THESIS

Determinant attributes of customer choice of banks, supplying mortgage products

Submitted to Auckland University of Technology
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Submitted by Mikhail Kotykhov

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the qualification of any other degree or diploma of a university or other institution of higher learning, except where due acknowledgement is made.

Mikhail Kotykhov

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No matter what accomplishments you make, somebody helped you.
Althea Gibson

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Abstract

The following research study attempts to identify the determinant factors, affecting the customer choice among alternative suppliers of mortgage products. The other objective of the study is to evaluate the role of bank brand in the customer choice of mortgage provider. The Analytic Hierarchy Process is employed as the research methodology. Research results suggest that cost-related factors (interest rate, borrowing limit and application costs), and one service-related factor (speed of decision) are determinant for the choice among alternative mortgage providers. However, brand-related factors, such as bank reputation and recommendations, are not found to have a significant effect on the customer choice. The method of brand value calculation, developed in the study requires further research to explain the role of brand in customer decision-making.

Keywords: Brand value, customer decision-making, customer choice, bank mortgages, the Analytic Hierarchy Process

INTRODUCTION

The objective of this research study is to identify the determinant attributes of customer decision-making in the choice of banks, which supply mortgage products. The research also aims to evaluate the impact of the brand concept on the customer decision-making process. The study is specifically focused on the importance of branding in customer decisions involving choice among alternative suppliers.

Bank mortgages are considered to be an example of a high-involvement customer product. It is hypothesized that brand makes a difference for the customer in the choice of mortgage products because mortgages are complex products and customers would be expected to use cues which simplify the decision process.

The importance of branding to customer choice processes has been widely discussed in the marketing literature. However, the importance of the brand in the customer decision-making needs clarification when seeking to understand why one supplier is chosen over another. Also, the value of the brand-related component in the total value of the market offering (for instance a mortgage product) has remained a challenging issue for researchers seeking to understand the factors influencing the purchase.

The research is designed as a critical replication and extension of the method, used by Armacost and Hosseini (1994) in their research study. The Analytic Hierarchy Process is used to determine the relative importance of attributes of customer decision-making and which factors are the determinant attributes for customer decision-making, when choosing among several alternative suppliers.

Armacost et al. (1999) emphasize that facilitating and modeling a decision-making process has been and continues to be a challenging problem. Difficulties arise, in particular, in structuring the decision problem by identifying the appropriate criteria and alternatives to be used in making the decision and then evaluating them. For the purpose of the following research, the employment of the Analytic Hierarchy Process (AHP) as a research methodology can help in decomposing the research problem (choice of the mortgage

provider) into a hierarchy of determinant factors or attributes that influence customer choice. The determinance scores and importance scores, which identify the relative impact of each attribute, as well as the scores for sub-attributes related to each attribute, will be determined using the AHP.

The research will contribute to marketing knowledge through identifying the impact of brand value by estimating the ranking for each mortgage provider in the market.

The thesis is presented in six main sections:

Chapter 1 provides a critical review of the relevant marketing literature on customer decision-making, branding and brand value. The gaps in existing marketing knowledge are identified in order to explain the importance of the following research study, and to identify the context of this study, which addresses these gaps.

In Chapter 2 the research problem is explained. The design of the research instruments used to address this problem is described and the research hypotheses are established.

Chapter 3 outlines the research methodology employed in this study. The advantages of the research methods chosen (Analytic Hierarchy Process and nominal group technique) in relation to the objectives of the research study are presented.

Research procedures used are detailed in Chapter 4. Development of the research questionnaire, based on the nominal group results, is discussed in terms of technical challenges encountered, such as sampling respondents.

The results of the research and their analysis are presented in Chapter 5, followed by discussion of the results (Chapter 6), suggestions for future research and conclusions.

CHAPTER 1. LITERATURE REVIEW

"Brand's values" refer to the most basic and fundamental significances a truly strong brand comes to represent – values such as honesty, affection, security, freedom, fun, dominance, and trust.

(Berry, 1988)

1.1. Introduction

The following chapter presents the review of the relevant academic literature in relation to the objectives of the study. The first objective is to evaluate the role of brand-related attributes in the customer choice among alternative products. The other objective is to identify the determinant attributes in a customer decision to select a mortgage provider. Considering this, the following areas of the marketing literature will be critically reviewed in the chapter:

- The research on customer decision-making and customer choice among alternatives;
- Customer evaluation of the alternatives;
- Brand value and the role of brand in customer decision-making;
- Issues of branding identified in service markets.

The literature review aims to explain the research question of the present study and to translate this later into a set of research hypotheses.

1.2. Customer decision-making and customer choice

The customer choice has been an issue of continuing interest in the marketing literature. Specifically, proper classification and explanation of the factors affecting customer choice pose the challenge for researchers.

Sheth et al. (1999) suggest that customer decisions include whether to purchase, what to purchase, when to purchase, from whom to purchase, and how to pay for it. Hansen (1976)

defines the decision-making process as a sequence of conflict situations, which occur in all stages of the choice process, and explaining what has been chosen.

The notion of choice has a central role in understanding customer behaviour. The choice concept originates from the psychological sciences and later was adopted in marketing to explain the patterns of consumer decision-making. Hansen (1976) points out that any choice situation is characterised by conflict, uncertainty and cognitive activity. He identifies the following three aspects of choice:

- Two or more choice alternatives are available;
- The choice alternatives must stimulate a certain amount of conflict;
- Cognitive processes aimed at reducing the conflict must occur.

Hansen (1976) further suggests that it is possible for customers to apply different choice principles depending on the conflict situation and the nature of the choice. The nature of the choice principle applied by the customer in the individual choice process varies with the nature of the alternatives, the nature of conflict situation and the amount of aroused conflict. The customer may use a simple choice principle when a single aspect is used as a clue or when unidimensional preference determines the choice of alternatives. However, using non-compensatory and multi-attribute choice principles may occur in more complex choice situations.

Multi-criteria decision-making models are used in the marketing research to explain customer behavior. Employment of these models may help to identify the individual attitude towards a brand as a function of these individual perceptions of the brand's need-satisfying qualities or attributes as well as the assessment of the value for each attribute (Lutz, 1975).

Bettman et al. (1998) emphasizes that consumer decision-making involves difficult value trade-offs and uncertainties. Thus, the rational choice theory is hypothesized to explain customer decisions. Bettman et al. further argue that the choice does not depend on the particular descriptions of options and specific methods used to elicit customer preferences. Each alternative is assumed to have a utility that depends only on this alternative. The

customer is able to calculate which alternative will maximize the received value and selects accordingly.

The alternative method of explaining consumer choice is the information-processing approach (Tversky and Kahneman 1991, Simon 1990). The approach is developed on the notion that decision makers have certain limitations on their ability to process information. This might include limited working memory and limited computational skills (Bettman et al. 1998). Customer behaviour can be seen as the interaction between the information-processing system of individuals and the task environments.

To summarize, the concept of customer choice provides the underlying basis for the present study. Although customer choice is a complex concept, involving multiple attributes, the research literature suggests that identification of the determinant attributes of the customer choice may help to clarify our understanding of the underlying mechanism of customer choice between alternatives.

1.3. Information search and customer decision-making

Sheth et al. (1999) identify five stages in the customer decision-making process. These stages come in the following order: (1) problem recognition, (2) information search, (3) evaluation of alternatives, (4) purchase decision and (5) post-purchase behavior. The part of the literature review presented below attempts to outline the main concepts of the information search stage in the customer decision-making process.

Tellis and Gaeth (1990) found out that consumers often purchased products when complete information about the alternatives was not available. The researchers explained that imperfectness of the information is the result of proliferation of competing brands, time and effort consumption of search and sampling activities, biases in product evaluation, the constant process of product innovation, and customer mobility.

Furse et al. (1984) suggest that the amount of search activity for the customer is a function of product knowledge and experience, satisfaction with prior purchases, individual differences (e.g. ability), situational variables (e.g. time pressure) and product importance.

Also, the researchers emphasize the difference between heuristic and systematic processing in choice behavior. Critical evaluation of relevant attributes or alternatives and detailed processing of information represent the systematic processing mode, while in the heuristic decision mode decisions are based on a superficial assessment of cues and cognitive heuristics. Heuristics are most likely to be used by individual customers in the situation of low involvement decision-making.

Moorthy et al. (1997) conclude that most of the previously conducted research studies exhibit very limited pre-purchase information search activity, even for high involvement consumer goods. Moorthy et al. (1997) further suggest that the benefits of search for the customer are determined by how a consumer perceives the uncertainty in the choice environment, the degree of a customer's involvement or the importance a customer gives to a product category, as well as risk aversion.

The marketing literature discusses various sources of information used by the customer for decision-making about particular brands. This includes marketing information sources, such as advertising, and non-marketing sources. The latter group contains personal sources of information, including friends and past experience of using the product, and independent sources, such as publicly available information and expert advice. Murray (1991) suggests that services customers prefer to use personal sources rather than impersonal sources of information.

Moore and Lehmann (1980) identify the following set of variables that determine the intensity of information search for the customer:

- Market environment (number and complexity of alternatives, information availability)
- Situational variables (time and financial limitations, psychological and social variables)
- Product importance (price, perceived risk, differences among variables, preferential attributes)
- Knowledge and previous experience of using the product

- Individual differences (customer involvement, demographic characteristics, personality and life-style related characteristics)

Weitzman (1979) introduces the concept of reservation utility as a summary measure of the value of getting information about a particular brand, considering the costs and benefits of searching. Thus, he suggested that the optimal search strategy is when brands are arranged in order of their reservation utilities and the search begins with a brand with the highest utility. If a perceived utility for this brand appears to be higher than the reservation utility of the second-ranked brand, then search ends with the first brand, otherwise it continues with the second-ranked brand and so on. Therefore, the optimal stopping and optimal selection rules imply that the information about one brand does not affect the consumer's perceptions of the utility of other brands. This argument is questioned by Moorthy et al. (1997), who argue that further search within a product category is determined by the interdependence of brand-related information.

Moorthy et al. (1997) argue that if a customer decides to stop searching, the brand with the maximum utility will be chosen. If a customer wishes to continue searching, the next brand to be searched is selected. The optimal sequential decision rule is applied, according to Moorthy et al. (1997) at each stage of information search and this rule determines whether or not to continue search (optimal stopping rule) and which brand to search next time (optimal selection rule).

Moorthy et al. (1997) suggest that customer experience in the product category increases the customer's expertise and knowledge of particular brands. The former increases the need for more information while the latter decreases it.

Sheluga et al. (1979) suggest that the overall utility of a product or a brand is a function of the estimated utilities of the attributes that comprise it. Thus, the prediction of which product will be chosen by the customer, other things being equal, is the product alternative which has the most positive overall evaluation. The utility of a particular product can be calculated as the following:

$$U_{jk} = f(u_{1jk}, u_{2jk}, ..., u_{njk}),$$

where U_{jk} = utility of product j for customer k

u_{ijk} = utility of the i_{th} attribute of product j for consumer k

Sheluga et al. (1979) argue that prior to the choice decision, the consumer may not consider all relevant attributes associated with each product alternative. The researchers suggest that when product information is self-selected, consumers access only a small subset of the available information. Therefore, consumer choice decisions are based on subsets of information they consider, and not on the overall set of information available. This may be especially applicable to the situation when a new product is purchased, or for non-habitual purchases when there is little product-specific information in consumer memory.

The attempt is made in the study of Sheluga et al. (1979) to test whether consumers are rational decision makers within the limits of the information to which they are exposed. The results obtained indicated that choice predictions based on searched information are significantly more accurate than predictions based on all available information. The study concludes that the consumer decision is highly rational within the limits of accessed information. Also, the information search measures, such as extent and order of acquisition of attribute information, are found to have a positive correlation with value of the attribute, in reaching the decision.

Machleit et al. (1993) suggest that attribute information for familiar brands are linked in a consumer's memory with a specific brand. However, the attribute information for unfamiliar brands is connected with a general product category. Customers are more likely to retrieve specific attribute information from retrieval cues for familiar brands than for unfamiliar brands. Also, as customers presumably have a selective exposure to a large amount of advertisements, they are less motivated to consider the information about unfamiliar brands than about familiar brands. Similar research results are obtained by Arora and Stoner (1996), who found out that customers might have a better memory for information about familiar brands. The conclusion was made that customers are more likely to recall the information about familiar brands, and the information loss in memory owing to competitive interference is less likely.

Other factors discussed in the research literature concerning customer choice can be summarized as follows:

- Interattribute inference, when the value of one attribute is inferred from another attribute;

- Evaluative consistency, when the unknown attribute is assumed to conform to the overall evaluation of the brand;

- Purchase decision involvement, which influences the extent of information search. For instance, the research of Beatty and Smith (1987) tested the relationship between external search effort and a number of motivating variables. It was found that purchase involvement, attitude towards shopping, and time availability have a positive correlation with external search, while product class knowledge has a negative correlation to external search.

To summarize the discussion in the academic literature outlined above, the following points discussed should be emphasized as being related to the objectives of the present study:

- The competition between brands/alternatives may affect customer information search and explain the imperfectness of information the customer uses to make decisions;

- Customer pre-purchase information search may be limited even for high-involvement products;

- Personal sources of information may be preferred to non-personal in the service customer decision-making;

- The intensity and the outcomes of the information search are affected by the set of brands involved in the search process. Brands with maximum utility are likely to be chosen by customer as a result of the information search process;

- It is argued in existing literature that customer choice is highly rational within the limits of the searched information. However, customers may not consider all relevant attributes associated with each product alternative when making a choice;

- It was considered a challenge for the existing research to identify the extent to which the customer is likely to use heuristic information search (influenced by the brand name rather than objective evaluation of alternative products' features) in making a decision among alternative suppliers.

1.4. Evaluation of the alternatives in the decision-making process

Sheth et al. (1999) suggest that the customer purchase decision is associated with the number of existing alternatives, and the customer task is to choose among these alternatives. Gabbott and Hogg (1994) further argue that the process of information search leads the consumer to an evoked set of alternatives that will form the basis for comparison and choice.

Mitchell and Boustani (1994) suggest that the first source of uncertainty for customers in the stage of evaluating the alternatives is which criteria or attributes they should use to judge products. Although consumers may be ignorant of some attributes, the information search may reveal them. Also, the consumer may be not be sure about the relative importance of each attribute.

Bettman (1975) argues that choice among the alternatives is simplified if processing is organized by attribute or dimension. It is easier for the customer to compare alternatives on one attribute, and after that to do the same with other attributes. Evaluating one brand at a time over all attributes allows the customers to make tradeoffs among all attributes for all alternatives. Bettman emphasizes that evaluation of brands by the use of attributes provides comparative and relative information for the customer. Presenting several attributes at once rather than one attribute at a time may facilitate the evaluation of brand alternatives for the customer.

Biehal and Chakravarti (1982) suggest that preference for attribute-based strategies is moderated by individual differences, the organization of product information, as well as whether information is externally available, or drawn from memory. More attribute-based processing will be likely to take place for the consumer who attaches significance to one or several attributes, while brand-based processing will be used for the customer who values a larger number of attributes equally. Therefore, consumers whose attribute-importance weights vary significantly may show higher levels of attribute processing. To summarize, attribute-based choice processing is likely to be the highest in attribute-structured environments, and least when the environment is structured by brand. Biehal and

Chakravarti (1982) conclude that consumer memory for product information is brand organized.

Urbany et al. (1989) define two types of uncertainty for the customer in decision-making processes: (1) knowledge uncertainty (also referred to as information uncertainty), and (2) choice uncertainty (which alternative to choose). Moorthy et al. (1997) further argue that consumers face uncertainty about the true values of the discriminating attributes. This uncertainty can be either brand-specific or related to more general market uncertainty. As identified by Moorthy et al. (1997) with brand-specific uncertainty, the customer has n independent probability distributions, $g_i(x_i)$, describing the n brands. With market uncertainty a customer has only an aggregation of individual brand distributions, $g(x)$, describing all the brands in the market.

Also, Moorthy et al. (1997) distinguish between relative uncertainty about the product category and relative uncertainty about individual brands. The former is defined as the uncertainty about which brand is the best, while the latter is the uncertainty about what each brand offers.

Tellis and Gaeth (1990) identify the following major strategies the customers may use under uncertainty. First, the best value strategy is used when the brand with the least overall cost in terms of price and expected quality is chosen. Second, a price-seeking strategy implies the choice of highest priced brand to maximize the expected quality. Finally, the customers who choose to buy the lowest priced brand to minimize the immediate costs use a price aversion strategy.

Bettman and Park (1980) analyze the impact of prior knowledge and experience on customer decision-making. It appears that customers with moderate knowledge and experience do more information processing than those with high or low knowledge levels. Also, more knowledgeable customers process the information by brand. Consumers use attribute-based evaluation of alternatives in early phase and brand-based evaluations in later phases of choice. Thus, the customers tend to start decision-making with attribute comparisons, and then turn to brand evaluation in which trade-offs and comparisons of alternatives are made.

To summarize, the existing research literature on the customer evaluation of alternatives prior to the choice decision, reveals the crucial role of identifying the attributes/factors affecting the customer decision for understanding customer choice among alternative products.

It is emphasized, that the alternatives evaluation stage of the decision-making process can be characterized by a significant degree of uncertainty. This occurs, as the customer is often not sure about the relative importance of each attribute in the decision. It is suggested that comparing alternatives on each attribute with one another and making tradeoffs among attributes for alternatives may facilitate the decision-making for the customer.

Branding has been presented in many studies as the influential factor when customers evaluate of alternatives. Specifically, it was found that consumer memory for product information might be organized around brands. Consumers may use attribute-based comparison in the early stage of alternatives evaluation, and brand-based comparison in the later stages. Thus, the customers tend to start decision-making with attribute comparisons, and then turn to brand evaluation, where trade-offs and the comparison of alternatives are made.

At the same time, an analysis of the existing literature shows that the impact of brand-related determinants of customer choice among alternative products has not received a great amount of attention.

1.5. Risk and effort in customer decision-making

Customer perceived risk and customer effort are analyzed in the existing literature as two influential factors in the customer decision-making process. These factors are often discussed as two dimensions of the product price. For instance, Murphy and Enis (1986) define risk in the context of customer decision-making as a subjective feeling about the price of a product. The risks involved in the customer decision-making process may include both financial (monetary) and non-financial risks, such as social risk, psychological risk, physical risk, and functional risk.

Peter and Ryan (1976) identify perceived risk at the brand level as a combination of the following risk sub-categories, connected to the purchasing process: financial, performance, physical, psychological, and social risks. Thus, these researchers suggest that perceived risk can be expressed as follows:

$$BP_{ij} = \sum_{k=1}^{k=n} PL_{kij}$$

where BP_{ij} = preference for brand i by market segment j

PL_{kij} = probability of loss k for brand i expected by market segment j

i = brand,

j = market segments based on importance of losses

n = facet of perceived risk

Peter and Ryan (1976) conclude that the relationship between probability of loss and brand preference is inverted, and therefore the greater the probability of loss, the less the brand preference. This conclusion is supported by Mitchell and Boustani (1994), who argue that the customer decision-making is a complex process and involves a significant amount of risk. In this process, the highest preference in the choice will be associated with the brand, which has least perceived risk.

Risk aversion has a significant influence on consumer decision-making (Shimp and Bearden, 1982). Risk-averse consumers are more likely to search extensively for the information on product quality during purchasing decisions (Shimp and Bearden, 1982). Bao et al. (2003) suggest that risk-averse customers prefer to stay with the well-established brands in order to avoid possible financial loss through trying unknown brands.

Perceived risk may affect the consumers' reliance on price as an indicator of quality (Shapiro, 1973). Risk reduction strategies for highly risk-averse customers may include the inclination to buy the higher-priced brand. Thus, as suggested by Bao et al. (2003), risk aversion positively contributes to the "brand-conscious" and "price-equals-quality" orientation. Also, Bao et al. (2003) emphasize that in the situation of product information overload, low risk-averse consumers are concerned about distinguishing good brands from

bad, while highly risk-averse consumers tend to use risk-reduction instruments, such as the use of price, brand, and store cues. The uncertainty associated with buying a new product may motivate risk-averse customers to increase information acquisition. However, the research findings of Gemunden (1985) indicate that the information acquired by this group of customers may lead to a greater perceived risk for these consumers, as overload of information may lead to confusion.

Bao et al. (2003) suggests that in a highly competitive market, price might be a good indicator of quality. Using price to infer quality, as suggested by Tellis & Gaeth (1990), does not impose much risk on consumers.

Bettman (1973) introduces two different dimensions of perceived risk: inherent risk and handled risk. Inherent risk is related to product class, while handled risk may appear when customer chooses a particular brand within a product class in the usual buying situation. Bettman argues that even when a consumer feels that a large risk is associated with the product class, he or she will buy a favourite brand with confidence. However, in the situation when a consumer has no information, handled and inherent risk will be the same.

Also, Bettman (1973) argues that the amount of risk inherent in a brand choice situation within a product class will depend on the ability of the customer to construct a reasonable decision rule for making a brand choice and the importance to the customer of making a satisfactory choice within a product class. Thus, the perceived distribution of quality over brands in one product class will affect the customer decision. Consequently, the higher the perceived variation in quality for the product class, the less effective is the brand choice decision rule. Also, the higher the mean level of perceived quality, the greater the chance of an the effective brand decision to be made and lower is the perceived risk for the customer. Handled risk, as identified by Bettman (1973) increases with inherent risk, but decreases with the amount of information held about the product class, perceived usefulness of this information, and the customer's familiarity with brands within a product class.

Gemunden (1985) attempts to challenge the Bettman's (1973) research findings. He argues that the higher degree of perceived risk does not necessarily induce more intensive information search. The conclusion is made that generally information acquisition increases

the perceived risk rather than decreases it. Perceived risk can be explained as a variable, which is neither constant at the beginning of an information gathering process, nor will it be always reduced as the amount of information acquired grows. Gemunden (1985) points out that the majority of studies in the area are restricted to the analysis of the specific relationship between perceived risk and information search. The researcher argues that high risk does not necessarily lead to rigorous information search and the customers could resort to other risk reduction strategies, such as price-oriented quality evaluation, selective use of brand, or seller and store information cues, with a high confidence value. Gemunden (1985) uses the following arguments to justify his research findings:

- Perceived risk remains below a critical threshold of "tolerated risk" and therefore no motivation for information search is induced;
- Customers may perceive available information sources as not entirely trustworthy or competent;
- The influence of perceived risk on information search is suppressed by the costs of information behavior. These costs may include, for instance, social costs of asking the advice of other people, as well as time costs of searching and processing of information.

A variety of risk reduction strategies, such as perceived value of brand, a free trial offer or advertisement, are discussed in the academic literature. Roselius (1971) provides a definition for a risk reduction strategy as a device or action, initiated by a buyer or seller, which is used to execute one of the two following strategies. The buyer can either reduce the perceived risk or shift from one type of perceived loss to another for which he or she has more tolerance. Specifically, Roselius (1971) identifies the following types of risk reduction strategies:

- Endorsements or testimonials, portrayed in advertisements;
- Brand loyalty, previous satisfactory experience in buying the brand;
- Brand image and reputation;
- Pre-purchase testing;
- Store image;
- Warrants and guarantees;
- Word of mouth

Though the concepts of perceived risk are widely discussed in the academic literature, much less attention to the issue has been received in the context of services. Zeithaml and Bitner (1996) argue that the perceived risk in judging the performance of the product is higher for buying services than goods. The customer may have limited knowledge and experience for evaluating the service product, due to the complex nature of services. Choi and Scarpa (1994) found that services are difficult to judge, even after experience of using them. Therefore, the relative intangibility brings about the relative increase in the perceived risk.

Together with risk, customer effort can be considered to have a significant impact on decision-making. Murphy and Enis (1986) define effort as the amount of financial, mental and physical exertion it takes to purchase the product for the customer. The researchers suggest that effort has both monetary and non-monetary components. The latter may include, for instance, the time customers spend, shopping, traveling, waiting, performance and monitoring.

Analysis of the academic literature suggests the amount of customer effort is a function of customer involvement, which includes search efforts, as well as information collection, evaluation and testing.

However, previous research lacks studies that attempt to explain the extent branding can be used to reduce effort in customer decision-making. One of the few studies, which provides a coverage of the topic (Biswas, 1992) amongst other research findings, concluded that consumers valued a time saving, since less time was spent shopping for familiar brands.

In sum, an analysis of the existing research literature identifies a negative relationship between the perceived risk and the preference for the brand, with which the risk is associated. Marketers need to be concerned with the reduction of risk associated with each of the alternative offers.

It is suggested that customers can use brand as a risk and effort reduction instrument in decision-making. Specifically, the customer may use brand perceptions rather than

undertake further information search about the product. A number of research studies, as discussed earlier, identify brand image and reputation as central to risk reduction strategies, which are frequently used by customers. Furthermore, it is argued that a customer may prefer to buy a favourite brand with confidence, even when the consumer feels a high risk associated with the product class.

Previous research studies also suggest that perceived risk is higher in the services market than in the product market. Therefore it might be assumed that customer decision-making in the choice of bank products can involve a significant amount of risk for the customer, and that the brand may be used to reduce this risk.

1.6. Issues related to the marketing of services

The distinctive characteristics of services, such as intangibility, inseparability, variability, perishability, are widely discussed in the research literature (Cowell 1989, Blankson and Kalafatis, 1999, Ellis and Mosher, 1993). Dorsch et al. (2000) identify the services industry as a complex and competitive environment. Firms in services industry experience the increased competition with other providers within the same service category. Also, the level of consumer involvement is a significant factor affecting the evaluation of different services and the final purchase decision (Aldlaigan and Buttle, 2001, Foxall and Pallister, 1998).

Existing research on service industries is focussed primarily on the issues of customer satisfaction with services (Parasuraman et al. 1988, 1991, 1994; Carman 2000), analysis of service firms' performance (Schlesinger and Heskett, 1991; Sin and Tse, 2000; Manilla and James, 1977), service quality (Gronroos, 1990; Lovelock 1992 among others). Less attention, however, has been paid in the literature to the issues of customer decision-making when purchasing services and branding of services.

Murray (1991) analysed information acquisition for services customers and concluded that in the services industry, customers face greater uncertainty and loss, which implies a more extended decision-making process. Davies (1996) concludes that the difficulties associated with the evaluation of financial services have contributed, in part, to their negative image; with implications both for their purchase and for sustained custom. Services are

characterized by higher perceived risk because of their complexity, the high outlay, together with deferred benefits and an uncertainty of performance.

Dibb and Simkin (1993) accentuated the importance of considering the intangibility factor when analyzing services. They state that the traditional four Ps of marketing (product, place, price, promotion) are insufficient consideration when marketing services and services businesses. Services cannot be touched, stored or acquired; they are an experience or process. Therefore, the marketers face problems in stocking services, pricing, creating product differentiation, in reassuring consumers and reducing perceived risk of adoption, and in preventing product copying by competitors. A multiplicity of services is offered, dependent on employee skills and attitudes, with minimal tangible product differentiation and innovations quickly copied and modified by competitors. Also, as stated by Dibb and Simkin (1993) in banking and insurance, any product launches or modifications are quickly copied and updated by competitors.

Gabbott and Hogg (1994) argue that the difficulties of obtaining effective pre-purchase information about services is likely to result in a smaller evoked set of alternatives for services than for goods. Zeithaml (1981) argues that since obtaining the relevant and comprehensive information is difficult for services, the customers may have more loyalty towards the first acceptable alternative they found. If the customer has previous experience of a service the evoked set can contain only one service. If the consumer does not have previous experience, then the size of the evoked set is dependent on the effectiveness of the external information available (Gabbott and Hogg, 1994)

Gabbott and Hogg (1994) identify two problems for consumers when defining attribute sets in relation to services. The first problem is to identify these attributes. The key issue here for the consumer is in identifying cues with which to predict the nature of the customer service experience. The second problem is to make comparisons among alternative services on the basis of these attributes after they are identified. Besides, the bargainable nature of services, allowing in most cases the negotiation between the service provider and customer over different attributes, emphasizes the uncertainty of the comparison process.

Discussing further the cues customers use to predict the outcome of their service experience, Gabbott and Hogg (1994) emphasize that in the case of tangible products a number of previous research studies identified these clues as brand name, origin or price. Researchers suggest, however, that the range of these cues for services is much wider, including service provider, artefacts, premises, and likely to be uniquely associated with each service.

To summarize, the present research study will be conducted in the context of the banking industry and therefore the challenges discussed in the academic literature with regard to the service industry, its specific features and complex nature, should be addressed in the study. It was suggested in previous research studies that the level of customer involvement would be expected to be significant in service markets. In these markets the offer has minimal tangible attributes for differentiation from competitors, and therefore the role of intangible components is expected to be more important. The choice among alternatives can be challenging, and therefore the customer's perception of the service provider brand may produce an impact on the final choice among alternative providers.

1.7. Customer's bank selection decision

The determinant factors of the customer's bank selection decision have received less attention in the academic literature, when compared to a variety of more broadly focused studies on customer decision-making. The following represents the analysis of research findings, obtained in previous studies on bank choice. It is important to note that some of the research studies discussed above were conducted in specific country/cultural settings, or represent the opinion of specific segments of the market (e.g. when using only students or business customers as respondents). Therefore, the research findings obtained in these studies may not be entirely representative for the majority of bank customers. In further support to this point, Boyd et al. (1994) suggest that financial institution selection criteria importance changes across different geographic areas, and demographic characteristics of the population, and therefore research on bank customer decision-making should include a variety of geographical and demographical segments of the customers where important. Also, Edris (1997) concludes that bank management should be aware that some of the bank selection determinants vary from one segment of the market to another.

Table 1.1 summarizes information about research studies on the customer bank selection decision. For each research study presented in the table, key findings are identified (more important and less important attributes of bank choice), sample of respondents used is shown in terms of its geographic and some demographic characteristics, and the research methodology employed is outlined.

Table 1.1. Summary of findings of the research of key attributes of bank selection decision

Authors	Key findings on the determinants of bank selection decision	Sample of respondents	Research methodology
Anderson et al. (1976)	More important factors: Recommendations, reputation, availability of credit, staff friendliness, account charges Less important factors: Hours of operation, interest paid on savings accounts, new account premiums or gifts	Customers of various demographic groups in the USA	Determinant attribute analysis
Javalgi et al. (1989)	More important factors: Safety, high interest rate on savings, location, reputation, quality of service, low interest rate on loans Less important factors: Saturday banking, ease of qualifying for free checking account by maintaining a minimum balance	Customers of various demographic groups in the USA	Analytic Hierarchy Process
Khazeh and Decker (1992)	More important factors: Service fees, reputation, interest rates on loans, the time required for loan approval, friendliness of staff Less important factors: Effective advertisement, the availability of direct deposit, drive-in windows, the availability of financial advice, having federally insured deposits	Business school alumni in Maryland, USA	Determinant attribute analysis
Boyd et al. (1994)	More important factors: Reputation, interest charged on loans, and interest on savings accounts Less important factors: Friendliness of employees, modern facilities, and drive-in service	Customers of various demographic groups in the USA	Comparison of importance scores obtained for each variable
Thwaites and Vere	More important factors: Convenience of ATM location, special offers	College and university	Comparison of importance

(1995)	for students, service fees Less important factors: Not specified	Students in the United Kingdom	scores, factor analysis
Kennington et al. (1996)	More important factors: Reputation, fees, service and convenience Less important factors: Not specified	Individual customers in Poland	Qualitative research
Elliot et al. (1996)	More important factors: Fees, speed of problem resolution, convenience Less important factors: Personal relationship with bank, product scope and customisation	Individual customers in the USA	Trade-off analysis
Edris (1997)	More important factors: Size of bank assets, efficiency of personnel, help in financial emergencies, banking experience, friendliness of staff, reputation Less important factors: Effective advertising, interests on deposits, lending policy	Business customers in Kuwait	Determinant attribute analysis
Ulengin (1998)	More important factors: Loyalty programs, off-site ATMs, reduced waiting times at branches	Bank customers in Turkey	Conjoint analysis
Zineldin (1998)	More important factors: Friendliness and helpfulness of personnel, accuracy in account transaction management, speed of service Less important factors: Convenience of location, price, advertising	Business customers in Sweden	Comparison of importance scores obtained for each variable
Ta and Har (2000)	More important factors: High interest rate on deposits, convenient location, quality of service, self-banking facilities available, low banking fees Less important factors: Recommendations, special packages for undergraduate students and long operating hours	Undergraduate students in Singapore	Analytic Hierarchy Process

Table 1.1 shows that the following important attributes of customer decision-making are most frequently found across research studies:

- <u>Reputation</u> (Anderson et al., 1976; Javalgi et al., 1989; Khazeh and Decker, 1992; Boyd et al., 1994; Kennington et al., 1996; Edris, 1997)

- <u>Low service fees</u> (Anderson et al., 1976; Khazeh and Decker, 1992; Thwaites and Vere, 1995; Kennington et al., 1996; Elliot et al., 1996; Ta and Har, 2000)

- <u>Location</u> (Javalgi et al., 1989; Thwaites and Vere, 1995; Kennington et al., 1996; Elliot et al., 1996; Ta and Har, 2000)

- <u>Quality of service</u> (Javalgi et al., 1989; Kennington et al., 1996; Ulengin, 1998; Ta and Har, 2000)

- <u>Staff friendliness</u> (Anderson et al., 1976; Khazeh and Decker, 1992; Edris, 1997)

Also, <u>recommendations</u> (Anderson et. al, 1976) and <u>loyalty programs</u> (Ulengin, 1998) were found as influential factors in customer choice of a bank.

Decision-making factors such as <u>hours of operation</u> (Anderson et al., 1976; Ta and Har, 2000) <u>new account premiums or gifts</u> (Anderson et al., 1976), advertisement (Khazeh and Decker, 1992; Edris, 1997), <u>drive-in windows</u> (Khazeh and Decker 1992; Boyd et al. 1994), <u>modern facilities</u> (Boyd et al. 1994), <u>personal relationship with bank</u> and <u>product scope and customisation</u> (Elliot et al. 1996) were found to be not important for customers in their choice of banks.

However, previous research studies do not always produce the consensus on the set of factors important (and less important) for customers in their decision-making. Devlin (2002) points out that studies attempting to explain the choice of banks and their services provide valuable pointers, however, they draw conflicting conclusions. Indeed, <u>staff friendliness</u> was found important for customers in studies of Anderson et al. (1976), Khazeh and Decker (1992) and Edris (1997), however the study by Boyd et al. (1994) did not support these findings. <u>High interest rate on savings</u> was found in three research studies, outlined in the Table 1.1, as an important attribute of customer choice of banks, though Anderson et al. (1976) and Edris (1997) found this factor not important. Finally, the research findings of Anderson et al. (1976) about <u>recommendations</u> as important factor, were not supported by Ta and Har (2000).

In relation to bank mortgages, two factors were found to be important for customers when they chose their bank. These included <u>low interest rate on loans</u> (Javalgi et al., 1989; Khazeh and Decker, 1992; Boyd et al., 1994), <u>time required for loan approval</u> (Khazeh and Decker, 1992).

It is important to discuss the development of research methodology used in the previous studies of bank selection decision. Several researchers (Anderson, 1976; Khazeh and Decker, 1992) employed a similar technique for calculating the determinant attributes in their studies. The determinant attributes were identified out of the sample of attributes tested as the ones with the highest determinance score. The latter was calculated as a product of importance scores and difference scores. The importance score reflects the customer ranking of how important this attribute is compared to others, while the difference score identifies the perceived differences among the alternatives with respect to this attribute. The attributes are considered determinant if they have a high determinance score, which is obtained by multiplying each respondent's rating (score) of the importance of the attribute by the score for the degree of difference, and then computing the mean value.

Ulengin (1998) in his study used hierarchical information integration, and conjoint analysis, to identify customer preferences in the choice of a bank. Results of the study show the reliability of the hierarchical information integration method in understanding customer decision-making. The method of hierarchical representation of the customer's choice decision was also employed in the studies of Javalgi et al. (1989) and Ta and Har (2000). However, these studies were based on the Analytic Hierarchy Process (AHP) as the research methodology, and demonstrated the advantages of the AHP, compared to other methods for exploring the determinants of customer decision-making. Analytic Hierarchy Process is employed in the present research study to investigate the customer choice among alternative bank mortgage products. The advantages of AHP as a method for investigating the determinants of customer choice will be discussed in Chapter 3 of the study.

Boyd et al. (1994) in their research on the determinant factors of bank selection, found significant differences in criteria used by customers in their choice of bank, when customers surveyed belong to different demographic segments of the market. For instance, considering the customer groups with different marital status, quick service and hours of

operation appeared to be more important for divorced people than single or married. Customers with a relatively large number of people in the household (six or more) place more emphasis on location and do not rank such factors as reputation or availability of current accounts highly. Contrary to this group, the customers who belong to smaller size households rank interest charged on loans and availability of current accounts relatively highly. People with lower income tend to place more emphasis on modern facilities, location and availability of current accounts, while customers with higher income choose the bank, based on high interest on savings accounts, hours of operation and friendliness of staff.

Khazeh and Decker (1992) found that female customers perceive some attributes of bank choice higher than male customers. These attributes include friendly staff, interest on savings accounts, interest rate on checking account, and drive-in windows. However, the research by Boyd et al. (1994) does not identify significant differences between the criteria that are determinant for bank selection between male and female respondents. This conclusion is supported by Devlin (2002), who did not find significant differences between male and female customers in the criteria they use for the choice of the mortgage provider.

1.8. Research on the customer choice of mortgage products

Meidan (1984) emphasizes that it is challenging to define a banking product. The reason behind this challenge is twofold. First, each individual service constitutes a separate product; and second, the entire banking service constitutes a single product.

Bank product can be seen as a bundle of attributes and values. This may include tangible attributes such as costs, and intangible attributes such as bank reputation and recommendations. Collins (1989) argues that customer perceptions of the product represent the net impact on the customer of the product's benefits, image, advertising and other augmentations. Changes in the bundle of utilities perceived to form the product might either increase or decrease the amount of money the customer is willing to pay. Therefore, customer value may be assumed as the starting point in pricing products.

Aldlaigan and Buttle (2001) identify mortgages as a high-involvement product, and purchase of a mortgage product is associated with a significant degree of risk and effort. However, Talaga and Buch (1998) do not support this conclusion and argue that for some consumers, the choice of a mortgage is a high involvement decision for some, while for others it is a low involvement decision. Further support for this argument is presented by Devlin (1998), who argues that mortgages are generally considered amongst the simple products, available in the financial services market. This implies a relatively low degree of customer involvement in purchase. Devlin (2002) argues that the low degree of customer involvement, and a customer inclination to rely on advice rather than extensive information search, can be justified by the fact that the range of mortgages and institutions from which they can choose is daunting. As a result, many customers may not have the time or interest to search all options, which could help explaining reliance on advice.

Talaga and Buch (1998) further argue that as features of different mortgage products may vary, a customer may trade-off these features with each other. These researchers point out that purchase of a mortgage product may take the form of a compensatory decision model. Customers may see the mortgage as being the totality of the product offering and compare it to the totality of other product offerings. Trade-offs will necessarily be made in such a decision framework.

Despite the extensive coverage of mortgage market trends, features of mortgage products, related advertisements, and analysis presented in the mass media, the studies of the customer decision-making when choosing mortgage products are only rarely found in the research literature. Specifically, two published studies, being the work of Talaga and Buch (1998) and Devlin (2002), has attempted to explain the determinants of the customer choice of mortgage products. Talaga and Buch (1998) pointed out that previous research did not consider a key practical issue for the mortgage provider: how consumers make trade-off decisions among several mortgage variables, and how they prioritize among different mixes of these variables.

The study of Talaga and Buch (1998) found that additional costs (including application costs) were the most important factor in choosing mortgages out of the five factors tested, followed by type of mortgage (fixed or variable). At the same time, term of mortgage (15

years or 30 years) has been found least important. Also, it was found that knowledge of the mortgage provider was considered to be moderately important for customers when they were making a choice among alternative mortgages. The importance score for this variable, though, is lower than for other scores, obtained for the type of mortgage and term of mortgage respectively. The other important finding of Talaga and Buch (1998) includes the fact that borrowers do not necessarily choose mortgages according to the rational economic criteria.

It is necessary to note, however, that research design of Talaga and Buch's (1998) study did not involve the use of real brand names of mortgage providers, and was aimed at evaluation the importance of a strong brand name variable on the customer choice. Also, the research compared the perceptions of mortgage users versus non-mortgage users, and therefore it seems doubtful that reliable results on the important factors for mortgage selection can be obtained from customers who do not have any experience in choosing mortgages. The research did not include interest rate in the set of variables to be tested due to the design of the research study, and therefore the presumably high impact of interest rate factor on the choice cannot be directly evaluated from the study results.

Devlin (2002) explores customer choice criteria in the mortgage market in the United Kingdom. Professional advice was found to be the most important choice criteria, followed by interest rate, lending amount, relationship and loyalty. However, such factors as service quality, image and reputation of the mortgage provider were identified as being of lesser importance when it comes to customer choice. Devlin (2002) argues that if customers rely to a great extent on professional advice when choosing the mortgage, this puts in question suggestions in the previous research literature that mortgage selection is a high-involvement activity.

Interest rate was ranked the second most important decision factor in the study of Devlin (2002). The researcher pointed out that interest rate is a feature of service, which can be easily evaluated and compared prior to purchase, since the interest rate charge is generally understandable and explicit. The other important factor found, behavioural loyalty, implies that the customer is likely to get a mortgage from an institution with which the consumer has another account or has had previous dealings.

Factors, such as branch location did not appear to influence a customer's choice of mortgage. Devlin (2002) justify this finding by stating that customers are more likely to make more effort to search out a particular mortgage and/or provider, or professional advice, rather than just accept the institution which happens to be closest to them. This, according to Devlin (2002), may well be indicative of the fact that consumers judge the mortgage market to be differentiated more effectively than retail banking services market.

Similarly, the image and reputation of the mortgage provider, as well as the service quality were not found by Devlin (2002) to affect customer decisions. Devlin explained that such factors are likely to dominate when there is a lack of product specific criteria that can be searched for, understood and evaluated prior to purchase. However, for home loans such factors as interest rates and lending limits to individuals are searchable.

Devlin (2002) also found differences in choice criteria used by people in different social classes. Higher social class, higher household income, higher educational attainment and financial maturity may increase the likelihood of choosing an existing home loan provider for a new loan. However, customers who belong to lower social class, have lower household income, lower educational attainment and financial immaturity may stress the importance of branch location, choosing an "other account" provider, based on recommendation and professional advice.

The studies by Talaga and Buch (1998) and Devlin (2002) succeeded in identifying the determinant attributes of customer choice of mortgage products. However, the role of brand in customer decision-making is not explicitly identified.

The other variable among previous studies of mortgages is the choice of research methodology. Devlin (2002) acknowledged that one of the limitations of his research study is that the structure of the data did not allow for aggregation, for instance by using factor analysis. Also, communality between the number of results presented could lead to the suggestion that at least some of the analysis was superfluous. Finally, Devlin (2002) stated

that his study, being a cross-sectional study of choice criteria, may not provide an enhanced understanding of the process of consumer choice.

None of the existing research studies on customer choice of mortgages has used the Analytic Hierarchy Process to explain customer choice and the influential factors involved in it. The use of AHP as research methodology allows for identifying and ranking the determinant attributes of customer choice of mortgage. The advantages of the AHP in the relation to the objectives of present research are discussed in Chapter 3 of this study.

1.9. Scope and description of the bank mortgage market in New Zealand

The present research study considers customer choice of mortgage products in New Zealand. Therefore, the scope and trends and competitive situation in New Zealand mortgage market is of interest.

The New Zealand banking market can be characterised by a high degree of concentration and includes five major banks - ANZ, National Bank, ASB Bank Limited, Bank of New Zealand, Westpac Banking Corporation. National Bank was acquired in 2004 by ANZ Banking Group but continues to operate under their original brand name. Hongkong Shanghai Banking Corporation Limited, a high-profile international bank, is not included in the group of leading banks, since it is a relatively new player in the New Zealand retail market and has a small, yet growing, market share. The group of major banks is facing increased competition from three smaller banks – Taranaki Savings Bank Ltd (TSB), Kiwibank Ltd, and St George Bank New Zealand Ltd (trading as Superbank), who specialize in residential mortgage lending. Smaller banks have been playing a significant role in the retail banking market by adding to competition and delivering product innovation. Although these banks are small relative to the overall size of the New Zealand banking sector, with assets of only 2 per cent of the total, they have increased their share of banks' residential mortgage loans outstanding from 1 per cent in June 2002 to over 3 per cent in June 2005 (Financial Stability Report – RBNZ, 2005). TSB and Kiwibank are the only two banks in the market, which are New Zealand owned. Figure 1.1 represents the market shares of banks in New Zealand market in 2004.

Figure 1.1. Market shares of New Zealand Banks in 2004
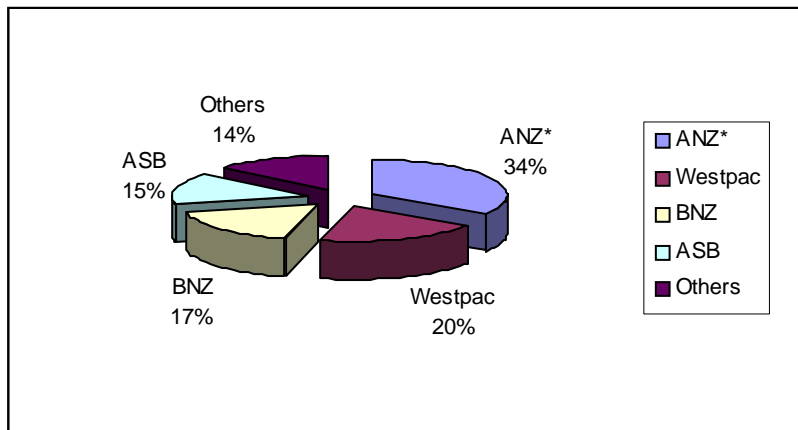
Source: Review – RBNZ (2005)

* Market share of ANZ includes the market share of National Bank, acquired by ANZ Banking Corporation in 2004

It is important to note that all banks in the New Zealand mortgage market face the increasing competition not only from other banks, but also from non-banking financial institutions.

A comprehensive analysis of the mortgage market in New Zealand is not available from the publicly available media sources. However, limited data can be analysed to identify major trends and general competitive situation in the mortgage market.

Chaston (2004) reports that residential mortgages are increasingly important to banks. More than half of their total loans and advances are in residential mortgages. This percentage is growing. For instance, in the eighteen months from December 2002 until June 2004 the bank's balance sheets have shown that lending on residential mortgages has grown by about +5% of total loans and advances.

According to statistics presented by a major research company (AC Nielsen NZ mortgage market, 2004) the mortgage market in New Zealand has the following characteristics:

- About 56% of the adult population of New Zealand adults are homeowners.
- Approximately 0.9 million people (25% of New Zealand population) have a mortgage on the home they live in, or on a holiday home.

- People aged under 35 are less likely to have a mortgage (22%) than they were in 1996 (32%). At the same time, 73% of people who are 35 to 59 years of age have a mortgage, which indicates an increase of 9% over 1996.

A recent analytical report, published by the Reserve Bank New Zealand, indicates that mortgage rates are currently relatively low and more attractive for customers, mostly as result of increased price competition in fixed rate lending. Large banks' net interest margins have come under pressure as competition has intensified, particularly in the residential mortgage lending market (Financial Stability Report – RBNZ, 2005)

Figure 1.2 shows the market shares of major New Zealand banks in the mortgage market in July, 2004. It is clear from Figure 1.2 that five main banks determine the competitive situation in the market. The conglomerate of ANZ/National Bank is an obvious market leader, followed by ASB, Westpac and BNZ. Other banks have a combined market share of slightly more than 5%.

Figure 1.2. Market shares of banks in New Zealand mortgage market in July, 2004

	Other banks	HSBC	BNZ	Westpac	ASB	ANZ/National Bank
Market share	2.6	3.1	15.9	20.4	22.5	35.5
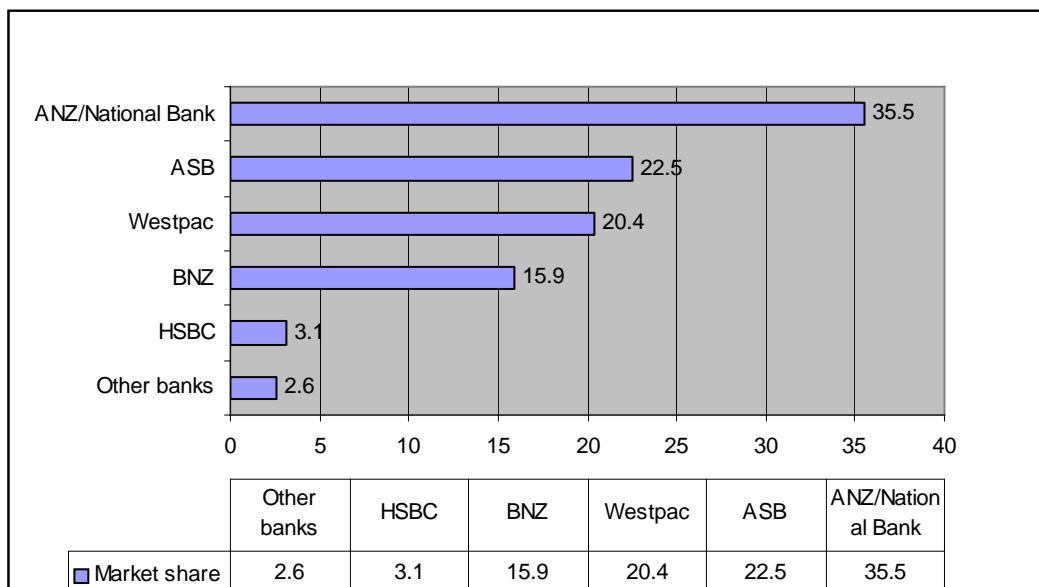
Source: Vaughan (2004)

Recent trends of the mortgage market, analysed in the media, indicate that the market share of BNZ continues to increase at a higher pace than the market share of other banks. The

bank's mortgage portfolio grew by $656 million to $17.51 billion during the quarter, lifting its market share to 16.34% at the end of June of 2005 (Ruth, 2005). This growth is attributed to the fact that BNZ has a strategy of attracting new customers by significantly reducing the interest rates on fixed interest mortgages.

1.10. Research on branding

Kotler (1991) defines a brand as a "name, term, sign, symbol, design, or combination of them which is intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competitors".

Aaker (1991) argues that the brand name represents the most important asset for the company, the basis of competitive advantage, and future earnings streams. Crimmins (1992) further argues that brand names enhance the value of products and are difficult for competitors to copy, and therefore brand names play a critical role in marketplace competition. At the same time, Aaker (1991) notes that the brand name is not always managed in a coordinated, coherent manner with a view that it must be maintained and strengthened.

Berry (1988) points out that the benefits of building strong brands may include the following:
- Strong brands generate consistent volume and revenue year after year;
- A strong brand commands a higher price and margin than does a weaker brand;
- Strong brands are more resistant to price competition;
- The customer can value strong brands over a longer period of time. Strong brands have strong values associations, which are relevant to the brand-customer relationship.

Keller (1993) identifies the following dimensions that distinguish brand knowledge and affect customer response: the awareness of the brand, favorability, strength, and uniqueness of brand associations in consumer memory. Brand awareness is associated with strength of brand trace in customer memory. The determinant factors for brand awareness are brand

recognition and brand recall performance. Brand image is defined by Keller (1993) as perceptions about a brand reflected by the brand associations. These associations are classified in three major categories - attributes, benefits and attitudes. The relationship among different dimensions of brand knowledge is illustrated graphically in Figure 1.3:

Figure 1.3. The dimensions of brand knowledge
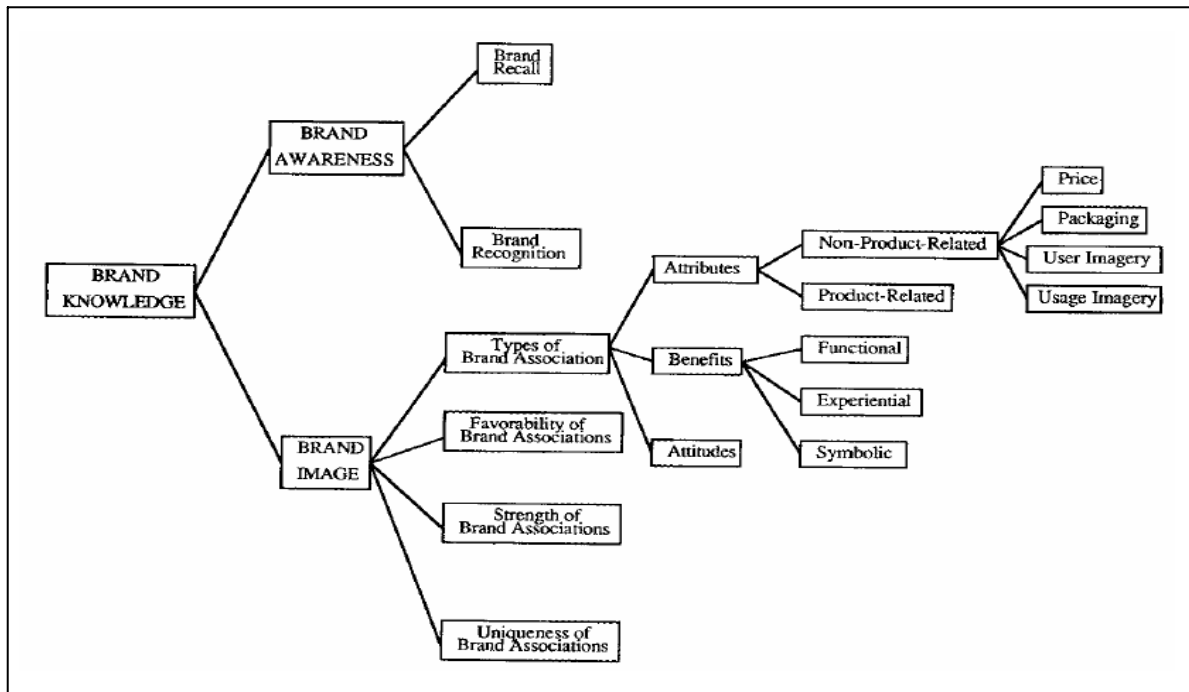
Source: Keller (1993)

Suppington and Wernerfelt (1985) identify a firm's brand name as a valuable asset that can greatly enhance the demand for firm's products. These researchers argue that extensive branding allows the company to reduce its overall advertising expenditures, but can produce confusion for customers if the branded products are not very similar, thereby reducing the demand for the products. The research of Suppington and Wernerfelt (1985) suggests that a branded product may convey information to customers that an unbranded product cannot. Also, a brand name may reduce uncertainty about the product characteristics.

Ghosh et al. (1995) argue that an important discussion question regarding branding is whether brand attitudes and preferences might be affected by how familiar consumers are

with a brand. Therefore, the degree of brand familiarity is likely to affect brand performance.

To sum up, the exploration of brand phenomena in marketing has received an extensive coverage in the marketing literature. The main issues evolve from the literature on branding include, but are not limited to the following: brand loyalty, brand management, brand equity and brand awareness. At the same time, the research question of the present study requires a more specific focus on the issues of brand value and it's measurement, the impact of brand on customer decision-making, and the challenges of branding in the service markets. Therefore, a critical review of previous academic studies exploring these specific research areas will be provided.

Brand equity and brand value

Brand equity is defined by Aaker (1991) as the added value that a brand name gives to a product. Similarly, Farquhar (1989) defines brand equity as the "added value endowed by the brand to the product". Turley and Moore (1995) point out that brand equity results from all the activities needed to market the brand and, therefore, it can be viewed in terms of the brand-focused marketing effects of those activities.

Keller (1993) defines brand equity as the condition under which the consumer is familiar with the brand and is able to recall favourable, strong and unique brand associations. Also, Turley and Moore (1995) argue that the underlying basis of brand equity is consumer memory. When the consumer thinks about a product, or recognizes a problem, a "spreading activation" process connects node to node and determines the extent of retrieval. The factor, which mediates which and how many nodes are activated, is the strength of association between the nodes. For instance, once the consumer thinks of the need for a new car, specific information most strongly linked to the new car model will come to mind. The information will include features like price, styling, consumer's past experience with it, word of mouth, and other information.

Lassar et al. (1995) point out that conceptually brand equity may consist of two components – brand strength and brand value. Brand strength is determined by the brand

associations held by a customer, while brand values can be seen as benefits that accrue when brand strength is leveraged to obtain superior current and future profits. Lassar et al. (1995) evaluate customer-based brand equity as the customer response to a brand name and that it represents favourable, strong and unique brand associations in the memory of the customer. Brand equity can be described as the enhancement in the perceived utility and desirability a brand name confers on the product or the customer perception of the overall superiority of the brand compared to other brands.

Lassar et al. (1995) conclude that customer-based brand equity can have five underlying dimensions: performance, value, social image, trustworthiness and commitment. The description of each dimension is provided in Table 1.2:

Table 1.2. Five components of brand equity

Component	Description
Performance	Critical for the brand evaluation, as if the brand doesn't perform its functions customers will not buy it.
Social image	Value-adding component due to the social reputation associated with owning and using the brand
Value	Customer's choice of brand depends on perceived balance between the price of the product and its utilities. Higher price value can enhance brand equity
Trustworthiness	Higher value is placed on the brands customers trust
Identification	Customers often come to identify with some brands and develop sentimental attachment with those brands

Source: Lassar et al. (1995)

Lassar et al. (1995) point out that customers use brand name to infer quality of an unfamiliar product, because the brand name is built on the associations with other quality products carrying this name. Researchers conclude that companies have to manage all the elements of brand equity at the same time. The results of the study show that if customers evaluate a brand to perform well, one can also expect the value of this brand or its trustworthiness to be higher. However, if the brand scores low on a single dimension (e.g. social image), consumers do not evaluate other dimensions highly.

Also, Lassar et al. (1995) emphasized that brand equity was a concept, which can be measured only in comparison with other brands in the same category. In the marketing literature, both financial and consumer-related methods are used to measure brand equity. For instance, Simon and Sullivan (1993) suggested two financial techniques for the measurement of brand equity. The first technique is based on an analysis of movements in stock price to capture the dynamic nature of brand equity. The other technique is based on the calculation of brand replacement, or the amount of funds needed to establish a new brand.

Some researchers argue, however, that brand equity is determined by the customer (Crimmins, 1992), and therefore the customer-related methods can be used to evaluate it. For instance, Aaker (1991) uses consumer preference ratings for a branded product versus a non-branded product to establish brand equity.

Kim (1990) argues that there is no universal formula for assessing the equity of the brand. Any attempt to measure brand equity should begin with the acknowledgement that a brand exists in the mind of the customer, and is not captured by the physical properties of the product. The brand can be seen through the rational, emotional, sensual realms of the customer mind. Therefore, to quantify brand equity we need to analyze all the above-mentioned dimensions of the human mind, as well as the relative strength of these dimensions. Kim (1990) suggests that the criteria for measuring brand equity may include:

- Extensiveness (the total number of people who have thoughts, or feelings evoked by the brand)
- Comprehensiveness (the ability to generalize the evoked thoughts and feelings of customers about the brand)
- Intensiveness (the strength of thoughts and feelings evoked by the brand)

Aaker (1991) identifies the following four dimensions of brand equity: brand loyalty, name awareness, perceived quality and other brand associations. These dimensions are suggested to characterize the brand equity. Contrary to this suggestion, Farquhar (1989) argues for a direct approach of measuring brand equity, through assessing the value added by the brand

to the product. Crimmins (1992) argues that commitment to an individual brand results from the perceived value added by the brand name. The greater the value added by the brand name, the better the chances that preference for that brand will survive the lower prices and promotions of competing products. Perceived brand value, therefore, is a key to the difference between what it costs to make and distribute the brand and what consumers are willing to pay for it. Also, Winters (1991) suggests that brand equity contains the value added to a product by the associations and perceptions of a brand name for the customer.

To summarize the discussion presented here, Calderon et al. (1997) identify two major sets of theory relating to brand value. Firstly, one group of researchers identify brand value as a set of concepts, which the customer links with the brand related product. This line of research is based on analysis of the assets, which constitute brand values. Secondly, another group of researchers argues that brand value is an intangible asset, which reflects the company's financial results. The brand in this perspective is an object to be transformed in order to generate profit.

Measurement of brand value

The effectiveness of brand management, as suggested by Crimmins (1992) relies on a proper measurement of brand value. Therefore, the justifications for measuring brand value can be numerous. Calderon et al. (1997) suggest that brands are bought and sold, and therefore have to be valued. Consequently, any investment made to enhance brand value has to be justified. Hence, quantification of brand value is a core element in the development of new products.

Crimmins (1992) emphasized that the attempt to measure value added might have three dimensions from the customer point of view:

- The amount of value added by the brand name in a category
- The breadth of the added value, that is, the range of product categories in which the brand name can add value
- The content of the added value, that is, the specific qualities, which are implied by the brand name. These qualities, which are invisible at the time of purchase (such as

reliability, rich lather, or masculine personality), are the reason why the brand name adds value.

Calderon et al. (1997) argues that any attempt to measure brand value meets with two problems. The first problem is that brand value must be evaluated from both the company's perspective and the customer's perspective. While from the company's perspective, different quantitative variables can be used (profits, market share, price differentials), with the consumer; the variables to be quantified are generally qualitative in nature, such as associations, preference and satisfaction. The second problem is the intangible character of this asset, which makes it difficult to apply traditional accounting valuation methods. It can be argued that products are goods or services that the firm generates, while the brand is what the client buys; they only exist in their mind as a group of thoughts and sensations associated with the product, and give it a meaning that is materialized in the behavior of the purchase.

Methods of evaluating brand value, according to Calderon et al. (1997), include marketing methods, directed to analyzing consumer related aspects, as well as financial methods, which can be used to provide an estimate of a brand's economic value. The following is a brief explanation of methods of brand evaluation, provided by Calderon et al. (1997):

Financial methods
- Cost-replacement method (Simon and Sullivan, 1993), which implies estimating the cost of establishing a comparable brand;
- Stock exchange movement analysis, which measures the use of share price as a basis for evaluating the asset value of the brand. (e.g. Simon and Sullivan, 1993);
- Brand valuation through historic costs and the valuation at market price of similar brands;
- Royalties method which evaluates the profits according to the royalties to be paid in the case of the brand not being owned;
- Timed accounting method that measures the value of the trademark by updating the cash flow it has generated (Farquhar, 1989).

The advantage of financial methods of brand value calculation is the relative ease of application, and the ready availability of information needed to calculate value, such as balance sheets, costs, market capitalization, etc.

Calderon et al. (1997) suggest that certain important factors, such as loyalty, perceived quality, or identity are not possible to estimate using financial methods of brand valuation. These factors are reflected in the behavior of the consumer with regard to the brand. Therefore, the use of marketing or customer-based methods can provide a more objective approach to the brand value calculation.

Marketing methods
Marketing methods of brand value calculation include the following:
- Primed prices method. Brand value assets, such as awareness, perceived quality, identity and loyalty, have the potential to provide the brand with a primed price (Holbrook, 1992). Primed prices related to the brand can be measured when observing market price levels and through customer research. The brand value in any given period can be calculated by the product of the added price and the units sold. The cash flows, deducted over an acceptable length of time, could approximate brand value;
- Brand value based on future income. Some research studies, including Aaker (1991), Aaker and Alvarez del Blanco (1994), argue that the best measurement of brand value comes from deducting the current value of future and attributable incomes from brand value assets;
- Conjoint analysis, which considers the utility derived from the physical attributes of the product, the utility derived from the presence of the brand and the utility resulting from interaction between the brand and product attributes. The monetary value of a brand name could therefore be calculated by developing the judgment, relative to other relevant attributes in the class of products;
- Hierarchical integration of information, developed by Park and Srinivasan (1994) enables the simultaneous study of the influence of brand and its components on consumer preferences. Park and Srinivasan (1994) separate brand value into two components: one based on distortions, caused by the brand to consumer perceptions

of product attributes; and the other which is not based on those attributes. In this method, it is assumed that individuals categorize the attributes according to certain constructs, integrating information on the attributes to form their impressions of different alternatives with respect to these constructs.

The challenging nature of the brand value calculation, when intangible components of the total product value need to be assessed, may explain the reason why none of the techniques discussed can be used as the universal method. Each of these methods can be applied to a specific business situation, but the more comprehensive technique for the calculation of brand value, applicable to a wide variety of situations, is yet to be developed.

1.11. Impact of brand on the customer decision-making

Berry (1988) points out that every brand should have a unique idiosyncrasy, since some distinguishing mark or characteristic makes it easier for people to talk about brand and to remember it. Bhat and Reddy (1998) emphasize that a clear and consistent image-building campaign has long been a cornerstone of brand marketing practice. Therefore, developing, communicating, and maintaining a brand's image is a critical factor for the long-term success of a brand.

Park et al. (1986) suggest that a brand concept is either functional or symbolic, thus being associated with customer's functional or symbolic needs respectively. The functional concept is related to brands that satisfy customer's functional or product-related needs, while the symbolic concept is associated with enhancing self- or social esteem. Bhat and Reddy (1998) developed the scales to access a brand's symbolic and functional association with customers. They suggest that brand symbolism and functionality are separate phenomena. Thus, brands can be successfully positioned as both symbolic and functional.

Heilman et al. (2000) identify three brand-organized stages of purchasing a new product. First is the information collection stage that focuses on low-risk and familiar brand names. The second stage includes more extensive information collection, when the search is extended to lesser-known brands. A third stage comprises information consolidation, which leads to preference towards those brands that provide the greatest utility. These researchers

argue that the customers experience in purchasing the product is negatively correlated with the perceived risks in purchasing less familiar brands and is positively correlated with the probability of purchasing one of these brands.

Earlier in the research literature, Lussier and Olshavsky (1979) conclude that the strategy by which subjects acquire the information about brands is influenced by the number of brands presented, as well as the amount and format of information presented for each brand. Therefore, the brand choice strategy is influenced by the external task environment. It was found in the study that when the number of alternatives is small, the customers tend to use a compensatory strategy when evaluating alternatives. As the number of alternatives increases, customers may use a non-compensatory strategy to eliminate unacceptable alternatives first. Later however a compensatory strategy is used to evaluate the remaining alternatives in the decision-making process. Also, in choice situations where both products and brands are familiar to the customer, customer knowledge, beliefs and attitudes influence the selection process. Moore and Lehmann (1980) provide additional support to this argument, suggesting that consumers acquire less information when brand names are present.

Aaker and Keller (1990) suggest that when a customer's motivation and ability to process information is low, they might rely on perceived brand quality and brand familiarity in making brand evaluations. High involvement implies high risk, and therefore consumers may need the reassurance provided by choice of established brand name.

1.12. Issues of branding in service industries

The Findings of Arora and Stoner (1996) support the assertion that branding is equally important for service companies. Researchers suggest that in the specific setting of service marketing, the name of the service company is expected to carry certain benefits similar to those associated with a brand name. Thus, name recognition in service marketing may convey perceptions of quality and affect the choice of service. Also, Retzloff (1989) found that for an insurance company, image was an important determinant of success, with respondents rating the importance of image ahead of price.

Arora and Stoner (1996) found that in service industries customer intentions to switch were influenced by name familiarity. In particular, respondents were more likely to use the high name familiarity insurance company than the company with a less familiar brand name. Davies (1996) argues that since financial services are purchased infrequently, many consumers are inexperienced and unfamiliar with the competing institutions and their brands.

Blankson and Kalafatis (1999) emphasize that the positioning of services is more difficult than the positioning of physical goods. Berry (1986) suggests that the company name works as the surrogate brand for many services, in the absence of tangible products on which to affix a brand name. However, Berry (1986) argues that the challenge in services branding can be a significant marketing advantage to companies, which manage to become power branders. Four characteristics are proposed to identify power branders: (1) the company brand can be easily distinguished from competitors, (2) the brand communicates the company's "reason for being", it's relevant and meaningful for the customers, (3) the brand has a tangible quality, and call be easily recalled and depictured in the mind of the customer, and (4) the company effectively links specific brands to each other, and to the main company brand.

De Chernatony and Segal-Horn (2003) point out that marketers, when interpreting service brands as promises, draw heavily on the classical product branding model, emphasising raising customer expectations through advertising. For services they argue, it is difficult to ensure consistent standards to meet such raised expectations, and therefore quality shortfalls or gaps may occur. The study by de Chernatony and Segal-Horn (2003) identifies three criteria important to the success of service brands: focused position, consistency and values.

Krishnan and Hartline (2001) attempt to assess brand equity in the context of services marketing and to compare it to brand equity for goods. The results of their study show that brand equity is less important for services than goods. Krishnan and Hartline (2001) conclude that due to the inherent differences between goods and services, the concept of brand equity may require some adaptation for extension into the context of services marketing

De Chernatony and Riley (1999) argue that for services, as well as for goods, differentiation should not just result from a name or logo, but from a well-defined set of consumers' perceptions. The researchers argue that conceptualizing "the brand" as the link between the set of values, created by the company, and the way these are perceived by consumers, applies to both physical goods and services. Strong identity and reputation of the "company as brand" is suggested as a possible way of enhancing consumers' perceptions and trust in the firm's range of services and as the basis for differentiation.

However, as indicated by De Chernatony and Riley (1999), many financial service firms have overlooked the extent to which customers lack an understanding of financial products. The companies may rely on their brand names alone to differentiate themselves, rather than making their brands a set of values, which act work to simplify customer choice.

1.13. Summary

This chapter discussed the findings of existing research on the issues of customer decision-making, customer values, branding, brand value and its calculation. An analysis of the research literature showed that the problem of customer choice should be seen as complex and multi-attribute problem. To understand the underlying mechanism of customer decision-making, the attributes of choice decision should be identified, and the relative importance of each attribute should be evaluated. The major challenge for the researchers is to estimate the extent to which customers evaluate the attributes of choice in a rational, systematic processing mode, and the extent to which cognitive or heuristic modes are employed.

Branding is emphasized as having an important role to play in customer decision-making. It is suggested that customers use brands as cues to evaluate and compare products, hence reducing the risk and effort in the purchase decision. This may be especially true in the case of a service industry, due to the specific characteristics of services. A wide variety of methods are used to evaluate brand value, however a more comprehensive method, applicable to a wider range of situations, is required.

The main issues and gaps in research knowledge, identified from the existing research literature, will be addressed in the following two chapters, which explain the research design for the present study (Chapter 2), and the research methodology used (Chapter 3).

CHAPTER 2. RESEARCH DESIGN

2.1. Introduction

The following chapter outlines the research design of the study, based on an analysis of the research literature, presented in Chapter 1. The objectives of the study will now be identified. The research question and its importance is then explained, and two research hypotheses are stated.

2.2. Description of the research problem

Javalgi et al. (1989) emphasize that many decision makers in financial institutions find it essential to obtain information from customers, in order to identify the degree to which various product/service characteristics are important, and how they influence customer choice decisions. The key aspect of success in financial services marketing is the ability to develop and implement customer-oriented marketing strategies based on customer preference.

The focus of this research study is on the evaluation of brand value, and the relative role of the brand among other attributes of customer decision-making. The research attempts to evaluate the extent to which the bank's brand is important for customers when they choose among alternative mortgage products.

The issues of branding have been extensively discussed in the marketing literature, though such issues as the impact of brand on the customer decision-making have received less attention in recent research. The following study attempts to address this gap. The review of existing literature reveals that marketers use a wide variety of methods for brand evaluation, often contradictory with each other in terms of results obtained. Brand value calculation poses a challenge, as various tangible and intangible factors need to be considered. It is important therefore to design more comprehensive methods, which can to be used in a wider range of marketing situations.

To summarize, the objectives of the present research study can be described as:

- Identifying the determinant attributes of bank customer decision-making when making a choice among alternative banks (mortgage providers);
- Evaluating the relative impact of brand-related and non-brand related factors on the customer choice of mortgage supplier.

2.3. Research design

The total value of product for the customer can be calculated as the sum of the product (tangible) component, and brand (intangible) component. Therefore, to calculate the value of the brand we would need to calculate the value of the product itself, and then deduct this value from the total amount the customer is willing to pay for the product.

It can be assumed that the choice among alternatives is a function of customer perception of both product and brand. Therefore, the research design involves the random selection of bank mortgage products, presented to the respondents for evaluation and comparison. If the product is randomised, then we can assume the choice to be the function of the brand alone. As the tangible component of the total product value will now be equal to zero, the intangible component involving the brand can now be measured.

Brand equity can be estimated relative to other brands in a given set of alternatives. Therefore, for the purpose of this study, one of the mortgage products presented to respondents involves a dummy (non-existing) brand - Zak Bank. Hence, the relative preference scores of a mortgage product, branded as Zak bank, will be compared with the scores of the products related to brands of existing New Zealand banks. If the sets of preference scores, obtained for different banks, are homogeneous, it may indicate that the brand has no significant influence on customer decision-making.

The other focus of the present research study is that the research attempts to identify which attributes are determinant when customers select a mortgage supplier. Khazeh and Decker (1992), in their research on the bank selection decision, argue that if a certain characteristic Y is viewed by consumers as important, yet there is little perceived distinction among

banks in this regard, this characteristic may not be a decisive factor in the bank selection process. On the other hand, if characteristic Z is viewed by consumers as being only of moderate importance, but performance with respect to this characteristic varies widely among institutions, this could be a critical factor in choosing between banks. Khazeh and Decker (1992) further argue that whether the specific attribute is determinant for bank selection is a function of both the importance of the attribute, and the perceived degree of dissimilarity among institutions with respect to that attribute.

The same method of identification of determinant attributes for customer choice is employed by Armacost and Hosseini (1994) in their study. The present research study attempts to critically replicate the method of Armacost and Hosseini (1994) in relation to the customer choice among alternative mortgage providers. The study will employ the Analytic Hierarchy Process as the main research methodology. AHP represents a ratio-scaled method for evaluating multiple attribute alternatives, and is especially useful when at least some of the decision-making attributes are intangible. Using the AHP methodology, the decision problem of customer's choice of mortgage product is described as a hierarchy of determinant attributes affecting the decision. The preferences obtained for each decision-making attribute will be synthesized into overall rankings of the alternatives. Next, the determinant attributes of customer choice will be identified. More detailed description of the research methodology used in the study is provided in Chapter 3.

2.4. Importance of the research question

Sheth et al. (1999) emphasize that for marketers it is of crucial importance to understand the decision process the customer goes through. Understanding the process helps marketers in organizing marketing efforts in accordance with the customer's decision-making imperatives. Proper identification, evaluation and ranking of the determinant factors of customer decision-making can help marketing executives to design products and services they offer more effectively, as well as to identify more efficient ways of distribution and promotion of products offered. Javalgi et al. (1989) further argue that it is critical for decision-makers in the financial services industry to develop customer-oriented strategies, based on the analysis of customer preference.

Talaga and Buch (1998) point out that previous research on mortgages focused mostly on the dynamics of the interest rates, which does not explain the decision-making process for buyers (which factors are important to consider when choosing the mortgage), or lenders (how they can differentiate the product to maximize sales and profits). While prices for mortgage instruments offered by lenders may be equal in financial terms, the perceptions of borrowers is that they are not equivalent. This lack of perceived equivalence can be used by lenders to lead borrowers to choose one instrument over another. Talaga and Buch (1998) conclude that further research on the issues of mortgage choice should focus on why borrowers choose one mortgage instrument/feature over another. The present study aims at identifying and classifying the most influential factors, affecting the customer choice of mortgages, and, therefore, addresses this gap in the research literature.

It can be assumed that bank marketers may use the results obtained in the present study to understand the amount customers are willing to spend on the brand and, as a consequence, how effective is the total expenditure on brand advertising in the mortgage market.

2.5. Research hypotheses

To address the objectives of the research stated above, two research hypotheses will be tested, as described below.

Value of marketing offer to customer or decision-maker is a function of product and brand plus the allowance for statistical discrepancy:

Value = f (product, brand)
Value = f_1 (product) + f_2 (brand)

If the product is randomized and, therefore, the product component of value is equal to null, then it can be assumed that the value of the marketing offer is equal to the value of brand plus statistical discrepancy (Ə)

Value = 0 + g (brand) + Ə
Value = g (brand) + Ə

Assuming this, the following hypothesis can be tested in the research:

H1: Brand has no significant impact on customer choice among alternative mortgage providers

Hypothesis H1 will be considered true if the research study reveals that relative scores (weights) for each individual bank come from the same population. In this case the sets of relative weights for banks, including a dummy brand (Zak bank), are homogeneous and therefore the preference scores of non-existing brand (Zak bank) are not significantly different from that of the existing brands.

The next research hypothesis (H2) attempts to compare the relative impact of "brand" related, intangible attributes (such as reputation, soundness, recommendations) and product" related, tangible attributes (such as interest rate, borrowing limit, application costs etc.) on the customer's choice. The hypothesis will test which group of attributes are determinant for the customer decision to choose mortgage product.

H2: "Brand" related attributes are dominant in the customer choice of mortgage products

Hypothesis H2 will be considered true if the research study proves that determinant scores of "brand" related attributes of customer decision-making are higher than determinant scores of "product" related attributes. The selection of brand-related and product-related attributes to be tested in this study is explained in Chapter 4.

CHAPTER 3. RESEARCH METHODOLOGY

3.1. Introduction

The following chapter describes the research methodology employed in this study. The first stage of the research involves use of the nominal group technique. The process of conducting the nominal group session is explained. The next stage of the research study involved use of the Analytic Hierarchy Process (AHP). The principles of AHP methodology are described in this chapter. Specifically, the description is focused on the advantages of AHP in relation to the study objectives. The disadvantages of this research methodology are discussed and possible ways to minimize their negative impact on the study design and results are referred to. The chapter further describes the process of AHP hierarchy development, prioritization of the elements in the hierarchy, and calculation of relative weights for attributes, subattributes and the alternatives. The use of the AHP method to identify the determinant attributes of customer choice is also described.

3.2. Nominal group technique

Prior to developing the research questionnaire, we need to identify those factors affecting the customer choice of mortgage supplier. Therefore, the nominal group technique was used to specify these factors, and the nominal group session was designed. When the attributes/criteria of mortgage products choice are identified, they are included in the research questionnaire and then tested in order to find out which attributes are determinant for customer choice.

Armacost et al. (1999) emphasized that group decision-making can take a structured or non-structured format. The first, being a structured format (e.g. focus group) involves significant interaction and discussion between group members, with an overall goal of providing a consensus decision. The second type of format involves non-interacting decision-making, where various types of methods can be employed, for instance Delphi method. The Delphi method incorporates collecting individual opinions in order to reach the consensus with no direct interaction being employed. The Nominal group technique

involves a certain amount of feedback in order to clarify the opinions of participants, and uses voting system to reach a final decision.

The Nominal Group Technique was described by Delbeque et al. (1975) and has been widely used in academic research studies, as well for marketing research. As noted by Morgan (1988) research in marketing is likely to search for emotional and unconscious motivations of customers, or other decision-makers, and often does not fit well with survey research, which involves a structured questions format.

Nominal group research involves an organized collection process, and then summarizing the opinions within a group of individuals on a specific topic. The main advantage of using a nominal group is the ability to obtain several different perspectives from people about the same topic.

A nominal group session involves an organized discussion and collective activity/effort to find a solution to the research problem. Unlike interviewing, nominal groups involve a significant amount of interaction component and the attempt is made to find the prevalent common opinion among controversial opinions discussed. Group interviewing, on the contrary, puts the emphasis on questions asked by the researcher and responses obtained from the respondents, without attempting to summarize the opinions discussed. The other important feature is that nominal groups involve a step-by-step procedure, while the interview process can be modified in terms of time, procedure, sequence and nature of questions asked, within the process. The level of insight and the output produced vary significantly between the nominal group and group interviewing. The nominal group session may reveal more specific, and deeper clarification of issues discussed, than the more formal face-to-face interview methods.

The aim of the nominal group is to identify respondents' feelings, experiences and reactions. They are independent of opinions, to a great extent influenced by the group or social setting, and are more likely to be revealed through the process of group decision-making, used by the nominal group technique. The environment of group decision-making also may help the participants to reconsider their own understanding on various points, as they consider other opinions being expressed. Morgan (1988) concludes that nominal

groups elicit information efficiently, and are useful for identifying the most important aspects of the issue discussed.

Possible disadvantages of Nominal Group Technique should not be neglected. The success of the nominal group session largely depends on the interpersonal and leadership skills of the nominal group moderator. Morgan (1988) argues that the moderator of the nominal group has less degree of control over the output of research data, compared to individual or group interviewing. Other disadvantages include the need for careful and time-consuming preparation. To prevent bias in research results the assurance should be made that participants will have their own experiences dealt with when the topic is discussed. Morgan (1998) further argues that the participants in the nominal group should be as heterogeneous as possible in terms of gender, age, and occupation, as the larger diversity can have a positive impact on participants' contribution.

Kreuger (1988) emphasizes that nominal groups can be used efficiently at the preliminary or exploratory stages of a research study. Also, Powell et al. (1996) point out the ability of a group research session to be used to generate research hypotheses. Various researchers (Morgan 1988, Powell et al. 1996, Kitzinger 1994, among others) recognize the potential of a nominal group for developing research questionnaires. Nominal Group Technique can also be applied to develop dimensions of the problem, or to identify criteria for evaluating the solutions to the problem (Armacost et al., 1999).

3.3. Nominal group session: a description of the process

The aim of the nominal group session conducted prior to developing research questionnaire was to identify the attributes/influential factors associated with the choice of a mortgage supplier.

Participants joined the study on a voluntarily basis. The selection of participants was made by approaching postgraduate students and staff members in Faculty of Business, Auckland University of Technology and asking them if they currently use or have a recent experience in using bank mortgage products. Those who satisfied these criteria were invited to participate in the nominal group session. All necessary information was provided via an

Information Sheet that was handed out to potential participants. Those who agreed to participate were asked to provide consent to participation in the research. To ensure that the privacy of respondents was protected, no identifying information was collected about respondents.

Five people with mortgage experience were selected for an initial nominal group session. The smaller number of respondents, as suggested by Delbeque et al. (1975), may help in obtaining clearer results. Armacost et al. (1999) explain that contrary to the Delphi method, the nominal group technique is limited to small size groups, since the amount of workload for facilitator and participants increases significantly as the group size increases.

The nominal group session was conducted in five stages, in accordance with a procedure recommended by Delbeque et al. (1975). The session time was approximately 1 hour 20 minutes.

The nominal group session began with the presentation of the topic: "List those attributes/factors that affect your decision in choosing a provider of mortgage products". The participants were given time to write key ideas silently and independently on a sheet of paper. Next, the participants were asked to mention in a random order one idea that they had written down. The moderator recorded that on a flip chart visible to all participants. This procedure was repeated until members had stated all their items. The moderator reviewed the list and eliminated duplicates. Discussion with the participants was held to ensure that all ideas on the flip chart are clearly understood by all participants. Finally, the relative importance of each item was established through voting. The results of the nominal group session are described in Chapter 4 of the present study.

3.4. Analytic Hierarchy Process

The present study aims at identifying the determinant attributes of bank customer choice of mortgages. The research methodology chosen to address this objective is the Analytic Hierarchy Process (AHP), a decision-support method, designed to deal with complex multi-attribute decisions. The Analytic Hierarchy Process is a research methodology, which can be applied for structuring, measurement and synthesis of factors or elements that affect

decision-making. AHP involves decomposition of a complex and unstructured research problem into the organized set (hierarchy) of components. AHP was developed by Thomas L. Saaty (see Saaty 1980, 1982 for the conceptual AHP background).

AHP is based on ratio-scale measurement, and therefore can be applied to research problems where interval-scale measures are not appropriate. The other important feature of the AHP method is the ability to provide the ratio-scale measures for both objective and subjective factors. The ratio-scale priorities are calculated by eliciting pairwise comparisons.

Saaty (1980), the developer of the AHP methodology, concludes that the problem of decision making is concerned with weighting alternatives, all of which fulfill a set of desired objectives. The problem is to choose that alternative which most strongly fulfills the entire set of objectives. The numerical weights for alternatives are to be calculated with respect to sub-objectives, and then for sub-objectives with respect to higher order objectives. The weights should be meaningful for allocating resources and they should be similar to what an economist or a physicist may obtain using his methods of measurement. Thus, Saaty (1980) concludes that the process of weighting should produce weights or priorities that are estimates of an underlying ratio scale.

The basic step involved in the AHP process, regardless of the nature and scope of the research problem, are the following:
- (1) Constructing a decision problem as a hierarchy of determinant attributes;
- (2) Prioritisation of elements in the hierarchy
- (3) Calculation of results

Saaty (1980) recommended the following approach to the Analytic Hierarchy Process:
- Defining the problem and specifying the solution desired.
- Structuring the hierarchy of determinant factors for decision-making.
- Constructing a pairwise comparison matrix, which evaluates the relative impact of each element to the related element in the upper level. The pairwise comparisons among elements are made at the same level.

- Hierarchical structure is used to weight the eigenvectors by the weights of the criteria. The sum of all weighted eigenvector entries corresponding to each element is calculated.

- The entire hierarchy is checked for consistency. An overall inconsistency ratio of 0.1 and lower is normally considered to be acceptable for a decision.

3.5. Advantages of AHP in the relation to the study objectives

Saaty (1980) points out that the Analytic Hierarchy Process simplifies the cognitive demands placed on decision-makers by restricting the uncertainty (involved in the choice from multiple options), to pairwise comparisons among these options with respect to the decision-making criteria. Javalgi et al. (1989) further argued that the AHP provides bank managers with the ability to integrate the multi-attribute preferences of customers using a hierarchical model to determine the bank's relative position in the marketplace.

AHP has been successfully applied in a number of research studies in the area of customer choice. These studies include, among others, Bahmani et al. (1986), Armacost et al. (1990), and Armacost and Hosseini (1994). Also, AHP has been applied to the customer choice of banks, for example Khazeh and Decker (1992), Javalgi et al. (1989).

Davies (2001) argues that one of the strongest advantages of the AHP is the ability to compare alternatives in the absence of any standard scales for measurement. Therefore, the judgments made may involve tangible and intangible data, logic and feelings, quantitative and qualitative factors, all at the same time.

The advantages of the AHP compared to other research methods are summarized in the Table 3.1.

Table 3.1. The advantages of AHP in comparison with other research methods

Advantages of AHP	Compared to the following methods	Research study	Comment
The ability to accommodate multi-criteria decision making	New Product screening	Calantone et al. (1999)	Also, the ability of AHP not to rely on historical data was identified by Calantone et al. (1999)
Trade-off between qualitative and quantitative data	Linear Programming methods	Dyer (1990)	AHP was applied in the study of Dyer (1990) together with linear programming to address the gaps of the latter method
More precise identification of the determinant attributes (e.g. in customer decision-making)	Direct dual questioning (DQDA)	Armacost and Hosseini (1994)	Determinant attributes have the ability to determine a given set of alternatives. Both AHP and DQDA identify these attributes, though AHP uses reference points with pairwise comparisons to identify the importance of the attributes while DQDA considers all alternatives simultaneously. The method of Armacost and Hosseini (1994) is employed for critical replication and extension in this research study
Doesn't require the calculation of utility	Conjoint analysis	Javalgi et al. (1989)	AHP uses pairwise comparisons to estimate preferences at each level of decision process and therefore does not require the explicit estimation of the utility function
Allows more attributes to be considered at the same time	Conjoint analysis	Scholl et al. (2005)	The decision problem considered in the present research involves a significant amount of attributes and sub-attributes
Lower complexity for respondents in making pairwise comparisons	Conjoint analysis	Scholl et al. (2005)	Less complexity can help to reduce time, effort and cost of the research

Conjoint analysis is the main alternative to AHP in solving multi-attribute decision problems. Scholl et al. (2005) argue that when a relatively small number of attributes and attribute levels are considered, the conjoint analysis has relative strengths over AHP as it requires less comparisons and therefore gathers more information per comparison. Scholl et al. (2005) further argue that conjoint analysis allows for fewer, but more complex comparisons between alternatives or criteria. Having more attributes and levels of attributes makes the application of conjoint analysis less practical, because the interview expenses

and the cognitive burden for the decision-makers are increased. In the case of AHP, considering many attributes is possible whenever they can be arranged properly within a hierarchy. This point is supported by Mulye (1998), who argues that in studies with eight or more attributes, AHP should be the preferred method. The traditional conjoint method loses its appeal when a large number of attributes are considered, due to limitations in human cognitive capacity.

Scholl et al. (2005) conclude that AHP, in comparison to conjoint analysis, gets more detailed results, allows more attributes to be considered and sets a lower complexity level for the decision-makers performing pairwise comparisons.

In sum, AHP is designed to assist with complex decision-making, when a relatively large number of criteria/subcriteria (both quantifiable and intangible criteria) are tested. The other advantages of AHP discussed above include simplicity, ease of use, and flexibility. AHP provides a systematic approach to subjective decision process and therefore makes it possible to elicit accurate judgments (Narasimhan 1983). The method allows calculating priorities and weights for specific elements in a hierarchy in order to identify the most important elements (Saaty 1980). Finally, AHP leads to a clearer understanding of the situation by members of decision-making group, which leads to a higher degree of commitment to a chosen alternative (Harker and Vargas 1987).

3.6. Possible disadvantages of the AHP and ways to address these disadvantages in the study

Given the advantages of the Analytic Hierarchy Process discussed in relation to this research study, certain disadvantages should not be underestimated. Cheng et al. (2002) argue that the Analytic Hierarchy Process recognizes only the interaction between elements of two adjacent levels of hierarchy and doesn't consider the possible impact of relationship between the elements on the same level. The wrong use of AHP methodology, therefore, can lead to unreliable research findings and wrong business decisions.

The assumption of original AHP method is that weights of higher-level elements are not influenced by lower level elements. This condition, as explained by Saaty (1990) and

Armacost et al. (1999), means that AHP may not be applied to some research problems, involving feedback loops.

Davies (1994) summarizes other potential disadvantages of the AHP as a research methodology:

- Reaching group decision can be challenging in the situation when the conflict of interest exists among decision-makers
- Identifying the overall customer judgments out of a large number of individual judgements, obtained from a large number of individual customers
- Accuracy of scale used in knowledge elicitation or measuring judgements. This becomes difficult due to the fact that marketing problems are often unstructured and involve creative output.
- The difficulty for the customer to make a choice among a large number of alternatives, involved in a choice decision.

To address the disadvantages of the AHP discussed above, the present study will employ the following techniques:

- To minimize the negative impact of possible inconsistency in pairwise comparisons the individual questionnaires will be evaluated for consistency and those with high inconsistency index will be eliminated from consideration. The overall inconsistency index will be calculated for the overall set of data, obtained from the questionnaires.
- The geometric mean, as suggested by Armacost and Hosseini (1994) can be used to address the issue of eliciting customer judgements using the data obtained from a large number of various individual customer opinions
- To address the scale problem, the ratio scale (from 1 to 9), recommended by Saaty (1980) will be employed in the study to calculate the full range of differences in customer judgements about criteria and alternatives.
- To address the difficulty of making choices among a large number of alternatives, each respondent in the study will be asked to choose among presumably more manageable number of choice alternatives (four). The number of criteria

(subcriteria) elements considered by respondents for pairwise comparisons at the same time also will not exceed four elements.

- The issue of making respondents more confident and comfortable about making pairwise comparisons among a large number of criteria or alternatives can be minimized by structuring the unique set of sub-attribute (subcriteria) for each attribute (criterion) in the AHP hierarchy. As a consequence, the required number of pairwise comparisons to be made by the respondent at a time can be reduced.

3.7. Constructing the hierarchy of determinant attributes using AHP

Armacost et al. (1990) argue that proper identification of the hierarchy is the key to success in using the Analytic Hierarchy Process. Developing the hierarchy of determinant attributes helps to improve decision making as the decision maker is more aware of which of the factors are important in the decision. A hierarchy represents an organized set of elements in which influence is distributed from the top down. The elements of a decision problem are assigned to specific levels depending on the degree of influence they have on the levels below.

Composing the hierarchy represents the first step in the AHP process, in which the unstructured decision is decomposed into a number of components, and then arranging these components in a hierarchical form. The top element in the hierarchy represents the overall objective of the research problem. The intermediate level is composed by criteria, or the elements affecting the decision. The lowest level of the hierarchy represents the alternatives available for decision-making.

Figure 3.1 represents a simple example of hierarchy, which includes the goal, determinant attributes and the alternatives:

Figure 3.1. AHP hierarchy
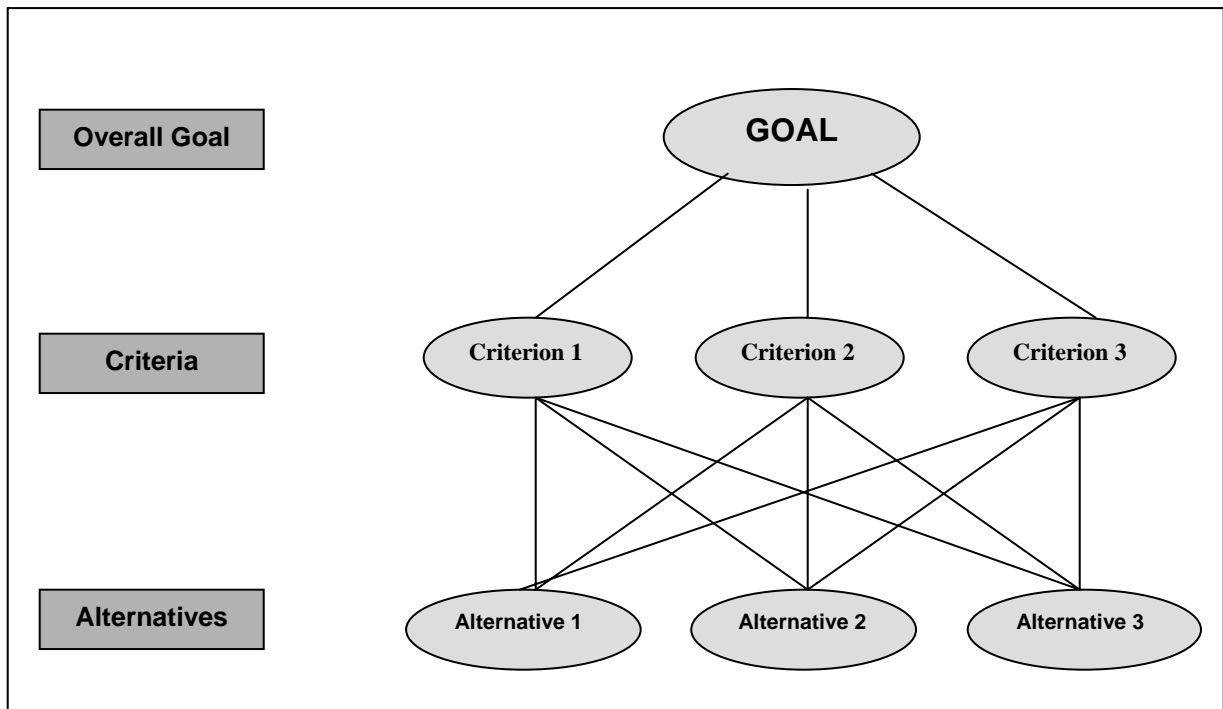
Source: Armacost et al. (1999)

Saaty (1980) recommends a maximum of nine elements to be included in each level of hierarchy. Therefore, for more complex decision-making problems the elements in the criteria can be decomposed into the related subcriteria elements at the next level of hierarchy. This allows for meaningful comparisons among a limited set of criteria or subcriteria at each level to be considered.

Pairwise comparisons among the criteria elements or alternatives in the hierarchy are the basis for decision-making. Therefore, the number of criteria and the number of alternatives should be small enough for decision-maker to be able to compare the elements with each other.

3.8. Prioritisation of elements in the hierarchy

The next step, following the construction of hierarchy, involves prioritising the hierarchy elements to identify the relative importance of the elements in each level of the hierarchy

(criteria, subcriteria and alternatives). This is made through pairwise comparisons of these elements with respect to the their importance to an element in the next higher level. A set of preference matrices is obtained as the result of comparison.

For **n** elements in the hierarchy a total of $n(n-1)/2$ pairwise comparisons need to be calculated. A 9-point scale is used to make comparisons. This scale consists of verbal judgments (equal, moderately preferred, strongly preferred, very strongly preferred, extremely preferred). These judgments are assigned with numerical values (1,3,5,7,9 respectively), while the following set of values (2,4,6,8) represents compromises between these judgments.

The detailed explanation of scale elements, developed by Saaty (1980) is provided in Table 3.2 below:

Table 3.2. Description of scale elements used in AHP

Intensity of Importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
3	Weak importance of one over another	Experience and judgment slightly favor one activity over another
5	Essential or strong importance	Experience and judgment strongly favor one activity over another
7	Very strong or demonstrated importance	An activity is favored very strongly over another, dominance is demonstrated in practice
9	Absolute importance	The evidence favoring one activity over another is the highest possible order of affirmation
2, 4, 6, 8	Intermediate values between adjacent scale values	When compromise is needed

Source: Saaty (1980)

3.9. Calculation of relative weights for attributes and subattributes

The process of prioritization of the elements in a hierarchy is followed by calculating relative weights for all elements. In this stage the pairwise comparisons obtained are analyzed to find out the relative weights of criteria, subcriteria and alternatives. When the relative importance of all elements in decision hierarchy is determined, AHP provides the integration of the relative preferences into an overall preference rating for each criterion

(attribute and subattribute) and the relative preferences of the decision alternatives with respect to each criterion (Armacost et al., 1990).

The weights are calculated as the components of the normalized eigenvector, representing the largest eigenvalue of the comparison matrix. The next step is to calculate the composite weights of alternatives by multiplying the weights for each segment throughout the hierarchy on the way from the goal to the particular alternative.

The AHP calculations are explained in the studies of Saaty (1980) and Javalgi et al. (1989). Pairwise comparisons obtained are entered into the reciprocal matrix, where the a_{ij} element of the matrix is $1/a_{ij}$. Javalgi et al. (1989) illustrate this with an example on the bank selection criteria. If the respondent compares two criteria C_1 (location) and C_2 (safety of funds) with respect to the decision to select a bank, and C_1 is identified to be very strongly more important than C_2, then a value of a_{12} is equal to 7 and the value of a_{21} equals to 1/7. Figure 3.2 illustrates a simple 2 X 2 pairwise comparison matrix that compares C_1 and C_2 with respect to the overall goal (selecting a bank)

Figure 3.2. Simple pairwise comparisons matrix used for AHP calculations

Selecting a bank	C_1	C_2
C_1	1	7
C_2	1/7	1

Source: Javalgi et al. (1989)

Javalgi et al. (1989) further explains that the procedure described is repeated for all pairwise comparisons of the decision-making attributes with respect to the overall goal, resulting in a similar pairwise comparison matrix. A similar process is used to obtain the pairwise comparisons of subattributes with the respect to each related attribute. Finally, the pairwise comparisons are obtained for decision alternatives with respect to each subattribute of decision-making.

The pairwise comparisons are used to evaluate the priorities of several criteria with respect to a higher level criterion. Thus, the weight, w_i, reflecting the importance of criterion i should be determined. The weights obtained can be used to rank order the importance of

each criterion. The relative importance of two criteria is the ratio of their weights (e.g. $a_{12}=w_1/w_2$). If $C_i, i = 1, \ldots, n$ represents n criteria, with respective weights $w_i, i = 1, \ldots, n$ then A, the matrix of pairwise comparisons can be drawn as the following (Figure 3.3):

Figure 3.3. Matrix of pairwise comparisons used to identify the relative weights

$$A = \begin{array}{c} \\ \\ C_1 \\ C_2 \\ \cdot \\ \cdot \\ \cdot \\ C_n \end{array} \begin{array}{ccccc} C_1 & C_2 & \cdot & \cdot & \cdot & C_n \\ \left(w_1/w_1 \right. & w_1/w_2 & \cdot & \cdot & \cdot & \left. w_1/w_n \right) \\ w_2/w_1 & w_2/w_2 & \cdot & \cdot & \cdot & w_2/w_n \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ w_n/w_1 & w_n/w_2 & \cdot & \cdot & \cdot & w_n/w_n \end{array}$$

Source: Javalgi et al. (1989)

Using the method described above, the weights/priorities can be calculated for each pairwise comparison matrix on each level of the hierarchy. Javalgi et al. (1989) explains that to synthesize the results over all levels, the main eigenvector of the pairwise comparison matrix at each level is weighted by the priority of the higher level criterion with respect to which the comparison is made. The resulting priorities represent the intensity of customer perception of the preferences of the alternatives, considering the relative performance of the criteria in the hierarchy, the importance of the attributes and trade-offs among these attributes.

3.10. AHP method extension, used in the study of Armacost and Hosseini (1994)

The present study employs the method, used by Armacost and Hosseini (1994). The researchers used AHP-DA (determinant attributes) method, which is an extension of the AHP research methodology, the principles of which were outlined earlier in this chapter.

The study of the Armacost and Hosseini (1994) pursued the following objectives:
- To evaluate and rank the determinant attributes of the customer decision-making;

- To compare two research methodologies, AHP and dual questioning method (DQDA) in terms of their relative strength in identifying the determinant attributes of the customer decision-making

The method of Armacost and Hosseini (1994) attempts to develop an approach to identify which attributes are determinant when the choice is made among given alternatives, using information available in the Analytic Hierarchy Process. The combined relative priorities of the criteria are compared with the relative priorities of the alternatives to calculate determinance scores. These scores are used to identify which of the criteria are determinant (both important and different across alternatives). The approach proposed can be extended to include decision hierarchies with multiple levels of attributes and subattributes.

As Armacost and Hosseini (1994) attempted to identify the attributes/factors affecting customer decision, the design of their research involved the use of a questionnaire to collect the information from customers. The scores, obtained from the individual questionnaires, were aggregated by calculating their geometric mean. These aggregated judgments were used as the inputs in the AHP-based calculations of priorities of the attributes and alternatives.

The amount of effort, required in the process of pairwise comparisons, should be minimized to facilitate achieving the objectives of the research. To achieve this, the method used by Armacost and Hosseini (1994) involves structuring the research hierarchy with a unique set of subcriteria related to each criterion, and in this way reducing the number of pairwise comparisons required.

The following can be considered among the challenges of using the method described:
- AHP methodology is based on the ratio scale, and, therefore, as suggested by Harker and Vargas (1987 and 1990), the geometric mean rather than the arithmetic mean should be used. Davis (2001) further argues that the arithmetic mean may not provide a good estimate of what most consumers might consider is representative of their judgements. Calculation of the mean value can be affected by a small number of consumers holding extreme views.

- Davies (2001) also points out that AHP-based analysis involves a degree of concern about the confidence of the output recommendations and findings. The researcher argues that inconsistency involved in the AHP research is a function of faults, related to the hierarchy structuring, inappropriate modes of questioning and scaling, and the interaction between alternatives.

Davies (2001) concludes that the usefulness of the AHP output depends on how well the model represents the problem domain, the way judgments are elicited, and how employed ratio scales can identify the true differences between alternatives. If all these issues are addressed in the design of the AHP-based research study, the user of the research results can be more confident about applying these results to the real-life decision-making.

Identification of determinant attributes

Armacost and Hosseini (1994) suggest that determinance is a combined effect of both importance, and the difference between attributes with respect to a particular set of alternatives. Therefore, AHP-DA requires importance scores, difference scores, and finally, determinance scores to be calculated for each attribute and subattribute of decision-making in the hierarchy.

The calculation of determinance scores is described by Armacost and Hosseini (1994) as follows. Let a_i represent the normalized priority of the ith attribute, $i = 1, \ldots, n$, and let p_{ij} be the normalized local priorities of the jth alternative with respect to the ith attribute, $i = 1, \ldots, n, j = 1, \ldots, m$. The ratio-scaled values of a_i are used as the importance scores. The pairwise comparisons and resulting priorities for the alternatives enable estimation of the differences among the alternatives with respect to each attribute. If there are no differences with respect to attribute i, then $p_{ij} = 1/m$ for all j because all m alternatives are equally preferred. When all m alternatives are not equally preferred, a measure of the average similarity effect is the geometric mean of the local priorities, since the priorities are ratio scaled. Assuming g_i to be the average similarity effect for the ith attribute, then

$$g_i = \left(\prod_{j=1}^{m} p_{ij} \right)^{1/m}, \quad i = 1, \ldots, n.$$

If all the alternatives are equally preferred, then g_i reaches its maximum value of $1/m$. Thus similarity can be measured using the g_i values. A difference score can measure the deviation from a no-difference situation, or the difference between g_i and $1/m$.

Suppose y_i is the difference score for the ith attribute. Then:

$$y_i = (1/m - g_i), i = 1, \ldots, m.$$

Once the importance score a_i for the ith attribute, and y_i, the difference score for the alternatives with respect to the ith attribute are obtained, the determinance score d_i can be calculated as the product of these two variables:

$$d_i = a_i y_i, i = 1, \ldots, m.$$

Finally, the determinant attributes are identified using a sampling distribution of the determinance scores with a one-tailed significance test at the 0.05 level. The attributes are identified by those, which determinance scores exceed the critical determinance score calculated.

Armacost and Hosseini (1994) further argue that to facilitate the decision-making and to reduce the number of attributes to be considered at a given time, the attributes should be divided into general categories (main attributes), each containing a subset of the attributes (subattributes). The researchers explain that the method they use to identify the determinant attributes may be extended to multiple levels of attributes. Assuming that each subattribute refers to a single attribute, s^i_{kj} represents the local priority of jth alternative with respect to the kth subattribute belonging to the ith attribute. In this multi-level attribute situation, the determinant subattributes can be identified by computing the priority (importance) of each subattribute as $a_i p_{ik}$ (global priority of the kth subattribute) and using this value instead of a_i in the calculation of d_i (determinance scores). Also, s^i_{kj} replaces p_{ij} in calculation of g_i (average similarity effect). To identify which attributes are determinant, the subattribute level must be collapsed onto the alternatives by replacing p_{ij} to $p_{ik}s^i_{kj}$ in computation of the

average similarity effect. The similarity scores obtained are used to compute the difference scores and the determinance scores.

3.11. Summary

This chapter describes the research methodology employed in the study. The Nominal Group Technique is used to identify the factors affecting the customer decision-making process. These factors are incorporated in the research questionnaire to obtain their relative priorities/weights. When the questionnaire is developed and the data collected, the data will be processed using the Analytic hierarchy process. The process of AHP hierarchy construction, and calculation of relative priorities of the elements in the hierarchy, are described. Relative advantages of the research method chosen is compared to other methods. The research procedures and the collection of research data are described in Chapter 4 of the present study.

Chapter 4. RESEARCH PROCEDURES

4.1. Introduction

The following chapter provides the description of research procedures and the data collection process. The outcomes of the nominal group session are presented, and the process used in questionnaire development is described.

The first stage of research involved the use of the nominal group technique. The results of the nominal group session were used to develop the research questionnaire. In the next stage of research the Analytic Hierarchy Process (AHP) is employed and a hierarchy of determinant attributes developed. Research data from the questionnaires is obtained and the ExpertChoice software is then used to conduct the data analysis and to calculate the priorities of the attributes, subattributes and choice alternatives in the AHP hierarchy.

4.2. Results of nominal group session

The nominal group was conducted with participation of five respondents. The results of nominal group session are presented Table 4.1. The factors identified are listed in the left column, individual scores/rankings if any for each factor (on the scale from to 1 to 5, where 1 is the lowest and 5 as the highest score) are identified in the second column, and a total score (sum of individual scores) for each factor is shown in the third column.

Table 4.1. The attributes/factors that affect customer decision in choosing mortgage provider

Factors	Score	Total
1. Service quality	5, 1	6
2. Convenience of contact	1, 3	4
3. Soundness of the institution	1, 3	4
4. Down payment amount (borrowing limit)	2, 2, 5	9
5. Interest rate	3, 5, 2, 5, 4	19
6. Application costs	1, 1	2
7. Fit with existing finance	4	4
8. Speed of decision	-	-
9. Package offering (bundle)	2, 4	6
10. Personal banking	4, 5	9
11. Recommendations	4	4
12. Pay-off restrictions	3	3
13. Assistance with paper work	-	-
14. Term of mortgage	3	3
15. Knowledge of the market	2	2
16. Liberal approval criteria	-	-

It is evident from the results of the nominal group session that interest rate has the highest score among the criteria identified. Other significant factors identified include service quality, down payment amount, bundle of a mortgage offer with other products, personal banking and recommendations. All of the factors identified by nominal group participants were incorporated in the research questionnaire, including those factors, which were not ranked by participants as important. The factors were summarized into four main groups, as discussed below.

4.3. Identification of criteria and subcriteria to be tested in the research questionnaire

The factors identified in the nominal group session were summarized in the four groups: confidence, cost, service, and convenience. These groups represent criteria/attributes of customer choice:

- Confidence, including three sub-criteria (reputation, recommendations, soundness and safety);
- Cost, including four sub-criteria (interest rate, borrowing limit, application costs, early repayment penalties);
- Service, which incorporates speed of decision, assistance with paperwork and term of mortgage

- <u>Convenience</u>, including liberal approval criteria, convenience of contact and bundling with other products.

The group of confidence-related attributes (reputation, recommendations, soundness and safety) was considered to be brand-related. The study is designed to test if these attributes are determinant in customer choice and, therefore, make a significant impact on a customer decision to choose a mortgage provider. Table 4.2 specifies the criteria and sub-criteria elements used in the questionnaire. Each subcriteria element is briefly described.

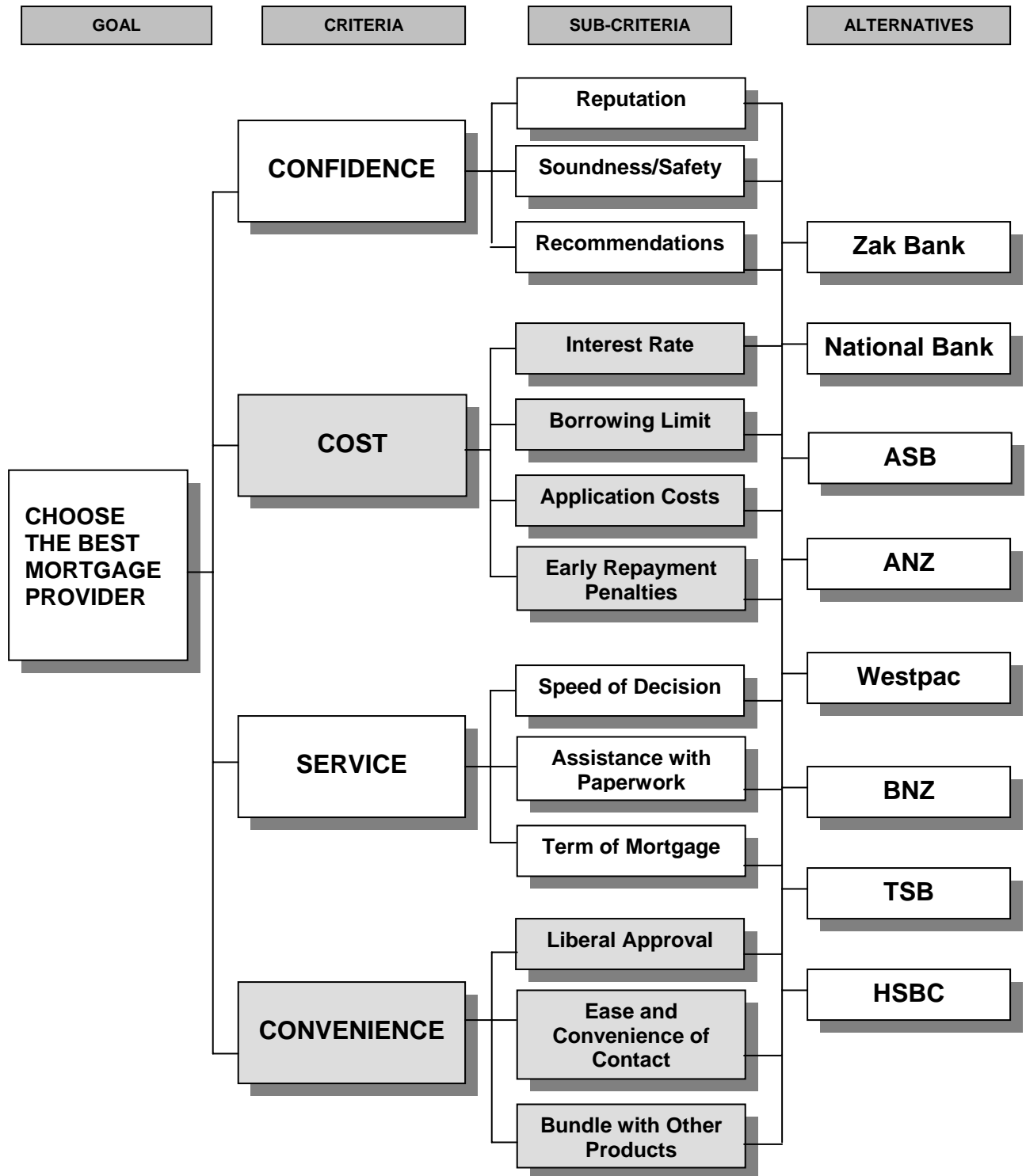**Table 4.2. Criteria and subcriteria elements and their description**

Criteria	Subcriteria	Description
Confidence	Reputation	Reputation of financial institution (bank)
	Recommendations	Recommendation or advice from other people about the bank
	Soundness and safety	Financial security and safety of the bank
Cost	Interest rate	The annual interest rate paid of the mortgage
	Borrowing limit	The maximum amount of money that can be borrowed as a percentage of the property value
	Application costs	Fees charged by the bank for mortgage application approval
	Early repayment penalties	Charges made by the bank if you want to repay a fixed rate mortgage early
Service	Speed of decision	Time taken to approve mortgage application
	Assistance with paperwork	Assistance and advice provided by the bank employees
	Term of mortgage	The number of years (usually from 1 to 30) it will take to pay off your mortgage if you make regular repayments
Convenience	Liberal approval criteria	The ease of meeting the mortgage approval criteria
	Convenience of contact	Convenience of bank location and communications
	Bundling with other products	Additional benefits gained by linking the mortgage with other products (ex. income insurance etc.)

The factors identified are to some extent consistent with previous research studies on customer selection of mortgage provider. Talaga and Buch (1998) tested factors, such as application costs, type of mortgage (fixed or variable), term of mortgage (15 years or 30 years), knowledge of mortgage provider. Devlin (2002) tested professional advice (recommendations), interest rate, lending amount, relationship, loyalty, service quality, image and reputation of the mortgage provider, and branch location. However, a number of factors, which were not considered in previous research, were identified from the nominal group session and incorporated into research questionnaire. This involved soundness and safety of the mortgage provider, borrowing limit, early repayment penalties, speed of decision, assistance with paperwork, approval criteria, and bundling with other products.

4.4. Construction of hierarchy of determinant attributes, using AHP

For the purpose of study, the decision problem of choosing among alternative mortgage products was structured into a hierarchy, consisting of three levels. The top level represents the overall goal of choosing the best mortgage provider. The middle level contains the attributes/criteria of customer decision-making and respective sub-attributes/subcriteria for each criteria element. The third level of the hierarchy includes eight banks/alternatives. Figure 4.1 shows the hierarchy of determinant attributes of customer decision-making when choosing a mortgage provider.

Figure 4.1. Hierarchy of determinant attributes of customer decision-making when choosing the mortgage provider

GOAL	CRITERIA	SUB-CRITERIA	ALTERNATIVES

CONFIDENCE
- Reputation
- Soundness/Safety
- Recommendations

COST
- Interest Rate
- Borrowing Limit
- Application Costs
- Early Repayment Penalties

SERVICE
- Speed of Decision
- Assistance with Paperwork
- Term of Mortgage

CONVENIENCE
- Liberal Approval
- Ease and Convenience of Contact
- Bundle with Other Products

CHOOSE THE BEST MORTGAGE PROVIDER

Alternatives:
- Zak Bank
- National Bank
- ASB
- ANZ
- Westpac
- BNZ
- TSB
- HSBC

4.5. Development of the research questionnaire

The respondents were asked to compare factors, representing one level of research hierarchy with each in a pairwise manner. The preference of one factor over another could be indicated by selecting one number in a row, using the following scale (Table 4.3)

Table 4.3. Scale used for the comparison of alternatives

Scale elements	Description
1	Equally preferred
3	Mildly preferred
5	Strongly preferred
7	Very strongly preferred
9	Extremely preferred
2,4,6,8	For compromise between the above values

The nine-point scale, used in the research questionnaire is recommended by Saaty (1980). To facilitate questionnaire layout, and further data analysis and calculations, the computerized AHP software package ExpertChoice was used.

The design of the present research involves asking customers to compare mortgage products of several banks. It may be acknowledged, however, that some of the customers may not have experience dealing with some banks they have to evaluate, and, therefore need to rely on their perceptions rather than on their personal experience. Javalgi et al. (1989) addressed this issue by acknowledging that when making judgments the customer may be well informed on a perceptual basis, but may be not well informed on an objective basis. The respondents may not have experience dealing with some particular banks they compare and therefore the customer knowledge of these banks will be derived from the experience of relatives/friends with these particular banks, and the perception of these banks developed through the advertising. Javalgi et al. (1989) suggests that even if the respondent does not have objective data on some criteria for the bank, they will have some impression of this attribute based on some personal experience, advertising, or some other non-objective stimuli.

In the research questionnaire, detailed instructions were given to respondents on how to use the scale to complete pairwise comparisons provided. The description of each criteria and subcriteria element to be compared by the respondents (Table 4.2) was included in the questionnaire. Approximately 20-25 minutes were estimated as the time taken for a respondent to complete a questionnaire. The respondents were asked to complete the questionnaire and to mail it back in the prepaid envelope provided. Participation in the study was strictly on voluntarily basis. No incentives for respondents were offered in the data collection process. No personal information was collected from the respondents that could identify them.

Firstly, the respondents were asked to provide a pairwise comparison of the main attributes/criteria. Figure 4.2 represents the example of a question in the research questionnaire, where the respondents are asked to compare the criteria elements with each other on the basis of importance.

Figure 4.2. The example of question in the research questionnaire. Pairwise comparison of the criteria

With respect to choosing the best mortgage which of the two items on each row below is more important, and how much more important is it?

	Extremely preferred			Strongly preferred			Equally preferred			Strongly preferred			Extremely preferred			
Confidence	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Cost
Confidence	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service
Confidence	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Convenience
Cost	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service
Cost	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Convenience
Service	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Convenience

Secondly, the sub-criteria were compared with each other within each element of the main criteria. Figure 4.3 provides an example from the research questionnaire, where the respondents were asked to provide a pairwise comparison of sub-criterion related to confidence.

Figure 4.3. The example of question in the research questionnaire. Pairwise comparison of sub-criteria

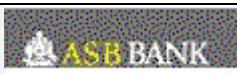|																			
With respect to <u>**CONFIDENCE**</u> which of the two items on each row below is more important, and how much more important is it?																			
	Extremely preferred ↓			Strongly preferred ↓				Equally preferred ↓				Strongly preferred ↓			Extremely preferred ↓				
Reputation	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Soundness and safety**
Recommendations	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Soundness and safety**
Recommendations	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Reputation**

In the last part of the questionnaire the respondents were given the information about four mortgage products. Each product was assigned to a brand name of a particular mortgage provider. This included banks, operating in New Zealand market, plus one non-existing bank, developed specifically for the purpose of the current study, as specified in the research design. The existing brands of banks included National Bank, ANZ, ASB, Westpac, Bank of New Zealand (BNZ), Taranaki Savings Bank (TSB), Hong Kong Shanghai Banking Corporation (HSBC). The dummy (non-existent) brand of the bank was specified as Zak Bank.

Each questionnaire contained four alternative mortgage products, which were associated with the brand name of the bank and the visual representation of the corresponding bank logo. Bank logos were printed in colour to achieve better visual recognition of the brand for the respondent. Zak Bank's mortgage offer, representing chosen at random existing mortgage offer, was included in each individual questionnaire, while the other three banks and their corresponding alternative mortgage products were chosen randomly for each questionnaire. A computer program was developed to achieve the random choice of banks/mortgage products in each questionnaire. Table 4.4 provides the example of four mortgage products presented to a respondent for comparison.

Table 4.4. Example of four mortgage products, presented to the respondent

	Zak Bank		ASB BANK	Westpac
INTEREST RATE **Variable**	7.75% p.a.	7.75% p.a.	7.75% p.a.	7.75% p.a.
Fixed **1 year** **2 years**	6.90 % p.a. 7.40 % p.a.	6.90 % p.a. 7.40 % p.a.	6.90 % p.a. 7.40 % p.a.	6.90% p.a. 7.30% p.a.
Borrowing limit	95% of the property value	95% of the value of your property	95% of the value of your property	95% of the property value
Application and account fees	Up to $400	Maximum $400	Maximum $400	Maximum $400
Interest payment terms	Fortnightly or monthly	Fortnightly or monthly	Fortnightly or monthly	Fortnightly or monthly
Product bundling	An all in one home loan and transaction account that uses all your available surplus funds to reduce your interest costs and pay off your loan sooner	Transaction fees for the current account opened in the Bank are waived	An all in one home loan and transaction account that uses all your available surplus funds to reduce your interest costs and pay off your loan sooner	An all in one home loan and transaction account that uses all your available surplus funds to reduce your interest costs and pay off your loan sooner
Early repayment penalties	For a fixed interest rate loan a payment of lump sum once a year of up to 5% of loan amount, a $100 fee applies. For lump sum greater than 5% additional penalty applies	You may increase the principal repayments on your fixed rate loan by up to a further $1,000 per month or $500 per fortnight without penalty	With a fixed rate home loan, for each year of the fixed rate term, you can make extra repayments in addition to your regular fixed payments of up to 5% of the loan balance to a maximum of $10,000, without incurring an Early Repayment Charge.	For a fixed interest rate loan a payment of lump sum once a year of up to 5% of loan amount, a $100 fee applies. For lump sum greater than 5% additional penalty applies
Minimum and maximum terms of mortgage	No minimum or maximum term	No minimum or maximum term	No minimum term Maximum 30 Years	No minimum term Maximum 30 Years

Given the four mortgage alternatives presented, respondents were asked to compare them pairwise with respect to each subcriteria element. Figure 4.4 represents the example of the

question in the research questionnaire, in which the respondents were asked to compare alternative mortgage products with each other with respect to one element of subcriteria (reputation). Similar questions were asked with respect of all other subcriteria elements.

Figure 4.4. Example of question in research questionnaire. Pairwise comparison of alternatives with respect to sub-criteria

With respect to <u>REPUTATION</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

	Extremely preferred				Strongly preferred				Equally preferred				Strongly preferred				Extremely preferred		
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9		horse logo
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9		ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9		Westpac
horse logo	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9		ASB BANK
horse logo	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9		Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9		Westpac

Also, the respondents were asked the following six demographic questions:

- <u>Bank or banks the respondent is currently using</u>. The respondents could select more than one from the list provided;

- <u>Main bank</u> the respondent is using for the majority of financial transactions;

- <u>Bank or banks the respondent is using currently, or has used, as a mortgage provider</u>. The respondent could select more than one from the list provided;

- <u>Age</u> (less than 30 years, 31-40, 41-50, more than 50)

- <u>Gender</u> (female or male)

- <u>Mortgage experience</u> (no experience, little experience, significant experience)

The demographic questions, asked in the questionnaire, did not include questions about income of respondents, as the researcher believes this question might avert the respondent from filling out the questionnaire. A sample copy of the complete research questionnaire is shown in Appendix I.

4.6. Data Collection

A total of 140 questionnaires was handed out to residents of Auckland, New Zealand, who have a mortgage experience, resulting in 62 completed questionnaires being returned.

Selection of respondents

Boyd et al. (1994) note that financial institution selection criteria importance may change from one geographic area to the other, based on the demographic characteristics of the populations being studied. Therefore, it was concluded that study of the bank selection decision should be conducted in different areas and among different customer groups to gauge better characteristic perceptions of a demographic group, which is representative of the general population.

The questionnaires were handed out to 140 residents of Auckland, New Zealand. The researcher approached each of the potential respondents individually, and asked them if they were interested to participate in the research study on bank mortgages and if they had a mortgage experience. The purpose of the research study was also explained to the potential respondents. If the potential respondent agreed to participate in the study, a questionnaire was given to them with a prepaid return envelope and they were asked to complete the questionnaire and return it.

Preliminary calculations of the inconsistency ratio for each individual questionnaire returned revealed the fact that some questionnaires contained a considerable amount of inconsistency. Hence, the questionnaires with the incontinency ratio higher than 0.1 had been eliminated from further analysis. Therefore, a total of 45 questionnaires were selected for the analysis and calculations.

4.7. Summary

This chapter described the research procedure used in the study. A research questionnaire was developed based on the results of a nominal group session. The factors, identified by nominal group participants as determinant for the selection of mortgage provider were classified into criteria and subcriteria. Hence, four elements of criteria (confidence, cost, service and convenience) were used. The AHP hierarchy was developed incorporating the overall goal, criteria, subcriteria and alternatives (bank mortgage providers). All these elements were included in the questionnaire for identifying the determinant attributes of customer decision-making. The respondents made pairwise comparisons between the elements representing the same level in the hierarchy. The detailed report on data analysis, calculations and research findings will be presented in Chapter 5.

CHAPTER 5. DATA ANALYSIS AND RESEARCH RESULTS

No amount of effort on the part of brand managers, marketing directors, researchers, advertising agencies, or anyone else involved in attempting to revitalize a brand will succeed if, at the very top, the value of brands has been forgotten or was never really understood

(Berry, 1988)

5.1. Introduction

The following chapter provides a description of the data analysis process and presents the research results. Data obtained from individual research questionnaires was recorded in a spreadsheet format, using Microsoft Excel, and the geometric means were calculated for each value of the pairwise comparisons. Next, the mean values obtained were inserted into the ExpertChoice software program to make individual calculations. The importance scores for each attribute and subattribute of bank selection decision, together with the local priorities for the banks/alternatives, were calculated using ExpertChoice software. Finally, the determinant attributes and subattributes of the customer choice of mortgage provider were identified.

Sixty-two questionnaires were returned suitable for use in the analysis. However, seventeen questionnaires had an inconsistency index higher than 0.1. These questionnaires were excluded from further analysis. Therefore, fifty-five questionnaires with an inconsistency index of less than 0.1 were used for the analysis and calculations.

5.2. Respondents' demographics

The following is the analysis of demographics of respondents, based on the 45 questionnaires analyzed.

Table 5.1 identifies the banks respondents' use for their transactions. It is necessary to note that one respondent could select more than one bank. Nearly half of the respondents (22 people) had financial transactions with ASB bank. Approximately a quarter of respondents had accounts with each of the following banks: National Bank, ANZ and Westpac.

Table 5.1. Respondents' demographics. Banks the respondents use for their transactions

Bank	Number of respondents*
ASB	22
National Bank	14
ANZ	13
Westpac	11
Kiwi Bank	4
Other	11

*The respondents could select more than one bank

Table 5.2 summarizes the respondents' statistics as regards their main bank. The respondents were asked to nominate one bank, with which they conduct the majority of their banking transactions.

Table 5.2. Respondents' demographics. Main bank used by respondents

Bank	Number of respondents
ASB	14
National Bank	9
ANZ	8
Westpac	7
Kiwi Bank	3
Other	4

It is clear from the Table 5.2 that ASB bank is the leader in main bank selection by respondents studied. ASB is followed by National Bank, ANZ and Westpac with a relatively equal number of people identifying each of these banks as the main bank.

Table 5.3 shows the banks that respondents currently have a mortgage with. As some of the respondents presumably may have more than one mortgage, they were allowed to identify more than one bank. The results shown in Table 5.3 are not consistent with bank usage shown in Table 5.1 and Table 5.2. It implies that customers do not always obtain the mortgage from he bank where they do their main transactions.

Table 5.3. Respondents' Demographics. Bank used by respondents currently as the mortgage providers.

Bank	Number of respondents*
ASB	15
National Bank	8
ANZ	7
Westpac	7
Kiwi Bank	2
Other	8

*The respondents could select more than one bank

Table 5.4 shows the mortgage experience of respondents. The respondents had to select one of the three options: no experience in using mortgages, little experience and significant experience. The data in the table shows that the number of respondents with some mortgage experience prevails over the number of people with significant experience in selecting mortgages.

Table 5.4. Respondents' Demographics. Mortgage Experience

Mortgage experience	Number of respondents
Significant experience	13
Some experience	32

Table 5.5 shows the age of respondents. Nearly half of the respondents (19 people) belong to the group of 31-40 years, while the other half represents people older than 40 years.

Table 5.5. Respondents' Demographics. Age of respondents

Age	Number of respondents
30 years or younger	2
31-40 years	19
41-50 years	13
50 years or older	11

Table 5.6 represents the gender of respondents. The number of female respondents constitutes approximately two thirds of the total number of people participated.

Table 5.6. Respondents' Demographics. Gender of respondents

Gender	Number of respondents
Male	17
Female	28

One questionnaire was received from the respondent with missing demographic data. However, it was found that this questionnaire had an inconsistency ratio higher than the acceptable level of 0.1 and it was not included in the analysis.

5.3. Data entry

The data obtained from the research questionnaires was transferred into a spreadsheet format using the Microsoft Excel program. For each completed research questionnaire the pairwise comparisons obtained were entered into a separate Microsoft Excel worksheet to assess the relative importance of the attributes at each level of research hierarchy. In line with the description of the AHP methodology of Saaty (1980) and Javalgi et al. (1989), the pairwise comparisons were entered into a reciprocal matrix. The description of the matrix is provided in Chapter 3.

Figure 5.1 shows the example of data entry using Microsoft Excel for each individual questionnaire. The figure indicates the comparisons between the four decision-making attributes (confidence, cost, service, convenience) with respect to the overall goal of choosing the best mortgage provider. It should be noted that the higher the matrix entry, the more important is the row factor versus the column factor.

Figure 5.1. Data entry example – Pairwise comparisons of attributes with respect to the goal

Questionnaire 1

1.1. THE IMPORTANCE OF DIFFERENT MORTGAGE FEATURES

With respect to choosing the best mortgage which of the two items on each row below is more important?

	Confidence	Cost	Service	Convenience
Confidence		4.00	1.00	0.25
Cost	0.25		4.00	4.00
Service	1.00	0.25		2.00
Convenience	4.00	0.25	0.50	

Next, the pairwise comparisons obtained for subattributes of customer decision-making with the respect to the each related attribute were entered into the spreadsheet format. The example of pairwise comparisons of related subattributes with respect to "confidence" attribute is shown in Figure 5.2

Figure 5.2. Data entry example - Pairwise comparisons of sub-attributes with respect to the attribute

1.2. COMPARING THE IMPORTANCE OF MORTGAGE DETAILS

With respect to <u>CONFIDENCE</u> which of the two items on each row below is more important?

	Reputation	Recommendation	Soundness
Reputation		0.33	1.00
Recommendation	3.00		3.00
Soundness	1.00	0.33	

The process of entry was continued for each of the remaining attributes (cost, service, convenience). Finally, the pairwise comparisons obtained for the alternatives/banks were entered into the spreadsheet format. Figure 5.3 represents the example of data entry of pairwise comparisons for the alternatives with respect to "reputation" subattribute.

Figure 5.3. Data entry example - Pairwise comparisons of alternatives with respect to the individual subattribute

1.3. PREFERENCE COMPARISONS

With respect to <u>REPUTATION</u>, which of the two banks on each row below would you prefer?

	ZAK Bank	ASB	Westpac	TSB
ZAK Bank		0.11	0.13	0.13
ASB	9.00		5.00	4.00
Westpac	8.00	0.20		1.00
TSB	8.00	0.25	1.00	

In this example four alternatives (Zak Bank, National Bank, Westpac and HSBC), included in that particular questionnaire, were compared with respect to reputation. The process was continued for each of the subattributes considered.

In this way, all pairwise comparisons made were entered into the spreadsheet format. Also, as indicated above, each research questionnaire was tested for the consistency of pairwise comparisons by entering these comparisons into the ExpertChoice program. The program provides an automatic indication of inconsistency ratio when the research hierarchy is completed and pairwise comparisons are entered. As a result, the questionnaires with the inconsistency index higher than the acceptable level of 0.1 were eliminated from further analysis.

5.4. Calculation of priorities for attributes and subattributes

The next step in data analysis involved the calculation of relative priorities for the overall dataset. These calculations were made using the ExpertChoice software program. This program allows for making computer-based calculations of relative priorities of attributes and subattributes of decision-making with respect to the overall objective, and the relative priorities of the alternatives with respect to the attributes and goal.

To evaluate the overall relative priorities, the geometric mean of all respondents for each pairwise comparison was calculated in the separate worksheet in Excel worksheet. The resulting worksheet with geometric mean values for overall pairwise comparisons calculations, obtained for of each attributes with respect to the goal, each subattribute with respect to the related attribute, and each of the alternatives with respect to the goal are presented in Appendix II to the study. The mean values obtained were used for data entry into the ExpertChoice, and the resulting comparison matrix incorporating these geometric means, was used for analysis and calculations. This method of information aggregation for overall calculations is recommended by Saaty (1980) and Javalgi et al. (1989). Figure 5.4 shows an example of numerical pairwise comparisons entry into the ExpertChoice program. The example shown indicates pairwise comparisons of attributes with respect to the overall objective, and an inconsistency index of 0.01.

Figure 5.4. Overall pairwise comparisons of attributes with respect to the goal
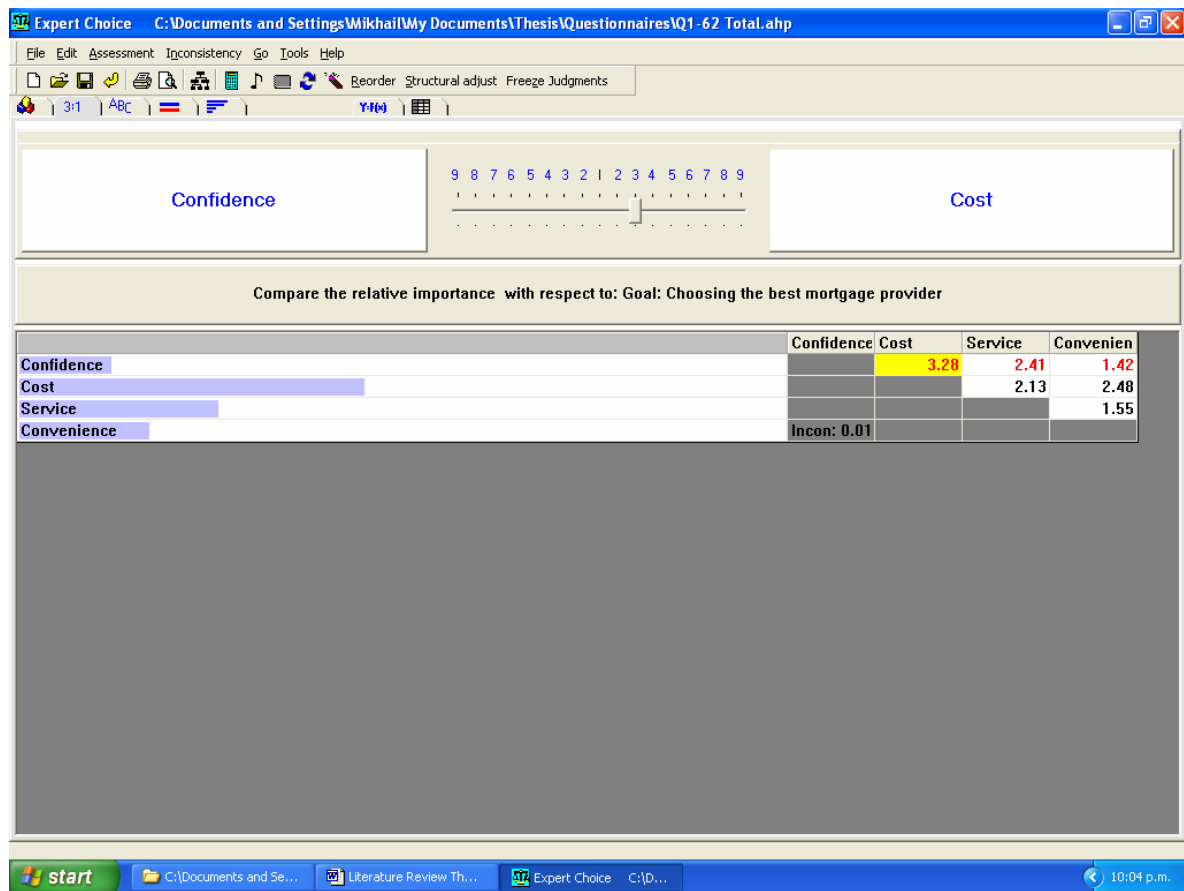
The entry of geometric means of pairwise comparisons into the ExpertChoice program continued for each of the subattributes with respect to the related attribute and for all alternatives with respect to each subattribute.

When overall pairwise comparisons are entered into the ExpertChoice, the program calculates the importance scores for the attributes/subattributes. The results of calculations are shown in Figure 5.5. The scores shown for attributes are normalized along with the importance scores of subattributes within a particular attribute.

Figure 5.5. The results for importance scores of attributes and subattributes of a mortgage provider selection decision
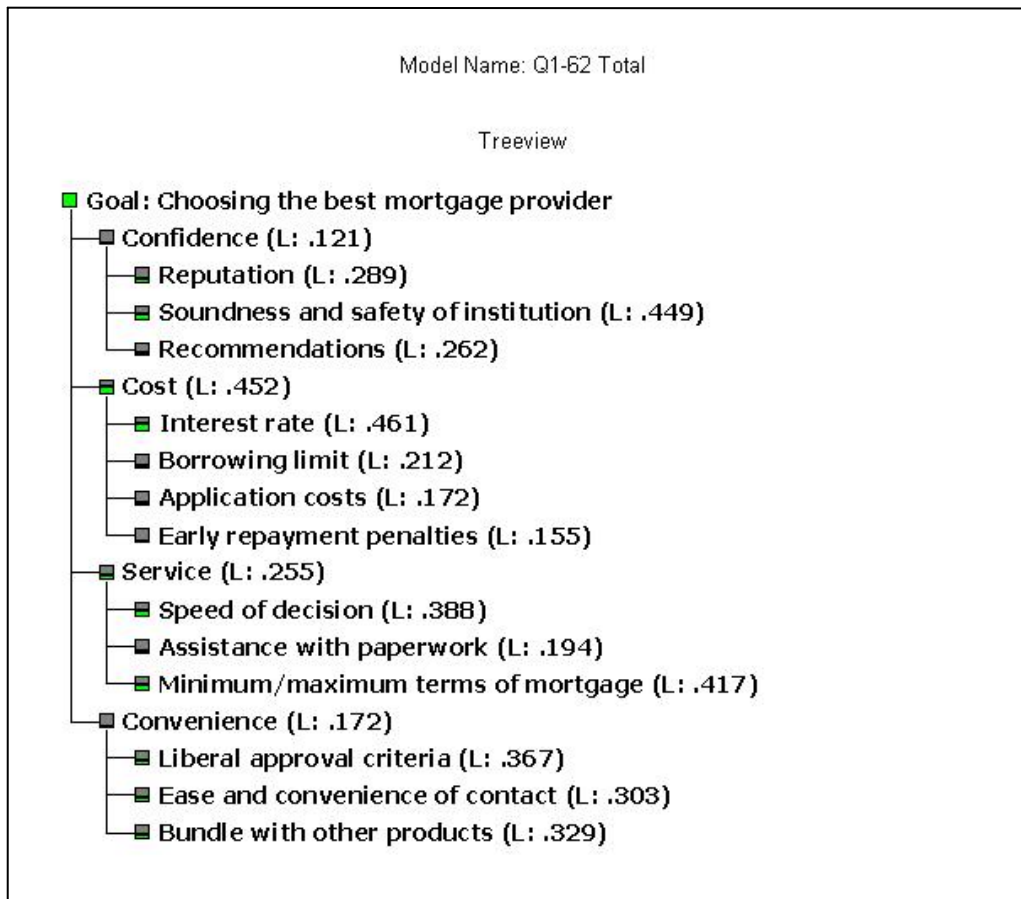
It is evident from Figure 5.5 that <u>cost</u> has been identified as the most important attribute (importance score of 0.452), followed by <u>service</u> (0.255). At the same time <u>convenience</u> (importance score of 0.172) and <u>confidence</u> (0.121) are identified as less important attributes of the decision-making when customer is selecting among alternative mortgage products.

Considering the importance scores for individual subattributes within each attribute, the following conclusions can be drawn from the Figure 5.1

- <u>Cost</u> is identified as the most important attribute and <u>interest rate</u> has the highest score among other subattributes within the cost attribute. The importance score of

interest rate subattribute is equal to 0.461. <u>Borrowing limit</u> has the second position with approximately twice as lower importance score (0.212). Other subattributes – <u>application costs</u> and <u>early repayment penalties</u> (importance scores of 0.172 and 0.212 consequently) do not appear to have a significant influence on the customer decision-making as far as the cost-related factors are concerned.

- <u>Service</u> has the second position among the attributes and <u>term of mortgage</u> has been the most important among service-related factors (importance score of 0.417). This is followed by <u>speed of decision</u>, which has a similar result of importance (0.388). The relatively low importance score, compared to other subattributes within the service attribute is obtained by <u>assistance with paperwork</u> (0.194)

- <u>Soundness and safety</u> of institution is identified as then most important among <u>confidence-related</u> factors with the importance score of 0.449. Two other subattributes (<u>reputation</u> and <u>recommendations</u>) have lower and approximately equal importance score values.

- All of the <u>convenience-related</u> subattributes (<u>liberal approval criteria</u>, <u>ease and convenience</u>, <u>bundling with other products</u>) have similar results for importance, therefore none of them can be identified as a dominating among the subattributes of convenience.

Table 5.7 identifies the local priorities of the attributes with respect to the goal of selecting the best mortgage product (a_i), local priorities of subattributes (p_{ik}), and normalized local priorities of subattributes.

Table 5.7. Local priorities for the attributes and subattributes of a mortgage provider selection decision

Attribute	a_i	Subattribute	p_{ik}	Normalised subattribute
Confidence	0.121	Reputation	0.289	0.035
		Soundness	0.449	0.054
		Recommendations	0.262	0.032
Cost	0.452	**Interest Rate**	**0.461**	**0.208**
		Borrowing Limit	0.212	0.096
		Application Costs	0.172	0.078
		Early Repayment	0.155	0.070
Service	0.255	**Speed of Decision**	**0.388**	**0.099**
		Assistance	0.194	0.049
		Term of Mortgage	**0.418**	**0.107**
Convenience	0.172	Liberal Approval	0.367	0.063
		Ease and Convenience	0.303	0.052
		Bundle	0.33	0.057

Comparing the normalized subattribute scores across all attributes has identified four dominating factors/subattributes. Interest rate has the highest normalized score (0.208), the other three factors have a considerably less value of local priority. Term of mortgage is second (0.107), followed by speed of decision (0.099) and borrowing limit (0.096).

The inconsistency index for the overall set of pairwise comparisons, based on the 45 questionnaires, is equal to 0.002, which is well below the acceptable level of 0.1.

5.5. Identifying the determinant attributes and subattributes

As previous analysis has identified the importance scores for attributes and subattributes, the next step is to identify which attributes and subattributes are determinant in customer decision-making for the choice of mortgage supplier. Calculations employ the method of identifying the determinant attributes, used by Armacost and Hosseini (1994). This method is described in Chapter 3.

The following values, obtained using the ExpertChoice calculations, are presented in Table 5.8

- The local priorities of the attributes with respect to the overall goal of choosing the best mortgage provider ($a_i, i = 1,2,3,4$);
- The local priorities of subattributes with respect to each attribute ($p_{ik}, i = 1,2,3,4; k = 1,2,3,4$)
- The local priorities of alternatives with respect to each subattribute ($s^i_{kj}, i = 1,2,3,4; k = 1,2,3,4; j = 1,2,3,4,5,6,7,8$)

Next, relative priorities g^i_k for each of the 13 subattributes are calculated as a geometric mean of local priorities of alternatives with respect to each subattribute s^i_{kj}. Relative priorities for each of the 4 attributes, g_i, are calculated as the geometric mean of local priorities of subattributes with respect to this attribute. The difference score, y^i_k, is calculated for each subattribute and each attribute. Finally, the determinance scores, d^i_k, are calculated for each subattribute and for each attribute. The results of calculations are presented in the Table 5.8.

Table 5.8. Importance scores, difference scores and determinance scores for attributes and subattributes of a mortgage provider selection decision

Attribute	a_i	Subattribute	p_{ik}	Alternative	s^i_{kj}	g_i	y_i	d_i
Confidence	0.121					0.3240	0.0094	0.0011
		Reputation	0.289	ZAK	0.035	0.1081	0.0169	0.0020
				National	0.234			
				ASB	0.211			
				ANZ	0.104			
				Westpac	0.127			
				BNZ	0.119			
				TSB	0.066			
				HSBC	0.104			
		Soundness	0.449	ZAK	0.040	0.1113	0.0137	0.0017
				National	0.247			
				ASB	0.172			
				ANZ	0.114			
				Westpac	0.121			
				BNZ	0.126			
				TSB	0.078			
				HSBC	0.102			
		Recommendations	0.262	ZAK	0.036	0.1090	0.0160	0.0019
				National	0.232			
				ASB	0.207			
				ANZ	0.108			
				Westpac	0.105			
				BNZ	0.136			
				TSB	0.071			
				HSBC	0.105			
Cost	0.452					0.2259	0.0241	0.0109
		Interest Rate	0.461	ZAK	0.070	0.1187	0.0063	0.0029
				National	0.236			
				ASB	0.116			
				ANZ	0.118			
				Westpac	0.112			
				BNZ	0.110			
				TSB	0.112			
				HSBC	0.126			
		Borrowing Limit	0.212	ZAK	0.076	0.1177	0.0073	0.0033
				National	0.246			
				ASB	0.133			

				ANZ	0.136			
				Westpac	0.100			
				BNZ	0.104			
				TSB	0.109			
				HSBC	0.096			
		Application Costs	**0.172**	ZAK	0.071	**0.1178**	**0.0072**	**0.0033**
				National	0.207			
				ASB	0.101			
				ANZ	0.165			
				Westpac	0.105			
				BNZ	0.100			
				TSB	0.162			
				HSBC	0.089			
		Early Repayment	**0.155**	ZAK	0.072	**0.1203**	**0.0047**	**0.0021**
				National	0.210			
				ASB	0.127			
				ANZ	0.110			
				Westpac	0.119			
				BNZ	0.114			
				TSB	0.134			
				HSBC	0.114			
Service	**0.255**					**0.3157**	**0.0176**	**0.0045**
		Speed of Decision	**0.388**	ZAK	0.064	**0.1147**	**0.0103**	**0.0026**
				National	0.244			
				ASB	0.174			
				ANZ	0.112			
				Westpac	0.129			
				BNZ	0.092			
				TSB	0.109			
				HSBC	0.076			
		Assistance	**0.194**	ZAK	0.072	**0.1169**	**0.0081**	**0.0021**
				National	0.243			
				ASB	0.158			
				ANZ	0.116			
				Westpac	0.118			
				BNZ	0.108			
				TSB	0.098			
				HSBC	0.087			
		Term of Mortgage	**0.418**	ZAK	0.077	**0.1158**	**0.0092**	**0.0023**
				National	0.263			
				ASB	0.125			
				ANZ	0.142			
				Westpac	0.106			

				BNZ	0.094			
				TSB	0.113			
				HSBC	0.080			
Convenience	**0.172**					**0.3323**	**0.0010**	**0.0002**
		Liberal Approval	**0.367**	ZAK	0.071	**0.1186**	**0.0064**	**0.0011**
				National	0.220			
				ASB	0.155			
				ANZ	0.122			
				Westpac	0.130			
				BNZ	0.096			
				TSB	0.102			
				HSBC	0.104			
		Ease and Convenience	**0.303**	ZAK	0.057	**0.1124**	**0.0126**	**0.0022**
				National	0.243			
				ASB	0.195			
				ANZ	0.116			
				Westpac	0.132			
				BNZ	0.099			
				TSB	0.082			
				HSBC	0.076			
		Bundling	**0.33**	ZAK	0.073	**0.1182**	**0.0068**	**0.0012**
				National	0.206			
				ASB	0.159			
				ANZ	0.148			
				Westpac	0.131			
				BNZ	0.099			
				TSB	0.104			
				HSBC	0.080			

Once the importance scores, difference scores and determinance scores are obtained, we need to identify which subattributes are determinant. The calculations show that at the 0.05 confidence level, average determinance score is equal to 0.0022, and standard error of the determinance scores is equal to 0.0002 (see Table 5.9). Therefore, the critical value of determinance score is equal to 0.0025 and subattributes with determinance scores higher than a critical value of 0.0025 can be identified as determinant. Table 5.9 shows that four determinant subattributes (interest rate, borrowing limit, application costs and speed of decision) are identified.

Table 5.9. Determinance scores (d$_i$) for the individual subattributes

Subattributes	d$_i$	Normalized d$_i$
Reputation	0.0020	0.0697
Soundness	0.0017	0.0592
Recommendations	0.0019	0.0662
Interest Rate*	**0.0029**	**0.1010**
Borrowing Limit*	**0.0033**	**0.1150**
Application Costs*	**0.0033**	**0.1150**
Early Repayment	0.0021	0.0732
Speed of Decision*	**0.0026**	**0.0906**
Assistance	0.0021	0.0732
Term of Mortgage	0.0023	0.0801
Liberal Approval	0.0011	0.0383
Ease and Convenience	0.0022	0.0767
Bundle	0.0012	0.0418
Sum	**0.0287**	**1.0000**
Average	0.0022	0.0769
Std error	0.0002	0.0067
Critical Value of d$_i$	**0.0025**	**0.0876**

* Identifies the determinant subattributes

Similar procedure leads to the identification of the determinant attributes. The average determinance score for attributes is equal to 0.0042, and standard error of the determinance scores is equal to 0.0024. Therefore, the critical value of determinance score is equal to 0.0081 at a 0.05 level of confidence. Table 5.10 summarizes the determinance scores (*d$_i$*) and the normalized determinance scores for each of the four attributes of customer decision.

Table 5.10. Determinance Scores (d$_i$) for the attributes

Attributes	d$_i$	Normalized d$_i$
Confidence	0.0011	0.0659
Cost*	**0.0109**	**0.6527**
Service	0.0045	0.2695
Convenience	0.0002	0.0120
Sum	**0.0167**	**1.0000**
Average	0.0042	0.2500
Std error	0.0024	0.1452
Critical Value of d$_i$	**0.0081**	**0.4824**

* Identifies the determinant attribute

Table 5.10 shows that only one attribute of the mortgage provider selection decision is determinant. It is evident that cost has the normalized determinance score higher than the combined score of three other attributes. Service, confidence and convenience have determinance scores lower than the critical value of 0.0081 and, therefore, are not identified as determinant attributes of customer choice.

5.6. Results for individual banks/alternatives

Considering the results for individual banks/alternatives, the following conclusions can be drawn. Comparing the importance scores, obtained by each bank, it is evident that National Bank has the highest score of 0.235, followed by ASB bank (0.144). ANZ Bank has a third position with a score of 0.125. Following the leaders is a group of four banks, Westpac, TSB, BNZ and HSBC, where each bank has a similar score, ranging from 0.098 to 0.116. Zak Bank, a non-existent brand, developed for the purpose of study, has a score of 0.067, which is considerably lower than the scores of existing New Zealand banks. Figure 5.6 compares the normalized individual scores obtained for banks/alternatives.

Figure 5.6. Overall preference scores for the banks/alternatives
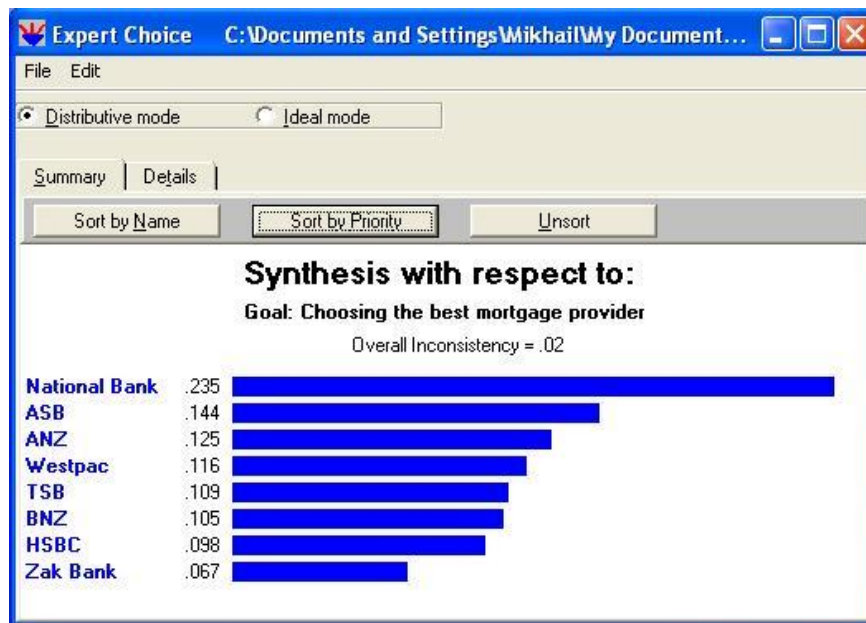
Since understanding the impact of bank brand on the customer choice of a mortgage provider is one of the objectives of the present study, it is instructive to compare the scores, obtained by individual banks with respect to brand-related factors analyzed in the study: reputation, soundness/safety and recommendations. The following figures (5.7 – 5.9) represent the normalized relative importance scores of individual banks with respect to each of the factors. It is clear that, National Bank and ASB are ranked first and second with respect to each factor analyzed, while Zak Bank, predictably, has the lowest score in each of the factor sets. The relative importance scores of other banks are significantly lower than whose of two leading banks.

Figure 5.7. Overall preference scores for the banks with respect to reputation
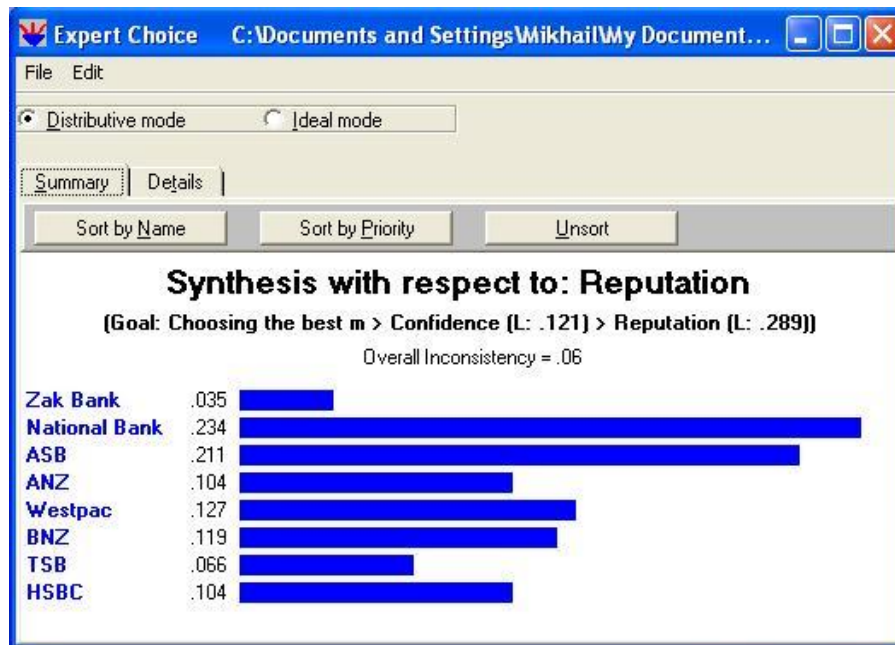
Figure 5.8. Overall preference scores for the banks with respect to soundness and safety of the institution
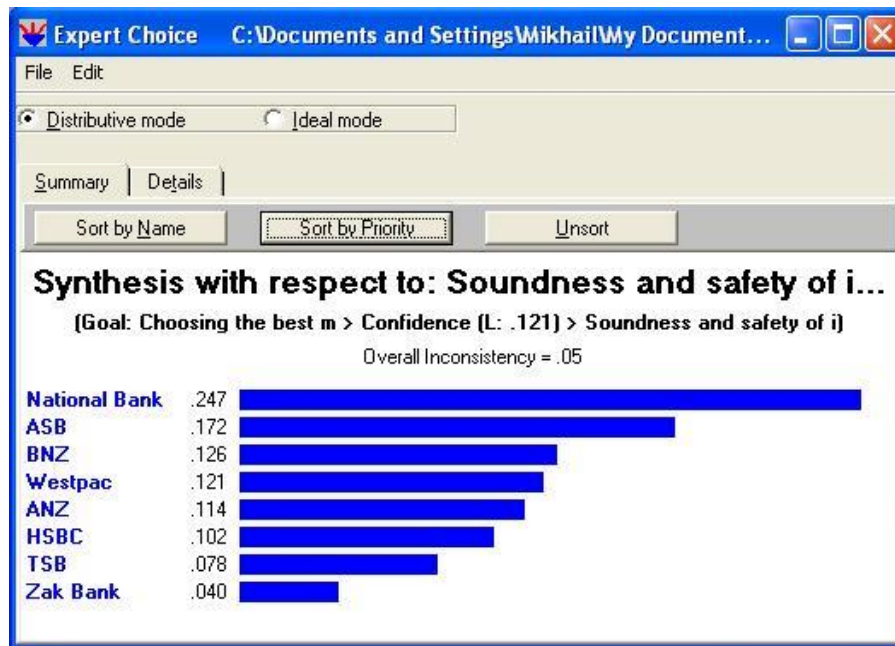
Figure 5.9. Overall preference scores for the banks with respect to recommendations
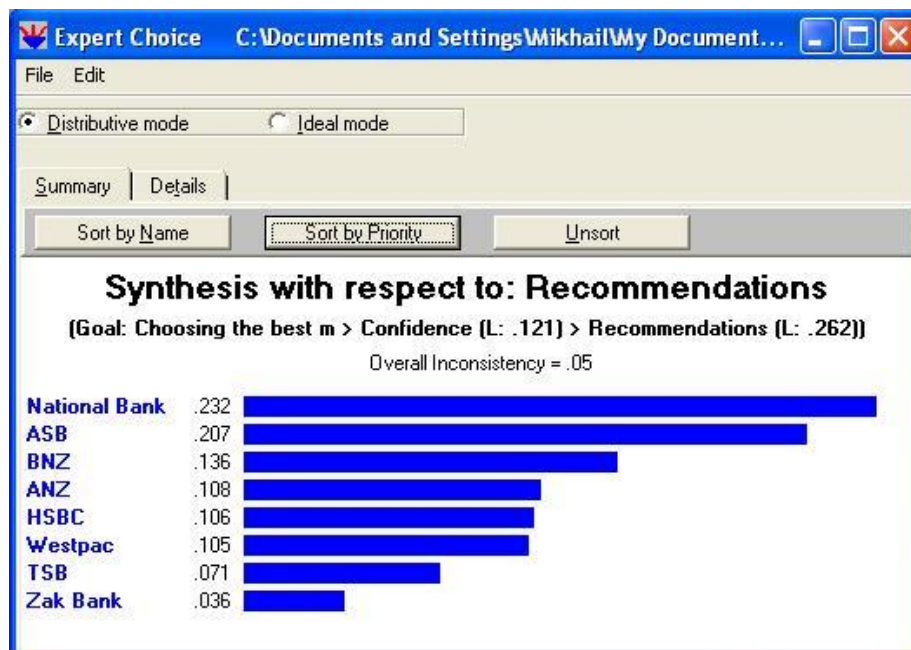
5.7. Evaluating the impact of brand on the customer choice of banks

To evaluate the impact of brand on customer decision-making, we need to compare the independent samples, consisting of relative weights for each bank/alternative and to decide if these samples come from the same or different population. We need to identify whether the differences among the samples indicate that they come from different populations, or they just represent insignificant variations such as are to be expected among random samples from the same population. If the samples represent the same population, this may indicate that the bank's brand affects the customer choice. If the samples belong to different populations, the opposite may be true.

To test this idea, Kruskal-Wallis test can be used. The relative priorities of alternatives, obtained in each individual questionnaire, can be grouped into sets/samples by bank, with a total of 8 banks. Each set of priorities, related to an individual bank, can be treated as an independent sample to be tested. The Kruskal-Wallis test is designed to decide whether k independent samples are from different populations and tests the null hypothesis H_0, which states that the k samples come from the same or identical populations with respect to average values. If H_0 is true, then H (the Kruskal-Wallis statistic) is distributed as chi-square with $df = k - 1$, where df represents the degrees of freedom. The value of H can be calculated as follows:

$$H = [12 / N (N+1)] [\Sigma((\Sigma R)^2 / n)] - 3(N + 1),$$

where N = the total number of cases

n = the number of cases in a given group

$(\Sigma R)^2$ = the sum of the ranks squared for a given group of subjects

The value of H obtained, is then compared with table value of the Chi-Square distribution for the chosen level of significance and for the degrees of freedom (df). If the value of H is larger than the table value, then the null hypothesis H_0 is rejected at this level of significance.

The test was completed using the computerized statistical software package SPSS. The results of the test for the overall set of alternative banks is presented in Figure 5.10.

Figure 5.10. Results of Kruskal-Wallis test for the overall set of bank's relative importance scores

Ranks

bank		N	Mean Rank
pref	ANZ	22	105.70
	ASB	22	109.68
	BNZ	17	95.97
	HSBC	16	95.56
	National	19	134.08
	TSB	21	89.93
	Westpac	18	97.47
	Zak	45	48.90
	Total	180	

Test Statistics[a,b]

	pref
Chi-Square	47.502
df	7
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: bank

The table value of chi-square for the level of significance (α) equal to 0.05, and df = 7, is equal to 14.067. Since 14.067< 47.502, the null hypothesis is rejected. This means that one or more banks are from a different score population and that there is a significant difference among these populations.

Also, the Kruskal-Wallis test was conducted for each pair of banks/alternatives. A total of 29 pairs were tested. For each pair, the table value of chi-square for the level of significance (α) equal to 0.05, and df = 1, is equal to 3.841. Table 5.11 shows the values of H (Kruskal-Wallis statistics), obtained in each test.

Table 5.11. The values of H, obtained in comparisons by two banks

	ZAK	National Bank	ANZ	ASB	BNZ	Westpac	TSB
National Bank	**26.998**	**National Bank**					
ANZ	**21.347**	**5.295**	**ANZ**				
ASB	**19.301**	3.161	0.159	**ASB**			
BNZ	**10.620**	**6.348**	0.146	0.900	**BNZ**		
Westpac	**9.271**	3.667	0.240	0.253	0.079	**Westpac**	
TSB	**10.431**	**8.481**	1.067	1.954	0.380	0.072	**TSB**
HSBC	**11.082**	**5.146**	0.333	1.041	0.000	0.067	0.068

It is evident from Table 5.11 that values of H, obtained for ANZ, ASB, BNZ, Westpac, and TSB are lower than the table value of chi-square, which is equal to 3.841. However, they are significantly higher in all values, involving the comparisons of Zak Bank with other banks. The same is true in case of four out of six comparisons, obtained for National Bank. Hence, it may be assumed that the null hypothesis H_0 is rejected for at least two sets of preference scores, which represent Zak Bank and National Bank. These sets do not belong to the same population with the sets of preference scores, obtained for other banks.

In sum, the results of Kruskal-Wallis test show that the sets of relative preferences/weights for banks, representing each individual bank, do not come from the same population. It indicates that these sets are not homogeneous, and significant differences exist among them. This may reject the research hypothesis stating that brand has no significant impact on the customer choice of mortgage provider.

5.8. Sensitivity analysis of study results

Once the weights of decision criteria are obtained, we can evaluate the response of the calculated overall priority to changes in the relative importance of the criteria. The sensitivity analysis of research results, conducted using the ExpertChoice software program, allows the testing of different scenarios, and evaluating of how changes in the weight of one objective will affect the outcome of the decision.

Figure 5.11 represents the performance sensitivity analysis of study results. The figure displays how the alternatives perform with respect to each of the criteria objectives as well

as overall. The priorities for individual attributes are identified on the left Y-axis. The priorities of individual banks/alternatives with respect to each attribute are identified on the right Y-axis.

Figure 5.11. Performance Sensitivity of study results
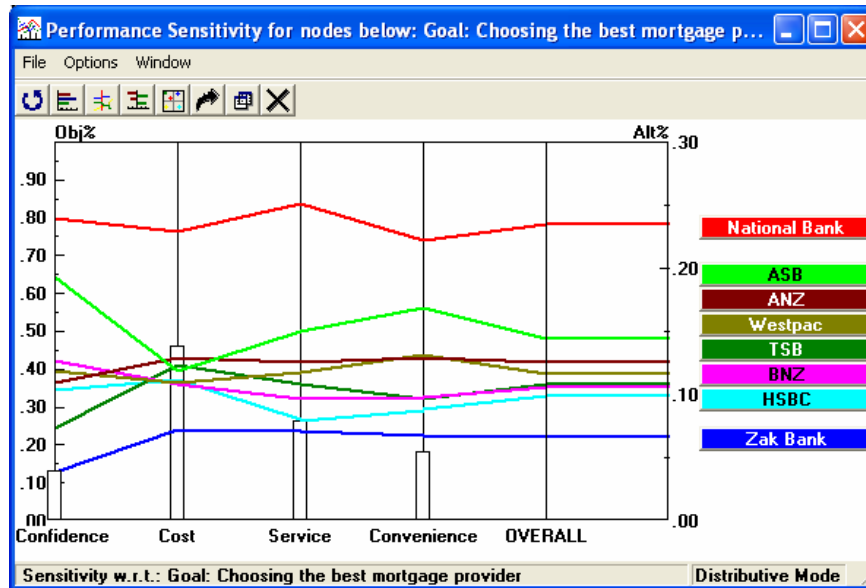
The analysis of data in Figure 5.11 does not indicate significant difference in sensitivity of relative weights of certain banks (e.g. National Bank, ANZ) with respect to different criteria. At the same time, the fact of noticeable interest is the sensitivity of individual alternatives confidence and costs. It is evident from the Figure 5.7 that the relative weights obtained for ASB bank are to a certain extent sensitive to the changes across the criteria elements (specifically for confidence and cost). This may indicate that the customers rank this bank higher in terms of confidence, but at the same time the cost, associated with the bank's mortgage offer are perceived to be higher than those of at least three other banks, hence the lower score of ASB bank with respect to the cost. However, performance sensitivity analysis indicates the different situation for TSB bank, which is ranked significantly higher with respect to the cost attribute than the to confidence attribute. A similar pattern can be seen for the dummy brand - Zak Bank. In respect for the latter attribute, it is expected that the cost of Zak Bank's offer, randomly chosen from existing bank's offers, as specified in the questionnaire design (Chapter 4), would be more important to respondents than the confidence dimension (a function of reputation,

recommendations and soundness) since it is a non-existing brand and respondents had never heard about it before.

The sensitivity analysis of research results indicate that the results are robust as far as service and convenience are concerned. An exception is the ASB Bank with a relatively higher score for convenience, and HSBC Bank, which is ranked relatively low in respect to perceived level of service.

The analysis of performance sensitivity provided above, is supported by the analysis of dynamic sensitivity. Figure 5.8 demonstrates the original results of study. The left field of the figure represents the overall relative weights for attributes/criteria, while the right field shows the relative weights of banks/alternatives.

Figure 5.12. Dynamic Sensitivity – Original study results
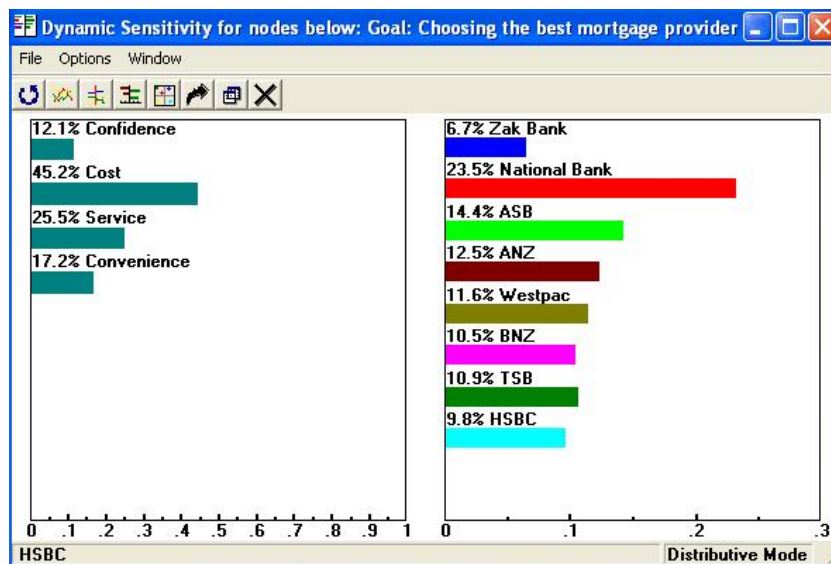
If we assume that the relative weight of the most important criteria (cost) has increased, using dynamic sensitivity analysis we can evaluate the consequent changes in relative priorities of alternatives. Figure 5.13 shows the situation when the relative priority of cost has increased to 80%. When the changes in the weights of alternatives are compared with the corresponding original values, shown in Figure 5.12, it can be seen that the increase of cost attribute significance did not affect the relative weighs of most banks. However, the

overall preference of ASB Bank has been noticeably diminished (from 14.4% to 12.8%). At the same time both TSB and HSBC have gained 1% each in their relative preference scores.

Figure 5.13. Dynamic Sensitivity – Increased priority of cost attribute
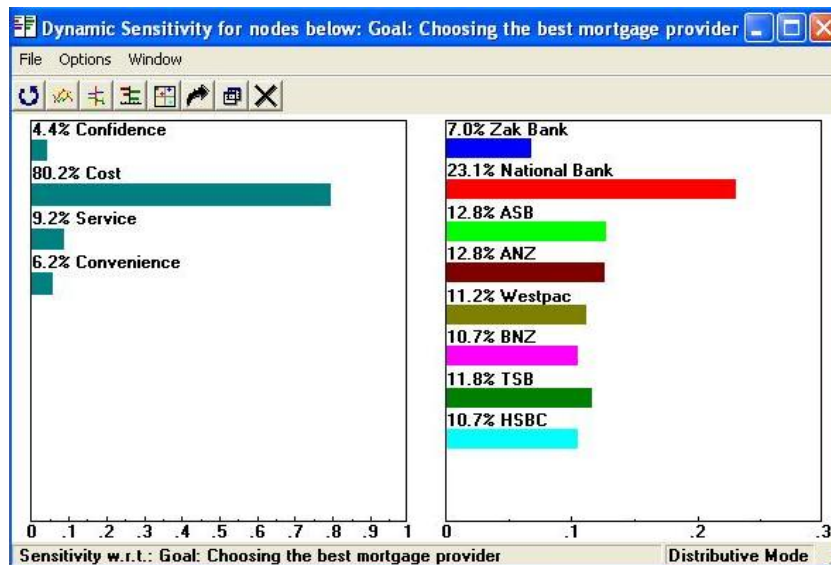
Figure 5.14 indicates the opposite situation, when the overall relative priority of the cost attribute has been decreased to 10% and the priorities of other decision-making attributes have increased respectively. Predictably, in this scenario, the relative weight of ASB Bank has increased by nearly 2%, and the relative weights of TSB and HSBC have been decreased by approximately 1% each. The relative priorities of other banks did not show significant changes as compared to their original values, shown in the Figure 5.12.

Figure 5.14. Dynamic Sensitivity – Decreased priority of cost attribute
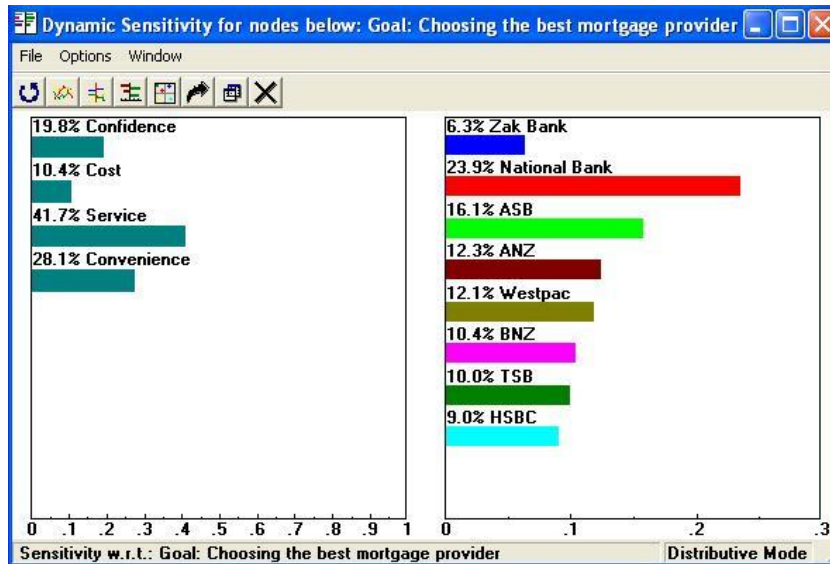
To summarize the results of sensitivity analysis, it can be assumed that there is sensitivity to the changes in the cost variable, regarding the relative preference of banks, as being indicated for ASB Bank, TSB and HSBC. An increase in the importance of cost-related factors may produce a negative impact on the relative preference for the ASB bank, but the other two banks, may gain in their preference. A decrease in the relative importance of cost may be positive for ASB Bank, but diminishes the relative preferences for TSB and HSBC.

5.9. Summary

The research identified the determinant attributes for customer choice of mortgage provider. Specifically, cost is identified as a key attribute for the customer decision to choose a particular mortgage provider. Also, cost-related subattributes (interest rate, borrowing limit, and application costs) are determinant for customer choice. The other determinant subattribute identified, speed of decision, is related to service.

Considering the customer preference for individual banks/alternatives, the study shows that National Bank with respect to overall goal and with respect to each element of criteria and subcriteria is ranked higher than all other banks.

In sum, the results of the study suggest that customers base their choice on the cost-related factors, such as interest rate and borrowing limit. At the same time, brand-related factors (such as reputation and recommendations) are not determinant for customer decision-making. It is also evident that service-related factors (except for speed of decision) and convenience-related factors do not significantly affect the customer choice among alternative mortgage products.

Research results are discussed in Chapter 6 of the present study.

CHAPTER 6. DISCUSSION OF RESULTS

By understanding values of greatest importance
to banking customers, a bank can refocus
its resources to lower costs and business risk
while boosting market share and profitability
Elliot et al. (1996)

6.1. Introduction

The following chapter provides a critical analysis of the results of the present research study. The results obtained are compared with those of previous research studies on the customer's bank selection decision, and mortgage choice decision. Next, the implications for the banking firms are discussed in terms of applicability of the research findings for re-designing the existing mortgage products and allocation of the amount spent on brand-related advertising. Also, the limitations of the research study are identified with regard to research design, sampling and methodology used; all of these limitations are briefly discussed. The chapter concludes with suggestions for future research to clarify the ideas discussed, to address the remaining gaps in the knowledge, and to verify research results in areas other than the choice of a mortgage provider.

6.2. Discussion of research results

Both research hypotheses were rejected in the study. The results obtained show that customers do not consider the bank's brand as influential factor in the choice of a mortgage provider. Also, the brand-related attributes, such as reputation or recommendations, are not determinant for the customer choice. The research identifies cost-related factors (interest rate, borrowing limit and application costs) and one service-related factor (speed of decision) as the determinant factors for customer decision-making as regards the choice of the mortgages.

The assumption that brand name is the clue a customer is using to reduce the risk and effort, associated with the choice decision is universal in the research literature, as explained in Chapter 1. However, this assumption is not supported by the results of this study. Results suggest that the customer is likely to spend more time to find the best deal when choosing the mortgage provider, paying more attention to the factors such as the interest rate, and the borrowing limit. At the same time, brand-related factors, such as bank reputation or recommendations are secondary in the process of customer choice.

The analysis of the trends in the New Zealand mortgage market, presented in Chapter 1 of this study, reveals the fact that the market share of one particular bank (BNZ) has risen since the bank management made a decision to focus on lowering the costs of their mortgage products for the customers. Specifically the decision was made to keep the interest rates for fixed rate loans lower than those of competitors. The correlation between the focus of bank management on lowering the interests rates and the market share growth can be seen as consistent with the research findings obtained in this study.

Also, the results of sensitivity analysis conducted in Chapter 5 of the study show that the customers may perceive the mortgage offer of ASB Bank as being too expensive. Assuming the significant impact of cost-related factors on the overall bank choice decision, the bank may lose overall share of preference to other banks despite having a relatively high score in terms of confidence. On the contrary, as the cases of TSB and HSBC show, relatively strong performance with regard to the cost dimension makes their score more competitive, despite the low scores obtained for confidence-related factors, such as reputation and recommendations.

6.3. Comparison of importance scores and determinance scores for subattributes

Some important conclusions can be drawn when the decision-making factors in customer choice of mortgages are compared in terms of their relative importance and determinance against other factors. Table 6.1 illustrates both importance and determinance scores rankings for the factors tested in the research study.

Table 6.1. Comparison of importance and determinance scores rankings for factors, affecting customer choice of mortgage provider

Subattributes	Importance Score Rankings	Determinance Score Rankings
Reputation	12	9
Soundness	9	11
Recommendations	13	10
Interest Rate*	**1**	**3**
Borrowing Limit*	**4**	**1**
Application Costs*	**5**	**2**
Early Repayment	6	8
Speed of Decision*	**3**	**4**
Assistance	11	7
Term of Mortgage	2	5
Liberal Approval	7	13
Ease and Convenience	10	6
Bundle	8	12

* Four decision-making attributes, identified in study as determinant are shown as bold

Table 6.1 shows that the first five positions are distributed among the same decision-making factors in both importance and determinance. However, the ranking within each of the two sets differs. For example, the interest rate is a leader in importance score among other subattributes of customer decision-making, but it has only third position in determinance. At the same time, borrowing limit dominates other factors, having the top ranked determinance score, although it is ranked only fourth in importance. Application costs factor has a second ranking in terms of determinance, however it is ranked only fifth in terms of importance. Finally, the study found term of mortgage to be the second most important factor of customer decision-making, although it was not identified among the determinant attributes.

These results conflict with the research findings of Armacost and Hosseini (1994), where the same subattributes of customer choice were identified as having the same rank with regard to both importance and determinance. Armacost and Hosseini (1994) were analyzing the factors affecting the customer choice of fast-food restaurant, and found that two factors (food taste and food selection) ranked first and second in terms of their importance and

determinance. The third ranked determinant subattribute (menu alternatives) has the fourth highest importance score among other decision-making subattributes.

Other decision-making factors considered in the present research study, that differ in their relative importance and determinance for the customer decision-making include liberal approval criteria, which is ranked 7th in importance and the lowest 13th in determinance (see Table 6.1). The opposite examples may be seen for the factor of ease and convenience of contact, which has the 6th highest determinance score, but is ranked 10th in terms of importance) and for the assistance with paperwork (ranked 11th and 7th respectfully).

6.4. Research results compared with previous studies on bank selection

The research does not identify brand as a determinant decision-making factor for customer choice among alternative banks. This contradicts previous research studies analyzed in Chapter 1, which assume the significant role of brand in customer decision-making. However, the present study was focused specifically on the choice of a mortgage provider, and it appears that studies in other areas/industries may produce different results.

In this research study, the interest rate, borrowing limit, application costs and speed of decision were identified as being the determinant attributes for customer decision-making on the choice of mortgage provider. This finding of cost-based factors dominance is consistent with the previous research results, as a number of studies (e.g. Anderson et al., 1976; Khazeh and Decker, 1992; Elliot et al., 1996; Ta and Har, 2000) identified low service fees as influential for the customer choice of bank.

However, other factors identified as important for customers in previous research, including reputation (e.g. Javalgi et al., 1989; Khazeh and Decker, 1992; Boyd et al., 1994), location (e.g. Javalgi et al., 1989; Thwaites and Vere, 1995; Elliot et al., 1996; Ta and Har, 2000), recommendations (Anderson, 1976) and quality of service (Javalgi et al., 1989; Kennington et al., 1996; Ulengin, 1998; Ta and Har, 2000) were not found in this study to be among the dominant considerations for customer.

The results of the study can be also compared with the results, obtained in previous studies of the mortgage selection determinants. Even though the set of factors, tested with respect to determinance for the customer choice, does not necessarily replicate those used in previous research, some other important conclusions may be drawn as a result of comparison.

The research findings are unlikely to agree with conclusion of Devlin (2002), who considers mortgages as a low-involvement product, where customer preference tends to rely on advice rather than extensive information search. Evaluating the degree of customer involvement in the purchase of mortgages was not among the objectives of this research. However, it can be assumed that if the interest rate, borrowing limit and application costs dominate the decision to select a particular mortgage provider, the customers are likely to spend a significant amount of time and effort on the information search to find the best deals on the above-mentioned determinant factors.

The present study supports the findings of research by Devlin (2002), in which he identified interest rate as the second most important factor for the customer in making choice. Also, Javalgi et al. (1989), Khazeh and Decker (1992), and Boyd et al. (1994), found interest rate on loans to be an influential factor for customers when choosing a bank. Our study also found speed of loan approval decision influential, which agrees with the findings of Khazeh and Decker (1992). The results are also consistent with the findings of Talaga and Buch (1998), who considered application costs as being a determinant factor for customer's decision. Service quality, image and reputation of the mortgage provider were not found to be determinants of customer's choice, which also agrees with the research findings of Devlin (2002).

At the same time, while recommendations do not determine customer choice in this research study, Devlin (2002) found this factor to be the most important. Term of mortgage was found to be the least important by Talaga and Buch (1998), but in the present study it has the 2nd highest importance score and 5th highest determinance score.

The difference between research findings and the literature may be explained by considering differences in the research methodology used. For instance, Devlin (2002)

identified the important attributes of customer mortgage choice, but the structure of data used in his study did not allow for aggregation, and therefore did not provide an enhanced understanding of customer choice. However, the Analytic Hierarchy Process, used in the present study, allows for identification of the determinant attributes of customer decision-making, which can be considered as reliable indicators of factors affecting the customer choice.

6.5. Limitations of the research

Although the research results obtained can clarify the determinants of bank customer choice decision, a number of limitations of the present research study should be acknowledged. These limitations may be attributed to data collection and research methodology.

Limitations, related to data collection

The relatively small sample of respondents may not produce generally representative results for customer choice determinants as far as customer affiliation with various demographic groups is concerned. Also, a number of completed questionnaires returned to the researcher had an inconsistency index higher than 0.1, which may indicate difficulties for some respondents to complete pairwise comparisons. This point was also discussed by Armacost and Hosseini (1994), who acknowledge that the AHP approach requires more work by the respondents in terms of the number of items to be compared and consequently, a number of questions to answer.

The research questionnaire includes questions, which ask respondents about financial matters. The researcher acknowledges that the discussion of questions, related to personal finance may be considered sensitive for the respondents, and therefore may divert some of them from completing the research questionnaire. Also, some respondents indicated they use several banks for their transactions, and some of them indicated they currently have mortgages with several banks. Presumably, this may complicate their decision-making process when they choose among alternative mortgage products.

Limitations related to research methodology

Some limitations of the research study may be attributed to the research methodology used. The factors to be tested were obtained through one nominal group session with five people participating, and therefore it may be assumed that several nominal groups may have helped to identify additional factors, important to customers. Also, the Analytic Hierarchy Process, used in this study, has been proved to be a powerful research method to identify the determinant attributes of customer decision-making; however there are certain limitations of the AHP, which were presented in Chapter 3.

6.6. Implications for business

Javalgi et al. (1989) point out that it is crucial for banks to be able to identify and understand customer preferences in order to decide which services the bank should offer. Researchers have argued that AHP can assist decision-makers in obtaining a detailed understanding of what product/service characteristics are important to customers and how their preference judgments on the relative importance of attributes influence their choice decision. Based on the results of their study of the determinants of bank selection decision, Javalgi et al. (1989) suggested that AHP can be used to redesign specific products or services, to introduce new service concepts, or to determine the best product/service mix, thus increasing the sales/profit growth.

The present research study illustrates this point and, therefore its results should be considered relative to its implications for banking industry practice. Specifically the two main points are that:

- AHP may be used to decompose customer choice and its elements into a hierarchy. We can measure relative preference for each element of customer decision-making and hence infer relative brand values
- Expenditure on branding may not necessarily be useful in the mortgage product market, where bank brands do come from the same population, as confirmed by research results analysis.

Measuring brand values
Berry (1988) suggests that the strategy of building a strong brand involves building the customer trust towards the brand and understanding of brand values. The present research

provides a method, which can be used to evaluate the impact of brand on the customer choice among alternative products. Also, it was found that brand-related values do not significantly affect the customer choice, and therefore banks may use these findings to re-evaluate their products and marketing mix allocation.

Brand-related expenditure

The study of Devlin (2002) found that service quality, image and reputation of the mortgage provider were not important for customers when choosing the mortgage. Given the emphasis many financial services organizations place on service quality, and the amount of money spent on corporate advertising, it is surprising to see how relatively unimportant such criteria are to consumers in general, when it comes to mortgages.

Corresponding with the findings of present research, Talaga and Buch (1998) point out that understanding how consumers make trade-offs among the elements of a mortgage instrument, can help lenders profitably design instruments that appeal more exactly to the needs and desires of borrowers. Talaga and Buch (1998) explain that since the borrowers value something about the brand name, those lenders with a strong brand name should be able to charge somewhat higher fees for the same mortgage or charge equivalent fees for mortgages with higher interest rates. According to Berry (1988), strong brand building strategies imply the identification of clear and relevant values that have not been well expressed in the mortgage market. These values, once understood, provide a very effective tool for increasing the market share.

In sum, present research suggests that customers pay more attention to cost-related factors, rather than brand-related, service-related (except for the speed of decision), or convenience-related factors. This may have significant implications for the design of bank mortgage products. It can be assumed that a relatively smaller player in the banking market, if they can design a mortgage product with a lower interest rate, higher borrowing limit, and minimum amount of application fees, may be expected to obtain a strong competitive advantage in the mortgage market, and increase their market share. The larger banking institutions, on the contrary, may choose to rely on their stronger brand and thus underestimate the significance of cost-related customer values.

6.7. Suggestions for future research

The research has identified the AHP as a method for evaluating brand value in customer decision-making when choosing among alternatives. This study explored the customer's choice of mortgage provider. In addition, the study can be seen as a step towards further clarification of brand-related issues discussed in marketing literature, rather than a comprehensive solution to these issues. To validate the findings of this research, to clarify the research knowledge on brand values and the role of brand in customer decision-making, it would seem reasonable to suggest other researchers to conduct similar studies on customer choice. These studies should employ the AHP method as an efficient tool to understand the customer decision-making process and should be conducted in industries, other than banking.

In relation to the banking industry, the present research study can be replicated for the banking products other than mortgages (e.g. credit cards or savings accounts). Devlin (2002) suggests that bank mortgages are not necessarily homogeneous with other bank products, and therefore the similar study on customer choice of other bank products could be expected to add to the research results found in this study.

Future research could identify possible variation in mortgage provider selection in relation to the demographic characteristics of customers (such as gender, family size, etc.). Though some demographic information about respondents was collected in this study, the objectives of the study did not include the analysis of possible differences in decision-making among various demographic groups; therefore, it is for future research to address these differences.

It may be also interesting to investigate the degree of customer involvement in the purchase of mortgages, as well as for other banking products. Possible clarification of this issue in future studies could help understanding the process of customer choice better. The present research results suggest that customers base their choice on the cost-related factors, such as interest rate and borrowing limit, while the recommendations of others are ranked significantly lower among decision-making attributes. This may suggest the higher degree

of customer involvement in purchasing mortgage products, but thorough investigation of this issue needs to be conducted in future research.

The present research revealed a difference between the ranking of important and determinant factors of customer choice, as described earlier in Chapter 6. This contradicts the research results of the Armacost and Hosseini (1994). Although, the clarification of this issue was not the objective of the present research study, future research can address this problem and investigate the differences identified.

Another avenue for future research may be found in the area of loyalty of the customers to their financial institutions. Specifically, it could be evaluated to what extent a customer prefers to deal with the same institution when buying other bank products. The limited sample of customers observed in the present research study and lack of representative samples for each bank, does not allow conclusions to be made on this issue. However, future research may use larger customer samples of customers and compare the results for users of a particular bank versus non-users in terms of their preference for this bank as the mortgage provider.

6.8. Summary

This chapter discussed the results of the research study. It was found that the results are consistent with results obtained in previous research. However, the study identified determinant attributes of the customer choice of mortgage provider, which were not revealed by previous studies. Using the AHP-DA methodology, a difference was found between the rankings of important and determinant attributes.

The research identified values of the customers, which are likely to be determinant in the customer's choice of mortgage products. Using this knowledge, bank marketers may re-design their mortgage products accordingly with the customer values. This might provide banks with a competitive advantage in the mortgage market, and could have a positive effect on their market share.

CONCLUSIONS

The objectives of the present research were twofold: to evaluate the role of brand affecting customer choice of a mortgage provider, and to identify which attributes of customer choice are determinant. The research attempted to develop a technique for a brand value calculation, which can be used in future research to evaluate the role of brand in customer decision-making.

The Analytic Hierarchy Process was employed to address the objectives of the study. The customer choice decision was structured in the form of hierarchy, incorporating the overall goal (choice of the best mortgage provider), attributes of customer decision-making, as well as subattributes, related to each attribute, and alternatives (banks).

The research results obtained showed that cost-related factors dominate the customer choice. Among these factors, application costs, interest rate and borrowing limit are identified as determinant for customer decision-making when choosing among alternative mortgage providers. The other factor found as determinant (speed of loan approval decision) belongs to the group of service-related factors. However, the brand-related factors of customer decision-making (bank reputation, recommendations, soundness and safety of the institution) do not significantly influence customer choice.

Also, it was found in the study that the sets of relative priorities/importance scores obtained for individual banks are not homogeneous and are unlikely to belong to the same population. The hypothesis that brand is a dominant factor in customer choice among alternative mortgage providers has very little support. Also, the results of the study contradict some studies, outlined in the review of relevant academic literature, where it is suggested that branding assumes an influential role in customer decision-making. It is acknowledged, however, that study has certain limitations and therefore further research is needed to provide a comprehensive explanation of the impact of brand on the customer choice of mortgage provider.

The study has two important messages for bank marketers. First, the method used in this study, can be used to evaluate the related preference for each element of customer decision-making and hence infer relative brand values. Second, bank managers would be well advised to review the expenditures on branding in the mortgage product market. Research results suggest that the customer pay more attention to cost-related attributes of a mortgage offer, rather than brand-, service- or convenience-related attributes, and, therefore mortgage products offered may be re-designed to better match the customer values identified.

REFERENCES

Aaker D., Keller, K.L. (1990) Consumer evaluations of brand extensions, *Journal of Marketing* 54, (1) 27-41

Aaker, D. (1991), *Managing Brand Equity*, New York: Free Press

Aaker, D. (1996), *Building Strong Brands*, New York, Free Press

ACNielsen NZ market research (2004) Retrieved from the Internet 01.07.2005 at
http://www.acnielsen.co.nz/MRI_pages.asp?MRIID=10

Aldlaigan A., Buttle F. (2001) Consumer involvement in financial services: an empirical test of two measures, *International Journal of Bank Marketing,* Vol.19 (6) p. 232-245

Ambler T., Styles C. (1996) Brand development versus new product development: towards a process model of extension decisions, *Marketing Intelligence & Planning*, Vol. 14 No. 7, pp. 10-19

Anderson, W.T, Cox, E.P, Fulcher, D.G (1976), "Bank selection decisions and marketing segmentation", *Journal of Marketing*, Vol. 40 No.1, pp.40-5

Armacost R., Hosseini J., Javalgi R. (1990) Using the Analytic Hierarchy Process for small business decision making, *Akron Business and Economic Review;* Vol. 21, No. 1, p. 75

Armacost R., Hosseini J. (1994) Identification of determinant attributes using the Analytic Hierarchy Process, *Journal of the Academy of Marketing Science*, Vol. 22, No. 4, pp.383-392

Armacost R., Hosseini J., Pet-Edwards J. (1999) Using the Analytic Hierarchy Process as a two-phase integrated decision approach for large nominal groups, *Group Decision and Negotiation*, Vol. 8, No. 6, p. 535

Arora R., Stoner C. (1996) The effect of perceived service quality and name familiarity on the service selection decision, *The Journal of Services Marketing*, Vol. 10 No. 1, pp. 22-34

Bahmani, N., Javalgi, R.G., and Blumburg, H. (1986) An application of the Analytic Hierarchy Process for a consumer choice problem, *Developments in Marketing Science*, Vol. 9, pp. 402-06.

Bao Y., Zhou K.Z., Su C. (2003) Face consciousness and risk aversion: do they affect consumer decision-making? *Psychology and Marketing*, Vol. 20(8) pp.733–755

Beatty S. Smith S. (1987) External search effort: an investigation across product categories, *Journal of Consumer Research*, Vol. 14

Bettman J. (1975) Issues in designing consumer information environments, *Journal of Consumer Research*, Vol. 2(3)

Bettman J., Park C. (1980) Effects of prior knowledge and experience and phase of the choice process on the consumer decision processes: a protocol analysis, *Journal of Consumer Research*, Vol. 7

Bettman J. Luce M. Payne J. (1998) Constructive consumer choice processes*, Journal of Consumer Research*, Vol. 25

Berry L. (1986) Big ideas in services marketing, *Journal of Consumer Marketing* Vol.3 (2) p.47

Berry L., Lefkowith E., Clark T. (1988) In services, what's in a name, *Harvard Business Review*, Vol. 66, pp. 28-30

Berry N. (1988) Revitalizing brands, *The Journal of Consumer Marketing*, Vol. 5(3)

Biehal G., Chakravarti D. (1982) Information-presentation format and learning goals as determinants of consumers' memory retrieval and choice processes, *Journal of Consumer Research*, Vol. 8(4)

Biswas, A. (1992) The moderating role of brand familiarity in reference price perceptions, *Journal of Business Research*, Vol. 25, pp. 251-62.

Bharadwaj S. Menon A. (1993) Determinants of success in service industries, *Journal of Services Marketing*, 7(4) pp. 19-46

Bhat S., Reddy S. (1998) Symbolic and functional positioning of brands, *The Journal of Consumer Marketing*, Vol.15(1), p. 32

Blankson C., Kalafatis S (1999) Issues and challenges in the positioning of service brands: a review, *Journal of Product & Brand Management*, Vol. 8 No. 2, pp. 106-118

Booms, R. H. and Bitner, M. J., "Marketing strategies and organization structures for service firms", in Donnelly, J. and George, W. R. (Eds), *Marketing of Services*, American Marketing Association, Chicago, IL, 1981

Boyd W., Myron L., White C. (1994) Customer preferences for financial services: an analysis, *The International Journal of Bank Marketing*, Vol.12, Iss. 1, pp. 9-16

Bristow D. Asquith J. (1999) What's in a name? An intracultural investigation of Hispanic and Anglo consumer preferences and the importance of brand name, *Journal of Product & Brand Management*, Vol. 8, No. 3, pp. 185-203

Calantone, R.J., Di Benedetto, C.A. and Schmidt, J.B. (1999), Using the analytic hierarchy process in new product screening, *Journal of Product Innovation Management*, Vol. 16, pp. 65-76.

Calderon H., Cervera A., Molla A. (1997) Brand assessment: a key element of marketing strategy, *Journal of product & brand management*, Vol. 6 No. 5, pp. 293-304

Carman, J. (2000) Consumer perceptions of service quality: an assessment of SERVQUAL dimensions, *Journal of Retailing*, Vol. 66 No. 1, p. 33

Chaston D. (2004) Interest rates in New Zealand. Retrieved 20.05.2005 from the Internet at http://www.interest.co.nz/comment112404.html

Cheng E., Li H., Ho D. (2002) Analytic hierarchy process (AHP). A defective tool when used improperly, *Measuring Business Excellence*, Vol. 6(4), pp. 33-37

de Chernatony L. (2001) A model for strategically building brands, *Journal of Brand Management*, Vol. 9(1), p. 32

de Chernatony, L., Riley, F. (1997) Brand consultants perspectives on the concept of the brand, *Marketing and Research Today*, Vol. 25, pp. 45–52.

de Chernatony L., Riley F. (1999) Experts' views about defining services brands and the principles of services branding, *Journal of Business Research*, Vol. 46, pp. 181–192

de Chernatony L., Segal-Horn S. (2003) The criteria for successful services brands, *European Journal of Marketing*, Vol.37 (7)

Choi, C.J. and Scarpa, C. (1994), A note on small versus large organizations, *Journal of Economic Behavior & Organization*, Vol. 24, July, pp. 219-24

Collins B. (1989) Marketing for engineers In *Management for Engineers* by Samson D., Longman, Melbourne

Cowell, D. (1989), *The Marketing of Services*, Heinemann, London.

Crimmins, J.C. (1992) Better measurement and management of brand value, *Journal of Advertising Research*, July-August, pp. 11-19

Davies M. (1996) Image problems with financial services: some considerations for improvement, *Management Decision*, Vol. 34(2), p. 64

Davies M. (2001) Adaptive AHP: a review of marketing applications with extensions, *European Journal of Marketing*, Vol. 35 No. 7/8, pp. 872-893.

Delbeque, A.L., Van de Ven A.H., Gustafson D.H. (1975) *Group techniques for program planning: a guide to nominal group and Delphi process.* Glenview, III. Scott, Foresman

Derbaix, C. (1983). Perceived risk and risk relievers: an empirical investigation, *Journal of Economic Psychology*, Vol. 3, p. 19–38.

Devlin, J.F. (1998), Adding value to service offerings: the case of UK retail financial services, *European Journal of Marketing*, Vol. 32, No. 11/12, pp. 1091-1109

Devlin J.F. (2002) An analysis of choice criteria in the home loans market, *The International Journal of Bank Marketing*, Vol.20, Iss. 4/5, pp. 212-27

Dibb S., Simkin L. (1993) The strength of branding and positioning in services, *International Journal of Service Industry Management*, Vol.4 (1), p.25

Dobree, J. and Page, A.S. (1990), Unleashing the power of service brands in the 1990s, *Management Decision*, Vol. 28, pp. 14-28

Dorsch M, Grove S, Darden W (2000) Consumer intentions to use a service category, *Journal of Services Marketing*, Vol. 14(2), pp.92-117

Dowling G. (1986) Perceived risk the concept and its measurement, *Psychology and Marketing*, Vol. 3

Dyer, J.S. (1990) Remarks on the analytic hierarchy process, *Management Science*, Vol. 36, No. 3, pp. 249-58.

Elliot M., Shatto D., Singer C. (1996), Three customer values are key to market success, *Journal of Retail Banking Services*, Vol. 18 No. 1

Ellis, B. and Mosher, J. (1993), Six Ps for four characteristics: a complete positioning strategy for the professional services firm CPAs, *Journal of Professional Services Marketing*, Vol. 9 No. 1, pp. 129-45.

Edris, T.A. (1997), Services considered important to business customers and determinants of bank selection in Kuwait: a segmentation analysis, *International Journal of Bank Marketing*, Vol. 15 No.4, pp.126-33

ExpertChoice Software, Expert Choice, Inc, Pittsburgh, PA, http://www.expertchoice.com

Farquhar, P. (1989) A dialogue on momentum accounting for brand management, *International Journal of Research in Marketing*, Vol. 10, pp. 77- 92.

Farquhar, P. (1989), Managing brand equity, *Marketing Research*, Vol. 1, pp. 24-33.

Financial stability report – Reserve Bank of New Zealand (2005). Retrieved 27.10.2005 from the Internet at http://www.rbnz.govt.nz/finstab/fsreport/fsr_nov2005.pdf

Forman E., Gass S. (2001) The Analytic Hierarchy Process - an exposition, *Operations Research*, Vol.49 (4), p. 469

Foxall G., Pallister J (1998) Measuring purchase decision involvement for financial services: comparison of the Zaichkowsky and Mittal scales, *The International Journal of Bank Marketing*, Vol.16 (5), p. 180

Gabbott M., Hogg G. (1994) Consumer Behaviour and Services: A Review, *Journal of Marketing Management*, Vol.10, pp. 311-324

Gemunden, H. G. (1985) Perceived risk and information search: A systematic meta-analysis of the empirical evidence, *International Journal of Research in Marketing*, Vol. 2, pp. 79–100

Ghosh A., Chakraborty G., Ghosh D. (1995) Improving brand performance by altering consumers' brand uncertainty, *Journal of product & brand management,* Vol. 4 No. 5 pp.14-20

Gronroos, C. (1990), *Service Management and Marketing: Managing the Moments of Truth*, Lexington Books, Lexington, MA

Hansen F. (1976) Psychological theories of consumer choice, *Journal of Consumer Research*, Vol. 3

Haley R. (1968) Benefit segmentation. A decision-oriented research tool, *Journal of Marketing*, Vol. 32, pp. 30-5

Harker, P.T., Vargas, L.G. (1987), The theory of ratio scale estimation: Saaty′s Analytic Hierarchy Process, *Management Science*, Vol. 33 No.11, pp.1383-403

Harker, P.T. and Vargas, L.G. (1990), Reply to remarks on the analytic hierarchy process by J.S. Dyer, *Management Science*, Vol. 36 No. 3, pp. 269-73

Heilman C., Bowman D., Wright G. (2000) The evolution of brand preferences and choice behaviors of consumers new to the market, *Journal of Marketing Research*, Vol.37

Hon K.Y., Gail T. (1994) How the Chinese select their banks, *Journal of Retail Banking*, Vol.16 No 4 p. 36

Hotbrook, M.B. (1992) Product quality attributes and brand name as determinants of price: the case of consumer electronics, *Marketing Letters*, Vol. 3 No. 1, pp. 71-83

Keller K. (1993) Conseptualizing, measuring and managing customer-based brand equity, *Journal of Marketing*, Vol. 57

Kennington C., Hill J., Rakowska A. (1996) Consumer selection criteria for banks in Poland, *The International Journal of Bank Marketing*, Vol.14, Iss. 4, p. 12

Khazeh K., Decker W. (1992) How customers choose banks, *Journal of Retail Banking*, Vol. 14, No. 4, pp.41-44

Kim, P. (1990), A perspective on brand, *Journal of Consumer Marketing*, November, pp. 62-7.

Kitzinger J. (1994) The methodology of focus groups: the importance of interaction between research participants, *Sociology of Health* 16 (1): 103-21

Krishnan B., Hartline M. (2001) Brand equity: is it more important in services? *Journal of Services Marketing* Vol.15, 5, pp.328-342

Kreuger R.A. (1988) *Focus groups: a practical guide for applied research*. London: Sage

Kotler P. (1991) *Marketing Management Analysis, Planning and Control*, 8th ed. Englewood Cliffs, NJ Prentice-Hall

Lassar W., Mittal B., Sharma A. (1995) Measuring customer-based brand equity, *Journal of Consumer Marketing*, Vol. 12, No.4, pp.11-19

Levy, M. (1996), Current accounts and baked beans: translating FMCG marketing principles to the financial sector, *The Journal of Brand Management*, Vol. 4, pp. 95-9

Lovelock, C. (1992), *Managing services - marketing, operations and human resources*, 2nd ed., Prentice-Hall, Englewood Cliffs, NJ.

Lutz R. (1975) Changing brand attitudes through the modification of cognitive structure, *Journal of Consumer Research*, Vol. 1, pp. 49-59

Lussier D. Olshavsky (1979) Task complexity and contingent processing in brand choice *Journal of Consumer Research*, Vol. 6

Machleit, K.A., Allen, C.T. and Madden, T.J. (1993), The mature brand and brand interest, *Journal of Marketing*, Vol. 57, October, pp. 72-82.

Maklan S., Knox S. (1997) Reinventing the brand: bridging the gap between customer and brand value, *Journal of product & brand management*, Vol. 6, No. 2, pp. 119-129

Manilla, J.A. and James, J.C. (1977) Importance-performance analysis, *Journal of Marketing*, January, pp. 77-9

Meidan A. (1984) *Bank marketing management* Macmillan Publishers, London

Mitchell V. Boustani P. (1994) A preliminary investigation into pre and post-purchase risk perception and reduction, *European Journal of Marketing*, Volume 28 Number 1 pp. 56-71

Montgomery C., Wernerfelt B. (1992) Risk Reduction and Umbrella Branding, *The Journal of Business*, Vol. 65 (1)

Moore W. Lehmann D. (1980) Individual Differences in Search Behaviour for a non-durable, *Journal of Consumer Research*, Vol. 7 (3), pp. 296-307

Moorthi Y. (2002) An approach to branding services, *The Journal of Services Marketing*, Vol.16 (2), p. 259

Moorthy S. Ratchford B. Talukdar D. (1997) Consumer information search revisited theory and empirical analysis, *Journal of Consumer Research*, Vol. 23

Morgan D.L. (1988) *Focus groups as qualitative research*. London: Sage

Mulye (1998) An Empirical Comparison of Three Variants of the AHP and Two Variants of Conjoint Analysis, *Journal of Behavioral Decision Making*, Vol. 11, pp. 263- 280

Murphy P., Enis B. (1986) *Marketing*, Scott Foresman, Glenview, IL
Murray K. (1991) A test of services marketing theory: consumer information acquisition activities, *Journal of Marketing*, Vol. 55(1), pp. 10-25

Narasimhan R. (1983) An analytical approach to supplier selection, *Journal of Purchasing and Material Management*, Vol. 19 No.1, pp.27-31

Onkvisit, S., Shaw, J.J. (1989), Service marketing: image, branding, and competition, *Business Horizons*, January-February, pp. 13-18

Oppewal, H., Louviere, J.L. and Timmermans, H. (1994) Modeling hierarchical conjoint processes with integrated choice experiments, *Journal of Marketing Research*, Vol. 31, February, pp. 92-105

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988) SERVQUAL: a multiple item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1991) Refinement and reassessment of the SERVQUAL scale, *Journal of Retailing*, Vol. 67 No. 4, pp. 420-50

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1994) Alternative scales for measuring service quality: a comparative assessment based on psychometric and diagnostic criteria, *Journal of Retailing*, Vol. 7 No. 3, pp. 201-30

Park, C.W., Jaworski, B.J. and MacInnis, D.J. (1986) Strategic brand concept image management, *Journal of Marketing*, Vol. 50, October, pp. 135-45

Park, C.S., Srinivasan, V. (1994) A survey-based method for measuring and understanding brand equity and its extendibility, *Journal of Marketing Research*, Vol. 31, May, pp. 271- 88

Peter P., Ryan M (1976) An investigation of perceived risk at the brand level, *Journal of Marketing Research*, Vol. 13, No. 2 (May), pp. 184-88

Pras B. Summers J. (1978) Perceived risk and composition models for multi-attribute decisions, *Journal of Marketing Research*, Vol. 15, pp. 429 – 437

Powell R.A., Single H.M., Lloyd K.R. (1996) Focus groups in mental health research: enhancing the validity of user and provider questionnaire, *International Journal of Social Psychology* 42 (3), pp.193-206

Review of the Regulation and performance of NZ's major financial institutions - Reserve Bank of New Zealand (2005). Retrieved from the Internet 01.08.2005 at

http://www.rbnz.govt.nz/finstab/banking/supervision/1498932.pdf

Retzloff, C.D. (1989), What are some of the opportunities in cross selling? *Market Facts*, Vol. 8(8), November-December, pp. 11-15.

Roselius T. (1971) Consumer rankings of risk reduction methods, *Journal of Marketing*, (35), pp. 56-61

Ruth J. (2005) Bank of New Zealand gained a smidgen more share of the mortgage market in the June quarter but its profitability is suffering slightly. Retrieved 01.09.2005 from the Internet at http://www.goodreturns.co.nz/article/976490998.html

Saaty T. (1980) *The Analytic Hierarchy Process* McGraw-Hill Book Co., New York

Saaty, T. (1982), *Decision Making for Leaders*, Lifetime Learning Publications, Belmont, CA

Saaty, T. (1996), *Decision Making with Dependence and Feedback: The Analytic Hierarchy Process*, RWS Publications, Pittsburgh, PA

Sappington D. Wernerfelt B. (1985) To brand or not to brand: theoretical and empirical question, *Journal of Business*, Vol. 58 (3)

Schlesinger, L. Heskett, J. (1991) Breaking the cycle of failure in services, *Sloan Management Review*, Spring, pp. 17-28

Scholl A., Manthey L., Helm R., Steiner M. (2005) Solving multiattribute design problems with analytic hierarchy process and conjoint analysis: An empirical comparison, *European Journal of Operational Research*, Vol. 164 (3) , pp. 760-777

Shapiro, B. P. (1973). Price reliance: existence and sources, *Journal of Marketing Research*, Vol. 10, pp. 286–294.

Sheluga D, Jaccard J., Jacoby J. (1979) Preference, search and choice: an integrative approach, *Journal of consumer research*, Vol. 6

Sheth J.N, Mittal B., Newman B. (1999) *Customer Behaviour and Beyond*, The Dryden Press, Orlando, Florida

Sheth J.N (1979) The surpluses and shortages in consumer behavior theory and research *Journal of Academy of Marketing Science,* Vol. 7 (4), pp. 414-27

Shimp, T. A., & Bearden, W. O. (1982) Warranty and other extrinsic cue effects on consumers' risk perceptions, *Journal of Consumer Research*, 9, pp. 38–46.

Simon, C. and Sullivan, M. (1993) The measurement and determinants of brand equity: a financial approach, *Marketing Science*, Vol. 12, November, pp. 28-52

Simon H. (1990) Invariants in human behaviour, *Annual Review of Psychology*, Vol. 41, pp.1-19

Sin, L. Tse, A. (2000) How does marketing effectiveness mediate the effect of organizational culture on business performance? The case of service firms, *The Journal of Services Marketing*, Vol. 14 No 4, p. 295

Sproles, G. B., & Kendall, E. L. (1986). A methodology for profiling consumers' decision-making styles, *Journal of Consumer Affairs*, Vol. 20, pp. 267–279.

Ta H.P., Har K.Y. (2000) A study of bank selection decisions in Singapore using the Analytic Hierarchy Process, *International Journal of Bank Marketing*, Vol. 18 No 4, pp. 170-180

Talaga J., Buch J. (1998) Consumer trade-offs among mortgage instrument variables, *International Journal of Bank Marketing*, Vol. 16(6) pp. 264–270

Tellis, G., Gaeth, J. (1990). Best value, price-seeking, and price aversion The impact of information and learning on consumer choices, *Journal of Marketing*, 54, pp. 34–45.

Turley L., Moore P. (1995) Brand name strategies in the service sector *The Journal of Consumer Marketing* Vol.12, Issue 4, p. 42

Tversky A., Kahneman D. (1991) Loss aversion in riskless choice: a reference-dependent model, *Quarterly Journal of Economics*, Vol. 106, pp. 1039-1062

Thwaites D., Vere L. (1995) Bank selection criteria – a student perspective, *Journal of Marketing Management*, Vol. 11, pp. 133-149

Ulengin B. (1998) Using hierarchical information integration to examine customer preferences in banking, *International Journal of Bank Marketing*, Vol. 16 No. 4-5, p202-209

Urbany J. Dickinson P. Wilkie W. (1989) Buyer uncertainty and information search, *Journal of Consumer Research*, Vol. 16, pp. 208-215

Vaugnan G. (2004) Banks get ready for battle, *New Zealand Herald*, Retrieved from the Internet 10.05.2005 at
http://www.nzherald.co.nz/search/story.cfm?storyid=%1C%FD%FB%C4%2A%BB%BC

Weitzman M. (1979), Optimal search for the best alternative, *Econometrica*, Vol. 47

Wind Y. (1973) A new procedure for concept evaluation, *Journal of Marketing*, Vol. 37, pp. 2-11.

Wind, Y. (1978) Issues and advances in segmentation research, *Journal of Marketing Research*, Vol. 15, pp. 317-37

Winters, L.C. (1991), Brand equity measures: some recent advances, *Marketing Research*, Vol. 3, pp. 70-3.

Zeithaml (1981) How consumer evaluation processes differ between goods and services. In *Marketing of Services* (Eds) Donnelly J.H., George W.R. (Chicago), AMA

Zeithaml V. Bitner M. (1996), *Services Marketing*, McGraw-Hill, Singapore

Appendix I.

Copy of the research questionnaire

Faculty of Business
Auckland University of Technology
Private Bag 92006
Auckland
New Zealand

Phone: (09) 917 9721
Fax: (09) 917 9976
Email: business@aut.ac.nz

September 1, 2004

Dear Sir or Madam

Re: Research Questionnaire

My name is Mikhail Kotykhov. I'm a student at Auckland University of Technology conducting a research as part of a thesis for my Master of Business degree.

You are invited to participate in my research project and I would appreciate any assistance you can offer me. As part of my thesis I'm doing a research on bank mortgages. The purpose of my study is to identify the most important factors that influence customer choice of mortgage provider.

Attached is a questionnaire, which consists of two parts:

Part I. Demographic and general information
Part II Comparing the features of mortgage products.

The questionnaire should not take longer than 20 minutes. No details, which could be used to identify respondents, are asked for in this questionnaire. Your assistance in undertaking this research is highly valued and very much appreciated.

Thank you very much for your time and help. If you have any queries or wish to have more information about this research please don't hesitate to contact me at the following address and telephone number:

Faculty of Business
Auckland University of Technology
Private Bag 92006, Auckland, New Zealand
Tel. 021 2179984

Yours faithfully,

_____

Mikhail Kotykhov

The contact details of my research supervisor are the following

Associate Professor Brett Collins
Postgraduate Programmes
Auckland University of Technology
Ph 917 9999   Extn.5444
E-Mail brett.collins@aut.ac.nz
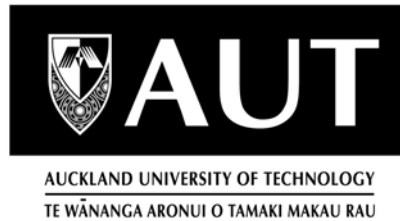
Auckland University of Technology
Faculty of Business

Research Questionnaire

Important decision factors
when customers select a mortgage

Project Supervisor
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Postgraduate Programmes
Auckland University of Technology
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Mikhail Kotykhov
Master of Business student
Auckland University of Technology
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Guidelines on completing the questionnaire:

1. In each question, please select from the scale 9 to 1 on the left hand side of the scale if the choice stated on the left hand side is more preferred.

2. In each question, please select from the scale 9 to 1 on the right hand side of the scale if the choice stated on the right hand side is more preferred

3. Please, consider only the two alternatives on a row at each time and circle one number per row using the scale:

1	**Equally preferred**
3	**Mildly preferred**
5	**Strongly preferred**
7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

EXAMPLES

With respect to choosing the best mortgage which of the two items on each row below is more important, and how much more important is it?

	Extremely preferred	Very strongly preferred	Strongly preferred	Mildly Preferred	Equally preferred	Mildly Preferred	Strongly preferred	Very strongly preferred	Extremely preferred	
Confidence	9	8	7	⑥ 5	4	3	2 1	2	3 4	5 6	7 8	9	**Cost**

As you strongly prefer confidence, you selected and circled the number 5 on the left side of the row, which corresponds to "Confidence" being "Strongly preferred"

	Extremely preferred	Very strongly preferred	Strongly preferred	Mildly Preferred	Equally preferred	Mildly Preferred	Strongly preferred	Very strongly preferred	Extremely preferred	
Confidence	9	8	7	6	5	4	3 2 1	2	3 4	5 ⑥ 7	8	9	**Cost**

As you are between "Strongly preferred" cost and "Very strongly preferred" cost, you select and circle number 6 on the right side of the row, which corresponds to Cost being between "Strongly preferred" and "Very strongly preferred"

	Extremely preferred	Very strongly preferred	Strongly preferred	Mildly Preferred	Equally preferred	Mildly Preferred	Strongly preferred	Very strongly preferred	Extremely preferred	
Confidence	9	8	7	6	5	4	3 2 ①	2	3 4	5 6	7 8	9	**Cost**

As you have no preference between Confidence and Cost you circle 1 in the middle of the row

PART I. DEMOGRAPHIC AND GENERAL INFORMATION

Please answer all questions

1. **I currently use the following banks for my transactions (tick all that apply)**

   ☐ ANZ   ☐ National Bank

   ☐ ASB   ☐ Kiwi Bank

   ☐ Other banks

2. **My main bank, where I do the majority of financial transactions, is the following (tick only one)**

   ☐ ANZ   ☐ National Bank

   ☐ ASB   ☐ Kiwi Bank

   ☐ Other banks

3. **I currently have mortgages with the following banks (tick all that apply)**

   ☐ ANZ   ☐ National Bank

   ☐ ASB   ☐ Kiwi Bank

   ☐ Other banks

4. **Experience in selecting mortgages (tick the appropriate)**

   ☐ I have a significant experience in selecting mortgages

   ☐ I have a little experience in selecting mortgages

   ☐ I have no experience in selecting mortgages

5. **My age is (tick the appropriate)**

   ☐ 30 years or younger

   ☐ 31-40 years

   ☐ 41-50 years

   ☐ 50 years or older

6. **My gender is (tick the appropriate)**

   ☐ Female

   ☐ Male

TERMS AND DEFINITIONS USED IN THE QUESTIONNAIRE

Confidence	**Reputation**	Reputation of financial institution (bank)
	Recommendations	Recommendation or advice from other people about the bank
	Soundness and safety	Financial security and safety of the bank
Cost	**Interest rate**	The annual interest rate paid of the mortgage
	Borrowing limit	The maximum amount of money that can be borrowed as a percentage of the property value
	Application costs	Fees charged by the bank for mortgage application approval
	Early repayment penalties	Charges made by the bank if you want to repay a fixed rate mortgage early
Service	**Speed of decision**	Time taken to approve mortgage application
	Assistance with paperwork	Assistance and advice provided by the bank employees
	Term of mortgage	The number of years (usually from 1 to 30) it will take to pay off your mortgage if you make regular repayments
Convenience	**Liberal approval criteria**	The ease of meeting the mortgage approval criteria
	Convenience of contact	Convenience of bank location and communications
	Bundling with other products	Additional benefits gained by linking the mortgage with other products (ex. income insurance etc.)

PART II. COMPARING THE FEATURES OF MORTGAGE PRODUCTS

1.1. THE IMPORTANCE OF DIFFERENT MORTGAGE FEATURES

With respect to choosing the best mortgage which of the two items on each row below is more important, and how much more important is it?

	Extremely preferred				Strongly preferred				Equally preferred				Strongly preferred				Extremely preferred	
Confidence	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Cost**
Confidence	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Service**
Confidence	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Convenience**
Cost	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Service**
Cost	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Convenience**
Service	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Convenience**

1.2. COMPARING THE IMPORTANCE OF MORTGAGE DETAILS

With respect to <u>CONFIDENCE</u> which of the two items on each row below is more important, and how much more important is it?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Reputation	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Soundness and safety**
Recommendations	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Soundness and safety**
Recommendations	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Reputation**

With respect to <u>COST</u> which of the two items on each row below is more important, and how much more important is it?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Interest rate	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Borrowing limit**
Interest rate	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Application costs**
Interest rate	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Early repayment penalties**
Borrowing limit	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Application costs**
Borrowing limit	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Early repayment penalties**
Application costs	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Early repayment penalties**

1. If the choice stated on the left hand side is more preferred, please select from the scale 9 to 1 on the left hand side of the scale in each question.

2. If the choice stated on the right hand side is more preferred in each question, please select from the scale 9 to 1 on the right hand side of the scale in each question.
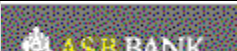
3. Please, consider **only the two alternatives** **on a row** at each time and circle one number per row using the scale:

1	**Equally preferred**
3	**Mildly preferred**
5	**Strongly preferred**
7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>SERVICE</u> which of the two items on each row below is more important, and how much more important is it?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Speed of decision	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Assistance with paper work**
Speed of decision	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Term of mortgage**
Assistance with paperwork	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Term of mortgage**

With respect to <u>CONVENIENCE</u> which of the two items on each row below is more important, and how much more important is it?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Liberal approval criteria	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Convenience of contact**
Liberal approval criteria	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Bundling with other bank products**
Convenience of contact	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	**Bundling with other bank products**

1.3. PREFERENCE COMPARISONS

You are offered the following four alternative mortgage products (please, see the table on the next page)

The products are assigned with the following labels:

ZAK Bank

NATIONAL

ASB

WestPac

Please, use this table to compare the mortgages by features using the guidelines provided

Four mortgage products

	Zak Bank	(logo)	ASB BANK	Westpac
INTEREST RATE **Variable** **Fixed** **1 year** **2 years**	7.75% p.a.6.90 % p.a.7.40 % p.a.	7.75% p.a.6.90 % p.a.7.40 % p.a.	7.75% p.a.6.90 % p.a.7.40 % p.a.	7.75% p.a..6.90% p.a.7.30% p.a.
Borrowing limit	95% of the property value	95% of the value of your property	95% of the value of your property	95% of the property value
Application and account fees	Up to $400	Maximum $400	Maximum $400	Maximum $400
Interest payment terms	Fortnightly or monthly	Fortnightly or monthly	Fortnightly or monthly	Fortnightly or monthly
Product bundling	An all in one home loan and transaction account that uses all your available surplus funds to reduce your interest costs and pay off your loan sooner	Transaction fees for the current account opened in the Bank are waived	An all in one home loan and transaction account that uses all your available surplus funds to reduce your interest costs and pay off your loan sooner	An all in one home loan and transaction account that uses all your available surplus funds to reduce your interest costs and pay off your loan sooner
Early repayment penalties	For a fixed interest rate loan a payment of lump sum once a year of up to 5% of loan amount, a $100 fee applies. For lump sum greater than 5% additional penalty applies	You may increase the principal repayments on your fixed rate loan by up to a further $1,000 per month or $500 per fortnight without penalty	With a fixed rate home loan, for each year of the fixed rate term, you can make extra repayments in addition to your regular fixed payments of up to 5% of the loan balance to a maximum of $10,000, without incurring an Early Repayment Charge.	For a fixed interest rate loan a payment of lump sum once a year of up to 5% of loan amount, a $100 fee applies. For lump sum greater than 5% additional penalty applies
Minimum and maximum terms of mortgage	No minimum or maximum term	No minimum or maximum term	No minimum term Maximum 30 Years	No minimum term Maximum 30 Years

1. If the choice stated on the left hand side is more preferred, please select from the scale 9 to 1 on the left hand side of the scale in each question.

2. If the choice stated on the right hand side is more preferred in each question, please select from the scale 9 to 1 on the right hand side of the scale in each question.
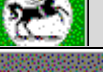
3. Please, consider **only the two alternatives** **on a row** at each time and circle one number per row using the scale:

1	**Equally preferred**
3	**Mildly preferred**
5	**Strongly preferred**
7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>REPUTATION</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

Left	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Right
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

With respect to <u>SOUNDNESS AND SAFETY OF THE INSTITUTION</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

Left	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Right
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

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7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>RECOMMENDATIONS</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(horse logo)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(horse logo)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(horse logo)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

With respect to <u>INTEREST RATE</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(horse logo)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(horse logo)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(horse logo)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

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1	**Equally preferred**
3	**Mildly preferred**
5	**Strongly preferred**
7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>BORROWING LIMIT</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

Left	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Right
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(Lloyds)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

With respect to <u>APPLICATION COSTS</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?
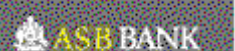
Left	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Right
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(Lloyds)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

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1	**Equally preferred**
3	**Mildly preferred**
5	**Strongly preferred**
7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>EARLY REPAYMENT PENALTIES</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(Lloyds)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

With respect to <u>SPEED OF DECISION</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(Lloyds)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

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5	**Strongly preferred**
7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>ASSISTANCE WITH PAPER WORK</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

Left	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Right
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(Lloyds)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

With respect to <u>TERM OF MORTGAGE</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

Left	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Right
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(Lloyds)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(Lloyds)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

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3	**Mildly preferred**
5	**Strongly preferred**
7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>LIBERAL APPROVAL CRITERIA,</u> which of the two banks on each row below would you prefer, and how much your choice is preferred?

Bank (left)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bank (right)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	[Lloyds horse logo]
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
[horse logo]	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
[horse logo]	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

With respect to <u>EASE AND CONVENIENCE OF CONTACT,</u> which of the two banks on each row below would you prefer, and how much your choice is preferred?

Bank (left)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bank (right)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	[horse logo]
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
[horse logo]	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
[horse logo]	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

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7	**Very strongly preferred**
9	**Extremely preferred**
2,4,6,8	**For compromise between the above values**

With respect to <u>BUNDLING WITH OTHER PRODUCTS</u>, which of the two banks on each row below would you prefer, and how much your choice is preferred?

Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	(horse logo)
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
Zak Bank	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
(horse logo)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	ASB BANK
(horse logo)	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac
ASB BANK	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Westpac

Thank you very much for completing questionnaire

Once you have completed the questionnaire, please mail the questionnaire to the researchers using the business reply-paid envelopes that are enclosed.

Appendix II.

Overall importance scores, obtained for pairwise comparisons of attributes, subattributes and alternatives

1.1. THE IMPORTANCE OF DIFFERENT MORTGAGE FEATURES

With respect to choosing the best mortgage which of the two items is more important?

	Confidence	Cost	Service	Convenience
Confidence		0.30	0.41	0.67
Cost	3.28		2.13	2.48
Service	2.41	0.49		1.55
Convenience	1.42	0.40	0.65	

1.2. COMPARING THE IMPORTANCE OF MORTGAGE DETAILS

With respect to <u>CONFIDENCE</u> which of the two items is more important?

	Reputation	Recommendation	Soundness
Reputation		1.16	0.61
Recommendation	0.87		0.73
Soundness	1.63	1.38	

With respect to <u>COST</u> which of the two items is more important?

	IR	BL	AC	ERC
Interest Rate		2.58	2.70	2.46
Borrowing Limit	0.39		1.34	1.49
Application Costs	0.37	0.74		1.23
Early repayment costs	0.40	0.67	0.81	

With respect to <u>SERVICE</u> which of the two items is more important?

	SD	Assistance	TM
Speed of decision		2.14	0.87
Assistance	0.47		0.50
Term of mortgage	1.15	2.01	

With respect to <u>CONVENIENCE</u> which of the two items is more important?

	Approval Criteria	Convenience	Bundling
Approval Criteria		1.24	1.09
Convenience	0.81		0.95
Bundling	0.97	1.06	

1.3. PREFERENCE COMPARISONS

With respect to <u>REPUTATION</u>, which of the two banks on each row below would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.25	0.19	0.26	0.29	0.34	0.34	0.33
National Bank	3.99		0.97	1.25	3.29	3.58	4.17	1.66
ASB	5.11	1.02		4.94	1.01	1.16	2.86	2.10
ANZ	3.81	0.80	0.20		0.53	1.08	1.84	1.00
Westpac	3.44	0.30	1.06	1.89		1.10	1.01	1.48
BNZ	2.95	0.28	0.86	0.92	0.91		2.87	1.45
TSB	2.91	0.24	0.35	0.54	0.99	0.35		0.40
HSBC	3.02	0.60	0.48	1.00	0.67	0.69	2.49	

With respect to <u>SOUNDNESS AND SAFETY</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.24	0.25	0.40	0.30	0.38	0.37	0.38
National Bank	4.15		0.69	2.14	2.57	4.32	3.82	1.59
ASB	3.95	1.43		1.99	1.10	1.08	1.90	1.30
ANZ	2.49	0.47	0.50		0.56	1.33	1.62	1.82
Westpac	3.30	0.39	0.94	1.77		1.10	0.84	1.12
BNZ	2.64	0.23	0.92	0.75	0.91		2.87	1.93
TSB	2.73	0.26	0.52	0.61	1.19	0.35		0.57
HSBC	2.62	0.63	0.77	0.52	0.89	0.52	1.74	

With respect to <u>RECOMMENDATIONS</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.22	0.23	0.31	0.33	0.32	0.34	0.34
National Bank	4.61		0.65	2.68	2.79	3.43	3.02	1.54
ASB	4.33	1.54		2.89	1.76	1.03	2.89	1.77
ANZ	3.20	0.37	0.35		0.58	0.93	2.30	1.71
Westpac	3.04	0.36	0.61	1.72		1.10	1.01	0.57
BNZ	3.14	0.29	0.97	1.08	0.91		2.49	2.26
TSB	2.98	0.33	0.35	0.43	0.99	0.40		0.62
HSBC	2.90	0.65	0.56	0.58	1.77	0.44	1.61	

With respect to <u>INTEREST RATE</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.35	0.45	0.73	0.67	0.61	0.62	0.59
National Bank	2.82		1.11	1.61	2.67	2.91	3.26	1.73
ASB	2.20	0.90		1.00	0.65	0.81	0.84	0.79
ANZ	1.36	0.62	1.00		0.98	1.02	1.15	1.20
Westpac	1.50	0.37	1.53	1.03		1.32	0.62	0.83
BNZ	1.64	0.34	1.23	0.98	0.76		0.80	1.38
TSB	1.60	0.31	1.19	0.87	1.61	1.25		0.54
HSBC	1.70	0.58	1.26	0.83	1.19	0.73	1.84	

With respect to <u>BORROWING LIMIT</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.29	0.65	0.63	0.56	0.58	0.48	1.02
National Bank	3.42		1.06	2.01	2.39	4.15	3.69	1.69
ASB	1.53	0.94		0.77	1.63	0.74	1.63	1.12
ANZ	1.57	0.50	1.30		1.48	1.41	1.42	1.41
Westpac	1.73	0.42	0.61	0.68		1.27	1.04	0.84
BNZ	1.73	0.24	1.36	0.71	0.79		0.89	1.25
TSB	2.07	0.27	0.61	0.71	0.96	1.12		1.89
HSBC	1.05	0.59	0.89	0.71	1.18	0.80	0.53	

With respect to <u>**APPLICATION COSTS**</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.41	0.59	0.51	0.65	0.71	0.51	0.70
National Bank	2.57		1.21	0.80	2.49	2.89	2.15	2.12
ASB	1.59	0.83		0.42	1.38	0.89	0.60	0.71
ANZ	1.85	1.24	2.34		1.48	1.00	1.24	1.49
Westpac	1.53	0.40	0.72	0.68		1.00	1.14	1.32
BNZ	1.34	0.34	1.12	1.00	1.00		0.33	1.55
TSB	1.95	0.46	1.67	0.80	0.87	3.04		3.00
HSBC	1.42	0.47	1.41	0.67	0.76	0.64	0.33	

With respect to <u>**EARLY REPAYMENT PENALTIES**</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.37	0.63	0.81	0.72	0.63	0.63	0.58
National Bank	2.73		0.91	2.64	1.36	3.57	1.90	1.72
ASB	1.58	1.10		2.32	0.47	0.68	1.03	0.94
ANZ	1.22	0.38	0.43		1.38	0.77	1.28	1.82
Westpac	1.38	0.73	2.11	0.72		1.03	1.17	0.38
BNZ	1.58	0.28	1.47	1.30	0.97		1.00	1.14
TSB	1.59	0.52	0.96	0.78	0.85	1.00		3.34
HSBC	1.72	0.58	1.06	0.55	2.60	0.87	0.30	

With respect to <u>**SPEED OF DECISION**</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.37	0.39	0.62	0.60	0.63	0.55	0.70
National Bank	2.67		0.71	2.51	2.80	3.57	3.53	2.07
ASB	2.55	1.40		2.06	0.73	1.31	1.79	1.86
ANZ	1.61	0.40	0.48		0.66	1.32	1.25	2.68
Westpac	1.66	0.36	1.37	1.52		1.34	1.18	1.38
BNZ	1.59	0.28	0.76	0.75	0.74		1.00	1.20
TSB	1.81	0.28	0.56	0.80	0.84	1.00		3.08
HSBC	1.54	0.48	0.53	0.48	0.72	0.83	0.42	

With respect to <u>**ASSISTANCE WITH PAPER WORK**</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.38	0.46	0.68	0.58	0.60	0.55	0.96
National Bank	2.62		0.74	2.68	2.71	3.26	2.56	2.47
ASB	2.14	1.35		1.03	0.92	0.99	1.47	2.04
ANZ	1.47	0.37	0.97		0.73	1.20	1.36	1.33
Westpac	1.73	0.37	1.08	1.36		0.88	1.34	1.27

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
BNZ	1.66	0.30	1.01	0.83	1.13		1.07	0.97
TSB	1.83	0.39	0.68	0.74	0.74	0.94		1.15
HSBC	1.04	0.40	0.49	0.75	0.79	1.03	0.87	

With respect to <u>TERM OF MORTGAGE</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.40	0.64	0.69	0.71	0.83	0.72	0.75
National Bank	2.50		0.91	3.12	3.05	4.13	3.31	1.77
ASB	1.56	1.09		0.59	0.59	1.11	1.06	2.01
ANZ	1.44	0.32	1.70		2.78	0.77	0.96	2.27
Westpac	1.40	0.33	1.68	0.36		1.04	1.34	1.18
BNZ	1.20	0.24	0.90	1.29	0.96		0.50	1.24
TSB	1.39	0.30	0.94	1.04	0.75	2.01		1.59
HSBC	1.33	0.56	0.50	0.44	0.85	0.81	0.63	

With respect to <u>LIBERAL APPROVAL CRITERIA</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.38	0.43	0.62	0.53	0.68	0.56	0.98
National Bank	2.59		0.89	2.19	2.71	3.26	2.56	0.88
ASB	2.33	1.12		0.91	0.93	1.37	1.51	1.98
ANZ	1.60	0.45	1.10		0.64	1.33	1.37	1.49
Westpac	1.90	0.37	1.07	1.56		1.32	1.34	1.08
BNZ	1.48	0.30	0.73	0.75	0.76		1.00	1.16
TSB	1.79	0.39	0.66	0.73	0.74	1.00		1.41
HSBC	1.01	1.14	0.50	0.67	0.93	0.86	0.71	

With respect to <u>EASE AND CONVENIENCE OF CONTACT</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.36	0.27	0.53	0.45	0.62	0.52	0.73
National Bank	2.80		0.70	2.28	2.86	3.72	3.54	2.36
ASB	3.74	1.43		1.95	0.87	1.29	2.11	2.96
ANZ	1.88	0.44	0.51		0.64	1.21	1.18	3.04
Westpac	2.24	0.35	1.14	1.56		1.20	1.63	1.24
BNZ	1.69	0.27	0.78	0.82	0.83		1.07	1.60
TSB	1.93	0.28	0.47	0.85	0.61	0.94		0.78
HSBC	1.38	0.42	0.34	0.33	0.80	0.62	1.27	

With respect to <u>BUNDLING WITH OTHER PRODUCTS</u>, which of the two banks would you prefer?

	ZAK Bank	Nat Bank	ASB	ANZ	Westpac	BNZ	TSB	HSBC
ZAK Bank		0.44	0.37	0.52	0.53	0.69	0.66	1.15
National Bank	2.26		0.91	0.99	2.49	3.43	1.95	2.09
ASB	2.68	1.09		0.96	1.05	0.97	1.50	2.53
ANZ	1.91	1.01	1.04		0.71	1.18	2.03	1.80
Westpac	1.88	0.40	0.95	1.42		1.39	1.45	1.06
BNZ	1.46	0.29	1.03	0.84	0.72		0.66	1.20
TSB	1.51	0.51	0.66	0.49	0.69	1.52		1.47
HSBC	0.87	0.48	0.39	0.56	1.09	0.83	0.68	