quality and the relationship among the constructs were also reviewed. The chapter also discussed the model constructs in the context of the retail banking industry.

CHAPTER 3: CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

3.1 Introduction

This chapter presents a conceptual model of bank satisfaction and the 13 hypotheses formulated to address the following five research objectives:

1. To identify the primary dimensions of service quality and their relative importance as perceived by customers in the New Zealand banking industry.
2. To determine if perceived value plays a moderating role between service quality and the customer satisfaction as perceived by customers in the New Zealand banking industry.
3. To determine if corporate image plays a moderating role between service quality and the service quality dimensions as perceived by customers in the New Zealand banking industry.
4. To examine the effects that Service Quality, Value (price), and Corporate Image have on Customer Satisfaction in the New Zealand banking industry.
5. To examine the effects of demographic characteristics on bank customers' perceptions of the service quality dimensions, customer satisfaction, and the related constructs that affect customer satisfaction.

3.2 Conceptual Gaps in the Literature

A review of the literature on the banking industry identified three conceptual research gaps. The first gap identified in the literature relates to the lack of empirical research on the dimensions of service quality in a New Zealand banking context. Although several international empirical studies have been conducted on the dimensions of service quality in international financial service sector (Avkiran, 1994; Ennew and Binks, 1999; Aldaigan and Buttle, 2002; Arasli, Katircioglu, and Mehtap-Smadi, 2005), little has been done on the dimensions of service quality in New Zealand banking industry. To date, there is no published empirical research that identifies the dimensions of service quality, or examines the impact of dimensions on service quality in a New Zealand banking context. Further, no empirical research has been

done to identify the relative importance of the primary dimensions to service quality in the context of the New Zealand banking sector.

The second conceptual gap relates to a lack of empirical research on the banking sector using a multi-level structure to conceptualize service quality and customer satisfaction. A few studies have focused on service quality and/or customer satisfaction, however, no studies to date have used multi-level model, which includes the service quality dimensions, customer satisfaction, corporate image, and value (price) to measure customers' evaluation of bank performance. Therefore, this study proposes the conceptual research model as shown in Figure 3.

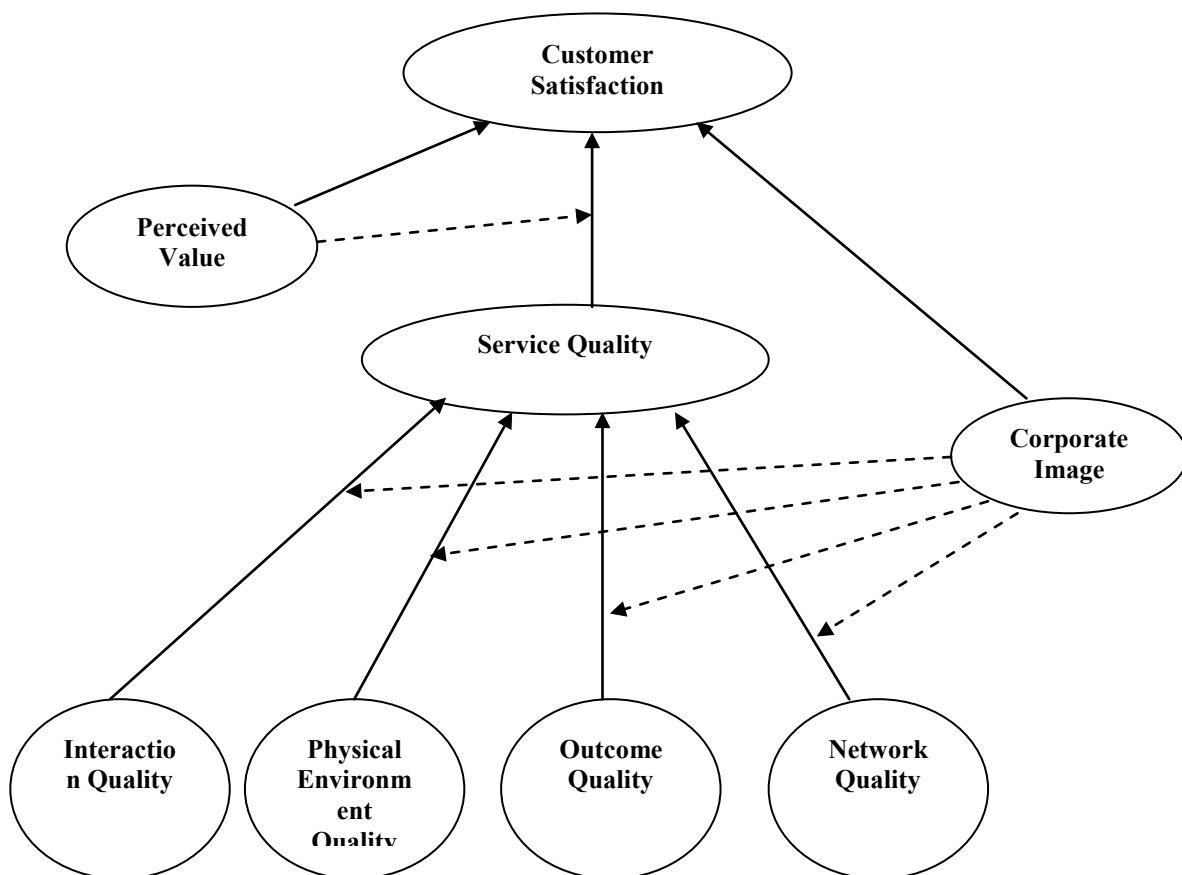


Figure 3: Bank Customers' Satisfaction Conceptual Framework

The third conceptual gap relates to a lack of empirical studies on the effects of the demographic characteristics on customers' perceptions of service quality, customer satisfaction, corporate image, and value (price) in the New Zealand banking industry. It is important information because customers have different demographic

characteristics may affect an individual's overall evaluation of service quality, satisfaction, corporate image, and value (price).

3.3 Hypotheses Development

The conceptual research model of bank customer satisfaction and service quality shown in Figure 3 suggests that bank customers form their overall service quality perceptions based on four primary dimensions: Interaction Quality, Physical Environment Quality, Outcome Quality, and Network Quality. The service quality perceptions perceived by bank customers is expected to influence their overall satisfaction. Value (price) is expected to have a moderating effect between Service Quality and Customer Satisfaction. In addition, Corporate Image is expected to moderate between service quality and interaction quality, physical environment quality, outcome, and network quality respectively. A total of 13 hypotheses are formulated. The first eleven hypotheses are used to test each path in the model. The last two hypotheses are used to test the perceptual differences in bank customers' satisfaction, service quality and the primary dimensions based on demographic factors.

3.3.1 Hypotheses Relating to Research Objective 1 Perceived Service Quality and the Primary Dimensions

Increasing competition in the banking industry over the past two decades encouraged bank practitioners and marketers to realize that high service quality resulted in higher levels of customer satisfaction (Yavas, Benkenstein, and Stuhldreier, 2004). The causal relations between the two constructs are well documented in banking literature. For example, to investigate the impact of service quality on bank customer satisfaction, Jamal and Nasser (2002) found that service quality was a causal antecedent of customer satisfaction. In a study on private bank customers, Lassar, Manolis, and Winsor (2000) reported that customer satisfaction can be positively predicted by the level of service quality perceptions. Yavas, Benkenstein, and Stuhldreier's (2004) study revealed a similar result that service quality was at the root of customer satisfaction.

Interaction Quality

Bank services are highly involved in personal interactions, and therefore, researchers have suggested that the interactions involved between staff and bank customers during service delivery is an important factor when bank customers' evaluated service quality (Ennew and Binks, 1999; LeBlanc and Nguyen, 1988; McDougall, Gordon, Levesque, and Terrence, 1994). Ojasalo (2003) showed that the consumer interactions during the service process would affect a customer's perceptions of service quality. Moreover, Ko, and Pastore (2005) demonstrated the importance of interaction quality during the production and consumption of services due to the high levels of face-to-face communication. Therefore, this study uses interaction quality as one of the primary dimensions to evaluate service quality.

Physical Environment Quality

In the marketing literature, researchers were concerned about the physical environment or non-human factors that affected the customers' perception of service quality (Brady and Cronin, 2001). Bitner (1992) referred to such non-human factors as the servicescape, which represented the service environment that customers experienced during the service delivery process. The author demonstrated that the service environment had a significant impact on customers' perceptions of overall service quality.

In the banking sector, LeBlanc and Nguyen's (1988) study showed that the physical environment quality had a large impact on perceived service quality. Howcroft (1993) identified five important service quality dimensions for banks, the result indicated the surrounding environment was one of the important dimensions used to measure overall service quality.

Outcome Quality

McDougall et al. (1994) described the performance related aspects of service quality as an outcome quality. It was determined by the skills and know-how of the employees, the ability of the organization and its employees to keep their promises with customers, and to solve problems when they appeared (McDougall et al., 1994).

Therefore, outcome quality was the result of the service transaction that was delivered by the service provider (Gronroos, 1982, 1990).

In the context of the banking industry, the outcome quality was considered as a crucial aspect for bank service quality evaluation (LeBlanc and Nguyen, 1988; Lewis, 1991). McDougall and Levesque (1994) found bank service quality was comprised of three underlying dimensions: processes, outcomes and the tangibles. The outcome aspects of service quality were also identified in Blanchard's (1994) study on the United Kingdom retail banking industry. Blanchard (1994) conceptualized service quality using three criteria related to the process/outcome perspective, subjective/objective perspective and soft/hard perspective of service quality.

Network Quality

The rapid growths in the information technology and network systems during the past decade have introduced major changes in the global economy and business environment (Qureshi et al, 2008). In the banking industry, the information technology development has increased the communications and transactions between banks and their clients (Booz and Hamilton, 1997). The technological innovations leading to time saving, and service quality has improved for bank customers (Qureshi et al., 2008). In order to remain competitive, banks are increasing the technology based service options to deliver dependable services to their consumers (Al-hawari et al., 2005; Fitzsimmons and Fitzsimmons 1997). Herington and Weaven (2007) studied bank e-service quality and collected data from 200 Australian respondents who regularly used internet banking. The results showed that personal needs, internet site organization, user-friendliness of the site, and site efficiency as the most significant factors that influenced bank customers' e-service quality perceptions.

As discussed in Section 3.3.1, the four service quality dimensions: interaction quality, physical environment quality, outcome quality, and network quality are expected to influence service quality. The following hypotheses are developed to test the effects of the service quality dimensions on perceived service quality:

H₁: Interaction quality positively affects bank customers' service quality perceptions.

H₂: Physical environment quality positively affects bank customers' service quality perceptions.

H₃: Outcome quality positively affects bank customers' service quality perceptions.

H₄: Network quality positively affects bank customers' service quality perceptions.

The factor analysis results (see details in Chapter 5) indentified five service quality dimensions. A fifth service quality dimension indentified in the factor solution called Lending Quality is expected to positively influence service quality. The following hypothesis is developed to test the effects of the lending quality on perceived service quality (see details in Chapter Five, Section 5.4.2).

H₅: Lending quality positively affects bank customers' service quality perceptions.

Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality are expected to affect bank customers' perception of service quality (see Section 2.5). However, only a few studies have indentified the relative importance of the primary dimensions to service quality in a New Zealand banking context. Therefore, the following relationships are hypothesized:

H₆: Bank customers will vary perceptions of the importance of each primary dimensions to overall service quality.

3.3.2 Hypotheses Relating to Research Objective 2

Value (price)

Value is closely related to price (Matzler, Würtele, and Renzl, 2006). The authors described the role of price as the determinant during the purchase and after purchase process. The positive relationship between "good" value (pricing) and customer satisfaction has been widely supported in the literature by empirical studies (Heskett et al., 1990; Ortmeyer et al., 1991; and Ayres and Nalebuff, 2003). For example, Ostrom and Iacobucci (1995) found that a favorable price perception had a significant effect on customer satisfaction. Lai (2004) investigated the relationship between perceived value and customer satisfaction for Short Message Services. Lai's (2004) findings indicated that perceived value was one of the key determinants of customer

satisfaction. This finding is consistent with Fornell et al.'s (1996) and Cronin et al.'s (2000) findings that perceived value positively affected customer satisfaction.

In terms of banking industry, Varki and Colgate (2001) studied price perceptions in the United States and New Zealand banking industry, the results indicated that perceptions of value (price) had a direct impact on bank customer satisfaction. Similarly, Matzler, Wurtele, and Renzl (2006) studied price satisfaction in retail banking in Austria, the research findings suggested that price satisfaction positively influenced bank customers' overall satisfaction. Johnson, Gustafsson, Andreassen, Lervik, and Cha (2001) also reported a direct positive effect of price attractiveness on customer satisfaction.

Value (price) was also viewed as a subjective construct that played a moderating role between service quality and customer satisfaction (Caruana, Money, and Berthon, 2000). Shonk (2006) suggested that customer satisfaction was partly influenced by value in service firms. Gallarza and Saura (2006) suggested there was a natural chain between service quality, perceived value, and customer satisfaction. Therefore, the following relationship is hypothesized:

H₇: Perceived value moderates the relationship between service quality and customer satisfaction

3.3.3 Hypotheses Relating to Research Objective 3

Corporate Image

Image has been described as a subjective knowledge (Boulding, 1956), as an attitude (Hirschman et al., 1978), and as a combination of product characteristics that were different from the physical product (Erickson et al., 1984). Corporate image was one of the core aspects that lead to organizational success (Granbois, 1981). Naser, Jamal, and Al-Khatib's (1999) study showed "the image of the bank" as one of the most important bank selection criteria for customers. Che-Ha and Hashim (2007) asserted that brand image was one of the important factors that explained customers' satisfaction. Aydin and Ozer (2005) claimed that, corporate image resulted from customers' consumption experiences and those experiences, in turn, determined customers' overall service quality perceptions. Similarly, Lu, Zhang, and Wang (2009)

recommended using corporate image as a moderator for the relationship between interaction quality, physical environment quality, outcome quality and service quality. The authors argued that customers may forgive negative service quality if a company had a good image bearing in customers' minds (Lu, Zhang, and Wang, 2009). The focus group discussion conducted in this current study indicated that image moderated between primary dimensions and service quality. Therefore, the following relationships are hypothesized:

H₈: Corporate image moderates the relationship between overall service quality and each of the service quality primary dimensions: interaction quality (H_{8a}), physical environment quality (H_{8b}), outcome quality (H_{8c}), network quality (H_{8d}), and lending quality (H_{8e}).

3.3.4 Hypotheses Relating to Research Objective 4

There is a positive relationship between value, corporate image, service quality, and bank customer satisfaction (Section 2.6). Therefore the following hypotheses are proposed:

H₉: A higher perception of value has a positive impact on customer satisfaction.

H₁₀: Higher perception of bank's corporate image has a positive impact on customer satisfaction.

H₁₁: A higher perception of service quality positively affects customer satisfaction.

3.3.5 Hypotheses Relating to Research Objective 5

Several researchers proposed that customers' perception of service quality dimensions, overall service quality and satisfaction may differ according to their demographic characteristics (Clemes et al., 2007, 2001; Clemes, Ozanne, and Laurensen, 2001; Gagliano and Hathcote, 1994).. Webster (1989) studied demographic characteristics and their relationship with service quality perceptions and found consumers' demographic characteristics are closely related to service quality. Similarly, Gagliano and Hathcote's (1994) study also found that customers' demographic characteristics played an important role in determining perceived service quality. Thus customers'

demographic characteristics do have impacts on customers' satisfaction and service quality (Skogland and Siguaw, 2004) and the following relationships are hypothesized:

H₁₂: Bank customers' level of satisfaction and the influential factors (Corporate Image, Value, and Service Quality) differ according to customers' demographic characteristics (gender, age, ethnicity, education level, occupation, and annual income).

H₁₃: Bank customers' perceptions of the primary dimensions (interaction quality, physical environment quality, outcome quality, and network quality) of service quality differ according to customers' demographic characteristics (gender, age, ethnicity, education level, occupation, and annual income).

3.4 Chapter Summary

Chapter Three presented the conceptual research model used in this study. A total of 13 hypotheses were formulated to address the five research objectives discussed earlier in the chapter. The following chapter discusses the research methods to test the 13 hypotheses.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

This chapter outlines the research design and methodology used to test the 13 hypotheses developed in Chapter Three. This chapter also discusses the sample derivation, sample size, data collection, questionnaire design, and the empirical techniques used in the research.

4.2 Sample Derivation

The data was collect from a convenience sample of customers, aged 18 years or older, whose primary bank was the Auckland Saving Bank (ASB). The surveys were administered at five ASB bank branches in Christchurch, New Zealand during the period January 5th to 30th February, 2010. Four research assistants helped to distribute and administer the survey in front of the bank branches. In this study, bank customers' perceptions of the primary dimensions, service quality, value (price), corporate image, and satisfaction were specifically examined using the survey instrument.

4.3 Sample Size

The primary data used in this study was collected through a survey questionnaire. The sample was drawn from bank customers in Christchurch. Kumar (2005) argued that convenience sampling was common for market researchers. Starmass (2007) suggested that the advantages of adopting convenience sampling were cost effective and time saving. Although the application of the convenience sampling technique is somewhat limited, the sample could deliver accurate results when the population is homogeneous (Starmass, 2007). Since the targeted population in our study was homogeneous, the data was collected from a convenience sample of individuals, irrespective of their banking purpose, gender, occupation, or income. Convenience sampling was used in this research due to the limited budget and practical difficulties in obtaining the list and information of the targeted population. People aged less than 18 years were excluded from the survey, as it was perceived that they may not have sufficient banking experiences to interpret and respond to all the questions in the survey questionnaire.

In order to make generalizations with confidence about the constructs under investigation, the appropriate sample size has to be considered. According to Sekaran (2003), sample statistics need to be reliable and represent the population parameters as close as possible within a narrow margin of error. For factor analysis, the minimum sample size should be at least five times the number of variables to be analyzed (Hair, Black, Babin, Anderson, and Tatham, 2006). There are 26 variables to be analyzed in this study and following Hair et al (2006)'s suggestion, at least 130 completed questionnaires were required.

For multiple regression analysis, Garson (2006) recommends that the sample size should be at least equal to the number of independent variables plus 104 for testing regression coefficients, and at least 8 times the number of independent variables plus 50 for testing the R-square respectively. Therefore, the 7 independent variables in this study required at least 111 completed questionnaires in order to test the regression coefficients and the R-square. However, the actual number of independent variables can only be derived from the factor analysis (Hair et al., 2006).

Furthermore, Crouch's (1984, p. 142) recommends that "minimum sample sizes for quantitative consumer surveys are of the order of 300 to 500 respondents". Therefore, this study required at least 300 usable questionnaires.

4.4 Data Collection Procedures

This study selected ASB bank customers as the sample. The ASB is a well established bank with branches throughout New Zealand. The researcher sought permission from all seven ASB bank branches in Christchurch, permission for the survey was granted by five branch managers. The survey questionnaires were distributed in front of the five bank branches during business hours. The survey pack included a copy of the cover letter, the questionnaire, and a prepaid envelope. During the distribution time, four research assistants stood beside the branches' main door and asked the ASB bank customers to complete the survey questionnaire, and to return it using the prepaid envelope. The survey questionnaires were distributed during eight-week period until

the sufficient numbers of completed questionnaires were returned for the purpose of this study. A total of 1200 questionnaires were distributed during this period.

4.5 Questionnaire Development

4.5.1 Focus Group Interview

The review of literature identified four primary dimensions, as perceived by bank customers to evaluate service quality. Previous literature also indicated the importance of value/price and corporate image in explaining customers' satisfaction. In order to provide additional insights into the proposed dimensions and the related constructs to help develop the questionnaire, focus group interviews were conducted.

A focus group interview is a qualitative data gathering technique that is used to exploring knowledge and attitudes, or understanding complex behavior and motivations among different social demographic groups (Edmunds, 1999). During focus group discussion, the group members are asked to express their subjective comments, perceptions, or feelings about a defined area of interest (Kreuger, 1988). As a result, these obtained attitudes and feelings may help to draw out precise issues that may be unknown to the researchers, hence creating a more reliable questionnaire (Greenbaum, 1998).

Morgan (1993) addressed the importance of conducting focus groups in marketing to facilitate questionnaire design and to formulate different question categories. Conducting a focus group interview will not only create a more reliable questionnaire for behavioral research (Greenbaum, 1998), but also helpful to test service concepts (Edmunds, 1999).

Kotler (1987) recommends that "groups of eight to twelve target consumers, usually (but not always) a relatively homogeneous group" be used to conduct a focus group interviews (Kotler, 1987 pp .226). Edmunds (1999) noted that it is generally rare to use a single focus group for a study. Following Kotler's (1987) and Edmunds's (1999) recommendation, two focus group interviews (one consisting of nine bank customers; and another consisting of eight bank staff/managers) were conducted for current study.

The participants for the focus group interview were randomly selected from the targeted population.

The first focus group consisted of nine customers who banked with several New Zealand banks. Before conducting the focus group interviews, the researcher confirmed all the participants were aged 18 or over and had adequate New Zealand banking experiences to understand the content of the interview questions. The main purpose of the first focus group was to help the researcher to investigate the aspects and attributes of banking experience as perceived by consumers. First, the group members were asked to identify all attributes that have an impact on their evaluation of a bank service based on four identified service quality dimensions: interaction quality, physical environment quality, outcome quality, and network quality. Following this, they were encouraged to identify any additional attributes or the constructs related to those service quality dimensions that could influence their perceptions about bank services. They were also asked to identify the factors that they considered to be the most crucial while forming perceptions of the quality of service experience they received at a bank. The second focus group consisted of eight bank staff/managers. They are selected because employees have good knowledge and experiences in designing and administering quality service program. Information gathered from such employees may help the researchers to understand the nature of quality service which differ from those gathered from the focus group (bank customers). The main focus of the second focus group was to list attributes/factors that bank staff/managers considered as important during a banking experience.

The feedback gathered from the focus group interviews and the constructs identified in the literature review were also used to develop the survey questionnaire. The final survey questionnaire consisted of 41 items, which were used to measure the constructs.

4.5.2 Design and Layout of the Survey Instrument

The questionnaire consists of three sections (see Appendix 2). Section One contains a total of 26 items: 7 Interaction Quality items, 8 Physical Environment Quality items, 7 Outcome Quality items, and 4 Network Quality items. Section Two measured the

higher order constructs: service quality (3 items), customer satisfaction (5 items), value (3 items), and corporate image (4 items). Section Three measured the demographic variables, such as gender, age, ethnicity, level of education, occupation, household annual income. Some other questions regarding customers' personal banking details (e.g. number of years with current bank, whether banking with other banks, types of services used) were also included.

All the questions in the questionnaire were based on multiple service encounters and positively worded (Carman, 1990; Cooper and Schindler, 2006). Miles and Huberman (1994) recommended using Likert Scale format questions in order to correctly measure the answers, to help with interpreting the findings, and to strengthen the results of survey questions. Schall (2003) demonstrated the benefits of a seven-point Likert-type scale compared to five- and ten-point Likert-type scales, and recommended using a seven-point Likert-type scale when designing a questionnaire. Following Miles and Huberman's (1994) and Schall's (2003) suggestion, the constructs in the questionnaire for the current study were measured using Likert-type scale where each scale indicates the respondent's level of agreement to a statement measured on a seven point scale, with '1' being strongly disagree, '7' strongly agree, and '4' being neutral with the statement. A seven-point scale can increase the variation and reliability of the responses (Nunnally, 1978).

In order to capture the richness of the constructs, increase reliability and reduce measurement error as suggested by Churchill (1979), each of the constructs in the questionnaire: service quality, value (price), corporate image, and customer satisfaction were all measured using multiple items.

4.5.3 Pretesting Procedures

Pretesting of the questionnaire was conducted on a random sample of 30 bank customers. The pretest was conducted to obtain feedback to improve the content of the questions, instructions, clarity, and the layout of the questionnaire. Furthermore, pretesting of the questionnaire also assessed the reliability of the constructs, the measures, and the likely response rate. Some minor wording modifications to the

questionnaire were made as a result of this process. The final version of the questionnaire is in Appendix 1 and 2.

4.6 Data Analysis Technique

Once the usable responses from the questionnaires were collected, the data was recorded and coded into SPSS software version 15.0. The data was analyzed using three statistical techniques; factor analysis, multiple regression analysis, and analysis of variance. Exploratory factor analysis was used to examine the factors that make-up overall service quality, multiple regression analysis was used to test the conceptual model, and analysis of variance was used to compare the results based on the customers' demographic characteristics.

4.6.1 Factor Analysis

Factor analysis is a multivariate statistical method whose primary purpose is to define a structure within a set of observed variables (Stewart, 1981). It is an interdependence technique in which all variables are simultaneously considered (Hair et al., 2006). Stewart (1981) summarizes three functions of factor analysis: (1) minimizing the number of variables while the amount of information in the analysis is maximized; (2) searching qualitative and quantitative data distinctions when the data is too large; and (3) testing hypotheses about the number of distinctions or factors underlying a set of data.

The following sections discuss the types of factor analysis and its assumptions. The correlation matrix, factor rotation and interpretation of factor results are also discussed.

4.6.1.1 Factor Analytic Data Modes

Stewart (1981) summarized different types of modes that could be used for different research purposes (see Table 4.1). The appropriate mode of factor analysis depends on different research objectives (Hair, Anderson, Tatham, and Black, 1998). In this study, the first objective is to identify the relationships among the variables from the data collected from a number of individuals on one occasion. Therefore, the R factor

analysis was used to analyze the relationships among the variables and to identify groups of variables forming latent dimensions (factors) (Hair et al., 2006).

Table 4.1: Modes of Factor Analysis

Technique	Factors are loaded by	Indices of association are computed across	Data are collected on
R	Variables	Persons	One occasion
Q	Persons	Variables	One occasion
S	Persons	Occasions	One variable
T	Occasions	Persons	One variable
P	Variables	Occasions	One person
O	Occasions	Variables	One person

Source: Stewart (1981, pp. 53).

4.6.1.2 Types of Factor Analysis

There are two major methods of extracting the factors from a set of variables: confirmatory factor analysis and exploratory factor analysis (Stewart, 1981). Confirmatory Factor Analysis (CFA) seeks to test the hypothesized relationship between the observed variables and their underlying latent construct(s) exists in one or several samples (Garson, 2006). The postulated relationship pattern are developed and supported by knowledge of the theory, prior empirical research, or both, and then the hypothesis are tested statistically. Therefore, confirmatory factor analysis (CFA) is a statistical technique used to verify the expected factor structure of a set of observed variables (Hair et al., 2006).

Exploratory factor analysis (EFA) has been used to explore the possible underlying factor structure of a relatively large set of observed variables without imposing a preconceived structure on the outcome (Child, 1990; Garson, 2006). The EFA factor structure is not based on the knowledge of the theory or prior empirical research, therefore, by performing EFA the underlying factor structure is identified (Hair et al., 2006).

There are several different forms of factor analysis; however the selection of the appropriate model is based on the factor analysis objectives and the amount of prior knowledge about the variance in the variables (Hair et al., 1998). EFA was adopted for this study. EFA can obtain a solution through two methods: common factor analysis and component analysis (Hair et al., 2006).

Common factor analysis is also called principal factor analysis (PFA). PFA is a form of factor analysis seeks the least number of factors that can account for the common variance (correlation) of a set of variables (Hair, 2006). The components analysis is also called Principal Components Analysis (PCA), seeks the set of factors which can account for all the common and unique (specific plus error) variance in a set of variables (Hair, 2006).

Common factor analysis is a form of factor analysis used for the purpose of identifying latent variables which contribute to the common variance of the set of measured variables, excluding variable-specific (unique) variance (Garson, 2006). By comparison, components analysis reflects both the common and unique variance of the variables and may be seen as a variance-focused approach seeking to reproduce both the total variable variance with all components and to reproduce the inter-correlations (Garson, 2006). PCA is generally used for the purpose of data reduction, which is to reduce the information in many measured variables into a smaller set of components (Hair et al., 2006).

Since the researcher do not have a causal model but want to reduce a large number of items to a smaller number of underlying latent variables and PCA is far more widespread and accepted by researchers (Hair et al., 1998). PCA was considered the appropriate method to analyze the data for this study.

4.6.1.3 Assumptions for Factor Analysis

Linearity

Factor Analysis is a linear procedure. Any non-linearity can bring a problematic solution (Coakes, Steed, and Price, 2008). Therefore, careful examination of any departures from linearity is necessary (Hair et al., 2006).

Multivariate normality

Most significance statistics build on the normal distribution, so it is usual for the common underlying distribution to be normally distributed. The dependent variable should be normally distributed for each combination of the independent values. The smaller the sample size, the more important it is to screen data for normality (Hair et al., 2006).

Homoscedasticity

Since factors are linear functions of measured variables, homoscedasticity of the relationship is assumed. The researcher should test to assure that the residuals are dispersed randomly throughout the range of the estimated dependent variable. The lack of homoscedasticity may mean (1) there is an interaction effect between a measured independent variable and an unmeasured independent variable not in the model; or (2) that some independent variables are skewed while others are not. However, homoscedasticity is not considered a critical assumption of factor analysis (Fox, 2005).

No outliers

Outliers are a form of violation of homoscedasticity, which can impact correlations heavily and thus distort factor analysis. To deal with outliers, they are removed from the analysis and explained on a separate basis, or transformation may be used which tend to "pull in" the outliers. These include the square root, logarithmic, and inverse ($x = 1/x$) transforms (Garson, 2007).

Valid factor interpretations and labels

Factor interpretations and labels must have face validity and/or supported by theory. It is difficult to assign valid meanings to factors. A recommended practice is to have a panel not otherwise part of the research project assign one item to one factor label. A rule of thumb is that at least 80% of the assignments should be correct (Hair et al., 2006).

Factorability of the correlation matrix

Coakes and Steed (2001) suggested several methods to determine the appropriateness for applying factor analysis to a data set.

First, it is important to inspect whether the correlation matrix is appropriate for factor analysis, the researcher must look for correlations that are greater than 0.3. If several values in the correlation matrix exceed 0.3 then it is appropriate to use factor analysis (Coakes and Steed, 2001). The anti-image correlation matrix is used to assess the sampling adequacy of each variable. Only variables with sampling adequacy greater than minimal acceptable significant level of 0.5 will be included in the analysis (Coakes and Steed, 2001). Both Bartlett's test of Sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy can be used to determine the factorability of the matrix as a whole. If Bartlett's test of Sphericity is significantly large among some of the variables, and Kaiser-Meyer-Olkin index is greater than 0.6 then the factorability is assumed (Coakes and Steed, 2001).

4.6.1.4 Criteria for Determining the Number of Factors

Kaiser criterion

Kaiser criterion recommends dropping all the factors with an eigenvalue below 1 and considering factors with an eigenvalue greater than 1 as common factors (Nunnally, 1978). However, Lance, Butts, and Michels (2006) argued this criterion may overestimate or underestimate the true number of factors. Therefore, they recommend not using Kaiser Criterion as the only tool to determine the number of factors.

Cattell's scree test plot

The Cattell's (1966) scree test is another way to determine the number of factors to include in the analysis. Scree test criterion plots the components on the X axis and the corresponding eigenvalues on the Y axis. At the break or leveling point of slope, indicating the number of factors to include in the analysis. The rule of Cattell's scree test is to view all the factors with eigenvalues above the break point on the plot as common factor and rejecting those below it (Jackson, Goffin, and Helmes, 2000).

4.6.1.5 Factor Rotation Methods

Rotation serves to make the output more understandable and is usually necessary to facilitate the interpretation of factors (Garson, 2006). The goal of factor rotation strategies is to obtain a clear pattern of loadings (Garson, 2006). The rotation won't

affect the sum of eigenvalues (percent of variance explained), but it will change the eigenvalues of particular factors as well as the factor loadings (correlations between the variables and the factors) (Garson, 2006). In a plot, each variable is represented as a point. Researcher could rotate the axes to different directions without altering the relative locations of the points. As a result of rotation, the actual factor loadings would change. Different rotation methods may generate same total eigenvalues that explain the same amount of variance, but the factor loadings will be changed (Garson, 2006). Since factor loadings are used to represent the meaning of factors, this means that different meanings may be ascribed to the factors depending on the rotation (Garson, 2006). Orthogonal and oblique rotation methods are the most common rotation method in research application.

Orthogonal factor rotation

Factor rotation axes are maintained at 90 degrees and each factor is independent. There are no correlations between the factors and no factor correlation matrix is produced (Hair et al., 2006). There are three orthogonal rotation methods: Varimax Rotation, Quartimax Rotation, and Equimax Rotation.

Varimax rotation developed by Kaiser (1958) is the most common rotation criterion (Hair et al., 2006). It maximizes the variance of the squared loadings of a factor (column) on all the variables (rows) in a factor matrix and enables to differentiate the original variables by extracted factor (Garson, 2008). The result tends to make the original variable associated with one (or a small number) of the factors, and each factor represents only a small number of variables (Abdi, 2003), which make it easy to identify each variable with the factor.

Quartimax method is an alternative method to vaimax. Quartimax rotation minimizes the number of factors needed to explain each variable (Abdi, 2003). The result of quartimax rotation often focuses on a general factor that most variables are loaded with a high or medium degree (Hair et al., 1998). Such a factor structure is usually not helpful for the research purpose (Garson, 2008).

Equimax rotation is a compromise between Varimax and Quartimax criteria (Abdi, 2003). However, Hair et al., (2006) argued that Equimax rotation method is not

widely accepted by researchers and therefore it is not recommended as a common approach to data analysis.

Oblique factor rotations

Different from orthogonal factor rotation, oblique factor rotations allow the factors to be correlated (Rummel, 1970). Stewart (1981) concludes that oblique rotations play an important role in assisting theory building, especially in the development of consumer behavior theories. Direct oblimin rotation and Promax rotation are the most commonly used oblique rotations.

Oblimin is normally used when seeking a non-orthogonal solution. Applying Oblimin can lead to higher eigenvalues but diminished interpretability of the factors (Garson, 2006). Promax performs the similar function as Oblimin except computationally faster than Oblimin. Thus, Promax is more often selected when data sets are extensively large (Garson, 2008).

The orthogonal rotation method has gained widespread acceptance in the marketing literature and very few factors are uncorrelated in reality (Hair et al., 2006). In many marketing applications, correlated factors and hierarchical factor solutions are perceived to be intuitively attractive and theoretically justified (Stewart, 1981). Therefore, the Varimax orthogonal rotation is used in this research.

4.6.1.6 Interpretation of Factors

The factor loadings are the correlation coefficients between the variables and factors (Garson, 2006). When factors are interpreted, Hair et al. (2006) claimed that the decision rules must be based on the factor loadings that are worth consideration and attention. The significance of factor loadings generally depends on the sample size (see Table 4.2).

Table 4.2: Guidelines for Identifying Significance Factor Loadings Based on Sample Size

Factor Loading	Sample Size Needed for Significance *
0.30	350
0.35	250
0.40	200
0.45	150
0.50	120
0.55	100
0.60	85
0.65	70
0.70	60
0.75	50

* Based on a 0.05 significance level and power level of 80 percent; the standard error assumed to be twice those of conventional correlation coefficients.

Source: (Hair et al., 2006, pp.128)

According to Hair et al. (2006), the more absolute size of the factor loadings, the more significant it is in interpreting factor structure. Hair et al. (2006, p. 129) summarizes the following criteria for the practical or statistical significance of factor loadings:

- Although factor loadings of ± 0.30 to ± 0.40 are minimally acceptable, values greater than ± 0.50 are generally considered necessary for practical significance.
- To be considered significant:
 - A smaller loading is needed given either a larger sample size or a larger number of variables being analyzed.
 - A larger loading is needed given a factor solution with a larger number of factors, especially in evaluating the loadings on later factors.
- Statistical tests of significance for factor loadings are generally conservative and should be considered only as starting points needed for including a variable for further consideration.

Normally, a higher factor loading is preferred. Raubenheimer (2004) suggests for exploratory purposes, a lower level such as 0.4 or lower is accepted. But, in any cases, factor loadings must be interpreted accordingly to the theory, not by arbitrary cutoff levels (Garson, 2006).

4.6.2 Summated Scale

In order to reduce the over reliance on a single response and minimize measurement error, the summated scale technique is recommended by Hair et al. (2006). This technique is formed by combining all the variables loading highly on a factor and summing or averaging them to create a new variable (Hair et al., 2006). In addition, summated scales can present the multiple aspects of a concept in a single measure. According to Hair et al. (2006), the construction of a summated scale must check for content validity, dimensionality, and reliability.

4.6.2.1 Content Validity

Content validity is the assessment of the correspondence of the variables to be included into a summated scale and its conceptual definition (Hair et al., 2006). It is used to ensure the measurement items are adequate and representative according to the research concept (Sekaran, 2003). Ruane (2005) suggests that content validity is an important consideration if the research concept involves in multi-dimensional structure, and multiple measurement items must be applied to measure the dimensions.

4.6.2.2 Test for Unidimensionality

The items in the summated scale are assumed to be unidimensional, which means each item should measure the same underlining concept (De Vaus, 2002). If it does not, it is assumed the item is measuring something different from other items, and therefore the item should be dropped (De Vaus, 2002). The test of unidimensionality is that each scale should consist of items loading on a single factor (Hair et al., 1998).

4.6.2.3 Test for Reliability

A summated scale is reliable when the same scale score is obtained from individuals on two different occasions (De Vaus, 2002). If a variable is generated from a set of questions that always return a consistent and stable response, even if questions were replaced with other similar questions, then the variable is said to be reliable (Reynaldo and Santos, 1999).

4.6.3 Multiple Regression Analysis

Regression analysis is a statistic technique used to investigate the relationships between a dependent variable and one or more independent variables (Kometa, 2007; Sykes, 1993). Simple linear and multiple linear regressions are the most common regression models applied in social sciences (Aaker, Kumar, and Day, 2007). Multiple linear regression is used in this study to investigate the relationship between bank customers' overall satisfaction and seven independent variables.

The multiple regression analysis equation takes the form of:

$$y = a + b_1x_1 + b_2x_2 + \dots + b_nx_n + e \quad (1)$$

where y is the dependent variable, X is the independent variable, and e is the random error term. The b_1, b_2, \dots, b_n are the regression coefficients that represent, on average, the amount the dependent variable y changes when the corresponding independent variable changes 1 unit (Jaccard and Turrisi, 2003). The standardized version of the beta coefficients are the beta weights, and the ratio of the beta coefficients is the ratio of the relative predictive power of the independent variables (Garson, 2008). Therefore, regression coefficients can be used to evaluate the strength of the relationship between the independent variables and the dependent variable. Chu (2002) claim that the beta coefficients of the independent variables can be used to determine its derived importance to the dependent variable compared with other independent variables in the same model. a is the constant, where the regression line intercepts the y axis and the error term represents the assumed random error will occur (Hair et al., 1998). That is the dependent variable y will be when all the independent variables are 0 (Garson, 2006). R^2 is the multiple correlation, which represent the percent of

variance in the dependent variable explained collectively by all of the independent variables (Garson, 2008). That is the R^2 value in the model provides a measure of the predictive ability of the model. The closer the value to 1, the better the regression equation fits the data (Dielman, 2001).

The F test is used to test the significance of the regression model as a whole. F-ratio statistic takes the form of $F = [R^2/k]/[(1 - R^2)/(n - k - 1)]$ (Garson, 2008). F is a function of R^2 , the number of independents, and the number of cases. F is computed with k and (n - k - 1) degrees of freedom, where k = number of terms in the equation not counting the constant (Garson, 2008). The decision rule for F-ratio statistic is to reject the null hypothesis if F is greater than the critical value of an appropriate level of significance, and not to reject the null hypothesis when F value is smaller or equal to the critical value of an appropriate level of significance.

Multiple linear regression analysis was used in this study to test the research hypotheses developed in Chapter Three. The multiple regression models can be presented in the following reduced form:

$$CS = f(CI + V + SQ) + e \quad (2)$$

where

$$SQ = f(IQ + PEQ + OQ + NWQ + LQ) \quad (3)$$

where:

CS= Customer Satisfaction

CI= Corporate Image

V= Perceived Value

SQ = Overall Service Quality

IQ = Interaction Quality

PEQ= Physical Environment Quality

OQ= Outcome Quality

NWQ= Network Quality

LQ= Lending Quality

e= Error term

Equation 2 predicts the mean population value of customer satisfaction on the basis of the known and fixed values of service quality, corporate image, and value (price). The model includes customer satisfaction as a dependent variable, service quality, corporate image, and value (price) as the independent variables.

Equation 3 predicts the mean population value of service quality on the basis of the known and fixed values of five primary dimensions: interaction quality, physical environment quality, outcome quality, network quality, and lending quality. The model includes service quality as a dependent variable, and five primary dimensions as the independent variables.

4.6.3.1 Moderated Multiple Regression (MMR)

In recent years, many researchers recognized the import roles of moderate effect in many social and behavioral theories building (Whisman, 1993). The moderating effect is used to detect not only the main effects of independent variables, but also their interactive effects (Snell and Dean, 1994). For example, a linear causal relationship in which the variable X is presumed to cause the variable Y , however, with existence of a moderating variable z , it can alters the strength of the causal relationship between variables X and Y . which is labeled as a moderator (Baron and Kenny, 1986). To detect the existences of moderating effect, Moderated Multiple Regression (MMR) is often used (Cohen and Cohen, 1983). Cohen and Cohen (1983) recommend that the main effect variables should subtract its mean from all observation before multiplying them together.

To investigate the moderating effect and test Hypotheses 7 and 8, five new variables were created:

The first variable (service quality x value) is to estimate a moderating relationship between service quality and customer satisfaction with value (price) as a moderator.

Second variable (interaction quality x corporate image) is to estimate a moderating relationship between interaction quality and overall service quality with corporate image as a moderator.

Third variable (physical environment quality x corporate image) is to estimate a moderating relationship between physical environment quality and overall service quality with corporate image as a moderator.

The fourth variable (outcome quality x corporate image) is to estimate a moderating relationship between outcome quality and overall service quality with corporate image as a moderator.

The fifth variable (network quality x corporate image) is to estimate a moderating relationship between network quality and overall service quality with corporate image as a moderator.

In the MMR, the independent variables (e.g, service quality and value) are regressed against customer satisfaction in two successive steps: firstly, service quality and value (price) are regressed individually; and then the new variable (service quality x value) are regressed against customer satisfaction. If the regression result indicate the new variable (service quality x value) is significant, then indicates a moderating relationship among the three variables.

4.6.4 Analysis of Variance (ANOVA)

The purpose of analysis of variance (ANOVA) is to test for significant differences between means from two or more groups originate from same populations (Hair et al., 2006). This research uses ANOVA to examine bank customers' perceptual differences of the constructs based on several demographic characteristics.

The logic of ANOVA is to partitioning the total variance into the component that is due to true random error (i.e., MS_W) and the components that are due to differences between means (i.e., MS_B). The F statistic for ANOVA:

$$F \text{ statistic} = \frac{MS_B}{MS_W}$$

Where, MS_B is the mean square within groups whereas MS_W is the mean square between groups (Hair et al., 2006).

The computed F values are then tested for statistical significance and critical value $P=0.05$ is generally taken as marking an acceptable boundary of significance. P value

needs to be less than 0.05 for the F ratio to be significant (Saunders, Lewis, and Thornhill, 2007). If F ratio is significant, reject the null hypothesis of no differences between means, and accept the alternative hypothesis that the means (in the population) are different from each other (Cardinal and Aitken, 2006).

4.7 Assumption for Regression Analysis and ANOVA

Before apply regression analysis and analysis of variance, the following assumptions must be tested to make sure the properness of the analysis.

Absence of Outliers

Outliers are a form of violation of homoscedasticity, which can affect the regression coefficients substantially (Garson, 2008). Outlier refers to the cases of high residuals (errors) that are far from the regression line (Garson, 2008). It can be detected in the analysis of residuals and leverage statistics (Osborne and Waters, 2002). Garson (2008) suggest that researchers remove outliers from analysis and try to explain them on a separate basis. A rule of thumb is that an outlier is a point whose standardized residual is greater than 3.3 (corresponding to the 0.001 alpha level) (Garson, 2007). In some cases, transformations such as square root, logarithmic, and inverse may be used to "pull in" outliers and improve normality (Osborne and Waters, 2002).

Linearity

Regression analysis is a linear procedure, and the relationship between dependent and independent variables, and it is only applicable when the relationships are linear in nature (Osborne and Waters, 2002). If a nonlinear relationship is presented, the regression R-square will underestimate the variance explained overall and the betas will underestimate the importance of the variables involved in the non-linear relationship (Pedhazur, 1997). This may cause the regression result to be unusable for the researcher (Garson, 2008). Hair (2006) suggests that examining the residual scatter plots is the most common way to identify any nonlinear patterns in the data.

Multicollinearity

Multicollinearity refers to the economic variables in the data that move together in systematic ways (Hill, Griffiths and Judge, 2001). Such variables are believed to have

problems with collinearity or multicollinearity when several variables are involved (Hill, Griffiths, and Judge, 2001). When multicollinearity appears, any variable's effect can be predicted or accounted for by the other variables in the analysis (Hair, 2006). Similarly, Neter, Wasserman and Kutner (1985) argued that the multicollinearity problem may also arise from the natural correlation among the independent variables themselves. Estimates are unbiased but assessments of the relative strength of the explanatory variables and their joint effect are unreliable when multicollinearity exists.

The multicollinearity problem can make interpretation of variables complicated or even impossible as it is hard to confirm the clear relationships between dependent and independent variables (Hair et al., 2006). As a result, under multicollinearity, the assessments of the relative strength of the explanatory variables and their joint effect are unreliable (Garson 2006). On the other hand, multicollinearity can also generate unexpectedly large estimated standard errors for the coefficients of the variables involved in the analysis (Dorak, 2007). Dorak (2007) suggests checking for multicollinearity among explanatory variables in the data when conduct an exploratory research (Dorak, 2007). Neter, Wasserman, and Kutner (1985) argues although multicollinearity can not be viewed as a violation of the regression assumptions, it may cause serious difficulties. Lin (2008) summarizes the difficulties to include: (1) variances of parameter estimates may be unreasonably large; (2) parameter estimates may not be significant; and (3) a parameter estimate may have a sign different from what is expected (p. 417).

Garson (2006) suggest following techniques to detect multicollinearity.

Tolerance:

$$\text{Tolerance} = 1 - R^2$$

where R^2 is the multiple R of a given dependent regressed on all other independent variables.

If the tolerance value is smaller than cutoff value, usually 0.20, the independent should be dropped from the analysis due to multicollinearity. The tolerance looks at the single independent variable with relation to all other independent variables and

takes interaction effects into account as well as simple correlations. This technique is better than just using simple $R^2 > .80$ (Garson, 2006). According to Drazin and Rao (1999), the rule of thumb is that tolerance values greater than 0.20 do not have multicollinearity, whereas tolerance values between 0.20 and 0.10 suggest that researchers should view the results with caution. Tolerance values less than 0.10 indicate a serious multicollinearity problem, suggesting that researchers should reconsider the independent variables.

Variance inflation factor (VIF):

The variance-inflation factor (VIF) is the reciprocal of tolerance. VIF is computed as follows:

$$VIF_j = \frac{1}{1 - R_j^2}$$

Garson (2006) suggest the rule of thumb is that when VIF is greater than 4.0, multicollinearity is a problem. However, more lenient cut-off of points was used in application, for instance, Dielman (2001) use 10 as the cut off points. O'Brien (2007) indicate the most common rule of thumb for a VIF is 10, which is regarded by many researchers as a sign of severe or serious multicollinearity problems (O'Brien, 2007). Myers (1990) also shared the similar view that if average VIF_j is greater than 10, then multicollinearity may be affecting the least-squares estimates of the regression coefficient, Conversely, VIF values below 10 indicate that multicollinearity is not a problem (Myers, 1990).

Condition Index

Garson (2007) suggests a condition index which uses square roots of the ratio of the largest eigenvalues to each other eigenvalue as an alternative approach to assess multicollinearity in data. Many researchers suggest condition indices over 15 indicate possible multicollinearity problems and over 30 indicate serious multicollinearity problems (Amiama, Bueno, and Álvarez, 2008; Garson, 2007; Joshua, 2008). However, Belsley, Kuh and Welsch (1980) argue that condition index values greater than 30 do not necessarily indicate problematic multicollinearity. William (2008)

argued there is still no clear cutoff criterion for condition index to evaluate multicollinearity. Therefore, it is suggested to consider a condition index as a reference (William, 2008).

Normally distributed Error Term

Residuals that represent the error term should be normally distributed for each set of values of the independent variables (Garson, 2008). A histogram of standardized residuals is a simple graphic method to check for the normality of the data (Garson, 2008). However, Hair et al. (1998) suggested that a normal probability plot (P-P Plot) is the better alternative method to assess whether the error terms are normally distributed. This is done by plotting observed cumulative probabilities of occurrence of the standardized residuals on the Y axis and expected normal probabilities of occurrence on the X axis, such that a 45-degree line will appear when the observed conforms to the normality expected and the assumption of normally distributed error is met (Garson, 2008).

Independent Error Terms (No Autocorrelation)

One assumption for multiple regression analysis is the uncorrelated error term (Dielman, 2001). Uncorrelated error term in a data set means the current values should not be correlated with previous values (Garson, 2008). In other words for any two observations within the data series, it is assumed knowing one observation tells nothing about the other observation (Cardinal and Aitken, 2006). To deal with the correlated observations, Garson (2008) suggest the Durbin-Watson coefficient tests for autocorrelation. The hypotheses in the Durbin-Watson test are given below (Montgomery, Peck, and Vining, 2001):

$H_0 : \rho = 0$ implies that auto-correlation is not present.

$H_1 : \rho > 0$ implies that auto-correlation is present.

The test statistic is

$$d = \frac{\sum_{i=2}^n (\hat{e}_i - \hat{e}_{i-1})^2}{\sum_{i=1}^n \hat{e}_i^2}$$

where $\hat{e}_i = y_i - \hat{y}_i$ and y_i and \hat{y}_i are, respectively, the observed and predicted values of the response variable for individual i ; d becomes smaller as serial correlations increase. Upper and lower critical values, d_U and d_L have been tabulated for different values of k (number of explanatory variables) and n (number of observations or cases) (Montgomery et al., 2001).

The Durbin-Watson value ranges from 0 to 4, close to 0 indicates extreme positive autocorrelation; close to 4 indicates extreme negative autocorrelation; and close to 2 indicates no serial autocorrelation (Garson, 2008). As a rule of thumb, Durbin-Watson test value should be between 1.5 and 2.5 to indicate independence of observations. Positive autocorrelation means standard errors of the beta coefficients are too small. Negative autocorrelation means standard errors are too large (Garson, 2008).

Homoscedasticity Error Terms

Homoscedasticity means the variance of residual error should be constant for all values of the independent variables (Garson, 2008). Heteroscedasticity (lack of homoscedasticity) is detected when the variance of errors differs at different values of the independent variables, which can in turn lead to serious distortion of the findings and seriously weaken the analysis, thus increasing the possibility of a Type I error (Osborne and Waters, 2002).

This assumption can be checked by residual plot, that is, the plot of the standardized residuals (the errors) by the regression standardized predicted value (Garson, 2008).

If residuals plots are randomly scattered around the horizontal line, this indicates a relatively even distribution. However, heteroscedasticity is present when the residuals are not evenly scattered around the line, and it usually take the shape of a bow-tie or fan (Osborne and Waters, 2002).

4.8 Chapter Summary

This chapter outlined the research framework and methodology used to test the 13 hypotheses described in Chapter Three, and to answer the five research objectives. A questionnaire was developed to assess bank customers' perceptions of the service quality dimensions, service quality, value (price), corporate image, satisfaction. In

addition, several demographic questions were also included in the questionnaire to capture the characteristics of bank customers. The statistical analyses used in this study include factor analysis, regression and analysis of variance.

CHAPTER 5: RESULTS AND DISCUSSIONS

5.1 Introduction

This chapter presents the results of the data analysis according to the research methodology discussed in Chapter Four. A detailed discussion regarding the five research objective is also presented. The statistical assumptions of factor analysis, multiple regression and analysis of variance are tested to provide a valid and accurate result. The result of the factor analysis, multiple regression, and analysis of variance are presented, and the hypotheses are tested. Finally, the results are discussed in terms of their relation to each of the relevant research objectives.

5.2 Sample and Response Rate

A total of 1200 questionnaires were randomly handed out to customers of ASB bank in Christchurch City, New Zealand during a two month period. A total 425 (35.4%) survey questionnaires were returned. Thirteen of the questionnaires were incomplete and considered not suitable for use in the study. This resulted in a total of 412 (34.3%) usable questionnaires that were greater than the sample size of 130 suggested by Hair et al. (2006) for factor analysis. The numbers of useable questionnaires fall between of 300 to 500 as suggested by Crouch 1984. Therefore, the sample size was considered adequate for this research.

5.2.1 Non-response Bias

Non-response bias refers to the people who refuse or choose not to participate in the voluntary survey (Dillman, 2007). Statistically it may affect the survey data by skewing the results of statistical inferences and estimates drawn from the data (Dillman, Eltinge, Groves, and Little, 2002). More importantly, Goyder (1987) suggested non-response bias could be a threat to the reliability of the field of survey research itself.

5.2.1.1 Early/Late Responses

Armstrong and Overton (1977) suggested an extrapolation method for estimating non-response bias. The extrapolation method is based on the assumption that a subject

who has responded less readily (response later) may answer similarly to non-respondents.

In this study, 211 useable questionnaires were received between January 5th and January 31st, 2010 and a further 201 useable questionnaires were received between February 1st and February 28th, 2010. Coakes and Steed (2001) suggest an independent t-test is appropriate when different participants have responded under different conditions. To check for sample non-response bias, an independent t-test is required involving three steps are required. Firstly, the returned questionnaire is grouped according to the time order. The first batch of 211 questionnaires received in January was named Group One and the second batch of 201 was named Group Two. Then the summated scale (mean scores) for the Service Quality Dimensions (IQ, PIQ, OQ, NWQ, and LQ), the Overall Service Quality items, the Value items, the Corporate Image items, and the Overall Customer Satisfaction items of the two groups were computed. Finally, independent t-tests (see Table 5.1) were conducted to determine whether the difference between the means for two groups was significant. The probability values in Levene's test for all of the constructs are greater than 0.05, indicating that the two groups have equal variances (Coakes and Steed, 2001). The two-tail significance values of all the constructs showed $p > 0.05$, and thus no significant mean differences appeared between two groups. This indicates that the two groups come from the same population. Therefore, there is no evidence of non-response bias in this research.

Table 5.1: Independent Sample Test for Non-Response Bias

Construct	Levene's Test for Equality of Variances		T-test for Equality of Means Significant at 5% Level				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Interaction Quality	0.758	0.384	-0.613	410	0.871	-0.015	0.094
Physical Environment Quality	0.779	0.378	-0.461	406	0.645	-0.047	0.102
Outcome Quality	1.894	0.170	-1.945	406	0.052	-0.217	0.112
Net Work Quality	1.184	0.227	0.876	404	0.382	0.095	0.108
Lending Quality	0.043	0.835	0.082	400	0.934	0.008	0.101
Overall Service Quality	3.474	0.063	-1.860	408	0.064	-0.210	0.113
Perceived Value	0.687	0.408	-2.247	409	0.25	-0.228	0.102
Corporate Image	2.786	0.096	-1.243	409	0.215	-0.132	0.106
Overall Customer Satisfaction	0.134	0.714	0.000	409	1.000	0.000	0.122

Note: Homogeneity of Variance Assumed

5.2.1.2 Missing Data

Missing data exists in almost all statistical analyses (Allison, 2001). Missing data may include respondents' outright refusals, respondents missing or forgetting to answer some of the questions, and research questions that are not applicable to respondents (Allison, 2001).

In the data collected, most of the missing items were under or equal to 1%, however, 10 items had greater than 1% of missing data (see Appendix 3, Table 21A). Allison (2001) stated that missing data will cause ubiquitous problems in social science studies. One of the most common methods to resolve the missing data problem is to replace the missing value with mean scores based on all valid responses (Hair et al. 2006). Similarly, Garson (2007) suggested using Maximum Likelihood Estimation (MLE) and replacing the missing value with the estimated mean (EM) when there is a low percentage of missing values. Thus imputation for EM was undertaken. According to Garson (2007), the MLE method assumes missing values are Missing at random, MAR (as opposed to missing completely at random, MCAR). The visual inspection indicated that these missing values were missing at random (MAR). Therefore as suggested by Garson (2007), the missing values have been imputed with the estimated means (see Appendix 3, Table 22A).

5.3 Descriptive Statistics

Section Three of the survey questionnaire was designed to assess bank customers' demographic characteristics and banking service experiences. It also includes a discussion of the respondents' general banking experiences (in terms of bank reliability, location, rates and charges, credit granting speed, and service at counter) in comparison to other banks. Results of the demographic characteristics of respondents are presented in Table 5.2 below.

Table 5.2: Profile of the Respondents

Variables		Total Respondents	
		Frequency (No. of respondents per option)	Percentage
Gender	Male	177	43.0
	Female	235	57.0
	Total	412	100.0
Age	18-25	31	7.5
	26-35	89	21.6
	36-45	99	24.0
	46-55	92	22.3
	56-65	66	16.0
	66-75	25	6.1
	75+	10	2.4
	Total	412	100.0
Ethnicity	NZ European	253	61.4
	NZ Maori	23	5.6
	Pacific Islander	9	2.2
	European	51	12.4
	Asian	63	15.3
	Other	13	3.2
Total	412	100.0	
Education	Intermediate Education	8	1.9
	High School	125	30.3
	Diploma/Certification	159	38.6
	Bachelors Degree	87	21.1
	Postgraduate Degree	28	6.8
	Other	5	1.2
	Total	412	100.0
Occupation	Professional	122	29.6
	Self-employed	61	14.8
	Student	26	6.3
	Civil Servant	44	10.7
	Laborer	9	2.2
	Farmer	7	1.7
	Unemployed	9	2.2
	Retired	42	10.2
	Sales/service	38	9.2
	Home Maker	28	6.8
	Other	26	6.3
	Total	412	100.0
	Income	Up to NZ\$200,000	44
NZ\$20,001-NZ\$30,000		30	7.3
NZ\$30,001-NZ\$40,000		74	18
NZ\$40,001-NZ\$60,000		115	27.9
NZ\$60,001-NZ\$80,000		70	17
NZ\$80,001-NZ\$100,000		35	8.5
NZ\$100,001-NZ\$120,000		23	5.6
NZ\$120,000+		21	5.1
Total	412	100	

As shown in Table 5.2, there are more female (57%) respondents than male (43%) respondents.

The age groups of the respondents are: 26-35 years old (21.6%), 36-45 (24%) years old, and 46-55 (22.3%) years old. The respondents aged between 36 and 45 years old accounted for the largest age group.

In terms of the respondents' Ethnic background, New Zealand European are the largest group (61.4%) followed by Asian (15.3%) and Europeans (12.4%). Pacific Islander accounted for the smallest group with only 2.2% in total.

In Table 5.2, 38.6% of the respondents have a diploma or certification, followed by 30.3% high school graduates, and 21.1% have bachelor degrees. In terms of the respondents' occupation, the largest group was "Professional" (29.6%), the second largest group was "Self-employed" (14.8%), followed by the "Civil Servant" (10.7%).

Table 5.2 revealed the majority of respondents' average annual income before tax was between NZ\$40,001 and NZ\$60,000 (27.9%), followed by NZ\$30,001 and NZ\$40,000 (18.0%), and NZ\$60,001 and NZ\$80,000 (17.0%). Table 5.3 summarized the respondents' responses to their current banking experiences.

Table 5.3: Respondents' Current Banking Experience Compare With Other Banks

Variables		Total Respondents	
		Frequency (No. of respondents per option)	Percentage
My Current Bank's Reliability Compared With Other Banks	Better	71	17.2
	Good	123	29.9
	Not bad	59	14.3
	Same	115	28.9
	Not as good	27	6.6
	Bad	11	2.7
	Worse	6	1.5
	Total	412	100.0
My Current Bank's Location and Timing Compared With Other Banks	Better	76	18.4
	Good	87	21.1
	Not bad	53	12.9
	Same	141	34.3
	Not as good	35	8.6
	Bad	15	3.6
	Worse	5	1.2
	Total	412	100.0
My Current Bank's Rates and Charges Compared With Other Banks	Better	36	8.7
	Good	77	18.7
	Not bad	68	16.5
	Same	174	42.3
	Not as good	32	7.8
	Bad	19	4.6
	Worse	6	1.5
	Total	412	100.0
My Current Bank's Faster Credits Compared With Other Banks	Better	39	9.5
	Good	72	17.5
	Not bad	64	15.5
	Same	191	46.3
	Not as good	23	5.6
	Bad	19	4.6
	Worse	4	1.0
	Total	412	100

My Current bank's Service at Counter Compared With Other Banks	Better	97	23.5
	Good	108	26.3
	Not bad	56	13.5
	Same	89	21.6
	Not as good	30	7.3
	Bad	22	5.3
	Worse	10	2.4
	Total	412	100

Table 5.3 shows 29.9% of the survey respondents think their current banks have good reliability compare to other banks. The second largest group of respondents (27.9%) thinks the reliability of their current bank is the same as other banks and 17.2% of the respondents think their current bank has a better reliability than other banks. Only 1.5% of the respondents consider that their current bank is worse than other banks in terms of the bank reliability.

In term of location and timing, most of the respondents (34.3%) think the location and timing of their current bank is no better than other banks. The second largest group of respondents (21.1%) think their current bank provides a good location and timing compared with other banks, and 18.4% respondents think their current banks is better in terms location and timing compared to other banks.

In terms of rates/charges and faster credit, most of the respondents think there is no big difference among the banks. However, 18.7% of the respondents think their current bank provides good rates/charges and faster credit compared to other banks, and 16.5% of the respondents rate their current banks' rates/charges and faster credit as "Not bad" when compared to other banks.

Finally, the respondents' service quality experiences among banks were also compared. As shown in Table 5.3, most of the respondents (26.3%) think their current bank provides a good service quality at the counter compare to other banks, and 23.5% of the respondents considered their current bank provides better service at the counter compared with other banks. Table 5.4 summarizes the respondents' current banking status.

Table 5.4 Respondents' Current Banking Status

Variables		Total Respondents	
		Frequency (No. of respondents per option)	Percentage
Banking with current bank (in years)	1-5	143	34.7
	6-10	120	29.1
	11-15	56	13.6
	16-20	43	10.4
	21-25	12	2.9
	26-30	13	3.2
	31-35	12	2.9
	36+	13	3.2
	Total	412	100.0
If respondents bank with other banks	Bank with other banks	202	49.0
	Not bank with other banks	210	51.0
	Total	412	100.0
Bank customers also bank with:	ANZ Bank	71	35.15
	BNZ Bank	28	13.86
	National Bank	34	16.83
	Westpac Bank	46	22.77
	SBS Bank	13	6.44
	Kiwi Bank	28	13.86
	HSBC Bank	2	0.9
	TSB Bank	3	1.49
	Total	412	100.0
Bank accounts held with current Bank	Cheque Account	343	83.3
	Saving Account	321	77.9
	Online Account	192	46.5
	Other	81	19.7
	Total	412	100.0
Length of term deposits (in years)	1-2 years	146	35.8
	3-5 years	53	13.0
	5-10 years	11	2.7
	10+ years	4	1.0
	Total	412	100.0
Other banks services used by respondents	Home Loan	178	43.6
	Car Loan	30	7.4
	Home Content Insurance	102	25.0
	Health Insurance	17	4.2
	Other	61	15.0
	Total	412	100.0

Table 5.4 shows 34.7% of the respondents have bank with their current bank between 1-5 years, followed by 6-10 years (29.1%), 11-15 years (13.6%) and 16-20 years (10.4%). In addition, 51% of the respondents reported that they do not bank with other banks. Conversely, 49% of the respondents bank with other banks. Within the group of respondents who bank with other banks, the majority of the respondents (35.1%) use the ANZ as their secondary bank. These are followed by banks such as the Westpac (22.77%), National (16.83%), BNZ (13.86%), Kiwi Bank (13.86%), SBS (6.44%), TSB (1.49%), and HSBC (0.9%).

In terms of the accounts that respondents' hold with their current bank, most of the respondents have more than one account with their bank. For example, 83.3% of the respondents hold cheque account, while 77.9% hold savings account with their current bank. In addition, 46.6% of the respondents have an online account with their bank.

The data in Table 5.4 shows 35.8% of the respondents hold term deposits of 1-2 years with their bank followed by 3-5 years (13%) and 5-10 years (2.7%). Except for the normal accounts customers hold with their current bank, other banking services that customers use were also reported. As documented in table 5.4, home loans (43.6%), followed by home content insurance (25%), other services (e.g. superannuation, business loans) (15%), car loans (7.4%), and health insurance (4.2%).

5.4 Assessment for Factor Analysis

After the questionnaire was collected and tabulated, a series of statistical assumptions were tested to ensure the appropriateness of the data for factor analysis.

5.4.1 Statistical Assumptions for Factor Analysis

Hair et al. (2006) and Coakes and Steed (2001) suggest to check for sufficient correlations in the data matrix in order to minimize the violation of the assumptions in running factor analysis. Following the method suggested by Coakes and Steed (2001), the data matrix was examined for sufficient correlations by computing the correlation matrix, inspecting the anti-image correlation matrix, conducting Barlett's test of sphericity, and assessing the Kaiser-Meyer-Olkin measure of sampling adequacy.

5.4.1.1 Examination of the Correlation Matrix

Hair et al. (1998) suggested that if the matrix of correlation exceeds 0.3, it indicates a good sizeable correlation, and then the data is appropriate for factor analysis. The correlation matrix (see Appendix 4, Table 23A) revealed that majority of correlations were above 0.30, this indicated that the items shared common factors and were therefore suitable for factor analysis.

5.4.1.2 Examination of the Anti-Image Correlation Matrix

The anti-image correlation matrix (see Appendix 5, Table 24A) showed the negative values of the partial covariance where the majority of the off diagonal values were small. This indicated that the data matrix was appropriate for factor analysis (Coakes and Steed, 2001).

5.4.1.3 Examination of Barlett's Test of Sphericity

According to Hair et al. (2006), Barlett's test of sphericity tests for correlations among the variables within the same model. The purpose of conducting this test is to determine the factorability of the matrix as a whole. The correlation matrix showed the test value was large (6151.852) and significant (p-value = 0.000) and indicating that the data set was appropriate for factor analysis (Coakes and Steed, 2001).

5.4.1.4 Examination of Kaiser-Meyer-Olkin measure of sampling adequacy

Similar to Barlett's test of sphericity, the measure of sampling adequacy (MSA) is also used to assess the factorability of a data matrix (Coakes and Steed, 2001). Coakes and Steed (2001) suggested the MSA should be greater than 0.6 in order to assume the factorability of the data set. The result shows the MSA value is equal to 0.920 which indicates the data is appropriate for factor analysis.

5.4.2 Factor Analysis Results

The tests for the assumptions of factor analysis in Section 5.4.1 revealed that the data set was appropriate for factor analysis and therefore principal components factor analysis was conducted on all of the items that constituted the service quality dimensions that were derived from the literature review and the focus group interviews. The following sections summarize the key results.

5.4.2.1 Latent Root Criterion

Latent roots criterion is the most commonly used technique for selecting the number of factors for further analysis (Hair et al., 2006). Hair et al. (2006) recommend including only the factors with latent roots or eigenvalues greater than one, and any

factors with latent roots or eigenvalues less than 1 should be excluded in the analysis. The results of the latent root criterion (see Appendix 6, Table 25A) demonstrated that 26 variables submitted to factor analysis formed five dimensions. These five dimensions explained 63% of the variation in the data.

5.4.2.2 Scree Test Criterion

The Scree test graphically displays the eigenvalues for each factor (Coakes and Steed, 2001). Figure 5.1 shows that by laying a straight edge across the bottom portion of the roots, there are five factors before the curve becomes approximately a straight line (Garson, 2008). This procedure indicates that the extraction of five dimensions was appropriate for this analysis.

Scree Plot

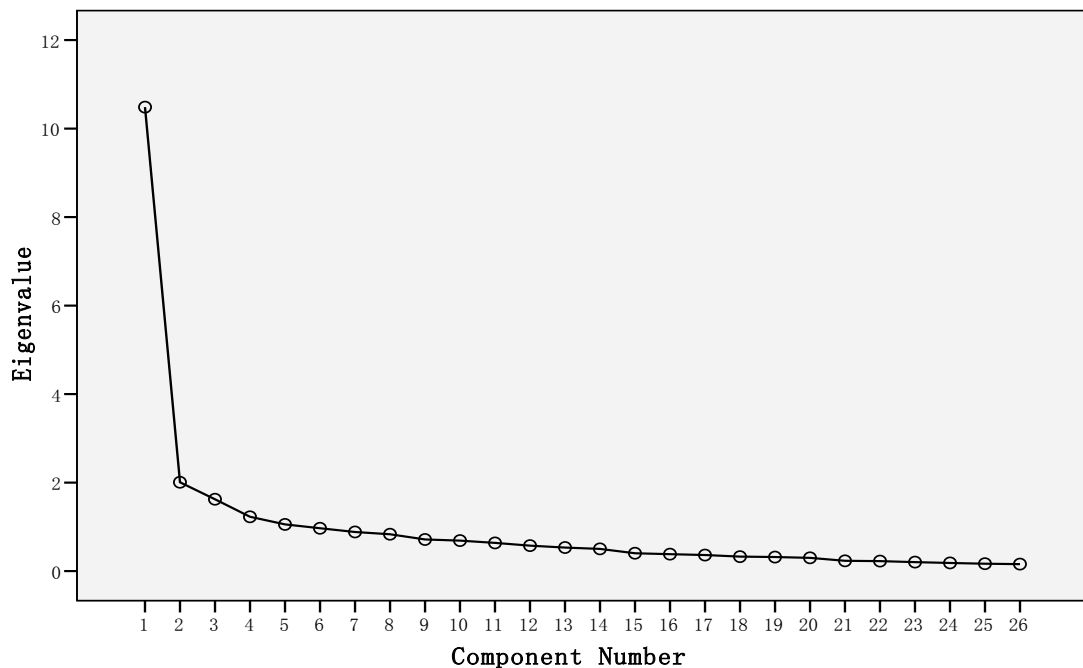


Figure 5.1: The Scree Plot

5.4.2.3 Factor Rotation

The initial inspection of the unrotated factor matrix suggests that 16 variables highly loaded on a single factor and 10 variables loaded on two or more factors. Because this

matrix did not have any meaningful patterns, to reduce ambiguity and obtain a meaningful pattern, an orthogonal rotation (VARIMAX) was conducted.

The VARIMAX rotation resulted in five factors. Five variables were cross loaded (see Appendix 7, Tables 26A). However the variables that cross loaded on one factor were significantly larger than the other. As the factors were considered to be independent, the final factor structure was based on the VARIMAX rotation (Hair et al., 2006).

5.4.2.4 Interpretation of Factors

Hair et al. (2006, p. 128) recommended that factor loadings of ± 0.30 to ± 0.40 are minimally acceptable, but values greater than ± 0.50 are generally considered necessary for practical significance. However, the authors also suggested that a smaller loading is sufficient when the sample size is large, and a large loading is required for given a factor solution with a large number of factors. Since the sample size (412) in current study is greater than 200 (required factor loading of 0.4), this study used ± 0.40 as the sign factor loading. The VARIMAX rotation considered the factor loadings > 0.40 for 25 variables as significant, and only one variable (PEQ1) had a loading of less than 0.40. The results shows 20 variables load on one factor, 5 variables have cross loadings and the remaining one variable did not load on any component. Since PEQ6 and PEQ7 have a close loading on both Interaction Quality and Physical Environment Quality, therefore the items in PEQ6 and PEQ7 have been dropped from analysis. The items PEQ1 did not load on any of the five components hence it was dropped from the analysis (see Appendix 7; Table 26A for details of the variable loadings). Each factor was named in accordance with the construct that they represented. The 5 factors were renamed: (1) Interaction Quality; (2) Physical Environment Quality; (3) Outcome Quality; (4) Network Quality; and (5) Lending Quality.

5.4.3 Summated Scale

The purpose of a summated scale is to use several variables that represent different facts of a same concept instead of using a single variable to represent that concept (Hair et al., 2006). Hair et al. (2006) suggested that the content validity,

dimensionality, and reliability of the measurement scales must be satisfied before summing all the items.

5.4.3.1 Content Validity

As suggested by Ruane (2005), content validity should be checked if the research concept involves a multi-dimensional structure. All measurement items were inspected by the researcher and marketing professionals to ensure that they were adequate for use in this research. It was therefore concluded that the items exhibited adequate content validity.

5.4.3.2 Dimensionality

No variables loaded on different factors in the component matrix. After the VARIMAX rotation, only one item's (PEQ1) loading was smaller than 0.40. As a result, the outcome of this process resulted in 25 variables representing 5 factors.

5.4.3.3 Reliability

After dropping the insignificant loading item, the remaining 25 variables were then tested for reliability. As discussed in Section 4.6.2.3, Cronbach's Coefficient Alpha was used to measure reliability of the scales. The result in Table 5.5 shows that all factors have a Cronbach's Coefficient Alpha greater than 0.60, indicating reliability of the scale (see Tables 5.5). This is consistent with Churchill's (1979) recommendation.

In addition, reliability tests were also performed on the summated scales for the Service Quality, Value (price), Corporate Image, and Customer Satisfaction constructs. Table 5.6 showed all the Cronbach's Alpha are over 0.60 which indicates all the constructs are reliable (Churchill, 1979).

Table 5.5: Reliability of Scaled Items for Dimensions of Service Quality

Dimension	Cronbach's Alpha	Item No.	Items	Rotation Loading
Interaction Quality	0.907	IQ1	Bank staff have good knowledge	0.741
		IQ2	Bank staff provide clear explanations	0.601
		IQ3	Bank staff provide clear answers to questions	0.784
		IQ4	Bank staff provide useful advice	0.767
		IQ5	Waiting time for service is acceptable	0.517
		IQ6	Bank staff act in a professional manner	0.775
		IQ7	Bank staff appearance is neat and tidy	0.716
		PEQ8	The ambient conditions in the bank are good	0.542
Physical Environment Quality	0.816	PEQ2	The bank has an efficient cash handling machine (ATM's)	0.619
		PEQ3	The bank provides good access for customers	0.706
		PEQ4	The bank has enough parking spaces for customers	0.738
		PEQ5	The bank has a convenient location for customers	0.686
		PEQ7	Customer feel safe and secure when in the bank	0.447
Outcome Quality	0.701	OQ4	Bank statements are accurate	0.534
		OQ5	The bank informs customer about policy changes	0.681
		OQ6	The bank informs customer about new products	0.691
		OQ7	The bank insists on error free transactions and records	0.673
Network Quality	0.869	NWQ1	User-friendly internet banking services	0.826
		NWQ2	24 hours access to internet banking services	0.891
		NWQ3	Internet banking is safe and secure	0.811
		NWQ4	Bank services are easy access through the phone	0.518
Lending Quality	0.756	OQ1	The bank offers competitive interest rates	0.460
		OQ2	The time taken for loan approval/disapproval is acceptable	0.762
		OQ3	The loan terms and conditions are clear and adequate	0.784

Table 5.6: Reliability of Scaled Items for Customer Satisfaction and Related Constructs

Construct	Cronbach's Alpha	Item No.	Items
Service Quality	0.908	SQ1	Excellent service quality compare to other bank
		SQ2	Pleased with service performance
		SQ3	Provide consistently good services
Value (price)	0.894	P1	Reasonable fee charged
		P2	Good value for money
		P3	Satisfied with given charges
Corporate Image	0.892	IMA1	The bank has a good image in customers' minds
		IMA2	The bank is a stable business enterprise
		IMA3	Trustworthy compared with other banks
		IMA4	The bank has strong credibility
Customer Satisfaction	0.945	CS1	The bank satisfied my needs and wants
		CS2	Satisfied banking experience
		CS3	Happy to choose current bank compared to other banks
		CS4	Right decision to stay with current bank
		CS5	Banking experience is very satisfactory

5.5 Assessment of the Regression Models and ANOVA

5.5.1 Assumptions for Regression Analysis and ANOVA

All eight regression models were tested for the presence of outliers, multi-collinearity, linearity, normality, independence, and homoscedasticity of the error term.

5.5.1.1 Outliers

Each of the eight models was examined for the presence of outliers. Outliers were identified as the outlying observations whose standardised residual was greater than 3. As recommended by Maddala (2001), outliers were removed from the analysis in order to reduce their influence on the performance of the eight regression models in this study.

An outlier refers to cases of high residuals (errors) that are far enough from the regression line that they should be removed from analysis (Garson, 2008). Garson (2008) claimed that an outlier whose standardized residual is greater than 3.3 should be excluded from the regression analysis. Therefore, all the outliers with standardized residual greater than 3.3 were dropped from all eight regression models in this study (Garson, 2008).

5.5.1.2 Multicollinearity

Multicollinearity was assessed for the eight regression models in this study. The initial inspection of the Pearson Correlation Matrix (see Appendix 9, Tables 28A-41A) for each of the regression models revealed that the correlations between the independent variables did not exceed 0.80.

Collinearity statistics include *Tolerance*, *Variance Inflation Factor (VIF)*, and *Condition Index* were also computed for all of the regression models (see Appendix 9, Table 42A). As shown in the Table 42A, values of tolerance for all regression models were above 0.35, this is well over the rule of thumb suggested by Garson (2006) and Drazin and Rao (1999) that tolerance values greater than 0.20 do not indicate multicollinearity problems. Garson (2006) suggested the conservative rule of thumb for the Variance Inflation Factor (VIF) is when the value is greater than 4.0, it indicates a multicollinearity problem. All VIF values in the eight regression models in this study were less than 4.0, and it was deemed that multicollinearity would not

affect the least-squares estimates of the regression coefficient (Myers, 1990). Another criterion to detect multicollinearity is condition index, where some researchers suggest that if the value exceeds 15, it indicates possible multicollinearity problems and if the value is over 30 it indicates serious multicollinearity problems (Amiama, Bueno, and Álvarez, 2008, Garson, 2007, Joshua, 2008). However, Belsley, Kuh, and Welsch (1980) argue that even CI values greater than 30 do not necessarily indicate problematic multicollinearity. Within the regression models of current study, the value of the condition indices for Model 1, 3, 4, 8 exceeded 15, and none exceeded 30, this suggests that a certain degree of multicollinearity exists in those regression models, but it is not a serious problem (Garson, 2007).

5.5.1.3 Linearity

Following Hair et al.'s (2006) suggestions, the residual scatter plots were also examined for linearity. The scatter plot of standardized residuals versus the fitted values (see Appendix 10, Figure 4A) for all regression models were visually inspected. The plots did not reveal any nonlinear patterns in the data, indicating a linear relationship in all of the regression models in this study.

5.5.1.4 Normality of the Error Term Distribution

To assess the normally distributed residual, the histogram residuals and the normality probability plots were plotted as suggested by Garson (2008) and Hair et al. (1998). As shown in Appendix 11, Figure 5A, the histogram plots revealed that the distribution approximated the normal distribution. In addition, the normal probability plot (P-P Plot) was approximately a straight line (Appendix 12, Figures 6A). Both appendices indicate that the residuals were normally distributed.

5.5.1.5 Independence of the Error Terms (No Autocorrelation)

The Durbin-Watson test was computed to diagnose the independence of the error terms. The test values and corresponding critical values are summarized in Table 5.7.

Table 5.7 Durbin-Watson Test Statistics

Model	Dependent Variable	Durbin-Watson	Critical Value (at 1% level)	
			DL	DU
1	Overall Service Quality	1.888	1.623	1.725
2	Customer Satisfaction	Step 1: 1.996	1.653	1.693
		Step 2: 2.015	1.664	1.684
3	Overall Service Quality	Step 1: 1.881	1.653	1.693
		Step 2: 1.851	1.664	1.684
4	Overall Service Quality	Step 1: 1.879	1.653	1.693
		Step 2: 1.830	1.664	1.684
5	Overall Service Quality	Step 1: 1.890	1.653	1.693
		Step 2: 1.934	1.664	1.684
6	Overall Service Quality	Step 1: 1.904	1.653	1.693
		Step 2: 1.932	1.664	1.684
7	Overall Service Quality	Step 1: 1.888	1.653	1.693
		Step 2: 1.889	1.664	1.684
8	Customer Satisfaction	1.986	1.643	1.704

Table 5.7 shows that the Durbin-Watson values for each of the eight regression models. According to Garson (2008), a rule of thumb for the Durbin-Watson test is that the value should be between 1.5 and 2.5 in order to indicate independence of the observations. Ndubisi and Koo (2006) also suggested the value of Durbin-Watson test should be greater than DU to indicate no autocorrelation in the residuals. All Durbin-Watson values in this study satisfied these two criteria, and therefore, the assumption of independence of the error terms was satisfied.

5.5.1.6 Homoscedasticity of the Error Terms

It is assumed the variance of residual error is constant for all values of the independent variables in regression models (Garson, 2008). In the scattered residual plots (see Appendix 10, Figure 4A), the residuals plots are randomly scattered around the horizontal line, and there is no evidence that the residuals plots exhibit the shape of a bow-tie or fan (Osborne and Waters, 2002), thus the assumption for homoscedasticity of the error terms is satisfied for all eight regression models.

5.5.2 Results Pertaining to Research Objective One

This section presents the results relating to Hypotheses 1 to 6 that were formulated in order to achieve Research Objective One. Those hypotheses were proposed to test the effects of the service quality dimensions on overall perceived service quality. However, the factor analysis revealed a fifth factor that as a dimension of service quality as perceived by customers. As discussed in Section 5.4.2, the additional

service quality dimension was named Lending Quality. Therefore, the summated scale of the four originally proposed dimensions and the newly indentified dimension, Lending Quality, were regressed against Overall Service Quality.

5.5.2.1 Hypotheses 1, 2, 3, 4, 5 and 6

There are five independent variables: Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality in Regression Model One. These service quality dimensions (independent variables) were regressed against Service Quality. The Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality dimensions are independent variables to test their effects on Service Quality. The results relating to Hypotheses 1 to 6 are summarized in Table 5.8.

Table 5.8: Multiple Regression Results Relating to Hypotheses One, Two, Three, Four, Five, and Six (Model One)

Model One	Unstandardised		Standardised Coefficient Beta	t	Sig.	
	Coefficient B	Std. Error				
Overall Service Quality (Constant)	-0.075	0.259		-0.289	0.773	
Interaction Quality	0.539	0.062	0.451	8.715	0.000	***
Physical Environment Quality	0.106	0.053	0.095	1.991	0.047	**
Outcome Quality	0.121	0.043	0.119	2.827	0.005	***
Network Quality	0.155	0.043	0.147	3.584	0.000	***
Lending Quality	0.094	0.050	0.082	1.886	0.060	*
Adjusted R²=0.541 *** Significant at 1% level F=98.078*** ** Significant at 5% level * Significant at 10% level						

The F statistic of 98.078 was significant at the 1% level of significance. Therefore, the independent variables have some power to predict Service Quality. In addition, the adjusted coefficient of determination (adjusted R-square) indicates the model fit. The adjusted R² revealed that 54.1% of the variance in Service Quality was explained by the regression model. The p-values of the t-tests were at the 1% level of significance for Interaction Quality, Outcome Quality, and Network Quality. The Physical Environment Quality dimension was significant at the 5% level, and the Lending Quality was significant at 10% level of significance. Since all service quality dimensions were significant, each of these variables helped to explain some of the

variation in Service Quality. Therefore, the bank's Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality have positive effect on customers' service quality perceptions. Thus Hypotheses One, Two, Three, Four, and Five were statistically supported.

5.5.2.2 Discussion Regarding Research Objective One

There are five significant service quality dimensions as perceived by bank customers. These five primary dimensions are Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending quality. All five dimensions positively affect overall service quality perception. The empirical results support Hypotheses One, Two, and Three and they are consistent with literature. The results also provide further evidence for the use of Interaction Quality, Physical Environment Quality, and Outcome Quality to measure service quality in the context of the banking industry. In addition, the Network and Lending Quality also positively affect Service Quality. Those service dimensions are unique to bank customers' perception on service quality. Furthermore, the results of Hypotheses 1 to 5 suggest that the multi-dimensional structure of service quality is also applicable to banking industry (Brady and Cronin, 2001).

In Model One, the standardized coefficients (β) of Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality show the relative importance of the five dimensions on Service Quality. Interaction Quality ($\beta=0.451$) has the most influential effect on Service Quality, followed by Network Quality ($\beta=0.147$), Outcome Quality ($\beta=0.119$), and Physical Environment Quality ($\beta=0.095$). Further, Lending Quality ($\beta=0.082$) has the least influence on customers' overall service quality perceptions. Therefore, hypothesis six is supported that bank customers do vary in their perceptions of the importance of each of the service quality dimensions.

5.5.3 Results Pertaining to Research Objective Two

This section presents the results for Hypothesis 7 tested to satisfy Research Objective Two. Research Objective Two examines whether Perceived Value moderates the effect between Service Quality and Customer Satisfaction.

5.5.3.1 Hypothesis 7

Hypothesis 7 hypothesized that Perceived Value moderates between Service Quality and Customer Satisfaction (see Table 5.9).

Table 5.9: Regression Results Relating to Hypothesis Seven (Model 2)

Model Two	Unstandardized Coefficient B	Std. Error	Standardized Coefficient Beta	t	Sig.
Step 1					
Customer Satisfaction					
(Constant)	0.463	0.165		2.814	0.005
Service Quality	0.674	0.039	0.627	17.305	0.000***
Perceived Value	0.333	0.043	0.279	7.697	0.000***
Adjusted R²=0.701					
F=477.807***					
Step 2					
Customer Satisfaction					
(Constant)	-0.099	0.410		-0.242	0.089
Service Quality	0.780	0.081	0.725	9.680	0.000***
Perceived Value	0.541	0.146	0.453	3.708	0.000***
Service Quality × Perceived Value	-0.037	0.025	-0.254	-1.494	0.036**
Adjusted R²=0.702					
F=320.253***					

*** Significant at 1% level
 ** Significant at 5% level
 * Significant at 10% level

Moderated multiple regression models are widely used in marketing research to detect existence of the moderating (interaction) effects that consists of comparing two least-squares regression equations (Aiken and West, 1991; Cohen and Cohen, 1983). A moderate relationship can be expressed as a moderator (Z) interacts with a predictor variable (X) to alter the relationship between the predictor variables and outcome variable (Y) (Villa, Howell, Dorfman, and Daniel, 2003). This interaction effect XZ can be obtained by multiplying the predictors (i.e., X*Z) (Villa et al., 2003). The moderated multiple regression can be conduct in two steps: the first step tests the main effects of the X and Z variables to predict Y, and the second step adds a higher order term XZ that represent interaction effect after add Z variable (Villa et al., 2003).

In Table 5.9 step one, the F statistic of 477.807 was significant at the 1% level of significance. This result suggested that the independent variables Service Quality and Perceived Value have some impact on the dependent variable Customer Satisfaction,

and the regression model was statistically significant. The adjusted coefficient of determination (R^2) revealed that the two independent variables accounted for 70.1% of the variation in the Customer Satisfaction. The p-values of the t-tests were significant at the 1% level, indicating both Service Quality and Perceived Value have some influences on Customer Satisfaction.

In step two, the F statistic of 320.253 was also significant at the 1% level of significance. Thus, the moderating and independent variables have some explanatory power on Customer Satisfaction. The adjusted R^2 of 0.702 revealed that the regression model can explain about 70.2% of the variation in Customer Satisfaction. Further, the results of t-test suggested the p-value were significant for variable Service Quality \times Perceived Value at 5% level of significance, thus the beta coefficients of both independent variable (Service Quality) and moderating variable (Perceived Value) were significant, which helped to explain some of the variations in dependent variable (Customer Satisfaction). Table 5.9 shows the Service Quality coefficient increased from 0.627 to 0.725. This result can be interpreted as the effect of Service Quality on Customer Satisfaction become stronger when the moderator, Value is added into the model. Therefore, the moderating effect of perceived Value on Service Quality and Customer Satisfaction was supported by the results of the statistical analysis.

5.5.3.2 Discussion Regarding Research Objective Two

Hypothesis Seven hypothesized that perceived Value moderates the relationship between Service Quality and Customer Satisfaction. The result in Table 5.9 shows Perceived Value does moderates the relationship between Service Quality and Customer Satisfaction in the context of banking industry.

5.5.4 Results Pertaining to Research Objective Three

This section presents the results for Hypotheses 8a, 8b, 8c, 8d, 8e in order to satisfy Research Objective Three. Research Objective Three examines whether Corporate Image plays a moderating role between Interaction Quality and Service Quality.

5.5.4.1 Hypothesis 8a

Hypothesis 8a hypothesized that Corporate Image moderates the relationships between Interaction Quality and Service Quality. The results relating to H8a were presented in Table 5.10.

Table 5.10: Regression Results Relating to Hypothesis Eight (H_{8a}) (Model Three)

Model Three	Unstandardised Coefficient B	Std. Error	Standardised Coefficient Beta	t	Sig.
Step 1					
Service Quality					
(Constant)	0.138	0.212		0.653	0.514
Interaction Quality	0.423	0.050	0.354	8.552	0.000***
Corporate Image	0.539	0.044	0.508	12.288	0.000***
Adjusted R²=0.628					
F=346.009***					
Step 2					
Service Quality					
(Constant)	-0.656	0.617		-1.062	0.289
Interaction Quality	0.584	0.127	0.488	4.584	0.000***
Corporate Image	0.704	0.128	0.663	5.504	0.000***
Interaction Quality × Corporate Image	-0.032	0.023	-0.269	-1.368	0.024***
Adjusted R²=0.629					
F=231.791***					

*** Significant at 1% level
 ** Significant at 5% level
 * Significant at 10% level

In step one, the F statistic of 346.009 was significant at the 1% level of significance. This indicated the independent variables Interaction Quality and Corporate Image have some power to explain the dependent variable, Service Quality, and the regression model was statistically significant. The adjusted coefficient of determination (adjusted R²) revealed that the two independent variables accounted for 62.8% of the variations in Service Quality. Moreover, the t-tests used to test the significance of each beta coefficient of the independent variables revealed that the beta coefficients of the Interaction Quality and Corporate Image were statistically significant (See Table 5.10).

In the second step, the F value of 231.791 was significant at the 1% level of significance, indicating the moderating variable and the independent variable have some power to explain Service Quality, and the regression model is statistically

significant. The adjusted R^2 of 0.629 revealed that the variable Interaction Quality x Corporate Image explain as much as 62.9% of the variance in the dependent variable. This suggests a good fit of the model. Further, inspection of t-statistic indicates the beta coefficients of Interaction Quality and the moderating variable, Corporate Image are statistically significant. Therefore, the Corporate Image moderates the relation between Interaction Quality and Service Quality were statistically supported (See Table 5.10).

5.5.4.2 Hypothesis 8b

Hypothesis 8b hypothesized that Corporate Image moderates the relationships between Physical Environment Quality and Service Quality. The results relating to H8b were presented in Table 5.11.

Table 5.11: Regression Results Relating to Hypothesis Eight (H_{8b}) (Model Four)

Model Four	Unstandardised Coefficient B	Std. Error	Standardised Coefficient Beta	t	Sig.
Step 1					
Service Quality					
(Constant)	0.633	0.218		2.900	0.004
Physical Environment Quality	0.196	0.046	0.176	4.288	0.000***
Corporate Image	0.683	0.044	0.642	15.659	0.000***
Adjusted R²=0.581					
F=281.994***					
Step 2					
Service Quality					
(Constant)	-0.168	0.674		-0.249	0.803
Physical Environment Quality	0.365	0.142	0.327	2.570	0.011***
Corporate Image	0.843	0.135	0.793	6.248	0.000***
Physical Environment Quality × Corporate Image	-0.033	0.026	-0.275	-1.255	0.022***
Adjusted R²=0.582					
F=188.790***					

*** Significant at 1% level
 ** Significant at 5% level
 * Significant at 10% level

In step one, the F statistic of 281.994 was statistically significant at the 1% significance level, indicating the independent variables (Physical Environment Quality and Corporate Image) have some explanation power on dependent variable Service Quality, and the model is statistically significant. The adjusted coefficient of determination (adjusted R^2) equal to 0.581 indicated that the two independent

variables accounted for 58.1% of the variation in the Service Quality. The t-test values of the independent variables were all significant at the 1% level, suggested the beta coefficients of the Physical Environment Quality and Corporate Image were significant (See Table 5.11).

In the second step, the F value of 188.790 was significant at 1% level of significance indicated the independent variable (Physical Environment Quality) and moderating variable (Corporate Image) helped to explain some of the variation in dependent variable, and the regression model was statistically significant. The adjusted R-squared suggested that 58.2% of the variation in Service Quality was explained by the regression model. The p-value of the t-test was significant at the 1% level for Physical Environment Quality \times Corporate Image, indicating that the beta coefficients of the independent variable (Physical Environment Quality) and moderating variable (Corporate Image) were statistically significant. Therefore, the Corporate Image moderates the relation between Physical Environment Quality and Service Quality were statistically supported (See Table 5.11).

5.5.4.3 Hypothesis 8c

Hypothesis 8c hypothesized that Corporate Image moderates the relationship between Outcome Quality and Overall Service Quality. The results relating to H8c were presented in Table 5.12.

In step one, the F statistic of 287.770 was significant at the 1% significance level, indicating the independent variables, Outcome Quality and Corporate Image have some explanation power on Service Quality, and the regression model was statistically significant. Further, the value of the adjusted coefficient of determination (adjusted R²) suggested that 58.6% of variability in the Service Quality can be accounted for by the two independent variables. In addition, the t-test revealed that the beta coefficients of the Outcome Quality and Corporate Image were significant (See Table 5.12).

Table 5.12: Regression Results Relating to Hypothesis Eight (H_{8c}) (Model Five)

Model Five	Unstandardised Coefficient B	Std. Error	Standardised Coefficient Beta	t	Sig.
Step 1					
Service Quality					
(Constant)	0.633	0.212		2.989	0.003
Outcome Quality	0.185	0.038	0.182	4.912	0.000***
Corporate Image	0.699	0.039	0.658	17.731	0.000***
Adjusted R²=0.586					
F=287.770***					
Step 2					
Service Quality					
(Constant)	0.233	0.596		0.391	0.696
Outcome Quality	0.267	0.120	0.263	2.219	0.027***
Corporate Image	0.781	0.121	0.735	6.459	0.000***
Outcome Quality × Corporate Image	-0.016	0.023	-0.139	-0.718	0.027***
Adjusted R²=0.585					
F=191.789***					

*** Significant at 1% level
 ** Significant at 5% level
 * Significant at 10% level

In step two, the F value of 191.789 was significant at 1% level of significance indicated that the moderating and independent variables helped to explain some variations in Service Quality, and the regression model was statistically significant. In addition, the value of the adjusted R-squared suggested that 58.5% of the variations in Service Quality can be explained by the regression model. The p-value of the t-test was significant at 1% level of significance for variable Outcome Quality × Corporate Image. Thus, the independent variable (Outcome Quality) and moderating variable (Corporate Image) helped to explain some of the variation in dependent variable. And therefore, the Corporate Image moderates the relation between Outcome Quality and Service Quality were statistically supported (See Table 5.12).

5.5.4.4 Hypothesis 8d

Hypothesis 8d hypothesized that Corporate Image moderates the relationship between Network Quality and Overall Service Quality. The results relating to H8d were presented in Table 5.13.

Table 5.13: Regression Results Relating to Hypothesis Eight (H_{8d}) (Model Six)

Model Six	Unstandardized Coefficient B	Std. Error	Standardised Coefficient Beta	t	Sig.
Step 1					
Service Quality					
(Constant)	0.747	0.221		3.375	0.001
Network Quality	0.134	0.041	0.127	3.253	0.001***
Corporate Image	0.720	0.042	0.679	17.342	0.000***
Adjusted R²=0.570					
F=268.936***					
Step 2					
Service Quality					
(Constant)	0.066	0.559		0.118	0.906
Network Quality	0.277	0.116	0.264	2.400	0.017***
Corporate Image	0.859	0.112	0.810	7.636	0.000***
Network Quality × Corporate Image	-0.128	0.021	-0.239	-1.328	0.033***
Adjusted R²=0.571					
F=180.220***					

*** Significant at 1% level
 ** Significant at 5% level
 * Significant at 10% level

In step one, the F statistic of 268.936 was statistically significant at the 1% significance level, indicating the independent variables helped to explain some variations on dependent variable Service Quality, and the model was statistically significant. The value of the adjusted coefficient of determination (adjusted R²) suggested that the two independent variables (Network Quality and Corporate Image) account for 57% of the variations in Service Quality. The p-values of the t-test were statistically significant at the 1% level for both Network Quality and Corporate Image (See Table 5.13).

In the second step, the F value of 180.220 was significant at 1% level of significance, indicating the moderating variable (Corporate Image) and the independent variable (Network Quality) helped to explain some of the variations in Service Quality, and the regression model was statistically significant. In addition, the adjusted coefficient of determination (adjusted R²) indicated that 57.1% of the variation in Service Quality can be explained by the regression model. The p-value of the t-test was significant at 1% level of significance for Network Quality × Corporate Image, indicating that the beta coefficients of both the independent variable and the moderating variable were statistically significant. Therefore, the hypothesized moderating effect of Corporate

Image on the relation between Network Quality and Overall Service Quality was confirmed by the results (See Table 5.13).

5.5.4.5 Hypothesis 8e

Hypothesis 8e hypothesized that Corporate Image moderates the relationship between Lending Quality and Overall Service Quality. The results relating to H8e were presented in Table 5.14.

Table 5.14: Regression Results Relating to Hypothesis Eight (H_{8e}) (Model Seven)

Model Seven	Unstandardized Coefficient B	Std. Error	Standardised Coefficient Beta	t	Sig.
Step 1					
Service Quality					
(Constant)	0.825	0.214		3.852	0.000
Lending Quality	0.128	0.046	0.112	2.796	0.004***
Corporate Image	0.730	0.043	0.687	17.131	0.000***
Adjusted R²=0.571					
F=268.200***					
Step 2					
Service Quality					
(Constant)	0.836	0.733		1.141	0.255
Lending Quality	0.125	0.178	0.110	0.702	0.000***
Corporate Image	0.728	0.132	0.685	5.513	0.000***
Lending Quality × Corporate Image	0.010	0.030	0.004	0.017	0.089*
Adjusted R²=0.570					
F=178.352***					

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

In step one, the F statistic of 268.200 was significant at the 1% significance level, suggested that the independent variables Lending Quality and Corporate Image have some explanation power on Service Quality, and the regression model was statistically significant. Further, the adjusted R² suggested that 57.1% of the variability in the Service Quality can be accounted for by the two independent variables. In addition, the t-test examine the significance of each beta coefficient of the independent variables revealed that the beta coefficients of the Lending Quality and Corporate Image were statistically significant (See Table 5.14).

In step two, the F value of 178.352 was significant at 1% level of significance indicating the moderating variable (Corporate Image) and the independent variable (Lending Quality) helped to explain some of the variations in Service Quality, and the model is statistically significant. In addition, the adjusted R² suggested that 57% of the variation in Service Quality can be explained by the regression model. The p-value of the t-test was statistically significant for Lending Quality × Corporate Image. Therefore the hypothesized relationship was statistically supported (See Table 5.14).

5.5.4.6 Discussion Regarding Research Objective Three

Hypothesis 8a, 8b, 8c, 8d, and 8e hypothesized that the corporate image moderates the relationship between the primary dimensions and service quality (see Tables 5.10-5.14), Corporate Image played an important role as a moderator between each of the service quality dimensions (Interaction; Physical Environment; Outcome, Network; and Lending Quality) and Service Quality in the context of banking industry were statistically proved.

5.5.5 Results Pertaining to Research Objective Four

This section presents the results relating to Hypotheses 9, 10, and 11 that were formulated in order to achieve Research Objective Four. The goal of Research Objective Four was to examine the constructs that may affect customer satisfaction for New Zealand banking industry.

5.5.5.1 Hypotheses 9, 10, 11

Hypotheses 9, 10, 11 examined the relationships between perceived value, corporate image, service quality and bank customer's satisfaction. The result associated with Hypotheses 9, 10, and 11 were summarized in Table 5.15.

Table 5.15: Multiple Regression Results Relating to Hypotheses 9, 10, and 11 (Model Eight)

Model Eight	Unstandardized		Standardised Coefficient Beta	t	Sig.
	Coefficient B	Std. Error			
Customer Satisfaction					
(Constant)	-0.069	0.170		-0.406	0.685
Perceived Value	0.270	0.042	0.227	6.511	0.000***
Corporate Image	0.337	0.045	0.294	7.459	0.000***
Service Quality	0.474	0.045	0.439	10.598	0.000***
Adjusted R ² = 0.735					
F = 381.314***					

*** Significant at 1% level
 ** Significant at 5% level
 * Significant at 10% level

The F statistic of 381.314 was significant at the 1% level of significance. The adjusted R² revealed that 73.5% of the variation in Customer Satisfaction was explained by the regression model, this indicated a good fitness of the model. The p-values of the t-tests were significant at 1% level of significance for Perceived Value, Corporate Image, and Service Quality. Therefore, suggested that the beta coefficients of the three independent variables were significant. Thus, Hypotheses 8, 9 and 10 were supported by the results of the statistical analysis.

5.5.5.2 Discussion Regarding Research Objective Four

The three hypotheses relating to Research Objective Four hypothesized that Value, Corporate Image and Service Quality positively influences the bank customers' satisfaction. The inspection of the standardised coefficients β indicating the relative importance of the three constructs Perceived Value, Corporate Image, and Service Quality to customer satisfaction. As shown on the Table 5.15, Service Quality ($\beta=0.439$) was perceived as the most important factor for bank customer satisfaction, followed by Corporate Image ($\beta=0.294$). The Perceived Value ($\beta=0.227$) have the smallest impact on bank customer satisfaction among the three constructs. Figure 5.2, shows the standardised coefficients listed next to all the significant paths.

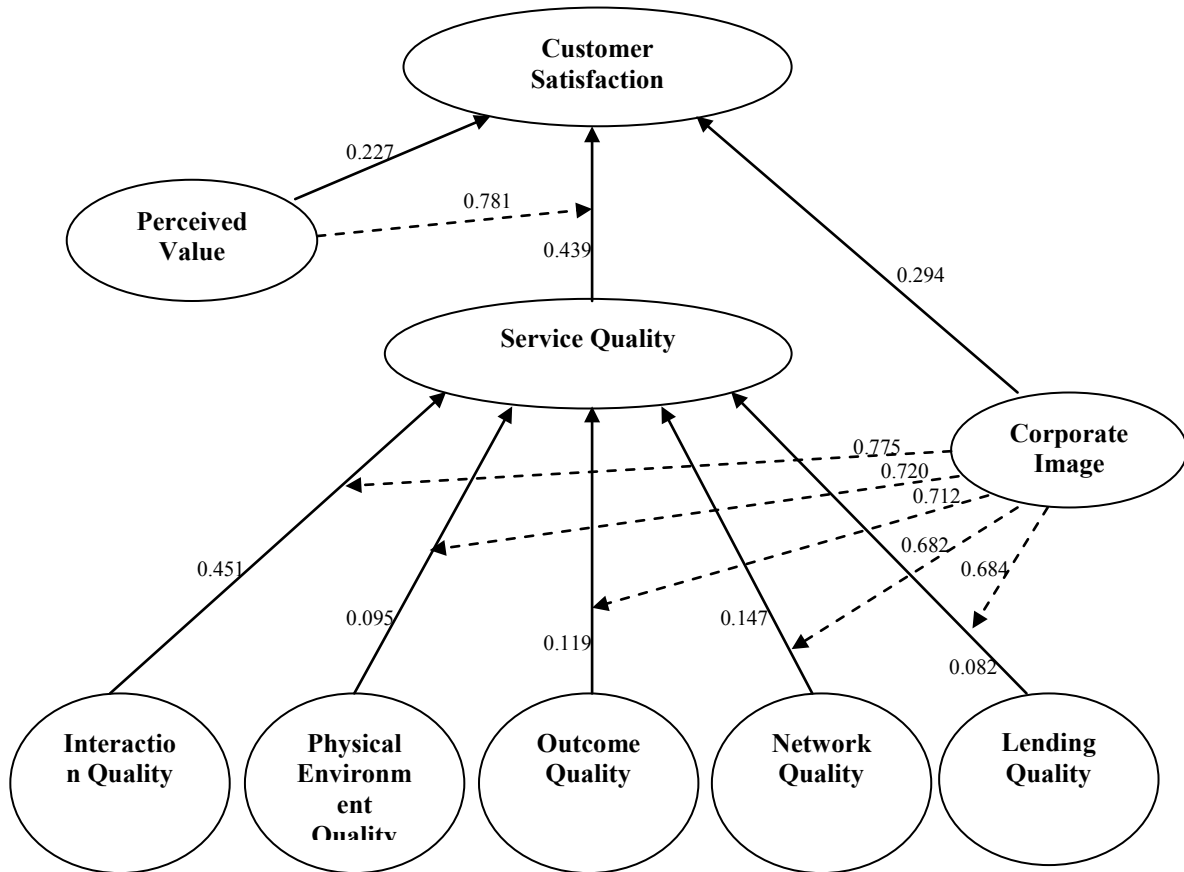


Figure 5.2: Customer Satisfaction of Surveyed Customers in the Banking Industry: Path Model

At the lower level of Figure 5.2, the five service quality dimensions, Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality varied in terms of their importance to overall perceived Service Quality. Interaction Quality ($\beta = 0.451$) was perceived as the most important dimension to influence overall service quality. Network Quality ($\beta = 0.147$) was perceived as the second most important dimension to influence overall service quality. This indicated an increasing number of bank customers using internet or phone banking services with their current banks. Followed by Outcome Quality ($\beta = 0.119$), the Physical Environment Quality ($\beta = 0.095$). The Lending Quality ($\beta = 0.082$) have the least effect on service quality as perceived by bank customers.

There are both direct ($\beta = 0.227$) and moderating effects ($\beta = 0.781$) of perceived Value on Customer Satisfaction via Service Quality. Corporate Image also acts as a

moderator between the primary dimensions and Service Quality. The strongest moderating effect ($\beta=0.775$) was between Interaction Quality and Service Quality, followed by Physical Environment Quality ($\beta=0.720$) and Outcome Quality ($\beta=0.712$). The moderating effect between Lending Quality ($\beta=0.684$) and Network Quality ($\beta=0.682$) with overall Service Quality accounted the weakest.

5.5.6 Results Pertaining to Research Objective Five

Research objective five examines the effect of bank customers' demographic factors on customer satisfaction and the related constructs. Accordingly, Hypotheses 12 and 13 were proposed to investigate whether there were perceptual differences between different groups of respondents based on their demographic characteristics. Garson (2008) suggested one of the key assumptions for ANOVA was the groups formed by the independent variable(s) should be relatively equal in size. In this study, only three groups: Gender, Ethnicity, and Occupation fulfilled this assumption. The other three groups: Age, Highest Level of Education, and Annual Income Before Tax, have disproportionate sample sizes. In order to obtain a reliable statistical result, the three demographic factors were regrouped. The original age demographic factor that contains seven age groups was combined into three groups, Young (18 to 35 years old), Middle age (36 to 55 years old), Older (56 years and over). The educational demographic factors were regrouped from seven groups to three groups, low education (High School and under), middle level education (diploma and certification), and high education (bachelor's degree and over). Similarly, the eight annual income groups were regrouped into three groups, low income (NZ\$40,000 and under), middle income (NZ\$ \$40,001-80,000), and high income (NZ\$80,001 and over).

5.5.6.1 Hypothesis 12

Hypothesis 12 hypothesized that bank customers' level of satisfaction and the influential factors (Service Quality, Value, and Corporate Image) differ according to each customer's demographic characteristics, such as Gender, Age, Ethnicity, Level of Education, Occupation, and Annual Income. As shown in Table 5.16, the F statistics revealed that the Value was the only constructs that does not differ within the six demographic groups (see details in Appendix 13, Table 43A). The F-test were

significant at 10% significance level for Corporate Image and Customer Satisfaction in the Ethnicity demographic factor, indicating that there were significant perceptual difference in these two constructs within the Ethnicity Group. In addition, mean difference also exists in the Service Quality (10% level) and Customer Satisfaction (10% level) constructs in the Level of Education group. Further, the group means were also differ within the Age group for both Corporate Image (1% level) and Customer Satisfaction. Table 5.16 summarizes the ANOVA results related to Hypothesis 12, the significant perceptual differences was indicated.

Table 5.16: ANOVA Results Relating to Hypothesis 12

Construct	Gender	Age	Ethnicity	Level of Education	Occupation	Annual Income
Corporate Image		***	*			
Perceived Value						
Service Quality				*		
Customer Satisfaction		***	*	*		

*** Significant at 1% level
 ** Significant at 5% level
 * Significant at 10% level

Note: For detail of the empirical results see Appendix 13, Table 43A

5.5.6.2 Hypothesis 13

Hypothesis 13 hypothesized that bank customers have different perception on Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality according to each customer's demographic characteristics (Gender, Age, Ethnicity, Level of Education, Occupation, and Annual Income). The result showed that the Physical Environment Quality has no perceptual difference on the mean across all the demographic groups (see Appendix 13, Table 44A). Interaction Quality was perceived differently within the Age, Ethnicity, and Occupation groups at 10%, 5% and 10% level of significance, respectively. In addition, Outcome Quality was also perceived differently within the Age, Ethnicity, and Occupation groups at 10%, 5% and 1% level of significance, respectively. There was no perceptual difference in the Network Quality dimension within all the demographic factor groups except Annual Income group which was significant at 5% significance level. Further, both Age and Annual Income groups have different perception on Lending Quality at 10% and 5% level of significance, respectively. Table 5.17 summarized the ANOVA results associated with Hypothesis 13, the significant perceptual differences was indicated.

Table 5.17: ANOVA Results Relating to Hypothesis 13

Primary Dimension	Gender	Age	Ethnicity	Level of Education	Occupation	Annual Income
Interaction Quality		***	**		***	
Physical Environment Quality						
Outcome Quality		***	**		*	
Network Quality						**
Lending Quality		*				**

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

Note: For detail of the empirical results see Appendix 13, Table 44A

5.5.6.3 Discussion Regarding Research Objective Five

The existence of perpetual difference on Corporate Image, Perceived Value, Service Quality, and Customer Satisfaction within Gender, Age, Ethnicity, Level of Education, Occupation, and Annual Income groups were investigated.

Both Corporate Image and Customer Satisfaction constructs were perceived differently within the Age and Ethnicity groups. In addition, Customer Satisfaction constructs were also perceived differently within the Level of Education groups. Similar to Customer Satisfaction, Service quality construct was perceived differently within the Level of Education group. However, the Perceived Value shows no mean perceptual difference within the six demographic factors. Gender groups have no perceptual differences between females and males on Customer Satisfaction. Similarly, the result revealed that people within different occupation and income groups have no perception difference on Customer Satisfaction and the related constructs.

In terms of service quality dimensions, Interaction Quality, outcome Quality, and Lending Quality were perceived differently within the Age group. Moreover, both Occupation and Ethnicity groups perceived Interaction Quality and Outcome Quality differently. In addition, the Network Quality and Lending Quality were perceived differently within the Annual Income group. Physical environment quality was the only dimension that had no perceptual difference across all the demographic groups. Further, Gender groups have no perceptual differences between females and males on all of the five service quality dimensions. Customers with different education levels did not exhibit any different perceptions on Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality.

5.6 Chapter Summary

This chapter presented the empirical results according to the research data and the methodology outlined in Chapter Four. Examination of the data indicated that the questionnaire was valid and reliable, and the statistical assumptions of factor analysis, regression analysis and analysis of variance were met.

The factor analysis identifies an additional dimension (Lending Quality) to measure overall service quality. A new hypothesis was formulated to test the relationship between lending quality and overall service quality. Accordingly, each path in the conceptual model presented in Section 3.3 was tested using eight regression models. The research hypotheses statistically supported by the results. Hypothesis 12 and 13 investigate the different perceptions that may exist on all the constructs within different demographic groups. The ANOVA result demonstrated that of all the demographic groups, such as Age and Ethnicity Groups exhibited the most perceptual differences within their groups across all the constructs examined, that is, Customer Satisfaction, Service Quality, Corporate Image, Perceived Value, Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality.

CHAPTER 6: CONCLUSIONS AND IMPLICATIONS

6.1 Introduction

This Chapter provides a summary of the research findings, and provides several conclusions based on the empirical results in Chapter Five. The theoretical and managerial contributions, limitations, and avenues for future research are also discussed.

6.2 Summary of the Study

The review of the literature in Chapter Two showed the importance of maintaining and sustaining customer satisfaction for banks in today's competitive financial service environment. Service quality is considered as the key to gaining competitive advantage for the banking industry (Roth and van der Velde, 1991, 1992). In order to maintain a long-run advantage, it is essential for banks to implement service quality improvement program to monitor and sustain superior operation quality (Zenios and Soteriou, 1997).

The previous literature suggests using multi-dimensional models to conceptualize and measure perceived service quality in different industries, including banking. The literature review, the focus groups, and the statistical analysis provide strong support for the multi-dimensional structure of Service Quality consisting of four primary dimensions, Interaction Quality, Physical Environment Quality, Outcome Quality, and Network Quality as perceived by bank customers. Furthermore, the factor analysis also identified Lending Quality as another primary dimensions for service quality. Other related constructs used in the model of the current study including value (price) and corporate image were also identified and supported by the literature review.

Customer satisfaction is closely related to service quality (Cronin and Taylor, 1992; Rust and Oliver, 1994), value (price) (Zeithaml and Bitner, 2003; Fornell et al. 1996; Ostrom and Iacobucci, 1995), and corporate image (Che-Ha and Hashim, 2007; Mihelis et al., 2001). The relationships among these constructs have been analyzed in this study.

In order to achieve a better understanding of bank customers' satisfaction and its relationships with service quality perceptions, value (price), and corporate image, the following five research objectives were developed:

1. To identify the primary dimensions of service quality and their relative importance as perceived by customers in the New Zealand banking industry.
2. To determine if perceived value plays a moderating role between service quality and customer satisfaction as perceived by customers in the New Zealand banking industry.
3. To determine if corporate image plays a moderating role between service quality and the service quality dimensions as perceived by customers in the New Zealand banking industry.
4. To examine the effects that Service Quality, Value (price), and Corporate Image have on Customer Satisfaction in the New Zealand banking industry.
5. To examine the effects of the demographic characteristics on bank customers' perceptions of the service quality dimensions, customer satisfaction, and the related constructs that affect customer satisfaction.

The five research objectives were satisfied by testing the 13 hypotheses developed in Chapter Three. Hypotheses 1 to 6 relate to Research Objective One, Hypothesis 7 relates to Research Objective Two, Hypothesis 8 relates to Research Objective Three, Hypotheses 9 to 11 relate to Research Objective Four and Hypotheses 12 to 13 relate to Research Objective Five.

6.3 Conclusions Pertaining to Research Objective 1

Research Objective One is satisfied. The primary dimensions of perceived service quality for bank customers in New Zealand are identified. The primary dimensions are Interaction Quality, Physical Environment Quality, Outcome Quality, and Network Quality as identified in the literature, supported in the focus group interviews, and confirmed by the statistical analysis. The findings add support to Brady and Cronin (2001) and Dabholkar et al.'s (1996) studies that service quality

consisted of several primary dimensions that include Interaction Quality, Physical Environment Quality and Outcome Quality.

The results of the factor analysis revealed that service quality, as perceived by New Zealand bank customers, consist of not only Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality. This result suggests that these five dimensions are important components of service quality as perceived by bank customers.

The primary dimensions, such as Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality explained 54.1% of the variations in Service Quality. This indicates that there is a significant positive relationship between service quality and the five primary dimensions. This result is partially consistent with Brady and Cronin's (2001) and Dabholkar et al.'s (1996) findings.

The result indicates that Interaction Quality ($\beta=0.451$) has the most influential effect on Service Quality compared to the other four primary dimensions. Network Quality ($\beta=0.147$) is the second most influential dimension of service quality, followed by Outcome Quality ($\beta=0.119$) and Physical Environment Quality ($\beta=0.095$). Lending Quality ($\beta=0.082$) has the least effect on bank customers' overall service quality perceptions compare to the other primary dimensions.

6.4 Conclusions Pertaining to Research Objective 2

Research Objective Two was satisfied as the hypothesized moderating effect of value (price) positively moderates the relationship between Service Quality and Customer Satisfaction.

The statistical result show that perceived Value (price) has a moderating effect ($\beta=0.781$) on the relationship between Service Quality and Customer Satisfaction; therefore, Hypothesis 7 is supported. Caruana et al. (2000) indicated that the impact of service quality on customer satisfaction was not only direct but also moderated by

perceived value. The result of this study concurs with Caruana et al's (2000) finding that perceived value (price) moderates the relationships between Service Quality and Customer Satisfaction in the context of the New Zealand banking industry.

6.5 Conclusions Pertaining to Research Objective 3

Research Objective Three was satisfied. The hypothesized moderating effect of Corporate Image on Service Quality and each of the primary dimensions of service quality were confirmed.

The statistical result shows Corporate Image as a moderator that interfere the relationship between Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, Lending Quality, and Service Quality; therefore, Hypotheses 8a, 8b, 8c, 8d, and 8e are supported. This is consistent with the results from previous research. For example, Gronroos (1984) states that "a customer's positive image of the restaurant makes him find excuses for his negative experiences...a negative image may easily increase perceived problems with service quality" (Gronroos, 1984. pp 39). Lu (2009) also proved that corporate image has a significant moderating effect on the impacts of outcome and environment quality. The study's results shows that when a consumer's interaction, physical environment, outcome, network, or lending quality perception are negative, a positive corporate image may help mitigate the negative effect on interaction, physical environment, outcome, network, or lending quality on perceived service quality.

The result also reveals the strongest moderating effects of corporate image are between Interaction Quality and Service Quality ($\beta=0.775$), followed by Physical Environment Quality and Service Quality ($\beta=0.720$), Outcome Quality and Service Quality ($\beta=0.712$), and Lending Quality and Service Quality ($\beta=0.684$). The weakest moderating effect is between Network Quality and Service Quality ($\beta=0.682$). The strong positive relationships indicates that holding Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending quality constant, customers' level of service quality perceptions increases with the level of favorable corporate image in their minds. In other words, customers

have bad experiences about quality in terms Interaction, Physical Environment, Outcome, Network, and Lending may still form positive Service Quality perceptions because of a good Corporate Image (Lu, 2009).

Similarly, the moderating effect on all of the primary dimensions and service quality are significant at the 1% level of significance. This also confirmed that a good corporate image in customers' minds could help mitigate the unfavorable service quality in terms of Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality and Lending Quality on the overall perceived service quality. This result concur with the findings of Lu, Zhang, and Wang (2009) that corporate image moderates the effect of service quality and its' related dimensions (physical environment, and outcome quality).

6.6 Conclusions Pertaining to Research Objective 4

Research Objective Four was satisfied as each of the hypothesized relationships: Satisfaction (Hypotheses 9, 10 and 11), relating to Value (price), Corporate Image, and Service Quality in the conceptual model were supported. Hypothesis 9 hypothesized that Customer Satisfaction was positively influenced by perceived Value (price). The statistical result shows that Value (price) has a positive effect on Customer Satisfaction ($\beta=0.227$). This result confirmed Varki and Colgate's (2001) findings that value (price) perception has a significant direct effect on customers' satisfaction in the banking industry. It is also supports the view that perceived value is an important factor relate to bank performance and customer satisfaction (Matzler et al., 2006). Hypothesis 10 hypothesized that Customer Satisfaction is positively influenced by Corporate Image. This hypothesized relationship is also significant ($\beta=0.294$), and support the view that image is an important factor in explain bank customers' satisfaction (Che-Ha and Hashim, 2007). The results also support the findings of Mihelis et al. (2001) that bank image leads to bank customers' satisfaction. Furthermore, Service Quality showed the strongest positive effect ($\beta=0.439$) on bank customer satisfaction compare to Value (price) and Corporate Image. Thus Hypothesis 11 was satisfied. This result supports Lassar, Manolis, and Winsor's (2000) finding that service quality offered by bank positively affect the level of bank customers' satisfaction. The results are also consistent with Jamal and Nasser's (2002)

findings that service quality is a causal antecedent of customer satisfaction.

6.7 Conclusions Pertaining to Research Objective 5

Research Objective Five is partially fulfilled because not all of the constructs (Corporate Image, Value, Service Quality, and Customer Satisfaction) and the service quality dimensions (Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality) are perceived differently according to the respondents' Gender, Age, Ethnicity, Level of Education, Occupation, and Annual Income. Galloway and Blanchard (1996) suggest the demographic categories are considered important by the bank because of the potential interference between actions taken to target particular market segments and the satisfaction of existing customers. The results of this study are consistent with the findings of Yavas, Benkenstein, and Stuhldreier (2004) and Galloway and Blanchard (1996), whose studies reveal that lifestyle and demographic characteristics are important indicators regarding the acceptance of products/services in the retail banking industry. In addition, Clemes et al. (2009) suggest that customers' perceptions of service quality may differ due to social, cultural factors of different settings. For example, people with different social demographic characteristics may have different perceptions of value, corporate image, service quality, and customer satisfaction (Skogland and Sigauw, 2004; Clemes, Ozanne, and Laurensen, 2001; Snepenger and Milner, 1990)

The empirical results of this study indicate that the demographic groups such as Gender, Occupation, and Income perceived no differences on all of the constructs. This finding partially agrees with Safakli's (2007) study that there is no significant perceptual difference in service quality within the Gender group for banks. However, Safakli (2007) finds that bank customers with different educational background perceive service quality differently. Urban and Pratt's (2000) findings indicate that customers' perceptions of service quality differ in terms of gender, ethnicity, education and income. The results of this study indicate that customers' perceptions of service quality differ in terms of their ethnicity and level of education. This finding is consistent with previous studies such as Safakli (2007) and Urban and Pratt (2000). The results of this study also indicate that there is no perpetual difference in the gender groups in regard to bank service quality. This is consistent with the findings

of Ahmad, Rehman, Saif, and Safwan (2010) whose study reveal that there is no perceptual differences between male and female bank customers on the service quality.

6.8 Implications

This study makes several theoretical and managerial implications.

6.8.1 Theoretical Implications

The results of this study support the use of a multi-level approach for conceptualising and measuring service quality, similar to the framework developed by Brady and Cronin (2001) and Dabholkar et al. (1996).

This research provides a framework for understanding the interrelationships between Customer Satisfaction and the constructs related to Customer Satisfaction: Service Quality, Corporate Image, and Value (price). The results of this study show that Service Quality, Value (price), and Corporate Image have an influence on Customer Satisfaction. According to the regression results (see Section 5.5.5.1), Service Quality is the most important determinant of Customer Satisfaction ($\beta=0.439$), followed by Corporate Image ($\beta=0.294$) and Value ($\beta=0.227$). This may be interpreted as Service Quality being the main driver of bank Customer Satisfaction compared with Value (price) and Corporate Image. In addition, the empirical results suggest that Corporate Image also has a direct impact on Customer Satisfaction. This may be interpreted as a better brand image that bank customers have in their minds, the more satisfied they feel. Finally, the results show that Value (price) has the least influence on Customer Satisfaction. Although Value (price) is perceived to have a small impact on Customer Satisfaction, Value should not be neglected since it plays an important role in enhancing the level of customer satisfaction in the retail banking industry (Matzler, Wurtele, and Renzl, 2006; Varki and Colgate, 2001). Value perceptions are considered to be the result of a cost benefit trade-off (Zeithaml, 1988), that compares the price customers have to pay and the quality they receive (Monroe, 1990). The result is consistent with Varki and Colgate's (2001) findings that value has a direct effect on bank customers' satisfaction.

This research also examines the moderating effect of Value (price) on the relationship between Service Quality and Customer Satisfaction. The empirical results reveal that Value (price) has a moderating effect on the relationship between Service Quality and Customer Satisfaction (see Section 5.5.3). The result implies that customers may not be entirely satisfied with a bank's services, but they may still be satisfied due to the good value (price) provide by the bank. Further, Corporate Image was empirically tested as a moderating variable between Service Quality and each of the primary dimensions (Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality). The results reveal that Corporate Image has a moderating impact on the relationship between Service Quality and the primary dimensions of service quality (see Section 5.5.4). For example, Corporate Image has a moderating effect on the relationship between Service Quality and Interaction Quality ($\beta=0.775$), Physical Environment Quality ($\beta=0.720$), Outcome Quality ($\beta=0.712$), Network Quality ($\beta=0.682$), and Lending Quality ($\beta=0.684$). Therefore, when a bank customer has a good image towards a bank, even if he/she perceives a lower level of Interaction Quality/Physical Environment Quality/Outcome Quality/Network Quality or Lending Quality, he/she may still form a favorable perception on the bank's overall Service Quality. Aydin and Özer (2005) suggest that corporate image is a result of consumption experiences by customers, and the consumption experiences indeed determine service quality perceptions. Lu, Zhang, and Wang (2009) recognize that customers tend to forgive bad services when they have a good image towards their service providers. Therefore, even if the customers occasionally receive bad services from their current bank, the overall service quality perceptions may still remain positive because of a good corporate image among the customers.

6.8.2 Managerial Implications

The results of this study provide information to bank management regarding the conceptualization and measurement of service quality. It also provides some insights into constructs that constitute bank customer satisfaction. The results may improve bank managers' understanding of service quality and customer satisfaction.

In relation to Research Objective One, the results of this study identify five primary dimensions of service quality. The bank management can use the multi-level approach developed in this research for strategic planning, marketing, and staff training to evaluate bank customers' perceptions of service quality. However, because of the dimensions of service quality may vary across industries and cultures, bank managers should note that the dimensional structures identified in this study must be re-configured for their own specific banking organization and cultural setting to ensure the accuracy of the measurement.

In relation to Research Objective Two, the results of this study indicate that Perceived Value plays a moderating role between Service Quality and Customer Satisfaction. This provides bank managers with a better understanding of the relationship between Service Quality and Value (price) with Customer Satisfaction. It may also help bank management to form pricing strategies, as well as direct management's attention to the trade-off between value (price) and Service Quality to deliver the best possible Service Quality and Value to achieve maximum Customer Satisfaction.

In relation to Research Objective Three, the results of this study indicate that Corporate Image plays a moderating role between Service Quality and the primary dimensions of service quality (Interaction Quality, Physical Environment Quality, Outcome Quality, Network Quality, and Lending Quality). This result may increase the understanding of the relationships between Service Quality and the primary dimensions involving Corporate Image as a moderator. In order to satisfy customers, bank management may concentrate on creating a better image and reputation in the customers' minds, while delivering a high level of quality service through personal interaction, physical environment, service outcome, technology network and investing and their lending system.

In relation to Research Objective Four, the results of this study indicate that Service Quality, Value (price) and Corporate Image all positively affect Customer Satisfaction. The Service Quality is found to have the most impact on bank Customer Satisfaction followed by Corporate Image and Value (price). This means customers place more emphasis on service quality even though they have to pay more. The higher the banks' Image (reputation) in the customers' mind, the more satisfied they are.

Understanding this relationship provides bank managers the opportunity to place a strong focus on delivering the best possible Service Quality as well as create a better Image, and provide a good Value.

In relation to Research Objective Five, the results of this study indicate that different demographic groups have different perceptions on Customer Satisfaction and some of the related constructs. As discussed in Section 5.5.6.1, both Age and Ethnicity groups have different perceptions in evaluating a bank's Corporate Image and Customer Satisfaction. In order to enhance a bank's reputation/image, and to achieve better customer satisfaction, bank management should develop strategies and products to cater for different aged customers from different culture backgrounds. For instance, in order to target the increasing number of international customers (new immigrants) and to work towards long term relationships with customers, the bank should provide more help in terms of language, cultural understanding, develop better pricing strategies, provide more services, and offer some community assistance.

6.9 Research Limitations

This study demonstrates that Service Quality, Corporate Image, and Value (price) play an important role in enhancing New Zealand bank customers' satisfaction. However, there are several limitations of this study.

Firstly, the data of this study was collected from a single bank in one city. This may limit the generalization of the information to other banks. The framework and constructs developed in this study may need to be revised to suit banks in different cultural settings. The five Service Quality dimensions identified in this research may not be applicable for banking sectors across different cultures, or in different service industries outside the banking sector. Therefore, the service quality dimensions identified in this study need be tested and verified before applied to other cultures and/or service industries.

Secondly, in the banking industry, there are very few studies to date examining customer satisfaction, service quality and other related constructs using the multi-level model. This study only includes corporate image, value (price), and service

quality to conceptualize bank customers' satisfaction. There may be some other predictors of customer satisfaction that perceived by bank customers that are not included in this study.

Thirdly, the measurement items of the constructs examined in this study were based on the previous literature, and focus group discussions. This may not be inclusive, as it is difficult to offer a full description of the nature of the bank service quality construct. There may be some other dimensions of service quality that have not been identified in the conceptual framework of this study.

Fourthly, this research focuses only on the perceptions of customers and did not measure the perceptions of employees and managers regarding bank Customer Satisfaction and the relevant constructs, Service Quality, Corporate Image, and Value (price). This information once obtained, may be valuable to bank management.

6.10 Directions for Future Research

This study is important in helping to understand the issues involved in the conceptualisation and measurement of bank customers' satisfaction and service quality. As a result, a number of future studies could be conducted.

Firstly, future research may explore other constructs that relate to customer satisfaction. For example, behavioural intentions may be included in a model to examine the consequences of customer satisfaction in a banking context. The service quality dimensions maybe re-examined or developed to measure service quality when applying the model in this study to different industries.

Secondly, future research may conceptualize service quality in a hierarchical structure. The primary dimensions of service quality indentified in this study could be measured in term of the in pertaining sub-dimensions. For example, the Interaction Quality may be measured by several sub-dimensions, such as staff conduct, and staff accuracy.

Thirdly, the multi-level structure framework and methodology used in this study may be used by the banks to assess customers' satisfaction and measure service quality in

other countries and it should provide bank management with valuable strategic information.

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Appendices

Appendix 1: Cover Letter

Research Information Sheet

Dear Sir/Madam

I am Master's Degree student at Lincoln University in Christchurch, New Zealand. My thesis research project is to examine the factors influencing bank customers' satisfaction in the New Zealand's banking industry. You are invited to participate in this survey.

I ask your help with my project. Attached is a brief questionnaire, which should only take about 10 to 15 minutes to complete, and your answers will be **completely anonymous and confidential**. However, in order to qualify for this research, you must at least 18 years old and a bank customer. This research is for my postgraduate study and the research findings will benefit marketers and practitioners in the banking sector. The aggregate results of this study may be used for future academic publications. The aggregate results of this study will also be provided to bank managers/marketers. If you choose to complete the survey, it will be understood that you have consented to participate in the research project and to publication of the results of the research project. This research has been reviewed and approved by the Lincoln University Human Ethics Committee.

Please fill out the questionnaire and return the completed questionnaire in the pre-paid envelope. I can be contacted by telephoning (021) 391611, or by email at jing.wei@lincolnuni.ac.nz. You can also contact my supervisors Dr. Christopher Gan, Michael D. Clemes and Dr. Baiding Hu. Dr. Gan can be contacted at (03) 3252811 (ext 8155) or GanC1@lincoln.ac.nz, Mr. Clemes can be contacted at (03) 3252811 (ext 8292) or Clemes@lincoln.ac.nz, and Dr. Hu can be contacted at (03) 3252811 (ext 8092) or Baiding.Hu@lincoln.ac.nz.

Each and every response is important and I deeply appreciate your valuable participation. Thank you very much for your co-operation and assistance.

Yours Sincerely

Jing Wei
Commerce Division
Master Student
Lincoln University

Research Supervisors:

Dr Christopher Gan
Associate Professor
in Economics
Commerce Division

Mr Mike Clemes
Senior Lecturer
in Marketing
Commerce Division

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Appendix 2: Questionnaire

A SURVEY OF CUSTOMERS' SATISFACTION IN THE NEW ZEALAND BANKING INDUSTRY

Only those 18 years or older are asked to complete the questionnaire

QUESTIONNAIRE

This questionnaire contains three sections. Please respond to all of the statements in Section 1, 2 and 3. Listed below are a series of statements that relate to your overall banking experience in New Zealand. Please refer to your **primary** bank when you respond to each statement.

SECTION ONE:

Please **CIRCLE** how strongly you agree or disagree with each of the following statements on a scale of 1 to 7. 1-you strongly disagree, 7-you strongly agree.

			Strongly Disagree		Neutral		Strongly Agree	
1.	The bank staff have a good knowledge about the services and products the bank offers	1	2	3	4	5	6	7
2.	The bank staff provide a clear explanation about the fees and charges associated with the services I request	1	2	3	4	5	6	7
3.	The bank staff provide clear answers to my questions	1	2	3	4	5	6	7
4.	The bank staff provide useful advice to help me solve my problems	1	2	3	4	5	6	7
5.	The waiting time for bank services is acceptable	1	2	3	4	5	6	7
6.	The bank staff act in a professional manner	1	2	3	4	5	6	7
7.	The bank staff appearance is neat and tidy	1	2	3	4	5	6	7
8.	The bank has modern computers	1	2	3	4	5	6	7
9.	The bank has efficient cash handling equipment (ATM's)	1	2	3	4	5	6	7
10.	The bank provides good access for its customers	1	2	3	4	5	6	7
11.	The bank provides enough parking spaces for its customers	1	2	3	4	5	6	7
12.	The bank has branches that are conveniently located for its customers.....	1	2	3	4	5	6	7
13.	The bank has a functional layout for customers	1	2	3	4	5	6	7

14. I feel safe and secure when I am transacting business
in my bank..... 1 2 3 4 5 6 7
15. The ambient conditions in my bank (e.g., temperature,
ventilation, noise, odour) are good 1 2 3 4 5 6 7
16. My bank offers a competitive interest rate for term
deposits 1 2 3 4 5 6 7
17. The time taken for the approval/disapproval of a
loan is acceptable 1 2 3 4 5 6 7
18. The transparency regarding all the terms and conditions
associated with a loan approval are clear and adequate.... 1 2 3 4 5 6 7
19. My bank statements are accurate 1 2 3 4 5 6 7
20. My bank keeps me informed of policy changes 1 2 3 4 5 6 7
21. My bank keeps me informed of new products..... 1 2 3 4 5 6 7
22. My bank insists on error-free transactions and records 1 2 3 4 5 6 7
23. My bank provides a user-friendly internet banking service 1 2 3 4 5 6 7
24. My bank provides a dependable 24 hours access to its
internet banking service 1 2 3 4 5 6 7
25. My bank's internet services are safe and secure 1 2 3 4 5 6 7
26. My bank's services are easily accessed through the
telephone 1 2 3 4 5 6 7

SECTION TWO:

Please **CIRCLE** how strongly you agree or disagree with each of the following statements on a scale of 1 to 7. 1-you strongly disagree, 7-you strongly agree.

- | | Strongly
Disagree | | | | Neutral | | | | Strongly
Agree |
|---|----------------------|---|---|---|---------|---|---|--|-------------------|
| 1. My bank has a good image in customers' minds..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| 2. My bank is a stable business enterprise | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| 3. My bank is trustworthy compared to other banks..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| 4. The credibility of my bank is strong | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| 5. The fees charged by my bank are reasonable, given the
service quality it delivers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| 6. Overall, my bank provides good value for money..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |

7. I am satisfied with the value I receive for the bank charges that I pay 1 2 3 4 5 6 7
8. My bank provides excellent service quality compared to other banks 1 2 3 4 5 6 7
9. I am pleased with the services that my bank performs 1 2 3 4 5 6 7
10. Overall, my bank consistently provides good service 1 2 3 4 5 6 7
11. My bank satisfies my needs and wants 1 2 3 4 5 6 7
12. Banking with my bank is a satisfying experience..... 1 2 3 4 5 6 7
13. Compared to other banks, I am happy to choose my current bank as my financial service provider 1 2 3 4 5 6 7
14. I made the right decision to stay with my current bank..... 1 2 3 4 5 6 7
15. My experience with my current bank can best be characterised as very satisfactory..... 1 2 3 4 5 6 7

SECTION THREE:

The questions below relate to personal data. Please **TICK** the most appropriate box.

1. What is your gender?

- Male Female

2. Which is your age group?

- 18-25 26-35 36-45 46-55
 56-65 66-75 76+

3. What is your ethnicity?

- NZ European NZ Maori Pacific Islander European
 Asian Other

4. Which is the highest level of education you have completed?

- Primary School Middle School High School
 Diploma/Certification Bachelors Degree Postgraduate Degree
 Other

5. What is your occupation?

- Professional Self-employee Student Civil Servant

- Labourer Farmer Unemployed Retired
 Sale/Service Home Maker Other

6. What is your before tax annual household income (NZ\$) in the last year?

- Up to NZ\$ 20,000 NZ\$ 30,001-40,000 NZ\$ 60,001-80,000 NZ\$ 100,001-120,000
 NZ\$ 20,001-30,000 NZ\$ 40,001-60,000 NZ\$ 80,001-100,000 Over NZ\$ 120,000

7. How would you rate your bank compared to other banks with regard to the following?

	Better		Same			Worse	
	1	2	3	4	5	6	7
Reliability	1	2	3	4	5	6	7
Location & Timing	1	2	3	4	5	6	7
Rates & Charges	1	2	3	4	5	6	7
Faster Credit	1	2	3	4	5	6	7
Service at the counter	1	2	3	4	5	6	7

8. How long have you been banking with your current bank? ____ (years)

9. Do you bank with other banks?

1. Yes [] 2. No []

10. If yes, what bank _____?

11. What type of account(s) do you have with your current bank?

1. Cheque account
2. Savings account
3. Online account
4. Other (please specify) _____

12. What banking services have you used with your bank? (Tick all that apply)

1. Term deposits (1-2 year)____ (3-5 years)____ (5-10 years)____ (more than 10 years) _____
2. Loans: Home loan _____, Car loan _____. Insurance: Home content _____, Health _____
3. Other (please specify) _____

Your participation in this survey is greatly appreciated. Thank you for your time and if you have further comments about Bank Customer Satisfaction, please feel free to comment in the space provided below. Once again, we assure you that identity will remain

STRICTLY CONFIDENTIAL.

Appendix 3: Data Imputation

Table 21A: Summary Statistics of Missing Data for Original Sample (N=412)

Missing Data											
Item	Number of Cases	Mean	Standard Deviation	Number	Percent	Item	Number of Cases	Mean	Standard Deviation	Number	Percent
IQ1	412	5.51	1.227	0	0.0	NWQ1	406	5.62	1.308	6	1.5
IQ2	412	5.14	1.416	0	0.0	NWQ2	407	5.77	1.286	5	1.2
IQ3	412	5.61	1.220	0	0.0	NWQ3	406	5.63	1.285	6	1.5
IQ4	412	5.40	1.257	0	0.0	NWQ4	412	5.48	1.270	0	0.0
IQ5	412	5.34	1.322	0	0.0	IMA1	412	5.50	1.245	0	0.0
IQ6	412	5.89	1.184	0	0.0	IMA2	412	5.68	1.212	0	0.0
IQ7	412	6.11	1.036	0	0.0	IMA3	411	5.43	1.286	1	0.2
PEQ1	410	5.70	1.152	2	0.5	IMA4	412	5.60	1.225	0	0.0
PEQ2	412	5.86	1.237	0	0.0	V1	410	4.85	1.525	2	0.5
PEQ3	412	5.70	1.315	0	0.0	V2	412	5.13	1.446	0	0.0
PEQ4	408	4.90	1.497	4	1.0	V3	411	4.78	1.590	1	0.2
PEQ5	412	5.25	1.530	0	0.0	SQ1	410	5.23	1.344	2	0.5
PEQ6	412	5.54	1.196	0	0.0	SQ2	412	5.63	1.165	0	0.0
PEQ7	412	5.79	1.152	0	0.0	SQ3	412	5.64	1.223	0	0.0
PEQ8	412	5.72	1.132	0	0.0	CS1	412	5.36	1.350	0	0.0
OQ1	411	4.99	1.323	1	0.2	CS2	411	5.30	1.332	1	0.2
OQ2	403	4.82	1.172	9	2.2	CS3	412	5.40	1.326	0	0.0
OQ3	405	4.77	1.184	7	1.7	CS4	412	5.47	1.335	0	0.0
OQ4	412	5.94	1.790	0	0.0	CS5	412	5.46	1.464	0	0.0
OQ5	411	5.18	1.512	1	0.2						
OQ6	411	5.10	1.527	1	0.2						
OQ7	408	5.17	1.362	4	1.0						

Table 22A: Population Estimated Means Results

Summary of Estimated Means

Network Quality	Item	IQ1	IQ2	IQ3	IQ4	IQ5	IQ6	IQ7	
	All Values EM	5.51 5.51	5.14 5.14	5.61 5.61	5.40 5.40	5.34 5.34	5.89 5.89	6.11 6.11	
Network Quality	Item	PEQ1	PEQ2	PEQ3	PEQ4	PEQ5	PEQ6	PEQ7	PEQ8
	All Values EM	5.70 5.69	5.86 5.86	5.70 5.70	4.90 4.90	5.25 5.25	5.54 5.54	5.79 5.79	5.72 5.72
Network Quality	Item	OQ1	OQ2	OQ3	OQ4	OQ5	OQ6	OQ7	
	All Values EM	4.99 4.99	4.82 4.83	4.77 4.78	5.94 5.94	5.18 5.18	5.10 5.10	5.17 5.18	
Network Quality	Item	NWQ1	NWQ2	NWQ3	NWQ4				
	All Values EM	5.62 5.63	5.77 5.78	5.63 5.64	5.48 5.48				
SQ, V, Image, CS,	Item	IM1	IM2	IM3	IM4	V1	V2	V3	SQ1
	All Values EM	5.50 5.50	5.68 5.68	5.43 5.43	5.60 5.60	4.85 4.85	5.13 5.13	4.78 4.78	5.23 5.24
	Item	SQ2	SQ3	CS1	CS2	CS3	CS4	CS5	
	All Values EM	5.63 5.63	5.64 5.64	5.36 5.36	5.30 5.30	5.40 5.40	5.47 5.47	5.46 5.46	

Appendix 4: Correlation Matrix

Table 23A: Correlation Matrix

	IQ1	IQ2	IQ3	IQ4	IQ5	IQ6	IQ7	PEQ1	PEQ2	PEQ3	PEQ4	PEQ5	PE6	PE7	PE8	OQ1	OQ2	OQ3	OQ4
IQ1	1.000	.633	.693	.601	.470	.600	.537	.360	.441	.481	.289	.354	.497	.482	.482	.281	.344	.358	.179
IQ2	.633	1.000	.679	.595	.458	.486	.407	.263	.411	.435	.374	.436	.512	.416	.424	.312	.335	.406	.198
IQ3	.693	.679	1.000	.734	.458	.647	.607	.353	.464	.471	.309	.390	.567	.509	.511	.363	.373	.421	.203
IQ4	.601	.595	.734	1.000	.511	.624	.557	.315	.380	.412	.304	.371	.484	.438	.453	.337	.322	.373	.173
IQ5	.470	.458	.458	.511	1.000	.577	.495	.345	.413	.426	.381	.459	.521	.362	.491	.323	.386	.418	.196
IQ6	.600	.486	.647	.624	.577	1.000	.722	.383	.444	.502	.274	.452	.500	.490	.496	.283	.323	.312	.170
IQ7	.537	.407	.607	.557	.495	.722	1.000	.468	.482	.475	.259	.388	.538	.544	.578	.290	.357	.331	.178
PEQ1	.360	.263	.353	.315	.345	.383	.468	1.000	.487	.360	.287	.233	.377	.340	.376	.203	.252	.276	.135
PEQ2	.441	.411	.464	.380	.413	.444	.482	.487	1.000	.636	.369	.433	.501	.489	.396	.272	.261	.218	.117
PEQ3	.481	.435	.471	.412	.426	.502	.475	.360	.636	1.000	.466	.551	.546	.498	.500	.289	.330	.277	.216
PEQ4	.289	.374	.309	.304	.381	.274	.259	.287	.369	.466	1.000	.526	.383	.348	.292	.288	.249	.272	.139
PEQ5	.354	.436	.390	.371	.459	.452	.388	.233	.433	.551	.526	1.000	.488	.399	.363	.325	.275	.302	.139
PEQ6	.497	.512	.567	.484	.521	.500	.538	.377	.501	.546	.383	.488	1.000	.591	.589	.372	.367	.353	.193
PEQ7	.482	.416	.509	.438	.362	.490	.544	.340	.489	.498	.348	.399	.591	1.000	.572	.394	.398	.333	.211
PEQ8	.482	.424	.511	.453	.491	.496	.578	.376	.396	.500	.292	.363	.589	.572	1.000	.382	.361	.320	.271
OQ1	.281	.312	.363	.337	.323	.283	.290	.203	.272	.289	.288	.325	.372	.394	.382	1.000	.403	.375	.129
OQ2	.344	.335	.373	.322	.386	.323	.357	.252	.261	.330	.249	.275	.367	.398	.361	.403	1.000	.759	.148
OQ3	.358	.406	.421	.373	.418	.312	.331	.276	.218	.277	.272	.302	.353	.333	.320	.375	.759	1.000	.178
OQ4	.179	.198	.203	.173	.196	.170	.178	.135	.117	.216	.139	.139	.193	.211	.271	.129	.148	.178	1.000
OQ5	.398	.483	.426	.363	.449	.296	.294	.231	.271	.255	.290	.332	.449	.319	.303	.276	.369	.464	.245
OQ6	.371	.499	.466	.412	.350	.352	.312	.253	.307	.273	.293	.348	.394	.363	.331	.315	.388	.466	.208
OQ7	.384	.365	.368	.316	.269	.299	.289	.287	.336	.228	.231	.368	.364	.402	.284	.300	.261	.369	.228
NWQ1	.337	.264	.383	.330	.314	.422	.387	.262	.339	.292	.163	.276	.359	.377	.294	.217	.460	.413	.135
NWQ2	.303	.218	.326	.268	.251	.391	.441	.239	.370	.316	.162	.246	.341	.417	.342	.268	.421	.343	.185
NWQ3	.292	.242	.352	.303	.253	.297	.365	.187	.348	.285	.291	.280	.334	.422	.293	.279	.423	.395	.146
NWQ4	.318	.354	.344	.359	.261	.324	.380	.295	.296	.299	.169	.282	.335	.306	.378	.312	.315	.331	.188

Table 23A: Correlation Matrix (Continued)

	OQ5	OQ6	OQ7	NWQ1	NWQ2	NWQ3	NWQ4
IQ1	.398	.371	.384	.337	.303	.292	.318
IQ2	.483	.499	.365	.264	.218	.242	.354
IQ3	.426	.466	.368	.383	.326	.352	.344
IQ4	.363	.412	.316	.330	.268	.303	.359
IQ5	.449	.350	.269	.314	.251	.253	.261
IQ6	.296	.352	.299	.422	.391	.297	.324
IQ7	.294	.312	.289	.387	.441	.365	.380
PEQ1	.231	.253	.287	.262	.239	.187	.295
PEQ2	.271	.307	.336	.339	.370	.348	.296
PEQ3	.255	.273	.228	.292	.316	.285	.299
PEQ4	.290	.293	.231	.163	.162	.291	.169
PEQ5	.332	.348	.368	.276	.246	.280	.282
PEQ6	.449	.394	.364	.359	.341	.334	.335
PEQ7	.319	.363	.402	.377	.417	.422	.306
PEQ8	.303	.331	.284	.294	.342	.293	.378
OQ1	.276	.315	.300	.217	.268	.279	.312
OQ2	.369	.388	.261	.460	.421	.423	.315
OQ3	.464	.466	.369	.413	.343	.395	.331
OQ4	.245	.208	.228	.135	.185	.146	.188
OQ5	1.000	.728	.421	.239	.181	.283	.342
OQ6	.728	1.000	.512	.240	.209	.261	.305
OQ7	.421	.512	1.000	.326	.304	.260	.358
NWQ1	.239	.240	.326	1.000	.797	.739	.433
NWQ2	.181	.209	.304	.797	1.000	.772	.488
NWQ3	.283	.261	.260	.739	.772	1.000	.463
NWQ4	.342	.305	.358	.433	.488	.463	1.000

Appendix 5: Anti-Image Correlation Matrix

Table 24A: Anti-Image Correlation Matrix

	IQ1	IQ2	IQ3	IQ4	IQ5	IQ6	IQ7	PEQ1	PEQ2	PEQ3	PEQ4	PEQ5	PE6	PE7	PE8	OQ1	OQ2	OQ3	OQ4
IQ1	.949	-.261	-.223	-.075	-.034	-.143	-.009	-.062	.011	-.126	.030	.094	.046	-.052	-.061	.053	-.051	.036	.048
IQ2	-.261	.945	-.265	-.106	-.036	.021	.115	.095	-.077	.023	-.109	-.095	-.075	-.005	-.001	.032	.029	-.077	-.023
IQ3	-.223	-.265	.937	-.354	.167	-.145	-.133	.020	-.079	.006	.035	.054	-.109	.017	-.054	-.084	.042	-.079	-.033
IQ4	-.075	-.106	-.354	.950	-.162	-.134	-.071	.019	.049	.005	-.026	.033	.002	-.021	.033	-.053	.045	-.022	.000
IQ5	-.034	-.036	.167	-.162	.919	-.266	-.018	-.015	-.133	.071	-.110	-.104	-.111	.143	-.192	-.055	-.036	-.115	-.041
IQ6	-.143	.021	-.145	-.134	-.266	.922	-.395	-.007	.071	-.097	.051	-.130	.062	-.070	.062	.012	.035	.063	.009
IQ7	-.009	.115	-.133	-.071	-.018	-.395	.935	-.187	-.062	.041	.057	-.039	-.065	-.102	-.171	.077	-.034	-.015	.024
PEQ1	-.062	.095	.020	.019	-.015	-.007	-.187	.908	-.294	.040	-.166	.124	-.039	.019	-.066	.021	.028	-.101	-.020
PEQ2	.011	-.077	-.079	.049	-.133	.071	-.062	-.294	.912	-.404	.024	-.017	-.041	-.093	.113	-.012	.009	.137	.102
PEQ3	-.126	.023	.006	.005	.071	-.097	.041	.040	-.404	.914	-.179	-.248	-.114	-.054	-.127	.042	-.075	-.014	-.125
PEQ4	.030	-.109	.035	-.026	-.110	.051	.057	-.166	.024	-.179	.899	-.285	-.013	-.047	.032	-.063	.004	-.005	-.015
PEQ5	.094	-.095	.054	.033	-.104	-.130	-.039	.124	-.017	-.248	-.285	.927	-.101	.015	.039	-.069	.039	-.015	.051
PEQ6	.046	-.075	-.109	.002	-.111	.062	-.065	-.039	-.041	-.114	-.013	-.101	.962	-.204	-.193	-.041	-.002	.043	.053
PEQ7	-.052	-.005	.017	-.021	.143	-.070	-.102	.019	-.093	-.054	-.047	.015	-.204	.951	-.216	-.102	-.110	.064	-.028
PEQ8	-.061	-.001	-.054	.033	-.192	.062	-.171	-.066	.113	-.127	.032	.039	-.193	-.216	.941	-.096	-.029	.041	-.124
OQ1	.053	.032	-.084	-.053	-.055	.012	.077	.021	-.012	.042	-.063	-.069	-.041	-.102	-.096	.952	-.149	-.035	.031
OQ2	-.051	.029	.042	.045	-.036	.035	-.034	.028	.009	-.075	.004	.039	-.002	-.110	-.029	-.149	.872	-.634	.027
OQ3	.036	-.077	-.079	-.022	-.115	.063	-.015	-.101	.137	-.014	-.005	-.015	.043	.064	.041	-.035	-.634	.874	-.013
OQ4	.048	-.023	-.033	.000	-.041	.009	.024	-.020	.102	-.125	-.015	.051	.053	-.028	-.124	.031	.027	-.013	.897
OQ5	-.117	-.046	-.013	.094	-.242	.108	-.024	.024	.032	.050	.007	.005	-.185	.014	.108	.037	.018	-.077	-.115
OQ6	.142	-.118	-.053	-.081	.141	-.118	.052	-.021	-.046	.017	-.026	-.015	.079	-.009	-.082	-.025	-.078	-.049	.029
OQ7	-.165	.048	.015	.018	.048	.052	.041	-.051	-.114	.173	.001	-.183	-.031	-.167	.053	-.069	.149	-.151	-.117
NWQ1	.017	.009	-.070	-.028	-.065	-.159	.153	-.103	.035	.011	.117	-.044	-.068	.047	.054	.134	-.121	-.033	.056
NWQ2	-.005	-.004	.086	.103	.048	-.071	-.151	.055	-.075	-.032	.069	.065	-.008	-.012	-.040	-.070	-.063	.056	-.102
NWQ3	-.019	.098	-.073	-.054	.038	.162	-.034	.129	-.087	.085	-.239	-.026	.046	-.146	.034	-.020	.038	-.087	.016
NWQ4	.0046	-.140	.088	-.121	.097	.008	-.057	-.124	.037	-.062	.101	-.040	.029	.120	-.137	-.106	.010	-.004	-.009

Table 24A: Anti-Image Correlation Matrix (Continued)

	OQ5	OQ6	OQ7	NWQ1	NWQ2	NWQ3	NWQ4
IQ1	-.117	.142	-.165	.017	-.005	-.019	-.046
IQ2	-.046	-.118	.048	.009	-.004	.098	-.140
IQ3	-.013	-.053	.015	-.070	.086	-.073	.088
IQ4	.094	-.081	.018	-.028	.103	-.054	-.121
IQ5	-.242	.141	.048	-.065	.048	.038	.097
IQ6	.108	-.118	.052	-.159	-.071	.162	.008
IQ7	-.024	.052	.041	.153	-.151	-.034	-.057
PEQ1	.024	-.021	-.051	-.103	.055	.129	-.124
PEQ2	.032	-.046	-.114	.035	-.075	-.087	.037
PEQ3	.050	.017	.173	.011	-.032	.085	-.062
PEQ4	.007	-.026	.001	.117	.069	-.239	.101
PEQ5	.005	-.015	-.183	-.044	.065	-.026	-.040
PEQ6	-.185	.079	-.031	-.068	-.008	.046	.029
PEQ7	.014	-.009	-.167	.047	-.012	-.146	.120
PEQ8	.108	-.082	.053	.054	-.040	.034	-.137
OQ1	.037	-.025	-.069	.134	-.070	-.020	-.106
OQ2	.018	-.078	.149	-.121	-.063	.038	.010
OQ3	-.077	-.049	-.151	-.033	.056	-.087	-.004
OQ4	-.115	.029	-.117	.056	-.102	.016	-.009
OQ5	.858	-.581	.007	.004	.117	-.109	-.150
OQ6	-.581	.871	-.264	.061	-.022	.001	.071
OQ7	.007	-.264	.890	-.113	-.065	.150	-.138
NWQ1	.004	.061	-.113	.885	-.469	-.322	.013
NWQ2	.117	-.022	-.065	-.469	.872	-.413	-.151
NWQ3	-.109	.001	.150	-.322	-.413	.873	-.136
NWQ4	-.150	.071	-.138	.013	-.151	-.136	.927

Appendix 6: Factor Extraction Table

Table 25A: Eigenvalues and the Explained Percentage of Variance by the Factors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.397	39.987	39.987	10.397	39.987	39.987
2	2.025	7.790	47.777	2.025	7.790	47.777
3	1.656	6.369	54.146	1.656	6.369	54.146
4	1.247	4.795	58.941	1.247	4.795	58.941
5	1.056	4.061	63.001	1.056	4.061	63.001
6	.969	3.728	66.729			
7	.893	3.435	70.164			
8	.834	3.206	73.370			
9	.710	2.732	76.102			
10	.692	2.663	78.765			
11	.644	2.477	81.242			
12	.585	2.249	83.492			
13	.536	2.061	85.553			
14	.500	1.924	87.477			
15	.406	1.563	89.041			
16	.381	1.464	90.505			
17	.362	1.394	91.899			
18	.332	1.277	93.176			
19	.316	1.215	94.391			
20	.300	1.152	95.543			
21	.231	.890	96.433			
22	.220	.848	97.280			
23	.200	.769	98.050			
24	.183	.705	98.755			
25	.168	.645	99.400			
26	.156	.600	100.000			

Appendix 7: Rotated Factor Tables

Table 26A: Rotated Component Matrices with VARIMAX Rotation

	Component				
	1	2	3	4	5
IQ3	.784				
IQ6	.775				
IQ4	.767				
IQ1	.741				
IQ7	.716				
IQ2	.601				
PEQ8	.542				
IQ5	.517				
PEQ4		.738			
PEQ3		.706			
PEQ5		.686			
PEQ2		.619			
PEQ6	.491	.496			
PEQ7	.427	.447			
PEQ1					
NWQ2			.891		
NWQ1			.826		
NWQ3			.811		
NWQ4			.518		
OQ6				.691	.405
OQ5				.681	.420
OQ7				.673	
OQ4				.534	
OQ3					.784
OQ2					.762
OQ1					.460

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 7 iterations.

Appendix 8: Questionnaire Items with Orthogonal (VARIMAX) Rotation

Table 27A: VARIMAX Rotated Component Matrix with Variables

Item No.	Item Name	Component				
		Interaction Quality	Physical Environment Quality	Outcome Quality	Network Quality	Lending Quality
IQ3	Bank staff provide clear explanation	0.784				
IQ6	Bank staff act professional	0.775				
IQ4	Bank staff provide useful advice	0.767				
IQ1	Bank staff have good knowledge	0.741				
IQ7	Bank staff have neat appearance	0.716				
IQ2	Bank staff provide clear answers to questions	0.601				
PE8	Bank have good ambient conditions	0.542				
IQ5	Acceptable waiting time for bank service	0.517				
PEQ4	Bank provide enough parking space for customers		0.738			
PEQ3	Bank provide good access for customers		0.706			
PEQ5	Bank provide convenient location for customers		0.686			
PEQ2	Bank have efficient cash handling equipment (ATM)		0.619			
PEQ6	Bank has a functional layout for customers	0.491	0.496			
PEQ7	Bank provide safe and security for customers	0.427	0.447			
PEQ1	Bank has modern computers					
NWQ2	Bank provide a dependable 24H access to i-banking			0.891		
NWQ1	Bank provide a user-friendly i-banking			0.826		
NWQ3	Bank provide a safe and secure i-banking			0.811		
NWQ4	Bank services are easily accessed through phone			0.518		
OQ6	Bank keep customer informed with new product				0.691	0.405
OQ5	Bank keep customer informed with policy changes				0.681	0.420
OQ7	Bank insists on error-free transaction and records				0.673	
OQ4	Bank provide accurate statements				0.534	
OQ3	Term and condition transparency associate with loan					0.784
OQ2	Waiting time for loan approval is acceptable					0.762
OQ1	Bank offers a competitive reates					0.460

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a Rotation converged in 7 iterations.

Appendix 9: Multicollinearity Statistics

Table 28A: Pearson Correlation Matrix, Model 1

		OverallSQ	IQ	PEQ	OQ	NWQ	LQ
OverallSQ: Service Quality	Pearson Correlation	1	0.702**	0.536**	0.516**	0.502**	0.443**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000
	N	410	410	406	407	405	403
IQ: Interaction Quality	Pearson Correlation	0.702**	1	0.651**	0.559**	0.491**	0.501**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000
	N	410	412	408	408	406	403
PEQ: Physical Environment Quality	Pearson Correlation	0.536**	0.651**	1	0.446**	0.421**	0.385**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000
	N	406	408	408	404	402	402
OQ: Outcome Quality	Pearson Correlation	0.516**	0.559**	0.446**	1	0.402**	0.473**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000
	N	407	408	404	408	403	401
NWQ: Network Quality	Pearson Correlation	0.502**	0.491**	0.421**	0.402**	1	0.498**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000
	N	405	406	402	403	406	400
LQ: Lending Quality	Pearson Correlation	0.443**	0.501**	0.385**	0.473**	0.498**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	403	403	402	401	400	403

** Correlation is significant at the 0.01 level (2-tailed).

Table 29A: Pearson Correlation Matrix, Model 2A

		Value	Overall service quality	Customer satisfaction
Value	Pearson Correlation	1	.663**	.697**
	Sig. (2-tailed)		.000	.000
	N	411	409	410
Service Quality	Pearson Correlation	.663**	1	.812**
	Sig. (2-tailed)	.000		.000
	N	409	410	409
Customer Satisfaction	Pearson Correlation	.697**	.812**	1
	Sig. (2-tailed)	.000	.000	
	N	410	409	411

** Correlation is significant at the 0.01 level (2-tailed).

Table 30A: Pearson Correlation Matrix, Model 2B

		Service Quality × Value	Overall customer satisfaction
Service Quality × Value	Pearson Correlation	1	.785**
	Sig. (2-tailed)		.000
	N	409	408
Customer Satisfaction	Pearson Correlation	.785**	1
	Sig. (2-tailed)	.000	
	N	408	411

** Correlation is significant at the 0.01 level (2-tailed).

Table 31A: Pearson Correlation Matrix, Model 3A

		Corporate image	Interaction Quality	Overall service quality
Corporate image	Pearson Correlation	1	.685**	.750**
	Sig. (2-tailed)		.000	.000
	N	411	411	410
Interaction Quality	Pearson Correlation	.685**	1	.702**
	Sig. (2-tailed)	.000		.000
	N	411	412	410
Service Quality	Pearson Correlation	.750**	.702**	1
	Sig. (2-tailed)	.000	.000	
	N	410	410	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 32A: Pearson Correlation Matrix, Model 3B

		Interaction Quality × Corporate Image	Overall service quality
Interaction Quality × Corporate Image	Pearson Correlation	1	.777**
	Sig. (2-tailed)		.000
	N	411	410
Service Quality	Pearson Correlation	.777**	1
	Sig. (2-tailed)	.000	
	N	410	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 33A: Pearson Correlation Matrix, Model 4A

		Corporate Image	Physical Environment Quality	Overall service quality
Corporate Image	Pearson Correlation	1	.621**	.750**
	Sig. (2-tailed)		.000	.000
	N	411	407	410
Physical Environment Quality	Pearson Correlation	.621**	1	.574**
	Sig. (2-tailed)	.000		.000
	N	407	408	406
Service Quality	Pearson Correlation	.750**	.574**	1
	Sig. (2-tailed)	.000	.000	
	N	410	406	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 34A: Pearson Correlation Matrix, Model 4B

		Physical Environment Quality × Corporate Image	Overall service quality
Physical Environment Quality × Corporate Image	Pearson Correlation	1	.722**
	Sig. (2-tailed)		.000
	N	407	406
Service Quality	Pearson Correlation	.722**	1
	Sig. (2-tailed)	.000	
	N	406	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 35A: Pearson Correlation Matrix, Model 5A

		Corporate Image	Outcome Quality	Overall service quality
Corporate Image	Pearson Correlation	1	.508**	.750**
	Sig. (2-tailed)		.000	.000
	N	411	407	410
Outcome Quality	Pearson Correlation	.508**	1	.516**
	Sig. (2-tailed)	.000		.000
	N	407	408	407
Service Quality	Pearson Correlation	.750**	.516**	1
	Sig. (2-tailed)	.000	.000	
	N	410	407	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 36A: Pearson Correlation Matrix, Model 5B

		Outcome Quality × Corporate Image	Overall service quality
Outcome Quality × Corporate Image	Pearson Correlation	1	.712**
	Sig. (2-tailed)		.000
	N	407	407
Service Quality	Pearson Correlation	.712**	1
	Sig. (2-tailed)	.000	
	N	407	410

Table 37A: Pearson Correlation Matrix, Model 6A

		Corporate Image	Network Quality	Overall service quality
Corporate Image	Pearson Correlation	1	.554**	.750**
	Sig. (2-tailed)		.000	.000
	N	411	406	410
Network Quality	Pearson Correlation	.554**	1	.502**
	Sig. (2-tailed)	.000		.000
	N	406	406	405
Service Quality	Pearson Correlation	.750**	.502**	1
	Sig. (2-tailed)	.000	.000	
	N	410	405	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 38A: Pearson Correlation Matrix, Model 6B

		Network Quality × Corporate Image	Overall service quality
Network Quality × Corporate Image	Pearson Correlation	1	.688**
	Sig. (2-tailed)		.000
	N	406	405
Service Quality	Pearson Correlation	.688**	1
	Sig. (2-tailed)	.000	
	N	405	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 39A: Pearson Correlation Matrix, Model 7A

		Corporate Image	Lending Quality	Overall service quality
Corporate Image	Pearson Correlation	1	.579**	.750**
	Sig. (2-tailed)		.000	.000
	N	411	402	410
Lending Quality	Pearson Correlation	.579**	1	.510**
	Sig. (2-tailed)	.000		.000
	N	402	402	402
Service Quality	Pearson Correlation	.750**	.510**	1
	Sig. (2-tailed)	.000	.000	
	N	410	402	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 40A: Pearson Correlation Matrix, Model 7B

		Lending Quality × Corporate Image	Overall service quality
Lending Quality × Corporate Image	Pearson Correlation	1	.685**
	Sig. (2-tailed)		.000
	N	402	402
Service Quality	Pearson Correlation	.685**	1
	Sig. (2-tailed)	.000	
	N	402	410

** Correlation is significant at the 0.01 level (2-tailed).

Table 41A: Pearson Correlation Matrix, Model 8

		summat ed scale for overall customer satisfaction	summate d scale for overall service quality	summate d scale for value	summate d scale for corporate image
Customer satisfaction	Pearson Correlation	1	.612**	.697**	.764**
	Sig. (2-tailed)		.000	.000	.000
	N	411	409	410	410
Service Quality	Pearson Correlation	.612**	1	.663**	.750**
	Sig. (2-tailed)	.000		.000	.000
	N	409	410	409	410
Value	Pearson Correlation	.697**	.663**	1	.617**
	Sig. (2-tailed)	.000	.000		.000
	N	410	409	411	410
Corporate Image	Pearson Correlation	.764**	.750**	.617**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	410	410	410	411

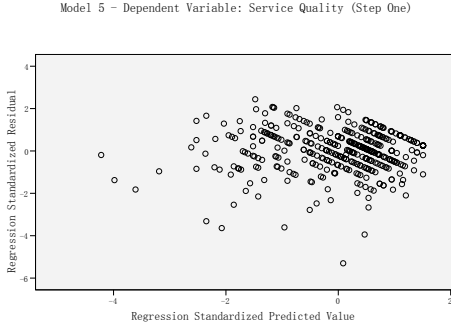
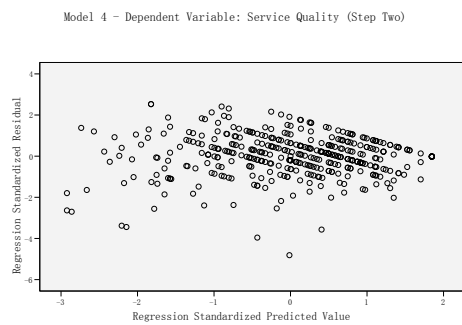
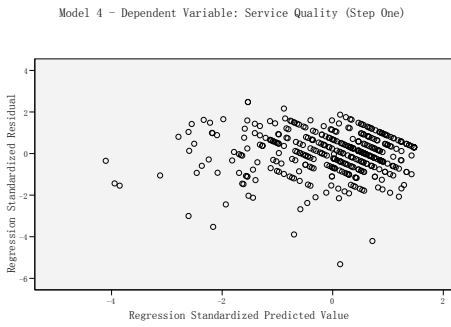
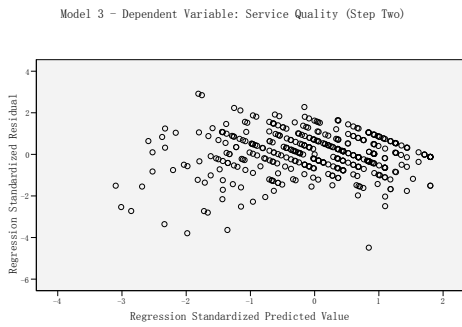
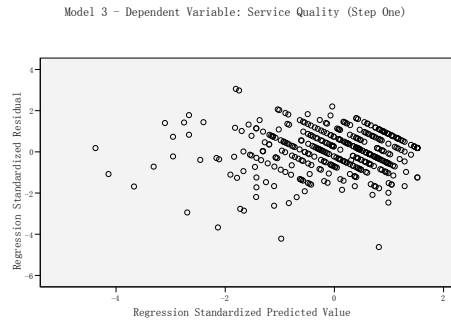
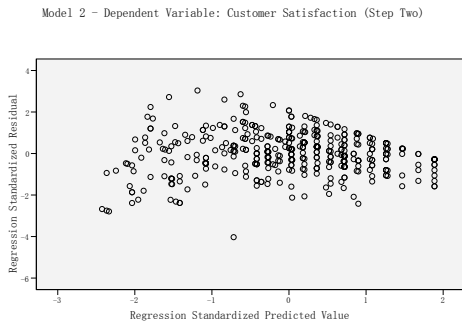
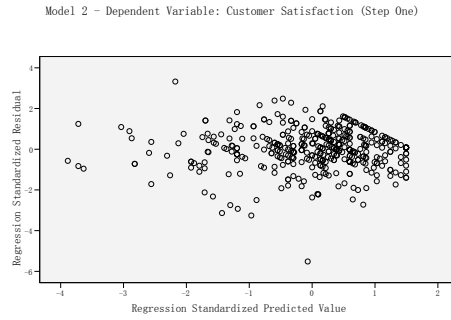
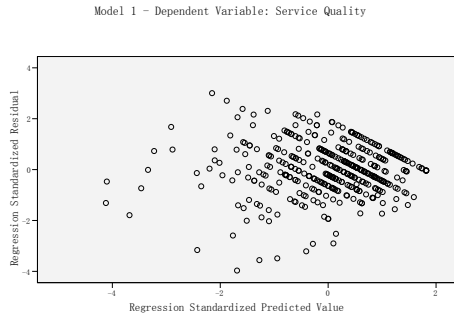
** Correlation is significant at the 0.01 level (2-tailed).

Table 42A: Multi-collinearity Statistics

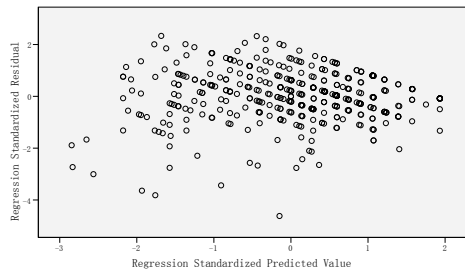
Model	Dependent Variables	Independent Variables	1/(1- R ²)	Collinearity Statistics		
				Tolerance	VIF	Condition Index
1	Service Quality	Interaction Quality	2.208	0.417	2.399	15.591
		Physical Environment		0.485	2.062	16.643
		Quality		0.626	1.598	17.760
		Outcome Quality		0.666	1.501	18.791
		Network Quality		0.588	1.700	25.865
2	Customer Satisfaction	Step One	3.344	0.556	1.768	8.917
		Service Quality Value		0.556	1.768	13.765
3	Service Quality	Step Two	2.506	1.000	1.000	5.227
		Service Quality × Value				
3	Service Quality	Step One	2.681	0.531	1.883	12.535
		Interaction Quality Corporate Image		0.531	1.883	17.486
4	Service Quality	Step Two	2.506	1.000	1.000	6.767
		Interaction Quality × Corporate Image				
4	Service Quality	Step One	2.381	0.616	1.623	12.448
		Physical Environment Quality Corporate Image		0.616	1.623	15.016
5	Service Quality	Step Two	2.079	1.000	1.000	6.626
		Physical Environment Quality × Corporate Image				
5	Service Quality	Step One	2.415	0.744	1.343	11.711
		Outcome Quality Corporate Image		0.744	1.343	12.842
6	Service Quality	Step Two	2.028	1.000	1.000	6.369
		Outcome Quality × Corporate Image				
6	Service Quality	Step One	2.331	0.695	1.439	12.544
		Network Quality Corporate Image		0.695	1.439	13.574
7	Service Quality	Step Two	1.869	1.000	1.000	6.711
		Network Quality × Corporate Image				
7	Service Quality	Step One	2.326	0.669	1.496	11.954
		Lending Quality Corporate Image		0.669	1.496	13.616
8	Customer Satisfaction	Step Two	1.880	1.000	1.000	6.188
		Lending Quality × Corporate Image				
8	Customer Satisfaction	Step One	3.802	0.376	2.660	10.254
		Service Quality Value		0.532	1.879	14.770
		Corporate Image		0.413	2.419	20.239

Appendix 10: Scatter Plots

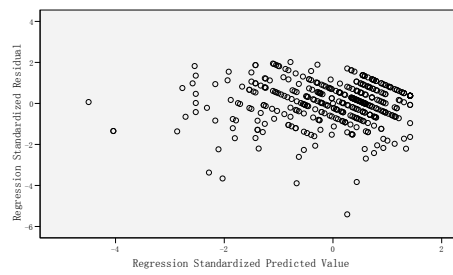
Figure 4A: Residual Scatter Plots



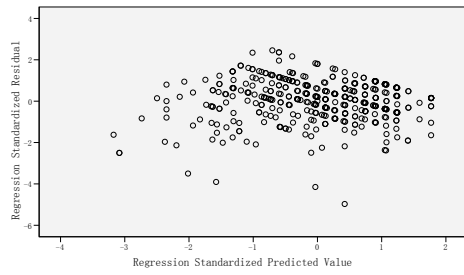
Model 5 - Dependent Variable: Service Quality (Step Two)



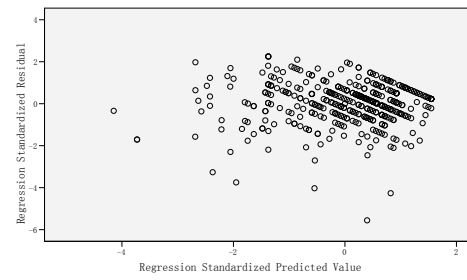
Model 6 - Dependent Variable: Service Quality (Step One)



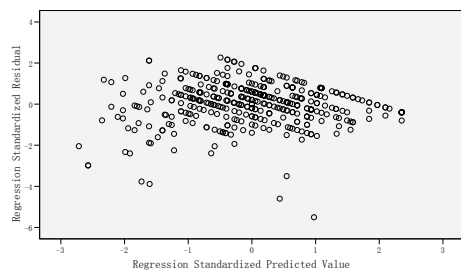
Model 6 - Dependent Variable: Service Quality (Step Two)



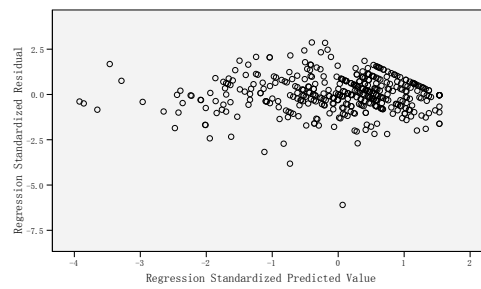
Model 7 - Dependent Variable: Service Quality (Step One)



Model 7 - Dependent Variable: Service Quality (Step Two)

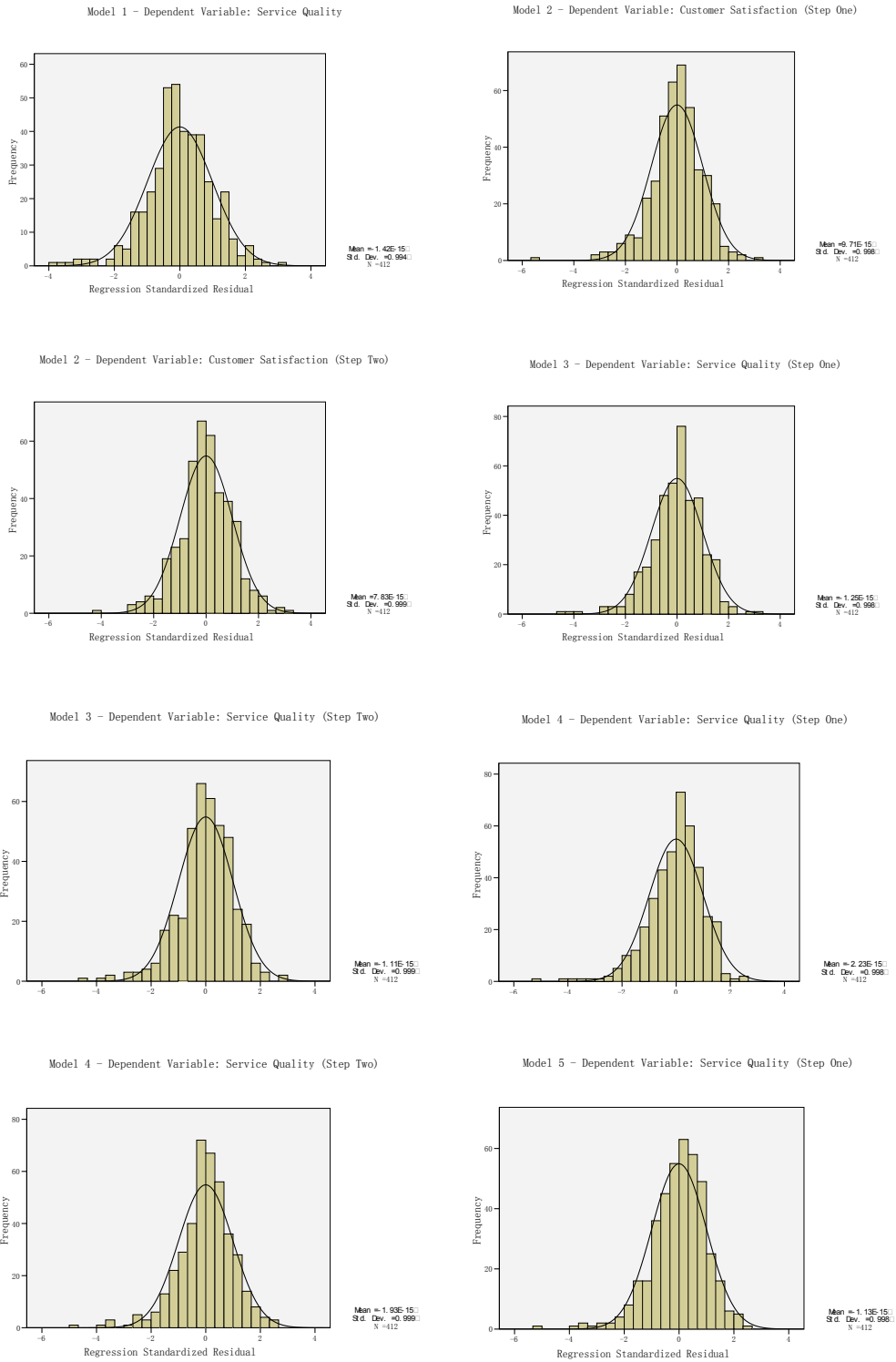


Model 8 - Dependent Variable: Customer Satisfaction

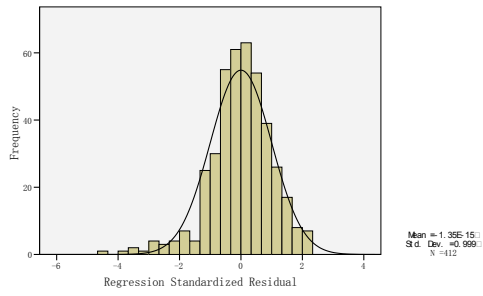


Appendix 11: Normality Plot

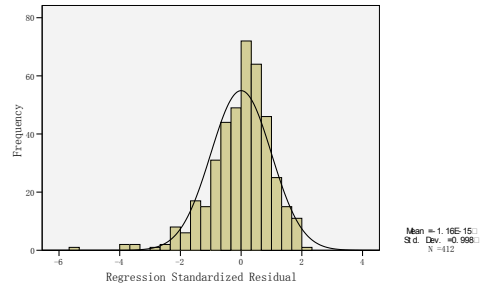
Figure 5A: Normality Plot



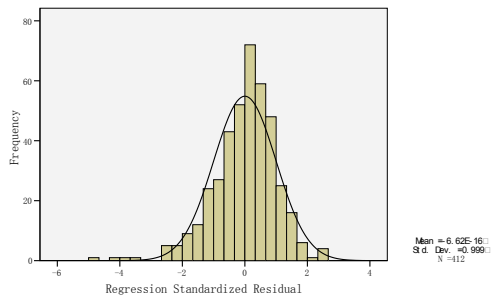
Model 5 - Dependent Variable: Service Quality (Step Two)



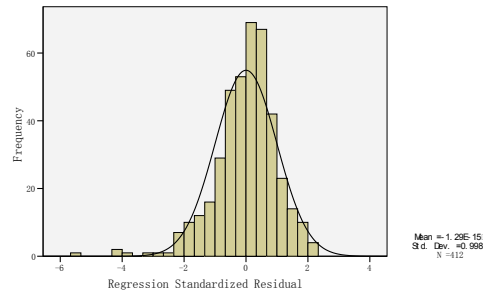
Model 6 - Dependent Variable: Service Quality (Step One)



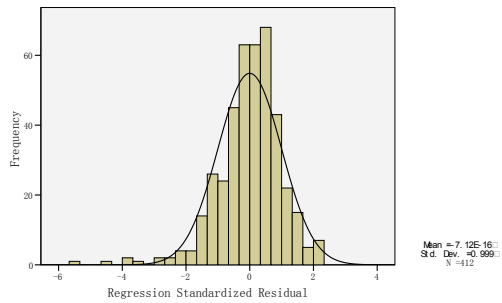
Model 6 - Dependent Variable: Service Quality (Step Two)



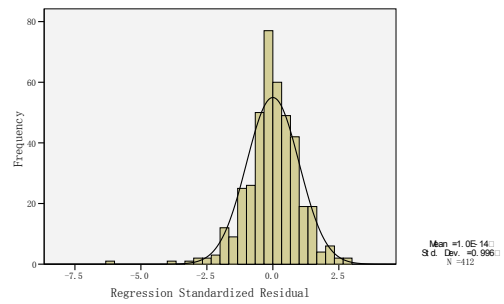
Model 7 - Dependent Variable: Service Quality (Step One)



Model 7 - Dependent Variable: Service Quality (Step Two)



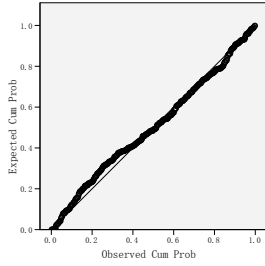
Model 8 - Dependent Variable: Customer Satisfaction



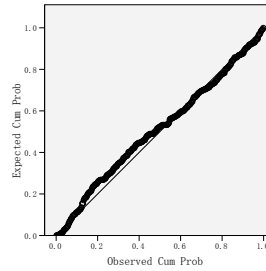
Appendix 12: Normal P-P Plot of Regression Standardised Residual

Figure 6A: Normal P-P Plot of Regression Standardised Residual

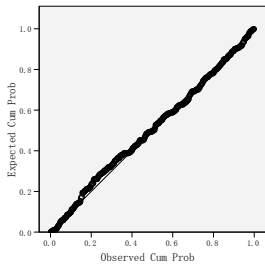
Model 1 - Dependent Variable: Service Quality



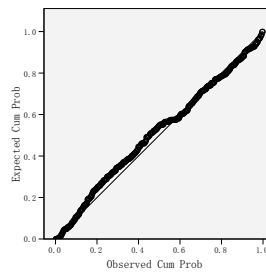
Model 2 - Dependent Variable: Customer Satisfaction (Step One)



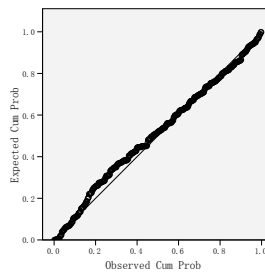
Model 2 - Dependent Variable: Customer satisfaction (Step Two)



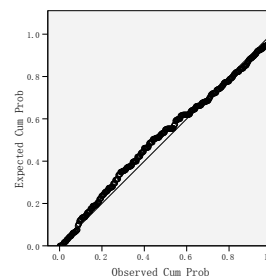
Model 3 - Dependent Variable: Service Quality (Step One)



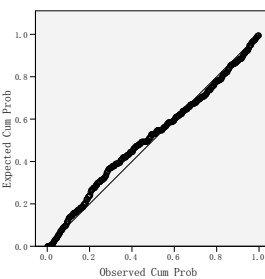
Model 3 - Dependent Variable: Service Quality (Step Two)



Model 4 - Dependent Variable: Service Quality (Step One)



Model 4 - Dependent Variable: Service Quality (Step Two)



Model 5 - Dependent Variable: Service Quality (Step One)

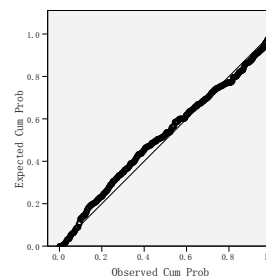
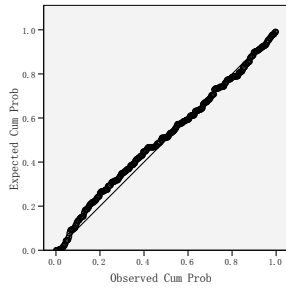
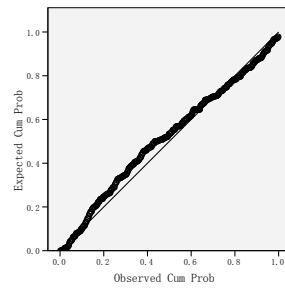


Figure 6A (continued)

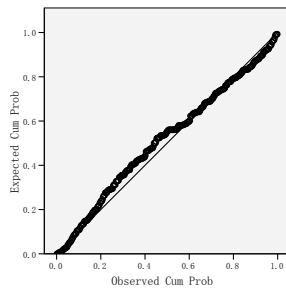
Model 5 - Dependent Variable: Service Quality (Step Two)



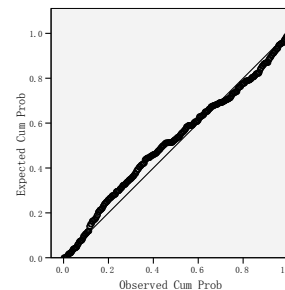
Model 6 - Dependent Variable: Service Quality (Step One)



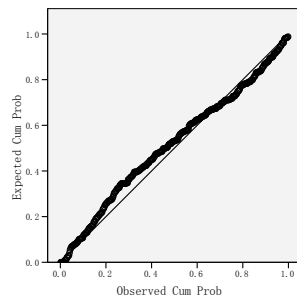
Model 6 - Dependent Variable: Service Quality (Step Two)



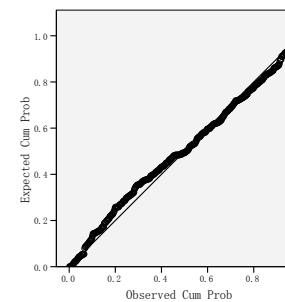
Model 7 - Dependent Variable: Service Quality (Step One)



Model 7 - Dependent Variable: Service Quality (Step Two)



Model 8 - Dependent Variable: Customer Satisfaction



Appendix 13: Analysis of Variance Results

Table 43A: Customer Perception of Satisfaction and Pertaining Constructs

Gender

Variable	Gender	Frequency	Mean	F	Sig.
Service Quality	Male	176	5.46	0.256	0.613
	Female	234	5.52		
	Total	410	5.50		
Value	Male	177	3.61	1.519	0.218
	Female	234	3.74		
	Total	411	3.69		
Corporate Image	Male	176	5.48	1.071	0.301
	Female	235	5.60		
	Total	411	5.55		
Customer Satisfaction	Male	177	5.37	0.216	0.642
	Female	234	5.43		
	Total	411	5.40		

Age

Variable	Age	Frequency	Mean	F	Sig.
Service Quality	Young	120	5.17	7.920	0.207
	Middle age	191	5.57		
	Older	99	5.75		
	Total	410	5.50		
Value	Young	120	3.64	2.267	0.183
	Middle age	191	3.62		
	Older	100	3.88		
	Total	411	3.69		
Corporate Image	Young	120	5.43	1.455	0.000***
	Middle age	191	5.56		
	Older	100	5.68		
	Total	411	5.55		
Customer Satisfaction	Young	120	5.09	8.123	0.000***
	Middle age	191	5.42		
	Older	100	5.75		
	Total	411	5.40		

Ethnicity

Variable	Ethnicity	Frequency	Mean	F	Sig.
Service Quality	NZ European	251	5.61	1.708	0.132
	NZ Maori	23	5.57		
	Pacific Islander	9	5.59		
	European	51	5.30		
	Asian	63	5.25		
	Other	13	5.10		
	Total	410	5.50		
Value	NZ European	252	3.68	1.269	0.277
	NZ Maori	23	3.51		
	Pacific Islander	9	4.03		
	European	51	3.75		
	Asian	63	3.78		
	Other	13	3.12		
	Total	411	3.69		
Corporate Image	NZ European	252	5.59	2.078	0.067*
	NZ Maori	23	5.45		
	Pacific Islander	9	5.75		
	European	51	5.76		
	Asian	63	5.34		
	Other	13	4.88		
	Total	411	5.55		
Customer Satisfaction	NZ European	252	5.50	1.933	0.088*
	NZ Maori	23	5.50		
	Pacific Islander	9	5.71		
	European	51	5.34		
	Asian	63	5.11		
	Other	13	4.75		
	Total	411	5.40		

Level of Education

Variable	Level of Education	Frequency	Mean	F	Sig.
Service Quality	Low Education	131	5.56	3.162	0.043*
	Middle Education	159	5.61		
	High Education	120	5.28		
	Total	410	5.50		
Value	Low Education	132	3.70	0.453	0.636
	Middle Education	159	3.73		
	High Education	120	3.61		
	Total	411	3.69		
Corporate Image	Low Education	132	5.51	1.955	0.143
	Middle Education	159	5.67		
	High Education	120	5.43		
	Total	411	5.55		
Customer Satisfaction	Low Education	133	5.55	2.794	0.062*
	Middle Education	158	5.43		
	High Education	120	5.19		
	Total	411	5.40		

*** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

Occupation

Variable	Occupation	Frequency	Mean	F	Sig.
Service Quality	Professional	122	5.51	1.332	0.211
	Self-Employed	61	5.29		
	Student	26	4.99		
	Civil Servant	44	5.44		
	Labourer	9	5.74		
	Farmer	7	5.52		
	Unemployed	9	5.85		
	Retired	40	5.81		
	Sales/Service	38	5.47		
	Home Maker	28	5.77		
	Other	26	5.54		
Total	410	5.50			
Perceived Value	Professional	122	3.70	1.602	0.104
	Self-Employed	61	3.52		
	Student	26	3.65		
	Civil Servant	44	3.63		
	Labourer	9	3.72		
	Farmer	7	3.00		
	Unemployed	9	3.50		
	Retired	41	4.20		
	Sales/Service	38	3.75		
	Home Maker	28	3.54		
	Other	26	3.63		
Total	411	3.69			
Corporate Image	Professional	122	5.64	1.397	0.179
	Self-Employed	61	5.31		
	Student	26	5.16		
	Civil Servant	44	5.53		
	Labourer	9	5.97		
	Farmer	7	5.75		
	Unemployed	9	6.17		
	Retired	41	5.64		
	Sales/Service	38	5.38		
	Home Maker	28	5.71		
	Other	26	5.63		
Total	411	5.55			
Customer Satisfaction	Professional	122	5.45	1.370	0.192
	Self-Employed	60	5.24		
	Student	26	5.08		
	Civil Servant	44	5.14		
	Labourer	9	5.84		
	Farmer	7	5.49		
	Unemployed	9	5.33		
	Retired	42	5.90		
	Sales/Service	38	5.28		
	Home Maker	28	5.53		
	Other	26	5.42		
Total	411	5.40			

Annual Income

Variable	Annual Income	Frequency	Mean	F	Sig.
Service Quality	Low Income	148	5.41	0.783	0.458
	Middle Income	185	5.57		
	High Income	79	5.48		
	Total	412	5.49		
Perceived Value	Low Income	148	3.76	1.611	0.201
	Middle Income	185	3.68		
	High Income	79	3.50		
	Total	412	3.67		
Image	Low Income	148	5.42	2.000	0.137
	Middle Income	185	5.58		
	High Income	79	5.71		
	Total	412	5.55		
Customer Satisfaction	Low Income	148	5.24	2.154	0.117
	Middle Income	185	5.46		
	High Income	79	5.56		
	Total	412	5.40		

*** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

Table 44A: Customer Perceptions of the Primary Dimensions of Service Quality

Gender

Variable	Gender	Frequency	Mean	F	Sig.
Interaction Quality	Male	177	5.58	0.060	0.806
	Female	235	5.60		
	Total	412	5.59		
Physical Environment Quality	Male	175	5.43	1,251	0.264
	Female	233	5.55		
	Total	408	5.50		
Outcome Quality	Male	177	5.38	0.391	0.532
	Female	231	5.31		
	Total	408	5.34		
Network Quality	Male	176	5.58	0.539	0.463
	Female	230	5.66		
	Total	406	5.63		
Lending Quality	Male	173	4.87	0.131	0.718
	Female	229	4.83		
	Total	402	4.85		

Age

Variable	Age	Frequency	Mean	F	Sig.
Interaction Quality	Young	120	5.33	8.193	0.000***
	Middle age	191	5.62		
	Older	101	5.84		
	Total	412	5.59		
Physical Environment Quality	Young	120	5.39	2.245	0.107
	Middle age	190	5.47		
	Older	98	5.68		
	Total	408	5.50		
Outcome Quality	Young	119	5.13	6.518	0.002***
	Middle age	190	5.30		
	Older	99	5.67		
	Total	408	5.34		
Network Quality	Young	120	5.61	0.016	0.984
	Middle age	191	5.63		
	Older	95	5.62		
	Total	406	5.63		
Lending Quality	Young	119	4.77	2.334	0.098*
	Middle age	191	4.80		
	Older	92	5.05		
	Total	402	4.85		

Ethnicity

Variable	Ethnicity	Frequency	Mean	F	Sig.
Interaction Quality	NZ European	253	5.69	2.916	0.013**
	NZ Maori	23	5.78		
	Pacific Islander	9	5.61		
	European	51	5.50		
	Asian	63	5.24		
	Other	13	5.28		
	Total	412	5.59		
Physical Environment Quality	NZ European	249	5.55	1.032	0.398
	NZ Maori	23	5.56		
	Pacific Islander	9	5.51		
	European	51	5.55		
	Asian	63	5.23		
	Other	13	5.38		
	Total	408	5.50		
Outcome Quality	NZ European	251	5.47	2.783	0.017**
	NZ Maori	23	5.04		
	Pacific Islander	9	5.50		
	European	49	5.35		
	Asian	63	5.04		
	Other	13	4.69		
	Total	408	5.34		
Network Quality	NZ European	247	5.71	1.788	0.114
	NZ Maori	23	5.49		
	Pacific Islander	9	5.92		
	European	51	5.65		
	Asian	63	5.37		
	Other	13	5.12		
	Total	406	5.63		
Lending Quality	NZ European	245	4.91	1.079	0.371
	NZ Maori	23	4.64		
	Pacific Islander	9	4.56		
	European	50	4.83		
	Asian	63	4.86		
	Other	12	4.36		
	Total	402	4.85		

Level of Education

Variable	Level of Education	Frequency	Mean	F	Sig.
Interaction Quality	Low Education	133	5.69	1.323	0.268
	Middle Education	159	5.58		
	High Education	120	5.50		
	Total	412	5.59		
Physical Environment Quality	Low Education	131	5.43	0.364	0.695
	Middle Education	159	5.52		
	High Education	118	5.53		
	Total	408	5.50		
Outcome Quality	Low Education	131	5.48	2.003	0.136
	Middle Education	159	5.34		
	High Education	118	5.19		
	Total	408	5.34		
Network Quality	Low Education	130	5.52	1.274	0.281
	Middle Education	157	5.72		
	High Education	119	5.62		
	Total	406	5.63		
Lending Quality	Low Education	127	4.81	0.371	0.690
	Middle Education	159	4.83		
	High Education	116	4.92		
	Total	402	4.85		

*** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

Occupation

Variable	Occupation	Frequency	Mean	F	Sig.
Interaction Quality	Professional	122	5.64	2.779	0.002***
	Self-Employed	61	5.38		
	Student	26	5.16		
	Civil Servant	44	5.46		
	Labourer	9	5.79		
	Farmer	7	6.30		
	Unemployed	9	5.61		
	Retired	42	5.94		
	Sales/Service	38	5.34		
	Home Maker	28	5.99		
	Other	26	5.62		
Total	412	5.59			
Physical Environment Quality	Professional	121	5.59	1.427	0.166
	Self-Employed	60	5.24		
	Student	26	5.18		
	Civil Servant	44	5.60		
	Labourer	9	5.31		
	Farmer	7	5.86		
	Unemployed	9	5.47		
	Retired	40	5.85		
	Sales/Service	38	5.39		
	Home Maker	28	5.41		
	Other	26	5.51		
Total	408	5.50			
Outcome Quality	Professional	121	5.25	1.807	0.058*
	Self-Employed	61	5.14		
	Student	26	4.98		
	Civil Servant	43	5.60		
	Labourer	9	6.11		
	Farmer	7	5.61		
	Unemployed	9	5.44		
	Retired	40	5.75		
	Sales/Service	38	5.28		
	Home Maker	28	5.36		
	Other	26	5.24		
Total	408	5.34			
Network Quality	Professional	121	5.76	1.280	0.239
	Self-Employed	60	5.47		
	Student	26	5.36		
	Civil Servant	44	5.74		
	Labourer	9	6.00		
	Farmer	7	6.04		
	Unemployed	9	6.08		
	Retired	38	5.30		
	Sales/Service	38	5.68		
	Home Maker	28	5.55		
	Other	26	5.52		
Total	402	5.63			
Lending Quality	Professional	121	4.59	0.983	0.457
	Self-Employed	60	4.72		
	Student	26	4.53		
	Civil Servant	44	4.91		
	Labourer	9	5.30		
	Farmer	7	4.52		
	Unemployed	9	5.30		
	Retired	34	4.80		
	Sales/Service	38	4.75		
	Home Maker	28	4.85		
	Other	26	4.88		
Total	402	4.85			

Annual Income

Variable	Annual Income	Frequency	Mean	F	Sig.
Interaction Quality	Low Income	148	5.49	1.352	0.260
	Middle Income	185	5.66		
	High Income	79	5.62		
	Total	412	5.59		
Physical Environment Quality	Low Income	148	5.39	1.237	0.291
	Middle Income	185	5.54		
	High Income	79	5.58		
	Total	412	5.49		
Outcome Quality	Low Income	148	5.35	0.417	0.659
	Middle Income	185	5.29		
	High Income	79	5.43		
	Total	412	5.34		
Network Quality	Low Income	148	5.43	3.964	0.020**
	Middle Income	185	5.74		
	High Income	79	5.76		
	Total	412	5.63		
Lending Quality	Low Income	148	4.67	4.326	0.014**
	Middle Income	185	4.91		
	High Income	79	5.05		
	Total	412	4.85		

*** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level