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Ceara Cooper
Technological University Dublin

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**The Role of Commitment in Relationship
Marketing in Consumer Services – An Airline
Perspective**

by Ceara Cooper B.Sc. Mgmt

**School of Marketing
Dublin Institute of Technology**

Master of Philosophy

November 2002

**Supervisor: Mary Lawlor
Advisory supervisor: Aidan O'Driscoll**

DECLARATION

I certify that this thesis which I now submit for examination for the award of M. Phil, is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

This thesis was prepared according to the regulations for postgraduate studies by research of the Dublin Institute of Technology and has not been submitted in whole or in part for an award in any other institute or university.

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Signature: *Ceara Cooper*

Date: *13th - Dec - 2002*

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LIST OF ABBREVIATIONS

AL	- Aer Lingus
ANOVA	- Analysis of variance
BA	- British Airways
BMI	- British Midlands International
CEO	- Chief Executive Officer
CFA	- Confirmatory factor analysis
DCU	- Dublin City University
DIT	- Dublin Institute of Technology
FA	- Factor analysis
FFP	- Frequent flyer programme
MR	- Multiple regression analysis
RM	- Relationship Marketing
SEM	- Structural equation modelling
UCD	- University College Dublin
WOM	- Word of Mouth

ABSTRACT

This study proposes a relationship marketing model, which identifies the antecedents of commitment in the context of consumer services. The literature review initially considers relationship marketing (RM) and the concept of commitment from the context of the marketing and social psychology literature. Commitment is a key element of RM. If parties to a relationship are not committed, the relationship risks dissolution. In this study, commitment is conceptualised as having two distinct dimensions i.e. affective and calculative commitment. Affective commitment represents a positive motivation for relationship continuance, whereas calculative commitment represents a negative motivation. Many studies consider commitment to be a unidimensional, global construct. However, using a global measure of commitment without considering the differing motivations could lead to problems in understanding why relationships are maintained.

The proposed relationship marketing model identifies the antecedents and one consequence of commitment in the context of consumer services. A conceptual framework graphically represents the various relationships between the variables in the model. The relationships between the variables have been taken from empirical results of other commitment models from the various literatures. There is a lack of research that models the nature of commitment in consumer services and this research aims to address this issue. Depending on the dimension, the antecedents of commitment differ. The affective antecedents that are being considered in this study include affect, satisfaction, freedom to choose and trust, while the calculative commitment antecedents include dependence, size of investment, availability of alternatives, and value. Finally, the behavioural outcome that is considered in this study is 'intention to continue'.

The context of the study relates to a consumer service model of commitment tested on passengers of the airline industry. The research objectives are (1) to develop measurement instrument with good psychometric properties which will test the model, (2) to test the hypothesised relationships of the model and (3) to compare sub-groups within the respondent population. The research was designed to be quantitative in nature. The constructs of the model were measured using summated rating scales and consisted of established measures as well as measures developed specifically for this study. The sample consisted of 243 passengers intercepted at Dublin airport. The sampling technique involved non-probability sampling, by means of quota sampling.

The final section of the study concerns the analysis and findings of the research. The analysis was carried out in three main stages in accordance with the three objectives of the study. The first part of the analysis deals with objective one, i.e. a measurement instrument with good psychometric properties. The scales of the final instrument demonstrated good reliability, as was evidenced by high Cronbach alphas and demonstrated good unidimensionality, as shown by factor analysis. The second part of the analysis involves testing the conceptual model and the hypotheses relating to it by means of regression analysis (in line with objective two). Thirteen of the seventeen hypothesised relationships are supported by the regression analysis. The third and final part of the analysis concerns objective three of the research and involves comparing the subgroups within the respondent population. T-tests and ANOVA are used to determine whether the subgroups differ in terms of the variables in the conceptual model such as affective and calculative commitment.

INTRODUCTION

This study proposes a relationship marketing model, which will identify the antecedents of commitment in the context of consumer services, more specifically the airline industry. The study begins by reviewing the literature on relationship marketing (RM) and the concept of commitment in consumer services. The development and maintenance of profitable long-term relationships with customers has received much attention in the area of services marketing. The main reason for the emergence of RM in services marketing is due to the inadequacy of the traditional marketing mix. However, some service situations are less relational oriented than others. Certain characteristics are necessary for relationships to develop e.g. high involvement, need for customisation and high uncertainty about the service. Some service categories such as the airline, hotel or grocery trade are not readily associated with these characteristics, making relationship building more difficult. Nonetheless, the airline industry in particular, has made concerted efforts to develop relational strategies and build customer commitment. Evidence of this can be seen by the wide acceptance of frequent flyer programmes in the airline industry.

The review then considers commitment in RM. Much of the literature and thinking on commitment in marketing originates from social psychology. For example, a marriage analogy is used to describe how commitment develops in business relationships. Commitment is considered to be a key concept in RM. If there is no commitment the relationship risks dissolution. In terms of defining commitment it is considered to be an elusive concept and is quite difficult to define, both in the marketing and social psychological literature. Definitions of commitment are quite varied, ranging from commitment as an intention to continue a relationship, commitment as relationship maintenance, to commitment as a desire for continuity.

In this study, commitment is conceptualised as having two distinct dimensions, namely affective and calculative commitment. While affective commitment represents a desire for relationship continuance, calculative commitment represents a negative motivation for its continuance. Many studies consider commitment to be a unidimensional, global construct. However, using a global measure of commitment without considering the differing motivations could lead to problems in understanding

why relationships are maintained. By integrating both sets of motivations a comprehensive picture of relationship commitment is provided. Few marketing studies address the differing effects of various types of commitment, thus this study aims to add to a body of literature where further research is needed. Of the two types of commitment, affective commitment is considered to be superior and the most effective in maintaining relationships. Nonetheless, while affective commitment may be more desirable, both types of commitment are usually present to some degree in relationships. The ideal relationship is characterised by a high degree of both affective and calculative commitment.

The commitment section also considers a short review of the literature concerning how various demographic groups differ in terms of their commitment towards relationships. During exploratory interviews conducted before the main survey, it became apparent that there were some demographic differences between respondents. For example, some of the female interviewees spoke about feelings of liking their airline very much, more so than the male interviewees. Given that this is an area that is under-researched in marketing, it is being considered in this study.

Having briefly examined relationship marketing and commitment, the literature review then considers the conceptual model of commitment. The proposed relationship marketing model identifies the antecedents and one consequence of commitment in the context of consumer services. The model has been adapted from previous models so that it is suitable for the context of consumer services. The relationships between the variables in this study are based on hypotheses revealed by various models reviewed in the industrial, consumer services and social psychological literature. The hypotheses are graphically represented in a conceptual model incorporating all the variables. There is a lack of research on marketing models of commitment in consumer service, especially in relation to multidimensional commitment. This model aims to address this gap in the literature.

The antecedents of commitment differ depending on whether they relate to affective or calculative commitment. The affective antecedents considered in this study include affect, satisfaction, freedom to choose and trust, while the calculative antecedents include dependence, value, size of investment and quality of available alternatives.

Trust and dependence are mediators of the relationships between most of the antecedent variables and commitment. The review initially considers the affective antecedent variables. The first of the affective antecedent variables to be considered is satisfaction. Satisfaction is considered from a cumulative perspective as opposed to a transaction-specific point of view. Affect is another of the affective variables and represents a direct antecedent to satisfaction in this study. Affect concerns the positive or negative feelings associated with the service encounter. The affective dimension of satisfaction is a very important and has often been neglected in the literature. Another affective variables that particularly applies to the airline industry is freedom to choose. Passengers with a greater freedom to choose e.g. leisure passengers are likely to be more affectively committed. Trust is the final affective variable and it also acts as a mediator between the antecedents and affective commitment. Trust is an important variable to consider from a services perspective, especially from the context of airlines where the consumer must pay for the service before experiencing it and must therefore, trust the service provider to perform as expected.

Having considered the antecedents of affective commitment, the chapter continues with the antecedents of calculative commitment. The first of the calculative variable considered is dependence. Mutual dependence is a characteristic very much associated with business-to-business relationships where partners are equally dependent on one another. However, from a consumer perspective the buyer and seller are unlikely to be equally dependent, making mutual dependence less likely. Most of the literature on dependence relates to the channel literature; thus, by considering dependence in consumer services, this study will go some way towards addressing the lack of research in the area. Dependence has three direct antecedents, which are also considered as calculative variables in this study. The first one is value. In the business-to-business literature value represents valued outcomes e.g. sales and profits, that result from the relationship. However, given that this is a consumer service study, value is conceptualised from a consumer perspective and is considered as a trade-off between costs and benefits.

Another of the calculative variables considered is size of investment. Parties to a relationship may invest in that relationship in some way. For example, consumers invest time and effort into locating a suitable service provider, or fly continually with

one airline in order to accumulate points. Should the consumer wish to leave the relationship they stand to lose such investments given that they are specific to the relationship. As such, investments create switching costs and may result in dependence on the relationship. The final calculative variable considered is the quality of available alternatives. Alternative quality refers to the consumer's perception of the availability of quality alternatives in the market place. Calculative commitment is likely to be higher in situations where there is a lack of quality alternatives available.

The conceptual model also considers one consequence of commitment. Loyalty was considered as one potential outcome to commitment. However, for various reasons, such as the conceptual similarity between loyalty and affective commitment, loyalty was not included in the model. The variable that is included is that of 'intention to continue'. Intention to continue is a behavioural variable and represents a partner's intention to remain in the relationship for the long term.

The final section of the literature review summarises some of the problems that were encountered in relation to the conceptualisation and operationalisation of the constructs. For example, there is a lack of consensus regarding the definitions and dimensionality of many of the variables in the model. Not surprisingly this lack of consensus can hinder the research process and lead to such problems as multicollinearity.

Having reviewed the literature, the next stage of the study involves the research methodology. As previously mentioned, the context of the study relates to a consumer service model of commitment tested on passengers of the airline industry. The overarching problem, or objective that concerns this study, is to test the proposed conceptual model of commitment. The sub-objectives are (1) to develop measurement instrument with good psychometric properties which will test the model, (2) to test the hypothesised relationships of the model and (3) to compare sub-groups within the respondent population. The study was predominantly quantitative, however before carrying out the main survey, some informal exploratory interviews were conducted in order to assist in developing the measurement instrument. The constructs of the model were measured using summated rating scales. Given that there is limited research on the construct of commitment in consumer services, it was difficult to find

appropriate measures. Thus, most of the measures were taken from various studies in the literature and adapted, and some were specifically designed for this study. The procedure for developing scales is quite lengthy and complex, and involves several steps including, designing items for the scales, collecting pilot test data and purifying the measurement instrument by testing its validity and reliability.

The sample consists of airline passengers at Dublin airport. The sampling technique involves non-probability sampling, more specifically quota sampling. Quotas were set so that the relevant characteristics of the population were represented in the sample. Quotas also serve as one attempt to overcome the limitations of non-probability sampling, such as potential unrepresentative composition of the sample. The forms of analysis that are deemed appropriate for this research include factor analysis for testing the unidimensionality of the measures, regression analysis (simple and multiple) for testing the hypothesised model and finally, t-tests and ANOVA (analysis of variance) for testing the differences in the respondent sub-groups.

The final section of the study concerns the analysis and findings of the research. The analysis was carried out in three main stages in accordance with the three objectives of the study. The first part of the analysis deals with objective one, i.e. a measurement instrument with good psychometric properties. This analysis is carried out in two parts; firstly by subjecting the pretest data to internal consistency analysis and factor analysis and secondly, the same analysis was carried out on the main survey data. It was necessary to re-analyse the measurement instrument given that some of the scales were modified after the pretest and also because the main survey data was collected from a different sample to the pretest data. The internal consistency analysis consists of Cronbach Alpha coefficient and the item-analysis, both of which are designed to test the reliability of the measurement instrument. The factor analysis tests the unidimensionality of the scales and ensures the individual items load highly onto the appropriate scale. The scales of the final instrument demonstrated good reliability, as was evidence by high Cronbach alphas and high item-total correlations, and demonstrated good unidimensionality, as shown by factor analysis.

The second part of the analysis involves testing the conceptual model and the hypotheses relating to it, in line with objective two. The model was tested by means of

multiple regression analysis. In accordance with the model, there are six regression equations to be tested. The procedure for examining a regression equation involves estimating the regression model, assessing the degree of multicollinearity, identifying influential observations, evaluating the assumptions and interpreting the regression variate. Each of these steps was conducted for all six regression equations.

The findings section attempts to do a number of things including, reaffirm the hypotheses that are supported by relating them back to the theory, rationalise the hypotheses that are not supported, as well as deal with some of the problems that arose during the research such as multicollinearity and lack of empirical distinction between variables. The results from this study provide adequate support for the conceptual framework. Thirteen of the seventeen hypothesised relationships are supported by the regression analysis. Furthermore, the model explains a substantial amount of variance of each dependent variable.

The third and final part of the analysis concerns objective three of the research and involves comparing the subgroups within the respondent population. This is very much an exploratory part of the research and as such, there are no formal hypotheses to be tested. T-tests and ANOVA are used to determine whether the subgroups differ in terms of the variables in the conceptual model such as affective/ calculative commitment, satisfaction, intention to continue etc. The subgroup analysis shows some interesting findings such as females being more affectively committed to their main airline than males, as well as being more satisfied.

CHAPTER 1

RELATIONSHIP MARKETING IN CONSUMER SERVICES

1.1 INTRODUCTION

This chapter considers relationship marketing (RM) and the concept of commitment in consumer services. The first section of the chapter examines the connection between RM and services marketing. RM has been particularly embraced by services marketing. The main reason for the emergence of RM in services is due to the inadequacy of the traditional marketing mix for services marketing. However, RM does not apply to every service situation or to every organisation. There are certain conditions necessary for relationships to form in services, for example, high involvement, need for customisation and high uncertainty about the product/ service. Some service categories such as the airline, hotel or grocery trade are not readily associated with these characteristics, making relationship building more difficult.

The next section of the chapter considers commitment in RM. Much of the literature and thinking on commitment in marketing originates from social psychology. For example, a marriage analogy is used to describe how commitment develops in business relationships. Commitment is an important concept in RM. The future prospects of a relationship depend on the level of commitment between the buyer and seller.

The penultimate section of the chapter considers the different motivations for commitment and why commitment should be treated as a multidimensional construct rather than a unidimensional one. The two main motivations for commitment are affective commitment and calculative commitment. While affective commitment represents a desire for relationship continuance, calculative commitment represents a negative motivation for its continuance. Many studies consider commitment to be a unidimensional, global construct. However, using a global measure of commitment without considering the differing motivations could lead to problems in understanding why relationships are maintained. Of the two types of commitment, affective commitment is considered to be superior and the most effective in maintaining relationships. Nonetheless, while affective commitment may be more desirable, both

types of commitment are usually present to some degree in relationships. The ideal situation is where there is a high degree of both affective and calculative commitment.

Finally, the last section of the chapter relates to a short review of the literature concerning how various demographic groups differ in terms of their commitment towards their relationships. The rationale for considering demographic differences originates from exploratory interviews carried out before the main survey, in which some demographic differences became apparent. This is an area that has been under-researched and is given some consideration, in the form of a sub-objective, in this study.

1.2 THE EMERGENCE OF RELATIONSHIP MARKETING IN SERVICES

The following section considers the emergence of RM in services marketing and thereafter considers the applicability of RM to the different types of service organisations. For a more detailed discussion on RM, its role in consumer markets and some of the problems facing it see Appendix A.

Literature on RM originates from two main sources; services marketing and industrial marketing or the IMP Group (Liljander & Strandvik 1995; Brodie et al. 1997; Gummesson 1987; 1994; Grönroos 1994; Christy et al. 1996; Pels 1999; Glynn & Lehtinen 1995). The need to develop and maintain profitable long-term relationships with customers has received much attention in these areas. The concept of RM in services first appeared during the early 1980s in a seminal article written by Berry (1983). Other significant influences on RM in services came from the Nordic School of Services of Scandinavia as well as from the UK and the USA (Gummesson 1995). RM is very applicable to services (Berry 2002). The main reason for the emergence of RM in the areas of services was due to the inadequacy of the marketing mix paradigm (Bejou 1997; Grönroos 1990; Wetzels et al. 1998; Wilson & Mummalaneni 1989). The traditional marketing mix continues to suit firms serving mass markets where little personal contact exists between buyer and seller, but the marketing model is not suitable for services or indeed industrial marketing. Other reasons for the emergence of RM are elaborated on in Appendix B, and include issues such as repeated contact

between customer and service provider facilitating RM; technological advances making it possible to track customer buying preferences, communicate with customers and customise service; as well as benefits accruing to both the company (i.e. customer retention economics) and the customer as a result of RM (Berry 1995; Berry 2002; Gummesson 2002; Lee et al. 2001; Palmer 2002).

1.2.1 Relational Orientation of Different Service Types

Some service types are more relational oriented than others. RM does not apply to every service situation or to every organisation (Berry 1995; Blois 1996; Barnes 1997; Beaton & Beaton 1995). Relationships are extremely complex and differ across individuals and settings. Different customers want different experiences and treatment in dealing with various firms. For example, Shemwell et al. (1994) question whether a customer is likely to want the same relationship with an automechanic as with their doctor. Some services are more relational oriented than others. They are described as 'relationship-friendly' services (Christy et al. 1996) and facilitate the relationship building process.

There are certain conditions necessary for relationships to form in services. According to Christy et al. (1996) consumers are assumed to engage in relationships with the presence of such factors as high involvement, reduced price sensitivity, status seeking, need for customisation and high uncertainty about product/ service. Services high in these relational characteristics are more suited to relational exchange. Barnes (1997b) carried out research into three industries, namely banking, grocery retailing and telecommunications, in order to examine the nature of customer relationships across industries. See table 1.1 for a summary of the results. Banks have the greatest opportunity for face-to-face contact and the nature of the service is more likely to be important and of high involvement, whereas telephone companies have much less opportunity for face-to-face contact because the core service is low in complexity and is taken for granted.

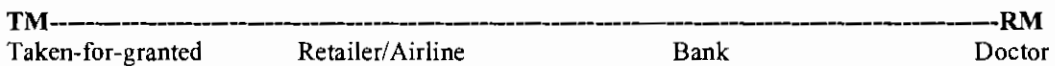
Table 1.1 Relational Orientation of Service Types

	Telecommunications	Grocery	Bank
Face-to-face contact	Rarely (may be some interaction but unlikely to be face-to-face)	Frequent	Frequent
Involvement	Very low involvement	Low/medium involvement	High Involvement
Complexity	Not complex	Not complex	Hi risk/ complex service
Comment	Service is continuously delivered and rarely fails. Often service is taken for granted.	Interaction unlikely with same employee each time.	Opportunity for traditional customer-banker relationship exists, where employees are on first name basis with customers.

Constructed based on Information from Barnes (1997b)

Service organisations can be placed along the marketing strategy continuum in accordance with the ease with which they develop relationships with customers (Barnes 1994).

Marketing Strategy Continuum



According to Barnes’ classification the airline industry is closer to the transaction end of the continuum and has similar characteristics to the grocery trade. That is, contact may be frequent but the service is usually not highly involved or complex. Thus, this classification scheme suggests that it is harder to build relationships in such industries. As a result it would also prove difficult to build commitment in the airline and similar industries such as grocery trade and hotels.

1.2.2 Factors which support a relational perspective

The following section elaborates on the characteristics that are necessary in services for a relational perspective, with special consideration given to the airline industry.

Importance of Employee: The importance of the employee may be said to vary depending on the type of company-customer relationship. However, given that the customer is highly unlikely to meet the same member of staff repeatedly e.g. the flight attendant, the relationship is more likely to be with the company or the brand.

Building a relationship with the company or brand may be problematic. The relationship that develops between a 'hands-on' service provider such as a hairdresser is quite different to that of a company-customer relationship where the customer does not necessarily deal with specific employees on a regular basis (Barnes 1994b). Barnes (1995; 1994b) questions whether a genuine relationship can be formed with a company and asks whether it can only be formed with employees. Sheaves & Barnes (1996) state that all the literature indicates that relationships exist between individuals, not organisations.

Customisation: Customisation proceeds along two dimensions, firstly the extent to which the characteristics of the service lend themselves to customisation and secondly, the judgement personnel are able to exercise in providing the service (Lovelock 1983). Customisation is difficult in the airline industry given that it has fixed routes, destinations and schedules. Each process is highly standardised by rules and regulations (Shostack 1987). Even if customisation is possible, the role of the service provider is constrained; when a problem arises it is usually management who take authority for the situation (Lovelock 1983).

Bowen (1990) classifies services into three empirically tested groups in accordance with level of customisation and customer contact. One of those groups consists of services characterised by moderate contact and standardisation e.g. airlines, cinemas and grocery stores. Bowen's classification suggests that there is little room for customisation in this grouping. However, some customisation may be possible in the airline industry. Increasing customisation may mean greater prestige or personalisation (Shostack 1987). This in turn incurs higher prices. This is arguably what the airlines have done for their most valued customers such as frequent flyers, business and first class passengers. Such passengers are willing to pay a higher price for customisation. They receive special treatment e.g. reserving seats in advance; being addressed by name by personnel and having access to special lounges.

Complexity: In many service contexts, buyers face uncertainty stemming from factors such as intangibility, complexity, lack of service familiarity and long-time horizon of delivery (Crosby et al. 1990). Forming relationships with service providers is very important when the service is complex or customised. Complex services, by

their very nature are more difficult to evaluate in terms of service quality (Berry 2002). When the buyer is relatively unsophisticated about the service or finds it difficult to evaluate the service, the customer must trust and rely on the provider (Sharma & Patterson 1999). Examples of complex services include such professional services such as accounting, insurance, and private banking (Crosby et al. 1990). In contrast, services high in 'search properties' (Darby & Karny in Sharma & Patterson 1999) such as hairdressing, restaurant experience, airline service, allow the customer to confidently evaluate the quality of what they have received immediately on consuming the service, making trust and relationship building less of a necessity.

1.2.3 Possibility for Commitment in Airline Industry

While the previous discussion might suggest that it is quite difficult to build commitment in the airline industry, this is not to say that airlines should disregard relationship marketing efforts. Indeed, the airline industry was one of the first industries to embrace relationship marketing strategies (Bejou & Palmer 1998). American Airlines introduced their AAdvantage programme in 1983; by 1986, 24 of 27 major US carriers had initiated some sort of frequent flyer programme (FFP) (Kearney 1990). By 1994, American Airlines had 22 million club members (EuroBusiness in Gilbert 1996). It was not until the early 1990s that non-US airlines began to introduce FFPs (Gilbert 1996). They realised how the idea had caught on with passengers especially high-yield, long-haul passengers such as business travellers. The programmes were also successful in Europe. British Airways Executive Club grew from 100,000 to 1.3 million members within two years of being launched (Buttle 1996).

Airlines have been one of the leading industries in developing relationships with customers. Bejou & Palmer (1998) state that some characteristics of the airline product lend themselves to a RM approach e.g. a small number of high value transactions, with details routinely recorded for accounting, promotional and operational reasons. With the aid of databases airlines have begun to implement loyalty programmes which allows them collect information about end customers (Palmer 2002; Breshnahan in Sheth & Parvatiyar 2002). "Tangible evidence of airlines' relationship marketing strategies is provided by the plethora of 'frequent flyer' loyalty programmes" (Bejou & Palmer 1998). Voss & Voss (1997) claim that

the airline industry has long understood the value of relational commitment and has responded with the creation of frequent flyer programmes. FFPs aim to build greater customer commitment and retention, as well as develop longer-term relationships (Browne 2000; Gilbert 1996). Thus, customer commitment to an airline appears to be possible. Furthermore, Berry (2002) states that RM is applicable when there is an ongoing or periodic desire for the service and when the customer controls the selection of service provider and has alternatives from which to choose. This situation characterises the airline industry, whereby customers require the services of airlines on a periodic basis (e.g. holidays) and usually have alternatives to choose from. The airline industry is therefore, a reasonable context for this study.

Having looked at RM in the context of the consumer service industry, the next section progresses to consider commitment in RM with special consideration given to services.

1.3 COMMITMENT IN RELATIONSHIP MARKETING

This section considers the concept of commitment, with a view to developing a commitment model for consumer services (considered in chapter 2). Literature from two main sources is examined. The first is the marketing literature focusing on relationship commitment, including channel and industrial relationship literature as well as the services marketing literature. The second source is social psychology dealing with interpersonal relationships, with a minor emphasis on organisational commitment. There is much agreement that it is beneficial to refer to literature of marketing and social psychology together (Brownstein 1997; Dwyer et al. 1987; Young & Denize 1995; Bejou & Palmer 1998; Bagozzi 1995). Möller & Wilson (Pels 1999) state that it “is easy to recognise that a pluralistic approach is needed for achieving a comprehensive understanding of relational exchange behaviour...each approach provides a partial view of the phenomenon”. Similarly, Sheaves & Barnes (1996) contend that marketers can learn a lot about the conditions that are conducive to the establishment of relationships through the study of social psychology.

However, there are also those who oppose the idea of turning to social psychology. Perrien & Ricard (1995) state that marketers should critically examine their rationale for using social psychology to gain a better understanding of RM given that the nature of human relationships is very different to that of economic relationships. Tynan (O'Malley and Tynan 1999) questions the marriage analogy borrowed from social psychology and puts forward 'more suitable metaphors' such as "stalking, rape, polygamy and prostitution". There is an assumption that interpersonal and business relationships are similar but this may not always be so. Nonetheless, the researcher is of the view that social psychology will help rather than hinder the literature review process and thus, social psychology literature is considered in this study.

1.3.1 Framework for the Development Process of Buyer-Seller Relationships

Committed business relationships are often compared with marriage (Bejou & Palmer 1998; Garbarino & Johnson 1999; Wetzels et al. 1998; Young & Denize 1995). Even as far back as 1983, Levitt used the marriage analogy, stating that the "sale, then, merely consummates the courtship, at which point the marriage begins...The era of the one-night stand is gone. Marriage is both necessary and more convenient". Both parties have mutually held expectations and jointly develop guidelines. The marriage analogy provides a good framework for evaluation. Dwyer et al. (1987) use a life-cycle theoretical approach to develop a model of buyer-seller relations. Using the analogy, Dwyer et al. (1987) describe how discrete transactions (e.g. casual dating) progress to more durable associations such as commitment. In total, there are five phases, which include awareness, exploration, expansion, commitment and dissolution. Of the five phases, commitment is the most desirable in the development of an on-going relationship (Scanzoni in Wetzels et al. 1998). It is the most advanced phase of partner's interdependence. If there is no commitment the relationship risks dissolution.

Problems with the Marriage Analogy in Services Marketing: The marriage analogy was originally conceived for channel and industrial relationships. Then the analogy was accepted into other areas such as services. Beaton & Beaton (1995) contend that relationships between service providers and clients are comparable to marriages given that commitment is the key to success in both. In a channel context,

Ganesan (1994) states that commitment increases when the other party is perceived to be dealing exclusively with the channel member. In such relationships where partners are highly dependent on one another, exclusivity may indeed be quite possible. However, in a services context such exclusivity may be questionable. Fournier et al. (1998) state that consumers have hundred of relationships in their personal lives and that only few of them are “of a close and committed nature”. It is thus unlikely, that the consumer would be totally committed to any one service provider. Instead, customers may have simultaneous relations with several competing service providers (Liljander & Strandvik 1995). Marriage implies there is fidelity. Consumers in a service situation may develop a network of service providers rather than a dominant relationship. Goodwin & Gremler (1996) state that friendship appears to be more apt paradigm than the marriage metaphor for understanding services. Often friendship becomes a reality in service relationships. This topic is dealt with further in chapter 2 (2.11.4).

1.3.2 Importance of Commitment in Relationship Marketing

Commitment is central to all the relational exchanges. Morgan & Hunt (1994) state that this includes exchanges between firms and ultimate customers in services marketing. According to Gundlach et al. (1995) commitment may become the “focal point of explanation in marketing” both for consumer and interorganisational relationships. There is much agreement that commitment is central to RM (Beaton & Beaton 1995; Dwyer et al. 1987; Gilliland & Bello 2002; Gundlach et al. 1995; Morgan & Hunt 1994; Palmer 2002; Parasuraman et al. 1985; Selnes 1998; Shemwell et al. 1994; Sheth & Paravatiyar 2002;). The commitment phase of the relationship represents the highest form of bonding (Gundlach et al. 1995) as well as a degree of exclusivity between partners (Bejou & Palmer 1998).

The future prospects of a relationship depend to an extent on the commitment of the buyer and seller. If partners are not committed the relationship may not continue. Wilson (1995) states that there is little doubt that commitment is a crucial variable in measuring the future of a relationship. Similarly, Beaton & Beaton (1995) contend that commitment is a powerful tool in the measurement and management of long-term relationships between service providers and their clients. Beaton & Beaton continue that commitment is set to become one of the principal predictors of stable

relationships in service organisations. Furthermore, they state that because of the measurement problems associated with satisfaction, that commitment could potentially be a better predictor of company performance than satisfaction. Such comments justify the need for further research on commitment and explain why commitment is the focal construct in this study.

1.3.3 Benefits of Commitment

Commitment is associated with many benefits. In an organisational commitment setting (i.e. employee-employer relationships), commitment leads to many critical behaviours such as co-operation, altruism and spontaneous unrewarded help; performing above and beyond the call of duty (O'Reilly III et al. 1986). Committed employees are more likely to remain in their jobs and may perform at higher levels than less committed employees (Mathieu et al. 1990; Mowday et al. 1979). In the context of social psychology, highly committed interpersonal relationships are more resilient insofar as partners can engage in more alteration and experimentation given that they are secure with one another (Rosenblatt 1977). Commitment implies a 'future orientation' and refers to stability and enduring quality and durability (Johnson 1973). Being committed is one of the most positive contributions that partners can make to a relationship (Van Yperen & Buunk 1990).

In a services marketing context, commitment leads to such voluntary behaviours as customer suggestions for service improvement, conscientiousness during service encounter as well as positive word-of-mouth and recommendations (Bettencourt 1997). Co-operation and enhancement are further benefits mentioned by Bendapudi & Berry (1997) and identification with the service organisation by Kelley & Davis (1994). Other benefits considered in various marketing literatures include retention (Morgan & Hunt 1994; Kelley & Davis 1994) and willingness to invest in the relationship as well as intention and desire to stay (Kumar et al. 1994).

1.4 DEFINING COMMITMENT

As with many marketing concepts, which lack conceptual clarity, there are also problems associated with defining commitment. Many academics are quite critical

about the array of definitions of commitment. One of the main criticisms is that the growth in research about commitment has not resulted in clarification of the theory of commitment (Morrow in Wetzels et al. 1998). The term commitment has been used to express such a varied assortment of ideas that it is fruitless to speculate on its 'real' meaning (Becker 1960). There is lack of consensus and remarkable variation in how commitment is defined and measured (Gilliland & Bello 2002; O'Reilly III et al. 1986; Fehr 1988; Kumar et al. 1994; Mowday et al. 1979). This makes studies of commitment very difficult. Fehr (1988) states that "a potpourri of definitions have been offered for commitment". The following section discusses these definitions. See definition table 1.2 for a summary of the different definitions offered by various academics.

Commitment has been predominantly viewed as an **intention to continue** a course of action or activity such as maintaining a relationship (Fehr 1988; Hocutt 1998; Kumar et al. 1994). One such definition commonly referred to is that of Dwyer et al. (1987), where commitment is viewed as "an implicit pledge of functional continuity between exchange partners". Other definitions refer to a desire to develop **stability** (Anderson & Weitz 1992; Fletchers & Peters 1997) or maintain the relationship (Moorman et al. 1992). Commitment is also considered to imply a **willingness to make short-term sacrifices** in order to realise long-term benefits in the relationship (Dwyer, Schurr & Oh 1987). Anderson & Weitz (1992) formally state: "Commitment to a relationship entails a desire to develop a stable relationship, a willingness to make short-term sacrifices to maintain the relationship, and a confidence in the stability of the relationship".

The next definition is that of commitment as a **desire to continue** a relationship. Desire refers to a positive type of commitment, where a definite effort is made to maintain the relationship. Commitment "is the desire to continue the relationship and to work to ensure its continuance" (Wilson 1995). The final definition is somewhat similar to desire, however includes a further element. This definition considers commitment to have both **attitudinal and behavioural** components (Mowday et al. in Brownstein 1997). The attitudinal element is a desire to spend energy and resources to sustain the object of commitment (Brownstein 1997). The behavioural state is defined by three attributes: sacrifice, persistence, and preoccupation with the object of

commitment (Weiner in Brownstein 1997). Similarly, Rusbult et al. define commitment as attitude and behaviour by considering commitment as a “tendency to maintain a relationship” (i.e. behaviour) and “to feel psychologically ‘attached’ to it” (i.e. attitude) (Rusbult 1983; Rusbult 1991; Lin & Rusbult 1995; Rusbult & Buunk 1993).

Table 1.2 Different Definitions Of Commitment

	Intention to continue	Stability/ Maintenance	Willingness to invest/ sacrifice	Desire to continue	Attitude & Behaviour
COMMERCIAL LITERATURE					
Anderson & Weitz 1992		✓	✓		
Bejou & Palmer 1998				✓	
Biong et al. 1995				✓	
Brownstein 1997					✓
Dwyer et al. 1987	✓		✓		
Fletchers & Peters 1997		✓	✓	✓	
Garbarino & Johnson 1999		✓			
Geyskens et al. 1996	✓				
Kumar et al. 1995	✓		✓		
Levinger 1991		✓			
Liljander & Strandvik 1995	✓				
Moorman et al. 1992		✓		✓	
Morgan & Hunt 1994				✓	
Wetzels et al. 1998	✓				
Wilson 1995				✓	
Young & Denize 1995	✓				
SOCIAL PSYCHOLOGY LITERATURE					
Becker 1960	✓				
Dindia & Canary 1993		✓			
Fehr 1988				✓	
Johnson 1991		✓			
Kiesler 1971	✓				
Lin & Rusbult 1995					✓
Lund 1985	✓				
Mowday et al. 1979					✓
Murstein & Mac Donald 1983					✓
Rosenblatt 1977		✓			
Rusbult & Buunk 1993					✓
Rusbult 1991					✓

1.4.1 Problems with Current Definitions

Apart from the criticisms mentioned above, there are other problems with the definitions. Defining commitment as intention to continue or maintain a relationship does not consider whether each party willingly takes part in the relationship. Hinde (Barnes 1997) states that while a relationship implies a degree of continuity between successive interactions, degree of continuity does not imply that a relationship exists. Similarly, Fehr (1988) states that the focus on ensuring the future of the relationship is

too narrow. The decision to continue is different to the decision to enhance the scope of the relationship (Selnes 1998). 'Continuity' does not guarantee a close relationship that parties desire to enhance and invest in.

Definitions which focus on desires to continue relationships, represent an improvement on continuance definitions, but are still inadequate. Such definitions infer parties willingly partake in relationships but assume that motivations for commitment are always positive. However, as will be discussed under 'motivation for commitment' in the next section, both positive and negative motivations for commitment must be considered. Appropriate definitions in the context of this research are those that consider both positive and negative motivations for commitment. For example, Sriram & Mummalaneni (Young & Denize 1995) contend that commitment exists because there is a need as well as a desire to continue trading.

1.4.2 Commitment as a Multidimensional Construct

The following section considers the motivations for commitment. Commitment is viewed as a construct with two dimensions, rather than being a global unidimensional construct.

Organisational researchers have noted that there are many motivations for intentions to commit to a relationship (Allen & Meyer in Geyskens et al. 1996). The two most often cited are calculative and attitudinal commitment (Mathieu & Zajac 1990) and seem to be most relevant for commercial relationships. Commitment is a multicomponent construct that considers both an economic and an emotional form of attachment (Gilliland & Bello 2002). Both types are also commonly referred to as motivations to maintain or continue a relationship (Bendapudi & Berry 1997). Geyskens et al. (1996) state that both affective (affective is another term for attitudinal) and calculative commitment are psychological states but they clearly arise from different motivations for maintaining a relationship. Gilliland & Bello (2002) state that both types of commitment bind a party to a relationship but the nature of the binding implies the existence of two very different types of relationships. There is a clear distinction between the two types of commitment (Johnson 1991; Rosenblatt 1977) with one representing a choice and the other a constraint.

From the table 1.3 below, it can be seen that the two types of commitment have been given various labels by different academics.

Table 1.3 Two Motivations for Commitment

Source	POSITIVE MOTIVATION	NEGATIVE MOTIVATION
Marketing Literature		
Bendapudi & Berry 1997	Psychological (Dedication)	Economic (Constraint)
Geyskens et al. 1996	Attitudinal (Affective)	Structural (Calculative)
Gilliland & Bello 2002	Emotional (loyalty)	Economic (Calculative)
Gundlach et al. 1995	Attitudinal (psychological)	Calculative (Instrumental)
Wetzels et al. 1998	Affective	Calculative
Liljander & Strandvik 1995	Positive commitment	Negative commitment
Social Psychology & Organisational Commitment Literature		
Allen & Meyer 1990	Affective	Continuance
Johnson 1973	Personal commitment	Constraint commitment (behavioural commitment)
Johnson 1991	Personal commitment	Structural commitment
Levinger 1991	Attraction-Based cohesiveness (internal driving forces)	Restraining Forces (external barriers)
Lewin 1951 (Levinger 1991)	Own induced forces	Restraining forces
Lewis & Spanier 1979 (Johnson 1991)	Marital quality variables	Threshold variables
Mathieu & Zajac 1990	Attitudinal	Calculative
Rosenblatt 1977	Personal dedication	External pressures
Sabatelli & Cecil-Pigo 1985	Affective component	Process component (monitoring of alternatives)
Stanley & Markman 1992	Personal dedication	Constraint commitment
Note () = other terms used by author		

1.4.3 Three Motivations for Commitment

Besides the two types of motivations for commitment mentioned, there is a third type known as moral commitment. Moral commitment has been the subject of extensive research in organisational commitment (Koslowsky et al. 1988; Levinger 1991; Sabatelli & Cecil-Pigo 1985; Kumar et al. 1994; Allen & Meyer 1990). It represents a feeling of moral obligation to stay with an organisation or a partner (Kumar et al. 1994). Johnson (1991) succinctly states that people continue in relationships because they want to (affective commitment), ought to (moral commitment) or have to (calculative commitment). Moral commitment is not being considered in this study, largely because it relates to an organisational commitment setting, but also because moral commitment is often considered to be an aspect of calculative commitment (Johnson 1991; Sabatelli & Cecil-Pigo 1985). Similarly, Levinger (1991) and Rusbult (1991) state that to distinguish between structural and moral factors is to lose simplicity.

The following section elaborates on the conceptualisation of affective and calculative commitment.

1.4.4 Affective Commitment

Affective commitment is also referred to as dedication commitment, positive commitment, personal commitment, affective attachment and psychological attachment (Allen & Meyer 1990; Johnson 1973; Liljander & Strandvik 1995; Levinger 1991). In an organisational setting it represents a “generalized sense of positive regard for, and attachment to, the organization” (Konovsky et al. in Geyskens et al. 1996). Strongly committed individuals identify with, are involved in, and enjoy membership in the organisation (Allen & Meyer 1990). Affective commitment represents a steadfast dedication to continue (Gilliland & Bello 2002). Stanley & Markman (Johnson 1991) conceptualise this type of commitment with the idea that ‘John is committed to his job’ or ‘I am committed to this and you cannot stop me!’.

There is clear agreement that affective commitment is based on a sense of liking and an emotional orientation (Meyer & Allen 1984; Wetzels et al. 1998; Rusbult 1991; Sabatelli & Cecil-Pigo 1985; Huston & Levinger 1978). Affective relationships are voluntarily sustained largely because the partners find interaction enjoyable (Huston & Levinger 1978). In affectively committed relationships, individuals desire to maintain the relationship (Stanley & Markman 1992; Bendapudi & Berry 1997; Geyskens et al. 1996; Kumar et al. 1995; Johnson 1991; Wetzels et al. 1998). Not only is there a desire to continue such a relationship but also efforts are made to improve it and to sacrifice for it.

Relationships based on affective commitment lead to positive outcomes. Parties improve the quality of the relationship for the joint benefit of each other. Parties willingly expend effort and want to work together for the good of the relationship (Stanley & Markman 1992; Steers in Brownstein 1997; Wetzels et al. 1998) and not solely for material or economic benefits (Gilliland & Bello 2002; Gundlach et al. 1995). According to Brownstein (1997) parties are motivated to persist in the face of difficulties (e.g. competitive or environmental threats) because of the desire to maintain affiliations.

1.4.5 Calculative Commitment

Calculative commitment is also known as constraint, structural, continuance or negative commitment (Johnson 1973; Kumar et al. 1994; Meyer & Allen 1984; Gundlach et al. 1995). It “refers to forces that constrain individuals to maintain relationships regardless of their personal dedication to them” (Stanley & Markman 1992). Calculative commitment represents a negative motivation to continue the relationship and is based on perceived structural constraints (Geyskens et al. 1996). Gilliland & Bello (2002) state that parties are bound by the sacrifices associated with termination, disruption and difficulty of finding another partner as well as loss of sunk investments. Brownstein (1997) conceptualises this calculative commitment with the sentence “I’m committed because it’s too late to turn back now; I’m in too deep”.

Unlike affective commitment where partners choose to continue the relationship, calculatively committed partners feel they have to continue. Abramson et al. (Becker 1960) state that: “Committed lines are those lines of action that the actor feels obligated to pursue by force...with penalties and costs so arranged as to guarantee their selection”. Parties feel that they must continue the relationship (Stanley & Markman 1992; Johnson 1991; Geyskens et al. 1996; Brownstein 1997). The negative consequences of severing the relationship are too great.

There are a number of factors, which create these negative consequences. The main two cited in the literature are switching costs and lack of alternatives. Geyskens et al. (1996) define calculative commitment by referring to switching costs and state that it is the perceived “need to maintain a relationship given the significant anticipated termination or switching costs associated with leaving”. Conceptualisations of costs originated with Becker (Rusbult 1991; Mathieu et al. 1990; Meyer & Allen 1984) who defined commitment as “consistent lines of activity” (Becker 1960). Activity remains consistent because of “side-bets” which make separation unaffordable. Costs may be economic, social or psychological (Bendapudi & Berry 1997; Stanley & Markman 1992). Examples of such costs given in the psychology literature by Johnson (1973) include, the end of a marriage resulting in sleeping alone or moving out of a house one has lived in for many years. Johnson also cites assets being forfeited e.g. a student

who drops out of college before receiving their qualification receives little for the time invested in college.

1.4.6 Rationale for Two Motivations

This section considers the rationale for considering commitment as a multidimensional construct as opposed to considering it as unidimensional. Social science literature, focusing on interpersonal and organisational relationships, has shown commitment to be multi-faceted (Geyskens et al. 1996; Johnson 1991). However, commitment is often considered to be unidimensional. Kumar et al. (1994) state that few studies address the differing effects of various types of commitment. There is disagreement among academics with regard to which type of commitment has been the focus in the literature, with some claiming it has been on affective and others on calculative.

In the commercial literature, Brownstein (1997), Geyskens et al. (1996) and Kumar et al. (1994) state that most research focuses only on affective commitment. Similarly, in organisational commitment, the most prevalent approach is that of affective commitment (Allen & Meyer 1990; O'Reilly III et al. 1986). Experts tend to ignore the potentially negative aspects of commitment such as feelings of obligation or feeling trapped (Fehr 1988). In contrast, Bendapudi & Berry (1997) and Young & Denize (1995) claim that the business literature focuses on constraint commitment. For many researchers, affect has a minimal role to play in conceptualising commitment (Allen & Meyer 1990). Thus, there are mixed views as to which type of commitment prevails in the literature.

Unidimensional Vs Multidimensional Commitment: Rusbult (1983) studied commitment as a single construct. Rusbult's rationale for doing so was that both types of commitment are strongly related, so that there was no need to deal with them as two constructs. In contrast, Rosenblatt (1977) states that the two aspects of commitment are conceptually distinct and may vary with considerable independence. Some definitions combine the two aspects but Rosenblatt (1977) states that keeping them separate, facilitates theorising and research on each of them. Kanter (Gilliland & Bello 2002) states that the two types of commitment represent two different and sometimes incompatible strains that organise business and personal relationships.

However, what should be noted is that affective and calculative commitment are not entirely distinguishable concepts, and that measurement of each contains elements of the other (Mathieu et al. 1990). An employee may initially join an organisation because of an exchange relationship (i.e. calculative commitment) yet develop attitudes consistent with maintaining membership (attitudinal commitment) (Mathieu et al. 1990). This suggests that the two may become more closely linked over time. “Nonetheless, the two forms...are sufficiently distinct to permit comparisons between their relative relationships with other variables of interest” (Mathieu et al. 1990; see also Meyer & Allen 1984). They appear to be empirically separable.

There are many persuasive arguments for emphasising two types of commitment and considering a multicomponent approach. Using a global measure of commitment without considering the underlying motivation could create confusion (Geyskens et al. 1996) as well as loss of information and incorrect findings (Kim & Frazier in Gilliland & Bello 2002). Bendapudi & Berry (1997) claim that both sets of motivations must be studied in order to fully understand why relationships are maintained. “Focusing on only one set of motivations (instead of examining both in tandem), runs the risk of perpetuating a schism in our understanding of relationships” (Bendapudi & Berry 1997). Similarly, Morgan & Hunt (1994) state that just as medical science should understand both sick and healthy individuals, so too must positive and negative motivations be considered when studying relationships. Relationships continue for different reasons and to varying degrees (Gilliland & Bello 2002). By integrating both sets of motivations a comprehensive picture of relationship commitment is provided. Thus, by conceptualising commitment as having an affective and calculative dimension, this study will contribute to an area of commitment where more research is needed.

1.5 THE EFFECTIVENESS OF AFFECTIVE AND CALCULATIVE COMMITMENT

The following section considers how effective each dimension of commitment is in maintaining relationships, and how the two types of commitment can work in harmony to create the ideal type of relationship.

It is possible for both types of commitment to be present simultaneously in a relationship, though not necessarily to the same extent. Bendapudi & Berry (1997) cross-tabulate the possible combinations between levels of constraint (calculative commitment) and level of dedication (affective commitment) as well as listing the implications.

Table 1.4

Implications of Constraints and Dedication for Relationship Marketing			
		Level of Dedication	
		LOW	HIGH
Level of Constraint	LOW	Relationship lacks both constraints and dedication. Customer unlikely to perceive need for stable relationship.	High dedication indicates opportunity for relationship enhancement. But there are no barriers to block aggressive competitors.
	HIGH	Low level of dedication makes relationship enhancement unlikely. Once constraints are lifted relationship may dissolve.	Such relationships are especially strong and durable with excellent future prospects. High constraints increase stability and high dedication deepens ties.

SOURCE: Adapted from Bendapudi & Berry (1997)

1.5.1 Calculative Commitment without Affective Commitment

The first situation considered is that characterised by high constraints and low dedication as outlined in table 1.4. Where calculative commitment is the only form of commitment to exist, it is likely that relationship effectiveness will be reduced. Calculatively committed customers have a weaker intention to stay and try to switch as soon as alternatives emerge or as soon as constraints are lifted (Wetzels et al. 1998). Constrained relationships tend to last only as long as the constraints do. As such, constraints are often perceived negatively by clinicians and researchers (Stanley & Markman 1992). However, it appears that constraint should only be thought of as negative when personal dedication and satisfaction have diminished in the relationship i.e. when the affective element no longer exists. Calculative commitment forms an exit barrier, stopping the customer from leaving but only becomes a problem when customer actually wants to leave. The barriers formed by constraints only influence one's decision to continue a relationship if one begins to contemplate exit (Johnson 1991; Levinger 1991; Stanley & Markman 1992). In other words, calculative commitment may stop a relationship from dissolving but lack of affective commitment is the ultimate reason for the dissolution.

In cases where affective commitment has diminished, constraints may force a partner to remain in an unhappy relationship. Constraints provide an explanation for the continuance of a stable, yet dissatisfying relationship (Stanley & Markman 1992). Relationships suffering from low satisfaction will remain intact only with significant constraint. If the costs of discontinuation are too much to bear, the partner may resign him/herself to long-term dissatisfaction or wait until the structural commitments are removed through natural course of events (Johnson 1991) e.g. in the case of a marriage, waiting until the children grow up. In a business context, a buyer may be trapped in a relationship, which they may prefer to exit. A “barrier to exit” is created; the customer is effectively “locked-in” (Barnes 1994). Relationships are not characterised by locking in customers; they should not be held against their will. Low satisfaction with little or no dedication translates into poor prognosis for therapy (Stanley & Markman 1992) i.e. some dedication is needed to maintain a relationship.

1.5.2 Affective Commitment without Calculative Commitment

The second situation is characterised by high dedication and low constraints as outlined in table 1.4. It is possible to feel neither a need nor an obligation but only a strong desire to remain in a relationship (Allen & Meyer 1990). Affective commitment is deemed to be the most effective form of commitment in maintaining relationships. Partners who freely choose to interact are more likely to be committed than those who are forced (Kiesler 1971; Koslowsky et al. 1988). Relationships built on affective commitment are qualitatively different to those built on constraint (Bendapudi & Berry 1997; Bejou & Palmer 1998).

An advocate of relationships that are based predominantly on affective elements is Barnes (1994). Barnes contends that there should be no exit barriers or switching costs, which lock customers into relationships. However, relationships based solely on affective commitment can lead to problems. Where there is high dedication but low constraints, there is no strong exit barrier to block aggressive competitors (Bendapudi & Berry 1997). Similarly, partners are free to defect when satisfaction falls slightly. It is perhaps too idealistic to state that relationships should not be characterised by any constraints. Even in interpersonal relationships such as marriages, constraints exist e.g. children. It may be that while the most effective

relationships are characterised by affective commitment, they also require some calculative commitment.

1.5.3 No Affective Commitment or Calculative Commitment

The third situation is characterised by low dedication and low constraints. Where both dedication and constraints are low, customers are unlikely to perceive a need for a stable relationship (Bendapudi & Berry 1997). There is little potential for such relationships, where neither affective nor calculative commitment exist. Dissolution of the relationship is likely to occur.

1.5.4 Combining both Calculative and Affective Commitment

The final situation is characterised by high dedication and high constraints. There is much agreement that both types of commitment may be present simultaneously in relationships (Brownstein 1997; Mathieu et al. 1990; Bendapudi & Berry 1997; Stanley & Markman 1992; Rusbult & Buunk 1993). The two types of commitment are not necessarily mutually exclusive or independent (Bendapudi & Berry 1997; Stanley & Markman 1992). For example, a relationship with a physician may result from doctor's membership to customer's health insurance plan as well as from trust developed from satisfactory past experiences (Bendapudi & Berry 1997).

The idea of constraints contributing to stability of relationships is common to both the marketing literature (Bendapudi & Berry 1997) and the social psychology literature (Johnson 1991; Rusbult 1983). Constraints should not be dismissed as being negative without considering their stabilising role (Rusbult et al. Stanley & Markman 1992). Stanley & Markman hypothesise that constraints are a major determinant of relationship stability ... "In satisfying marriages, we expect that constraints may help couples weather the inevitable fluctuations in satisfaction". Constraints hold relationships together during hard times (Rusbult 1991; Rusbult & Buunk 1993). In an interpersonal context, examples of constraints include children (Johnson 1991; Rosenblatt 1977). Children augment commitment to a marriage. Parents contemplating a divorce must consider the consequences of a break-up that will disrupt the entire structure of their children's lives (Johnson 1991). Partners with children are less free to leave a relationship than childless couples.

Thus, it is possible and even necessary for constraint and dedication to coexist. Preserving high constraint and dedication levels is described as essential by Bendapudi & Berry (1997). Calculative commitment alone may be considered as being negative, but when combined with affective commitment it has a positive role to play. It appears that both types of commitment are present to some extent in relationships, however, one form of attachment dominates over the other (Gilliland & Bello 2002). Bendapudi & Berry (1997) note that while both types of commitment may be present simultaneously, it is important to identify the primary motivation.

1.6 Commitment Levels across Various Demographic Groups

The final section of this chapter considers how various demographic groups differ in terms of their commitment to their relational partners. During exploratory interviews conducted before the main survey (as discussed in chapter 3), it became apparent that there might be differences between various demographic groups, in terms of their commitment towards their airline. For example, some of the interviewees discussed strong preferences for one airline company over another. Furthermore, some of the female interviewees spoke about feelings of liking their airline very much, more so than the male interviewees. Thus, a short review of the literature relating to demographic differences was undertaken.

Shemwell et al. (1994) state that marketing literature contains little research on how specific groups differ in terms of their willingness to engage in relational exchanges. However, there is a body of literature in the social psychological research about how males and females differ in terms of their attitudes towards commitment in their relationships. Research has shown that women place more emphasis on trust and commitment in their relationships (Townsend in Shemwell et al. 1994). Similarly, Sabatelli & Cecil-Pigo (1985) found that men scored significantly lower on commitment than did women. Nevertheless, Shemwell et al. (1994) caution that these findings have limited applicability to marketing, given that most of the gender difference research is conducted on a sexual or pseudo-sexual basis. Given the lack of research on this area in marketing, Shemwell et al. gave consideration to gender differences in their consumer service study. They found some support for the

hypothesis that females exhibit higher levels of affective commitment and trust than males with their service providers.

In terms of differences between other demographic groupings, Lin & Rusbult (1995) considered commitment levels across various grouping such as dating couples, cross-friendship couples and culture. Furthermore, Lin & Rusbult revealed that commitment was weaker among Americans than it was among Chinese couples. Finally, in terms of age difference, Bettencourt (1997) states that individual differences regarding likelihood of performing different behaviours should be investigated. Bettencourt found that older consumers were more likely to perform voluntary behaviours in their consumer-service provider relationships, such as spread positive word-of-mouth. Thus, this area of demographic differences across commitment and other variables, is an area that has been under-researched and warrants further examination. This examination is one of the sub-objectives of this research, with the main objective relating to the conceptual model of commitment, which is discussed in the next chapter.

1.7 CONCLUSION

This chapter initially reviewed RM in consumer services. There are certain characteristics necessary for the development and maintenance of relationships. Services that are of high involvement, with greater opportunity for face-to-face contact, as well as offering customisation to consumers are more likely to result in an opportunity for relationships to be formed. Services lacking in these characteristics are more transaction oriented. The airline industry could be considered to be more transactional than relational oriented. This suggests that it may be harder to build relationships and thus, commitment in this type of industry. However, the airline industry has widely embraced FFPs with the intention of building long-term relationships as well as customer commitment, suggesting that it is possible to build commitment in such a context.

The chapter went on to consider commitment both from a marketing and social psychological perspective. A marriage analogy is often used to describe business

relationships characterised by commitment. However, from a consumer services context, it is unlikely that consumers would be totally committed to anyone service provider. Thus, a friendship analogy may be more appropriate than a marriage one. Commitment is a key concept in relationship marketing. The future prospects of a relationship depend to an extent on the commitment of the buyer and seller. Commitment is as important if not more important than concepts which have traditionally been key elements of marketing such as satisfaction. Thus, commitment warrants further investigation and is the focal construct in this study.

In terms of defining commitment, it is a difficult concept to define. Many academics are quite critical about the lack of conceptual clarity surrounding commitment. Commitment has been defined in various ways, including commitment as an intention to continue, as maintenance of a relationship and as a willingness to invest in a relationship. There are many problems inherent in these definitions. They are quite narrow and fail to consider the full concept of commitment. In this study, commitment is considered to be multidimensional, comprising both affective and calculative commitment. While affective commitment represents a positive motivation for the continuance of the relationship, calculative commitment represents a negative motivation. Many studies consider commitment to be a global construct. However, considering commitment to be unidimensional fails to consider the underlying motivations for commitment. Treating the two concepts as being distinct, facilitates theory and research on commitment and provides a full picture of relationship commitment. Studies on global commitment are quite plentiful in comparison to those on multidimensional commitment, thus this study aims to enhance the body of literature on multidimensional commitment.

When the effectiveness of the two types of commitment is compared, affective commitment is usually considered to be far superior to calculative commitment. However, calculative commitment need not be considered to be a completely negative concept as it has a role to play in stabilising relationships. The most desirable form of relationship is characterised by high levels of both affective and calculative commitment.

The last section of the chapter considers a short review of the literature on how various demographic groups differ in terms of their attitudes towards commitment. This is an area of marketing that has been neglected and thus, is being given some consideration in this study.

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CHAPTER 2

RELATIONSHIP MARKETING MODEL OF COMMITMENT

2.1 INTRODUCTION

Having briefly examined relationship marketing and commitment, this chapter moves on to consider a conceptual model of commitment. The proposed relationship marketing model identifies the antecedents and one consequence of commitment in the context of consumer services. The conceptual framework presents a graphical representation of the various relationships between the variables that are included in the commitment model. The relationships between the variables have been taken from empirical results of other commitment models from the various literatures. There is a lack of research that models the nature of commitment in consumer services and this research aims to address this issue.

As previously mentioned, commitment is conceptualised as having a distinctive affective and calculative dimension. Given that the dimensions are separate it is reasonable to expect that each commitment dimension will have different antecedents. The antecedents of affective commitment in this study include affect, satisfaction, freedom to choose and trust. The calculative determinants considered include size of investment, availability of alternatives, value and dependence.

Each of these variables is considered individually under various headings. The headings include; definitions of the variable in the literature, dimensionality of the variable, the conceptualisation and operationalisation problems, the interrelationships between the variables and finally the relationship between the variable and commitment. In some cases, these headings do not apply to all the variables.

The chapter initially considers the affective antecedent variables. The first of the affective antecedent variables to be considered is satisfaction. Satisfaction in this study is considered to be cumulative, whereby consumer satisfaction is based on repeated encounters. Satisfaction has both cognitive and affective antecedent. This study considers one cognitive and one affective antecedent, namely value and affect respectively.

Freedom to continue is another affective variable. The literature proposes that the more freedom a consumer has to choose their preferred service provider, the more likely they are to be affectively committed. The final affective antecedent to be considered is trust. The trust section considers the dimensionality and antecedents to trust before finally considering the nature of the relationship between trust and satisfaction and trust and commitment.

Having considered the antecedents of affective commitment, the chapter continues with the antecedents of calculative commitment. The first of the calculative variables considered is dependence. The most desirable form of dependence is mutual dependence where parties are equally dependent on one another, however in a consumer situation, the seller manages the relationship and is not dependent on any one single customer making mutual dependence less likely. Dependence has three direct antecedents, which are also considered as calculative variables in this study. The first one is value. In the channel literature value is considered as the outcomes or achievement of goals that result from the relationship e.g. sales and profits. In this study, value is considered from a consumer viewpoint as opposed to a business-to-business perspective.

Another of the calculative variables considered is size of investment. Parties to a relationship invest various assets in a relationship e.g. an airline passenger may continually fly one airline in order to accumulate frequent flyer points. Such investments in turn create barriers to exiting the relationship should the consumer wish to leave. The final calculative variable considered is the 'quality of available alternatives'. Alternative quality refers to the consumer's perception of the availability of quality alternatives in the market place.

The chapter also considers one consequence of commitment. The consequence variable that is examined is that of 'intention to continue'. Intention to continue is a behavioural variable and represents a partner's intention to remain in the relationship for the long term.

The final section of the chapter considers the problems encountered during the literature review stage, such as lack of consensus in the literature as to the conceptualisation and dimensionality of the variables.

2.2 THE CONCEPTUAL MODEL OF COMMITMENT

This section presents the conceptual RM model of commitment and the rationale for the model.

2.2.1 The Role of Commitment in Relationship Marketing Models

Commitment is a key element of both interpersonal and marketing relationships. In the social psychological literature, Scanzoni (1979) states that commitment represents the highest level of interdependence between partners. Morgan & Hunt (1994) state that commitment is central to all the relational exchanges including those between firms and ultimate customers in services marketing. The importance of commitment in models is demonstrated by commitment being the most common dependent variable in buyer-seller relationship studies (Wilson 1995). Given the importance of commitment, Wetzels et al. (1998) state that it should play a central role in the development of any RM model.

2.2.2 Conceptual Framework

This study considers a RM model, which identifies and examines the determinants of commitment in a consumer service setting. Sharma & Patterson (1999) state that it is “not unreasonable to suggest that RM models formulated in goods and business-to-business sectors may need modification before they can be successfully applied” to consumer services. Thus, the model has been adapted from previous models so that it is suitable for the context of consumer services. The determinants or variables that contribute to commitment, originate from various models in the industrial, consumer services and social psychological literature. For an outline of the various models see Appendix A.

Many frameworks and models of commitment have been developed in the various literatures. Commitment models represent attempts to develop a comprehensive analysis of the determinants of relationship maintenance (Johnson 1991). Wetzels et

al. (1998) state that in order “to study relational commitment and its relationship with various antecedents and consequences, it is necessary to develop a conceptual framework”. The conceptual framework graphically represents the various relationships between the chosen variables. Similar to steps followed by El-Ansary (1997), the relationships between the variables in this study will be based on the hypotheses revealed by the various models reviewed. Thus, the hypotheses are graphically represented in a conceptual model incorporating all the variables. The model considers the direct and indirect relationships between the variables, however, it is only an interpretation of relevant research and does not consider all relationships.

The model in this study will examine only a subset of factors that lead to commitment and by no means covers an exhaustive list. Commitment is a complex phenomenon that is subject to so many forces that no study could assess more than a fraction of the relevant determinants (Anderson & Weitz 1992; Beaton & Beaton 1995; Gilliland & Bello 2002). Furthermore, the model considers only the consumer perspective on commitment, as opposed to considering both the buyer and seller perspectives. Most models consider only one side of the dyad, usually the buyer. One exception is Ganesan (1994) who focuses on both buyer and seller in his research. Liljander & Strandvik (1995) state that when talking about consumer services the focus should be on the consumer’s side of the relationship. There is much to be learned from the customers’ view of interaction with the service provider (Barnes 1997). Similarly, Sheth & Parvatiyar (1995) state that the firm’s motivations for engaging in relationships are clear but it is important to understand customer motivations.

Need for Research in this Area: Sharma & Patterson (1999) state that despite the fact that the essence of services marketing being the development of long-term relationship, “it is surprising to find so little empirical research that models the nature and determinants of relationships in consumer services”. Similarly, Garbarino & Johnson (1999) studied customer relationships from the context of theatre-goers and concluded that their research represents one of only a few empirical examinations of RM concepts in the consumer marketplace. Studies on RM in consumer markets are lacking (Sheth & Parvatiyar 1995).

There is a particular lack of research on the construct of commitment in consumer markets. While there has been much research devoted to examining the antecedents and outcomes of commitment in a business-to-business context, little attention has been given to business-to-consumer marketing (Gruen 1995) or indeed consumer services (Sharma & Patterson 1999). In 1997, Bettencourt stated that at that time, that only one previous study (i.e. Kelley & Davis 1994) had operationalised customer commitment to a service provider. In general, there is a paucity of consumer research on commitment's definition and measurement (Pritchard et al. 1999). Thus, this study attempts to address this lack of research.

2.3 IDENTIFYING THE DETERMINANTS OF COMMITMENT

The following section briefly introduces the determinants of commitment that are considered in this study. Commitment is central to RM, so much so that identifying the factors that influence commitment is very important (Wetzels et al. 1998). Given that commitment is a construct with multiple dimensions, it is reasonable to expect that antecedent variables will not affect each type of commitment in the same way. The two components of commitment may coexist, but they are anteceded by separate conditions (Gilliland & Bello 2002). Depending on the antecedents of commitment each type of commitment will develop independently as is now discussed (Allen & Meyer 1990).

2.3.1 Antecedents of Affective Commitment

The affective antecedents that are being considered in this study include affect, satisfaction, freedom to choose and trust. There is much agreement that satisfaction represents a determinant of affective commitment (Bendapudi & Berry 1997; Wetzels et al. 1998; Stanley & Markman 1992; Mathieu et al. 1990). Affect is an important antecedent to satisfaction as well as being a determinant of affective commitment. Freedom to choose is a relatively unexplored variable (Pritchard et al. 1999), however is considered as an antecedent to affective commitment. Trust is considered as a mediating variable (see below).

2.3.2 Antecedents of Calculative Commitment

Bendapudi & Berry (1997) state that the literature on the economic perspective (calculative commitment) emphasises switching costs, dependence on partner and attractiveness of alternatives. The antecedents of calculative commitment in this study include size of investment, availability of alternatives, value and dependence. There is much consensus as to investment and alternatives being determinants of calculative commitment, as well as global commitment (Stanley & Markman 1992; Allen & Meyer 1990; Johnson 1991; Kumar et al. 1994; Sriram and Mummalaneni in Young & Denize 1995; Wilson & Mummalaneni 1989; Beaton & Beaton 1995; Wetzels et al. 1998; Rusbult 1983). Value is an important determinant of dependence and as such is considered as an indirect antecedent to calculative commitment.

2.3.3 Mediating Variables

Studies in the area of RM show that trust and dependence seem to be crucial in influencing commitment (Andaleeb 1998; Wetzels et al. 1998). However, these variables do not affect the two types of commitment in the same way. Geyskens et al. (1996) state that depending on the type of commitment, the effects of trust and dependence differ; calculative commitment is affected more strongly by the interdependence structure whereas affective commitment is affected more by trust. Thus, in some studies these variables are considered as mediating variables, between antecedents and outcomes of RM variables. In the conceptual framework of Bendapudi & Berry (1997) the effects of these antecedents on constraint-based maintenance (calculative) are mediated through dependence while the effects for dedication-based maintenance (affective) are mediated both by dependence and trust. Morgan & Hunt (1994) consider trust (and commitment) as key mediating variables in their model (see also Garbarino and Johnson 1999). Similarly, in this study, trust and dependence are mediators of most of the relationships between the antecedents and affective/calculative commitment. See Figure 2.1 for conceptual model.

2.4 ANTECEDENTS OF AFFECTIVE COMMITMENT

The following section examines the affective variables of the model. The first affective antecedent considered is satisfaction. Thereafter, affect and the relationship

between affect and satisfaction are examined, before considering freedom to choose and finally the remaining affective variable, trust.

Conceptual Framework

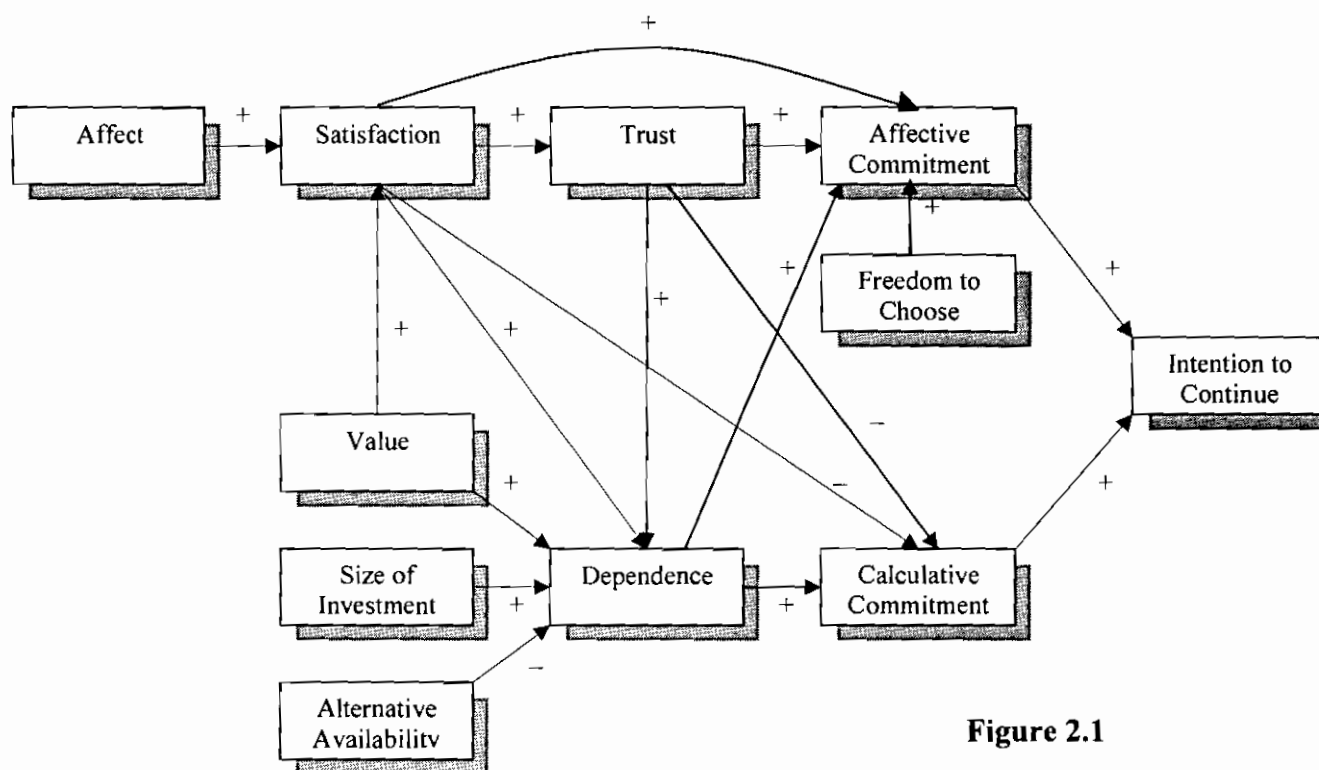


Figure 2.1

2.5 SATISFACTION

The concept of satisfaction is central to both marketing and RM (Churchill & Surprenant 1982; Gruen 1995; Oliver & Swan 1989). According to Kotler (Lovelock 1995) successful relationships are built on mutually satisfying exchanges in which both customers and suppliers gain value from the transaction. Customer satisfaction is particularly important to services marketing because customers have no tangible 'product' to examine so satisfaction relates to performance (Nicholls et al. 1998). Despite the importance of satisfaction to services the volume of research into service satisfaction has been far less than research into product satisfaction (Alford & Sherrell 1996).

2.5.1 Defining Satisfaction

Satisfaction has a variety of meanings in academic research (Hausknecht 1990). A variety of these meanings and definitions are discussed below and summarised in table 2.1.

TABLE 2.1 VARIOUS DEFINITIONS OF SATISFACTION

	Affective evaluation	Post - purchase Evaluative judgement	Cognitive & affective evaluation
Anderson & Narus 1990	✓		
Bettencourt 1997	✓		
Crosby et al. 1990	✓		
Ganesan 1994	✓		
Garbarino & Johnson 1999		✓	
Kelley & Davis 1994	✓		
Liljander & Strandvik 1995	✓		✓
Lin & Rusbult 1995	✓		✓
Oliver in Anderson et al. 1994		✓	
Rusbult & Buunk 1993	✓		✓
Rusbult 1991	✓		✓
Storbacka et al. 1994	✓		✓
Westbrook 1980a		✓	✓
Wilson & Mummalaneni 1989	✓		

There is a consensus in the marketing literature, both business and consumer, that satisfaction refers to a **positive affective or emotional evaluation**. This affective state occurs as a result of evaluating outcomes of interaction and the consumption experience. In the social psychology literature, there is also much emphasis on satisfaction as ‘feelings’ or affect. In the Investment model, Rusbult (1991) considers satisfaction to be the net effect of all the individual’s feelings towards the relationship, be they positive or negative. Satisfaction is also referred to as a **postpurchase evaluative judgement** (Fornell 1992). Westbrook (1980a) defines consumer satisfaction as “the favorability of the individual’s subjective evaluation of the various outcomes and experiences associated with using or consuming” a product/service.

A broader definition considers satisfaction to consist both of **cognitive and affective evaluations**. For example, Liljander & Strandvik (1995) consider satisfaction to be “customers’ cognitive and affective evaluation based on the personal experience across all service episodes within the relationship”. However, despite many definitions emphasising positive affect, most research concentrates on satisfaction as a cognitive evaluation. Oliver (1993) states that the affective basis of satisfaction has

not been well represented in the cognitive perspective of satisfaction. This point will be elaborated on later in this section.

2.5.2 Transaction Versus Cumulative Satisfaction

At least two conceptualisations of satisfaction can be distinguished; transaction-specific and cumulative satisfaction (Boulding in Anderson et al. 1994; Bolton & Drew 1991; Kelley & Davis 1994). Often there is a failure to make a distinction between the two types (Bitner & Hubbert 1994). Bitner & Hubbert continue that the two types may or may not be highly correlated. For example, if a consumer experiences twenty good encounters, the impact of one bad one on overall satisfaction is unlikely to be great, i.e. some minor bad experiences will be tolerated.

Transaction-specific satisfaction is viewed as post-choice evaluative judgement of one particular transaction (Oliver in Anderson et al. 1994). It is also referred to as service encounter satisfaction. Examples of discrete service encounters include a hair cut or an experience at a hotel check-in desk (Bitner & Hubbert 1994). **Cumulative customer satisfaction** on the other hand, is an overall evaluation based on total consumption experience with a good or service over time (Anderson et al. 1994; Fornell 1992). For the context of this study, satisfaction is conceptualised as being cumulative as opposed to encounter-specific. Cumulative satisfaction is also referred to as global satisfaction (Dwyer et al. 1987; Bettencourt 1997) as well as overall satisfaction (Bitner & Hubbert 1994; Garbarino & Johnson 1999). Customers' evaluate their satisfaction/ dissatisfaction with the service company based on cumulative encounters and experiences. Over time it is likely that multiple encounters will determine the level of overall satisfaction.

Past experience with a supplier's offering should have a positive influence on overall assessment of satisfaction (Anderson et al. 1994). British Airways (Clutterbuck & Goldsmith 1998), which aims to offer their passengers a better service experience, claims that this is carried out by five elements; "get passengers where they want to go, do it safely, go when they want to go, provide nourishment and let them accrue frequent-flyer miles". In turn, customers who are satisfied with past experience with a seller are more likely to develop and maintain a long-term relationship with that seller (Bendapudi & Berry 1997; Sharma & Patterson 1999). Furthermore, each element of

the service experience is important in the customer's overall assessment of satisfaction. Customers regard the entire travel experience as part of the service and do not differentiate between check-in, in-flight service, baggage collection etc. (McGann in Branigan 1996). The in-flight service in particular is quite important for leisure passengers, for whom the air trip may be an integral part of their holiday or visit (Shaw 1990).

2.5.3 Satisfaction Versus Service Quality

There is much debate as to the 'conceptual distinctness' of satisfaction and service quality (Wetzels et al. 1998), as well as debate as to the relationship between the two (Cronin & Taylor 1992; Liljander & Strandvik 1995). There are those who consider the two concepts to be distinct e.g. Anderson et al. (1994) and Mittal & Lassar (1998) and those that consider them to be related Bitner (Cronin & Taylor 1992). Furthermore, Zeithaml & Bitner (Lee et al. 2001) state that satisfaction is generally perceived as the broader concept and that service quality is a component of satisfaction. In sum, Bolton & Drew (Bitner & Hubbert 1994) state that there is confusion as to which is a better predictor of consumer behaviour, what their causal ordering is and whether they are distinguishable from a consumer point of view. Nicholls et al. (1998) state that sometimes satisfaction and quality are viewed as separate perceptions and other times they are considered to be factors that interact. In this study, they are being viewed as separate and only satisfaction is being considered.

2.5.4 Dimensionality of Satisfaction

There appears to be little consensus as to the dimensionality of satisfaction. Bitner & Hubbert (1994) state that satisfaction is likely to be multi-dimensional yet most studies consider it to be unidimensional. Satisfaction is generally considered as a unidimensional construct, which varies along a continuum from dissatisfied to satisfied (Westbrook and Oliver 1991). According to Rust et al. (Garbarino & Johnson 1999) global satisfaction is a useful predictor of customer behaviour but global measures do not identify specific aspects of the service that may need to be improved. There are also studies that consider satisfaction to be multi-dimensional. Research carried out by Nicholls et al. (1998) showed satisfaction to be a function of two independent dimensions; firstly, the service setting e.g. cleanliness and secondly, the personal service. Another multi-dimensional study of satisfaction is that of Surprenant

& Solomon (1987). In this study satisfaction is considered to be unidimensional. This is similar to the approach taken by Bettencourt (1997), Ganesan (1994) and Hocutt (1998). The dimensionality of satisfaction will be further discussed under the measurement section in chapter 3.

2.5.5 Problems of Conceptualising and Operationalising Satisfaction

Satisfaction is an elusive concept and neither its definition nor its measurement has yet been mastered (Beaton & Beaton 1995). Bitner & Hubbert (1994) state that conceptualisation and measurement problems are common to both academic and practical research. Satisfaction has been conceptualised and measured in various ways (Kelley & Davis 1994). Despite the complexity of the construct of satisfaction, measurement of it has been quite simple, mainly consisting of single-item rating scales of 4-7 points between 'very satisfied' to 'very dissatisfied' (Westbrook 1980b). Even though this comment was made in 1980, such measures are still being used (e.g. Cronin & Taylor 1992; Ostrom et al. 1995). Fornell (1992) continues that many traditional approaches to satisfaction measurement confuse causes of satisfaction with the phenomenon itself. This problem will be elaborated on at the end of the chapter (see section 2.18).

2.5.6 Satisfaction – Commitment Relationship

Although the effect of satisfaction on commitment is mediated through trust, satisfaction is also considered to have a direct relationship with commitment in this study. According to Gruen (1995) the relationship between satisfaction and commitment in the literature is substantial and in agreement; satisfaction exerts a direct causal effect on commitment rather than vice versa. Satisfaction is positively related to commitment (Beaton & Beaton 1995; Bettencourt 1997; Ganesan 1994; Garbarino & Johnson 1999; Gladstein in Hocutt 1998; Gruen 1995; Hocutt 1998; Kelley & Davis 1994; Tax et al. 1998; Wilson & Mummalaneni 1989). In social psychology, Rusbult's Investment Model proposes that individuals become increasingly committed as a result of increasing satisfaction levels (Lin & Rusbult 1995; Rusbult & Buunk 1993; Rusbult 1983; Rusbult 1991). A partner should feel more committed to the relationship to the extent that s/he is more satisfied with it.

Satisfaction, Retention & Commitment: “Customer satisfaction is not a surrogate for customer retention” (Reichheld 1993). Satisfaction may not lead to retention. Satisfied customers may still defect (Barnes 1995; Storbacka et al. 1994). Reichheld (1993) has shown that 65 to 85 per cent of customers who defect say they were satisfied. Similarly, satisfaction with past experiences in a relationship does not guarantee commitment (Rusbult 1983; Rusbult 1991). Satisfied customers do not necessarily commit to a relationship. Surprisingly, there is much agreement in the literature, especially the social psychological literature, that it is possible to be committed without being satisfied. A relational entity may be committed to a relationship in spite of being dissatisfied or unhappy (Rusbult 1991; Wilson & Mummalaneni 1989). Furthermore, Fehr (1988) and Rusbult (1983), state that satisfaction and commitment need not be strongly correlated because commitment may be produced by poor alternatives or large investments. However, it is important to consider that large investments and poor alternatives can trap a consumer in an unhappy relationship (Hocutt 1998). Hinde (Bendapudi & Berry 1997) states that unsatisfactory relationships remain in tact because constraints prevent dissolution.

These arguments reinforce the need for conceptualising commitment as having both a calculative and affective element, as is being done in this study. A dissatisfied partner in a relationship is more likely to remain in a relationship because of calculative commitment rather than an affective attachment. While it is possible that constraints would increase calculative commitment it seems less likely that they would increase affective commitment.

Fornell (1992) claims that satisfaction and switching costs are both strategies actively used by companies to retain customers. For example, Fornell (1992) states that American Airlines frequent flier programme is designed to induce customers to return, not through satisfaction but by creating economic incentives; Oriental airlines on the other hand, rely more on customer satisfaction to encourage the customer to return. It may not be possible to determine whether satisfaction is more effective than barriers to switching, since both strategies result in the customer returning (Fornell 1992). However, given the choice between returning because of satisfaction or constraints, consumers would most likely choose the former.

Satisfaction – Affective & Calculative Commitment: Given that commitment is conceptualised as multidimensional in this study, it is important to consider the relationship between satisfaction and the two types of commitment. Wetzels et al. (1998) showed that there is a positive relationship between satisfaction and affective commitment and between satisfaction and calculative commitment. From an organisational commitment perspective, Mathieu et al. (1990) state that job satisfaction is positively related to attitudinal commitment and to calculative commitment but more so to the former. For the context of this study, satisfaction is hypothesised to have positive relationship with affective commitment. However, based on the foregoing argument about the negative effect of constraints on satisfaction, it is hypothesised that there is a negative relationship between satisfaction and calculative commitment.

2.6 ANTECEDENTS TO SATISFACTION

The factors that contribute to satisfaction can be broken down into cognitive (e.g. disconfirmation model and value) and affective factors (e.g. affect) (Oliver 1993). See table 2.2 for various factors considered by researchers. The satisfaction antecedents considered in this study include value and affect.

TABLE 2.2 Satisfaction Antecedents

	Calculative		Affective
	Disconfirmation Model Factors	Value	Affect
Alford & Sherrell 1996	✓		✓
Churchill & Surprenant 1982	✓	✓	
Dubé-Rioux 1990	✓		✓
Howard & Sheth in Oliver 1980	✓		
Howard & Sheth in Ostrom et al. 1995		✓	
Kelley & Davis 1994	✓		
Oliver & Swan 1989	✓	✓	
Oliver 1993	✓		✓
Ostrom & Iacobucci 1995	✓		
Westbrook 1980a	✓		
Westbrook and Oliver 1991	✓		

2.6.1 Cognitive Evaluations of Satisfaction

Cognitive evaluations are the measures most often used in studies of consumer satisfaction (Dubé-Rioux 1990). One of the most prominent cognitive perspectives is

the disconfirmation model (Oliver 1993). The vast majority of satisfaction studies use some form of the disconfirmation model. There is much agreement that research literature on satisfaction has concentrated on the relationship between some form of the disconfirmation model and satisfaction (Churchill & Surprenant 1982; Olivia et al. 1992; Oliver in Alford & Sherrell 1996; Mowen 1995; Spreng et al. 1996; Westbrook 1980a; Westbrook and Oliver 1991; Wilson 1995). However, the disconfirmation model is not being considered in this study because it is a complex model that considers many variables and its inclusion would make the proposed commitment model overly large. One cognitive antecedent that is being considered is value. Value is discussed later in the chapter, while affect is discussed below.

2.6.2 Affective Evaluations of Satisfaction

Besides cognitive antecedents to satisfaction, there are also affective antecedents. This section considers the affective antecedent to satisfaction i.e. affect. Before discussing the relationship between affect and satisfaction it is necessary to examine the concept of 'affect'.

2.7 AFFECT

Affect may be defined as a "class of mental phenomena uniquely characterized by a consciously experienced, subjective feeling or state, commonly accompanying emotions and moods" (Gardner in Mowen 1995). Simply put, affect produces feelings of like or dislike. This feeling can then be used to evaluate the service encounter and whether it produces feelings of like or dislike (Alford & Sherrell 1996; Cumby & Barnes 1997; Price et al. 1995). The aim of the service encounter is to elicit 'positive affect' (Barnes et al. 1999).

In order to manage the service encounter effectively, it is necessary to consider consumer feelings that result from how they are treated by the organisation and the service providers (Barnes et al. 1999). Often the service provider has the potential to "make or break a situation based on how the customer is made feel during the service encounter" (Cumby & Barnes 1997). The 'how we make the feel' element represents the subtle messages occasionally sent to the customer leaving them with either a

positive/negative feeling towards the service provider. This element has an over-riding influence over all other elements of the service encounter. An organisation may get everything right but dissatisfaction may still result from some 'little thing'; some comment from staff or some other small thing remote from the provision of the core service (Cumby and Barnes 1997). Cumby & Barnes continue that the incident may be so small that it escapes management's attention e.g. a customer standing in a queue and people behind rush to a newly opened check-out, may be cause for much dissatisfaction.

2.7.1 Neglect of the Affective Dimension of Satisfaction

In comparison to cognitive responses, affective responses have traditionally been given less consideration in the evaluation of consumer satisfaction (Barnes et al. 1999; Oliver 1993). There is much agreement that the affective/ emotional aspect of the service delivery, particularly with regard to satisfaction, has been ignored by previous services marketing research (Barnes et al. 1999; Cumby and Barnes 1997; Dubé-Rioux 1990; Price et al. 1995; Sheaves & Barnes 1996). But this is gradually changing. According to Barnes et al. (1999) and Oliver (1993) more emphasis is being placed on the affective aspects of satisfaction. Thus, by including the affect variable in the model, this study will add to growing body of literature on a neglected area.

2.7.2 Dimensionality of Affect

As stated previously, satisfaction is not solely a cognitive phenomenon. It also comprises an element of affect or feeling (Westbrook 1980a). Satisfaction, is in part, an affective experience (Mano & Oliver 1993). Indeed, Oliver (Spreng et al. 1996) defines satisfaction as "an affective state that is the emotional reaction to a product or service experience". An unresolved issue is whether the affective element precedes or is concurrent with judgements of satisfaction (Westbrook 1980a). Similarly, Westbrook and Oliver (1991) question whether satisfaction and consumption emotion (where emotion is similar to affect) are distinguishable theoretical constructs. Westbrook and Oliver continue that some studies consider the emotional element and satisfaction as distinct while others conceptualise satisfaction itself as an emotional response. That is, some studies use emotion to measure actual satisfaction. For example Ganesan (1994) uses affective scales such as pleased/displeased, sad/ happy

as satisfaction measures, whereas Westbrook & Oliver (1991) use such scales to measure consumption emotion, an antecedent to satisfaction.

Mano & Oliver (1993) state that affect is clearly an antecedent to satisfaction. Similarly, Oliver (1993) states that positive and negative affect, have been found to make independent contributions to satisfaction judgements. Westbrook and Oliver (1991) argue that regardless of whether the two constructs are measured separately, that satisfaction incorporates an evaluation of consumption emotion anyway. But based on their research findings, Westbrook and Oliver (1991) conclude that satisfaction appears to be more complex in nature than a simple affective summary of positive and negative emotion during consumption experience. Having said that, they do state that efforts need to be made to develop more affectively enriched satisfaction measures such as the 'delighted-terrible' Westbrook scale (Westbrook and Oliver 1991). Thus, the issue of whether affect and satisfaction are distinct constructs appears to be unresolved. However, for the purposes of this study, they will be treated distinct, with affect as an antecedent to satisfaction¹.

2.7.3 Interpersonal Element of the Service Encounter

The feeling of like or dislike produced by affect, usually occurs during the service encounter. The service encounter refers to interaction between customer and service provider and is also defined as the 'moment of truth' (Normann in Crosby et al. 1990). Interpersonal treatment of the customer by the service provider greatly influences the consumer's evaluation of the service (Bitner et al. 1995; Tax et al. 1998). There is growing recognition of the importance of the person-to-person relationship between the service firm and the customer (Solomon et al. 1985). Barlow (1992) adds that "it fundamentally appeals to people to be dealt with on a one-to-one basis". David Bunworth of Aer Lingus, the Irish national airline, states that the strongest driver of value for two thirds of passengers is the nature of the service interaction between the passenger and the staff, i.e. staff recognition, demonstrating nothing is too much trouble, being responsive to requests and taking responsibility when problems occur, are all elements of the service that are valued by passengers (Bunworth 1999).

¹ The researcher would like to thank James Barnes for contributing his thinking on this matter.

The service provider is integral to the service encounter. Service providers are “invested with enormous responsibility for conveying the ‘personality’ of the service offering” (Surprenant & Solomon 1987). Often the service provider is the service as far as the consumer is concerned (Bitner et al. 1995; Hocutt 1998; Surprenant & Solomon 1987; Tax et al. 1998). Customers attribute employee actions to the organisation. The service provider is so important that Bendapudi & Berry (1997) state that every “interaction between the customer and the service-provider has the potential to strengthen, weaken or even destroy the relationship between them”. Some customers form such strong friendships with service providers that they can overlook ‘average’ service and higher prices (Goodwin & Gremler 1996) and even become tolerant of service failure (Berry 1995).

Social Bonds: Most business-consumer relationships start out as formal exchange relationships. However, by means of social bonds, communal relationships which resemble close friendships may be formed (Clark & Mills 1979). Czepiel (1990) states that service encounters are ‘first and foremost’ social encounters. One of the outcomes of these social encounters is social bonding. Long-term relationships require some degree of interaction between the customer and service provider so that a bond is created between the two parties (Barnes et al. 1999; Berry 2002; Voss & Voss 1997). Thus, social bonds develop through social interaction. For example, the Harley Owner’s Group organises weekend rallies, training sessions and other events that facilitate social encounters with other owners (Berry 1995). Such relationships may also develop in unlikely services, including those not traditionally associated with deep personal interaction e.g. courier service or telling the postman a personal problem (Goodwin & Gremler 1996). Relationships often develop with providers during brief interchanges associated with standardised, routinised, low involvement services. Thus, such relationships may be possible between passengers and airline personnel.

2.7.4 Affect – Satisfaction Relationship

There is much agreement as to the relationship between affect and satisfaction. “The fact that affect influences customer satisfaction is clear” (Cumby & Barnes 1997). Affect, experienced during consumption of services, positively influences satisfaction (Alford & Sherrell 1996; Barnes et al 1999; Cumby & Barnes 1997; Dubé-Rioux

1990; Mowen 1995; Westbrook 1987; Westbrook & Oliver 1991; Westbrook 1980a). Cumby and Barnes (1997) state that customers in satisfaction research often comment on how they are made feel. Satisfied customers mention companies they like to deal with... “ they go out of their way to help me...they call me by my name...they seem to know me” (Barnes 1993).

Research carried out by Bitner et al. (1995) showed how important feelings were in influencing satisfaction. Results showed that customers were particularly satisfied by unprompted and unsolicited employee actions such as pleasant surprises and special attention. The customer is made feel ‘unique’ or ‘pampered’. Such incidents also include truly out-of-the-ordinary employee behaviour; some small thing done for the customer which translates into highly satisfactory/ dissatisfactory encounter (Bitner et al. 1995). Total dissatisfaction may occur from employee rudeness, discrimination or ignoring of customers. The study showed that 28.9% of satisfaction/dissatisfaction incidents between airline passengers and flight attendants occur for above-mentioned reasons. Furthermore, 38.6% of all satisfaction/ dissatisfaction incidents concerned employee response to needs and requests. This relates to how the service is adapted to suit customer needs e.g. response to special needs such as medical or dietary requirements. Thus, the affective element or how the customer is made feel, clearly impacts on customer satisfaction. In this study, affect is hypothesised to have a positive relationship with satisfaction in this study.

2.8 FREEDOM TO CHOOSE

Another variable that is very important from a consumer service perspective, especially the airline industry, is ‘freedom to choose’. External forces, outside the control of the consumer, may impact on a consumer’s decision on whether they choose one service provider over another. Similar thinking is put forward by Iverson & Roy (1994) and Bendapudi & Berry (1997) whereby they claim that the environment has an impact on whether or not a relationship is maintained with a service provider. From an airline context there are two main segments – business and consumer. Often, the end consumer has much greater freedom in exercising their

choice of airline. Business consumers, on the other hand, may be constrained in their choice which may be decided for them by an employer.

Sheth & Parvatiyar (1995) validate this point by stating that certain institutions, such as an employer or a marketer, influence consumers' reasons for engaging in relational behaviour. In terms of employers, they prescribe guidelines on employee usage of products and services. Employees are more likely to engage in relational behaviours that are formally or informally specified by employers (Sheth & Parvatiyar 1995). Employers can limit choices, for example, by stipulating directly or indirectly, which airline an employee flies with. Sheth & Parvatiyar state that consumers accept the limited choice of consumption at the work place because of the power of the institution and the fruitlessness of engaging in conflict with the hierarchy. Individuals in this situation may be highly satisfied or they may be trapped in a relationship that is unsatisfactory (Young & Denize 1995). Making a change is outside their control.

Another institution mentioned by Sheth & Parvatiyar (1995) is that of the marketer. From an airline perspective the role of the marketer could be played by a travel agent. The end consumer or indeed the business traveller may avail of the services of a travel agent. Certain components of the airline service may be handled by travel agents e.g. information about flights, reservations and purchase of tickets (Lovelock 1983). To a certain extent, the control over decision on which airline to fly with, is taken from the consumer. The travel agent controls the decision, unless the consumer specifically nominates an airline with which they would like to fly. Thus, the choice of airline may be decided by the agent and not the consumer.

2.8.1 Volitional Process

There does not appear to be much literature on the 'freedom to choose' variable². The researcher originally considered simply including a 'Yes/No' dichotomous question on the questionnaire as to whether the passenger was free to choose their airline. However, such a question may be oversimplifying the freedom variable and does not allow for any complex multivariate data analysis. Subsequently, the researcher found that a similar variable had previously been considered in a consumer service study,

² The researcher wishes to thank Adrian Palmer for his helpful suggestions with regard to this variable.

more specifically an airline context by Pritchard et al. (1999). The variable considered by these authors was 'volitional choice'. Volitional choice is described as a process that includes freedom from constraints and freedom to choose (Pritchard et al. 1999). People perceive that their choices are freely made, and not dictated by constraints. Volition produces efforts to achieve an end, such that needs or desires are met (Bagozzi 1993). Individuals may not be free to choose a particular brand or service because they are constrained from making decisions due to the power of an external source (e.g. an employer). As a result individuals are less likely to feel personally committed to that decision (i.e. choice of service) if that decision must first be approved by an external source (Shamir in Pritchard et al. 1999).

2.8.2 Volitional Choice – Commitment Relationship

Pritchard et al. (1999) state that several theorists propose that consumer perceptions of volition play an important role in any theory of commitment. Kiesler (Pritchard et al. 1999) found that perceptions of freedom to choose act at the very core of one's commitment. Freedom of choice is required before attitudes of affective commitment can develop (Salancik in Shamir 1988). In their own study, Pritchard et al. (1999) showed that volitional choice was a positive antecedent to commitment. Pritchard et al. conceptualised commitment as resistance to change i.e. customers have a stable preference for one provider and are reluctant to change. This conceptualisation of commitment is quite similar to that of affective commitment, whereby the consumer desires to remain with the service provider and resists change. Thus, based on the findings of Pritchard et al. (1999) it is hypothesised that there is a positive relationship between the freedom to choose variable and affective commitment. As such, this relationship is not mediated through trust, as are the other affective variables. There is no need for the mediation since the literature only suggests a direct relationship between freedom to choose and affective commitment.

2.9 TRUST

The final affective antecedent to be considered is trust. In this study, trust is considered as the mediating variable between the other affective antecedents and affective commitment.

The significance of trust has been well documented in the literature. It has been widely studied in social psychology literature. Social psychology has addressed the importance of trust in interpersonal dyads (e.g. Rempel et al. 1985; Rempel & Holmes 1986; Rotter 1967; Larzelere & Huston 1980). Mc Conkie (Dwyer et al. 1987) suggests that “perhaps there is no other single variable which so thoroughly influences interpersonal and intergroup behaviour” as trust. While trust is an important aspect of interpersonal relationships it is also important in a business setting (Butler 1991; Morgan & Hunt 1994). Trust has more recently been given attention in marketing especially in terms of long-term relationships (e.g. Dwyer et al. 1987; Morgan & Hunt 1994; Sharma & Patterson 1999). Trust is generally viewed as an essential ingredient for successful relationships (Ahmed et al. 1998; Bejou & Palmer 1998; Berry 1995; Berry 2002; Doney & Cannon 1997; Garbarino & Johnson 1999; Gruen 1995; Selnes 1998; Sirdeshmukh et al. 2002; Tax et al. 1998). The role of trust in marketing is especially relevant in relationship marketing models (Geyskens et al. 1998; Hocutt 1998; Sharma & Patterson 1999; Wilson 1995). The key role of trust can be seen where trust acts as a mediator between antecedents and consequences of many RM models (e.g. Morgan & Hunt 1994; Garbarino & Johnson 1999).

2.9.1 Service Relationships & Trust

Berry (1995) states that trust must be present in service customer-company relationships. The right service delivered well, strengthens customer’s trust and confidence in the reliability of the firm (Morgan & Hunt in Berry 2002). Results of research carried out by Shemwell et al. (1994) showed that consumers need to be able to trust their service providers. Service providers who are able to engender trust will be rewarded with long-term relationships. Trust is crucial to the formation of service-based relationships because of the intangibility of services (Berry 1995). It reduces feelings of uncertainty and vulnerability. According to Berry (Sirdeshmukh et al. 2002) trust is perhaps the single most powerful marketing tool available to a service company. It is of great importance particularly where the customer must buy the service before experiencing it (Berry 2002; Liljander & Strandvik 1995; Morgan & Hunt 1994). This is true of the airline industry where the customer pays for a flight before flying with the airline. Indeed, it is possible for airlines to build up an image of being trustworthy. The Reader’s Digest Trusted Brands 2001 Survey, which involved

17,000 consumers from 18 European countries, showed that British Airways was voted the most trusted brand in the airline industry (Hiscock 2001).

2.9.2 Defining Trust

Moorman et al. (1993) state that definitions of trust contain two general approaches; the view of trust as belief and the view of trust as behaviour (see table 2.3 for different definitions of trust).

Trust as belief: Many definitions which concentrate on trust as a **belief**, consider this to be a belief that a partner will act in the best interests of the other partner and that the partners word or promise can be relied on. For example, Schurr & Ozanne (1985) describe trust as the “belief that a party’s word or promise is reliable and a party will fulfil his/her obligations in an exchange”.

Besides viewing trust as a belief, it has also been conceptualised as confidence or expectation about a partner. Moorman et al. (1992; 1993) state that trust has been viewed as a **belief, confidence or expectation** about a partner’s trustworthiness which results from the partner’s expertise or reliability. Sheth & Parvatiyar (1995) contend that the description of trust as **confidence** is rooted in consumer behaviour whereby consumers engage in relational exchange in order to reduce risk. Without confidence there would be no trust. According to Morgan & Hunt (1994) most definitions of trust draw on Rotter’s definition, which refers to trust as **expectancy**. Rotter (1967) defines interpersonal trust “as an expectancy held by an individual or group that the word, promise, verbal or written statement of another individual or group can be relied on”. In turn, many researchers refer to trust as a ‘generalized expectancy’ (Gruen 1995; Holmes 1991; Rempel et al. 1985; Selnes 1998).

TABLE 2.3 Trust Definitions in Marketing Literature

DEFINING TRUST	Belief best interests/ needs will be considered	Belief obligations will be fulfilled	Belief partner's word/ promise is reliable	Belief/ confidence in partner's reliability/ expertise	Honesty (credibility) & Benevolence
Trust Definitions in Marketing Literature					
Anderson & Weitz 1989	✓				
Crosby et al. 1990	✓			✓	
Doney & Cannon 1997					✓
Dwyer et al. 1987		✓			
Garbarino & Johnson 1999				✓	
Geyskens et al. 1998					✓
Kumar et al. 1995					✓
Liljander & Strandvik 1995		✓			
Moorman et al. 1992 & 1993				✓	
Morgan & Hunt 1994				✓	
Schurr & Ozanne 1985		✓	✓		
Whymark 1998	✓			✓	
Wilson 1995	✓				
Trust Definitions in Social Psychological Literature					
Deutsch in Holmes 1991	✓			✓	
Larzelere & Huston 1980					✓
Rempel & Holmes 1986				✓	
Rempel et al. 1985					✓
Rotter 1967			✓	✓	
Scanzoni (Rempel et al. 1985)	✓			✓	

Trust as Behaviour: Alternatively trust has been viewed as a **behaviour** that reflects a reliance on a partner as well as involving vulnerability and uncertainty (e.g. Deutsch in Moorman et al. 1992; 1993; Bendapudi & Berry 1997). Vulnerability is integral to trust. The behavioural view suggests that without vulnerability and uncertainty, trust is unnecessary (Moorman et al. 1992; 1993; Grönroos 1994; Dwyer et al. 1987; Morgan & Hunt 1994; Rempel et al. 1985). Trusting parties must be vulnerable to some extent for trust to be operational (Doney & Cannon 1997). Much of the research on trust has been conducted in a distribution channels context. In such situations vulnerability is created because parties are highly dependent on one another (Doney & Cannon 1997). Trust works to reduce such vulnerability because a trusting partner can count on a generalised reciprocity when conducting business (Morgan & Hunt in Gilliland & Bello 2002).

Moorman et al. (1992; 1993) state that both belief and behaviour must be present for trust to exist. The authors go on to say that if trust is present without reliance, then trust is limited. Conversely, if one partner is reliant on the other but there is no belief

about that partner's trust, such reliance is likely the result of power and control rather than trust.

2.9.3 Honesty & Benevolence

In social psychology, there is a consensus that trust has two essential elements; trust in party's honesty and trust in a party's benevolence (Larzelere & Huston 1980; Rempel et al. 1985). Larzelere & Huston (1980) state that "trust exists to the extent that a person believes another person (or persons) to be benevolent and honest". Honesty and benevolence have also been considered as elements of trust in a business context. Geyskens et al (1998) state that most studies in the channel literature define trust as "the extent to which a firm believes that its exchange partner is honest and/or benevolent". Other researchers who consider the elements of trust to be honesty and benevolence include Geyskens et al. (1996), Kumar et al. (1995), Ganesan (1994), Doney & Cannon (1997) and Wetzels et al. (1998). Geyskens et al. (1998) contend that while some studies only consider one or other dimension, that both dimensions are necessary to capture the construct of trust and result in stronger relations with other constructs (Geyskens et al. 1998). Thus, for the context of this study, the conceptualisation of trust is considered to include both honesty and benevolence.

Honesty: Trust in a partner's honesty, is the belief that one's partner is reliable, stands by its word, fulfils promises and is sincere (Anderson & Narus in Geyskens et al. 1998). The honesty element of trust is similar to defining trust as the belief that a partner's word is reliable, as mentioned above. Ganesan (1994) and Doney & Cannon (1997) refer to credibility as opposed to honesty but both are very similar. Credibility refers to an expectancy that the partner's word can be relied on.

Benevolence: Benevolence is the belief that a partner is genuinely interested in the other party's welfare or interests and will not take unexpected actions to the detriment of the other party (Geyskens et al. 1998). The benevolence aspect of trust is similar to the behaviour dimension of trust mentioned previously. One party will consider the other party's needs and fulfil its obligations. It is motivated to seek joint gains and not just consider its own needs (Wetzels et al. 1998; Doney & Cannon 1997; Larzelere & Huston 1980). Benevolence allows a party to feel comfortable despite becoming more vulnerable in the relationship. In the case of airlines, safety is very important. In

choosing a flight, safety and security is the second most important priority for leisure travellers and third most important for business travellers (Shaw 1990). Flying may be an ordeal, particularly in the light of the terrorist attacks of September 11th, 2001 in USA. It is important for airlines to project a safe and secure image. The mission statement of Aer Lingus, for example, refers to serving passengers in a safe and reliable manner and conveying the airline's intention to act in the customer's best interests (Annual Report 1998).

2.9.4 Dimensionality of Trust

Ganesan (1994) states that unlike many previous studies e.g. Anderson & Narus and Moorman et al. in Ganesan (1994), he considers trust to be multidimensional. According to Ganesan, credibility (or honesty) and benevolence are two distinct components of trust. Indeed, Ganesan found, based on his research, that credibility has a positive relationship with long-term orientation whereas benevolence does not. Similarly, Doney & Cannon (1997) state that some researchers have found evidence of discriminant validity for the two dimensions. Despite these arguments in favour of a multi-dimensional construct of trust, there are also many arguments considering trust to be unidimensional. Larzelere & Huston (1980) argue that while benevolence and honesty are conceptually distinct they may turn out to be operationally inseparable. If a partner's honesty is questioned, benevolence may also be questioned (Larzelere & Huston 1980). Geyskens et al. (1998) echo these sentiments that the two dimensions are intertwined. Doney & Cannon (1997) state that honesty and benevolence are highly correlated. In this study, trust is considered to comprise both aspects, honesty and benevolence, as a unidimensional construct.

2.9.5 Antecedents of Trust

Trust also has several antecedents (Butler 1991). A meta-analysis carried out by Geyskens et al. (1998) identified 60 antecedents and consequences of trust. However, there is confusion in the literature as to the antecedents and dimensions of trust. Factors that influence trust in some cases are considered as measures of trust in others. Sirdeshmukh et al. (2002) state that problems exist in understanding the factors that build consumer trust. For example, promise fulfilment and honesty are considered as antecedents or conditions for engendering trust by Butler (1991) and Martin (El-Ansary 1997), but are considered as dimensions by Geyskens et al. 1998, among

others. Furthermore, Selnes (1998) states that Morgan & Hunt include sources of trust as measures of it. Moorman et al. (1993) state that research has not systematically distinguished trust from related factors. Often the dimensions used are more appropriate as factors that influence trust rather than components of trust itself (Moorman et al. 1993). The distinction between conditions leading to trust and dimensions of the construct of trust is an important one (Butler 1991). Moorman et al. (1993) state that when dimensions and antecedents are used interchangeably, scholarly inquiry is hampered. This issue is considered in greater detail in section 2.18 at the end of the chapter.

2.9.6 Trust – Satisfaction Relationship

Butler (1991) suggests that as well as considering the dimensions of trust, that the conditions leading to trust should be measured. Satisfaction is one such condition. The definite relationship between satisfaction and trust is unclear (Gruen 1995). The causal ordering of trust and satisfaction has been the subject of much debate (Geyskens et al. 1998). One solution to the problem may be to consider trust and satisfaction to exhibit an iterative relationship. Having trust in a partner results in satisfaction, which in turn leads to a disposition to be more trusting in future interactions and so on (Martin in El-Ansary 1997). Despite an argument from Selnes (1998), that little effort has been made to explain the relationship between trust and satisfaction, there does appear to be some consensus that there is a positive relationship between the two. The relationship between satisfaction and trust is positive (Andaleeb 1998; Anderson & Narus 1990; Selnes 1998; Wetzels et al. 1998). There is also agreement that satisfaction contributes to trust. Rempel et al. (1985) states that trust evolves through mutually satisfying interactions. Satisfaction will have a positive effect on trust (Ganesan 1994; Gruen 1995; Ravald & Grönroos 1996; Selnes 1998; Tax et al. 1998; Wetzels et al. 1998). Garbarino & Johnson (1999) reported a similar positive relationship, but only for lowly relational customers not highly relational customers. Thus, based on the general agreement in the literature, satisfaction is considered to be a positive antecedent of trust in this study.

2.9.7 Trust – Commitment Relationship

Trust is considered as a prerequisite for global commitment (global commitment implies there is no distinction made between calculative and affective commitment).

Parties are unlikely to commit to a relationship unless trust has been established. As such, trust is a precondition for increased commitment. There is broad agreement in the literature that there is a positive relationship between trust and commitment (Andaleeb 1998; Anderson & Narus 1990; Dwyer et al. 1987; Ganesan 1994; Geyskens et al. 1998; Gruen 1995; Hocutt 1998; Larzelere & Huston 1980; Liljander & Strandvik 1995; Moorman et al. 1992). Trust is a key determinant of relationship commitment (Gundlach & Murphy in Sirdeshmukh et al. 2002). Relationships characterised by trust are so highly valued that parties will desire to commit themselves to such relationships (Hrebiniak in Sharma & Patterson 1999; Morgan & Hunt 1994). Given that commitment involves vulnerability and sacrifice, people are unlikely to be committed unless trust has been established (Garbarino & Johnson 1999).

Having considered the relationship between global commitment and trust, it is also necessary to consider the relationship between multidimensional commitment and trust.

Trust & Affective Commitment: There is much empirical support for the positive effect of trust on affective commitment. Geyskens et al. (1996) state that although many studies such as Morgan & Hunt (1994) refer to global commitment, their operationization reflects primarily affective commitment (i.e. most studies of global commitment consider only the affective dimension of commitment). The higher a partner's trust in its counterpart, the higher the affective commitment (Bendapudi & Berry 1997; Geyskens et al. 1996; Geyskens et al. 1998; Gilliland & Bello 2002; Wetzels et al. 1998).

Various reasons are purported for this positive relationship. Wetzels et al. (1998) state that trusting parties are more emotionally involved in the relationship and less consciously weighing up the costs against the benefits (i.e. parties are less calculative). Geyskens et al. (1996) refer to Holmes & Rempel in stating that highly trusting parties maintain positive feelings towards their partners by discounting negative attitudes in such a way as to confirm positive attitudes. In trusting relationships, partners are more willing to give each other the benefit of the doubt when things go wrong and are thus, more affectively involved. Bendapudi & Berry

(1997) refer to Williamson and claim that trusting exchange partners learn to trust that the other will act fairly should unforeseen events arise. In this way, the cost of lengthy contracts that aim to cover all eventualities can be avoided (Ganesan 1994). Trust reduces the cost of negotiating as parties willingly accept incomplete contracts.

Trust & Calculative Commitment: Calculative commitment is affected more strongly by the interdependence structure than by trust (Geyskens et al. 1996) i.e. a dependent partner is more calculatively committed whereas a trusting partner is more affectively committed. In a channel marketing context, Geyskens et al. (1996) found that trust in the supplier negatively impacts a customer's calculative commitment. The higher the trust the lower the calculative commitment for both channel partners (Geyskens et al. 1996; Geyskens et al. 1998). Wetzels et al. (1998) also tested this relationship, but measured trust as two distinct dimensions i.e. honesty and benevolence. The results are slightly conflicting with those of Geyskens (1996; 1998). Although Wetzels et al. hypothesised that there would be a negative relationship between calculative commitment and each trust dimension, the results showed a positive relationship for benevolence and calculative commitment and a negative one for honesty. Given that trust is being considered as a unidimensional construct in this study, it is hypothesised that there is a negative relationship between it and calculative commitment.

Various reasons are proposed for this negative relationship. When trust is low partners are likely to closely scrutinise the others behaviour. Low trust relationships are likely to have experienced "a history of broken promises, unmet expectations ..." (Rempel & Holmes 1986). Such relationships are characterised by many problems and much dissatisfaction. The decision to remain in the relationship is based on an analysis of the benefits versus costs (Geyskens et al. 1996; Wetzels et al. 1998). Without trust in the relationship partners will constantly try to escape (Ganesan 1994). The relationship is likely only to survive because the partner cannot easily be replaced i.e. the outcomes are not readily available elsewhere. When trust decreases in a partner, the party is likely only to continue the relationship due to a need to do so i.e. calculative commitment, rather than wanting to continue it.

Hypotheses for affective commitment and its antecedents are outlined in table 2.4.

Table 2.4 Direct and Indirect Determinants of Affective Commitment

Hypotheses		Relevant Literature
H1	There is a positive relationship between affect and satisfaction	Cumby & Barnes 1997
H2	There is a positive relationship between satisfaction and trust	Anderson & Narus 1990
H3	There is a positive relationship between satisfaction and affective commitment	Wetzels et al. 1998
H4	There is a positive relationship between freedom to choose and affective commitment	Pritchard et al. 1999
H5	There is a positive relationship between trust and affective commitment	Geyskens et al. 1996
H6	There is a positive relationship between dependence and affective commitment	Geyskens et al. 1996

Having considered the antecedents of affective commitment, the next section continues with the antecedents of calculative commitment.

2.10 ANTECEDENTS OF CALCULATIVE COMMITMENT

Dependence is the first variable to be considered in this section. Dependence acts as the mediating variable between the antecedents and calculative commitment. Thereafter, the variables to be considered are value, size of investment and finally availability of quality alternatives.

2.11 DEPENDENCE

Dependence is a necessary element in a relationship. Baxter & Simon (1993) state that for a relationship to be maintained, the two parties must sacrifice some of their independence. Relationships that lack dependence are characterised by short-term contracts, transactional product-price competition, limited communication and much switching to alternate partners (Dwyer et al. 1987; Kumar et al. 1995). While dependence is a crucial concept in channel research (Kumar et al. 1995), it has also been considered in service relationship models by Bendapudi & Berry (1997) and Hocutt (1998).

2.11.1 Defining Dependence

The definition of dependence in channel literature is often related to the power-dependence theory of Emerson (Buchanan 1992; Frazier et al. 1989; Geyskens et al. 1996; Hallèn et al. 1991). According to this theory, dependence encompasses two aspects. A party's dependence on its partner is determined by (1) its motivational investment in the relationship, and (2) the replaceability of the partner (Geyskens et al. 1996). Motivational investment refers to the value of the resources or outcomes that result from the relationship (Geyskens et al. 1996). By remaining in a relationship which results in valued outcomes, the party achieves desired goals. The replaceability aspect refers to the difficulty of replacing the partner because of switching costs or lack of alternatives (Buchanan 92; Frazier et al. 1989; Geyskens et al. 1996; Heide & John 1988). The more difficult it is to replace a partner, the greater the dependence.

2.11.2 Mutual Dependence

The most desirable form of dependence is considered to be symmetric interdependence. Symmetric interdependence exists when both parties are equally or mutually dependent (Kumar et al. 1995). Similarly, in a services marketing context, Czepiel (Berry 1995; Bitner 1995) states that relationships must be mutually beneficial. Partners must be willing to give, not just to get. The result of high levels of interdependence is a high degree of commitment from both parties (Sabatelli & Cecil-Pigo 1985). Some of the other positive outcomes of mutual dependence include; reduction in tendencies towards opportunistic behaviour (Gundlach & Cadotte 1994; Gundlach et al. 1995); mutuality of effort whereby both parties invest equally in the relationship (Dwyer et al. 1987; Kaufmann & Dant 1992; Young & Denize 1995); and finally, stability and enhancement of the relationship (Heide & John 88; Kumar et al. 1995).

2.11.3 Asymmetry Leads to Dissatisfaction

Dependence is referred to as asymmetry in a relationship between two partners (Gundlach & Cadotte 1994; Wetzels et al. 1998). Asymmetry relates to a situation where there is unequal power between the parties. In asymmetric relationships, the less dependent partner dominates the exchange and may use 'undue' influence (Buchanan 1992). As a result, dependence has traditionally been considered as a

liability. Asymmetrical relationships lead to dissatisfaction. The following are some of the likely outcomes of asymmetrical relationships (See table 2.5).

TABLE 2.5 OUTCOMES OF ASYMMETRICAL RELATIONSHIPS

	Opportunism /exploitation	Attempts to abandon relationship	Distrust	Dysfunctional relationships & instability	Power imbalance
Anderson & Weitz 1989	✓	✓	✓	✓	
Anderson & Weitz 1992	✓	✓	✓		✓
Blois 1996		✓			✓
Dwyer et al. 1987	✓			✓	
Ganesan 1994		✓			✓
Geyskens et al. 1996	✓			✓	
Gundlach & Cadotte 1994	✓				
Gundlach et al. 1995	✓			✓	
Kumar et al. 1995	✓		✓	✓	
Morgan & Hunt 1994					✓
Wilson 1995					

Opportunism: One outcome of asymmetrical relationships that can be detrimental to relationship stability is opportunism and warrants further discussion. Some firms will engage in opportunistic behaviour (Gilliland & Bello 2002). Opportunism is defined as ‘self-interest seeking with guile’ (Gundlach et al. 1995). It occurs when the more powerful partner exploits its advantage leading to the dissatisfaction of the low-power member (Anderson & Weitz 1989). The interests of the parties diverge and it becomes more attractive for the more powerful party to act opportunistically (Kumar et al. 1995). Opportunism can be explained by possession of power by each party. In interdependence theory, Thibaut & Kelley (1959) present a matrix of possible relationship outcomes. Each party has certain opportunities for exercising power over the other. Power to affect another’s relational outcomes enables the possessor to influence that person’s behaviour or to affect his outcomes (Blois 1996; Thibaut & Kelley 1959). Ultimately, opportunism has a negative effect on commitment and can undermine a relationship.

2.11.4 Dependence in a Consumer Service Environment

The ideal type of relationship is characterised by mutual dependence (Liljander & Strandvik 1995). In services marketing, Berry & Parasuraman (Morgan & Hunt 1994) state that relationships are built on the foundation of mutual commitment. Yet despite claims of mutuality of dependence and commitment in services marketing, this type of

interaction may not be pervasive in consumer markets. In industrial markets mutual dependence is often present, however, it may be less pervasive in consumer-service provider relationships (Liljander & Strandvik 1995). Palmer (2002) states that the relationship marketing paradigm has been 'stretched to situations' in which there are few sellers and potentially millions of buyers (i.e. consumer markets). In such situations, the existence of power imbalances is common.

Managed by the seller: Business-to-consumer relationships managed by the seller are asymmetrical (Dwyer in O'Malley and Tynan 1999) and leave no room for 'mutuality'. O'Malley & Tynan (1999) claim that customers are passive participants in these so-called 'relationship' managed independently of customer participation. Such seller maintained relationships are marked by a disproportionate commitment from the buyer (Voss & Voss 1997). Consumer-service relationships are not mutual in terms of interdependence.

Buyer dependence on seller: In most service situations the consumer has a wide variety of service providers to choose from, as discussed in chapter 1 under the friendship Vs marriage analogy heading. Unlike in business-to-business context, where viable alternatives are hard to come by and switching costs are high, in business-to-consumer markets, normally the buyer has several viable alternatives and low switching costs (Gruen 1995). In consumer services it is easier to change suppliers (Liljander & Strandvik 1995). However, there are some service situations which result in the customer becoming dependent. Services characterised by high involvement, e.g. medical services, often result in a high degree of consumer dependence on the service provider for information and guidance (Westbrook in Hocutt 1998). In terms of the airline industry, the airlines introduced loyalty programmes in an effort to make the consumer more dependent. Gilbert (1996) argues that if the rewards are substantial enough and the airline has a large enough network to offer flight choice that flying patterns of passengers, particularly business passengers, can be altered as a result of the rewards. Business travellers choose flights that promote two-for-one deals or that are affiliated to their domestic FFP (Gilbert 1996). Thus, passengers may come to depend on the airline to obtain these rewards.

Seller dependence on buyer: Similarly, the seller in consumer markets is also not dependent on any one single customer (unlike business markets) (Gruen 1995). Dependence is a function of the importance of the relationship to both parties. A small volume customer has little power since the company survival does not depend on their business (Storbacka et al. 1994). Often the supplier does not know its customers individually e.g. hamburger restaurant (Liljander & Strandvik 1995). Customer relationships may be cumulatively important to the seller but individual relationships may be small and inconsequential (O'Malley and Tynan 1999). This results in lower commitment of the seller to any single relationship (Anderson & Weitz in Gruen 1995).

2.11.5 Asymmetrical Interdependence is not always Negative

Given the foregoing argument, consumer-service provider relationships may be characterised by asymmetrical interdependence or indeed asymmetrical commitment. However, this situation does not irrevocably condemn the relationship. Young & Denize (1995) state that the idea that commitment must be proportionate for there to be a viable long-term relationship is not supported. Indeed, research carried out by Gundlach (1995) showed that disproportionate commitment may not always result in opportunistic behaviour. The dominant party may refrain from using its power to the detriment of the other party and invest in the relationship (Kumar et al. 1995). Bonoma (Morgan & Hunt 1994) states that "human behavior may not be so Machiavellian after all, especially not behavior in long-run relationships". From a social psychological perspective, there appears to be many marital relationships with asymmetrical commitment. Marital commitment of men and women in different societies may vary over time. For example, Kofyar tribal women are more likely to be of lower commitment than men, whereas in Western society men are considered to be less committed (Rosenblatt 1977). Thus, even in marital relationships, dependence is not always symmetrical, yet the relationships continue.

2.11.6 Protection of Consumer from Opportunistic Behaviour

Given that suppliers are usually the more powerful party in consumer markets, they have the opportunity to act opportunistically. However, the opportunity for opportunistic behaviour is not always available. The seller is usually much larger and stronger (unlike business-to-business where their size varies), with the result that

consumer protection laws have been designed to protect the weaker party (Gruen 1995). The consumer is protected from opportunistic behaviour on the part of the supplier organisation. Indeed from a consumer setting, it may be the consumer who engages in opportunistic behaviour, where consumers perceive large organisations as being able to tolerate and absorb violations by the consumer (Gruen 1995). The concern about opportunistic behaviour then shifts from the buyer to the seller. For example, airlines offering frequent flier miles run the risk of undesired transfers or sale (Gruen 1995) (e.g. members purchasing at special rates for non-members). Palmer (2002) considers one further means by which the opportunity for the supplier to act opportunistically is being reduced. Using the internet and other consumer-focused technology, consumers can initiate and guide relationships with suppliers. Palmer states that such changes have the potential to redress the power imbalances which have so far been typical of business-to-consumer relationships, with the result that the asymmetric interdependence of such relationships is reduced.

2.11.7 Trust – Dependence Relationship

According to Geyskens et al. (1998) in the channel literature, dependence is an antecedent to trust. However, there is little consensus on whether dependence should increase or decrease trust. Some academics are of the opinion that there is a positive relationship between dependence and trust, whereas others contend there is a negative relationship. Kumar et al. (1995) showed empirically that as interdependence asymmetry (or dependence) increases, trust and commitment decrease. Similarly, Anderson & Weitz (1989) and Ganesan (1994) state that trust increases when asymmetry decreases. Dependence creates conflict as well as mistrust of the dominant party's intentions (Anderson & Weitz 1992; Anderson & Narus 1990), which might explain the negative relationship between dependence and trust. In contrast, Geyskens et al. (1998), contend that dependence is positively correlated with trust. In a meta-analysis carried out by Geyskens et al. (1998), dependence had a small, but positive effect on trust. However, while dependence is considered as an antecedent to trust in the industrial literature, in consumer services, trust is considered to be an antecedent to dependence. Hocutt (1998) states that trust leads to higher levels of relative dependence and cites the example of a patient becoming dependent on a doctor in whom he/she trusts. Similarly, if an airline passenger learns to trust their airline to get them to their destination safe and on time, they may also come to depend on that

airline. Thus, trust is considered to have a positive relationship with dependence in this study.

2.11.8 Satisfaction – Dependence Relationship

The link between satisfaction and dependence has not been clearly established (Andaleeb 1998). Anderson & Narus (Geyskens et al. 1996) in the channel literature and similarly Thibaut & Kelley (1960) in the social psychological literature contend that the pattern of interdependence affects satisfaction. The dependent party's fear of exploitation reduces its satisfaction with the relationship. Alternatively, Andaleeb (1998) showed that higher dependence results in higher satisfaction. However, in the services literature the causal relationship is reversed with satisfaction affecting dependence. Bendapudi & Berry (1997) propose that the relationship between satisfaction and dependence is a positive one where the greater customer satisfaction with past experiences, the greater the dependence on a partner. They claim that a satisfied customer leaving a relationship, risks the possibility that available alternatives will not provide as much satisfaction. Similarly for this study, the relationship between satisfaction and dependence is hypothesised to be positive. The interrelationships between affective and calculative variables are considered in table 2.6.

Table 2.6 Interrelationships between Affective and Calculative Variables

Hypotheses		Relevant Literature
H7	There is a positive relationship between trust and dependence	Hocutt 1998
H8	There is a positive relationship between satisfaction and dependence	Bendapudi & Berry 1997
H9	There is a positive relationship between value and satisfaction	Wilson & Mummalaneni 1989

2.11.9 Dependence – Commitment Relationship

Research from a services context (Hocutt 1998) and from a channel literature perspective (Andaleeb 1998) proposes that the higher the dependence on the service provider the higher the commitment. However, when commitment is considered to have two dimensions, the relationship is not as simple as is now discussed.

Dependence & Affective Commitment: In the channel literature, dependence has been found to have a negative effect on affective commitment (Kumar et al. 1995; Anderson & Weitz in Wetzels et al. 1998). The more dependent party harbours

negative feelings towards the more powerful party because of the powerful party has the potential for exploitation (Geyskens et al. 1996). The fear of exploitation resulting from dependence means the motivation for continuing the relationship is more calculative than affective (Anderson & Weitz 1989).

Dependence need not always have a negative effect on affective commitment. Two studies, namely Geyskens et al. (1996) and Wetzels et al. (1998) hypothesised that there would be a negative relationship between dependence (referred to as interdependence asymmetry) and affective commitment, but the hypothesis was not supported in either study. Wetzels et al. (1998) conclude that “asymmetry in a relationship between supplier and customer does not automatically imply that a customer will be less affectively committed to the relationship”. It seems that dependence can have a small positive effect on affective commitment. The more powerful partner will not automatically use its power to the detriment of the weaker party, whenever the opportunity arises, as previously discussed. The weaker party considers this as fairer and as result is motivated to continue the relationship for affective reasons.

There is little literature as to the effect of asymmetric relationships or dependence in a consumer service context. The potential for exploitation that exists in business-to-business situations does not exist, given that the consumer is protected from the more powerful party by consumer protection laws. In the services literature, Bendapudi & Berry (1997) propose that dependence can lead to dedication to maintain a relationship i.e. dependence positively effects affective commitment. They continue that this occurs when the partner is non-opportunistic. Similarly, in this research the relationship between dependence and affective commitment is hypothesised to be positive.

Dependence & Calculative Commitment: The channel literature has shown that dependence has a positive influence on calculative commitment (Ganesan in Wetzels et al. 1998; Geyskens et al. 1996; Gilliland & Bello 2002; Wetzels et al. 1998). The findings of Geyskens et al. (1996) showed that greater interdependence asymmetry (i.e. dependence) increases calculative commitment for the more dependent partner

(i.e. the customer). The more dependent party feels more of a need to continue the relationship than the more powerful party.

The reason for the positive relation between dependence and calculative commitment can be explained by the economic nature of calculative commitment. Calculative commitment is based on economic rationale; a firm is motivated to stay because it needs to from an economic point of view (Geyskens et al. 1996). In the channel literature Gilliland & Bello (2002) state that when viable alternatives are not readily available the manufacturer becomes aware of the consequences associated with finding another distributor. It calculates the gains and losses associated with leaving and recognises that termination is economically unviable. Another reason for the economic rationale is that the weaker party is motivated to continue the relationship because it is necessary to do so because of high-perceived switching costs. Even though other potential relationships may be more equitable, switching costs prevent the dependent partner from leaving (Wetzels et al. 1998). The stronger the dependence on the partner to achieve value and relational outcomes from the relationship, the stronger the constraints to maintain the relationship (Bendapudi & Berry 1997). Dependence on a partner leads to constraints against dissolution. Thus, dependence is hypothesised to be positively related to calculative commitment.

2.12 ANTECEDENTS TO DEPENDENCE

Heide & John (1988) list five factors that contribute to or increase dependence. As such these factors are antecedents to dependence. Table 2.7 below displays a record of the various academics who considered the factors that contribute to dependence.

- (1) Motivational investment or valuing outcomes
- (2) Comparatively higher outcomes (Role theory perspective)
- (3) Concentration of exchange
- (4) Quality of Available of alternatives
- (5) Transaction specific investments

Table 2.7 Factors which contribute to or increase dependence

	Motivational Investment	Comparatively higher outcomes	Concentration of exchange	Quality of alternatives	Transaction specific investments
Heide & John 1988	✓	✓	✓	✓	✓
Emerson (Geyskens et al. 1996)	✓			✓	✓
Frazier 1989	✓	✓			✓
Ganesan 1994	✓	✓		✓	
Bendapudi & Berry 1997	✓	✓			
Anderson & Narus 1990		✓			

The first factor, **motivational investment**, was discussed as part of the definition of dependence in section 2.11.1. The second factor, dependence as **role theory**, occurs when the outcomes of the relationship are comparatively higher or better than those available from alternative relationships (Anderson & Narus 1990; Frazier et al. 1989; Ganesan 1994; Heide & John 1988). This is known as the role the role theory perspective. **Concentration of exchange** is the third factor contributing to dependence. This factor contributes to dependence when exchange is concentrated on a few suppliers. Concentration of exchanges is calculated by measuring the number of exchange partners and/or the fraction of business done with the particular partner (El-Ansary & Stern in Heide & John 1988). **Quality of alternatives and transaction specific investments** are the last two factors. Both of these are considered to contribute to dependence in the commitment model of this study.

The first dependence antecedent considered is that of valuing outcomes or motivational investment. This variable is considered under the heading of value as will be discussed in the following section.

2.13 VALUE

The first of the factors considered to contribute to dependence in this study is value. Value relates to the valued resources or outcomes received from a relationship. By remaining in a relationship that produces valued outcomes, the party achieves desired goals. In a channel marketing context, the goals that parties are trying to achieve refer to sales and profits accruing from the relationship (Andaleeb 1996; Gundlach & Cadotte 1994; Gundlach et al. 1995; Keith et al. 1990). However, from a consumer services perspective, the consumer's goal would not be sales and profits. Hence, this

study considers value from the consumer perspective. This issue is elaborated on in section 2.13.10.

2.13.1 Value & Relationships

The value construct is an important element of RM. Customers enter marketing relationships because they expect to receive value for participating. RM is a process that should create perceived value for the customer (Anderson 1995; Bagozzi 1995; Barnes 1997b; Grönroos 1997; Peterson 1995; Ravald & Grönroos 1996; Turnbull & Wilson 1989). A basic premise of value, is that parties give up something but in the long run the advantages are expected to outweigh the costs. As such, customers stay in relationship only as long as they perceive that the sum of the benefits exceed the costs (Christy et al. 1996; Sharma & Patterson 1999). Companies seeking relationships with their customers do so by continually improving the value of their product/service to the customer.

2.13.2 Service Value & Service Marketing

Service value continues to be a very important concept in services marketing (Beaton & Beaton 1995; Berry 1983; Bejou & Palmer 1998). Of the key concepts of services marketing e.g. quality, satisfaction and service value, value appears to be the most promising in services research (Brady & Robertson 1999). This can be witnessed by the various attempts to add value to services. Ravald & Grönroos (1996) see the value concept as being one of the most popular trends today, while Cronin et al. (1997) state that there is little doubt that service value is and will continue to be a key construct of interest to academics and practitioners. Bowen (1987) considers some of the factors that make the value concept especially important to services including the unique characteristics of service, intangibility and perishability. These factors increase the need for service firms to monitor and influence the perceived value of the service they provide.

2.13.3 Defining Value

Through exploratory research, Zeithaml (1988) deduced that there are four types of value, as perceived by the consumer:

- (1) value as low price – consumers equate value with price

- (2) value as whatever the customer wants in a product – benefits received are the most important components of value
 - (3) value as the quality received for what is paid – value is a trade-off between price and quality
 - (4) value as what is received for what is paid for – ratio of inputs versus outcomes.
- These four types of value can be combined into one overall definition: “Perceived value is the consumer’s overall assessment of the utility of a product based on what is received and what is given” (Zeithaml 1988).

Value as service quality relative to sacrifice: According to Zeithaml (1988), the third definition appears quite often in the literature. This definition purports that service value results from consumers weighing their perceptions of service quality against the sacrifices made to acquire a product. Customers assess value by trading off the quality of the service versus its costs in a given situation (Bolton & Drew 1991, see also Beaton & Beaton 1995; Cronin et al. 1997; Dodds et al. 1991; Drew & Bolton 1987; Rys et al. 1987).

Value as a Trade-off: As a result of Zeithaml’s definition in 1988 of value as a trade-off of the salient give and get components, most of the literature refers to value as a trade-off between the benefits and the costs. For example, perceived customer value is defined as:

- what you get for what you give (Rys et al. 1987).
- as benefits received relative to costs incurred (Anderson et al. 1994).
- perceived benefits received by the customer which are traded off against perceived costs (Lovelock 1996).
- the ratio between perceived benefits and perceived sacrifice (Ravald & Grönroos 1996; Patterson & Spreng 1997)

For similar definitions see also Beaton & Beaton (1995), Drew & Bolton (1987), Grönroos (1997), Lapierre (1997) and Liljander & Strandvik (1995).

2.13.4 Difficulty of Defining Service Value

Brady & Robertson (1999) state that most of the knowledge of the value concept relates back to Zeithaml’s means-end model of value from 1988. They continue by stating that other than Zeithaml there are few other attempts to conceptualise the value

concept. Zeithaml's work stems from the product literature. In the area of services, there is no such seminal work on perceived value (Lapierre 1997). Despite the importance of value in consumer services, most studies consider value from a product perspective (for exceptions see Brady & Robertson (1999) & Cronin et al. (1997)). Thus, the definition of value in a services context is not clear. The problem of defining service value is exacerbated by lack of research on the concept. Brady & Robertson (1999) state that despite the theoretical and practical importance of service value, there is a lack of empirical research on the value construct; most of the literature has been largely conceptual. Unlike the service quality and satisfaction, service value remains relatively unexplored. The measurement of service value is one area of marketing that requires more attention (Cronin et al. 1997; Dodds et al. 1991; Onkvisit & Shaw 1987; Ravald & Grönroos 1996).

In the services literature, Lovelock (1996) states that the "term 'value' is one that is rather loosely used". Perceived value is subjective and varies among consumers and usage contexts (Barnes et al. 1999; Bowen 1987; Livingston & Zeithaml 1987; Lovelock 1996; Mittal & Lassar 1998; Patterson & Spreng 1997; Ravald & Grönroos 1996). Different customers will give different weightings to various aspects of value, such as price and convenience, in their interaction with a service provider (Barnes et al. 1999). However, if service value is similar to product value, then it can be assumed that service value involves a trade-off between a customer's evaluation of the benefits of using a service and its costs (Bolton & Drew 1991).

2.13.5 The Value Trade-Off

For the purposes of this research, value will be treated as a trade-off of benefits and costs, as conceptualised by Zeithaml (1988). These benefits and costs are now discussed.

2.13.6 Benefits

Value encompasses benefits, which act as the 'get' component in the value trade-off. Benefits accruing to customers engaging in relationships can be quite vast. For example, product related benefits (Wilson & Mummalaneni 1989), reduced uncertainty and social satisfaction (Hocutt 1998), as well as service attributes and technical support (Lapierre 1997). Benefits may be **tangible or intangible** (Christy et

al. 1996; Bagozzi in Gruen 1995; O'Malley and Tynan 1999). Tangible benefits include access to extra service e.g. airline special lounges, special customer services arrangements e.g. fast check-in for regular passengers and extra information e.g. newsletters and magazines (Christy et al. 1996). Intangible incentives include social status enhancing benefits, which increase customer self-esteem. Research by Bitner (1995) also showed that service relationships can contribute to a sense of well-being and overall quality of life.

Beaton & Beaton (1995) define **service quality** as the only reward component received in the trade-off. However, as discussed in section 2.5.3, service quality is not being considered in this study.

The introduction of **loyalty schemes** has resulted in an important customer benefit. Loyalty scheme members are offered money or near money-off benefits e.g. preferential access to other products such as when an airline partners with another company (Christy et al. 1996). There is an assumption that loyalty schemes provide benefits, which represent value to customers. O'Malley (1998) questions whether this is so, especially considering that value means different things for different people. Air travel rewards are of higher aspirational value than that of 1% off purchases offered by retailers (O'Malley 1998). In relation to FFPs, Bejou & Palmer (1998) state that many remain "crude attempts to increase short-term sales without adding to the quality of the long-term relationship between an airline and its customers". Similarly, Croft (1995) asks if loyalty schemes provide value when consumers have to spend thousands of pounds to simply get a reduction on a holiday. Loyalty schemes and value should only be considered as part of a broader product offering i.e. considering other elements of value such as price, service, design, location and convenience (O'Malley 1998).

Though quality is often considered as the only 'get' component, another benefit is that of **convenience**. Convenience influences value perceptions (Zeithaml 1988). If customers need to be physically present during service delivery, which is the case for airlines, then factors such as scheduling and convenience are very important (Lovelock 1983). Consumers who feel inconvenienced by service providers as a result of factors such as awkward operation hours and long waiting times, may switch to

another provider (Keaveney 1995). Indeed, for business travellers, high flight frequency means much flexibility and is one of the most important criteria for business travellers in choosing a flight (Shaw 1990).

2.13.7 Sacrifice

Having considered the benefits aspect of the trade-off, this section considers the cost aspect. The sacrifice (or cost) component of value is most often considered to be price. **Price** is what is given up or sacrificed by the customer (Livingston & Zeithaml 1987). It is the 'give' component of the trade-off. Price is made up of two components; monetary and non-monetary price (Beaton & Beaton 1995; Brady & Robertson 1999; Drew & Bolton 1987; Grönroos 1997; Lapierre 1997; Mowen 1995). Monetary price represents the fees paid whereas non-monetary price concerns the time, effort and stress involved in acquiring the service.

While monetary price is a component of value it is not a synonym for value. One of the common misconceptions of value is that it is the same as price (Bowen 1987; Livingston & Zeithaml 1987). Putting a price on a product does not mean it has value. While price is not synonymous with value it is a very important factor in determining value. Dodds et al. (1991) state that if price is unacceptable then the offer can have little, if any perceived value. Buyers have 'reference points' or a range of acceptable prices for a product (Monroe in Patterson & Spreng 1997; Ravald & Grönroos 1996). Bowen (1987) states that research has shown that when price is higher than the acceptable level, value is perceived to be bad. Thus, it can be seen that value is a relative term. A low price is of little consequence unless value is provided (Onkvisit & Shaw 1987). Similarly, high price may be viewed as a bargain if it provides value.

In relation to price and airline passengers, price occupies a lower place in a business flyer's list of priorities (Shaw 1990). However, in some situations this segment seeks cheaper fares, such as when there is greater choice of available airlines or a corporate travel manager secures special deals. Leisure travellers are much more price sensitive than business travellers. For leisure travellers price is the most important factor in choosing a flight given that they pay for the flight out of their own pocket (Shaw 1990). Leisure travel is a luxury which consumers will forego if they have to. Lower fares and last-minute schemes are an important part of the mix for these passengers.

Money is not the only cost that customers incur while using services (Lovelock 1996; Zeithaml 1988). Other **non-monetary costs** include:

- Unnecessary mental or physical effort and time – there is an opportunity cost of time spent in pursuit of a service (Lovelock 1996).
- Psychic cost – attached to some services e.g. mental effort or even fear of flying; and sensory costs – putting up with aeroplane noise, uncomfortable seating, drafts etc. (Livingston & Zeithaml 1987; Lovelock 1996; Peterson 1995).
- Acquisition costs, transportation, installation, order handling, repairs, risk of failure and poor performance (Grönroos 1997; Ravald & Grönroos 1996).
- Time, effort and switching barriers (Liljander & Strandvik 1995).

2.13.8 Airline Value

Airlines generally use one of two strategies to provide their passengers with value. Former Aer Lingus chairman Bernie Cahill, summarises these strategies as either “point-to-point, no frills” or “full service, value focused” (Annual Report 1998). Examples of full-service airlines include Aer Lingus, British Airways and British Midlands. Ryanair on the other hand, has no frills and flies only point-to-point (i.e. only direct non-stop routes) (Forward 1999).

Lovelock (1996) states that some airlines differentiate themselves by providing supplementary services to each segment class i.e. economy, business and first class, and in addition, provide extra supplementary services to first and business class passengers. Full service airlines such as Aer Lingus use this form of differentiation. Its value strategy focuses on adding benefits, by providing supplementary services. For example, Aer Lingus’s FFP offers business travellers massage treatments at lounges at Dublin airport (www.flyaerlingus.com). Alternatively, Ryanair’s value strategy focuses on competing on low prices. Onkvisit & Shaw (1987) state that full-service brokers charge full price for value-added services, whereas discount brokers offer less service but at a lower price. This very much characterises the situation between Aer Lingus and Ryanair, with Aer Lingus charging premium prices and Ryanair charging discount prices.

Price and physical cues are used as an indication of service quality and value (Dodds et al. 1991; Zeithaml in Onkvisit & Shaw 1987). Airlines such as Aer Lingus, use flight attendants, uniforms, advertising and branding to project a differential image. While Ryanair concentrates on price and minimum service, Aer Lingus concentrates on high service quality. Indeed, recent research (Browne 2000), has shown that Aer Lingus scored higher on SERVQUAL scores than Ryanair. Aer Lingus passengers' perception of service quality is higher than that of Ryanair passengers.

The final section of value considers the interrelationships between value and other variables in the model.

2.13.9 Value – Satisfaction Relationship

It is particularly important to study value, given its role in influencing satisfaction. The exact nature of the relationship between perceived value and satisfaction has not been specified (Patterson & Spreng 1997). According to Patterson & Spreng, most existing satisfaction models rarely address the role of perceived value or alternatively, they consider benefits but ignore costs. Despite the lack of consensus as to the nature of the relationship between value and satisfaction, there is agreement that they are related (Gruen 1995; Thibaut & Kelley 1959). Assessments of the value of the relationship, determines the degree of satisfaction (Wilson & Mummalaneni 1989; see also Barnes et al. 1999; Jones & Sasser 1995; Rusbult & Buunk 1993). In sum, according to Howard & Sheth (Anderson et al. 1994) customer satisfaction is dependent on value. Thus, in this study value is considered to have a positive relationship with satisfaction.

2.13.10 Value – Dependence Relationship

In the channel literature dependence is often defined as a need to maintain a relationship with a partner to achieve goals (Dwyer et al. 1987; Frazier 1989; Ganesan 1994; Kumar et al. 1995; Keith et al. 1990; Wetzels et al. 1998). The outcomes of such relationships, e.g. sales and profits are highly valued. The greater the percentage of sales and profits contributed by the source firm the greater the dependence (El-Ansary & Stern in Frazier et al. 1989; Heide & John 1988). Therefore, the more one party needs the other to fulfil its goals and provide valuable outcomes, the higher the dependence. Similarly, in social psychology, Rusbult & Buunk (1993) draw on

Thibaut and Kelley's interdependence theory to describe dependence as the degree to which an individual relies on a relationship for obtaining valuable outcomes and depends on partner for fulfilment of important needs.

Such dependence is also possible in a services context. Bendapudi & Berry (1997) state that customers may be dependent on a service provider because the partnership leads to valuable outcomes. Consumers engaged in relationships with suppliers, are assumed to benefit in some way through attainment of goals or greater value (O'Malley and Tynan 1999). The greater the rewards provided by supplier the greater the dependence, to the extent that the customer may even be constrained. Customers who perceive a greater dependence on the partner to achieve relationship outcomes, feel constrained to maintain the relationship (Bendapudi & Berry 1997). Such dependence is more likely to result if there are no available alternatives to provide similar valuable outcomes. For example, Emerson (Buchanan 1992) defined dependence as the extent to which a partner provides valued resources for which there are few available alternatives sources of supply (See also Bendapudi & Berry 1997; Keith et al. 1990; Kelley & Thibaut 1978; Rosenblatt 1977; Thibaut & Kelley 1959). By switching to a competitor the customer would lose benefits not readily available from the competitor (Ganesan 1994). Thus, in this study value is hypothesised to be positively related to dependence.

The next variable to be considered is 'size of investment'. As mentioned, size of investment is a calculative variable as well as being an antecedent to dependence.

2.14 SIZE OF INVESTMENT

From a channel literature perspective, investments made by the each party are usually specific to the relationship. Such investments are referred to as idiosyncratic investments (Anderson & Weitz 1992; Gilliland & Bello 2002; Gundlach et al. 1995) or transaction-specific assets (Williamson in Wilson 1995). Transaction-specific assets are those human and physical assets (tangible and intangible) which are specific or relate only to one relationship (Heide & John 1988). Anderson & Weitz (1992) give an example of a transaction-specific asset in a channel relationship context of a

distributor firm training and dedicating personnel to service only a specific manufacturer's products. One reason for the term 'specific asset' is that investments, which are specific to a relationship, are difficult or impossible to use in another relationship (Anderson & Weitz 1992; Bendapudi & Berry 1997; Ganesan 1994; Gundlach et al. 1995; Kalwani & Narayandas 1995). Substantial investments may be of little value outside the relationship.

In the social psychological literature, investment size is referred to as the net forces binding one to an ongoing relationship (Rusbult 1991; Rusbult & Buunk 1993). Similarly, in a consumer services context, Beaton & Beaton (1995) state that investments act as a force for the continuance of the relationship as well as a bonding agent. An example of an investments made by the consumer includes the time and effort needed to identify a service provider (e.g. informing hairdresser about preferences) (Bendapudi & Berry 1997). As with idiosyncratic investments, investments that have been injected into the relationship represent sunk costs that cannot be retrieved should the relationship end (Beaton & Beaton 1995; Mowday et al. 1979; Meyer & Allen 1984; Rusbult & Buunk 1993).

Investments are generally referred to as having a positive impact on the relationship. Wilson & Mummalaneni (1989) state that relationships could not be maintained without some sort of investment being injected into the relationship. Investments are also responsible for communicating strong commitment to the relationship (Anderson & Weitz 1992; Ganesan 1994). Kumar et al. (1994) state that investments reflect an intention to become more deeply involved in the relationship. Some of the reasons for the positive effects of investments include, that they demonstrate an interest in building a strong relationship (Wilson & Mummalaneni 1989), they reduce the available alternatives open to a partner (Anderson & Weitz 1992), as well as reducing the temptation to engage in opportunistic behaviour (Anderson & Weitz 1992; Gundlach et al. 1995; Wilson 1995).

2.14.1 Size of Investment & Switching Costs

Investments that are injected into a relationship often result in switching costs. Switching costs refer to costs incurred in severing a relationship (Bendapudi & Berry 1997; Morgan & Hunt 1994). There is agreement that investments made into a

relationship increase the cost of ending that relationship and thus, result in switching costs (Beaton & Beaton 1995; Becker 1960; Rusbult 1983; Rusbult 1991). However, the investment must be perceived as being substantial enough that the individual is unwilling to lose it (Meyer & Allen 1984). Jackson (1985) states that the larger the investment the greater the customer reluctance to change commitments and incur costs.

Turnbull & Wilson (1989) refer to switching costs as **bonds**. Investments in a relationship are the bonds that tie the buyer to a specific seller (Beaton & Beaton 1995; Wilson & Mummalaneni 1989; Wilson 1995). Bonds represent exit barriers making it difficult to break the relationship (Liljander & Strandvik 1995; Storbacka et al 1994). Two classes of bonds exist, i.e. **structural and social bonds** (Turnbull & Wilson 1989). Broadly speaking, structural bonds could be compared to calculative commitment, where constraints prevent relationship dissolution. Structural bonds prevent relationship dissolution because investments made are irretrievable or because the complexity and cost of switching is too great (Turnbull & Wilson 1989). Similarly, social bonds could be compared to affective commitment where the affective element creates a desire for relationship continuance. Social bonds were discussed previously in section 2.7.3.

2.14.2 Bonds in Consumer Markets

Liljander and Strandvik (Storbacka et al 1994) suggest bonds in consumer markets include ten factors; (1) legal, (2) economic, (3) technological, (4) geographical, (5) time, (6) knowledge, (7) social, (8) cultural, (9) ideological and (10) psychological bonds. The first five constitute efficient exit barriers and are more likely to be perceived negatively by consumers (Liljander & Strandvik 1995). For example, a geographical bond may force a customer to remain with one supplier because there are no alternatives available in the locality. Such bonds can lead to dissatisfaction and ultimately defection e.g. legal bond binding a customer to a bank who leaves once a loan is paid (Storbacka et al. 1994). They can also prevent switching even when service is of low quality (Liljander & Strandvik 1995; Storbacka et al. 1994). The latter five bonds are more positive. Unlike the first five, these are not as easily managed by the service firm. They are perceptual factors; it is the customer's perception of their existence that matters (Liljander & Strandvik 1995). However,

these bonds may still function as exit barriers e.g. a knowledge bond may act as an exit barrier for a patient of a doctor (Hocutt 1998).

2.14.3 Questioning the Effectiveness of Switching Costs for Consumers

As with some of the other variables considered in this model such as dependence, there is doubt among some researchers as to the applicability of switching costs in a consumer setting. Gruen (1995) states that consumers usually have low switching costs; unlike business-to-business relationships, consumer-to-business relationships can be substituted for minimal financial cost. Similarly, O'Malley and Tynan (1999) state that switching costs are much less of an issue; structural and technical bonds are less prevalent. However, for consumers of services, there do appear to be some switching costs, as is discussed in the following section.

Consumer services switching costs: Bitner (1995) states that in accordance with human nature, most people prefer not to switch supplier, especially when there is considerable investment in the relationship. Consumers have competing demands for time and money. Staying in a relationship that is satisfying serves to simplify life as well as free up time for other concerns (Bitner 1995). Leaving would mean having to educate a new service provider as to needs and preferences (Bitner 1995; Sheth & Parvatiyar 1995). Sheth & Parvatiyar also state that staying in a relationship results in stress reduction due to the comfort of predictability; people are creatures of habit and learn to trust after time. Customers may be aware of a better offering but remain in relationship because of predictability and comfort.

Bendapudi & Berry (1997) consider relationship specific investments from a consumer context. They state that such investments made by the customer create a barrier to exit. Table 2.8 below lists examples of switching costs. From the examples it can be seen that switching costs can be monetary (i.e. financial cost), psychological (stress caused by thoughts of having to change supplier) and time related. One very important switching cost has been realised with the introduction of loyalty programmes into consumer markets. Frequent buyer clubs create switching costs in the form of points (Barnes 1994; Jones & Sasser 1990; Christy et al. 1996; Sheaves & Barnes 1996; Young & Denize 1995). Business travellers especially can avail of some attractive benefits such as waitlist priority, mileage points and lounge access, free car

rental (Browne 2000). There is much value placed on free travel for a business person's family or friends (Gilbert 1996). Bowen (1990) states that loyalty techniques that create exit barriers are becoming more and "more important because they reduce the ability of the customer to switch service firms". Marketers develop 'loyalty' by getting customers to return to accumulate points (Barnes 1994). The customer also makes financial investment to secure rewards for patronage (e.g. frequent flyer miles) (Bendapudi & Berry 1997).

TABLE 2.8 **EXAMPLES OF SWITCHING COSTS**

Industrial Marketing Examples	
Ganesan 1994	Lack of services and up-to-date information
Jackson 1985	Investments of time and money needed to adapt to new services
Morgan & Hunt 1994	Socio-psychological costs such as worry, aggravation and perceived loss of reputation or face.
Consumer and Services Marketing Examples	
Bendapudi & Berry 1997; Sheth & Parvatiyar 1995	Inconvenience, psychological upset, out-of-pocket cost, time and effort incurred in severing a relationship.
Barnes 1994b; Bitner 1995	Costs of establishing relationships with unfamiliar banks, retailers, hairdressers causes stress, as well as having to teach the supplier unique needs and preferences ('hassle' of making the change)
Storbacka et al. 1994	Search costs, learning costs, emotional costs as well as cognitive effort and risk factors (financial, psychological and social)
Social Psychological Examples	
Rusbult & Buunk 1993	Personal identity, mutual friends, shared memories and possessions become linked to the relationship
Johnson 1991; Meyer & Allen 1984	Time, energy, money and possible emotions
Rusbult 1991	Accepting a less-preferred job in order to live in the same area as one's partner

In the social psychological literature, Rusbult & Buunk (1993) state that personal identity becomes so linked to relationship that it is difficult to abandon it e.g. John becomes known not as John but as 'John and Mary'. Such investments, whether material or psychological, result in lengthy relationships (Rusbult & Buunk 1993). Becker (Rusbult 1991) goes as far as saying that partners become so used to the interdependence that they are 'unfit' for alternative relationships. Another so called switching cost in this context is children. The choice to have a child represents an investment (Lund 1985). In a study conducted by Sabatelli & Cecil-Pigo (1985) number of children was considered as a barrier to dissolution of a relationship.

Ironically investing in a relationship may create barriers to exiting that relationship. Stanley & Markman (1992) argue that the more that is invested in the relationship, the more complicated it becomes to end it e.g. what will become of children and joint

possessions. In the channel literature, Gilliland & Bello (2002) state that manufacturers can bind themselves to a relationship through contractual and investment pledges. Dedication to the relationship can become a constraint to dissolution. "Simply put, today's dedication is tomorrow's constraint" (Stanley & Markman 1992). Dedicated parties who are willing to invest in a relationship are creating potential barriers to exit. Anderson & Weitz (1992) state that partners have created, whether intentionally or not, barriers to exit.

2.14.4 Switching Costs as Beneficial or Detrimental to the Relationship

Switching costs are seen to have a beneficial effect on the relationship by many researchers. Anderson & Weitz (1992) state that having made investments, partners are encouraged to make the relationship as fruitful as possible. High costs that would result from termination lead the relationship to be considered important (Morgan & Hunt 1994) as well as encouraging partners to maintain high quality in the relationship (Dwyer et al. 1987). Given that switching costs are considered to be beneficial many researchers advocate creating switching costs in order to make it difficult for the customer to end the relationship (Crosby et al. 1990; Turnbull & Wilson 1989; Young & Denize 1995). Some even go as far as suggesting that the customer should be 'locked-in' to the relationship e.g. Kalwani & Narayandas (1995) suggest that "firms can lock up a customer base" (see also Rusbult 1983; Johnson 1991). It is questionable whether it is good practice to 'lock-up' the customer in a relationship.

There are also many researchers who are critical of switching costs, especially those used in a consumer context. Jones and Sasser (1995) state that high switching costs and strong loyalty promotional programmes generate artificial loyalty e.g. frequent flyer programmes. This explains why seemingly loyal customers defect when they exhaust their frequent flyer points (Jones and Sasser 1995). 'Loyalty' ends as soon as financial incentives end (Uncles in Christy et al. 1996). Furthermore, extensive use of financial benefits without building underlying affective loyalty is generally not considered a strong tool for building relationships (Barnes 1994; Garbarino & Johnson 1999). This investment in the programme acts as a barrier to exit, should the consumer wish to do so (Sheaves & Barnes 1996). Customers may be trapped in relationships in which they have made substantial investments. Individuals may have

little personal commitment to the relationship but leaving would mean sacrificing invested resources.

2.14.5 Investment – Dependence Relationship

There is much agreement that there is a positive relationship between transaction specific assets and dependence. Investments specific to the relationship increase the dependence of one party on the other (Anderson & Weitz 1992; Ganesan 1994). As previously mentioned, investments specific to the relationship create potential switching costs. In turn switching costs serve to increase dependence. Customer's perceived termination costs act as barriers that promote dependence on the relationship (Heide & John 1988; Bendapudi & Berry 1997; Ganesan 1994; Morgan & Hunt 1994). Investments complicate the exchange for the investing party by increasing the dependence on the partner and serving as an exit barrier. Thus, a positive relationship is hypothesised between size of investment and dependence in this study.

The next section considers the final calculative variable which is 'availability of quality alternatives'. This variable is also the final determinant of dependence considered in this study.

2.15 AVAILABILITY OF QUALITY ALTERNATIVES

The variable availability of quality alternatives relates to an individual's judgement as to the attractiveness of available alternatives (Rusbult 1991; Rusbult & Buunk 1993). Quality of alternatives considers the strength of the forces pulling an individual away from a relationship (Rusbult 1991; Rusbult & Buunk 1993). The presence of tempting alternatives creates a strain on the relationship. When an attractive alternative is presented, Johnson & Rusbult (1989) state that one option is to surrender to temptation, enjoy the alternative, and suffer any consequences; alternatively, the tempted partner could recognise that infidelity will only bring short-term pleasure. An obvious example of such a force is that of a tempting alternative relationship (Rusbult & Buunk 1993). However, quality of available alternatives need not only refer to other romantic involvement or in the case of services, another supplier. Alternatives

could also include non-romantic friendships or non-involvement (Rusbult 1991; Rusbult & Buunk 1993). Rosenblatt (1977) states that extramarital affairs, friendships and fantasies may represent serious monitoring of alternate relationships yet they might also represent pleasure seeking.

2.15.1 CL-Alt

In Thibaut & Kelley's (1959) Interdependence Theory, they refer to CL-Alt or comparison level of alternatives. According to the interdependence theory, parties consider the outcomes (rewards minus costs) of the relationship and based on these outcomes decide whether to remain or leave the relationship. One criterion used in this decision is the CL-Alt. It represents the lowest level of outcomes a member would accept in light of available alternatives (Thibaut & Kelley 1959). Parties to a relationship naturally feel attracted to their best available alternative. Individuals will remain in a relationship only as long as the outcomes of the relationship are superior to those available in the next best alternative i.e. a person remains in the best of the relationships available to him/her (Rusbult 1991; Rusbult & Buunk 1993). But Thibaut & Kelley (1959) state that no matter how favourable the level of outcomes already reached, individuals will always prefer outcomes better than those he/ she has. Individuals will normally strive to attain the best alternatives available to them.

2.15.2 Availability of Alternative Services

In a business-to-business context, alternatives can be difficult and time consuming to locate (Gruen 1995). However, as previously mentioned (see dependence in consumer services, 2.11.4) buyers in consumer markets have many viable alternatives and readily switch (Gruen 1995). Unlike in a business-to-business setting consumers face few contractual restrictions. Since consumers have the choice of multiple service providers there may be a greater incentive to terminate a relationship when it becomes unsatisfying or because attractive alternatives are readily available. Consumers are polygamous; some are even promiscuous (Peterson 1995). Frequent travellers are likely to have relationships simultaneously with various airlines.

The foregoing argument might suggest that quality of alternatives may not be a great predictor of commitment in a consumer services setting. However, this is not always the case. In some services, especially for highly specialised services (e.g. medical

specialist) a client will tend to have fewer alternatives as the significance of the matter to the client necessitates much investment in the service provider (Beaton & Beaton 1995). Also, though the airline industry may not be highly specialised, and despite some routes being highly competitive (meaning many alternative are available), people who have to go to a certain place at a certain time often have few alternatives (Jones and Sasser 1995).

2.15.3 Quality of Available Airlines at Dublin Airport

As will be discussed in chapter 3, data collection for this study took place at Dublin airport. The quality of alternatives variable applies particularly to the context of this research due to the limited availability of alternatives at Dublin Airport. Aer Lingus carries 45% of Dublin traffic, Ryanair 25%, 7% goes to British Midland International (BMI) and 23% is divided among other airlines (Aer Rianta 1999). British Airways (BA) also services Dublin airport, however codeshares with Aer Lingus, so the BA percentage of traffic is included in the Aer Lingus figure. Thus, there is largely only three main choices from Dublin airport i.e. Aer Lingus/British Airways, Ryanair and BMI. However, British Midland International services only the Dublin-London route. As a result passengers flying to destinations other than London, must choose mainly from either Aer Lingus or Ryanair and a few other options. The following section discusses the four above-mentioned airlines in order to give the reader an indication of the quality of the available alternatives at Dublin airport.

Aer Lingus: Aer Lingus was established by the government as the national airline of Ireland in 1936 (www.flyaerlingus.com). In 2001, Aer Lingus aims to be recognised as a world-class, full service modern airline (flyaerlingus.com). Furthermore, it aims to deliver quality in all aspects of product offering and to every passenger segment. Aer Lingus has a strategy of direct customer focus, a commitment to quality and a comprehensive, full service network carrier providing direct and connecting passenger services to all of Ireland's major markets (Annual Report 1998). According to the 1998 Annual report, Aer Lingus focuses on serving business and value conscious leisure passengers. However, Donoghue (2000) states that Aer Lingus has become a business airline, serving business passengers, especially in relation to the transatlantic route. Frequent flyers with Aer Lingus can avail of the FFP called TAB, as well as gain the advantages of Aer Lingus's membership of the Oneworld Alliance. Oneworld

is a nine-member coalition led by American Airlines and British Airways (Phillips et al. 1999). The alliance offers frequent flyers seamless travel, smoother transfers, access to more lounges and the opportunity to earn more frequent flyer miles (Aer Lingus 1998; Browne 2000).

In terms of customer care, Aer Lingus has long been known for its cordiality of service, its empathy and its staff efforts to satisfy customer needs (Donoghue 2000). Success of the airline stems from combining genuine warmth with professional efficiency (flyaerlingus.com). In 1999, the marketing manager David Bunworth stated that the core values of professionalism, intuition and intimacy are central to brand identity of Aer Lingus. Bunworth commented that the “airline is fortunate to have a personality that is natural, friendly, genuine and, honest which is essential to delivering an intuitive and intimate service experience...(Passengers) feel more at home with us than with any other carrier”.

Aer Lingus is positioned as a premium branded product. It justifies its premium price with its high-class quality service (Browne 2000). According to Bunworth (1999), Aer Lingus will never seek to position itself at the cheaper end of the market. However, while Aer Lingus does not compete on price, it is aware of sensitivity of demand (Branigan 1996). Along with the premium image, Aer Lingus also heavily concentrates on its Irish identity. Airlines have traditionally been identified by their country-of-origin (Bruning 1997) and Aer Lingus is no exception to this. Aer Lingus is a national icon for Ireland and the Irish. Much of Aer Lingus advertising emphasises the Irishness with slogans such as “You’re home”.

Currently, Aer Lingus like many other airlines in the full-service category, is suffering from the global downturn in the airline industry. A third of the current 6,200 Aer Lingus staff are to be let go (Flynn 2001). Apart from the global downturn, the main problems facing Aer Lingus include rising oil prices, falling fares, more intense competition (Irish Times, February 2000), the costs of industrial pay disputes (Flynn 2000), the negative impact on travel of the foot-and-mouth outbreak (Cronin 2001; Ross 2001) and finally, the downturn in travel since the attacks in America in September 2001. In addition to these problems, Aer Lingus has to contend with being a small airline serving a small domestic market (Killgren 1999).

Ryanair: The Ryan family established Ryanair in 1985 with the objective of breaking the duopoly of BA and Aer Lingus on the London-Dublin route (Buyck 2000). The initial attempt by the airline was not very successful. The company struggled as a full-service provider before Michael O’Leary (chief executive) took over in 1991 (Air Transport World 2000). Ryanair is a wholly independent airline (Annual Report 2000). Michael O’ Leary owns 9% of Ryanair, US investors own 46% and the rest is owned by the Ryan family, employees and shareholders in Europe (Buyck 2000).

Ryanair is considered to be the largest and most successful low fare airline in Europe (Flottau & Taverna 2001; Lawton 1999). Ryanair modelled itself on the US Southwest Airlines, which is also a low fare, no frills carrier, serving short-haul journeys (Buyck 2000; Mulqueen 1999). The no-frills approach is central to the company’s cost structure (Mulqueen 1999). Ryanair cuts costs wherever possible. No tea or coffee is served; they require too much inventory and according to Ryanair it is not good use of money (Forward 1999). Ryanair does not sell peanuts; “they mess up the cabin and slow things down” (O’Leary in The Economist 1999). Less flight attendants are required given that there is no in-flight service (The Economist 1999). Michael O’Leary (Air Transport World 2000) comments: “We’re not going to feed you or give you frequent-flier points, hot towels and all that nonsense”. Instead, Ryanair concentrates on value for money and punctual, reliable service. Other sources of cost reduction include Ryanair operating mainly from secondary airports (Browne 2000; Flottau & Taverna 200; Mulqueen 1999). As a result of less congestion at these secondary airports, Ryanair has quicker turnaround times than larger carriers and thus, can fly more routes per day with each aircraft. The introduction of Ryanair’s internet distribution strategy resulted in approximately €13 million in savings which came about by cutting out travel agents and initiating ticketless travel (Buyck 2000). Ryanair even saved in the construction of the website by employing two young students to complete the site rather than a web design company.

The director of sales and marketing at Ryanair claims that Ryanair does not target any segment in particular, instead it appeals to a mass audience and is not a niche carrier (Weston 1999). No attempt is made to distinguish between different segments of customers and all share the same non-assigned seating arrangement (Lawton 1999).

Despite these statements, Ryanair has a stronghold in the leisure market and is increasingly appealing to the cost-conscious business traveller (Air Transport World 2000). In line with the low fares philosophy, Ryanair positions itself as a low fare, value for money service provider. "Despite some sharp tactics the company still has a deserved reputation for value" (McManus 2001). According to McManus Ryanair is seen as the company that brought affordable air travel to the masses.

Ryanair is known for being controversial and even admits to being "controversial by nature" (Power in Harrison 2000). For example, CEO Michael O'Leary described Ryanair's competitor Go as "a dog...a chronic lossmaker" that would not be sold for very much (Marketing Week 2000). In terms of advertising, one Ryanair newspaper advert depicted Pope John Paul II revealing Ryanair fares as the fourth secret of Fatima (Murray 2000). Furthermore, BA brought Ryanair to the English High Court and lost (Irish Times, October 2000). The case related to a controversial Ryanair advert headlined "Expensive BA....DS!". The judge agreed that the advert might amount to "vulgar abuse", however the comparison between fares was "honest comparative advertising".

In relation to Ryanair's focus on customer service, Ryanair is considered to have some 'consumer-unfriendly' rules, especially those relating to baggage handling (White 2000). The office of consumer affairs receives a disproportionately high number of complaints relating to Ryanair (Grennan 2000). Complaints relate mainly to unexplained delays, inadequate information, lost or damaged luggage and lack of staff to deal with passenger inquiries.

Nonetheless, Ryanair is performing extremely well, despite the problems that other carriers such as Aer Lingus are experiencing. Barrington (2000) states that Ryanair is growing faster, has higher margins and is more stable than Aer Lingus. Ryanair has realised an average 25% annual growth in passengers and 20% increase in revenues for 10 consecutive years (Buyck 2000). Since 1995, profits have been growing at an approximate rate of 33% per annum. While other large carriers are announcing a fall in profits e.g. Aer Lingus and British Airways, Ryanair is announcing large increases in its profits (The Economist 1999).

British Airways: BA is Europe's biggest airline (Reuters 2000). BA aims to be the customer's first choice by delivering an unbeatable travel experience. It directs its efforts towards "orchestrating the customer experience" (Marshall in Clutterbuck & Goldsmith 1998). For example, BA has announced plans to introduce the world's first on-board fully flat bed (Kleinman 2000). Furthermore, BA recognises the distress caused to passengers when their luggage goes missing or is damaged. As a result, BA maintains a stock of most common luggage and replaces damaged items on the spot (Clutterbuck & Goldsmith 1998). In order to further improve the customer experience, BA tracks and records customers' flying patterns, complaints made, their lifestyles and what they value from the service (Clutterbuck & Goldsmith 1998). This helps the airline focus on improvements and build repeat custom. Similar to the approach taken by Aer Lingus, BA's concentrates on flying a greater proportion of higher-paying business travellers (Reuters 2000). However, at the same time, BA has begun to award 'BA miles' to passengers paying discount economy fares, which had previously not been available to this segment (Kleinman 2000).

According to Clutterbuck & Goldsmith (1998) some airlines have successfully managed to differentiate themselves as quality service providers and British Airways is an example of one such airline. BA was recently described as "arguably one of the most successful airlines in the world" (Aughney 2001). BA claims that it is committed to offering the best in-flight service in the world (www.britishairways.com). BA seems to be successful in its efforts according to recent research from the Reader's Digest 2001 Brand Survey (Hiscock 2001), which was carried out in 18 European countries, and showed that BA was rated very highly in terms of trust, quality and image. BA's commitment to customer service and quality has enabled BA to hold on to its margins, even during times of cut-price competition (Clutterbuck & Goldsmith 1998). However, as with many of the full-service airline, BA is currently experiencing many difficulties and is having to make staff redundant. Some of the problems facing BA include increased competition, concerns over low air fares, surging fuel prices, low staff morale, as well as doubts over BA's ability to sustain another three years of cost cuts (Acland 2000; Reuters 2000).

British Midlands: British Midland is Britain's second biggest airline (Flynn 1999). It is a privately owned company with shares being held by its chairman (Michael

Bishop) and SAS. British Midlands aims to provide good service and value for money (Reid in Barrington 1999). British Midlands recently rebranded itself as BMI (British Midland International) upon the introduction of transatlantic services (Irish Times 2001). One of BMI's busiest routes is the London-Dublin route. British Midlands ranks third, behind Ryanair and Aer Lingus in terms of volume of the London-Dublin passengers it handles (Barrington 1999). Like many of the full-service airlines, BMI has a frequent flyer programme known as the Diamond Club (www.iflybritishmidland.com). However, unlike its close competitors Aer Lingus and British Airways, BMI is not a member of the Oneworld Alliance, rather it is a member of the Star Alliance, which includes airlines such as SAS, Lufthansa, United Airlines, Singapore Airlines (Beesley 2000).

In sum, it can be seen that the strategies of Aer Lingus, BA and BMI are quite similar insofar as they are full-service airlines that seek to differentiate themselves by offering superior service quality. Ryanair on the other hand, pursues a strategy of cost leadership to differentiate itself. It aims to be the lowest fare airline on whatever route it serves and operates on a low cost basis.

The following section considers some further issues concerning the quality of alternatives variable, before addressing the availability of alternatives – dependence relationship.

2.15.4 Voluntary versus Involuntary Forsaking of Alternative Services

Commitment to a relationship varies over the duration of the relationship. Relationships generally suffer unsatisfying periods. Commitment towards a relationship is likely to vary, sometimes falling to “threatenable” low levels (Johnson & Rusbult 1989). Furthermore, attractive alternatives do not simply disappear once a relationship begins (Rusbult 1983). Partners will occasionally meet attractive alternatives that challenge their commitment. However, it is important to understand whether parties voluntarily maintain the relationship or not.

Voluntary forsaking of alternatives: Commitment involves forsaking certain alternatives in favour of the existing partner (Beaton & Beaton 1995; Gundlach et al. 1995). Evidence of such commitment to a supplier materialises as the customer

reduces sampling of competing offerings (Bennet 1996). Choice reduction is a form of commitment made by consumers to patronise a particular service provider rather than exercise choice (Sheth & Parvatiyar 1995). Engaging in a relationship means consumers reduce their choices or curtail assessment of alternatives. One reason why customer might forsake available alternatives is trust. Marketers who trust their trading partners should feel more certain about excluding potential alternate suppliers from consideration (Morgan & Hunt 1994). Similarly, satisfaction has a similar effect. The greater the customer satisfaction with past consumption experiences, the lower the probability of searching for external information (Kiel in Sheth & Parvatiyar 1995). From a social psychology perspective, satisfied partners, who have experienced happiness in their relationships, often show a tendency to devalue alternatives (Johnson & Rusbult 1989). When presented with attractive alternatives, highly committed parties may invest numerous resources in the relationship so as to create barriers to exit (Johnson & Rusbult 1989). This helps the partners to overcome temptation, when attractive alternatives are presented.

Involuntary Forsaking of Alternatives: Alternatively, consumers may be forced to forego attractive alternative relationships. Customers may perceive that there are few quality alternatives available. The customer is thus 'loyal' because of lack of perceived alternatives (Storbacka et al 1994). Sheaves & Barnes (1996) state that "having 'loyal' customers merely because they perceive no attractive alternatives suggests a vulnerable state and borders on the 'locked-in' situation". Similarly, in an industrial context, Wilson et al. (Kalwani & Narayandas 1995) state that being involved in long-term relationships could preclude a supplier from servicing more profitable accounts in future. As a result the supplier may have to forsake available alternatives.

2.15.5 Quality of Alternatives and Relationship Dissolution

The quality of alternatives becomes especially relevant when it acts as an opportunity for leaving an unhappy relationship. When barriers to exiting an unhappy relationship are reduced, the perceived quality of alternatives increases and feelings of commitment are likely to decline e.g. divorce is a more feasible option when a woman is on equal social and economic status to a man (Rusbult & Buunk 1993). In the channel literature, Gilliland & Bello (2002) state that without a relational bond to tie

the manufacturer, it would be willing to terminate the relationship should it receive an economically superior offer from another distributor.

When a partner is considering terminating a relationship they must evaluate many consequences. From a social psychological perspective, Johnson (1991) states that partners must consider not only the availability of 'replacements' but also many other factors such as their economic situation and the impact of the break-up on their social life. Johnson (1991) considers the alternatives available to a 45-year-old, unemployed mother of four in comparison to a 20-year-old college student. Because of high investment and low availability of alternatives the 45-year-old may feel she has no choice other than to remain in the relationship. Perceived cost of leaving is added to by perceived lack of alternatives (Meyer & Allen 1984) and together they can trap a partner in an unhappy relationship (Hocutt 1998).

2.15.6 Availability of Alternatives – Dependence Relationship

In social psychology, the Investment Model of Rusbult (1983; 1991) refers to quality of available alternatives as a determinant of commitment. In this model, the relationship between availability of alternatives and commitment is mediated through dependence. With regard to the relationship between availability of alternatives and dependence, there is consensus among researchers, that when availability of alternatives is high, dependence on the relationship is reduced and when alternatives are low, dependence is increased (Anderson & Narus 1990; Anderson & Weitz 1989; Bendapudi & Berry 1997; Dwyer et al. 1987; Ganesan 1994; Han & Wilson 1993; Hocutt 1998). Often lack of alternatives is one of the primary causes of dependence. The inability to replace a partner is an indication of the firm's dependence on that partner (Kumar et al. 1995; Hocutt 1998; Heide & John 1988). From a social exchange perspective, individuals with low CL-alt have few attractive options outside the relationship. A low CL-alt results in a partner being dependent on a relationship and having a need to remain with the partner (Rusbult & Buunk 1993; Hocutt 1998). Thus, availability of alternatives is considered to have a negative relationship with dependence.

Table 2.9 displays the hypotheses for calculative commitment.

Table 2.9 Direct and Indirect Determinants of Calculative Commitment

Hypotheses		Relevant Literature
H10	There is a negative relationship between satisfaction and calculative commitment	Wetzels et al. 1998
H11	There is a negative relationship between trust and calculative commitment	Geyskens et al. 1996
H12	There is a positive relationship between dependence and calculative commitment	Geyskens et al. 1996
H13	There is a positive relationship between value and dependence	Heide & John 1988
H14	There is a negative relationship between availability of alternatives and dependence	Anderson & Narus 1990
H15	There is a positive relationship between investment and dependence	Ganesan 1994

2.16 CONSEQUENCES OF COMMITMENT

Commitment has many consequences, one of which is loyalty. Loyalty is an important consequence but is not being considered in this study for reasons that will be explained in this section. The consequence of commitment that is being considered in this model is the behavioural outcome 'intention to continue'. This section initially considers the commitment-loyalty link before examining the intention to continue variable.

2.16.1 Commitment-Loyalty Link

The link between commitment and loyalty has received little empirical attention (Pritchard et al. 1999). Pritchard et al. offer two reasons for this lack of attention. Firstly, it is perhaps because both constructs are viewed as one and the same; secondly, it may be due to the lack of research on defining and measuring commitment in consumer research. Most research in a consumer setting relates to loyalty rather than commitment. Having said that, there are various views as to the relationship between commitment and loyalty. The following are just some of those views.

Commitment Synonymous with Loyalty: One of the predominant views is that commitment and loyalty are synonymous. Liljander & Strandvik (1995) state that commitment and loyalty are related concepts, and differentiate them only by the research tradition from which they emanate; loyalty stems from consumer markets,

whereas commitment has been used within the interaction approach of industrial marketing. This differentiation is quite tactical and indeed, Dick & Basu (1994) state that the study of loyalty is not only appropriate for brands (brand loyalty), but also for industrial goods (vendor loyalty). Beatty et al. (1988) consider commitment to be similar to brand loyalty and use the terms interchangeably. Many researchers include commitment in their conceptualisation of loyalty. Mowen (1995), for example, includes commitment as one element in his definition of loyalty. Similarly, Assael (1987) states that loyalty “implies commitment to a brand”. Other loyalty definitions that revolve around commitment include McGoldrick & Andre (O’Malley 1998), Anderson & Weitz (1992) and Garbarino & Johnson (1999).

Commitment and loyalty are sometimes used interchangeably to measure one another. Commitment is often operationalised by the degree of loyalty felt towards a partner (Dwyer et al. in Young & Denize 1995). For example, commitment measurement items include “I am a loyal patron of...” (Garbarino & Johnson 1999), “I consider myself to be highly loyal...” (Beatty et al. 1988) and “I feel very little loyalty to...” (Mowday et al. 1979). Alternatively, Mittal & Lassar (1998) suggest using commitment to measure loyalty.

Conceptually Distinct: Following on from the view of commitment and loyalty as synonymous, Bejou & Palmer (1998) argue that loyalty has often been confused with commitment. There is a view that these constructs are conceptually distinct. Pels (1999) states that many in the Nordic School and IMP would differentiate between brand loyalty and commitment. Olivia et al. (1992) even go as far as stating that the two constructs are not related.

Commitment as an Antecedent to Loyalty: A less extreme view than that of commitment and loyalty not being related, is that of the two being distinct concepts with a relationship between them. Bettencourt (1997) states that commitment is not synonymous with loyalty behaviours; commitment produces a variety of behaviours, one of which is loyalty. Bettencourt’s study conducted in a retail setting, found that customer commitment is positively related to customer loyalty. Pritchard et al. (1999) also showed empirically that loyalty is an outcome of commitment. Others who consider commitment as an antecedent of loyalty include (Beaton & Beaton 1995;

Day in Pritchard et al. 1999). Traditionally, it has been satisfaction that was considered as the antecedent to loyalty, but this explanation has been called into question (Pritchard et al. 1999), given the evidence that satisfied customers may still defect (Mc Kenzie in O'Malley 1998; Storbacka et al 1994). Thus, commitment has to an extent replaced satisfaction as a direct antecedent of loyalty.

2.16.2 Intention to Continue VS Loyalty

Intention to continue has been chosen over loyalty as the behavioural consequence of this model for the following reasons:

Commitment and Loyalty too Conceptually Similar: This study considers commitment to comprise two dimensions i.e. affective and calculative commitment. Conceptualising commitment in this way makes it very similar to loyalty, so much so that they may no longer be distinct concepts. Traditionally, loyalty was measured solely as repeat purchase. But behaviour-based loyalty measures make no attempt to understand factors underlying the repeat purchase, and are thus insufficient (Dick & Basu 1994). As a result of the inadequacy of behavioural measures, researchers began to consider attitude as well as behaviour in measuring loyalty (Dick & Basu 1994; Mowen 1995; O'Malley 1998; Pritchard et al. 1999; Wilson & Mummalaneni 1989).

The attitude component of loyalty is very similar to the affective dimension of commitment. Morgan & Hunt (1994) state that as “brand attitude becomes central to the repurchase decision in relational exchange, brand loyalty becomes increasingly similar to our conceptualization of commitment”. Pritchard et al. (1999) state that similar ‘attitudinal biases’ are at work in some definitions of loyalty and commitment. Similarly, Gundlach et al. (1995) contend that the attitudinal component of commitment shares ‘common domains of meaning with other prominent behavioural constructs’, such as loyalty. Indeed, just as affective commitment is described as an ‘affective attachment’, Jones and Sasser (1995) describe loyalty as “a feeling of attachment to or affection for a company’s people, products or services”.

Commitment more Appropriate than Loyalty: Another reason for not considering loyalty is that there is less need to study brand loyalty when it comes to service organisations (Kelley & Davis 1994). Brand loyalty is more suited to product

research. The unique character of the commitment construct provides a broader perspective and better understanding of service organisation-customer relationships than other constructs such as loyalty (Kelley & Davis 1994).

Lack of Theoretical Basis: A further reason is that few studies have considered the commitment-loyalty link. Two studies which empirically tested the commitment-loyalty link (Bettencourt 1997; Pritchard et al. 1999), considered only global commitment as opposed to multidimensional commitment. Kumar et al. (1994) state that because “few studies address the differing effects of various types of commitment, there is no solid theoretical basis for stating hypotheses that link each of the potential consequences to each type of commitment”. In this case there is no theoretical basis for linking calculative and affective commitment with loyalty.

Behavioural Intention more Practical than Loyalty: The final reason for not considering loyalty is that from a practical point of view, it might be more useful to study the ‘intention to continue’ variable than loyalty. Even if customers do profess their loyalty, it does not infer intention to continue the relationship. Research shows that 85% of people are not loyal to any single product/service rather they have a repertoire from which to choose (Sutcliffe in Croft 1995). Intention to continue purchasing is a more practical measure of actual future intentions than loyalty. The intention to continue variable is discussed in the next section.

2.17 INTENTION TO CONTINUE

This study will consider one behavioural outcome variable, which acts as a consequence of commitment. This consequence is ‘intention to continue’ and is similar to the consequence used in the model of by Wetzels et al. (1998) where ‘intention to stay’ was the behavioural outcome. It is manifested by a partner’s intention to continue the relationship in the future (Wetzels et al. 1998). Noordewier, et al. (1990) state that “expectation of continuity of a relationship” is imperative for relationalism. Unlike commitment, intention to continue is future oriented variable (Kumar et al. 1994). While commitment considers the present, intention to continue focuses on the future.

Other models consider behavioural outcomes, which have much in common with the intention to continue variable. Kumar et al. (1995) refer to 'expectation of continuity' which incorporates both partners intent to remain in the relationship, thus reflecting relationship stability. Kumar et al. (1994) consider 'intention to stay' as a consequence of commitment. Another similar variable is that of 'anticipation of future interaction' (Kellerman in Crosby et al. 1990) which is an outcome of dyadic encounters. Kellerman continues, that a high expectation of future interaction reflects a favourable perception of the relationship, whereas a low expectation reflects badly on the relationship. Finally, Barnes (1997) studied relationship strength as an indicator of 'likelihood of continuity' of the relationship, where stronger relationships are more likely to continue

2.17.1 Continuity as a Dimension of Commitment

Some researchers do not view continuity and commitment as conceptually distinct, rather continuity is considered as a dimension of commitment. Kumar et al. (1995) measure commitment as having three dimensions; affective commitment, expectation of continuity and willingness to invest in the relationship. Intent to remain is deeply imbedded as one of the factors in Mowday et al.'s (1979) conceptualisation of commitment. Gundlach et al. (1995) considered commitment to be made up of three dimensions, one of them being a temporal dimension. This dimension demonstrates that commitment evolves over the long-term. One of the measures used by Bettencourt (1997) to operationalise commitment was that of an intention to continue patronising a retailer. However, in this study continuity is viewed as conceptually distinct from commitment, with intention to continue as a consequence of commitment.

2.17.2 Commitment and Intention to Continue

Garbarino & Johnson (1999) state that traditionally satisfaction has been incorporated as the construct that predicts consumer behaviour. They continue, that the shift of emphasis in marketing towards relationalism, meant the list of factors that predict future intentions was broadened to include trust and commitment. Farrell & Rusbult (Gruen 1995) state that commitment is a stronger predictor of intention to remain in a relationship than satisfaction.

Kumar et al. (1994) studied three dimensions of commitment namely, calculative, affective and moral commitment. They state that high levels of commitment should lead to a strong intention to stay as well as a strong desire to stay in the relationship. Shemwell et al. (1994), who researched relationships with auto mechanics, doctors and hairdressers, refer only to affective commitment. They conclude that the more a consumer feels emotional/ affective commitment to a relationship with a service provider, the more likely they are to continue doing business. Wetzels et al. (1998) hypothesised that there is a positive relation between both affective and calculative commitment and intention to stay (See table 2.10). Wetzels et al. also interestingly found that affectively committed partners show a stronger intention to stay than customers who feel more calculative commitment. Calculative commitment only has a weak positive relationship with intention to stay. Thus, the relationship between affective commitment and intention to stay is stronger than that of calculative commitment and intention to stay.

Table 2.10 Consequences of Commitment

Hypotheses		Relevant Literature
H16	There is a positive relationship between affective and calculative	Wetzels et al. 1998
H17	commitment and intention to continue	

Before concluding the chapter, some problems of the literature review are considered.

2.18 PROBLEMS ENCOUNTERED DURING LITERATURE REVIEW

It became apparent during the literature review phase that there are many problematic issues surrounding the conceptualisation and operationalisation of the constructs, such as lack of distinct definitions and lack of consensus regarding dimensionality. These problems are now discussed.

Lack of Distinctness of Conceptualisation and Operationalisation: One of the major problems facing relationship marketing is a lack of distinctness between relationship constructs. Wetzels et al. (1998) state that as “a result of the paradigm shift towards relationships, researchers are facing the challenge of conceptualizing and operationalizing heterogeneous, overlapping and equivocal constructs”. Similarly, Morrow (Gundlach 1995) states that the growth of commitment-related concepts has

not resulted in careful segmentation of the theoretical domain and intended meaning of each concept. This problem is not confined to relationship marketing. Phenomena in many of the social sciences lack consensus regarding definitions, theories and measures (Gummesson 1994; Hausknecht 1990; Spector 1994).

Evidence of such overlapping and lack of clarity in definition is particularly obvious in the measurement of various constructs. For example, Ganesan (1994) used importance to measure dependence, while Morgan & Hunt (1994) used it to measure commitment. Barnes (1997) considered anger and frustration as measures of emotion, while Kumar et al. (1995) consider them as measures of conflict. These are but a few examples. One of the major problems that results from overlapping constructs is that of multicollinearity (Sabatelli & Cecil-Pigo 1985). Garbarino & Johnson (1999) refer to multicollinearity as 'empirical inseparability' and results in some researchers treating these constructs as one and the same because they are so interchangeable. Multicollinearity is discussed in greater detail in chapter 3.

Lack of Consensus regarding Dimensionality of Concepts: One further problem that was evident throughout the literature review concerned the dimensionality of the concepts. Firstly, in relation to this problem, there was a lack of consensus as to the dimensionality of some constructs. For example, as stated in section 2.5.4, satisfaction is considered as unidimensional in some studies and multidimensional in others. The same can be said of trust and affect as well as other variables in the model.

The second problem of dimensionality refers to the confusion of antecedent variables with the actual measures of the dimensions. The conditions leading to variables such as satisfaction, trust and dependence are confounded with measures of the actual dimensions themselves. The main problems that result from lack of consensus as to dimensionality, include contradictory findings (Kumar et al. 1995), as well as the difficulty of making direct comparisons (Churchill 1979; Fisk & Young 1985).

Explanations and Solutions: Hausknecht (1990) offers one possible explanation for this lack of consensus by stating that the marketing literature is still small in comparison to longer established disciplines. Gummesson (1994) continues by stating that it is a shortcoming to assume that concepts can be limited; they "are fuzzy entities

with fuzzy borders and overlapping properties". Furthermore, Blalock (Fornell 1992) contends that variables take on different meaning depending on the context in which they are applied.

However, various solutions have been suggested to overcome these problems. Churchill (1979) suggests that if more researchers consulted the literature the problem of widely varying definitions would not be so prominent. Churchill continues that the literature should indicate how the variable has been defined previously and how many dimension or components it has. Sabatelli & Cecil-Pigo (1985) and Spector (1994) state that more time needs to be given to the defining and refining more theoretically derived constructs. Finally, Gundlach et al. (1995) state that several studies will be needed to determine which conceptualisations are most reliable and provide the best explanations.

Finally, although these problems are longstanding and will not be solved by any one individual study, the researcher of this study aims to avoid the above-mentioned problems as much as possible by taking various steps:

- (1) thoroughly reviewing the literature on the various constructs
- (2) not creating any new definitions for the constructs in the study and
- (3) giving much consideration to finding distinct measures for each construct as is discussed in the methodology chapter.

2.19 CONCLUSION

This chapter considered a RM model of commitment that is suitable for consumer services. Given that there is a scarcity of commitment models in consumer services, the model in this study was adapted from other models so that it is appropriate to a consumer service situation. This model is also unique from the viewpoint that it considers multidimensional commitment and antecedents thereof, when most commitment models consider only global commitment. The antecedents of commitment differ depending on whether they relate to the affective or calculative dimension. The affective antecedents considered are affect, satisfaction, freedom to choose and trust, while the calculative antecedents are dependence, value, size of

investment and quality of available alternatives. Trust and dependence are mediators of the relationships between most of the antecedent variables and commitment.

The first affective antecedent is satisfaction. This study considers satisfaction from a cumulative perspective as opposed to a specific transaction point of view. With regard to the dimensionality and conceptualisation of satisfaction there is little consensus in the literature. This problem is not unique to satisfaction and as a result the literature review process was quite difficult. Satisfaction has a direct relationship with commitment, as well as having an indirect relationship mediated through trust. While the social psychological literature contends the satisfaction need not correlate highly with commitment (because constraints keep the relationship together), this research considers it more appropriate to conceptualise commitment as having two distinct dimensions i.e. calculative and affective. Thereafter, satisfaction relates positively to affective commitment and negatively to calculative commitment.

Affect is a direct antecedent to satisfaction and represents Cumby & Barnes' (1997) 'how we make them feel' element. The affective dimension of satisfaction is very important and has often been neglected in the literature. This study incorporates the affect variable in the model in an attempt to address this issue. Another affective variable that particularly applies to the airline industry is freedom to choose. Passengers with a greater freedom to choose e.g. leisure passengers are likely to be more affectively committed.

Trust is the final affective variable and it also acts as a mediator between the antecedents and affective commitment. The predominant view of trust is that it consists of two approaches, trust as belief and behaviour. These approaches can be equated with two essential elements of trust that are considered in social psychology i.e. trust as honesty and benevolence. Trust in this study is conceptualised as a unidimensional construct, comprising both the aforementioned aspects.

The second section of the chapter considered the calculative antecedent variables. Dependence mediates the relationships between the antecedent variables and calculative commitment. The dependence variable has been well researched in the channel literature, but has been given little consideration from a consumer service

viewpoint. Indeed, there are suggestions that dependence is less likely to occur in consumer situation because of the wealth of available suppliers not normally present in a business-to-business environment. By considering dependence from a consumer service perspective, this study will go some way towards addressing the lack of research in the area.

The next calculative variable considered is value. Unlike from a business-to-business context, where value refers to profits resulting from the relationship, value in this study is considered from a consumer services point of view. Value is treated as the trade-off of benefits and cost resulting from the relationship. Although value is a very important in consumer services, it has been largely under-researched in comparison to product value. Again, this study represents one attempt to remedy that situation. The third of the calculative antecedents, as well as being an antecedent to dependence, is size of investment. After an investment has been injected into a relationship, it may become a deterrent to switching from that relationship, since leaving may mean losing the investment. Examples of such switching costs in consumer markets include loyalty scheme points. The final calculative variable is availability of quality alternatives. Relational partners may be tempted away from their existing relationship by the availability of quality alternative partners. As previously mentioned, alternative suppliers are more readily available in consumer markets than in business-to-business markets.

This chapter also considered the consequences of commitment. One very important consequence of commitment is loyalty. Although loyalty is not considered as a variable in this study it is important to discuss the loyalty-commitment relationship and why loyalty was not included as a variable in the model. The consequence of commitment that is considered, is that of the behavioural outcome of intention to continue. As the variable suggests, intention to continue reflects a partner's intent to stay in the relationship for the foreseeable future. This variable has a positive relationship with both affective and calculative commitment.

Finally, the last section considers problematic issues surrounding the conceptualisation and operationalisation of the constructs, such as lack of distinct definitions and lack of consensus regarding dimensionality. This lack of agreement in

the literature could lead to problems insofar as comparison of results is made very difficult if different conceptualisations of the same variable are used. Also the process of conceptualisation becomes very subjective given that it is up to the researcher to decide which conceptual definition to choose. While it is not possible to solve these problems through any one particular study, small steps can be taken such as not creating any new definitions.

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CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the research methodology undertaken. There are various steps involved in the research process and these steps form the outline of the chapter. The first step considers the context of the research. The context of the study relates to a consumer service model of commitment tested on passengers of the airline industry.

The second step in the research process is the problem definition. The overarching problem, or objective as it is stated in this research, is to test the proposed conceptual model of commitment. The sub-objectives are (1) to develop measurement instrument with good psychometric properties which will test the model, (2) to test the hypothesised relationships of the model and (3) to compare sub-groups within the respondent population. Having specified the objectives, the next stage involves the research design. The research was designed to be quantitative in nature. Before conducting the full-scale quantitative study, some informal exploratory interviews were conducted in order to assist in developing the measurement instrument. The method of data collection involved survey research. The constructs of the model were measured using summated rating scales. The procedure for developing such scales involves several steps including, designing items for the scales and purifying the measurement instrument by testing its validity and reliability. The final stage of research design concerns the issues involved in designing the actual questionnaire.

The fourth step is sampling and sample design. The sample in this study was made up of airline passengers flying from Dublin Airport. The sampling technique involved non-probability sampling, more specifically quota sampling. Quota controls were set by using age, gender, main airline used and main purpose of flight. Quotas were set so that the relevant characteristics of the population were represented in the sample. Having set the quotas, the next stage in the research process is that of data collection. Data was collected by a single interviewer (the researcher) by means of personal interview.

The last stage in the process is the analysis stage. Three types of analysis were used. Factor analysis was used mainly for validation as opposed to data reduction purposes. Regression analysis, both simple and multiple, was used to test the hypothesised relationships of the conceptual model. Structural equation modelling may have been more appropriate for the purposes of testing the model, however, the reasons why it was not used are discussed. T-tests and ANOVA were used to analyse the differences between respondent sub-groups. Finally, the last section of this chapter considers the generalisability and limitations of the research.

3.2 MARKET RESEARCH PROCESS

The design of the research project specifies the data that is needed and how it is to be obtained (Tull & Hawkins 1990). There are various stages in the research process, which ensure the study is conducted in an orderly fashion. Systematic planning is required at all stages of the research process; procedures must be methodologically sound, documented and planned (Malhotra 1996). The research process represented in table 3.1 has been adapted from Malhotra (1996) and Tull & Hawkins (1990). The steps of the market research process provide a structure that will be followed for this chapter.

Table 3.1 Market Research Process

RESEARCH SETTING/ CONTEXT
↓
PROBLEM DEFINITION
↓
RESEARCH DESIGN FORMULATION
↓
SAMPLING AND SAMPLE DESIGN
↓
DATA COLLECTION AND PREPARATION
↓
DATA ANALYSIS

3.3 RESEARCH SETTING

The first stage of the research process considers the research setting or context. This section considers the rationale for the industry that is the focus of the research.

This study considers a consumer service model of commitment. However, within consumer services there are many types of service providers with very different characteristics. A model of commitment for consumer services could not relate to all service industries so one industry had to be chosen for the focus of the study. The airline industry was chosen for various reasons.

- 1) As discussed in chapter 1, the airline industry was one of the first industries to embrace loyalty schemes and thereby encourage customer commitment. Thus, it would be interesting to consider a commitment model in an airline context and to understand some of the factors that make consumers committed.
- 2) The first chapter of the literature review discussed impediments to relationship marketing in the airline industry. The airline industry could be considered to be more transaction oriented than relationship oriented. One reason for this is that the service is relatively uncomplicated and low in 'search properties' (Darby & Karny in Sharma and Patterson 1999 – see section 1.2.2). The customer can confidently evaluate the quality of the service immediately on consuming it. In contrast, more complex services such as insurance, private banking, medical specialist services, are more difficult to evaluate. Buyers face uncertainty as a result of factors such as intangibility, complexity and lack of service familiarity (Crosby et al. 1990). In complex service situations, the customer must trust and rely on the service provide with the result that a strong relationship is likely to form. Thus, given that the relationships and commitment are much more likely to be formed in complex services, it would be interesting to investigate the level of commitment that exists in less complex industries such as the airline industry, especially given that airlines have initiated loyalty programmes in an effort to build customer commitment.
- 3) Few studies have addressed consumer commitment from an airline perspective. Bejou & Palmer (1998) considered loyalty in the airline industry and Pritchard et al. (1999) examined the commitment-loyalty link in consumer services (hotel and airline). Thus, further studies of commitment in the airline industry are needed.

- 4) From a practical perspective, the airline industry was chosen because the researcher had a contact at Aer Lingus, the Irish national air carrier. It was originally hoped that the research would be conducted in conjunction with Aer Lingus but unfortunately this turned out not to be feasible. Nevertheless, the airline industry remained the focus of the study given that much time and effort had gone into considering this industry. It was also felt that considering airline passengers in general as opposed to one specific airline, namely Aer Lingus, would make the results more generalisable.
- 5) Finally, Bettencourt (1997) considered a consumer services model with commitment being one of the variables in the study. The industry that Bettencourt chose was the retail industry. The retail industry has many similar characteristics to the airline industry and according to Bowen (1991) in chapter one, the airline and retail industry come under the same classification. Bettencourt (1997) states that several characteristics of grocery retailing make it a good choice for testing hypotheses. These characteristics could also be considered to apply to the airline industry.
 - It is representative of many services such as fast food restaurants, retail banking and movie theatres, where employees are of moderate importance, customisation opportunities are low, employee-customer contact is moderate to low, customer performance expectations are moderate and service is provided on a discrete basis.
 - It provides repeated interactions between customer and service provider over time.
 - Lastly, it provides few inhibitions to switching service providers or voicing complaints or suggestions.

3.4 PROBLEM DEFINITION

The second step in the market research process is to define the problem. Problem definition is the most critical stage of the research process (Malhotra 1996; Tull & Hawkins 1990). Research results are unlikely to have much value unless the problem is properly defined. The problem must first be broadly defined and then, the specific components of the problem are considered. One approach to defining the problem involves preparing research questions and hypotheses.

Research Questions: Defining the problem involves formulating a research question that forms the backbone of the research design (Mason 1996). Research questions are refined statements of the specific components of the problem (Malhotra 1996). The overall research question for this study is stated below. The research question is phrased in terms of an objective:

To test a relationship marketing model of commitment that relates multidimensional commitment to antecedent variables and to one consequential variable in the context of consumer services (airline passengers).

After specifying the overall objective, each component of the problem may have to be broken down into subcomponents or research questions. These questions, or as they are stated here, objectives are listed below.

Objective 1: to construct a measurement instrument with good psychometric properties that will enable the conceptual model to be tested.

Rationale: As mentioned in chapter 2, there is a lack of research carried out on multidimensional commitment in consumer services. As a result, there is also a shortage of suitable measures for this context. Thus, the researcher aims to construct a measurement instrument, based on existing measures and newly developed measures, that will enable the conceptual model to be tested. The adequacy of the instrument will be tested to ensure it has good psychometric properties.

Objective 2: to empirically test the relationships and interrelationships specified by the conceptual model.

In order to carry out objective 2, a number of **hypotheses** must be specified. According to Malhotra (1996) a hypothesis (H) is an unproven statement or proposition about phenomenon that is of interest to the researcher. Hypotheses are used if literature suggests a hypothesised direction for the variables (Creswell 1994). All the hypotheses in this research are based on the literature.

There are 17 hypotheses, as specified in chapter 2. See Appendix A for the full list.

Objective 3: to compare subgroups in the target population to determine if they are statistically different, in terms of their commitment and intention to stay with their airline.

Rationale: As mentioned in chapter 2, little research has been carried out in marketing into the differences between males and females and their commitment to commercial organisations. Results of the informal interviews carried out with airline passengers seemed to suggest that there would be difference between some of the subgroups e.g. differences between those who flew Aer Lingus as opposed to Ryanair. This objective aims to explore differences between the subgroups.

3.5 RESEARCH DESIGN

The third step in the research process is research design. Malhotra (1996) states that research design is a “framework or blueprint for conducting a marketing research project”. It lays down the procedures that are necessary to answer the research questions.

According to Malhotra (1996) research designs are broadly categorised as being **exploratory or conclusive**. In relation to exploratory research, the process is flexible and unstructured. The data is primarily qualitative in nature, but may also include secondary data, convenience or judgement samples, small-scale surveys, case analyses (Tull & Hawkins 1990). Conclusive research, on the other hand, is more structured and usually based on large, representative samples. Data is quantitatively analysed and considered to be conclusive. The researcher usually has prior knowledge of the problem and focuses on accurate description of the variables in the proposed model. The research design that is of interest to this study is conclusive. Conclusive research can be further subdivided into cross-sectional or longitudinal. According to Malhotra (1996) the cross-sectional study involves the collection of information from any given sample of elements only once, while longitudinal studies involve measuring the sample repeatedly. The cross-sectional approach has been chosen for this study because time and money constraints prohibit a longitudinal study.

Research design involves formulating a method of data collection (Tacq 1997). Data collected may be primary or secondary data.

3.5.1 Primary and Secondary Research

Primary data is gathered expressly to solve the problem at hand (Malhotra 1996; Tull & Hawkins 1990). However, primary data is not collected until available secondary data has been analysed. Secondary research refers to data collected for some purpose other than the problem at hand. The results of the analysis of secondary research help define the marketing research problem and develop an approach for primary research (Malhotra 1996). The literature review is a major source of secondary research. It fills in gaps and extends prior research, as well as offering a benchmark for comparison (Creswell 1994). Theoretical considerations of the literature also provide a basis for conceptualisation and operationalisation of the constructs of interests.

Primary data may be quantitative or qualitative in nature. The following section considers these two research approaches as well as the debate and controversy that surrounds them.

3.5.2 The Quantitative – Qualitative Debate

Positivism and interpretivism are summary labels that refer to general research approaches. Positivism is otherwise labelled logical positivism, empiricism or objectivism (Creswell 1994; Hudson et al. 1988). The positivist approach is a series of logical, rational steps with the researcher remaining an objective on-looker during the process. Interpretivism, on the other hand, is labelled qualitative, naturalistic or subjective (Hudson et al. 1988). It is considered subjective with the researcher investing “his personality and experience into the field of research” (Gummesson 1991). In a general sense, quantitative research corresponds to positivism and qualitative with interpretivism, although strictly speaking the divide is not so simple. There is much debate as to the worth of the two main research approaches, with one (i.e. quantitative), often undeservingly assuming superiority. Downey & Ireland (1979) refer to it as the objective-subjective dilemma. The assumptions about the two techniques are considered to be positioned as polar opposites (See table 3.2). The

assumptions demonstrate the deep contrast between the alternate approaches (Patton in Creswell 1994).

Table 3.2 Quantitative and Qualitative Paradigm Assumptions

	Quantitative	Qualitative
Nature of Reality	Objective	Subjective
Researcher-respondent relationship	Researcher is independent	Researcher interacts
Role of Values	Value-free and unbiased	Value-laden and biased
Language of research	Formal/ impersonal voice	Informal/ personal voice
Process of research	<ul style="list-style-type: none"> • Deductive • Static design • Generalisations leading to prediction, explanation and understanding 	<ul style="list-style-type: none"> • Inductive • Emerging design • Patterns, theories developed for understanding

Adapted from Creswell (1994)

Quantitative research dominates: The prevalent view is that the quantitative methodology, with its emphasis on scientific vigour, is the superior methodology (Bryman 1984). Gardner (Churchill 1979) states that social scientists are enamoured with numbers and counting and rarely stop to ask, “what lies behind the numbers?”. With the labels objective and subjective it is not surprising that the tendency is towards the objective. A further explanation for the dominance of quantitative research relates to the idea of audiences of studies (e.g. journal editors and graduate committees) becoming accustomed to quantitative studies (Creswell 1994). The researcher attended a research conference (RM Conference Atlanta, 2000), where the quantitative-qualitative debate was discussed. There was a consensus that researchers, particularly PhD students, are indirectly persuaded toward the quantitative paradigm in order to get their work published in prestigious marketing journals which traditionally favour quantitative research. But there was also recognition that recently, there is a shift towards qualitative research such as the case study approach, especially in Europe. Gummesson (2002) states that research in marketing must liberate itself from excessive use of superficial survey techniques and simplistic hypothesis testing.

Qualitative research is often strongly criticised, while the weaknesses of quantitative research receive far less attention. However, quantitative research also has pitfalls. It can be inflexible and artificial, as well as being inefficient in understanding motivation for behaviour (Hudson et al. 1988). As Dichter, (Malhotra 1996) a qualitative proponent, states, “ten thousand times nothing is nothing”. Bogdan & Taylor (1975) state that “critics fail to realise...that the researcher acts as a selective

sieve in all forms of research". All research methods are fallible and in need of improvement. Researchers must consider what is being measured before deciding on a quantitative or qualitative operationalisation.

3.5.2.1 Rationale for Research Approach

The research approach chosen for this study is quantitative research. A mixed methodology was considered i.e. a combination of both approaches, but was not chosen for various reasons; firstly, using both paradigms involves extensive writing and often extends dissertations beyond normal size and scope; secondly, studies involving combined methodologies can be expensive, time-consuming and lengthy (Creswell 1994).

The following are some of the reasons for the appropriateness of a quantitative study.

- (1) Nature of problem;** testing a model of commitment and its antecedents can be facilitated by a quantitative study, whereby hypotheses relating to the conceptual framework are tested. A body of empirical literature on relationship marketing models currently exists. Most of these models propose a conceptual model and then test it by quantitative means. This study proposes to follow a similar structure. Thus, existing theories can be tested as well as being compared and contrasted.
- (2) Researcher's worldview;** Creswell (1994) states that researchers have a worldview, whereby their research tends to be guided by either the quantitative or qualitative methodology. While the researcher of this study has no preference for either approach, the researcher has already conducted a qualitative study at undergraduate level (Cooper 1999) and thus, wanted to gain experience of the other research approach by carrying out a quantitative study.

Before conducting the full quantitative study, some informal interviews were conducted and are discussed in the following section.

3.5.3 Informal Exploratory Interviews

The initial phase of the research involved informal personal interviews with approximately 12 airline passengers, carried out on an exploratory basis. These interviews were carried out before conducting the main survey. Hague (1994) refers to

these interviews as a pre-questionnaire discussion. Such interviews are not unusual and have been used by various researchers e.g. Ahmed et al. 1998 conducted a qualitative case study to refine their conceptual model and Morgan & Hunt (1994) carried out exploratory interviews to help draft their questionnaire. In this study the interviews lasted approximately 10 minutes. They were recorded and then were later fully transcribed.

The main rationale for the informal interviews in this research was to:

- (i) assist in adapting existing measures and develop new measures if required
- (ii) help with framing a questionnaire and decide on terminology for the questions
- (iii) provide insight into the customer-airline relationship
- (iv) finalise the objectives of the study.

Although the interview was informal in nature, it was not totally without structure. A list of subjects that were covered can be seen in Appendix B. In terms of the respondents, Churchill (1979) recommends using a judgement sample of people who can offer ideas and insights into the phenomenon e.g. consumers and marketers. Respondents who participated in the informal interviews for this study were made up of Irish airline passengers¹. It was hoped that interviews could also be conducted with marketing executives of Aer Lingus. These executives are referred to as industry experts (Malhotra 1996). However, this was not possible after it was decided that the research would no longer be conducted with Aer Lingus.

3.5.4 Data Collection Method

The main method of data collection chosen for this research is **survey research**. Survey research involves systematically gathering information from respondents for the purpose of understanding and/or predicting some behaviour (e.g. attitudes, awareness, motivations) (Tull & Hawkins 1990). Tull & Hawkins continue that survey research is the most common method of collection of primary data for decision making.

¹ The researcher wishes to thank her industry partner, Dialogue Marketing Communications, for assisting her to find respondents for these interviews.

Questionnaire: The term survey research usually implies that the research has been administered by means of a questionnaire (Tull & Hawkins 1990). The questionnaire is not an end in itself, rather it is an aid to the collection of data in an interview; “it is a vehicle by which people are interviewed” (Hague 1994). It provides the interviewer with a form on which to record answers and structure the interview. Answers are provided in an orderly fashion and are easily retrieved for processing.

Methods of Administering Survey Research: The administration of a questionnaire to a respondent is called an interview (Tull & Hawkins 1990). According to Malhotra (1996) there are three major ways of conducting interviews; by telephone, by personal interview and by mail interview. For a further discussion on these methods and their merits see Appendix C. The type being used in this research is the personal interview. During personal interviews the interviewer asks questions of the respondent in a face-to-face situation. One potential pitfall of personal interviews is that the respondent may give socially acceptable answers because of the presence of the interviewer. However, it was felt that this would not be a problem for this research given that the issues being covered were not of a personal nature.

3.5.5 Scaling and Measurement Procedures

The next section of the research design discusses the type of scale used to measure the constructs in the conceptual model, as well as the process involved in developing the actual measures.

3.5.5.1 Measurement Scales

Measurement is defined by Tull & Hawkins (1990) as assigning numbers to characteristics of objects, persons, states or events in accordance with rules. Four different types of scales of measurement can be distinguished; nominal, ordinal, interval and ratio (Tull & Hawkins 1990). The rules for assigning numbers to each scale become increasingly restrictive with the move from nominal to ratio. However, the benefit of the increased restrictions is that they allow for an increase in the arithmetic operations that can be performed on the numbers. Thus, interval and ratio scales are more desirable forms to use.

Problem of using ordinal data as interval: Attitude scales, for example the Likert scale, are often treated as interval scales, when technically they should be treated as ordinal data. This is further explained by the following example. The measurement of school exam results is ordinal, insofar as the distance from five to six is not the same as from seven to eight, on a scale of one to ten (Tacq 1997). However, analysis of results often assumes these distances are the same and as a result, implies a jump from ordinal to quantitative measurement. Tull & Hawkins (1990) state that most researchers treat the data from attitude scales as if they were of equal interval in nature because results of most standard statistical techniques are not affected greatly by small deviations from the interval requirement. Tacq (1997) concludes with the following comment “ordinal measurement level remains the blind spot of multivariate analysis. Alas”.

Scales in Survey Research: Scales are a special type of closed question. Scales are questions in which the limited choice of response has been chosen to measure respondent characteristics (Hague 1994). They involve words, numbers or even diagrams to find out people’s attitudes and behaviour. For a discussion on the various types of scales see Appendix D.

Summated Rating scales: The type of scale being used in this research is the Likert scale. The creation of such scales is attributed to Rensis Likert, who developed the scales for measuring attitudes (Spector 1994). “*Likert scales*, sometimes referred to as *summated scales*, require a respondent to indicate a degree of agreement or disagreement with each of a series of statements related to the attitude object” (Tull & Hawkins 1990). Summated rating scales are one of the most frequently used techniques in social science (Spector 1994). For the theory behind summated rating scales see Appendix E.

Single Vs Multiple Item Scales: The measures in this research consist of multiple item scales. There is much agreement that multiple-items are superior to single-item measures (Churchill 1979; Frazier et al. 1989; Mittal & Lassar 1998; Nunnally & Bernstein 1994; Tull & Hawkins 1990). Single items produce responses that are inconsistent and unreliable over time (Spector 1994). The same scale position is unlikely to be selected in successive questionnaire administrations (Churchill 1979).

Respondents may be affected by the day, their mood, the weather or misreading questions; consequently their answers may change when questioned at different times. All such factors introduce errors that lead to unreliability (Spector 1994). Thus, individual items tend to be subject to measurement error. Increasing the number of items increases reliability (Churchill 1979; Frazier et al. 1989; Mittal & Lassar 1998). With multiple items combined, errors tend to average out leaving more accurate and reliable measurement. However, the drawback of multiple-item measures is that they lengthen a survey when keeping it short is an important goal in application research (Mittal & Lassar 1998). Churchill & Peter (Anderson & Weitz 1989) state that it is common to trade reliability (i.e. reduce number of multiple items) for sample size, since response is more likely if questionnaires are shorter.

3.5.6 Developing Summated Rating Scales

The next section considers the steps that were involved in constructing the scales and measures. Measures of all the multiple item scales were developed using psychometric scale development procedures recommended by Churchill (1979) and Spector (1994). Use of these procedures was necessary to meet the first objective of this research (i.e. measurement scales with good psychometric properties). The scale development process is quite lengthy, with Spector stating that there are no shortcuts in devising good scales. The following section considers the lengthy procedure.

3.5.7 Specify the Domain of the Construct

Step one involves clearly defining the construct of interest. This task was completed in chapter 2. The more clearly defined the construct, the easier it will be to write items for it. One of the problems faced by researchers (especially social scientists) is that many constructs are “theoretical abstractions, with no known objective reality” (Spector 1994). Abstract and complex constructs can make the definition phase the most difficult part of scale construction. This is perhaps one of the reasons why there is so little consensus as to conceptualisation and operationalisation of marketing concepts, as mentioned in chapter 2.

3.5.8 Scale Design

Scale design is the second step in developing multi-item measures. It involves all decisions that must be made regarding statements used for the scale (Spector 1994).

There are several decisions that must be made concerning the chosen scale which are now discussed.

Number of Scale Categories: Scale categories refer to the number of points on the scale. More categories allows for greater precision (some scale developers use over 100) (Hague 1994; Spector 1994). But respondents may not be able to handle more than a few points. Traditionally, between 5 and 10 response categories are used (Nunnally in Spector 1994; Tull & Hawkins 1990). In this study seven points are being used. The main reason for using seven is that most other studies in this area used seven point scales so it made sense to use a similar number of points (cf. Anderson & Weitz 1992; Gundlach et al. 1995; Kumar et al. 1994; Patterson & Spreng 1997). Secondly, Malhotra (1996) states that if data is to be analysed using sophisticated statistical techniques, seven or more categories may be needed. The size of the correlation coefficient is influenced by number of scale categories; it decreases with a reduction in points.

Nature of Verbal Description in Itemised Rating Scales: According to Spector (1994) the most popular and versatile of the response categories is that of the 'agreement' type. Agreement response choices are usually bipolar ranging from total agreement to total disagreement and are symmetrical around a neutral point (Spector 1994). Respondents indicate magnitude of agreement or disagreement by choosing the appropriate point. In this study, each item was answered on 7-point scale where, '1' anchored 'strongly disagree', '4' anchored 'neutral' and '7' anchored 'strongly agree'.

Neutral point: The presence, position and labelling of a neutral category can have a major impact on response (Holdaway in Malhotra 1996). Those who prefer to avoid neutral points argue that attitude cannot be neutral and that individuals should be forced to indicate some level of agreement (Hague 1994). A neutral point is not a prerequisite in scales (Spector 1994). Tull & Hawkins (1990) argue that in many cases, consumers may indeed be neutral and should be allowed to express this neutrality. Consequently, based on this rationale, and the advice from various academics, a neutral point was included in the scales in this research.

Negatively worded items: Negatively-worded items are also known as reverse scored items. Reverse scored items guard against the acquiescence response tendency (the tendency to agree) (Butler 1991; Churchill 1979; Larzelere & Huston 1980; Mowday et al. 1979; Spector 1994). There are also arguments against using reverse-scored items. Parasuraman et al. (Brown et al. 1993) creators of SERVQUAL recommend that negatively worded items be transformed into positively worded statements because, in the original 1988 study, the negatively worded items loaded separately from the positively worded items. Babakus & Mangold (Lawlor 1996) also found that negatively worded items caused concern and frustration among respondents. Thus, in this study all items were worded positively. The main reasons for this were, firstly, the foregoing arguments that negatively-worded items should be avoided. Secondly, the results of the pilot study (to be discussed) suggested that negatively worded items would cause problems. The questionnaire tested in the pilot study included only positively worded statements yet many of the statements still caused confusion, with respondents requesting various statements to be repeated. The statements of this research are complex and demanding enough without including negatively worded items².

3.5.9 Designing the Measurement Scales

The following section considers the multiple-item scales used to measure the constructs in this study. Similar to the procedure used by Wetzels et al. (1998), the multiple-item measures formed an operationalisation of the conceptual framework. Isolating appropriate measures for this study was quite difficult, given that commitment has not been extensively researched in consumer services. The process of finding suitable measures was long and arduous. Only in a few cases could measures be taken in their entirety from another study and used in this study.

It is preferable to find context relevant measures i.e. measures that suit the industry that is the focus of the study. But when no appropriate, previously validated measures are available, measures from a variety of sources may have to be adapted, as was done by Garbarino & Johnson (1999) and Tax et al. (1998) in their consumer service studies. Similarly, Spector (1994) recommends using the content of existing scales to

² The researcher would like to thank Mary Ann Hocutt for her advice on this issue.

assist in scale development. The items from several scales can be modified and more items added to the scale. Most of the measures for this research consist of a mixture of scalar-items taken from various studies. In a few cases some of the items used in the scales were developed specifically for this study. In relation to scales from other studies, the anchor points of any scale not in an agree-disagree response format were altered so that all scales would have a uniform response i.e. 7-point agree-disagree Likert scale. The next section considers the problems of finding distinct measures and then considers the scales for each of the constructs in the study.

3.5.9.1 Problems of Finding Distinct Measures

Kumar et al. (1995) suspected that some of the variables in their study would be subject to multicollinearity i.e. they stated that because of the nature of the variables conflict, trust and commitment they were expected to be highly correlated. Similarly, in this study, it is expected that some of the antecedent variables, particularly the calculative variables will be highly correlated. One possible explanation for this high correlation is the halo effect. The halo effect refers to a strong statistical relationship between global evaluations such as overall satisfaction, service quality, trust and value (Crosby et al. in Garbarino & Johnson 1999). The thinking behind the halo effect is that the respondent does not thoroughly process the subtle differences of the evaluations, with the result that all the evaluations appear similar (Ostrom & Iacobucci 1995). Alternatively, the constructs may be tapping a single construct (Ostrom & Iacobucci 1995). While much effort is made to conceptually distinguish global constructs, empirical measurement problems often hamper this distinction. Some of the antecedent variables in this study are operationally quite similar. For example, availability of alternatives is often used to measure dependence. The following are dependence measures:

- 'We do not have an **alternative** to this retailer' (Ganesan 1994)
- 'There is really no **alternative** for this firm' (Wetzels et al. 1998).

Indeed, as previously mentioned in chapter 2, Heide & John (1988) state that 'empirical indicators' are used interchangeably as measures of dependence. Similarly, calculative commitment is often measured using availability of alternatives as well as switching costs which result from investments made in the relationship. The following are calculative commitment measures.

- ‘It is too difficult to switch to another tire supplier because of lack of good **alternatives**’ (Kumar et al. 1994).
- ‘There is just too much **time, energy, and expertise involved in switching** to another supplier’ (Kumar et al. 1994; Wetzels et al. 1998).
- ‘I am not afraid of what might happen if I quit my job without having **another one** lined up’ (Allen & Meyer 1990).

In this study, availability of quality alternatives, size of investment, dependence and calculative commitment are being treated as conceptually and empirically distinct constructs. The researcher fears that one potential problem will be multicollinearity if measures are not distinct enough. It is clear that the measures need to be empirically distinct³. The following section considers the origins of each of the measures.

3.5.9.2 Measuring Commitment

Measures of commitment, particularly multidimensional commitment, are not widely available in consumer services. Garbarino & Johnson (1999) continue that most of the existing measures of commitment and even trust, focus on specific business-to-business situations and as a results are not directly generalisable to the consumer context. Research by Kelley & Davis in 1994 (Bettencourt 1997), represents one of the only studies of commitment in consumer services, however even these measures were context-specific. Garbarino & Johnson (1999) state that the few studies of consumer commitment modify scales of organisational commitment to measure consumer commitment, see for example Kelley & Davis (1994) and Bettencourt (1997). A similar approach was taken in this study, whereby modified scales of organisational commitment were used. Appendix F contains the scales used. This table also shows the final survey instrument measures, having been adjusted after the pilot test (to be discussed).

Affective Commitment: Gruen et al. (2000) used Likert scales developed by Allen & Meyer (1990) in the organisational literature and modified the items where the context required it. Similarly, in this study, items were taken from Gruen et al. (2000) and modified to suit an airline study (See items 1, 3 and 5 in Appendix F). Item 2 was

³ The researcher would like to thank Natalie Allen for contributing her thinking on this matter.

originally used as a measure of loyalty, but for this study it is suitable to measure commitment as it captures the essence of affective commitment, a desire to fly with the airline. Item 4 was taken from Barnes (1997) study into banking relationships, as it too conveys the desire or willingness idea of affective commitment.

Sources of Affective commitment Measure
1. Gruen et al. 2000
2. Pritchard et al. 1999
3. Gruen et al. 2000
4. Barnes 1997
5. Gruen et al. 2000

Calculative commitment: For Calculative commitment, items 1-3 were taken from Gruen et al. (2000) (the items originated from Allen & Meyer 1990). These items were modified insofar as the items of Gruen et al. refer to ‘career disruption’ and ‘professional sacrifice’ occurring from leaving the relationship. Leaving an airline to fly with another is highly unlikely to have professional consequences so these items were modified. Item 4 was taken from the original set of items from Allen & Meyer (1990) and again it was adapted. Finally, the last item originated from Barnes (1997) study, as a measure of the ‘locked-in’ dimension of a banking relationship.

Sources of Calculative Commitment Measure
1. Gruen et al. 2000
2. Gruen et al. 2000
3. Gruen et al. 2000
4. Allen & Meyer 1990
5. Barnes 1997

3.5.9.3 Measuring the Affective Antecedents

The next section considers how the affective antecedent constructs were measured.

Measuring Affect: The measure of affect consisted of four items taken in their entirety from Barnes (1997). Barnes used the four-item scale to measure the ‘how we make them feel’ element of the relationship, that was discussed in chapter two. This ‘how we make them feel element’ element is central to the concept of affect. Thus, the

four-item scale was considered appropriate to measure affect in this study. The original item 3 used by Barnes (1997) did not include the words ‘if something goes wrong’. These words were added in because from an airline context, passengers expect their airline to listen to them, especially when something goes wrong.

Measuring Satisfaction: In the present study, as mentioned in chapter two, satisfaction is being treated as global or overall satisfaction as opposed to considering encounter specific satisfaction. The overall satisfaction measures (items 4 and 5 in appendix F) were adapted from Bitner & Hubbert (1994). Included in the satisfaction measure, there were also some items measuring attribute satisfaction. These items relate to various aspects of the service provided by the airline and were developed specifically for this study based on the informal interviews. The chosen attributes were those most often mentioned by respondents when asked about their satisfaction with their main airline e.g. comfort, in-flight service and check-in facilities. Often, when satisfaction is measured at attribute level, it is treated as a latent construct with multiple indicators i.e. the attributes (cf. Kelley & Davis 1994) and then analysed by structural equation modelling (SEM). But because ordinary least square regression is being used to test the data, the attribute items will be added along with the other satisfaction measures to form a single satisfaction measure as opposed to treating it as a latent construct.

Sources of Satisfaction Measure
1. Newly developed based on interviews
2. Newly developed based on interviews
3. Newly developed based on interviews
4. Bitner & Hubbert 1994
5. Bitner & Hubbert 1994

Measuring Trust: As mentioned in chapter 2, there is a consensus in the literature that trust has two essential elements; honesty and benevolence. Geyskens et al. (1998) state that despite this conceptual agreement on trust, most studies differ in terms of measurement of trust. Many studies include both aspects of trust as a single, global unidimensional measure. Although there are some exceptions. Geyskens et al. (1996) assessed trust by measuring honesty (five items) and benevolence (five items) and then equally weighted the two constructs to create a composite score for trust. Using

multiple indicators to measure the construct trust is made possible by structural equation modelling. The LISREL procedure allows for multiple indicators for a single latent construct, whereas multiple regression does not (Ganesan 1994). Thus, given that SEM is not being used in this study, trust was treated as a unidimensional construct with items that consider both honesty and benevolence aspects of trust included. This approach is very similar to that used by Doney & Cannon (1997). Some new items were also included in the scale based on the information obtained from the informal interviews. In relation to trust, interview respondents mentioned issues such as feeling safe and secure when flying and also associated trust with getting to a destination on time. The other items of the scale were constructed by combining scales of Larzelere & Huston (1980) and Shemwell et al. (1994). These items include both honesty aspects (honesty, truthful, keeping promises) and benevolence aspects (fairness, act in customers best interests), as well as a global trust measure adapted from Doney & Cannon (1997).

Source of Trust Measure
1. Shemwell et al. 1994
2. Larzelere & Huston 1980
3. Newly developed based on interviews
4. Larzelere & Huston 1980
5. Larzelere & Huston 1980
6. Newly developed based on interviews
7. Doney & Cannon 1997

Measuring Volition (Freedom of Choice): A measure of volition or volitional choice was readily available and also fortunately originated from an airline (and hotel) study carried out by Pritchard et al. (1999). Thus, the items did not have to be substantially adapted. The original scale contained three items but only two were used for this study (one of the reverse-scored items was not used). One of the items was adapted slightly insofar as it was originally phrased ‘my decision to fly with XYZ...’, but if the flights are chosen for a business passenger by his/her company then the choice of airline was not ‘their decision’. Thus, this item was reworded to ‘I control the decision on whether I fly with XYZ’.

Sources of Volition (Freedom of choice)
1. Pritchard et al. 1999
2. Pritchard et al. 1999

3.5.9.4 Measuring the Calculative Antecedents

The next section considers how the calculative antecedent constructs were measured.

Measuring Value: Value is extremely difficult to measure, given that it means different things to various segments of customers (Barnes et al. 1999). It proved quite difficult to find measures of value that would suit the airline context. Cronin et al. (1997) measured service value but only used one overall value measure and then considered quality (get component) and sacrifice measures (give component) as separate dimensions. In this study value is considered to encompass both give and get components and does not treat them as separate dimensions. As mentioned in chapter 2, many of the value measures originate from product market research. Thus, two of the measures were taken from the product research of Dodds et al. 1991. These items relate to price and value for money. Price represents the ‘give’ component of the value exchange. Other give components such as time, effort and search costs were not included for fear that they might overlap or create collinearity problems with the size of investment measures, which also considers time and effort issues. The third item, relating to schedule convenience represents one aspect of the get-component. This item was developed based on the informal interviews. The fourth item was adapted from the business-to-business, service context (Patterson & Spreng 1997). It operationalises the trade-off conceptualisation of value. The final item, which is an overall measure of value, came from Brady & Robertson (1999).

Sources of Value Measure
1. Dodds et al. 1991
2. Dodds et al. 1991
3. Newly developed based on interviews
4. Patterson & Spreng 1997
5. Brady & Robertson 1999

Measuring Investment: Items used to measure size of investment were all taken from Ping (1993). The original scale, as used by Ping, was a measure of switching costs and not specifically a measure of size of investment. Ping in his study, differentiates between size of investment and switching costs while many studies

combine the two elements. Rusbult (1983) in the social psychological literature for example, measures ‘size of investment’ as a mixture of switching costs and investments. Thus, the items used by Ping to measure switching costs were considered appropriate to measure size of investment as it is conceptualised in this study. As mentioned in chapter 2, frequent flyer miles that are accumulated as a result of joining an airline loyalty scheme, may represent significant switching costs. Nonetheless, no scalar item specifically referred to loyalty points because not all potential respondents would be members of loyalty schemes. Items referring to loyalty points would be redundant for non-loyalty scheme respondents.

Measuring Quality of Available Alternatives: A measure for quality of available alternatives is based on a scale of Jones et al. (2000). Jones et al. adapted this scale from existing scales and it was designed to measure the variable ‘attractiveness of alternatives’ in service provider banking relationship. Jones et al. intended the scale to measure beliefs about the existence of acceptable alternative service providers. Similarly in this study, the quality of available alternatives variable considers the whether quality alternatives exist. Three of the four items were taken from the original Jones et al. scale. The fourth was not included because it was simply a reverse-score of one of the positive items. One item (item 2) was specifically developed for this study. It considers whether there are other airlines that fly to the respondent’s required destination. It is important to consider not only available alternatives, but also whether these alternatives fly to the required destination.

Sources of Availability of Quality Alternatives
1. Jones et al. 2000
2. Newly developed
3. Jones et al. 2000
4. Jones et al. 2000

Measuring Dependence: In the channel literature, Kumar et al. (1995) state that there is no consensus on how dependence should be measured. Gilliland & Bello (2002) continue that despite a rich history of dependence in the channel literature, there is still a need for a single best way to operationalise it. There is even less indication as to how dependence should be measured in consumer services. Bendapudi and Berry

(1997) consider dependence in their consumer service relationship model but did not empirically test it. Hocutt (1998) measured 'relative dependence' in a consumer context, however relative dependence is conceptually different to dependence as it is conceptualised in this study.

As mentioned, the determinants of dependence (e.g. availability of alternatives, size of investment) are used as actual measures of dependence in some studies. However, these constructs are being used as determinants of dependence in this study, and thus, cannot be used for measuring dependence as well. The other measure of dependence in the channel literature considers Emerson's motivational investment (see chapter 2), which for business-to-business organisations is the sales and profits resulting from the relationship. Measures of dependence employing sales and profit are not appropriate in a consumer services context. As a result, there were only limited established measures available that could be used to measure dependence in this study. All efforts had to be made to ensure that the determinants were operationally distinct from the actual dependence measure.

In accordance with the approach taken by Ganesan (1994) two measures assessed dependence. The first measure in this study comprised two items taken from the original eight items used by Ganesan. The second measure considered percentage of purchase⁴. Heide & John (1988) state that dependence can be measured by concentration of exchange (which is represented by percentage of purchase in this study). The notion behind this measure is that the higher the percentage of purchase of flights with one particular airline, the higher the dependence. The actual percentage of purchase measure did not come from Ganesan (1994), but is actually a behavioural measure of loyalty taken from Pritchard et al. (2000).

3.5.9.5 Measuring the Outcome Variable

The measure of intention to continue was composed of two items taken from two different studies (by related authors) in the channel literature. One item was taken from the intention to stay scale of Kumar et al. (1994) and the other was based the expectation of continuity construct by Kumar et al. (1995). Two items were

⁴ The researcher wishes to thank Shankar Ganesan for his suggestions regarding this matter.

considered to be sufficient to measure this construct, given that the final measure of intention to stay used by Kumar et al. (1994) consisted of only two items.

Sources of Intention to Continue Measure
1. Kumar et al. 1994
2. Kumar et al. 1995a

The items for all of the above mentioned constructs were used as the measurement scales in the pilot test. The pilot test and the refinements made to the measurement instrument are discussed in the next section.

3.5.10 Purifying the Measures

The next step in scale construction requires the measures to be tested and purified. Measure purification in this research involved two steps; an item-sort task and the analysis of pilot test data. The details of these steps are discussed below.

3.5.10.1 Item-sort Task

One test of validity of the measurement instrument (see validity discussion below) was that of the item-sort task⁵ administered to expert judges. Expert judges are shown the items measuring the constructs and it is their task to assign each item to the construct they think it measures. This procedure was used by Kumar et al. (1994) who administered the item-sort task to 28 doctoral students. For the purposes of this research 6 experts judges (academics with expertise in this area) were asked to participate and if possible to request the help of their doctoral students also. Three of the judges very kindly partook in the item-sort task.

TABLE 3.3 Item-Sort Task Results

CONSTRUCT	% Agreement
Affect	58.33
Satisfaction	93.33
Trust	85.71
Freedom to Choose	100
Affective Commitment	55.56
Value	93.33
Availability of Quality Alternatives	83.33
Size of Investment	0
Dependence	33.33
Calculative Commitment	46.67
Intention to Continue	66.67

⁵ The researcher wishes to thank Suzanne Guerin (Psychology Lecturer, UCD) for suggesting the item-sort task as one means of scale validation.

As can be seen from Table 3.3, there was at least 50% agreement for all constructs apart from size of investment, dependence and Calculative commitment. Many of the items for these constructs were wrongly assigned to the construct availability of alternatives. This result is not particularly surprising considering the discussion in section 3.5.9.1, where the researcher stated that it was difficult to find distinct measures for the calculative constructs.

3.5.10.2 Pilot Test

Before actual pilot-testing of the measurement instrument, the initial version of the instrument was tested on a small number of respondents for its face validity. These respondents were asked to critique the questionnaire and the scales it contained, i.e. indicate where improvement needed to be made. Respondents included judges (those who have a special knowledge of the problem investigated) (Tacq 1997). Judges for this study included academics, colleagues and lecturers at the Dublin Institute of Technology. The scale was then revised based on feedback from the initial reviewers. The initial and final versions of the questionnaire can be viewed and compared in Appendix G and H. Furthermore, the final version of the questionnaire can be seen on page XXX.

The main changes that were made to the questionnaire based on the face validity test include that:

- verbal descriptors and end points were harmonised
- introductory statements to each section, that were designed to teach respondents about the concept, were removed as they were deemed confusing and unnecessary
- long and complex words were simplified e.g. 'predominantly' → 'main' in order to consider the potential variety of educational backgrounds of respondents
- negatively worded items were reworded into positive items
- appearance and outlay of questionnaire was revised
- unnecessary questions were removed e.g. those relating to 3rd most used airline

Conducting the pilot test: After making adjustments, the measurement instrument was ready to be formally piloted. Ideally the questionnaire should be administered in the same manner planned for the final survey (Spector 1994; Hague 1994). Thus, the

pilot study for this research was carried out in a very similar manner to the main survey. Permission was obtained from Aer Rianta (owners of Dublin Airport) to carry out a pilot test over 2 days in December 2000. Questionnaires were collected from respondents awaiting flights at departure gates. The researcher wanted to test if respondents could/ would complete the questionnaire in the absence of a researcher, but all respondents except one preferred to be assisted in filling out the questionnaire. Tull & Hawkins (1990) state that during administration of the pilot questionnaire, respondents can be asked questions about their thoughts on the questionnaire (known as debriefing), or asked to think aloud as they fill it out. However, in order to administer the pilot study in a similar manner to that of the main survey, comments were not directly elicited but were noted if the respondent offered any.

There is no set rule as to how many respondents should be used. Hague (1994) states that in a larger study, one involving more than 200 people, the size of the pilot could be between 20 and 50 interviews, which is sufficient to cover a good cross-section of respondents. Spector (1994) on the other hand recommends that a sample of 100 to 200 respondents is required for a pilot study. In this study a much smaller sample of 29 respondents participated in the pilot study. There are two reasons for the smaller sample size. Firstly, the aim of the research is not to develop a new scale. Instead the researcher seeks to adapt existing measures so that they are context-relevant. The measures will be adapted as little as possible so that they remain somewhat similar to the original measure. Secondly, time and money constraints mean that it is only possible to conduct a small pilot study to test the adapted measures.

Similar to a procedure used by Oliver & Swan (1989), the 29 respondents were recruited on a convenience basis. Respondents answering the pretest should be as similar as possible to the target respondent (Tull & Hawkins 1990). Although quotas were not set, (as is the case for the main survey), the researcher did ensure that important respondent characteristics were present i.e. respondents consisted of both males and females, business and leisure passengers and Aer Lingus and Ryanair passengers.

Having carried out the pilot study, it was deemed that the questionnaire was of acceptable length, respondents preferred to be assisted in the filling out of the questionnaire, and that questions and items were intelligible.

3.5.11 Pilot Test Analysis

As mentioned, stage three involves purifying measurement instrument. This involves testing the instrument for its psychometric properties, i.e. testing the **reliability and validity**. Reliability and especially validity are words that have very positive connotations. They are two basic properties of empirical measurement. Carmines & Zeller (1994) state that if a measure is reliable and valid, it has gone a long way towards gaining scientific acceptance. These tests must be carried out on the measurement instrument, because as Creswell (1994) states, when an instrument is modified or combined (as was the case for most of the measures in this study) it is necessary to re-establish reliability and validity. Reliability and validity are defined in this chapter and further considered in the analysis section (chapter 4).

3.5.12 Reliability

At the most general level, reliability concerns the extent to which any measuring procedure would yield the same results upon repetition of measurement (Carmines & Zeller 1994). Simply put, two or more researchers with similar purposes should come to similar conclusions (Gummeson 1991). But repeated measurements of the same phenomenon never precisely duplicate each other; the tendency rather is to achieve reasonable consistency. There are four basic methods for estimating reliability and they are the retest method, alternative-form method, split-halves method, internal consistency method (Carmines & Zeller 1994). The internal consistency method is used to assess reliability in this study. For a discussion on the other three types of reliability see Appendix I.

3.5.12.1 Internal Consistency Reliability

Internal consistency reliability is used to assess the reliability of summated rating scales (Malhotra 1996). All items on the multiple-item index must be designed to measure precisely the same thing. It indicates the extent to which items intercorrelate with one another and reflect a common underlying construct. There are various ways of calculating internal consistency reliability two of which include item analysis and

coefficient alpha (Mowday et al. 1979; Spector 1994). Both the item-remainder coefficient (also known as item analysis) and coefficient alpha should be used in choosing items for a scale (Spector 1994). A series of steps of deleting items and checking alphas is involved.

Item analysis: Item analysis provides information about how well each individual item relates to the other items in the scale (Spector 1994). This is shown by the item-remainder coefficient, also known as the part-whole or item-whole coefficient (Spector 1994). It represents the correlation of each item of the scale with the sum of the remaining items minus that item (Mowday et al. 1979). Spector continues that items with the highest item-remainder coefficients are those that are retained.

Coefficient Alpha: The most widely used statistic to assess internal consistency is the coefficient alpha (Carmines & Zeller 1994; Spector 1994). Coefficient alpha is also known as the Cronbach Alpha as it was developed by Cronbach in 1951 (Mowday et al. 1979). The alpha varies between .00 and 1.00 (Tull & Hawkins 1990). The alpha is usually positive with higher levels indicating higher levels of internal consistency. There is a rule of thumb for the minimum level that the alpha should reach before it demonstrates internal consistency. Most researchers agree that this level is at least 0.70 (Nunnally in Anderson & Weitz 1989, in Gundlach et al. 1995; in Rusbult 1983; Stanley & Markman 1992). Carmines & Zeller (1994) add that it should not be below 0.80 for widely used scales.

3.5.13 Validity

An internally consistent scale is definitely a desirable result, but the scale must still be validated (Spector 1994; Churchill 1979). Validity of research focuses on the extent to which a measuring device measures what it was designed to measure (Carmines & Zeller 1994; Gummesson 1991). Spector (1994) states that validation is a complex process as well as being the most difficult step in developing a scale. While reliability relates to empirical issues and whether it measures perform well, validity relates more so to theoretical issues and whether an indicator measures what it is intended to measure (Carmines & Zeller 1994). There are various types of validity (relevant in the social sciences). Those that are appropriate to this research are discussed below.

Methods such as criterion-related validity (includes concurrent and predictive validity) are not discussed given that they were not used.

3.5.13.1 Face Validity

Face validity relates to judgements made about a measuring instrument after it is constructed (Nunnally in Carmines & Zeller 1994). The focus is on the extent to which the measure 'looks like' what it is supposed to measure and items 'look right' (Churchill 1979; Creswell 1994). Face validity was tested before the pretest as discussed in section 3.5.10.2.

3.5.13.2 Content Validity

Content validity refers to a subjective, yet systematic, evaluation of the appropriateness of the measuring instrument (Tull & Hawkins 1990). While it may be easy to achieve content validity for a maths exam, it is much more difficult for more abstract phenomena of social science (Carmines & Zeller 1994). There is no agreement as to the criterion for determining the extent to which a measure has attained content validity.

3.5.13.3 Construct Validity

Construct validation is the preferred validation method because content and criterion-related validity have limited usefulness in assessing abstract social science measures (Carmines & Zeller 1994). Construct validity is the most sophisticated and difficult type of validity to establish (Malhotra 1996; Tull & Hawkins 1990). Construct validation focuses on the degree to which a measure performs in accordance with theoretical expectations. The researcher must have a sound theory of the nature of the concept being measured and how it relates to other concepts. There are various approaches for assessing construct validity. The most common approaches include convergent, discriminant and nomological validity (Malhotra 1996; Tull & Hawkins 1990). In order to use convergent and discriminant validity, at least two constructs must be measured, and each must be measured with at least two separate methods (Spector 1994; Churchill 1979). Thus, it was not possible to measure convergent and discriminant validity in this study, given that constructs were not measured using different methods. Nomological validity, on the other hand, was used (see section 3.5.1.4) and is discussed below.

Nomological Validity: Nomological validity is the extent to which the scale correlates in a theoretically predicted way with measures of different but related constructs (Malhotra 1996; Tull & Hawkins 1990). Typically, the validity test involves examination of a set of hypothesised interrelations of the intended construct with other constructs (Spector 1994). This involves demonstrating that the measure behaves as expected in relation to other constructs (Churchill 1979). For example, does job dissatisfaction relate to the likelihood of quitting, as is hypothesised in the literature (Churchill 1979). If there is empirical support for the hypotheses, validity of the scale is implied.

3.5.13.4 Factor Analysis for Scale Validation

Factor analysis (FA) can also be useful for assessing validity of empirical measures (Bryman & Cramer 1999; Nunnally in Carmines & Zeller 1994). Factor analysis validates a scale by assessing its unidimensionality. The idea is quite similar to convergent and discriminant validity; items that intercorrelate highly are assumed to reflect the same construct (convergent validity), and items that intercorrelate lowly are assumed to reflect different constructs (discriminant validity) (Spector 1994). Several previous studies appropriate to this research, used FA to determine the dimensionality of scale items (Crosby et al. 1990; Larzelere & Huston 1980; Mowday et al. 1979; Sabatelli & Cecil-Pigo 1985; Sharma & Patterson 1999; Tax et al. 1998).

The type of factor analysis being used in this study is exploratory (See section 3.8.1.1). However, the type of FA used for validation purposes is normally confirmatory FA by means of LISREL. In the defence of exploratory FA, Hair et al. (1995) state that even though it is not truly confirmatory, exploratory FA is used to evaluate proposed dimensionality. Exploratory FA is a good technique for studying the dimensionality of a scale (Anderson & Weitz 1992; Kumar et al. 1998; Spector 1994).

Finally, this section sums up on the actual validity tests conducted during this research.

3.5.13.5 Validity Tests Conducted

Validity of a scale is the theory-testing phase and is difficult to prove. Spector (1994) states that when a sufficient amount of tests supporting validity are collected, the scale is tentatively declared to be valid (Spector 1994). A number of validation studies were conducted for this research. Validation steps included:

- (1) Thorough review of the literature was conducted: Carmines & Zeller (1994) state that a sound **theory** of the nature of the construct being measured and how it relates to other constructs (hypotheses) is one step in validating constructs.
- (2) The measurement instrument was tested for **face-validity by expert judges** and subjected to an **item-sort task**
- (3) The relationships were **empirically tested and results interpreted** (see analysis, chapter 4)
- (4) A high level of **reliability** was displayed for the constructs in accordance with Malhotra's (1996) specifications (see analysis, chapter 4).
- (5) Factor analysis was carried out to examine **unidimensionality** of constructs.
- (6) Reliability and validity of the **measurement instrument were tested twice**, firstly on the data from the pilot survey and secondly on the data from the main survey. It was necessary to run the tests twice given that the measurement instrument was modified after the pretest making it necessary to re-establish reliability and validity.

3.5.14 Refinement of Measurement Instrument

The data from the pilot questionnaire was analysed in two ways; firstly by using reliability analysis and secondly, by using factor analysis (see pretest analysis, chapter 4). The following section discusses changes that needed to be made to some of the measurement scales, based on this analysis.

Affective Commitment: Results of the internal consistency reliability showed that items 3 and 5 of affective commitment seemed to be measuring something different to items 1, 2 and 4 (items are listed in appendix F). Factor analysis also pointed to two separate factors i.e. factor one, items 1, 2 and 4, and factor 2, items 3 and 5. In order to determine which group of items was a better measure of affective commitment i.e. group 1, 2 and 4 or group 3 and 5, their nomological validity was tested. Under nomological validity, a scale should correlate in a theoretically predicted way with

measures of related constructs. This study hypothesised that trust is positively related to affective commitment. The two groups of affective commitment items were correlated with trust. The result showed that items 1, 2 and 4 correlated positively with trust (0.686, $p < 0.01$). Items 3 and 5 had a weak positive correlation (.278) but was not significant.

Thus, it seemed reasonable to conclude that items 3 and 5 were not measuring affective commitment in an airline context. Indeed, having personally conducted the pretest interviews, the researcher found that respondents tended to act strangely to items 3 and 5. Some commented that it was unrealistic to suggest that they could have an 'emotional attachment' to their airline (item 5). With respect to item two, the sense of personal meaning stem was adjusted slightly. It was thought that this item was should not be deleted totally because many respondents in the informal interviews had commented that Aer Lingus, being the national airline, did have some sort of personal meaning. So the wording was changed from a 'great deal of personal meaning' to a more subtle 'sense of personal meaning'. Finally, item 5 was removed and replaced by an item that considered enjoyment ('enjoy dealing with my main airline') as opposed to an emotional attachment. Wetzels et al. (1998) and Geyskens et al. (1996) also used enjoyment items to measure affective commitment.

Calculative Commitment: Having conducted reliability and factor analysis it became clear that item 5, relating to feeling trapped, was causing problems. Factor analysis showed that the fifth item was loading more highly on another factor, other than the factor being formed by items 1 to 4. Thus, another item was included to replace the troublesome item. This item considered the consequence of the lack of available alternatives (see appendix F). When the calculative scale was originally being constructed for the pretest, the researcher made as much effort as possible not to include any items in the scale that could possibly be overlapping with measures of antecedent variables. For example, items used by Gruen et al (2000) to measure calculative commitment such as 'one consequence of dropping my relationship would be lack of available alternatives' were considered to be too similar to measures of availability of alternatives. Thus, to avoid potential collinearity problems, such items were not included for the pretest. But Spector (1994) states that content overlap can occur because two constructs share common components. Eliminating overlapping

items may compromise the content validity of the scale; it may not reflect the entire scope of the construct. Thus, the item that had originally been excluded because of potential collinearity was eventually included for fear of compromising content validity. The troublesome item was replaced by the Gruen et al. (2000) item mentioned above.

Dependence: Upon analysing the results of the pretest data, it was revealed that the measure of dependence was not proving to be very reliable. It appeared that the two-item measure and percentage of purchase measure were not measuring the same thing. It was decided to keep the percentage of purchase measure for the main survey but to try to increase the reliability of 2-item measure of dependence. One way of improving reliability is to increase the number of items in the scale (Carmines & Zeller 1994; Spector 1994; Tull & Hawkins 1990). Thus, another item was added to the scale. This item relates to replaceability and is in accordance with Emerson's (Geyskens et al. 1996) conceptualisation of dependence as mentioned in chapter 2 i.e. dependence as replaceability. The replaceability item was not included in the pretest because it was felt by the researcher that the replaceability item would be too similar to items measuring availability of alternatives. But as pointed out previously, eliminating overlapping constructs may compromise the content validity of the scale.

Satisfaction: Having conducted the pretest it was noted that item 3, relating to satisfaction with check-in services, was causing problems. Item 3 lowered the coefficient alpha value and the average item-total correlation (See pretest analysis, chapter 4). Factor analysis showed item 3 loading more highly on another factor, other than the factor formed by the other four items. Perhaps satisfaction with check-in facilities is too far removed from satisfaction with other elements of the service and could possibly be separate dimension. Thus, it was decided to replace this item before conducting the main study. It was replaced by a need-based satisfaction item taken from Westbrook (1980b).

Availability of Quality Alternatives: Having conducted the pretest it appeared that two of the four items of this scale were causing considerable problems. Factor analysis also showed items 1 and 2 forming separate factors to items 3 and 4.

1. If I needed to change my main airline, there are other good airlines to choose from
2. There are other available airlines that fly to my required destination(s)
3. I would probably be happy with the services of another airline
4. Compared to my main airline, there are other airlines with which I would probably be equally or more satisfied

Thus, items 3 and 4 did not appear to be adequate in measuring the quality of available alternatives from an airline context. The researcher of this study contacted Michael Jones (one of the researchers whose scales were used to measure this construct). The researcher explained to Jones that during the course of conducting the pretest the researcher had noted some problems with how respondents rated this variable. As previously explained, there are only two main choices when a passenger flies from Dublin Airport. Some passengers feel quite constrained in having only two main choices. When such respondents (i.e. passengers who feel constrained) were filling out the questionnaire, there was an inconsistency in how they answered. For items 1 and 2, such respondents selected 'strongly disagree', whereas for items 3 and 4, these respondents chose 'strongly agree'. It appears that items 3 and 4 are very hypothetical in comparison to items 1 and 2. Items 1 and 2 are quite definite, almost factual; there are or are there are not other quality airlines to choose from. Whereas items 3 and 4 ask the respondents to put themselves in a situation where more alternatives are available and then proceeds to ask them if they would 'probably' be happy if more airline were available. A constrained airline passenger is likely to agree that they would be happy if more airlines were available. Michael Jones agreed that the airline industry poses different problems than the banking industry (the context of his study). He agreed that the questions should be more definite and specific to the airline industry. Thus, the problematic items were dropped and one more item was created (See item 3, in appendix F). This item was created with the assistance of Mary Ann Hocutt and is similar to a measure she used in her 1998 study.

The final version of the questionnaire that was used in the main study is displayed below (and can also be seen in Appendix H).

CUSTOMER-SERVICE PROVIDER QUESTIONNAIRE

My name is Ceara Cooper and I am a masters research student from Dublin Institute of Technology. I am carrying out research on passengers' opinions of their airline.

I feel I am doing important research and would greatly appreciate your co-operation. The research is being carried out for educational purposes and is not sponsored by any particular airline. Your individual responses will remain **anonymous and confidential**.

SECTION 1 – FLYING PATTERNS

On average, how many times do you fly (return flights) per annum? _____

For what purpose do you mostly use airlines? Please tick (✓) one of the appropriate options.

- mostly for business purposes
 mostly for leisure/ pleasure purposes

With which airline do you fly most often? List airlines in order of usage, where (1) is the airline you use most, (2) is the airline you use second most.

- (1) _____ most often used airline
 (2) _____ second most used airline

About how long (in years) have you used your most often used airline?
 _____ time with most used airline

About how many times (return flights) during the last 12 months have you flown with your most often used airline? _____

About how many times (return flights) during the last 12 months have you used airlines in general? _____

List any frequent flyer programmes that you belong to in the spaces provided below:

- (1) _____
 (2) _____
 (3) _____

Please answer all remaining questions with regard to your main airline i.e. the airline with which you mainly fly. Alternatively, if you have more than one main airline, please answer with respect to the one you used last.

With your main airline, do you mainly fly long-haul or short-haul

Which cabin class do you normally fly with your main airline?

- Economy class
 First class
 Business class

The following sections include various statements that relate to your opinion about your main airline. The last page of the questionnaire is left blank for your comments if you wish to make any.

SECTION 2

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements? Circle one number for each statement.

	Strongly Disagree		Neutral			Strongly Agree	
I like the way I am treated by the staff at my main airline	1	2	3	4	5	6	7
I am treated with respect by the staff at my main airline	1	2	3	4	5	6	7
My main airline is very willing to listen to me	1	2	3	4	5	6	7
The staff at my main airline are very friendly towards me	1	2	3	4	5	6	7

SECTION 3

	Strongly Disagree		Neutral			Strongly Agree	
I feel that my airline is open and honest	1	2	3	4	5	6	7
My main airline is truly sincere in its promises	1	2	3	4	5	6	7
I trust my main airline to get me to my destination at the stated time	1	2	3	4	5	6	7
My main airline treats me fairly and justly	1	2	3	4	5	6	7
I feel that my main airline can be counted on to help me in any situation	1	2	3	4	5	6	7
I feel safe and secure with my main airline	1	2	3	4	5	6	7
My main airline can be trusted	1	2	3	4	5	6	7

SECTION 4

	Strongly Disagree			Neutral			Strongly Agree
I am satisfied with the in-flight service of my main airline	1	2	3	4	5	6	7
I am satisfied with the comfort provided by my main airline	1	2	3	4	5	6	7
My main airline satisfies my needs as an airline passenger	1	2	3	4	5	6	7
Compared to other airlines, I am satisfied with my main airline	1	2	3	4	5	6	7
In general, I am satisfied with my main airline	1	2	3	4	5	6	7

SECTION 5

	Strongly Disagree			Neutral			Strongly Agree
I feel a strong sense of belonging to my main airline	1	2	3	4	5	6	7
I fly with my main airline because it is the best choice for me	1	2	3	4	5	6	7
The identity of my main airline has a sense of personal meaning for me	1	2	3	4	5	6	7
I deal with my main airline because I want to, not because I have to	1	2	3	4	5	6	7
I fly with my main airline because I enjoy dealing with it as an airline	1	2	3	4	5	6	7

SECTION 6

	Strongly Disagree			Neutral			Strongly Agree
I control the decision on whether I fly with my main airline	1	2	3	4	5	6	7
I freely choose to fly with my main airline from available alternatives	1	2	3	4	5	6	7

SECTION 7

	Strongly Disagree			Neutral			Strongly Agree	
Overall, the services provided by my main airline are good value for money	1	2	3	4	5	6	7	
The price paid for the services of my main airline is acceptable	1	2	3	4	5	6	7	
Overall, the schedule convenience of my main airline is of high value to me	1	2	3	4	5	6	7	
Considering the costs of a flight with my airline, in comparison to what I receive in return, I believe I am getting value	1	2	3	4	5	6	7	
Overall, the value to me of my main airline's services is high	1	2	3	4	5	6	7	

SECTION 8

	Strongly Disagree			Neutral			Strongly Agree	
All things considered, I would lose a lot in changing my main airline	1	2	3	4	5	6	7	
Generally speaking, the costs in time, money, effort, and grief to switch my main airline would be high	1	2	3	4	5	6	7	
Considering everything, the costs to stop flying with my main airline and start up with an alternative airline would be high	1	2	3	4	5	6	7	

SECTION 9

	Strongly Disagree			Neutral			Strongly Agree	
Considering all the benefits and the drawbacks, I feel I will stay with my main airline for a long time	1	2	3	4	5	6	7	
I expect to continue flying with my main airline for a long time	1	2	3	4	5	6	7	

SECTION 10

	Strongly Disagree			Neutral			Strongly Agree	
If I needed to change my main airline, there are other good airlines to choose from	1	2	3	4	5	6	7	
There are other available airlines that fly to my required destination(s)	1	2	3	4	5	6	7	
If my main airline closed operations, I would have many options for a new airline as good as my former airline	1	2	3	4	5	6	7	

SECTION 11

	Strongly Disagree			Neutral			Strongly Agree	
It would be an inconvenience to me if I decided I wanted to drop my main airline	1	2	3	4	5	6	7	
Right now, staying with my main airline is a matter of necessity as much as desire	1	2	3	4	5	6	7	
A major reason I continue to fly with my airline is that dropping it would require considerable sacrifice – another airline may not match the overall benefits I have here	1	2	3	4	5	6	7	
It would be hard for me to leave my main airline right now, even if I wanted to	1	2	3	4	5	6	7	
One of the consequences of dropping my main airline would be the lack of available alternatives	1	2	3	4	5	6	7	

SECTION 12

	Strongly Disagree			Neutral			Strongly Agree	
My main airline is important to me for flying purposes	1	2	3	4	5	6	7	
I depend on my main airline for my flying needs	1	2	3	4	5	6	7	
It would be difficult to replace my main airline with another airline	1	2	3	4	5	6	7	

SECTION 13 – BACKGROUND INFORMATION

The following information is required purely for classification purposes. It would be greatly appreciated if you would provide this information.

Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>
Occupation	_____	
Age group	15-24 <input type="checkbox"/>	
	25-34 <input type="checkbox"/>	
	35-44 <input type="checkbox"/>	
	45-49 <input type="checkbox"/>	
	50-65 <input type="checkbox"/>	
	65+ <input type="checkbox"/>	
Educational level attained?	Primary school <input type="checkbox"/>	
	Junior Cert <input type="checkbox"/>	
	Leaving Cert <input type="checkbox"/>	
	Third Level <input type="checkbox"/>	
	Post-graduate <input type="checkbox"/>	
What is your nationality?	_____	
In which country do you currently live?	_____	

I have a good relationship with my main airline, to which I am committed!

**Strongly
Disagree**

Neutral

**Strongly
Agree**

1

2

3

4

5

6

7

PLEASE COMMENT

THANK YOU EVER SO MUCH FOR YOUR PARTICIPATION. I APPRECIATE IT VERY MUCH.

Having discussed scale construction, the next section considers how the actual questionnaire was designed.

3.5.15 Questionnaire Design

There are no fixed principles for questionnaire design. According to Hague (1994) a sound questionnaire is a combination of applicable principles, common sense, concern for the respondent, a clear concept of information needed, and thorough pretesting. Designing a good questionnaire involves getting thoroughly immersed in the relevant subject and is the result of constant refining, polishing and editing (Hague 1994). The following considers the issues involved in designing each of the sections of the questionnaire.

3.5.15.1 Response Format

The response format refers to the flexibility available to the respondent in answering the questions. Questions may be open-ended or closed questions.

Open-ended Questions: Open-ended questions leave the respondent free to choose any response considered appropriate within the limits of the question (Tull & Hawkins 1990). Open-ended questions should be kept to a minimum in large structured surveys because they require considerable effort on the part of the respondent to answer them and on the part of the analyst to analyse them. Most of the questions in the questionnaire are scalar. Hague (1994) states, there is the potential for such questions to be over-used in which case they cause respondent frustration because of lack of opportunity to state exactly how they feel. One open-ended question is included at the end of the questionnaire and asks respondents about their 'relationship' and commitment to their main airline (See last page of the questionnaire, Appendix H). The answers to this question will provide a basis for judging views of respondents that are difficult to capture with structured questions. According to Hague (1994) this information provides a 'feel' for the data and can be used in the final report by including quotes from representative responses.

Closed Questions: Closed questions on the other hand, specify the set of response alternatives. Replies to questions have been anticipated and respondent is asked to choose between a limited number of answers. There are three main types of closed

question; multiple choice, dichotomous and scalar. Under multiple choice questions, respondent must select from among three or more prespecified responses, while dichotomous questions allow for only two responses e.g. yes/no, male/female (Tull & Hawkins 1990). Scalar questions have already been discussed. A variety of these closed questions were used in the questionnaire.

3.5.15.2 Physical Characteristics of the Questionnaire

Appearance of the questionnaire is important particularly when the questionnaire must be self-administered. Such questionnaires should be desktop published and printed on quality paper, using open format and type that is easy to read (Hague 1994). Given that the questionnaire in this research was administered by an interviewer, it was decided that the questionnaire would not be desk-top published.

Question Sequence: The sequence of the questions is an important aspect of the questionnaire (Hague 1994; Tull & Hawkins 1990). The first few questions should relax and reassure the respondent. Questions should move from the general to the specific i.e. from easy questions to more difficult ones (Hague 1994; Tull & Hawkins 1990). Such a method helps respondents 'warm to the task of answering', and prepares them for more complex questions. The initial questions in this research considered general questions about usage of airlines such as number of times travelled by airline per annum, main purpose for flying, membership of frequent flyer programmes (See questionnaire in Appendix H).

Tull & Hawkins (1990) recommend that **personal data** should be requested in broad categories rather than specific levels. Thus, demographic information such as age was asked for in six response bands. Furthermore, Hague (1994) states that personal questions should be placed near the end of the questionnaire because the respondent is more likely to be committed to finishing the questionnaire, having completed the preceding questions. Personal information such as demographics, was placed at the end of the questionnaire in this study. **Demographic questions** are used to check that the correct quota of people have been interviewed as well as to analyse and control the sample (Hague 1994). The questions provide a profile of the respondent by finding such details as age, sex, social class etc. Demographics variables considered in this

research include, gender, occupation, age category, educational level, nationality and country of domicile.

3.5.15.3 Response Rate

“Survey response rate is broadly defined as the percentage of the total attempted interviews that are completed” (Malhotra 1996). The response rate for this research was very high. On average, approximately 93% of respondents were willing answer. This figure seems to be quite good, considering that typical response rate for personal or mall-intercept interviews is, according to Malhotra (1996), 80% and as low as 53% for questionnaire lasting 13 minutes (the questionnaire in this study lasted approximately 14 minutes). Non-response can lead to response bias or error i.e. error caused by differences between those who respond and those who do not. Various methods are used to motivate respondents to cooperate.

Refusal conversion or persuasion: refusal conversion involves not accepting a refusal without making an additional plea stressing the importance of respondents’ opinion or brevity of questionnaire (Tull & Hawkins 1990). The researcher of this study does not agree with this method and accepted refusals straight away. No effort was made to persuade the refuser to respond.

Contacting respondents: One of the major ways of reducing nonresponse bias centres on the approach used to contact the respondent (Tull & Hawkins 1990). The social motives that are present in face-to-face interaction operate to minimise refusals. In this study, the researcher attempted to gain cooperation by greeting the respondents and informing them that the researcher was a student who needed their help. Previous research carried out by the researcher (Cooper 1999) highlighted that respondents are more willing to cooperate with students than with profit-making organisations. Response rates are generally higher for university and charity organisations (Tull & Hawkins 1990).

Incentives: Another form of motivating respondents involves offering a financial incentive. Monetary incentives are a means of increasing response rates, while the effect of nonmonetary incentives e.g. keyrings varies (Tull & Hawkins 1990). At a minimum the incentive must be valued. In this research, respondents who completed

the questionnaire were offered a bar of chocolate or a pen. This was done for both the pilot and the main survey. For full details of how the chocolate and pens were obtained see Appendix J. It was not so much an incentive as it was a reward, or way of thanking the respondents for giving up 15 minutes of their time. Also, by not offering an incentive upfront, it reduced the possibility of bias, which might result from a difference between those who respond because of the inducement and those who do not.

3.5.16 Difficulties of Research Design

In conclusion to the research design section, the researcher wishes to highlight one important issue. Bowen (1987) cautions the researcher by stating that the development of a measurement instrument and the analysis of the results is not an easy task and continues that it should be done by a professional if the results are to be meaningful. Similarly, Spector (1994) states that the scale development process should be carried out in conjunction with guidance from someone with expertise. This person should, at the very least, review procedures, items, and the results of analyses conducted. The researcher in this study found it very hard to find someone with the expertise required. The researcher contacted:

- colleagues in her own college (DIT Mountjoy Square, Kevin Street and Aungier Street)
- psychology and marketing academics in Trinity College Dublin (TCD), Dublin City University, University College Dublin (UCD) and Michael Smurfit Business School
- psychology and marketing PhD students in TCD and UCD
- medical statisticians.

The process of trying to find someone with expertise to provide guidance was lengthy and time consuming. Eventually two such experts were found and kindly provided their assistance.

Having considered the research design procedure, the next stage of the research process considers the sampling.

3.6 SAMPLING AND SAMPLE DESIGN

Sampling is the fourth stage in the research process. Sampling and selection procedures are used to identify, choose and gain access to relevant units that will be used for data generation (Mason 1996). The sampling consists of various steps summarised below in table 3.4.

3.6.1 Target population

Sampling begins by defining the target population. The target population is defined in terms of elements, sampling units, extent and time (Malhotra 1996). An **element** is the object about which or from which the information is desired (Malhotra 1996). In survey research, the element is the respondent.

Table 3.4

Sampling summary

1. Target population	Element – passengers 18 years of age or older Sampling unit – Dublin airport Extent – in Dublin Time – during three weeks in March 2001
2. Sampling frame	Passengers departing from Dublin airport who meet the characteristics laid out by the quotas
3. Sampling technique	Non-probability sampling
4. Determine sample size	222 passengers (actually collected 243)
5. Sampling plan	Using Dublin Airport as an interviewing facility, departure gates act as sampling location, select and qualify passengers passing through these points until quotas are filled.

Respondents in this research were airline passengers. The **sampling unit** is the basic unit containing the elements of the population to be sampled (Tull & Hawkins 1990). In this study, the sampling unit was Dublin airport, which contained the element i.e. the passenger. Despite the small size of the domestic market of Ireland, Dublin airport is a busy airport. From 1994 to 1998, Dublin airport was the fastest growing of the larger airports in the world (Aer Rianta 1999). The Dublin-London route is the busiest international scheduled route in Europe, with 4.3m passengers in 1999 (Aer Rianta 1999). Thus, Dublin airport provides a reasonable sampling unit for this study. In terms of **time**, the survey was conducted over three weeks in March 2001. As with the pilot study, Aer Rianta (Owner of Dublin Airport) kindly granted permission to the researcher to conduct the main study. The researcher was granted a one-month pass,

which allowed access to all departure gates at the airport. The fact that the survey was conducted at only one time in the year, does not make allowances for seasonal variation, such as holiday seasons. This issue is further discussed in the limitations.

3.6.2 Sampling Frame

A sampling frame is a resource from which the smaller sample is selected (Mason 1996). It is a representation of the target population (Malhotra 1996) and usually provides a list (e.g. phone book) of population members (Tull & Hawkins 1990). According to Tull & Hawkins (1990) the only time a sampling frame is needed is when a probability sample is being used. As mentioned it was originally hoped that the research would be carried out with Aer Lingus, which would have meant that the frequent flyer database would have acted as the sampling frame. However, once it was established that the Aer Lingus sampling frame was no longer available, the other option was to use a nonprobability sample. Under the nonprobability method, a sampling frame is not needed.

3.6.3 Sampling Technique

The sampling technique determines how the sample will be selected (Tull & Hawkins 1990). The technique may involve probability or nonprobability sampling. Probability sampling ensures members are selected by chance and there is a known chance of each unit being selected; nonprobability sampling, on the other hand, results in members being selected by some other means rather than chance e.g. convenience (Tull & Hawkins 1990). Creswell (1994) states that random (probability) sampling is recommended because it allows empirically representative samples to be generated and generalisations to be made about the population. However, practicalities should be considered (Mason 1996). After it was decided that the research would not be conducted with Aer Lingus, a sampling frame was not available, making nonprobability sampling the other practical and feasible solution. Furthermore, there were potential problems with the Aer Lingus sampling frame. The Aer Lingus database (sample frame) related only to members of frequent flyer programmes, thus many loyal and committed non-frequent flyer programme members could have potentially been excluded. Also, the database did not differentiate between business and leisure passengers, hence quotas for each type could not be specified. Finally, the length of the questionnaire potentially ruled out probability sampling. Tax et al.

(1998) discovered that the length and relative complexity of the research instrument in their study indicated that a low response rate would be achieved from a random probability sample. Similarly, if this research used probability sampling and respondents received a lengthy, complex questionnaire by post they may have refused to take the time and effort to fill it out.

3.6.4 Types of Nonprobability Sampling

There are several kinds of nonprobability sample and they include; convenience, judgement, quota and purposive samples (Tull & Hawkins 1990). Quota sampling is the type being used in this research. For a discussion on the other types of sampling, see Appendix K.

Quota sampling is used when the sample is one selected purposively in such a way that the demographic and other characteristics of interest are represented in the sample in the same proportion as they are in the population (Tull & Hawkins 1990). The relevant control characteristics such as age, income, race, and geographic location are selected on the basis of characteristics of the population. Once the quotas have been assigned, sample elements are selected on a convenience basis as long as they fit the control characteristics (Malhotra 1996). Of the four types of nonprobability sampling, quota sampling most closely resembles stratified probability sampling (Tull & Hawkins 1990). Quota sampling overcomes some of the biases of nonprobability sampling. These biases result from variations in the demographic make-up of passers-by from the population as a whole, by location, by day and time of day, and by area chosen in the location. The effects of an unrepresentative demographic composition can be lessened by taking a quota sample.

Crimp (Gibney 1993) contests that quota sampling can be just as reliable as probability sampling in practice (but not in theory) providing that certain criteria are adhered to. For example, statistics relating to the structure of the population should be up-to-date and characteristics chosen to represent quotas should be important characteristics in the population. These criteria were adhered to as much as possible in this study (see quota discussion). Finally, rules should be laid out for interviewers so that as few decisions as possible are left to their discretion. Different decisions would

bias results. Given that only one data collector is being used (namely the researcher) this problem was overcome.

The next section, sample size, considers in greater detail how the quotas were set for the research.

3.6.5 Sample Size

Sample size refers to the number of elements to be included in the study. Given that quota sampling is being used, sample size will be decided by the **required size per cell** method which is used for stratified random and quota samples (Tull & Hawkins 1990). The cell size chosen is discussed in the next section. The other methods for choosing the sample size are discussed in Appendix L.

3.6.5.1 Quota controls

Quota controls are the relevant characteristics of the population that are to be represented in the sample. It is important that quota controls are kept to a reasonable number so as not to produce too many cells. Quota controls in this research consisted of **age, gender, airlines flying from Dublin and purpose of flight** (business or leisure). The airlines flying from Dublin were broken into three categories, Aer Lingus, Ryanair and others. It was important to represent this characteristic and the 'purpose of flight' characteristic because these are the focus of objective 3 i.e. differences between sub-groups. Up-to-date statistics relating to the characteristics of interest were obtained from Aer Rianta (owner of Dublin Airport). The statistics were based on research carried out by Aer Rianta on passenger profiles at the airport during 1999-2000.

As stated business and leisure quotas were to be set, however the business quota potentially posed a problem. It was pointed out to the researcher that considering business travellers would mean the study would relate to a business-to-business context when the aim of the study is to consider consumer services. However, Fisk & Young (1985) carried out a study of airline passengers in a consumer services context and considered two segments, business and student under the consumer service heading. In general, studies and texts referring to airlines do not make a distinction between business and leisure travellers. They consider only airline passengers as a

whole. For the purposes of this research business passengers are considered as individuals and a type of consumer, included in a business-to-consumer model⁶.

Frequent flyer Programme members: no quota was set in relation to members of frequent flyer programmes. There are a number of reasons for this. Firstly, as mentioned above (section 3.6.3), by selecting only frequent flyer members, many potentially loyal non-frequent flyer members might be excluded. Being a member of a frequent flyer programme does not necessarily infer loyalty or commitment. This study aims to examine airline passenger commitment regardless of whether they are frequent flyer members or not. Secondly, a representation of frequent flyer members was only necessary for the subgroup analysis. The subgroup analysis was very much exploratory. It was not a prerequisite that a certain amount of members and non-members be represented. If sufficient numbers of members or non-members were not available, then the analysis would not have been carried out. Finally, four quotas were already being considered and including a fifth relating to frequent flyer members was deemed unnecessary. Furthermore, it would make it difficult to identify respondents who meet all the necessary criteria.

Sample size was determined by the minimum cell size method using age and gender controls (3 x 2 = 6 cells). Age and gender were chosen to determine minimum cell size because according to Cronin et al. (1997) they help ensure that the respondent characteristics will be representative of the area population. Table 3.5 is a crosstabulation of gender and age for passengers travelling from Dublin airport.

The larger the number of cells the larger the sample will be. If the cell size is too small it would not be possible to compare sub-groups with any degree of statistical significance (Bejou & Palmer 1998). Sudman (Gibney 1993) recommends that the sample should be large enough so that there are 20-50 units in each cell.

⁶ The researcher would like to thank John Mowen, James Barnes and Adrian Palmer for their thinking on this matter.

Table 3.5 Dublin Airport passenger profile: Age by gender

Age	Male	Female
<25	15%	22%
25-49	66%	55%
50+	19%	23%
Total	100%	100%

The lower limit of 20 in each cell was chosen over a higher limit in light of the constraints facing the researcher, i.e. limited budget, limited time period granted by Dublin airport to carry out research (i.e. one month), and only one interviewer granted permission i.e. the researcher.

Table 3.6 Ratio of Males to Females

Age	Male	Female
<25	8.5	11
25-49	31	29
50+	8.5	12
Total	48%	52%

From the table 3.6 above it can be seen that the smallest cell is males less than 25 years or 50+, which represent 9% of the population (8.5% was rounded up to 9%). This cell being the smallest represents 20 respondents i.e. 20 respondents is the smallest cell size. Thus, if 9% represents 20 respondents, 100% represents 222 respondents. With the ratio of males to females being 48%: 52% the number of males to females will be 107: 115.

3.6.5.2 Distribution of Quota Controls

The next quota control is the 'airlines flying from Dublin' quota. The distribution of passengers across the airlines is roughly 45% of passengers with Aer Lingus, 25% with Ryanair 25% and 30% other. Unfortunately, figures available from Aer Rianta were not specific enough to determine the percentage travelling with the each airline under each age category or under each gender, so the percentages available were simply applied to all categories i.e. 45% of all age categories were assumed to fly with Aer Lingus, 25% of all age categories were assumed to fly with Ryanair and so on (see tables 3.7 & 3.8).

Table 3.7 Distribution of **MALES** across Airline Categories

Age	Aer Lingus		Ryanair		Other Airlines		Total	
	No.	%	No.	%	No	%	No.	Actual Pop. %
<25	7	45%	4	25%	5	30%	16	15%
25-49	32	45%	18	25%	21	30%	71	16%
50+	9	45%	5	25%	6	30%	20	19%
	48		27		32		107	100%

Table 3.8 Distribution of **FEMALES** across Airline Categories

Age	Aer Lingus		Ryanair		Other Airlines		Total	
	No.	%	No.	%	No	%	No.	Actual Pop. %
<25	11	45%	6	25%	8	30%	25	22%
25-49	28	45%	16	25%	19	30%	63	55%
50+	12	45%	7	25%	8	30%	27	23%
	51		29		35		115	100%

3.6.5.3 Final Sample Composition

Finally, the sample was broken down by whether the respondents fly predominantly for business or leisure purposes. According to Aer Rianta statistics the ratio of males to females travelling for business purposes is 70%:30%. The ratio of male to female leisure travellers is 40%:60%. However, for the purposes of setting the quotas, the ratio needs to show the ratio of males travelling for business and leisure and the ratio of females travelling for business and leisure. Thus, the table below shows that of the female travellers, 15% travel for business and 85% travel for leisure. For males, 40% travel for business and 60% for leisure.

	Female travellers	Male travellers
Business	15%	40%
Leisure	85%	60%
	100%	100%

Tables 3.9 and 3.10 show the final composition of quotas, with all four quota controls represented. The 'other airline' section was not split into business and leisure travellers in order to try to reduce the number of cells required.

Table 3.9 Distribution of MALES in accordance with Flight Purpose

Age	Aer Lingus			Ryanair			Other Airlines	
	Bus 40%	Leis 60%	Total	Bus 40%	Leis 60%	Total		Total
<25	3	4	7	2	2	4		5
25-49	13	19	32	7	11	18		21
50+	4	5	9	2	3	5		6
Total (107 males)			48			27		32

Table 3.10 Distribution of FEMALES in accordance with Flight Purpose

Age	Aer Lingus			Ryanair			Other Airlines	
	Bus 15%	Leis 85%	Total	Bus 15%	Leis 85%	Total		Total
<25	2	9	11	1	5	6		8
25-49	4	24	28	2	14	16		19
50+	2	10	12	1	6	7		8
Total (115 females)			51			29		35

It should be noted that some of the cells are quite small, with as little as one respondent in a cell. However, such small cells will not be analysed or compared. The aim of the quotas was to ensure that the relevant characteristics are represented in the sample. Comparison will not go beyond male Vs female or business Vs leisure sub-groups. Finally, it should be mentioned that the final sample size consisted of 243 respondents and not 222 as specified by the quotas. Some of the quotas were very small (e.g. business females) representing their small size in the population and thus, were difficult to locate. The statistics from Aer Rianta were annual statistics and relate to the make-up of passengers over a year. However, data for this research was collected at one point in time, meaning that some quotas may not have been available at that time. Thus, the researcher compensated for the cells that were difficult to fill by collecting data from extra respondents that were readily available.

3.7 DATA COLLECTION & PREPARATION

Data collection and preparation combine to make the fifth stage in the research process.

3.7.1 Data Collection

Data collection involves the researcher going out into 'the field' and collecting the data. Field controls need to be set in order to minimise errors during data collection (Tull & Hawkins 1990). Such controls are particularly important where interviewers are used in survey research, and the temptation to cheat exists (Tull & Hawkins 1990). As previously mentioned, the researcher took on the lengthy and arduous task of collecting all the data alone. This reduced the problems of interviewer bias and variation, and of having to validate the questionnaire to ensure actual respondents were intercepted to complete the questionnaire.

3.7.1.1 Questionnaire administration at the Airport

The actual administration of the questionnaire involved the researcher briefly introducing herself, stating that she was a research student from the Dublin Institute of Technology. The potential respondent was asked if s/he would have time to respond to a questionnaire. Respondents were told it would take approximately 10 minutes to fill out (interviews took on average 14 minutes). Potential respondents who agreed were then screened. After finding respondents who fulfilled all the necessary criteria, respondents were assured that individual replies would remain totally confidential. After questionnaires were collected, subjects were thoroughly debriefed and thanked for their participation and offered some chocolate or a pen.

3.7.1.2 Screening Questionnaire

The aim of the screening questionnaire is to find suitable respondents (Hague 1994). The main qualifying question that was used in this study, was that respondents should travel with one particular airline more so than any other airline. This airline was referred to as their 'main airline' and all questions were answered in relation to that airline. If respondents had more than one 'main airline' they answered in relation to the one with which they last flew. The rationale behind this screening question was that respondents should use a particular airline repeatedly. The questionnaire was not

appropriate for passengers who are indifferent as to which airline they fly with because this is a commitment study, and those with no main airline are unlikely to display any level of commitment. Finally, similar to the procedure used by Pritchard et al. (1999) all respondents had to use their main airline more than once a year. The remaining sampling questions ensured that respondents met the sampling criteria (i.e. age, gender, purpose of flight and main airline) in order to fill the specified quotas.

Having collected the data, it must be prepared and then input before analysis can take place. Data preparation is discussed next.

3.7.2 Data Preparation

Data preparation includes the coding, transcription, and verification of the data (Malhotra 1996). In terms of coding, it involves establishing categories and assigning respondents to them. Codes for multiple-choice and dichotomous questions in this research, involved a numbering system e.g. male = 1, female = 2. This number system facilitates the data analysis process. Appropriate categories were already established for the summated rating scales i.e. the 7-point scales. The scoring system did not need to take reverse scoring into consideration given that no such reversed-scored questions were used. In terms of the open-ended questions, no coding-scheme was used. Instead, important quotes were highlighted and were used to embellish the statistical findings.

The next step involved transcription or the inputting of the data from the questionnaire into the computer. Given that the researcher had personally collected the data, there were no missing responses because the researcher ensured that each questionnaire was fully and properly completed. As a result, no decisions had to be made regarding how to treat missing responses, inconsistencies or inaccuracies in the data. The final stage of data preparation is verification. Verification ensures that the data has been accurately transcribed. The researcher conducted random spot checks to ensure that data had been entered correctly. No inconsistencies were found.

Having entered the data into appropriate categories, scales were summed i.e., the individual's responses to the various scales were summed to provide a single attitude score for the individual. Multiple-items had to be collapsed because regression

analysis cannot deal with multiple indicators (Ganesan 1994). These collapsed values were then used to estimate the model.

The next stage after data collection and preparation is data analysis. The data analysis techniques chosen for this research are discussed next.

3.8 DATA ANALYSIS

Data analysis is the final stage in the research process. Data is useful only after analysis (Tull & Hawkins 1990). Analysis involves converting a series of recorded observations into descriptive statements and inferences about relationships. Although analysis is discussed last, it is imperative that the analysis technique is chosen before data collection. Otherwise the research objective may not be adequately answered. The following section discusses the various types of analysis used for this research including factor analysis, regression analysis and finally t-tests and ANOVA. The statistical package that will be used to carry out the analysis is SPSS.

3.8.1 Factor Analysis

Factor analysis (FA) is a multivariate statistical technique. It analyses the structure of the interrelationships (correlations) among large numbers of variables “by defining a set of common underlying dimensions known as factors” (Hair et al. 1995). Each factor is defined by those items that are more highly correlated with each other than with other items. The main aim of FA is to reduce the number of items into a smaller number of underlying factors, however as mentioned in section 3.5.13.5, the main aim for FA for this research was measure validation.

3.8.1.1 Exploratory VS Confirmatory Factor Analysis

FA can be exploratory or confirmatory (Hair et al. 1995; Spector 1994). Exploratory FA examines the relationships between variables without determining the extent to which the results fit the particular model. The focus is on interpreting results rather than formulating a priori hypotheses (Spector 1994). On the other hand, where the researcher has preconceived thoughts based on theory or past research, confirmatory factor analysis (CFA) is used (Hair et al. 1995). Tacq (1997) states that CFA is a

special case of LISREL developed by Jöreskog. CFA allows for formalised hypothesis testing. The analyst has prior knowledge as to which variables should be grouped together on a factor or has knowledge of the precise number of factors.

3.8.1.2 Sample Size

Reliability of factors emerging from the analysis depends on the size of the sample. Researchers generally would not factor analyse samples of fewer than 50 and would be inclined to use samples of more than 100 (Hair et al. 1995). As a general rule, the minimum is to have five to ten participants per variable (Gorsuch in Bryman & Cramer 1999; Hair et al. 1995; Field 2000). By finding the highest cases-per-variable ratio, the chances of overfitting the data (i.e. sample is specific with little generalisability) are reduced.

3.8.1.3 Approaches to Locating Underlying Dimensions

The two most widely used forms of FA are principal component analysis and common FA (Bryman & Cramer 1999; Hair et al. 1995). **Principal component analysis** is used when the objective is summarisation of the original information (variance) in a minimum number of factors for prediction purposes (Hair et al. 1995). For a description of variance and how it relates to factor analysis see Appendix M. **Common factor analysis**, is used when the main aim is to identify the latent dimensions or constructs of the original variables (Hair et al. 1995). There is much debate as to which model is more appropriate. Field (2000) continues that for non-statisticians the techniques appear quite similar. Hair et al. (1995) state common FA is subject to many problems which has resulted in widespread use of component analysis. Principal component analysis, on the other hand, is a 'psychometrically sound procedure' as well as being conceptually less complex than FA (Field 2000). Principal component analysis will be used in this research.

3.8.1.4 Criteria for Extracting Factors

Having chosen the model, the analyst must examine the initial unrotated factors (Hair et al. 1995). Data reduction possibilities are explored, but determination of the number of factors is not decided until factors are rotated. There are various criteria used to decide how many factors to extract. These criteria are briefly discussed here and are elaborated on in Appendix N.

Latent root criterion: only factors having latent roots (eigenvalues) greater than 1 are considered significant. Eigenvalues represent the amount of variance explained by a factor.

A Priori criterion: analyst already knows how many factors to extract before undertaking analysis.

Scree plot: The scree test provides a curve which is used evaluate the cut-off point (Hair et al. 1995). The cut-off point is the point of inflexion of the curve.

3.8.1.5 Interpreting Factors

In order to interpret factors a factor loading is required. Factor loadings are the correlation of each item/ variable with the factor (Bryman & Cramer 1999; Carmines & Zeller 1994; Hair et al. 1995). The higher the loadings, the more the particular item contributes to the factor. The first factor solution to be provided is the unrotated factor solutions, which results in data reduction. The unrotated solution usually does not provide meaningful patterns of factor loadings and is difficult to interpret. In order to provide simpler and more theoretically meaningful solutions, the factor solution is rotated.

3.8.1.6 Improving Interpretation with Factor Rotation

The two most commonly used methods of rotation are orthogonal and oblique (Bryman & Cramer 1999; Hair et al. 1995; Field 2000). **Orthogonal** means the factors are rotated while keeping them independent. **Oblique** rotation, on the other hand, allows factors to correlate (Field 2000). The oblique rotation is more realistic because, unlike with the orthogonal rotation, the theoretically important underlying dimensions are not assumed to be uncorrelated with one another (Hair et al. 1995). Oblique rotation is appropriate where the aim of FA is to obtain several theoretically meaningful factors or constructs. Given that this is the aim of the research, oblique rotation is considered to be suitable.

3.8.1.7 Criteria for Significance of Factor Loadings

When interpreting factors, the analyst must decide which factor loadings are worth considering. Ideally, each variable has a large loading on one and only one factor (Spector 1994). At a minimum, the factor loading should be at least $\pm.30$ (Bryman &

Cramer 1999; Field 2000; Hair et al. 1995; Spector 1994). Hair et al. (1995) continue that loadings of $\pm .50$ are considered practically significant.

As previously mentioned, FA is being used for measure validation purposes as opposed to data reduction purposes. FA will be further discussed in the analysis in chapter 4. Using factor analysis for measure validation purposes requires much emphasis to be given to the theoretical underpinnings of the constructs. For further discussion on theoretical guidance when using FA see Appendix O.

Having discussed factor analysis, the next section considers the theory behind simple and multiple regression, as well as the rationale for using regression analysis.

3.8.2 Regression Analysis

Regression analysis aims to predict a single dependent variable using one or more independent variables (Hair et al. 1995). Regression analysis is one of the most widely used and versatile dependence techniques, both for academic and applied market research (Hair et al. 1995; Mason & Perreault 1991). It is easy to interpret, is widely available (Mason & Perreault 1991) and according to Lewis-Beck (1993) the mastery of the technique will enable the researcher to analyse almost any set of quantitative data. The next section discusses why regression analysis was chosen to analyse the data.

3.8.2.1 Rationale for Multiple Regression Analysis

The overarching objective of this research is to test the conceptual model of commitment. Regression analysis will be used to analyse the hypothesised relationships of the framework. It is necessary to consider the rationale for choosing this technique, when other techniques may also be appropriate (Tacq 1997). One technique that would be appropriate is that of structural equation modelling by means of LISREL. The reason for this is that while multiple regression may be a powerful tool, it can examine only one relationship at a time i.e. a single relationship between the dependent and independent variables (Hair et al. 1995). Structural equation modelling allows multiple and interrelated dependence relationships to be examined simultaneously. It is particularly useful when one dependent variable becomes an independent variable in subsequent dependence relationships, which is exactly the

case for this research. Trust, for example, is a dependent variable in one relationship and independent in another. Tacq (1997) refers to this situation as considering causes of causes or using several hierarchical steps. If the analysis of the causal mechanisms is too complicated the analysis could be limited to direct influences on the dependent variable (Tacq 1997). This would result in multiple regression analysis in which the causal relationships between the independent variables are not investigated. However, in this study, MR is being used to consider causal relationship between independent variables.

The rationale and justification for using MR instead of SEM is now considered. Ganesan (1994), for example, was examining a RM model in the channel literature by means of SEM. In his study, data from both sides had been collected, but because the sample size (52) relating to the vendor data was too small, a LISREL model could not be used. Instead, the model was analysed using MR because of small sample size. The model, which investigated causes of causes, ideally should have been analysed by SEM but was analysed using MR. In order to further justify the use of MR, several academics were contacted and asked for their advice. The researcher put it to them that many models in the literatures are tested using SEM, but that the researcher felt that SEM was too complex and MR would suffice. The following academics agreed that MR was appropriate: Natalie Allen, Lance Bettencourt, Bill Black, Brian Fynes, Shankar Ganesan, Robert Morgan. Morgan stated that SEM is not a prerequisite a masters level and both he and Bettencourt stated that regression was perfectly appropriate. Bettencourt continued that regression loses some of the strength that SEM possesses, but the results are generally parallel to each other and that there is little significant difference between the conclusions of the two approaches. Black cautioned that some of the indirect effects would be lost, but that a good estimate of the main effects would still be obtained. However, he stated that this would be sufficient for the researcher's purposes and would allow more complex procedures to be avoided.

Simple regression involves only a single independent variable whereas multiple regression involves two or more independent variables. These techniques are now discussed.

3.8.2.2 Simple Regression

Simple regression is also referred to as bivariate regression. Bivariate regression is a straightforward technique which involves fitting a line to a scatter of points (Lewis-Beck 1993). The simplest relationship between the independent (the 'cause') and dependent variable (the 'effect') is a straight line (Lewis-Beck 1993). The general bivariate regression model according to Malhotra (1996) is as follows:

$$\hat{Y}_i = b_0 + b_1 X_i + e_i$$

i = unit of analysis

\hat{Y} = expected value of Y

b_0 = intercept

b_1 = regression coefficient

X = independent variable

e = error term

The equation suggests that Y is linearly related to X . Knowing the value of X , means the value of Y can be perfectly predicted (Lewis-Beck 1993). The error term acknowledges that the equation does not perfectly predict Y (Lewis-Beck 1993). Relationships in social sciences are almost always inexact (i.e. a perfect linear relationship does not exist) (Lewis-Beck 1993; Tacq 1997). The \hat{Y} distinguishes the predicted Y from the observed Y . The difference between Y_i and \hat{Y}_i is the error term (Tacq 1997):

$$e_i = Y_i - \hat{Y}_i.$$

The observed values Y_i are consequently the sum of a fixed part $b_0 + b_1 X_i$ and a random part e_i .

The regression coefficient (b_1) represents the slope of the regression line and indicates the expected change in Y when X is changed by one unit. For more information on the scatterplot, its components and how the regression function is estimated using the ordinary least squares criterion see Appendix P.

3.8.2.3 The Correlation Coefficient

In order to calculate the magnitude of the relationship and the proportion of variance explained the correlation coefficient is required (Taq 1997). For an explanation of the correlation coefficient and its square (R^2) see Appendix Q. Of greater interest is the **R^2 (squared correlation coefficient)**, also referred to as determination coefficient. The value of the determination coefficient indicates the percentage of variation of Y (dependent variable) explained by Xi (independent variable) (Hair et al. 1995) i.e. it indicates the explanatory power of the regression equation. The closer R^2 is to one the more variation in Y is explained by X. This also means the regression line fits the points better.

3.8.2.4 Multiple Regression

Multiple regression is a multivariate data analysis technique. It is used to analyse the relationship between a single dependent variable and several independent variables (Hair et al. 1995). It is a straightforward extension of bivariate regression and follows the same principles (Lewis-Beck 1993). The advantage of MR is that by including more independent variables it is possible to achieve greater explanation and prediction of the dependent variable. Hair et al. (1995) contend that using bivariate regression without considering multiple regression means ignoring a powerful technique that can provide potentially useful information. The set of weighted independent variables is termed the regression variate (Hair et al. 1995). The variate is a linear combination of the independent variables that best predicts the dependent variable. The regression equation is a well known example of the variate. The general form of the multiple **regression model** is as follows:

$$Y = b_0 + b_1X_1 + b_2X_2 + \dots + b_kX_k$$

As with simple regression, the coefficient, b_0 represents the intercept, but b_1 , b_2 , b_k , represent the partial regression coefficients (Malhotra 1996). The partial regression coefficients represent the variation in the dependent variable associated with a single independent variable, while holding the effects of the other independent variables constant. For more information on the partial regression coefficient and partial correlation see Appendix R. As before, the least squares principle is used to estimate

the parameters, with the aim of minimising the sum of the squares of the prediction errors (SSE) (Lewis-Beck 1993).

3.8.2.5 The Strength of the Relationship

The strength of the relationship stipulated by the regression equation is measured by the square of the multiple correlation coefficient, R^2 , which is also known as the coefficient of multiple determination (Malhotra 1996; Tacq 1997). The R^2 , represents the proportion of variation in 'Y' that is explained by the independent variables (Lewis-Beck 1993; Tacq 1997). The coefficient of multiple determination is also a measure of the goodness of fit of the regression equation (Lewis-Beck 1993). High R^2 are desirable because they give a more complete explanation of the phenomenon under study (Lewis-Beck 1993). For properly estimated models, the higher the R^2 value, the greater the explanatory power of the regression equation and therefore the better the prediction of the criterion variable (Hair et al. 1995). Explanation and prediction in MR are further discussed in 3.8.2.10.

A high R^2 is also indicates that a large proportion of the variance has been accounted for (Lewis-Beck 1993). Lewis-Beck continues that very high R^2 are needed to make accurate predictions (e.g. 0.9), this is why predictions are rarely made in the social sciences. However, low R^2 (e.g. below 0.2) need not be cause for disappointment. Low results can also be informative. They may suggest that the 'linear assumption of the R^2 is incorrect' (Lewis-Beck 1993). Even if nonlinearity is ruled out, then a low R^2 can still reveal that X does help explain Y, albeit to a small extent. Extremely low R^2 (e.g. near 0) provide very useful explanations. They imply that Y has virtually no dependency on X (Lewis-Beck 1993).

3.8.2.6 Approaches to Variable selection

There are several approaches to assist the researcher in finding the best regression model. The three main approaches are confirmatory, sequential and combinatorial (Hair et al. 1995). The **confirmatory approach** is most suited to structural equation modelling, where all variables have been closely specified by the researcher. The **sequential approach** (including backward elimination and stepwise estimation) involves selectively adding or deleting variables until maximum prediction with the smallest number of variables is achieved (Hair et al. 1995). While this approach may

seem ideal, Field (2000) and Hair et al. (1995) warn that analysts must be wary of multicollinearity. If variables are highly correlated, it is likely that only one of these variables will be included in the final solution. The researcher must be careful not to conclude that the excluded variable is inconsequential. Finally, the **combinatorial approach** includes all possible combinations of independent variables one at a time and identifies the best possible regression equation (Hair et al. 1995). One of these three approaches must be chosen in order to obtain the regression model. Whatever method is chosen, the researchers knowledge should have an input in determining the variables to be included (Field 2000; Hair et al. 1995). Otherwise, the regression results could have predictive accuracy without any managerial or theoretical implications. The chosen method for this research is discussed in chapter 4.

3.8.2.7 Examining Statistical Significance of the Model

Relationships between variables are tested for statistical significance in order to investigate whether the relationship can be generalised to the population (Tacq 1997). That is, is the result significant only for the sample i.e. a freak sample, or can it be generalised to the larger population. Chance variation or sampling error could cause differences among the samples (Hair et al. 1995). A test must be performed to see if the slope (or the intercept) estimate is significantly different from zero (Hair et al. 1995; Lewis-Beck 1993).

There are two significance tests; a test for the coefficient of determination (test of variation explained) and a test for the regression coefficient (Hair et al. 1995; Tacq 1997). In bivariate regression these tests coincide (Tacq 1997). In multiple regression on the other hand, testing must be carried out on the overall significance of the regression equation as well as on the specific partial regression coefficients (Malhotra 1996). The significance of the individual coefficients is tested by the t-statistic. The test for the coefficient of determination is the F-statistic. (See appendix S for more details on statistical testing).

3.8.2.8 Assumptions

Ensuring that the assumptions of regression analysis are met is necessary for two reasons; to check if results are representative of the sample obtained as well as to ensure that the best possible results have been obtained (Hair et al. 1995; Lewis-Beck

1993). Analysis of the residuals can help detect violation of the regression assumptions (Lewis-Beck 1993). The residual is the difference between the observed and predicted values for the dependent variable. The assumptions underlying multiple regression analysis apply to individual variables (dependent and independent) and to the relationship as a whole. Thus, the variables are first tested individually for violation of the assumptions and then the variate must be tested. The regression assumptions as cited by Hair et al. (1995) are discussed below and elaborated on in Appendix T.

1. The **linearity** of the phenomenon measured – linearity is naturally desirable as it is easy to calculate and interpret a linear pattern in the residuals.
2. The **constant variance** of the error terms (Homoscedasticity) – this assumption ensures that the dependent variable exhibits equal variance across the range of independent variables (Hair et al. 1995). Violation of this assumption (i.e. unequal variance) is referred to as heteroscedasticity.
3. The **independence of the error terms** – this assumption attempts to ensure that prediction errors are not correlated with each other.
4. The **normality** of the error term distribution – normality refers to the shape of the distribution curve for individual metric variables and whether they correspond with the normal distribution (Hair et al. 1995). If the variation from the normal distribution is sufficiently large all resulting statistical tests are invalid, as normality is required to use the F and t statistics.

3.8.2.9 Identifying Influential Observations

At this point, attention shifts from trying to find general patterns within the data, to finding observations that lie outside the general patterns or that strongly influence the regression results (Hair et al. 1995). Hair et al. continue that in moving from simple to multiple regression, the increased analytical power of the technique, requires additional diagnostics to deal with observations with substantial impact on the results. According to Hair et al. (1995) there are three basic types of observations; outliers, leverage points and influentials. These observations are considered in more detail in chapter four. These observations are not necessarily bad and do not have to be omitted. Influential observations can positively impact the data in the sense that they identify distinctive elements of the data set that may not otherwise have been

identified (Hair et al. 1995). Alternatively, the observation can negatively impact the results in a number of ways, including that the model does not fit the data as well, the R^2 is reduced and the standard error of the estimate for Y is inflated (Lewis-Beck 1993). These observations must be identified and their impact on the data determined.

3.8.2.10 Main Applications of Multiple Regression

Multiple regression has two main applications, prediction and explanation (Hair et al. 1995; Lewis-Beck 1993; Mason & Perreault 1991). These applications are not mutually exclusive and either or both types can be used for one research problem. **Prediction** is the fundamental purpose of multiple regression. The combination of independent variables is formed to predict the dependent variable (to predict Y for a given set of independent variables). **Explanation** on the other hand, involves drawing conclusions about the individual predictor variables (Mason & Perreault 1991). It is used to determine the relative importance of the independent in predicting the dependent variables (i.e. the effect on Y of a change in the value of a single independent variable). The beta coefficients (standardised regression coefficients) make it possible to determine the relative importance of the individual independent variables.

Multicollinearity is a potential problem associated with multiple regression analysis. Given that multicollinearity may likely occur in this research, it is discussed in the next section.

3.8.2.11 Multicollinearity in Multiple Regression

Collinearity is the association, measured as the correlation, between two independent variables (Hair et al. 1995). Two variables that are linearly dependent are called collinear. Multicollinearity, on the other hand, refers to the correlation among three or more independent variables (Hair et al. 1995). In theory, collinearity exists at two extremes; perfect collinearity (where the $R^2 = 1$) and no collinearity, where both variables offer separate explanation without overlap (Lewis-Beck 1993; Sabatelli & Cecil-Pigo 1985). In reality, data falls somewhere in between (Mason & Perreault 1991). In principal, the independent variables must not overlap, but often there is a strong association between the variables. Tacq (1997) continues that multicollinearity in multiple regression analysis is the rule rather than the exception. Some collinearity

is always present, so the researchers task is to determine the point at which it becomes problematic.

Collinearity has several **problematic consequences**; (1) parameter estimates may fluctuate dramatically and estimates may be unreliable; (2) parameter estimates may have the ‘wrong sign’ or signs that conflict with theory; (3) variables may have non-significant coefficients; and (4) relative importance of collinear variables may be difficult to determine (Hair et al. 1995; Lewis-Beck 1993; Mason & Perreault 1991; Sabatelli & Cecil-Pigo 1985).

The following are some solutions for **combating multicollinearity**.

Questionnaire structure: the first way of combating multicollinearity involves structuring the questionnaire so that items designed to measure a single construct are grouped together (Garbarino & Johnson 1999). The questionnaire in this research followed these guidelines.

Large sample: The most common means of avoiding multicollinearity is to increase the data by enlarging sample size (Lewis-Beck 1993; Mason & Perreault 1991). All things being equal, the bigger the sample size, the greater the chance of finding statistical significance (except for severe cases of multicollinearity) (Lewis-Beck 1993). But increasing sample size was not a practical option for this research.

Prediction only: While prediction is not affected by collinearity, interpretation is (Lewis-Beck 1993; Mason & Perreault 1991). Thus, the use of the equation may be restricted to prediction.

Omit variables: A final strategy is to get rid of the problematic variable(s) (Mason & Perreault 1991). Usually, it is enough to remove one of the variables.

Having discussed regression analysis and its appropriateness for analysing the conceptual model, the next section considers t-tests and ANOVA used to analyse the differences between the subgroups (objective 3).

3.8.3 T-tests & ANOVA

Objective three of this research aims to compare various sub-groups of the respondent population e.g. male Vs female, business Vs leisure. Techniques that can be used to assess the difference between group means for this research include the univariate

procedures of t-tests and ANOVA (analysis of variance) (Hair et al. 1998). In the social psychological literature Sabatelli & Cecil-Pigo (1985) evaluated the difference between males and females in terms of their level of commitment using t-tests. In this research both t-tests and ANOVA will be used.

3.8.3.1 T-tests

The t-test assesses whether the difference between two independent sample means is statistically significant (Hair et al. 1998). The t-test is used where there are two groups (e.g. two samples to compare) and one dependent variable. The groups are treated as independent variables (e.g. male Vs female) and are non-metric, while the dependent variable is metric e.g. commitment scale.

3.8.3.2 Analysis of Variance

ANOVA assesses whether the difference between two or more sample means are statistically significant. Thus, ANOVA handles situations with more than two groups (independent variables) and one dependent variable. Hair et al. (1998) state that it might be tempting to simply conduct a series of separate t-tests for the difference between each pair of means. However, this method has serious defects insofar as multiple t-tests inflate the overall Type I error, where type I error is the probability of rejecting the null hypothesis when it is actually true (Field 2000; Hair et al. 1998).

Having conducted ANOVA, and determined that there is a statistical difference between the groups, it is important to determine where the differences lie between the groups. Two methods exist for examining these differences – planned comparison and post hoc comparisons. Planned comparisons are one-tailed and are used where conceptual thinking can support the specific hypotheses to be made (Field 2000; Hair et al. 1998). They are never used in an exploratory manner. Post hoc tests, on the other hand, are two-tailed; they are used when no specific hypotheses exist and the direction of hypotheses is undecided (Field 2000; Hair et al. 1998). As mentioned in chapter 2, there is little research on differences between subgroups, thus this aspect of the current research is quite exploratory. Post hoc tests will be used so that the data can be explored for any group differences that exist.

Having considered the various types of analysis that will be used, the final section of this chapter considers the generalisability and limitation of the research.

3.9 GENERALISABILITY AND LIMITATIONS OF THE RESEARCH

Generalisability is considered in the following section and is followed by the limitation section.

3.9.1 Generalisability

Generalisability refers to the extent to which one can generalise from the observations at hand to the whole population (Malhotra 1996). The present study is limited to airline passengers flying from Dublin Airport. Generalising the results to other industries and countries may not be appropriate. Other researchers offer similar prudent advice in relation to their studies. Morgan & Hunt (1994) claim that their convenience sample of a single industry limits generalisability of their findings. In the defence of such studies, Morgan & Hunt continue that by limiting the study to a homogenous population, cross-industry variance is minimised which leads to stronger results.

Generalisability may also be limited by convenience samples (Bejou & Palmer 1998; Keaveney 1995). However, careful control procedures can provide samples that are quite representative (Tull & Hawkins 1990). Hence, for the purposes of this research, quota sampling was used so that the sample would reflect specific characteristics of population. Another factor that affects generalisability is sample size. Generalisability is influenced by the ratio of observations to the number of independent variables. As a general rule there should be five observations for each independent variable in the variate (Hair et al. 1995). Although 5 is the minimum, the desired level is 15 to 20 observations for each independent variable. Given that the highest number of independent variables for any of the regression equations in this research was 5, and the sample size was 243, the ratio was at least 48 ($243 \div 5$) for any equation. This ratio is well above the recommended 15-20 ratio.

Finally, it should be noted that the present study was not trying to generalise an established model to a new population or project a descriptive statistic from a sample to some larger population. It is hoped however, that the results would extend to other consumer service industries with similar characteristics (moderate involvement, moderately customised, retention is a high priority) but only further studies will confirm this.

3.9.2 Limitations

Limitations identify potential weaknesses of the study and show how the study is narrowed in scope (Creswell 1994). It is important to highlight limitations so that the full context of the study can be appreciated and comparisons made between studies. The following section lists some of the limitations of this study.

- (a) **Cross-sectional methodology:** The first limitation is the use of the cross-sectional methodology in this study. Using this methodology means that only a small amount of data can be collected, changes cannot be measured over time and the causal sequence of constructs cannot be captured (Bendapudi & Berry 1997; Ganesan 1994; Geyskens et al. 1998).
- (b) **Time of data collection:** Data was collected over three weeks in March 2001. The results of the study may have been different had the research been conducted at other times of the year e.g. busy airline holiday seasons such as Christmas and Summer time.
- (c) **Non-probability sampling:** although probability sampling ensures the sample is selected by chance, probability sampling could not be used in this study because of lack of available sampling frame.
- (d) **One side of dyad only:** As with many other studies (e.g. Geyskens et al. 1996; Kumar et al. 1995; 1998) this study considers only the consumer perspective and does not address the supplier's perspective i.e. the airlines.
- (e) **Single Industry:** Following on from the generalisability discussion, one of the limitations is the single service context of the study. Only one service industry (airline) was represented as opposed to representing several.
- (f) **Limited number of variables:** Although 11 variables were included in the model, they represent only a limited number of variables from a particular theoretical perspective. There are many more additional variables that could be included in a

consumer service commitment model e.g. communication, duration of relationship, service quality, loyalty.

- (g) **Global variables:** In general, the variables were global variables and were not specific to the airline industry. From an airline perspective, it may have been more useful if the measures related specifically to the airline i.e. if they were context specific.
- (h) **Model analysis:** as previously mentioned, a more suitable form of analysis for the complex conceptual model in this study, would have been structural equation modelling. Analysis was confined to multiple regression which is subject to assumptions and limitations that SEM is not.
- (i) **Only self-reports:** Only self-reports of customer behaviour were used to test hypotheses. According to Rusbult (1983) it is unclear what relation self-report has to actual behaviour. Respondent may not behave in the manner they say they do or will. Another problem with this method is recall bias (Malhotra 1996; Tax et al. 1998; Wetzels et al. 1998). Respondents may not be able to accurately recall past behaviour.

3.10 CONCLUSION

This chapter has described the lengthy and complex procedure involved in this research methodology. The overarching aim of the research was to test the conceptual model of commitment in the context of consumer services, more specifically the airline industry. The study was designed to be quantitative in nature and was carried out by means survey research, using personal interviews. The quantitative approach is often deemed to be the superior approach to research, however for the purposes of this study, the quantitative approach was chosen because it is adequate for testing the proposed model not because it is a superior method.

Summated rating scales were used to measure the main constructs in the model. The procedure for developing rating scales is quite complex and requires the assistance of experts in the area. It proved very difficult to locate an expert who would help guide the research process, however eventually assistance was received. There are many steps involved in scale design such as number of scale categories and neutral points,

but the most important is the actual items used to measure the constructs. As mentioned, there are few studies of commitment in consumer services and fewer still, of multidimensional commitment. It proved very difficult to find appropriate measures. It was particularly difficult to find measures of the calculative variables such as dependence and availability of alternatives, because these constructs are normally only associated with the channel literature. The problem of the lack of measures was confounded by the use in various studies of antecedent variables such as availability of alternatives as actual measures of dependence and calculative commitment.

The chapter thoroughly documented the sources of all the measures, how they were adapted or newly developed and the changes made to them based on purification procedures. The measures were tested after the pretest and again after the main study, for their reliability and validity. These tests involved testing the instrument for its face and construct validity, implementing an item-sort task, testing the internal reliability and conducting factor analysis to test for unidimensionality.

The sample for this research was made up of airline passengers at Dublin airport. The sampling technique used was that of non-probability sampling. Probability sampling was not an option because no sampling frame was available. However, the non-probability method (conducted by means of personal interviews) was more appropriate for this research given that the questionnaire was complex and lengthy and unlikely to have achieved a high response by mail. Also, the personal interview method allowed the researcher to ask specific questions of the respondents to see if they met the criteria set by the quotas. Such characteristics may not have been known with certainty for the population sample that was to be mailed. The quota sampling was used because it overcomes some of the problems of non-probability sampling such as potential unrepresentative composition of the sample.

Finally, the chapter considered the forms of analysis to be used in the research. As mentioned, factor analysis will be used to test unidimensionality of the constructs. Regression analysis will be used to test the hypothesised relationships of the model. Given that the conceptual model includes several hierarchical steps (examines causes of causes) a more appropriate form of analysis might be structural equation modelling.

However, SEM was deemed to be too complex at masters level and regression analysis was considered to be adequate. Finally, the respondent sub-groups will be analysed using t-tests and ANOVA.

The chapter concludes by discussing the generalisability and limitations of the research.

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CHAPTER FOUR

ANALYSIS & FINDINGS

4.1 INTRODUCTION

The following chapter presents the analysis and findings of the research. The initial part of the analysis deals with the data from the pretest, which was subjected to an internal consistency analysis and factor analysis. The internal consistency analysis consists of Cronbach Alpha coefficient and the item-analysis, both of which are designed to test the reliability of the measurement instrument. The factor analysis tests the unidimensionality of the scales and ensures the individual items load highly onto the appropriate scale. The aim of the above-mentioned analysis is to test the psychometric properties of the measurement instrument, in line with objective one of the research. Thereafter, the data from the main survey is also subjected to the same analysis as was conducted on the pretest data. It is necessary to re-analyse the measurement instrument given that some of the scales were modified after the pretest and also because the main survey data was collected from a different sample to the pretest data.

The second part of the analysis involves testing the conceptual model and the hypotheses relating to it, by means of multiple regression analysis. In accordance with the model, there are six regression equations to be tested. Each variable that has variables leading into it forms the basis for a separate regression equation, and there are six such equation in the model. The process for examining a regression equation is quite lengthy. As a result, one equation, namely the dependence equation is described in detail, while the other five are briefly discussed in this chapter and are fully discussed in the appendices. The procedure for examining a regression equation involves estimating the regression model, assessing the degree of multicollinearity, identifying influential observations, evaluating the assumptions and interpreting the regression variate. Each of these steps was conducted for all six regression equations.

The third and final part of the analysis concerns objective three of the research and involves comparing the subgroups within the respondent population. This is very

much an exploratory part of the research and as such, there are no formal hypotheses to be tested. The subgroups that are compared include amongst others, men Vs women, business Vs leisure and frequent flyer programme members Vs non-members. T-tests and ANOVA are used to determine whether these groups differ in terms of the variables in the conceptual model such as affective/ calculative commitment, satisfaction, intention to continue etc.

Having considered the analysis, the chapter then addresses the findings. The findings relating to the reliability and factor analysis of the measurement instrument were discussed in the methodology chapter. Thus, the findings in this chapter concern objective two (conceptual model) and objective three (subgroup comparisons) of the research. In relation to objective two, the findings are considered in terms of the six regression equations. Regression analysis provides support for thirteen of the seventeen hypothesised relationships. The section attempts to do a number of things including, reaffirm the hypotheses that are supported by relating them back to the theory, rationalise the hypotheses that are not supported, as well as address some of the problems that arose during the research such as multicollinearity and lack of empirical distinction between variables. Finally, the subgroup analysis reveals some interesting findings relating to differences between the groups, such as females being more affectively committed to their main airline than males. The findings section is complimented by an array of direct quotes from respondents taken from the informal interviews and the open-ended question on the questionnaire.

4.2 ANALYSIS OF PRETEST QUESTIONNAIRE DATA

The analysis that was carried out on the pilot survey data is discussed in the next section. Based on this analysis the measurement instrument was modified before being used in the main study, as discussed in chapter 3. The following section considers the correlation matrix, internal reliability analysis and factor analysis, all of which test the psychometric properties of the measurement instrument, in accordance with objective one of this study.

4.2.1 Correlation Analysis

The correlation matrix for the pretest data is displayed in table 4.1. The full description for each variable can be seen in table 4.2.

Table 4.1 **Pearson Correlations**

	AFFECT	TRUST	SATIS	FREED	ACOMMIT	VALUE	AVAIL	INVEST	DEPEND	CCOMMIT	INTENT
AFFECT	1.000										
TRUST	.739	1.000									
SATIS	.801	.776	1.000								
FREED	.364*	.562	.600	1.000							
ACOMMIT	.641	.651	.665	.447	1.000						
VALUE	.592	.612	.715	.606	.673	1.000					
AVAIL	-	-	-	-	-	-	1.000				
INVEST	.576	.527	.652	.565	.610	.670	-	1.000			
DEPEND	-	-	-	-	-	-	-.378*	.346*	1.000		
CCOMMIT	-	-	-	-	-	-	-.698	.380*	-	1.000	
INTENT	.418*	.516	.644	.640	.640	.717	-	.790	.435	.312*	1.000

All correlations are significant at $p < 0.01$ unless otherwise indicated (* $p < 0.05$)
Where $p > 0.05$ the correlation values have not been included

Correlation can be used to provide preliminary support for the hypotheses (Morgan & Hunt 1994). According to the correlation matrix in table 4.1, support is provided for only ten out of the seventeen hypotheses (See Research Methodology Appendix A for hypotheses). The following are the hypotheses that are not confirmed: H6, H7, H8, H10, H11, H12, H13. The fact that seven hypotheses are not confirmed is not of great cause for concern at the pilot study stage. With so many of the hypotheses not supported, it might suggest that it is inadequate measurement more so than the theory that is called into question. A glance at the correlation matrix shows that three variables in particular are raising cause for concern; dependence, availability and calculative commitment. These three variables are not significantly correlated with many of the other variables, and indeed all seven hypotheses that are not supported relate to these three variables. As will become apparent during the following analyses of pilot study data, these three variables were not being adequately measured, in terms of validity and reliability.

4.2.2 Internal Consistency Analysis

As mentioned in chapter three, there are various ways of calculating internal consistency reliability, two of which include the Cronbach Alpha Coefficient and item analysis (Mowday et al. 1979; Spector 1994). The **Cronbach Alpha** reliability scores are displayed in table 4.2, while the full reliability analysis output (including item-analysis) can be seen in Appendix A.

Table 4.2 Variable Description & Cronbach Alpha Coefficient Results

Variable Name	Variable Description	Cronbach Alpha
Affect	Affect	0.93
Trust	Trust	0.92
Satis	Satisfaction	0.78
ACommit	Affective Commitment	0.77
Freed	Freedom to Choose (Volition)	0.84
Value	Value	0.95
Avail	Availability of Quality Alternatives	0.42
Invest	Size of Investment	0.90
Depend	Dependence	0.37
CCommit	Calculative Commitment	0.76
Intent	Intention to Continue	0.93

All scales bar two (dependence and availability) reach the minimum accepted threshold of 0.70 (Nunnally in Spector 1994). The scales Affect, Trust, Value, Investment, and Intention all had alpha coefficients of above 0.90, which is well above the threshold meaning these scales demonstrate very good reliability. Freedom also showed good reliability with an alpha of 0.84.

Analysis will initially deal with these six variables (i.e. Affect, Trust, Value, Investment, Intention and Freedom) and then consider the others. The '**alpha if item deleted**' column (see Appendix A) indicates the value of the **coefficient alpha** if an item is deleted; an improvement is demonstrated if the alpha increases after deletion of the item. The researcher set a criterion for this column, whereby items that caused an improvement of 0.05 in the alpha upon their deletion, would be considered for removal. Deletion of items from any of the above-listed variables would not increase the alpha by 0.05. Thus, based on the coefficient alpha, no adjustments needed to be made to the scales of these six variables.

The second part of the internal consistency considers the **item-analysis**. As mentioned in chapter 3, item analysis represents the correlation of each item of the scale with the sum of the remaining items minus that item (Mowday et al. 1979). The item-analysis is represented by the column 'item-total correlation' in Appendix A. Items with the highest item-remainder coefficients are those that are retained. For the purposes of this research, a criterion was set whereby only those items that were above 0.50 would be retained in the scale. This is quite a conservative level, given that a value of 0.25 was used by Kelley & Davis (1994) and 0.40 by Pritchard et al. (1999). For the scales

of the six variables under consideration, all items are well above the threshold limit of 0.50, apart from one item for trust (item 6), which has an item-total correlation of 0.46. It was decided that this item would not be deleted, given that its deletion would not substantially increase the scales reliability (upon deletion the alpha would only increase from .9155 to .9265). If the item continued to cause problems after the main survey, it could still be deleted then. No items were removed from these six variables, based on the item-analysis.

The next three variables considered are, Satisfaction, Affective and Calculative commitment. All three had reasonably high alphas, with the lowest being 0.76 (Ccommit), however they do not meet the more desirable 0.80 level. In terms of Satisfaction, according to the criteria set for the alpha and item-analysis by the researcher, item 3 should be deleted. Similarly, two items of the Affective commitment scale, namely item 3 and item 5, did not meet the specified criteria. The alpha coefficient for the five items of the Acommit scale was .77, while the alpha with items 3 and 5 removed, increased to .85 (an improvement of 0.08). Item-to-total correlation for items 3 and 5 was 0.45 and 0.38 respectively, meaning both are lower than the criterion of 0.50. Thus, these items were considered for deletion. In relation to Calculative commitment, item 5 appeared to be problematic. The reliability measured by the coefficient alpha, improved by 0.034 when item 5 was deleted. Although 0.034 did not exceed the threshold of 0.05, the item-to-total correlation for the item was quite low at 0.31. Hence, this item was also a possible item for deletion.

Finally, the last two variables, Dependence and Availability were proving much more problematic than the other variables. As mentioned, dependence was measured by two different measures; a two-item measure and a percentage of purchase measure. The measure consisting of two items demonstrated very low reliability with a coefficient alpha of 0.36. The 'alpha if item deleted' was not available given that there are only two items. The item-to-total correlation for each item was very low at 0.22, which is well below the threshold of 0.50. While an alpha coefficient for the two item-measure is appropriate, it cannot be calculated for the percentage of purchase (PerPur) measure. In order to assess the reliability of the PerPur measure, the theory of SEM was applied. Hair et al. (1995) state that reliability in SEM is demonstrated by a set of latent construct indicators that are consistent in their measurement. Thus, indicators of

highly reliable constructs are highly intercorrelated, meaning that they all measure the same latent construct. Therefore, in order to measure the consistency of the two dependence measures (i.e. indicators), the two measures were correlated. The correlation between PerPur and Dependence measure was very low at 0.124 and also importantly, was not significant at the 0.05 level. The low correlation suggests low reliability, and also that the two measures are not measuring the same thing.

In terms of the variable Availability, the coefficient alpha for the four-item scale was only 0.418, however, it increased to 0.835 when items 3 and 4 were removed. The improvement of 0.417 is much higher than the specified criterion of 0.05. The item-to-total correlations for items 3 and 4 was 0.26 and -0.08 respectively, which are quite low and well below the 0.50 criterion. Surprisingly, item 4, a positively worded item, had a negative item-total correlation. Spector (1994) forwards two explanations for negative item-total correlations that seem reasonable in the context of this study. Firstly, the item may have initially seemed reasonable but in fact is quite ambiguous. This is quite true for both items 3 and 4. They seemed quite clear but after conducting the pretest appeared to be quite problematic. Secondly, the item might be inappropriate for chosen respondents. While the item may have been appropriate for customers of the banking industry (as creators of the scale Jones et al. 2000 originally intended) it does not appear to suit the customers of airlines at Dublin airport. Thus, items 3 and 4 were candidates for deletion.

4.2.3 Factor Analysis

As mentioned in chapter 3, factor analysis is being used for validation purposes to test the unidimensionality of the scales i.e. determine if several items of a scale form a single factor. In order to test the unidimensionality of a scale, items from at least one other scale must be included. It is not appropriate to carry out factor analysis on only items that form the factor. Bryman & Cramer (1999) state that doing so means that the analysis is only examining the way in which the scalar items are grouped together i.e. the factor structure of the scale itself is being analysed. Thus, each of the variables (scale consisting of items) in the model was factor analysed along with one other variable.

Only two variables at a time were factor analysed, because of the small sample size. The sample size of 29 respondents for the pilot survey would not ensure that the criterion of 5 to 10 respondents per item was met. Field (2000) states that large, reliable samples are needed if the main purpose is to find out what factors underlie a group of variables (i.e. data reduction). However as mentioned, data reduction is not the aim of this research. Given the small sample size, the results were interpreted with caution as is recommended by Hair et al. (1995). Furthermore, in relation to the sets of variables that were factor analysed, Field (2000) states that variables must correlate well but not perfectly. Thus, only those variables that were highly correlated were included together.

The following section shows the procedure used to conduct the factor analysis for affect and satisfaction. Thereafter, a synopsis of the results for the rest of the scales is given.

4.2.3.1 Affect - Satisfaction Factor Analysis

The first two scales considered in the factor analysis are affect and satisfaction (correlation .801, $p < 0.01$). Before carrying out factor analysis the degree of intercorrelations among the items must be examined through several available tests (Chenet 1996). These tests ensure that there is sufficient correlation to justify factor analysis. The Bartlett's test of sphericity assesses the overall significance of the correlation matrix (Hair et al. 1995). For the affect - satisfaction factor analysis, the Bartlett test indicates that the overall correlations are significant at the 0.001 level, meaning that FA is appropriate.

Bartlett test of Sphericity: 190.340 (significance = .000) Kaiser-Meyer-Olkin (KMO): 0.838

Another overall test to quantify the degree of intercorrelations is the Kaiser-Meyer-Olkin (KMO), which is a measure of sampling adequacy (Hair et al. 1998). Values between 0.5 – 0.7 are mediocre; 0.7 – 0.8 are good; 0.8 – 0.9 are great and values above 0.9 are superb (Hutcheson et al. in Field 2000). For these results the value is 0.83, also indicating that factor analysis is appropriate.

The anti-image correlation test provides a measure of sampling adequacy for each item along the diagonal (Field 2000). The KMO values for individual items are produced on the diagonal of the anti-image correlation matrix and should be greater than 0.5 if the sample is adequate for a given pair of items. Table 4.3, shows that all the values are greater than 0.5.

Table 4.3 Anti-image Correlation Matrix

	AFFECT1	AFFECT2	AFFECT3	AFFECT4	SATIS1	SATIS2	SATIS3	SATIS4	SATIS5
AFFECT1	.842	-.417	-.313	-.397	7.148E-02	-.252	-.387	-.264	.103
AFFECT2	-.417	.883	-5.981E-02	-.266	-.108	-1.983E-02	.249	.263	-.165
AFFECT3	-.313	-5.981E-02	.919	-.101	.171	-5.569E-02	-.141	-.315	7.887E-02
AFFECT4	-.397	-.266	-.101	.928	-1.856E-02	5.751E-03	-1.789E-02	7.056E-02	-.180
SATIS1	7.148E-02	-.108	.171	-1.856E-02	.817	-.494	2.568E-02	-.241	-3.919E-02
SATIS2	-.252	-1.983E-02	-5.569E-02	5.751E-03	-.494	.798	.288	.309	-.286
SATIS3	-.387	.249	-.141	-1.789E-02	2.568E-02	.288	.635	.328	-.261
SATIS4	-.264	.263	-.315	7.056E-02	-.241	.309	.328	.735	-.650
SATIS5	.103	-.165	7.887E-02	-.180	-3.919E-02	-.286	-.261	-.650	.834

Bolded figures = Measures of Sampling Adequacy (MSA) for individual items

These measures indicate that the items are appropriate for factor analysis. The next step is to derive the factors and assess their overall fit. As discussed in chapter 3, the extraction method used was principal component analysis and the rotation method was varimax with Kaiser normalization. Table 4.4, contains the final rotated solution. The eigenvalue, shown at the bottom of the table, assesses the importance of each component as well as assisting in selecting the number of factors to be retained. Factor retention was decided by the latent root criterion, whereby all factors with an eigenvalue greater than one are retained.

Table 4.4 Rotated Component Matrix

	Component		Communality
	1	2	
AFFECT1	<u>.824</u>	.477	.905
AFFECT2	<u>.639</u>	.566	.729
AFFECT3	<u>.816</u>	.345	.784
AFFECT4	<u>.763</u>	.496	.829
SATIS1	2.465E-02	<u>.868</u>	.754
SATIS2	.229	<u>.828</u>	.738
SATIS3	<u>.803</u>	-.265	.714
SATIS4	.536	<u>.563</u>	.605
SATIS5	.599	<u>.635</u>	.761
Eigenvalue	3.678	3.142	
% of variance	40.867	34.915	Total 75.781

The two factors represent 75.78% of the variance of the nine items. Component (or factor) 1 accounts for 40.86% and factor 2 accounts for 34.91% of the variance. All communalities are large indicating that a large amount of the variance in an item has

been extracted by the factor solution. In terms of factor loadings, the four affect items load onto one factor (factor 1) as expected. However, only four of the five satisfaction items load onto the second factor. As with the reliability and item-analysis, item three is inconsistent with the other four items.

This factor analysis procedure was then carried out for all the other variables. The full analysis results can be seen in appendix B, while a synopsis is included here. The **trust-affect factor analysis** indicated that item 6 of trust was not loading on the trust scale. This result concurs with the reliability and item-analysis, where items 6 lowered the internal consistency of the scale. The **affective commitment-satisfaction factor analysis** showed that items 3 and 5 from the affective commitment scale were forming a factor separate to the other items. This result is consistent with the internal consistency analysis, which showed that the two items lowered the coefficient alpha and item-total correlation. The **freedom to choose-intention to continue factor analysis** and also the **value-size of investment analysis** indicated that all items loaded onto the appropriate factors. As expected, the dependence-size of investment factor analysis showed that the two-item dependence measure, was not adequately measuring this construct. Finally, the **calculative commitment-quality of available alternatives factor analysis** showed that items 3 and 4 in the Availability scale form a separate factor to items 1 and 2. This result is consistent with the reliability analysis, whereby the inclusion of items 3 and 4 in the Availability scale resulted in a lowering of the alpha and item-total correlations. In terms of calculative commitment, item 5 is not loading on the calculative scale. This result also backs up the results of the internal consistency analysis where item 5 was causing problems.

The refinements and modifications of the measurement instrument that were made based on the results of the pilot test are discussed at length in chapter 3, section 3.4.1.4, and need not be further discussed here. For a comparison of the initial and the final measurement instrument see Research Methodology (Chapter 3), Appendix H.

4.3 ANALYSIS OF RELIABILITY AND VALIDITY OF MAIN SURVEY

The following section considers the psychometric tests carried out on the data from the main survey. It was necessary to evaluate the measurement instrument for a second time because some of the scales were adjusted after the pretest, which requires the reliability and validity of the scales to be rechecked. The scales that were not adjusted after the pretest were also re-evaluated, as Spector (1994) states that it is necessary to do so each time that the instrument is tested on a different sample. This section firstly examines the correlation matrix and some descriptives, and then discusses the internal consistency and factor analysis.

4.3.1 Correlation Analysis

The correlation matrix is displayed in table 4.5, along with scale descriptives (mean and standard deviation (SD)). According to Bettencourt (1997) the pairwise correlations among the variables provides preliminary support for hypotheses. The correlations provide support for fifteen of the seventeen hypotheses. The two that are not supported are satisfaction-calculative commitment and trust-calculative commitment. In both cases a negative relationship was postulated but the correlation analysis shows the relationships to be positive. With support for fifteen hypotheses, there has been an improvement on the pilot study scales where only ten out of seventeen hypotheses were supported. It is most likely that modification of the scales after the pilot study resulted in the improvement.

Table 4.5 Mean, Standard Deviation, final Alphas and Correlations

	Mean	SD	Pearson Correlation Matrix												
AFFECT	5.48	1.11	.9199												
TRUST	5.13	1.11	.779	.9087											
SATIS	5.26	1.17	.708	.756	.9114										
FREED	4.28	1.35	.243	.318	.320	.8480									
ACOMMIT	5.22	1.88	.575	.666	.685	.485	.9034								
VALUE	5.17	1.21	.326	.389	.449	.489	.488	.9277							
AVAIL	4.63	1.47	-	-	-	-	.110*	.158*	.7935						
INVEST	4.05	1.67	.217	.350	.324	.426	.507	.482	-.266	.9165					
DEPEND	4.63	1.45	.249	.312	.335	.211	.398	.224	-.420	.594	.8557				
CCOMMIT	4.20	1.42	.152*	.234	.235	.148*	.266	.202	-.469	.611	.799	.8636			
INTENT	4.96	1.47	.334	.431	.468	.449	.624	.577	-.175	.691	.552	.482	.941		

Means and standard deviations are computed based upon mean responses on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). Coefficient Alphas are highlighted along the diagonal
All correlations are significant at $p < 0.001$ unless otherwise indicated (* $p < 0.05$). Where $p > 0.05$ the correlation values have not been included

4.3.2 Internal Consistency Reliability

Internal consistency was established using the same methods as were used for the pretest, i.e. Cronbach Alpha Coefficient and item analysis. The final Cronbach Alpha scores are displayed in table 4.5 along the diagonal, while the full reliability analysis output (including item-analysis) can be seen in Appendix C. All scales have high reliability (above 0.8) except for the quality of available alternatives scale, however all scales reach the accepted threshold of 0.70 (Carman in Chenet 1996). The criteria that were used for considering items for deletion in the pretest, were also used for the main study. Thus, in terms of 'alpha if item deleted' criterion, only items that caused an improvement of ≥ 0.05 in the alpha upon their deletion, were considered for removal. Only one scale caused an improvement of the ≥ 0.05 and that was the Availability scale. By deleting item 2 from this scale the alpha improved from 0.4800 to 0.7935. Thus, this item was deleted and the alpha of 0.7935 is that which is reported in table 4.5.

The second part of the internal consistency analysis considers the **item-analysis**. Again the criterion used was the same as the pretest, whereby only those items that were above 0.50 would be retained in the scale. According to this criterion, items from three scales did not meet the required 0.50 level. The item-total correlation for the items in these three scales were as follows:

Acommit	item 2 = .4432
Value	item 3 = .4544
Avail	item 2 = .2942.

It has already been established that deletion of item 2 from the Availability scale would increase the Alpha substantially. Deletion of item 3 from the Value scale resulted in an increase of .0328 in the alpha, while deletion of item 2 from Affective commitment resulted in an increase of 0.0194. Thus, deletion of the item from either the value or the Acommit scale does not result in an improvement of ≥ 0.05 . In sum, based on the internal consistency analysis, only item 2 from the availability scale should be considered for deletion.

Lastly, the reliability of Dependence was considered. Dependence was measured by two different measures; a three-item measure and a percentage of purchase (Perpur)

measure. The alpha for the three-item measure was adequate (0.85). As mentioned in section 4.2.2 the reliability of the Perpur measure was assessed by correlating it with the three-item measure. The results were similar to the pilot test results; the correlation was very low at 0.03 and also importantly, was not significant at the 0.05 level. The low correlation suggests low reliability, and also that the two measures are not measuring the same thing. Thus, the Perpur measure was not used, instead only the three-item measure was considered in the analysis.

4.3.3 Factor Analysis

Factor analysis was again used to test the unidimensionality of the scales. In terms of sample size and the case-per-item ratio, the researcher ensured that at a minimum the five participants-per-item rule was met and where possible, the ten participants-per-item rule was met. The factor analysis first considers the affective variables, then the calculative variables and then the outcome variable, intention to continue.

4.3.3.1 Affective Variables Factor Analysis

The affective variables are examined first. The degree of intercorrelations among the items must be examined through the various tests. The Bartlett test of Sphericity for the affective data indicates that the overall correlations are significant at the 0.001 level. Another test to quantify the degree of intercorrelations is the Kaiser-Meyer-Olkin (KMO), the measure of sampling adequacy. The value of 0.935 is 'superb' according to Hutcheson (Field 2000).

Bartlett test of Sphericity: 4638.53 (significance = .000)
Kaiser-Meyer-Olkin (KMO): 0.935

The anti-image correlation test provides a measure of sampling adequacy for each item along the diagonal. The KMO values for individual items produced on the diagonal of the anti-image correlation matrix (not displayed) are all above 0.8, which is well above the 0.5 cut-off point. The results of these measures verify that factor analysis can be successfully carried out on the data.

The next step is to derive the factors and assess their overall fit. The method of extraction and rotation were the same as those used in the pretest i.e. principal

component analysis with varimax rotation. In order to derive the factors, the researcher specified that five factors be extracted, as opposed to selecting all eigenvalues greater than one (latent root criterion). Had the latent root criterion been applied, only four factors would have been extracted. This can be demonstrated by examining table 4.6.

Table 4.6 **Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.869	51.604	51.604	11.869	51.604	51.604	4.319	18.780	18.780
2	2.138	9.297	60.901	2.138	9.297	60.901	3.703	16.099	34.879
3	1.272	5.531	66.432	1.272	5.531	66.432	3.674	15.972	50.851
4	1.082	4.706	71.138	1.082	4.706	71.138	2.871	12.485	63.336
5	0.906	3.939	75.077	0.906	3.939	75.077	2.701	11.741	75.077

Under the 'initial eigenvalue' column it can be seen that the fifth component (i.e. factor) is only 0.906. The latent root criterion of 1.0 would preclude the inclusion of the fifth component. However, Hair et al. (1995) state that if an eigenvalue is quite close to one, then it might be considered for inclusion. The eigenvalue of 0.906 is close to one, hence this component was included.

Table 4.7 contains the final rotated solution. Five factors are confirmed as expected. The five factors represent 75.07% of the variance of the 23 items. The communalities (see last column) show the amount of variance in an item that is accounted for by the five factors taken together (Hair et al. 1995). The size of the communality indicates the variance in a particular item is accounted for by the factor solution. All communalities in table 4.7 are fairly large indicating that a large amount of the variance in each item has been extracted by the factor solution. All items load onto the expected scale, apart from item 2 (ACOMMIT2) of the affective commitment scale. ACOMMIT2 loads highest onto the freedom to choose scale. This item was also isolated by the item-analysis mentioned above, as not meeting the cut-off criterion.

The affective commitment scale was further factor analysed with other scales in order to further examine ACOMMIT2. The scales chosen were those with which affective commitment was highly correlated i.e. trust (correlation = 0.666, $p < 0.01$) and affect (correlation = 0.575, $p < 0.01$). The results are displayed in Appendix D. Both factor analysis outputs show that item 2 loads more highly on affective commitment than on

either trust or affect. Thus, item 2 was retained as an item in the Affective commitment scale.

Table 4.7 Rotated Component Matrix

	Component					Communality
	1	2	3	4	5	
AFFECT1	.291	.794	.298	9.298E-02	.164	.839
AFFECT2	.280	.832	.286	.113	.145	.886
AFFECT3	.463	.638	.220	9.768E-02	.205	.721
AFFECT4	.310	.784	.262	.131	.191	.833
TRUST1	.726	.284	8.987E-02	.143	.121	.651
TRUST2	.631	.370	.256	.106	.153	.635
TRUST3	.626	1.658E-02	.366	.234	.159	.606
TRUST4	.752	.333	.272	9.660E-02	.162	.786
TRUST5	.613	.451	.163	.151	.312	.726
TRUST6	.535	.398	.388	4.625E-02	.208	.641
TRUST7	.698	.316	.329	.137	.269	.787
SATIS1	.326	.310	.644	5.590E-02	.273	.694
SATIS2	.171	.194	.771	.110	.302	.764
SATIS3	.225	.329	.779	.193	9.809E-02	.813
SATIS4	.346	.281	.628	.226	.213	.690
SATIS5	.432	.300	.672	.240	.187	.821
ACOMMIT1	.234	.258	.270	7.411E-02	.762	.780
ACOMMIT2	.143	9.224E-02	.334	.642	8.740E-02	.560
ACOMMIT3	.162	.177	.177	7.309E-02	.879	.867
ACOMMIT4	.236	.118	.263	.514	.558	.715
ACOMMIT5	.375	.134	.259	.406	.616	.770
FREED1	6.476E-02	4.288E-02	2.311E-02	.905	8.084E-02	.831
FREED2	.137	.130	7.059E-02	.898	6.644E-02	.851
Eigenvalue	4.319	3.703	3.674	2.871	2.701	
% of Variance	18.780	16.099	15.972	12.485	11.741	75.077

4.3.3.2 Calculative Variables Factor Analysis

The next section considers factor analysis of the calculative variables. The overall correlations for the calculative data are significant at the 0.001 level according to the Bartlett test. The KMO (overall measure of sampling adequacy), with a value of 0.9, is 'superb'. Finally, the items along the diagonal of the anti-image correlation (not displayed) are greater than 0.5 (the lowest being 0.795), indicating the sample is adequate for factor analysis.

Bartlett test of Sphericity: 3278.72 (significance = .000)
Kaiser-Meyer-Olkin (KMO): 0.900

As with the analysis for the affective variables, the researcher specified that five factors be extracted. In table 4.8, the initial eigenvalues are highlighted. If the latent root criterion had been used, factor 4 and 5 would not have been included. Factor 4,

with a value of 0.980, is very close to one and thus can be considered for inclusion. The value of factor 5 is less eligible for inclusion with a value of 0.866. This factor is discussed in more detail below.

Table 4.8 **Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.633	40.171	40.171	7.633	40.171	40.171	4.960	26.105	26.105
2	3.637	19.144	59.316	3.637	19.144	59.316	3.634	19.128	45.232
3	1.198	6.304	65.619	1.198	6.304	65.619	2.796	14.716	59.949
4	.980	5.158	70.777	.980	5.158	70.777	1.883	9.910	69.859
5	.866	4.555	75.333	.866	4.555	75.333	1.040	5.474	75.333

Table 4.9, contains the final rotated solution. Surprisingly, only four (as opposed to five) factors are confirmed and they account for 69.85% of the variance of the 19 items. Factor one consists of items from two scales, i.e. the items of dependence and calculative commitment constitute only one factor. Further factor analysis was carried out on these two scales alone. The initial eigenvalues (see Appendix D) shows that the second factor only has an eigenvalue of 0.664. This low value, relative to the latent root criterion of one, may preclude the inclusion of each variable as a separate factor. Furthermore, the coefficient alpha for the items combined is 0.9145. This is an improvement of approximately 0.05 on the alphas for both dependence and calculative commitment. However, while it may make statistical sense to combine both scales, it does not make theoretical sense. Thus, the items were treated as separate constructs throughout the analysis, and the implications of treating the two constructs as a single factor are considered in the results section.

The second factor considered is that of value scale (see table 4.9). All of the value items, except for VALUE3, load highly on this factor. VALUE3 has quite a low loading (0.383) on the factor. This item was also responsible for lowering the internal consistency of the scale, as mentioned in section 4.2.2. Although the item did not exceed the cut-off points of the criteria set for the coefficient alpha and the item-total correlation, it did nonetheless result in a lowering of both these reliability values. As can be seen, the VALUE3 item does not load highly on any of the factors. Also, this item has the lowest communality of all the items (0.476). This lower communality indicates that a substantial portion of the variance in this item is unaccounted for by the factors. The troublesome item referred to schedule convenience while the other

four referred to value for money and price paid. Thus, the third item may represent a separate dimension to the other factors. The researcher decided to remove this item, with the result that the alpha increased from 0.8949 to 0.9277 as reported in table 4.5.

Factor 3 is quite straightforward, with all three Investment items loading highly on this scale. Factor 4 represents Availability, with two of the three Availability items loading highly onto this factor. This result is consistent with the reliability and item-analysis, whereby item 2 lowered the internal consistency of the scale and was consequently removed from the scale.

Factor 5 only has one item loading highly on it. This factor would not have been included under the latent root criterion because its eigenvalue is only 0.86, as discussed in section 4.3.3.1 above, and does not reach the cut-off of one. However, factor 5 is of little use anyway, because it only contains one item, namely AVAIL2, the item that does not load highly on the Availability scale.

Table 4.9 **Rotated Component Matrix**

	Component					Communality
	1	2	3	4	5	
AVAIL1	-.244	.174	-.160	.811	7.520E-02	.779
AVAIL2	-.121	8.147E-02	-5.845E-02	.168	.942	.940
AVAIL3	-.283	6.732E-02	-5.725E-02	.835	.135	.803
CCOMMIT1	.571	.256	.388	-.243	-.119	.616
CCOMMIT2	.783	-4.679E-03	.127	1.301E-02	.115	.642
CCOMMIT3	.741	.169	.363	-5.431E-02	6.379E-03	.712
CCOMMIT4	.774	-5.377E-02	.211	-.169	-3.422E-02	.677
CCOMMIT5	.699	-3.071E-02	.124	-.412	-7.800E-02	.681
DEPEND1	.749	.173	7.002E-02	-8.166E-02	-.170	.631
DEPEND2	.746	.143	.238	-.162	-.107	.671
DEPEND3	.791	5.640E-02	.294	-.197	-8.824E-02	.762
VALUE1	6.911E-03	.923	9.964E-02	2.036E-02	6.033E-02	.866
VALUE2	2.381E-02	.922	.100	2.929E-02	3.187E-02	.863
VALUE3	.338	.383	.330	.289	-.149	.476
VALUE4	.109	.902	.229	8.086E-02	7.377E-02	.890
VALUE5	.176	.740	.365	.184	-8.636E-02	.753
INVEST1	.315	.362	.733	-.119	-7.922E-02	.788
INVEST2	.331	.197	.866	-6.411E-02	6.962E-03	.902
INVEST3	.346	.245	.810	-.150	-2.941E-02	.860
Eigenvalue	4.960	3.634	2.796	1.883	1.040	
% of Variance	26.105	19.128	14.716	9.910	5.474	75.333
Cumulative %	26.105	45.232	59.949	69.859	75.333	

4.3.3.3 Outcome Variable – Factor Analysis

The third section of the factor analysis deals with the consequence variable of the conceptual commitment framework i.e. the relationship between affective and

calculative commitment, and intention to continue. In terms of the test of intercorrelations, the Bartlett test indicates that the overall correlations are significant at the 0.001 level, meaning that FA is appropriate.

Bartlett test of Sphericity: 1840.02 (significance = .000)
Kaiser-Meyer-Olkin (KMO): 0.839

The Kaiser-Meyer-Olkin (KMO), a measure of sampling adequacy, displays a substantially high value of 0.839. The KMO values for individual items, that are produced on the diagonal of the anti-image correlation matrix (not displayed), are all greater than 0.5 (lowest value = .782). Thus, all tests signify that the intercorrelations are sufficient for factor analysis to be carried out.

In order to extract the factors, the researcher specified that three factors be extracted, as apposed to using the Latent root criterion, which extracts factors with an eigenvalue greater than one. In table 4.10, the initial eigenvalues are highlighted. As can be seen, factor 3 would not have been included under the Latent root criterion. However, as discussed previously, the value of 0.93 is high enough to be considered for inclusion.

Table 4.10**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.233	43.612	43.612	5.233	43.612	43.612	3.459	28.823	28.823
2	2.434	20.284	63.896	2.434	20.284	63.896	2.720	22.666	51.489
3	.930	7.747	71.643	.930	7.747	71.643	2.418	20.154	71.643

Table 4.11, contains the final rotated solution. As expected, three factors are presented. These three factors account for 71.64% of the variance in the 12 items. All items load on the expected factors, apart from ACOMMIT2, which loads higher on factor 3, the Intention to Continue scale. However, as discussed in section 4.3.3.1, this item is not being removed from the Affective commitment scale.

Table 4.11 Rotated Component Matrix

	Component			Communality
	1	2	3	
INTENT1	.379	.430	.604	.694
INTENT2	.414	.492	.547	.712
CCOMMIT1	.706	.137	.362	.648
CCOMMIT2	.791	1.632E-03	1.130E-02	.626
CCOMMIT3	.816	9.531E-02	.250	.737
CCOMMIT4	.829	.156	1.012E-02	.712
CCOMMIT5	.784	1.833E-02	3.854E-02	.617
ACOMMIT1	.135	.874	.173	.813
ACOMMIT2	.150	2.661E-02	.837	.724
ACOMMIT3	5.478E-02	.911	.129	.849
ACOMMIT4	-7.958E-02	.683	.489	.711
ACOMMIT5	4.509E-02	.638	.587	.754
Eigenvalue	3.459	2.720	2.418	
% of Variance	28.823	22.666	20.154	71.643

From the above analysis it is evident that the validity and reliability of the measurement instrument has improved greatly as a result of the modification of the initial measurement instrument. Furthermore, based on the above analysis only two of the scales from the main survey need to be modified i.e. an item had to be removed from the Availability and Value scale, which resulted in high coefficient alphas for all scales.

4.4 MULTIPLE REGRESSION ANALYSIS

This section involves the analysis of the conceptual model by means of simple and multiple regression analysis. Before discussing the regression analysis, the assumptions of multivariate analysis of the individual variables are considered.

4.4.1 Assumptions

As discussed in chapter 3 (section 3.8.2.7), the individual variables must be tested for the assumptions of multivariate analysis. The assumptions that must be considered for the individual variables include normality, homoscedasticity and linearity.

Normality: Normality is one of the most fundamental assumptions in multivariate analysis. For a **graphical test** of normality the simplest check is a visual inspection of the histogram (Hair et al. 1998). Two characteristics reflecting the shape of the distribution are the kurtosis and skewness. Kurtosis refers to the 'peakedness' or

'flatness' compared with the normal distribution (Hair et al. 1998). Positive values of kurtosis indicate a pointy distribution while negative values indicate a flat distribution (Field 2000). Skewness refers to a pile-up of scores to the left or right of the distribution. Positive values of skewness indicate a pile-up to the left and negative values, a pile-up to the right (Field 2000). The values of skewness and kurtosis should be zero in a normal distribution.

For a **statistical test** of normality, the Kolmogorov-Smirnov test is often used (Field 2000; Hair et al. 1998). If the test is non-significant ($p>0.05$) then the distribution of the sample is not statistically different from a normal sample (i.e. it is probably normal).

The skewness and kurtosis values are displayed in table 4.12. An inspection of these values reveals that very few are close to zero as is required for a normal distribution. Furthermore, the Kolmogorov-Smirnov statistic reveals that only two variables are normal, i.e. only the values for affective and calculative commitment are non-significant ($p>0.05$). All the other variables display a significant departure from normality, ($p<0.05$) i.e. they are not normal.

Table 4.12 Tests of Normality

	Skewness	Kurtosis	Kolmogorov-Smirnov
Affect	-.635	.518	.000
Satisfaction	-.510	-.353	.000
Freedom to Choose	-.933	-.363	.000
Trust	-.326	-.443	.000
Affective Commitment	-.028	-.516	.084
Value	-.307	-.608	.000
Size of Investment	-.102	-.847	.000
Availability of Alternatives	-.533	-.229	.000
Dependence	-.453	-.097	.000
Calculative commitment	-.098	-.695	.069
Intention to Continue	-.667	.285	.000

A histogram for one normal (i.e. affective commitment) and one non-normal variable (i.e. size of investment) is displayed in Figures 4.1 and 4.2. While the distribution for affective commitment approximates the normal bell-shaped curve, the distribution for intention to continue is quite peaked, reflecting the positive kurtosis value, and skewed to the right reflecting the negative skewness value.

Figure 4.1

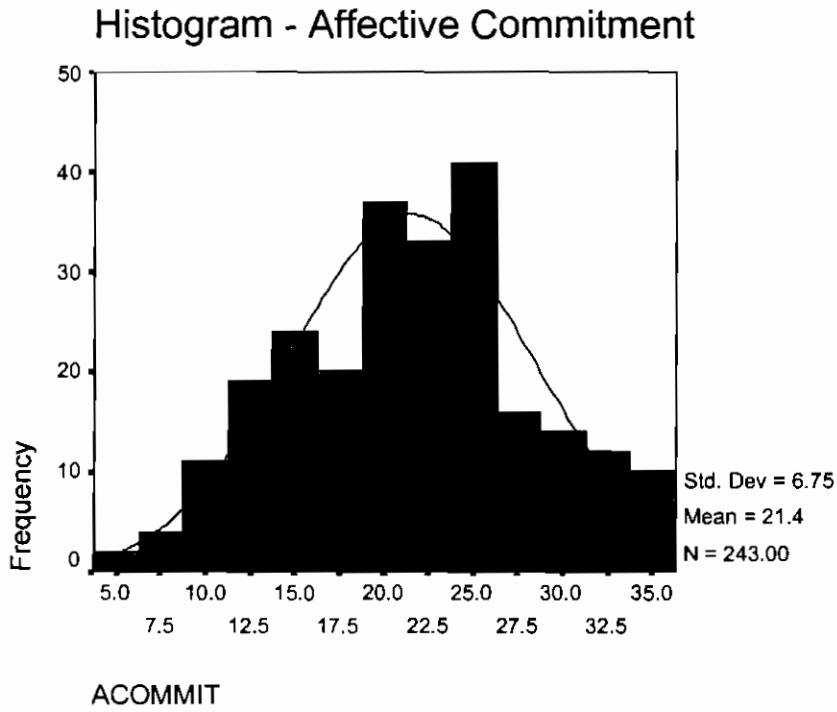
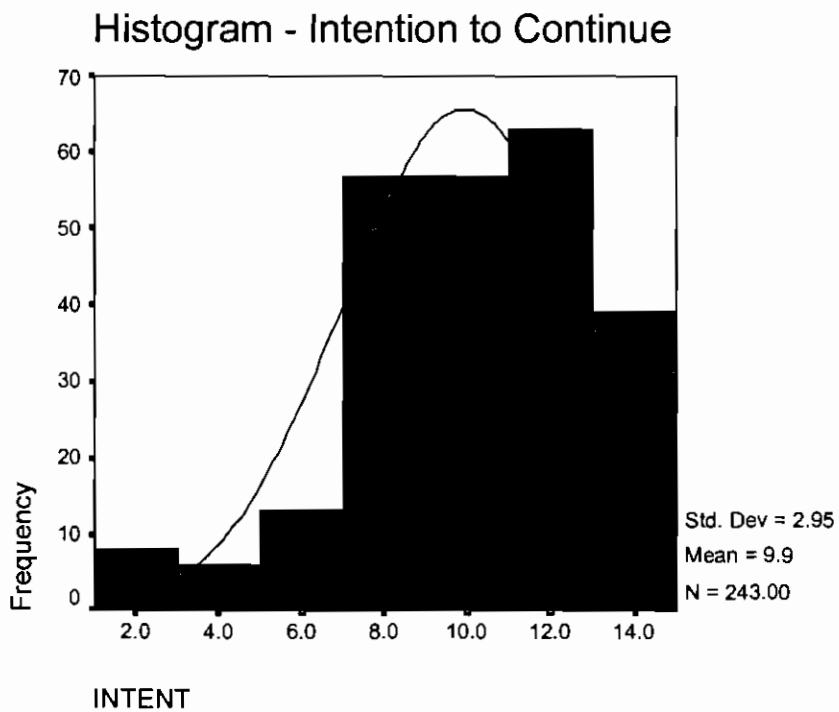


Figure 4.2



Remedies for non-normality: One of the remedies for non-normal variables is to perform transformations. Depending on the type of departure from normality, different transformations are appropriate e.g. skewed distributions can be transformed

by taking the square root, logarithms or even the inverse of the variable (Hair et al. 1998). Hair et al. recommend performing all possible transformations and then selecting the most appropriate transformed variable. For the purposes of this research all possible transformations were performed on each of the non-normal variables. However, the transformations did not improve the departures from normality and in most cases resulted in even greater departures. Thus, in accordance with recommendations from Hair et al. (1998) the variables were used in their original form because the transformations could not improve the non-normality. The departures from normality are not so extreme (i.e. all are below the value of 1) meaning that the normality assumption is not badly violated. As a result, the regression analysis will not be seriously violated (Norusis 2000). Furthermore, regression analysis has been shown to be quite robust even when the normality assumption is violated (Hair et al. 1998). Hence, the original variables were deemed appropriate for the analysis¹.

Homoscedasticity: This assumption relates to whether the dependent variable exhibits equal levels of variance across the range of predictor variables. The most common statistical test to assess whether the variances of a single metric variable are equal across any number of groups is the Levene test (Hair et al. 1998). The Levene test is used in conjunction with analysis of variance (ANOVA). Given that ANOVA will be used later in this chapter, the assumption of homoscedasticity for the individual variables will be further assessed then.

Linearity: The final assumption to be examined is the linearity of the relationships. Linearity is determined by a visual inspection of the scatterplot matrix. Examination of the matrix for this study (not displayed) did not reveal any nonlinear relationships in the variables that are being tested.

¹ The researcher wishes to thank Bill Black for his suggestions regarding solutions for non-normality

4.5 SIX REGRESSION EQUATIONS TO BE ANALYSED

The following section considers how regression analysis was used to test the hypothesised relationships of the model. In accordance with the model, there are six regression equations to be analysed. That is, each variable that has other variables leading into it, i.e. antecedents, forms the basis for a separate regression equation and there are six of those in the model.

Dependent Variable	Independent Variable(s)
Satisfaction	= f (Affect + Value)
Trust	= f (Satisfaction)
Affective Commitment	= f (Satisfaction + Trust + Freedom + Dependence)
Dependence	= f (Investment + Availability + Value + Satisfaction + Trust)
Calculative Commitment	= f (Dependence + Satisfaction + Trust)
Intention to Continue	= f (Affective Commitment + Calculative Commitment)

4.6 DEPENDENCE EQUATION

The following section examines data relating to the multiple regression equation of dependence only. This equation was chosen to be examined in detail because it has the most independent variables. Thus, this lengthy equation was considered appropriate to demonstrate the procedure used to analyse each of the equations. The procedure involved is extremely lengthy and will be discussed thoroughly for this equation, and to a lesser extent for the equations thereafter. The other five equations are fully discussed in the appendices.

Before discussing the regression output, it is necessary to examine the Pearson correlation matrix for the dependence equation (See table 4.13).

Table 4.13 Pearson Correlation Matrix – Dependence Equation

	DEPEND	INVEST	AVAIL	SATIS	TRUST	VALUE
DEPEND	1.000					
INVEST	.594	1.000				
AVAIL	-.420	-.266	1.000			
SATIS	.335	.324	-	1.000		
TRUST	.312	.350	-	.756	1.000	
VALUE	.224	.482	.158	.449	.389	1.000

All correlations are significant at the 0.01 level. Non-significant correlations are not included.

From the correlations it is apparent that, of the predictor variables, investment correlates most highly with dependence (.594). Intercorrelations between predictor

variables are moderate, apart from the correlation between trust and satisfaction (.756). This is quite a high correlation and is the first indication that there could potentially be problems of collinearity.

4.6.1 Estimating the Regression Model and Assessing Overall Fit

The next stage involves estimating the regression model and assessing its overall fit (Hair et al. 1998). In order to do this, an approach to variable selection must be chosen i.e. how will the variables be entered into the model. The various methods, e.g. confirmatory and stepwise, were discussed in chapter 3.

The method being used in this research is the **entry method** (known as Enter in SPSS), in which predictors are selected based on past work and entered simultaneously into the model (Field 2000). This approach is akin to the **confirmatory** approach, whereby the researcher completely specifies the set of independent variables to be included (Hair et al. 1998). The confirmatory approach is the simplest yet most demanding approach. The researcher must make decisions based on good theoretical reasoning as opposed to relying on the statistical package to make decisions (which is the case for stepwise methods). Field (2000) states that stepwise methods are best avoided except for exploratory model building. Confirmatory models are used when there is sound theoretical literature and past research available, upon which variables selection is based. Thus, the entry method is appropriate for this research given that selection of predictors is based on past research. The output for the dependence equation is displayed in table 4.14.

The **multiple R** ($R = 0.683$) is the value of the multiple correlation coefficient. It reflects the degree of association between the observed value of the dependent variable and the predicted value based on the regression model (Norusis 2000). The value of 0.683, is moderately large, indicating that the linear regression model predicts quite well.

Table 4.14 Model Summary

Five Independent Variables Entered using the Enter Method	
Multiple R	.683
Multiple R ²	.466
Adjusted R ²	.455
Standard error of estimate	3.23
Durbin-Watson	1.901

Predictors: (Constant), Invest, Avail, Satis, Value, Trust

Dependent Variable: Depend

Analysis of Variance					
	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	2157.85	5	431.57	41.44	.000
Residual	2468.14	237	10.41		
Total	4626.00	242			

Variables in the Equation						
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	9.381	1.250		7.504	.000	
INVEST	.402	.053	.462	7.648	.000	.445
AVAIL	-.446	.078	-.301	-5.722	.000	-.348
SATIS	.139	.056	.186	2.481	.014	.159
TRUST	2.773E-02	.041	.049	.669	.504	.043
VALUE	-4.393E-02	.050	-.054	-.882	.379	-.057

The R^2 , also known as the coefficient of multiple determination, indicates the percentage of total variation of Y (dependence) that is accounted for by the predictors (Hair et al. 1998). Thus, the predictor variables explain a moderate 46.6% of the variability (which is just under half of the possible variance to be explained). The R^2 assesses the goodness of fit of the regression equation. It is desirable to have a high R^2 , because it implies a more complete explanation of the phenomenon under study (Lewis-Beck 1993). However, while a high is desirable, it is not the only goal; if it were, then the researcher could continually add independent variables to the equation. Rather than adding variables to enhance R^2 , the researcher must be guided by theoretical considerations in deciding on variables to include.

The **adjusted R^2** gives an indication of how well the model generalises. Ideally the value should be the same or very close to the value of R^2 (Field 2000). In this equation, the difference for the final model is small ($0.466 - 0.455 = 0.011$), 1.1%. This shrinkage means that if the model originated from the population rather than the

sample, it would account for approximately 1.1% less variance in the dependent variable.

The **analysis of variance** (ANOVA) tests whether the model is significantly better at predicting the dependent variable than using the mean (Field 2000). The **F-ratio** is used to test the hypothesis that the amount of variance explained by the regression model is more than the variance explained by the average (that the R^2 is greater than zero) (Hair et al. 1998). Thus, the F-ratio ultimately tests the significance of the overall model. For this model the F-ratio is 41.441, which is unlikely to have happened by chance ($p < 0.001$). These results can be interpreted as meaning that the new regression model with extra predictors, significantly improved the ability to predict the outcome variable, over and above the mean as the model.

Variables in the Equation: The next part of the output concerns the parameters of the model. The **β value** (also known as the **regression coefficients**) denotes the estimated change in the outcome variable for a unit change in predictor variable, while holding the effects of all other predictors constant (Field 2000). For the independent variable, Invest, the value 0.402 is the regression coefficient (β_1). Its value is positive, thus it contributes positively to the outcome variable. The direction of each of the coefficients was consistent with prior expectations; all variables contribute positively apart from Avail, which was negative. In multiple regression, the model takes the form of an equation:

$$\text{Dependence} = \beta_0 + \beta_1 \text{ Invest} + \beta_2 \text{ Avail} + \beta_3 \text{ Satis} + \beta_4 \text{ Trust} + \beta_5 \text{ Value}$$

The predicted value is equal to the intercept (9.381) plus the regression coefficients multiplied by their value of the independent variable.

$$Y = 9.381 + .402 \text{ Invest} - .446 \text{ Avail} + .139 \text{ Satis} + .0027 \text{ Trust} - .0043 \text{ Value}$$

The standardised regression coefficient (or beta value) gives a better indication of the relative contribution of each variable because the standardised values allow for comparison. These values are discussed in greater detail under the section 4.6.5 'Interpreting the regression coefficient'.

Examining Statistical Significance: The overall model has been shown to be statistically significant (F-ratio), but it is still necessary to determine if the specific regression coefficients are significant (Malhotra 1996). Statistical significance is tested to ensure that the results are not specific to the sample, and that they are generalisable to other samples from this population. A **t-statistic** measures the significance of the regression coefficient. If the t-test associated with a β value is significant then the predictor is making a significant contribution to the model i.e. the coefficient is significantly different from zero (Field 2000). The smaller the value of the significance (and the larger the value of t) the greater the contribution of that predictor. For this model, Invest ($t = 7.648, p < 0.001$), Avail ($t = -5.722, p < 0.001$), and Satis ($t = 2.481, p < 0.05$) are all significant predictors of dependence. Trust and Value on the other hand, are not significant predictors of the outcome variable. But before rejecting the hypotheses on the effect of trust and value on dependence, a check for multicollinearity must be carried out. This check is carried out in the next section (4.6.2).

The **partial correlation** represents the variation in Y accounted for by each predictor, while controlling for the effects of all other predictors. Thus, it represents the unique relationship each predictor has with the outcome. For example, the partial correlation of Invest is .445. This means that 19.8% ($.445^2$) of the variance in the dependence variable (Depend) is explained by Invest, while controlling for the influence of the other four independent variables. As can be seen, the partial correlations for the non-significant variables (Trust = .043 and Value = -.057) are quite low, which helps to explain why these variables are not significant predictors of Depend.

4.6.2 Assessing the Assumption of no Multicollinearity

Three variables have been accepted as statistically significant in predicting dependence. However, before they can be accepted as valid they must be examined for degree of multicollinearity. Multicollinearity may substantially affect the variables ultimately included in the regression variate. In most research, particularly social science research, there will be some degree of multicollinearity. According to Hair et al (1998) multicollinearity can be assessed by firstly, calculating the variance inflation

factor (VIF) and tolerance values and secondly, using condition indices and decomposing the regression coefficient variance.

Table 4.15 Assessing Tolerance and VIF Values

Variable	Tolerance	Variance Inflation Factor (VIF)
Invest	.617	1.622
Avail	.815	1.227
Satis	<u>.400</u>	<u>2.499</u>
Trust	<u>.413</u>	<u>2.421</u>
Value	.607	1.646

Tolerance and **VIF** values are displayed in table 4.15. In terms of the VIF, if the largest VIF is greater than 10 then there is cause for concern; if the average VIF is substantially greater than 1 then the regression may be biased (Bowerman et al. in Field 2000). In this study, the largest VIF is 2.499; given that this is not close to 10 it would appear that multicollinearity is not a problem. The average VIF is 1.8, which is larger than 1, but not substantially. In terms of tolerance values, tolerance below 0.1 indicates a problem (Field 2000). Tolerance values in this study all exceed .4 suggesting no serious multicollinearity. While the results seem to suggest that there appears to be no problems with multicollinearity, it should be noted that the values for trust and satisfaction are different to the other values (see underlined values). The trust and satisfaction values are higher for the VIF when lower figures indicate little collinearity, and they are lower for tolerance when higher figures indicate little collinearity.

The procedure for assessing the **condition indices** and **decomposition of coefficient** involves two steps. Firstly, condition indices above a threshold value are identified. The threshold value ranges from 15-30, with 30 being most commonly used (Hair et al. 1998). In this study no value is greater than 30, but if the threshold value of 15 is applied, dimension 5 and 6 exceed this threshold value, suggesting that a problem may exist. The second step in analysing the table involves examining the variance proportions for all condition indices exceeding the threshold of 15. Any identified index with variance proportions above 90% is isolated. A collinearity problem is indicated when any identified index accounts for a substantial proportion of variance (.90 or above) for two or more coefficients (Hair et al. 1998).

From table 4.16 it can be seen that no two coefficients exceed the 90% threshold for the identified condition indices 5 and 6. However, Dimension 6 accounts for a substantial proportion of the variance for the coefficients of trust and satisfaction. While the coefficients do not exceed the 90% threshold, they are still very high at .84 and .85. This would suggest that there is a substantial degree of collinearity between trust and satisfaction. This result concurs with the results from the VIF and tolerance values.

Table 4.16 Assessing Condition Indices & Decomposition of Coefficient

Dimension	Eigenvalue	Condition Index	Proportion of Coefficient Variance					
			Constant	INVEST	TRUST	SATIS	AVAIL	VALUE
1	5.728	1.000	.00	.00	.00	.00	.00	.00
2	.153	6.126	.00	.31	.00	.00	.22	.00
3	5.443E-02	10.259	.00	.30	.08	.09	.36	.03
4	3.217E-02	13.344	.05	.30	.01	.00	.11	.92
5	2.175E-02	16.229	.94	.06	.06	.06	.30	.01
6	1.083E-02	23.002	.00	.02	.84	.85	.01	.04

From this assessment it appears that multicollinearity does not have a substantial impact on the estimated regression variate i.e. the statistically significant predictor variables investment, availability and satisfaction are not affected by multicollinearity. However, multicollinearity does seem to have an impact on the composition of the variate. Two of the variables that were theorised to be predictors of dependence in the conceptual model turned out not to be statistically significant i.e. value and trust. The correlation between dependence and trust is not particularly high (.312, $p < 0.01$), so it is not particularly surprising that it was not included as a predictor variable. Other variables were better predictors than trust. However, the correlation between satisfaction and dependence (.335, $p < 0.01$) was not very high either, yet satisfaction is a significant predictor of dependence. Satisfaction was included in the variate presumably because it had a slightly higher correlation with dependence, with the result that there is not enough unique variance in trust to justify its inclusion. This explanation would seem quite reasonable given that the correlation between satisfaction and trust is quite high (.756, significant at 0.01 level) which means they share much variance. Therefore, it would be incorrect to interpret from the results that trust has no impact on dependence. The high collinearity of satisfaction and trust dictates that only one of them is needed in the prediction process.

The next stage involves examining the regression variate firstly, to identify influential data points, and secondly to determine if the regression assumptions have been met.

4.6.3 Identifying Influential Observations

As mentioned in chapter 3, observations may be classified as being influential without being outliers. Thus, outliers are not the only type of influential observation that is being investigated. The following section considers a four-step procedure for identifying outliers, leverage points and influential observations as outlined by Hair et al. (1998).

4.6.3.1 Step 1 – Examining Residuals

Residuals are used to identifying observations that are **outliers** on the dependent variable (Hair et al. 1998). There are various types of residual including the standardized and the studentised residual as displayed in table 4.17. The studentised residual is the main indicator of outliers on the dependent variable (Hair et al. 1998). Hair et al. continue that for fairly large sample (i.e. 50+) there is a rule of thumb that standardised and studentised residuals greater than ± 2 are substantial, if not statistically significant. Observations outside this range are considered as outliers. As can be seen from table 4.17, various cases exceed the cut-off and can be classified as possible outliers. The full casewise diagnostic output for all 243 cases can be seen in Appendix E.

Table 4.17 Casewise Diagnostics - Residuals

Case Number	Actual Value	Predicted Value	Residual	Deleted Residual	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual
1	4	6	14.71590	-8.71590	-9.32390	.27695	<u>-2.79347</u>	<u>-2.83462</u>
2	23	21	14.06412	6.93588	7.03589	.05868	<u>2.16471</u>	<u>2.18181</u>
3	30	10	16.86366	-6.86366	-7.06781	.99621	<u>-2.15829</u>	<u>-2.17521</u>
4	39	9	16.06695	-7.06695	-7.20290	.72940	<u>-2.21085</u>	<u>-2.22928</u>
5	66	3	16.16583	-13.16583	-13.72626	.76252	<u>-4.07978</u>	<u>-4.31800</u>
6	116	19	10.92230	8.07770	8.93338	-.99347	<u>2.63233</u>	<u>2.66603</u>
7	121	3	10.70256	-7.70256	-8.09642	-1.06706	<u>-2.44711</u>	<u>-2.47338</u>
8	123	21	13.46067	7.53933	8.02811	-.14340	<u>2.41080</u>	<u>2.43576</u>
9	169	18	10.77828	7.22172	7.46288	-1.04170	<u>2.27490</u>	<u>2.29529</u>
10	197	3	11.38512	-8.38512	-8.45594	-.83848	<u>-2.60930</u>	<u>-2.64202</u>
11	207	6	16.65697	-10.65697	-10.86503	.92699	<u>-3.33442</u>	<u>-3.40829</u>
12	223	3	11.78380	-8.78380	-9.04863	-.70497	<u>-2.76262</u>	<u>-2.80228</u>

Outliers and influential observations can also be graphically represented for each independent variable by means of **partial regression plots** (Hair et al. 1998). The

partial regression plots displaying the influential observations (highlighted numbers) are contained in the assumption section (Figures 4.4 – 4.6).

4.6.3.2 Step 2 – Identifying Leverage Points from the Predictors

The next step involves examining **leverage points**. Leverage points differ substantially from remaining observations on one or more independent variables (Hair et al. 1998). Leverage values (also called hat values) range from 0 to 1, where 0 means the case has no influence and 1 indicates the case has complete influence over prediction (Field 2000). The average leverage value is p/n , where p is the number of predictor plus one for the constant, and n is sample size; as a rule of thumb, cases that are twice or three times the average should be investigated further (Hair et al. 1995).

(a) $2p/n = 2 (4 / 243) = 0.0329$.

(b) $3p/n = 2 (4 / 243) = 0.0493$.

The ‘ p ’ value comprises three predictors and one constant. Only three predictors were considered because only three out of five were statistically significant in predicting the outcome variable. Using the first threshold limit (see (a) above), 35 cases were selected as leverage points. These 35 cases are highlighted in Appendix F, where the diagnostic measures output for the full 243 cases is displayed. Using the second threshold limit (see (b) above), a much smaller number of 11 cases were identified (See Summary table 4.18 for the identified cases). These cases have an influential effect on results, but this does not necessarily mean that they are ‘bad’ (Hair et al. 1998). The observations must be examined further to assess what part of the results they affect.

Mahalanobis distance is another means of detecting outliers. While no rule of thumb cut-off point exists, Barnett & Lewis (Field 2000) produced a table of critical values dependent on number of predictors and sample size. For large samples (500) with five predictors, values above 25 are cause for concern; for smaller samples (100) with fewer predictors (3), values above 15 are problematic (Field 2000). In this study, only three values are over 15 (See Summary table 4.18 for Mahalanobis values) and no value is over 25.

4.6.3.3 Step 3 – Single-Case Diagnostics Identifying Influential Observations

In the third step, the influence of a single observation on the results is estimated. This involves deleting one or more observations and observing the changes in the results (Hair et al. 1998). One such measure is the **studentised deleted residual**, which provides the studentised residual for an observation when it is deleted from calculation of regression equation. A large value (greater than ± 2) indicates that the case differs substantially from other cases (Hair et al. 1995). The studentised deleted residual shows up similar cases as did the residuals in step 1 (See table 4.17).

The impact of deleting a single observation on each regression coefficient is shown by **DFBETA** (Hair et al. 1998). Hair et al. recommend that for medium- to large-sized samples, a threshold of $\pm 2 \div \sqrt{n}$ should be applied, ($\pm 2 \div \sqrt{n} = \pm 0.1283$). While some observations are identified for each individual coefficient, a number of observations affect multiple coefficients. Full output of all 243 cases can be seen in Appendix F, while the main influential observations are summarised in table 4.18.

While the deleted residuals assess the influence of a case on the residual, and the DFBETA assesses the influence of a case on the individual coefficients, these two measures do not assess the influence of a case on the model as a whole (i.e. overall model fit). There are three measures that assess the overall influence of a case on the model; Cook's distance, COVRATIO and SDFFIT (Hair et al. 1998). **Cook's distance** is the most representative measure of case influence on overall fit; values greater than 1 may be cause for concern (Field 2000; Hair et al. 1998). Hair et al. add that a threshold of $4 / (n - k - 1)$, where k is the number of independent variables, is suggested as a more conservative measure; [$4 / (243 - 3 - 1) = 0.0167$]. Given that no case has a threshold value greater than 1, the more conservative threshold value of 0.0167 was used. Fifteen observations were identified at this level (See table 4.18 for Cook's Distance).

A similar measure is the **COVRATIO** (covariance ratio), which is a measure of whether a case influences the variance of the regression parameters (Field 2000). A threshold can be established at $1 \pm 3p/n$; values above this threshold of $1+3p/n$ make estimation more precise and should not be deleted, whereas values below $1-3p/n$ detract from estimation efficiency (Hair et al. 1998). For this study, $1+3p/n = 1.04938$

and $1-3p/n = 0.950617$. The COVRATIO identifies 49 observations that contribute positively to parameter estimation (See Appendix F, bolded items) and 12 observations that detract from estimation (See table 4.18 for COVRATIO).

The third overall influence measure is the SDFFIT, which is the degree to which the fitted values change when a case is deleted. Hair et al. (1998) suggest a cut-off value for detecting substantial influence of $2 \sqrt{(p) / (n - p)}$. By applying this formula, a cut-off value of 0.25873 is obtained ($2 \sqrt{(4) / (239)} = 0.25873$). Using this threshold value, 28 observations are selected (see table 4.18).

Table 4.18 Summary of Diagnostic Tests for Influential Observations

Stand. & Stud. residuals	4	23	30	39	66	116	121	123	169	197	207	223		
Leverage (cutoff - 2p/n)	4	5	9	19	20	31	38	40	43	47	57	60	66	72
	73	89	91	93	95	96	98	103	116	121	123	133	140	141
	158	162	163	172	187	215	216	218	226	233				
Leverage (cutoff - 3p/n)	4	19	47	91	116	123	133	172	215	218	233			
Mahalanobis distance	47	116	218											
Stud. deleted residual	4	23	30	39	66	116	121	123	169	172	197	207	223	
DFBETA	4	11	19	30	66	103	116	123	169	235				
Cook's distance	66	91	30	38	47	66	91	116	121	123	169	172	207	223
	235													
COVRATIO	4	23	30	39	66	116	121	123	169	197	207	223		
SDFFIT	4	9	19	23	27	30	38	39	47	66	91	103	111	116
	121	123	169	172	182	186	198	207	210	215	219	223	235	239

Observations that continually reoccur across all the measures are presented in boldface

Across all of the measures, a number of observations (highlighted in table 4.18) have emerged as potentially negative influential points because of what Hair et al. (1998) describe as substantial influence and differences from the remaining observations. In total there were twelve influential observations. Table 4.19 shows how each of the 12 observations repeatedly exceeds the cut-off points of the various diagnostic measures.

Table 4.19 Diagnostic Measures for Identifying Influential Observations

Case No.	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA INVEST	Standardized DFBETA SATIS	Standardized DFBETA AVAIL
4	14.78468	<u>.09073</u>	<u>.06109</u>	<u>.89756</u>	<u>-.74867</u>	<u>.12893</u>	<u>-.35969</u>	<u>.48256</u>	<u>-.30832</u>
23	2.44403	.01126	.01010	<u>.92299</u>	<u>.26199</u>	-.10238	-.12228	-.01139	-.04228
30	5.99417	<u>.02309</u>	<u>.02477</u>	<u>.93761</u>	<u>-.37514</u>	-.10613	.03397	<u>-.27164</u>	<u>.19263</u>
39	3.57193	.01567	.01476	<u>.92255</u>	<u>-.30921</u>	<u>-.17590</u>	<u>-.15355</u>	.03985	.06220
66	8.88468	<u>.12311</u>	<u>.03671</u>	<u>.67761</u>	<u>-.89088</u>	<u>-.12810</u>	<u>.41204</u>	<u>-.33136</u>	<u>.59270</u>
116	<u>22.18393</u>	<u>.12234</u>	<u>.09167</u>	<u>.94935</u>	<u>.86771</u>	.02358	<u>.14964</u>	<u>-.79286</u>	<u>.22705</u>
121	10.77641	<u>.05103</u>	<u>.04453</u>	<u>.92468</u>	<u>-.55930</u>	<u>-.23324</u>	<u>-.29162</u>	<u>.03315</u>	<u>-.28929</u>
123	13.73795	<u>.06280</u>	<u>.05677</u>	<u>.94102</u>	<u>.62019</u>	<u>.53437</u>	<u>-.10728</u>	<u>-.32393</u>	<u>-.37655</u>
169	6.82436	<u>.02880</u>	<u>.02820</u>	<u>.92844</u>	<u>.41944</u>	<u>.16833</u>	<u>-.15703</u>	<u>.19284</u>	<u>-.02623</u>
197	1.03095	.00958	.00426	<u>.86839</u>	-.24281	.02381	.05655	.00609	-.12556
207	3.63823	<u>.03618</u>	<u>.01503</u>	<u>.78381</u>	<u>-.47622</u>	<u>-.01539</u>	<u>-.20163</u>	<u>.06565</u>	<u>.04856</u>
223	6.08696	<u>.03835</u>	<u>.02515</u>	<u>.86821</u>	<u>-.48658</u>	<u>.27156</u>	<u>.09948</u>	<u>-.00254</u>	<u>-.22926</u>

4.6.3.4 Step 4 – Selecting and Accommodating Influential Cases

There are no set rules for dealing with influential cases. Data must be checked for data entry errors or other correctable reasons; thereafter, influential cases that are substantially different from the remaining data on one or more variables should be closely examined (Hair et al. 1998). Hair et al. continue that if a case is unrepresentative of the general population it should be eliminated. Data in this study were checked for entry errors and no errors were found. Hair et al. (1998) recommend that cases that are consistently identified by the diagnostic analyses and are deemed to be the cases with the most impact on improving the regression equation should be removed. Thus, the 12 identified cases were removed, with the result that substantial improvements can be noted. The final model estimation output can be seen in table 4.20 in section 4.6.5. Overall prediction improved, with the R^2 changing from .466 to .594, an improvement of .128 (12.8%). This change is greater than that of adding the second highest contributing variable to the equation i.e., Availability, which only increased the R^2 by .074. Deleting these cases also meant that the standard error decreased from 3.23 to 2.63, an improvement of 18.5%. Hair et al. (1998) warn against trimming the data set so that good results are almost guaranteed. The researcher of this study removed only 12 cases that appeared to be distorting the data more so than other observations. This resulted in an improvement in estimation of the equation.

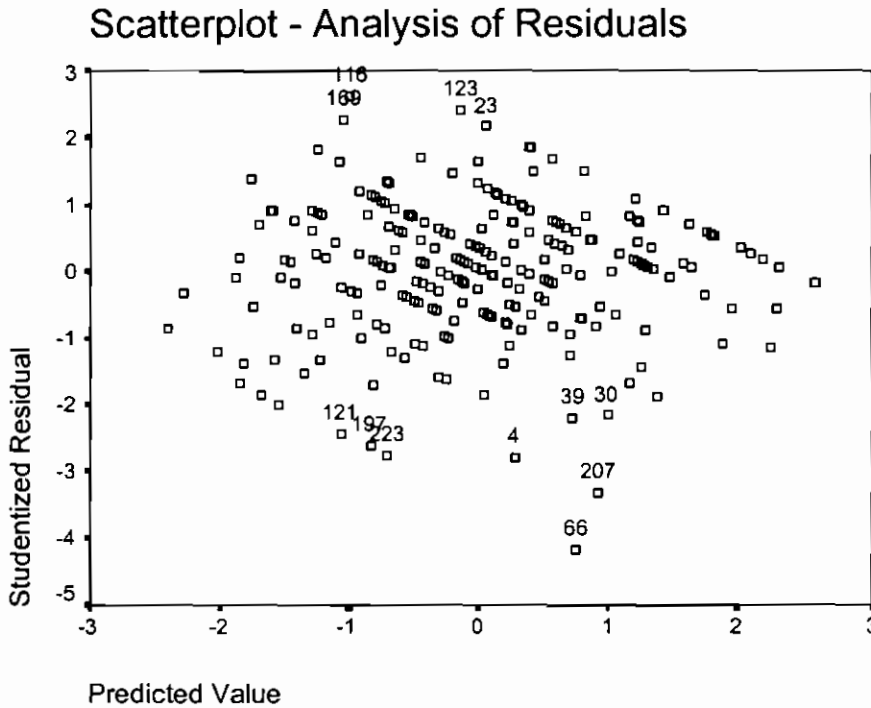
4.6.4 Evaluating the Variate for the Assumptions of Regression Analysis

As mentioned in chapter three, the assumptions underlying multiple regression analysis apply to both the individual variables (dependent and independent) and to the relationship as a whole (Hair et al. 1998). Having already examined the individual variables, the regression variate is examined to determine if it meets the assumptions. Norusis (2000) states that data should always be examined for violations of the regression assumptions because significance levels, confidence intervals, and other tests are sensitive to violations. The assumptions to examine are linearity, homoscedasticity, independence of the residuals, and normality. The principal measure used in evaluating the regression variate is the residual.

4.6.4.1 Linearity

This assumption is assessed through analysis of residuals and partial regression plots (Hair et al. 1998). In terms of **analysis of residuals**, the pattern of studentised residuals in figure 4.3, does not indicate the existence of a nonlinear relationship in the data. The points are randomly dispersed around zero, and there are no consistent curvilinear patterns, which are indicative of non-linearity (Norusis 2000).

Figure 4.3



The **partial regression plots** show the relationship of a single independent variable to the dependent variable (Hair et al. 1998). Partial plots are appropriate when using more than one independent variable. They help to determine if each of the independent variable's relationship with the dependent variable is linear. These plots are also used for identifying influential observations as discussed in section 4.6.3. The partial regression plot for Investment (figure 4.4) shows a well-defined relationship, which according to Hair et al. (1998) suggests the strong and significant effects of Investment in the regression equation. The variable Availability (figure 4.5) is defined in terms of scatter of points, but less well defined in terms of the negative slope. The less well-defined slope might explain its lesser effect on the equation (evidenced by smaller coefficient). For Satisfaction (figure 4.6), the partial plot shows a positive relationship. The relationship looks less linear than the other predictors. Again, the

less well-defined relationship explains the weak contribution of satisfaction to the equation. Nonetheless, the assumption of linearity appears to be met.

4.6.4.2 Constant Variance of the Error Term (Homoscedasticity)

This assumption deals with the constancy of the residuals across values of the independent variables. Diagnosis is again made by **analysis of residuals** (Hair et al. 1998). If variance is constant, no pattern in the data points will be seen and points are randomly and evenly dispersed (Field 2000; Norusis 2000). The residuals (Figure 4.3) appear to be randomly scattered around the horizontal line through 0. However, a number of influential data points (those identified by case numbers at the top and bottom of the plot) do appear to be creating a funnel shape. As discussed under the diagnostic section, these data points are removed before estimating the final equation. Thus, without these points, the plot loses the funnel shape (See Appendix G).

Figure 4.4

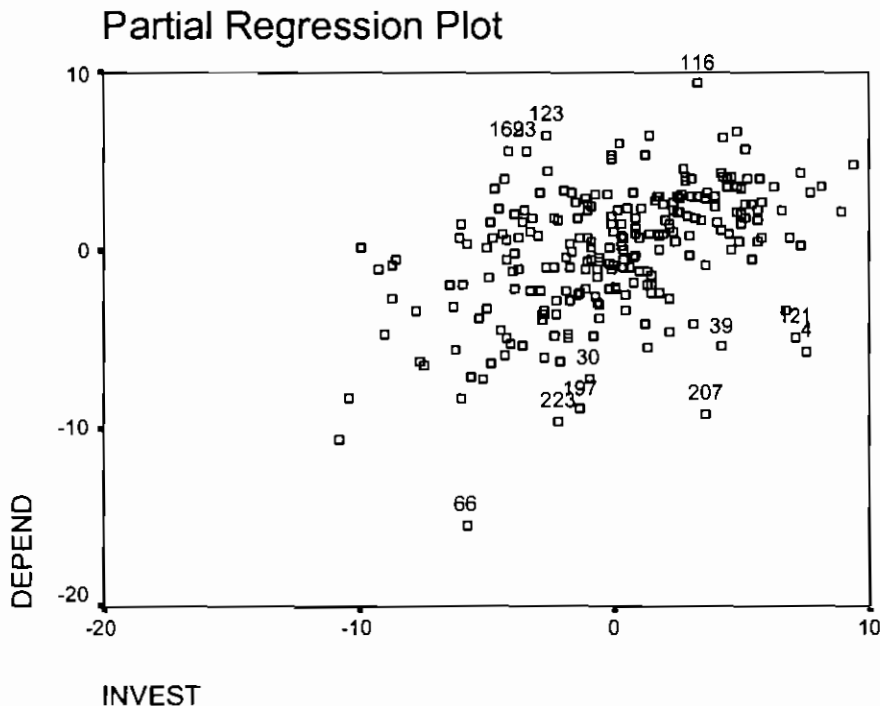


Figure 4.5

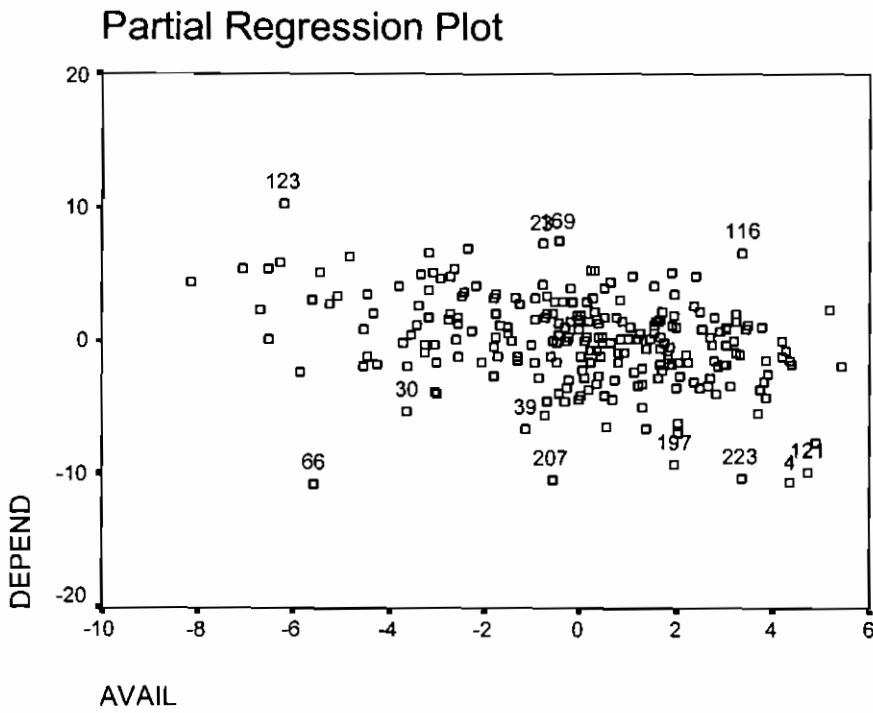
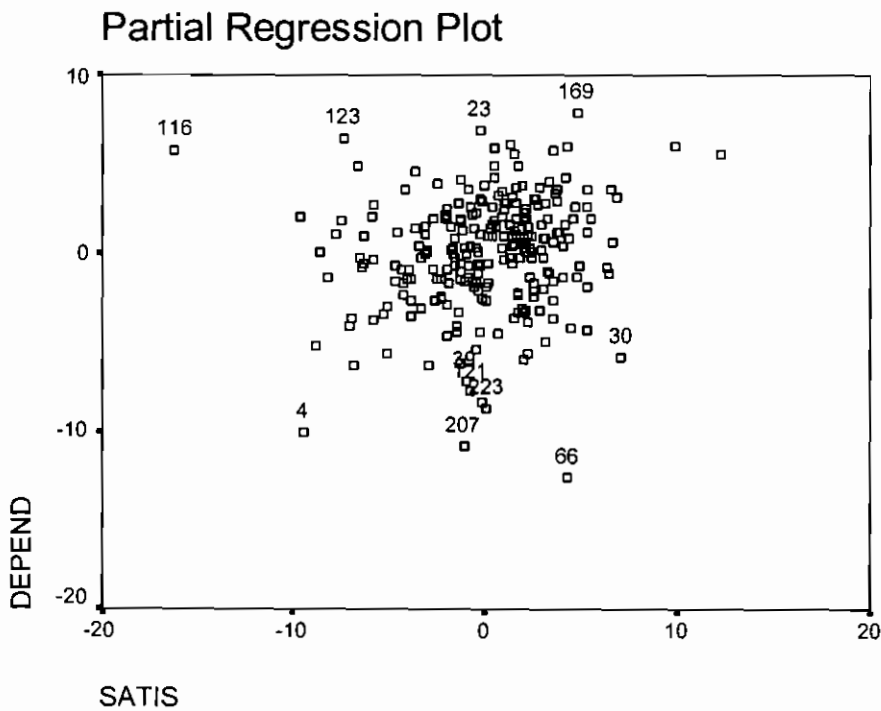


Figure 4.6



4.6.4.3 Independence of the Residuals

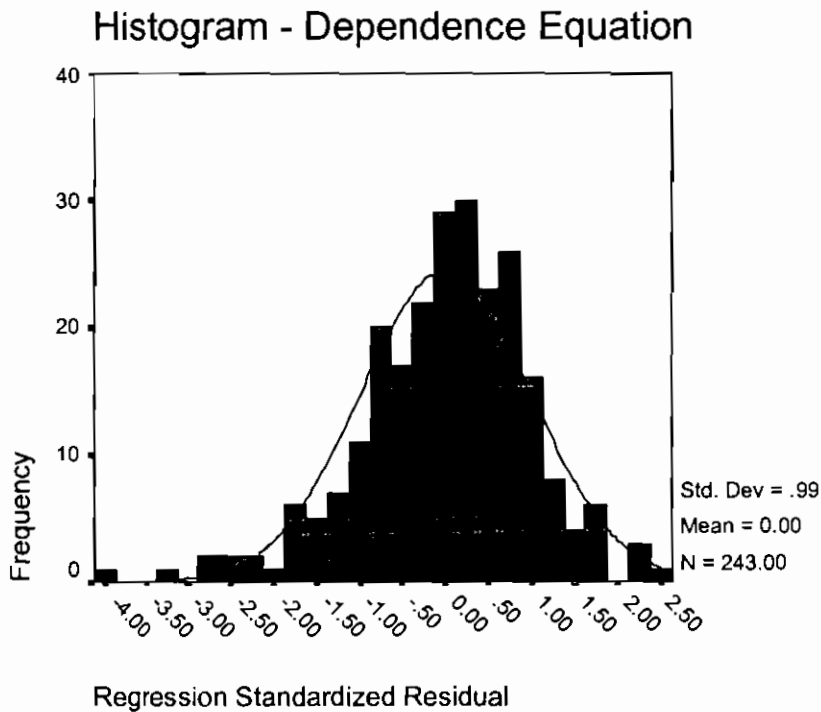
This assumption helps to determine if predicted values are independent. The **Durbin-Watson statistic**, informs as to whether the assumption of independent errors has been met (Field 2000; Norusis 2000). Field continues that values less than one or

greater than three should raise cause for concern. The closer the value is to 2 the better; a value of 2 means that residuals are uncorrelated. For this study the value is 1.9 (see table 4.14). Given that this is very close to 2, it is very likely that the assumption has been met.

4.6.4.4 Normality

Non-normality of the independent or dependent variables is one of the most frequently violated assumptions (Hair et al. 1998). A simple check for normality is that of a visual check of the **histogram of residuals**, to ensure that the distribution is normal (bell-shaped curve) (Field 2000). For the dependence data, the distribution is roughly normal, however the bell-shape curve is not exactly symmetrical and is slightly peaked (See Figure 4.7). However, Appendix G contains a much more normally distributed curve, after the influential data points have been removed.

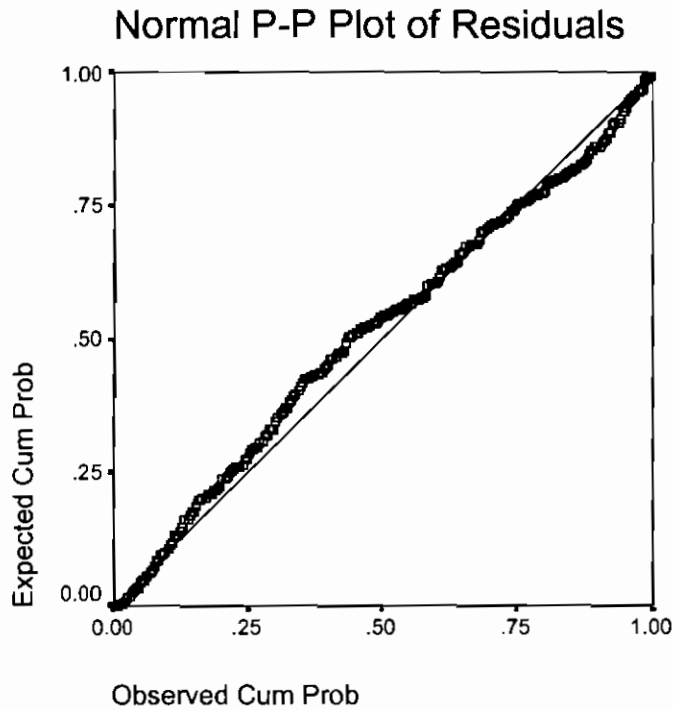
Figure 4.7



The **normal probability plot** is also used to show deviations from normality (Field 2000). If the distribution is normal, the residual line closely approximates the diagonal (Norusis 2000). Figure 4.8 shows what is roughly a normally distributed data set. Again, with influential data points removed, the normal probability plot in Appendix

G, shows an even better representation of the normal distribution (i.e. points are lying closer to the line).

Figure 4.8



To sum up, there does not appear to be any serious violation of the four assumptions. The assumptions seem to have been met. Thus, the model obtained through the sample can be accurately applied to the population of interest i.e. the coefficient and parameters appear to be unbiased (Field 2000).

4.6.5 Interpreting the Regression Variate

Having carried out the various diagnostic tests and finalised the estimated model the next task involves interpreting the regression variate by evaluating the estimated coefficients for their explanation of the dependent variable (Hair et al. 1998). The overall finalised regression model is displayed in table 4.20. The interpretation stage concerns explanation – assessing the impact of each independent variable in predicting the dependent variable – as opposed to prediction. In order to determine the relative impact of each independent variable, they must be standardised. The **standardised** β values are used for these purposes because they are easier to interpret. They are not dependent on the units of measurement of the variables and thus, can be compared. The standardised values give a better insight into the relative contribution of each variable and which predictor variable has the most impact (Field 2000). The

standardised beta values show the number of standard deviations that the outcome will change as a result of one standard deviation change in the predictor.

For this equation, Invest (beta = .538) is the most important variable in the variate, followed by Avail (beta = -.303) and then Satis (beta = .265) (See table 4.20). It should also be noted that trust could also potentially be a predictor of dependence but was not included in the equation because of collinearity with satisfaction. However, it is not likely that it would have been a very important predictor given that its correlation with dependence was lower than that of the correlation between satisfaction and dependence, and satisfaction turned out not to be the weakest predictor of dependence. Consistent with H8, and H15 there is a significant positive relationship between satisfaction and dependence and between investment and dependence, respectively. Similarly, the data provides support for H14, given the significant negative relationship between Availability of Alternatives and Dependence. However, contrary to H7 and H13, there is no significant positive relationship between trust and dependence and between value and dependence.

Table 4.20 Model estimation with 12 influential cases removed

Overall Finalised Regression Model Results						
Five Independent Variables Entered using the Enter Method						
Multiple R	.771					
Multiple R ²	.594					
Adjusted R ²	.585					
Standard error of estimate	2.632					
Durbin-Watson	1.809					
Predictors: (Constant), Invest, Avail, Satis, Value, Trust						
Dependent Variable: Depend						
Analysis of Variance						
	Sum of Squares	df	Mean Square	F Ratio	Sig.	
Regression	2277.103	5	455.421	65.756	.000	
Residual	1558.334	225	6.926			
Total	3835.437	230				
Variables in the Equation						
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
(Constant)	8.927	1.064		8.390	.000	
INVEST	.434	.044	.538	9.802	.000	.547
AVAIL	-.426	.067	-.303	-6.389	.000	-.392
SATIS	.190	.050	.265	3.826	.000	.247
TRUST	-4.735E-03	.036	-.009	-.133	.895	-.009
VALUE	-5.030E-02	.042	-.065	-1.198	.232	-.080

4.6.6. Evaluating Alternative Regression Models

It is advisable to evaluate alternative regression models in the search for additional explanatory power and confirmation of earlier results (Hair et al. 1998). As mentioned, the confirmatory approach was used to estimate the regression model. One alternative to the confirmatory approach is the stepwise estimation method. Thus, the stepwise method was then used to estimate the model. All the same variables were included in the model. The results are similar to those achieved through the confirmatory approach, but there are some differences (See Appendix H for results of the stepwise model estimation).

The coefficient of determination decreases slightly from .771 to .769 as a result of using the stepwise method. The R^2 decreases slightly because two less variables were included in the stepwise procedure (i.e. trust and value were not included as significant predictors of dependence in the stepwise procedure). However, overall model fit increased slightly using stepwise estimation. This can be seen by the lowering of the standard error of the estimation (SEE) from 2.632 to 2.629. Thus, the model fit for the step method was better than for the confirmatory approach. In sum, although the R^2 may be slightly higher for the confirmatory approach, the inclusion of the two non-significant variables in the model estimation detracts slightly from overall model fit.

4.6.7 Calculative Commitment and Dependence as one Factor

As previously mentioned, factor analysis carried out on calculative commitment and dependence showed that the eigenvalue for dependence was too small to form a separate factor, hence the two variables formed only one factor. Thus, additional regression analysis was carried out on these two variables in order to investigate them further. For the above dependence equation, the independent variables accounted for 46.6% of the variance in dependence (before cases were removed). Of the five independent variables, only three were significant predictors, namely Invest, Avail and Satis. In another equation, Dependence was replaced by calculative commitment as the dependent variable, while retaining the same five independent variables. The independent variables accounted for 48.4% of the variance in Ccommit. Of the five independent variables only two were significant predictors, namely Invest and Avail

(satisfaction was not significant). Thus, from a prediction point of view only 2.2% more variance is accounted for by substituting Ccommit for dependence. Thus, the two variables appear to be quite interchangeable, with little significant difference between the two variables acting as the dependent variable in the equation (apart from satisfaction being a predictor of dependence and not of calculative commitment).

Finally, in accordance with the factor analysis results of a single factor, the items for Depend and Ccommit were summed to form one variable referred to as DepCcom. In one further equation, Dependence was replaced by DepCcom as the dependent variable, while the five independent variables were retained. The independent variables accounted for 52.3% of the variance in DepCcom and again, only Invest and Avail were significant predictors. This is an improvement of 5.7% in prediction over the dependence equation. However, dependence and calculative commitment are conceptually distinct variables, and while combining them may improve statistical results, it would possibly lead to theoretical confusion. This issue is further discussed in the results, section 4.14.

4.7 SATISFACTION EQUATION

The next multiple regression equation to be analysed is that of Satisfaction, where satisfaction is the dependent variable and affect and value are the independent variables. Given that the extensive procedure for analysing a regression equation has just been discussed, the procedure for analysing the satisfaction equation is relegated to Appendix I and only the main findings are reported here.

Various tests were conducted to test for multicollinearity. The two variables in the variate, affect and value, were not highly correlated (0.326, $p < 0.01$), which is the first indication of little collinearity between the variables. Furthermore, the VIF and condition indices tests indicated that no collinearity is present. The regression variate was evaluated for violation of the assumptions. No violations were apparent. Diagnostic tests were carried out to examine the equation for influential observations. Ten cases emerged as negative influential points. They were removed, with the result that various improvements could be noted. Overall prediction improved, with the R^2

changing from .555 to .657, an improvement of 10.2%. Also, the standard error decreased from 3.920 to 3.227, an improvement of 17.6%. Thus, removal of the ten influential cases resulted in quite a substantial improvement in estimation of the equation.

Table 4.21 Model estimation with 10 influential cases removed

Overall Finalised Regression Model Results						
Two Independent Variables Entered using the Enter Method						
Multiple R	.811					
Multiple R ²	.657					
Adjusted R ²	.654					
Standard error of estimate	3.227					
Durbin-Watson	2.239					
Predictors: (Constant), AFFECT, VALUE						
Dependent Variable: SATIS						
Analysis of Variance						
	Sum of Squares	df	Mean Square	F Ratio	Sig.	
Regression	4595.279	2	2297.639	220.576	.000	
Residual	2395.803	230	10.417			
Total	6991.082	232				
Variables in the Equation						
	Standard Error of Coefficients		Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.967	1.165		2.546	.012	
AFFECT	.876	.050	.715	17.355	.000	.753
VALUE	.212	.042	.206	5.011	.000	.314

4.7.1 Assessing the Regression Model and Interpreting the Variate

The final model results can be seen in table 4.21. Both affect ($t = 17.35$, $p < 0.001$) and value ($t = 5.01$, $p < 0.001$) are statistically significant predictors of satisfaction and together account for 65.7% of the variance in satisfaction. The standardized beta values show that Affect (beta = .715) is by far the most important of the two predictors of Satis. Value has a much smaller beta (.206). These statistically significant relationships with positive beta values provide support for H1; there is a positive relationship between affect and satisfaction and for H9; there is a positive relationship between value and satisfaction.

4.8 TRUST EQUATION

The next equation to be analysed is the trust equation. This equation has only one independent variable, satisfaction, thus analysis will take the form of simple and not multiple regression. The main findings for the trust equation are reported here and the rest of the procedure is discussed in Appendix J.

The correlation between Trust and Satis is 0.756 ($p < 0.01$). This correlation is quite high and while there will be no collinearity for this equation (collinearity exists among independent variables) there is a certain amount of shared variance between the two variables. This was shown in the dependence equation where Trust and Satis were included together as independent variables and displayed signs of high collinearity.

The data from the trust equation was examined to see if it met the four regression assumptions. There did not appear to be any violations of these assumptions. As with the multiple regression procedure, the data was examined for influential cases. For the purposes of simple regression it is not necessary to examine all the diagnostics used in multiple regression, however it is still necessary to examine some (see Appendix J for those diagnostics). There were seven cases that repeatedly exceeded the cut-off values for each of the diagnostics examined. Similar to the procedure for the multiple regression equations, these 7 influential cases were deleted with the result that there were improvements in the model estimation. The R^2 improved from .571 to .649 (7.8%). Also, the standard error reduced from 5.109 to 4.500, an improvement of 11.9%.

4.8.1 Assessing the Regression Model and Interpreting the Variate

The final model results can be seen in table 4.22. Satisfaction is a statistically significant predictor of trust ($t = 20.781$, $p < 0.001$) and accounts for 64.9% of the variance in trust. This is quite a substantial value for one predictor alone. In simple regression the standardised coefficient is equivalent to the multiple R of 0.805. With a beta value of 0.805, satisfaction is a strong and important predictor of trust. Consistent with H2, satisfaction is positively associated with trust.

Table 4.22 Model estimation with 7 influential cases removed**Overall Finalised Regression Model Results**

One independent Variable Entered using the Enter Method	
Multiple R	.805
Multiple R ²	.649
Adjusted R ²	.647
Standard error of estimate	4.500
Durbin-Watson	1.970

Predictors: (Constant), SATIS

Dependent Variable: TRUST

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	8744.522	1	8744.522	431.860	.000
Residual	4738.156	234	20.249		
Total	13482.678	235			

Variables in the Equation

	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	8.023	1.383		5.800	.000	
SATIS	1.063	.051	.805	20.781	.000	.805

4.9 AFFECTIVE COMMITMENT EQUATION

The next equation is that of affective commitment (dependent variable) and satisfaction, trust, freedom to choose and dependence (independent variables). Before examining the regression equation, it is necessary to examine the correlation coefficients. Of the four predictor variables, satisfaction and trust correlate most highly with affective commitment. In terms of intercorrelations between predictor variables, all correlations are moderate, apart from the correlation between satisfaction and trust. This high correlation was also present in the dependence equation, and resulted in one of the variables not being included in the dependence equation.

In terms of multicollinearity, the results are very similar to those of the dependence equation. They suggest that there may be some collinearity between two of the predictors, Satis and Trust. It is worth noting that although there appears to be a high level of collinearity between trust and satisfaction, both variables are statistically

significant predictors of affective commitment (satisfaction: $t = 5.407$, $p < 0.001$; trust: $t = 4.46$, $p < 0.001$). Thus, given that both are statistically significant predictors of affective commitment and that neither exceeded the cut-off measures for detecting collinearity (they came close but did not exceed the threshold values), the collinearity problem does not appear to be too serious. As mentioned, the same collinearity was present in the dependence equation, yet only one of the variables namely satisfaction, significantly predicted dependence. Perhaps this is because the correlations between Acommit and Satis (0.685, $p < 0.01$) and Acommit and trust (0.666, $p < 0.01$) are much greater than those of Depend and Satis (0.335, $p < 0.01$) and Depend and trust (0.312, $p < 0.01$). Hence, there is much more unique variance available between Acommit and Satis and Acommit and Trust to justify the inclusion of both as significant predictors of Acommit.

In relation to the assumptions, no violations of the four regression assumptions were apparent in the data. The data was further analysed for influential observations. Across most of the diagnostic measures, a number of observations have emerged as potentially negative influential points. These cases were checked for entry errors and other correctable reasons but none were found. Thus, the nine cases identified were removed, with the result that various improvements can be noted. The final model results can be seen in table 4.23. Overall prediction improved, with the R^2 changing from 0.603 to 0.668, an improvement of 6.5%. Also, the standard error decreased from 4.29 to 3.831, an improvement of 10.6%. Thus, removal of the nine influential cases resulted in improvement in estimation of the affective commitment equation.

4.9.1 Assessing the Regression Model and Interpreting the Variate

The finalized model with the cases removed can be seen in table 4.23. All four independent variables, Satis ($t = 5.8757$, $p < 0.001$), Trust ($t = 5.067$, $p < 0.001$), Freed ($t = 6.742$, $P < 0.001$) and Depend ($t = 3.671$, $p < 0.001$) are statistically significant predictors of affective commitment and together account for 66.8% of the variance in affective commitment. The standardized beta values show that Satis (beta = .352) is the most important predictor of Acommit, followed closely by Trust (beta = .307), then Freed (beta = .272) and then Depend, which is the least important predictor (beta = .150). Thus, each of the four independent variables displays a significant positive relationship with affective commitment. These results provide

support for H3 (positive relationship between satisfaction and Acommit), H4 (positive relationship between freedom to choose and Acommit), H5 (positive relationship between trust and Acommit) and H6 (positive relationship between dependence and Acommit).

Model estimation with 9 influential cases removed

Table 4.23 Model Summary

Four Independent Variables Entered using the Enter Method						
Multiple R	.817					
Multiple R ²	.668					
Adjusted R ²	.662					
Standard error of estimate	3.831					
Durbin-Watson	1.896					
Predictors: (Constant), SATIS, TRUST, FREED, DEPEND						
Dependent Variable: ACOMMIT						
Analysis of Variance						
	Sum of Squares	df	Mean Square	F Ratio	Sig.	
Regression	6762.595	4	1690.649	115.170	.000	
Residual	3361.631	229	14.680			
Total	10124.226	233				
Variables in the Equation						
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	-6.285	1.334		-4.711	.000	
SATIS	.397	.068	.352	5.857	.000	.361
TRUST	.259	.051	.307	5.067	.000	.317
FREED	.477	.071	.272	6.742	.000	.407
DEPEND	.226	.062	.150	3.671	.000	.236

4.9.2 Evaluating Alternative Regression Models

Having used the confirmatory approach as the estimation method for the above results, the model was re-estimated using the stepwise method. The results for the stepwise procedure produced the exact same results, i.e. the R², the standard error, the beta coefficients etc. were all exactly the same for both procedures. The results are the same because all four predictors of affective commitment were significant for both estimation procedures; hence there could be no difference given that each procedure was estimating the same model.

4.10 CALCULATIVE COMMITMENT EQUATION

The calculative commitment (dependent variable) equation has as its predictor variables dependence, satisfaction and trust. As with previous equations that contained Satis and Trust as independent variables, the high correlation between these variables (.756) is likely to cause collinearity problems. The correlation between Ccommit and Depend is very high (.799). This is not surprising given that the findings of the factor analysis showed that these two variables loaded on the one factor.

4.10.1 Estimating the Regression Model and Assessing Overall Fit

The output for the Ccommit equation is displayed in table 2 in Appendix L. While the R^2 is quite high (.639) a closer inspection reveals that most of the variance is explained by only one variable, namely dependence. Satisfaction contributes .001 and trust contributes nothing. Satis and Trust are not only bad predictors of Ccommit, but they are also not statistically significant ($p > 0.05$). Although, Satis and Trust have been shown to display a high degree of collinearity in previous equations, this collinearity should preclude only one of the variables and not both of them from being included in the equation. The fact that both variables are not included in the equation suggests that after Depend was included in the equation, Satis and Trust did not exhibit enough unique variance for inclusion. Given that only one predictor was significant, this equation was treated as a simple regression equation with dependence predicting calculative commitment.

There were no apparent violations of the regression assumptions in the data. As with the previous equation, a number of cases appear as negatively influential observations. A total of 7 cases exceed the cut-off for each of the diagnostics (3, 30, 39, 165, 210, 228, 233). Similar to the procedure for the multiple regression equations, these 7 influential cases were deleted with the result that there were improvements in the model estimation. The R^2 improved from .638 to .696 (5.8%). Also, the standard error reduced from 4.292 to 3.890, an improvement of 10.33%.

Table 4.24 Model estimation with 7 influential cases removed

Overall Finalised Regression Model Results

One Independent Variable Entered using the Enter Method

Multiple R	.835
Multiple R ²	.696
Adjusted R ²	.695
Standard error of estimate	3.890
Durbin-Watson	1.969

Predictors: (Constant), DEPEND

Dependent Variable: CCOMMIT

Analysis of Variance

	Sum of Squares	Df	Mean Square	F Ratio	Sig.
Regression	8123.077	1	8123.077	536.828	.000
Residual	3540.800	234	15.132		
Total	11663.877	235			

Variables in the Equation

	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.590	.841		3.080	.002	
DEPEND	1.337	.058	.835	23.170	.000	.835

4.10.2 Assessing the Regression Model and Interpreting the Variate

The final model results can be seen in table 4.24. Dependence is a statistically significant predictor of calculative commitment ($t = 23.170$, $p < 0.001$) and accounts for 69.6% of the variance in calculative commitment. This is quite a substantial value for one predictor alone. In simple regression the standardised coefficient is equivalent to the multiple R of 0.835. With a beta value of 0.835, dependence is a strong and important predictor of calculative. Dependence is significantly positively related to calculative commitment, providing support for H12. However, as mentioned previously, neither satisfaction nor trust was significantly related to calculative commitment. The conceptual model hypothesised that both satisfaction (H10) and trust (H11) would be negatively related to calculative commitment however neither hypothesis is supported by the data.

4.11 INTENTION TO CONTINUE EQUATION

The final equation to be examined is that of the outcome variable, intention to continue. Intention to continue has two predictor variables, namely affective and

calculative commitment. The correlation between Acommit and Intent (.624, $p < 0.01$) is higher than that of the correlation between Ccommit and Intent (.482, $p < 0.01$). Thus, it is likely that Acommit Affect will be a better predictor of Intent than Ccommit. The correlation between the two predictors (i.e. Acommit and Ccommit) is quite low (.266), which suggests that high collinearity is unlikely. Indeed, the collinearity tests, indicate that collinearity does not appear to be a problem for the intent equation.

In relation to the assumptions, it appeared that one of the assumptions was violated. Analysis for homoscedasticity, which was made by examining the residuals (Figure 1, Appendix M) showed some evidence of heteroscedasticity. The residuals were forming a diamond shape. According to Hair et al. (1998) these shapes are evidence of heteroscedasticity. Various transformation options are available as a remedy for heteroscedasticity, including the square root, the log of the variable (Norusis 2000) and the inverse (Hair et al. 1998). Each of these transformations methods was performed on the dependent variable but without success. The result in each case was a lowering in the R^2 , very little change in the residual plot and a less well defined normal p-p plot. Thus, as with the independent variables that violated the assumption of normality, the data was not transformed and used in its original form.

The diagnostic measures for identifying influential observations, pointed to 13 cases that emerged as potentially negative influential points. These cases were checked for entry errors and other correctable reasons but none were found. Thus, the 13 cases were removed, with the result that various improvements could be noted. Overall prediction improved, with the R^2 changing from .497 to .578, an improvement of 8.1%. Also, the standard error decreased from 2.097 to 1.689, an improvement of 19.45%. Thus, removal of the thirteen influential cases resulted in an improvement in estimation of the equation, particularly in relation to the improvement of the standard error.

4.11.1 Assessing the Regression Model and Interpreting the Variate

The finalized model with the cases removed can be seen in table 4.25. Both independent variables, Acommit ($t = 12.940$, $p < 0.001$) and Ccommit ($t = 7.910$, $p < 0.001$) are statistically significant. Together the two variables account for 57.8% of

the variance in Intent. The standardised beta values indicate that Acommit (beta = .581) is a more important predictor of Intent than Ccommit (beta = .355). This supports the lower univariate correlation between Ccommit and Intent. Thus, both affective and calculative commitment are significantly positively related to intention to continue, providing support for H16 and H17, respectively.

Model estimation with 13 influential cases removed

Table 4.25 Model Summary

Two Independent Variables Entered using the Enter Method						
Multiple R	.760					
Multiple R ²	.578					
Adjusted R ²	.574					
Standard error of estimate	1.689					
Durbin-Watson	2.137					
Predictors: (Constant), CCOMMIT, ACOMMIT						
Dependent Variable: INTENT						
Analysis of Variance						
	Sum of Squares	df	Mean Square	F Ratio	Sig.	
Regression	885.794	2	442.897	155.168	.000	
Residual	647.928	227	2.854			
Total	1533.722	229				
Variables in the Equation						
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.415	.458		5.270	.000	
ACOMMIT	.226	.017	.581	12.940	.000	.652
CCOMMIT	.133	.017	.355	7.910	.000	.465

4.11.2 Evaluating Alternative Regression Models

As with the previous equation, an additional method i.e. the stepwise procedure was used to estimate the model. The exact same results were produced, which is only to be expected given that only two predictors were included and both were statistically significant when used in each estimation method.

4.11.3 Exploring Relationships between Predictor Variables & Intention to Continue

The intention to continue equation was considered to have two predictor variables, namely Acommit and Ccommit. However, these variables together account for less than 50% of the variance in Intention (without removing influential cases). There are other variables that correlate more highly with Intention than Acommit and Ccommit.

Further regression analysis shows that the optimal variate for Intention includes Invest, Value, Acommit and Depend. Together these four variables account for 63.6% of the variance in Intention (without removing influential cases). However, this equation is not being considered and will be further discussed in the findings section.

4.12 SUMMARY OF THE REGRESSION ANALYSIS RESULTS

Table 4.26 provides a summary of the final results of the regression analysis. It displays a synopsis of the important statistical results for the six regression equations.

Table 4.26 **Final Results of Regression Analysis**

	Satisfaction	Trust	Affective Commitment	Dependence	Calculative Commitment	Intention to Continue
Affect	.715	-	-	-	-	-
Satisfaction	-	.805	.352	.265	NSR	-
Trust	-	-	.307	NSR	NSR	-
Freedom	-	-	.272	-	-	-
Affective Commitment	-	-	-	-	-	.581
Value	.206	-	-	NSR	-	-
Size of Investment	-	-	-	.538	-	-
Availability	-	-	-	-.303	-	-
Dependence	-	-	.150	-	.835	-
Calculative Commitment	-	-	-	-	-	.355
Intention to Continue	-	-	-	-	-	-
F	220.576	431.860	115.170	65.756	536.828	155.168
(df)	(2,230)	(1,234)	(4,229)	(5,225)	(1,234)	(2,227)
R²	.657	.649	.668	.594	.696	.578
Standard Error of Estimate	3.227	4.500	3.831	2.632	3.890	1.689

Regression coefficients are standardised coefficients, $p < 0.01$ for all coefficients and F- statistic values Values are those after influential cases were removed

NSR: Non-Significant Relationship, where one was hypothesised by the conceptual model

Note: Only hypothesised relationships are considered. Where significant relationships exist but were not hypothesised they are not reported.

Furthermore, table 4.27 summarises the results of the hypothesised relationships. The table shows that regression analysis provides support for thirteen of the seventeen hypotheses. Thus, while the correlation analysis supported fifteen of the hypotheses, the regression analysis supports two less.

Table 4.27 Summary of Hypothesised Relationships

Hypotheses	Result	Support/ Nonsupport
There is a positive relationship between affect and satisfaction	Positive significant	Support
There is a positive relationship between satisfaction and trust	Positive significant	Support
There is a positive relationship between satisfaction and affective commitment	Positive significant	Support
There is positive relationship between freedom to choose and affective commitment	Positive significant	Support
There is a positive relationship between trust and affective commitment	Positive significant	Support
There is a positive relationship between dependence and affective commitment	Positive significant	Support
There is a positive relationship between trust and dependence	Nonsignificant	Nonsupport
There is a positive relationship between satisfaction and dependence	Positive significant	Support
There is a positive relationship between value and satisfaction	Positive significant	Support
There is a negative relationship between satisfaction and calculative commitment	Nonsignificant	Nonsupport
There is a negative relationship between trust and calculative commitment	Nonsignificant	Nonsupport
There is a positive relationship between dependence and calculative commitment	Positive significant	Support
There is a positive relationship between value and dependence	Nonsignificant	Nonsupport
There is a negative relationship between availability of alternatives and dependence	Negative significant	Support
There is a positive relationship between investment and dependence	Positive significant	Support
There is a positive relationship between affective commitment and intention to continue	Positive significant	Support
There is a positive relationship between calculative commitment and intention to continue	Positive significant	Support

4.13 SUB-GROUP COMPARISONS

The final part of the analysis relates to objective three of the research. It involves comparing the sub-groups within the respondent population in order to establish if and/or how they differ. As mentioned in chapter 2, there is little research in marketing on how males and females differ in terms of their commitment. Thus, this part of the

analysis is very much exploratory, and the differences between subgroups on various variables, such as commitment, intention to continue and other variables will be compared. The form of analysis being used involves t-tests and ANOVA.

Table 4.28 displays a breakdown of the demographics and characteristics of the population under consideration. Apart from age and gender, these characteristics were not used as quota controls. They are displayed to give an indication of population make-up.

Table 4.28

Population demographics & characteristics

Gender		Occupation		Educational level attained	
Female:	51%	ABC1:	76%	Primary school	2%
Male:	49%	C2DE:	24%	Junior Certificate	3%
				Leaving Certificate	21%
				Third Level	46%
				Postgraduate	28%
Nationality		Age		Main Airline Used	
Irish	45%	15-24:	16%	Aer Lingus	45%
British	29%	25-34:	32%	Ryanair	25%
American	12%	35-44:	18%	British Airways	9%
Dutch	4%	45-59:	8%	KLM	2.5%
German	3%	50-65:	22%	United Airlines	2.5%
Scandinavian	3%	65+ :	4%	British Midlands	2%
Australian	2%			Delta	2%
Other	2%			Other	12%

The following section considers various sub-groups and how they differ in terms of constructs from the commitment model. The first subgroup to be considered is that of gender.

4.13.1 Gender Differences

The aim of this test is to determine if there is a difference between males and females on various constructs including commitment, intention to continue and satisfaction. The null hypothesis is that the two groups have equal means. Given that there are only two groups the appropriate test is the t-test. The type of test that will be used is the independent means t-tests because different subjects represented each independent variable.

Affective commitment: The first variable to be examined is affective commitment.

The null hypothesis is that there is no difference between males and females in terms of their level of affective commitment.

Affective Commitment

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	120	20.12	6.882	.623
Female	123	22.71	6.391	.581

One of the main considerations for this test is that the sample sizes should be roughly the same. Unequal sample sizes make the test more sensitive to violation of the assumptions, especially the test for homogeneity of variance of the dependent variable (Hair et al. 1998). While sample size is evenly distributed in this case ($m = 49\%$; $f = 51\%$), the test will nevertheless be conducted. The Levene test is used to examine the assumption of homogeneity of variance of the dependent variable between groups. The test is non-significant for this data ($p > 0.05$), thus the null hypothesis is correct and the variances are not significantly different (i.e. the assumption of homogeneity of variances has not been violated) (Field 2000).

The next step is to examine the t-test to determine if there is a significant difference between the mean of males (20.12) and females (22.71). For this data, the test indicates that there is a significant difference between the means of the two samples ($t = -3.037$, $p < 0.01$). Females are more affectively committed than are males.

Calculative Commitment: The test for calculative commitment was carried out using the same procedure as that discussed for affective commitment.

Calculative Commitment

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	120	20.36	7.099	.643
Female	123	21.64	7.113	.647

While the mean level of calculative commitment is higher for females than males, the t-test shows that there is no significant difference between males and females ($t = -1.399$; $p > 0.05$). The null hypothesis of equal means is correct. There is no difference between males and females and their level of calculative commitment.

Intention to Continue: The next variable to be considered is Intention to Continue. there is no significant difference between males and females in terms of their intention to continue ($t = -1.659$; $p > 0.05$).

Intention to Continue

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	120	9.61	3.008	.272
Female	123	10.24	2.861	.260

Satisfaction: The test for the assumption of homogeneity of variance for satisfaction shows no significant differences for the two groups (Levene test, $p > 0.05$); the assumption has not been violated. Examination of the t-test results for satisfaction reveals that there is a significant difference between the means of the two samples ($t = -2.771$, $p < 0.01$). Females are more satisfied than are males.

Satisfaction

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	120	25.29	5.739	.520
Female	123	27.34	5.803	.528

There are no significant differences between males and females on all the other constructs represented in the conceptual model.

4.13.2 Comparison Between Airline Groupings

Research respondents were classified according to whether they fly Aer Lingus, Ryanair or other airlines. The researcher was interested in determining whether passengers of the airline groupings differ in terms of the various commitment model constructs. As well as the three groupings mentioned above (i.e. Aer Lingus, Ryanair and other) a fourth airline category, namely British Airways, was included in the analysis. British Airways passengers constituted 21 respondents (9%) in this survey. It was felt that this group was so big compared to the rest of the 'other' category that it might disproportionately sway the results of this 'other' group, given that the next biggest grouping was only 6 passengers (KLM – Dutch airline). Thus, it was taken from the 'other' category and treated as a separate group.

Given that there is a single metric variable and more than two groups, the appropriate test is ANOVA. The null hypothesis is that all groups have equal means. For ANOVA the appropriate test statistic is the F statistic.

Affective Commitment: The first variable to be considered is affective commitment. The null hypothesis is that the four airline groupings are equivalent in terms of their affective commitment towards their respective airlines.

Table 4.29 Affective Commitment Descriptives

Airline Grouping	N	Mean	Std. Deviation	Std. Error
AL	108	22.94	6.470	.623
RA	61	19.31	6.114	.783
BA	21	17.52	6.683	1.458
Other	53	22.26	7.000	.962
Total	243	21.41	6.754	.433

As can be seen from table 4.29, the sample sizes for the four groupings are not evenly distributed. The assumption of homogeneity of variance is particularly sensitive to unequal sample sizes. The Levene test, examines whether the variances of the four groups are significantly different. The Levene test is non-significant ($p > 0.05$), thus there is no significant difference across the variance of the three groups. This means that the unequal cell sizes should not impact the sensitivity of the statistical tests of group differences (Hair et al. 1998).

The next step is to examine the F ratio. The results show that all group means are not equal ($F = 6.864$, $p < 0.001$). There is a significant difference between the groups in terms of their affective commitment. However, it is necessary to carry out further analysis to find out which groups differ i.e. the F-ratio shows that there is a statistical difference between the groups but it does not indicate where the differences lie between groups.

Post hoc procedures test all group differences and identify those that are statistically significant. As mentioned in chapter 3, post hoc tests are being chosen over planned comparisons, because of the exploratory approach of this part of the research. One post hoc statistical test is the Scheffé method, one of the most widely used post hoc methods (Hair et al. 1998). The Scheffé controls the overall error rate so that it does

not exceed .05 and identifies all groups that are significantly different from each other. Field (2000) states that two other tests, Hochberg's GT2 and Gabriel's test, were specifically designed to cope with differences in sample sizes. Thus, all three of these tests were used.

The data for the Scheffe test is shown in the table 4.30. There was no need to report the data for the other tests (Hochberg and Gabriel) because each test showed the same groups to be statistically different. The output shows that there are significant differences. The Aer Lingus mean differs significantly by 3.62 from Ryanair and 5.41 from British Airways. The 'mean difference' column shows that by how much the group means differ. Thus, Aer Lingus passengers are more affectively committed than Ryanair or British Airways passengers. Finally, one other significant difference is that between the 'other' group and British Airways, with the other group mean being greater by 4.74.

Table 4.30 Multiple Comparisons: ACOMMIT

			Mean Difference (I-J)	Std. Error	Sig.
Scheffe	AL	RA	3.62*	1.044	.008
		BA	5.41*	1.555	.008
		Other	.67	1.094	.945
	RA	AL	-3.62*	1.044	.008
		BA	1.79	1.650	.759
		Other	-2.95	1.225	.124
	BA	AL	-5.41*	1.555	.008
		RA	-1.79	1.650	.759
		Other	-4.74*	1.681	.050
Other	AL	-.67	1.094	.945	
	RA	2.95	1.225	.124	
	BA	4.74*	1.681	.050	

* The mean difference is significant at the .05 level

Calculative Commitment: While the mean level of calculative commitment is higher for Ryanair and Other (see table 4.31), the F ratio shows that there is no significant difference between the means ($F = 1.209$, $p > 0.05$). The null hypothesis of equal means is correct. There is no difference between the airline groupings and their level of calculative commitment.

Table 4.31 Calculative Commitment Descriptives

Airline Grouping	N	Mean	Std. Deviation	Std. Error
AL	108	20.81	6.557	.631
RA	61	21.57	7.843	1.004
BA	21	18.48	7.910	1.726
Other	53	21.70	6.993	.961
Total	243	21.00	7.120	.457

Intention to Continue: The next variables to be considered is the Intention to Continue variable. The test for homogeneity of variance (Levene) for Intention shows no significant differences with any of the four groupings ($p > 0.05$), thus the assumption has not been violated. The results for the F statistic show that all group means are not equal ($F = 3.796$, $p < 0.05$). There is a significant difference between the groups in terms of their Intention to Continue.

Table 4.32 Intention to Continue Descriptives

Airline Grouping	N	Mean	Std. Deviation	Std. Error
AL	108	10.11	2.624	.252
RA	61	10.33	2.885	.369
BA	21	7.95	3.383	.738
Other	53	9.87	3.223	.443
Total	243	9.93	2.946	.189

Post hoc procedures were used to test all group differences. From table 4.33 it can be seen that there are significant differences between British Airways and Aer Lingus, and between British Airways and Ryanair. Both Aer Lingus and Ryanair passengers have significantly higher means than British Airways passengers and consequently, Aer Lingus and Ryanair passengers have a higher intention to continue.

Table 4.33 Multiple Comparisons: INTENT

			Mean Difference (I-J)	Std. Error	Sig.
Scheffe	AL	RA	-.22	.464	.975
		BA	2.16*	.691	.022
		Other	.24	.486	.969
	RA	AL	.22	.464	.975
		BA	2.38*	.733	.016
		Other	.46	.544	.870
	BA	AL	-2.16*	.691	.022
		RA	-2.38*	.733	.016
		Other	-1.92	.747	.090
Other	AL	-.24	.486	.969	
	RA	-.46	.544	.870	
	BA	1.92	.747	.090	

* The mean difference is significant at the .05 level

Satisfaction: The test of homogeneity of variance for satisfaction shows no significant differences with any of the four groupings ($p > 0.05$). Thus, further tests can be conducted. The F statistic indicates that there are significant differences between the group means ($F = 5.753, p < 0.01$).

Table 4.34 Satisfaction Descriptives

Airline Grouping	N	Mean	Std. Deviation	Std. Error
AL	108	27.55	5.248	.505
RA	61	24.52	5.971	.765
BA	21	23.43	5.249	1.146
Other	53	26.98	6.335	.870
Total	243	26.31	5.850	.375

The post hoc procedure tests (see table 4.35) show that there are significant differences between Aer Lingus passengers and passengers of Ryanair and British Airways. In each case, the group mean is higher for Aer Lingus, meaning Aer Lingus passengers are more satisfied than Ryanair and British Airways passengers.

Table 4.35 Multiple Comparisons: Satisfaction

			Mean Difference (I-J)	Std. Error	Sig.
Scheffe	AL	RA	3.02*	.911	.013
		BA	4.12*	1.356	.028
		Other	.57	.953	.950
	RA	AL	-3.02*	.911	.013
		BA	1.10	1.438	.901
		Other	-2.46	1.068	.154
	BA	AL	-4.12*	1.356	.028
		RA	-1.10	1.438	.901
		Other	-3.55	1.466	.121
Other	AL	-.57	.953	.950	
	RA	2.46	1.068	.154	
	BA	3.55	1.466	.121	

* The mean difference is significant at the .05 level

Affect: For the affect data, the homogeneity of variance test shows that there is no significant differences with any of the four groupings ($p > 0.05$), thus the homogeneity of variance assumption has not been violated. The F statistics indicates that there are significant differences between the group means ($F = 10.026, p < 0.001$).

Table 4.36 Affect Descriptives

Airline Grouping	N	Mean	Std. Deviation	Std. Error
AL	108	23.31	3.810	.367
RA	61	20.07	4.993	.639
BA	21	19.62	4.105	.896
Other	53	22.19	4.076	.560
Total	243	21.93	4.447	.285

Further tests using the post hoc procedure (see table 4.37) show similar results as those shown for affective commitment and satisfaction. The mean affect level for Aer Lingus is higher than that of Ryanair and British Airways, and the results are statistically significant.

Table 4.37 Multiple Comparisons: AFFECT

			Mean Difference (I-J)	Std. Error	Sig.
Scheffe	AL	RA	3.25*	.675	.000
		BA	3.70*	1.006	.004
		Other	1.13	.707	.470
	RA	AL	-3.25*	.675	.000
		BA	.45	1.067	.981
		Other	-2.12	.792	.069
	BA	AL	-3.70*	1.006	.004
		RA	-.45	1.067	.981
		Other	-2.57	1.087	.137
	Other	AL	-1.13	.707	.470
		RA	2.12	.792	.069
		BA	2.57	1.087	.137

* The mean difference is significant at the .05 level

It is worth noting that the results for trust also show Aer Lingus with statistically different means to Ryanair and British Airways, with Aer Lingus scoring higher means than the aforementioned airlines. Thus, the results for all of the affective variables concur. However, the results for trust are not reported because of violation of the assumption of homogeneity of variance ($p < 0.05$). However, Shemwell et al. (1994) state that ANOVA designs are robust to violations of the equality of group variances. Hence, the trust results are still reported.

Value: The Levene test statistic indicates that there is no significant difference between the group variances ($p > 0.05$), meaning the homogeneity of variance assumption has not been violated. The F ratio is statistically significant ($F = 13.120$, $p < 0.001$). Thus, there are differences between the group means.

Table 4.38 Value Descriptives

Airline Grouping	N	Mean	Std. Deviation	Std. Error
AL	108	24.55	5.987	.576
RA	61	29.33	5.153	.660
BA	21	21.90	5.513	1.203
Other	53	26.25	5.533	.760
Total	243	25.89	6.059	.389

The output from the post hoc procedure can be seen in table 4.39 and shows significant differences between various group means. Most notable are the results for Ryanair. The value level is higher for Ryanair respondents than for the other three groups and the results are statistically significant. Thus, Ryanair offers higher value than the other three airline groupings.

Table 4.39 Multiple Comparisons: VALUE

			Mean Difference (I-J)	Std. Error	Sig.
Scheffe	AL	RA	-4.78*	.905	.000
		BA	2.64	1.347	.281
		Other	-1.70	.947	.362
	RA	AL	4.78*	.905	.000
		BA	7.42*	1.429	.000
		Other	3.08*	1.061	.040
	BA	AL	-2.64	1.347	.281
		RA	-7.42*	1.429	.000
		Other	-4.34*	1.457	.033
Other	AL	1.70	.947	.362	
	RA	-3.08*	1.061	.040	
	BA	4.34*	1.457	.033	

* The mean difference is significant at the .05 level

Having considered the airline groupings, the next subgroup to be considered is the business Vs leisure grouping.

4.13.3 Business Vs Leisure Passengers

Respondents to this research were asked if they fly mainly for business or leisure purposes and were accordingly categorized into one or the other grouping. The researcher was interested in determining if there are significant differences between the two groups in terms of the constructs included in the model. Surprisingly, business and leisure passengers did not differ in relation to either type of commitment or any other variables in the model except for two variables, namely freedom to choose and

value. The full results for this subgrouping are reported in the appendix N. In summary, the mean for freedom to choose was higher for leisure passengers and the difference was statistically significant. Thus, leisure passengers believe they have greater freedom to choose their airline than do business passengers. The second variable that showed significant differences was value, with the leisure group believing that they receive better value for money.

4.13.4 Freedom to Choose Groupings

As mentioned, in chapter two, volition or freedom to choose is important from an airline perspective. Some passenger, such a business flyers, may be constrained in exercising their choice of preferred airline. The researcher was interested to examine the differences between those with much freedom to choose and those with little freedom. The freedom to choose variable was split into two groups based on the median split. In the questionnaire, freedom to choose was measured by two 7-point items, thus, the range was 14 and the median was 7. Group one was classified as those with little or no freedom to choose (i.e. those below seven) and group two was classified as those with greater or total freedom to choose (i.e. those equal to or above seven). These two groupings were then compared to see if they differed in relation to any of the commitment model constructs.

The full analysis of results can be seen in Appendix O. In summary, the group with greater freedom to choose scored higher (i.e. had higher means) for all the affective variables (affective commitment, affect, satisfaction and trust). There was no significant difference between the groups in terms of calculative commitment. Finally, the group with greater freedom to choose also scored higher in terms of value and intention to continue.

The next grouping concerns differences between members and non-members of FFPs.

4.13.5 Member of Frequent Flyer Programme of Main Airline

Research respondents were asked to indicate if they were a member of the frequent flyer programme of their main airline. As can be seen below, 82 (34%) said yes and 161 (66%) said no. The researcher was interested in examining differences between

these two groups. Surprisingly, the groups only differed in terms of one of the variables in the commitment model, namely value. The results are described below.

Value				
FFP with Main airline	N	Mean	Std. Deviation	Std. Error Mean
Yes	82	24.09	6.374	.704
No	161	26.81	5.696	.449

The test for homogeneity of variance for satisfaction shows no significant differences for the two groups (Levene test, $p > 0.05$). Furthermore, there is a significant difference between the means of the two samples ($t = -3.382$, $p < 0.001$). The group that is not a member of the frequent flyer programme of their main airlines believe they receive greater value.

These results were also carried out for all passengers who were a member of any frequent flyer programme, not necessarily the programme of their main airline. The results showed that 98 (40%) of the respondents were a member of at least one airline FFP, while 145 (60%) were not a member of any FFP. The results were identical to those discussed above for passengers who are members of their main airline's FFP. Again, the only variable on which the two groups were significantly different was value, with the non-members believing they receive greater value.

4.13.6 Age Groups

Respondent were assigned to one of six different age categories. The researcher was interested in determining if any of the groups differed significantly in terms of any of the commitment model constructs. Two age categories did show significant differences. The 50-65 age category differed from the 25-34 and 35-44 age categories on two constructs, namely affective commitment and value. The full results can be seen in Appendix P. In summary, the 50-65 age category scored higher than aforementioned categories, both in terms of affective commitment and value. Thus, the 50-65 age category of respondents is more affectively committed and believe they receive greater value.

4.14 INTERPRETATION OF RESULTS

Having carried out the analysis the next stage is the interpretation of the results. Objective 1 of the study, which concerned the development of a measurement instrument with good psychometric properties, has already been considered. Thus, this section will interpret the results by addressing the other two objectives. The first objective to be considered is objective 2 and it concerns the conceptual model and the hypothesised relationships within the model. Thereafter objective 3, which considers the differences between the sub-groups in the respondent population, will be addressed.

The section dealing with objective 2 is considered under the headings of the six separate multiple regression equations.

4.14.1 Affective Antecedent Variables & Affective Commitment

The first equations to be considered are those relating to the affective variables in the model, which include the satisfaction, trust and affective commitment equations. The results of the analysis are embellished throughout with quotes from both the informal exploratory interviews and from the open-ended question of the survey.

4.14.1.1 Satisfaction Equation

The results showed that as hypothesised, both **affect** and **value** are significant predictors of satisfaction. Increasing levels of affect and value result in an increase in satisfaction. Together these variables account for 65.7% of the variance in satisfaction, which is quite high for only two predictor variables. In terms of affect, 'how the customer is made feel' has a strong influence on their satisfaction with the service provider. This finding is consistent with those of other researchers such as Alford & Sherrell (1996), Cumby & Barnes (1997), and Westbrook & Oliver (1991).

One retired Irish male (leisure passenger, age 50+), commented on how Aer Lingus makes him feel:

“With other airlines you are treated as a number. Aer Lingus are different; they make you feel welcome”.

Similarly, one exploratory interview respondent (female, business; 25-49) stated that:

“I can understand the flight being delayed but it’s important to get an apology. It depends on the staff whether you are treated good or bad. Aer Lingus staff always make an apology”.

Value also positively impacts on satisfaction with the service. This result is consistent with previous studies (Howard & Sheth in Anderson et al. 1994; Wilson & Mummalaneni 1989). The consumer’s perception of value influences the degree of satisfaction. As one female interview respondent commented (leisure, 25-49):

“Ryanair, being so cheap definitely do provide me with value. I mean I flew to the South of France for a fiver each way plus tax a couple of weeks ago and that’s definitely value”.

The results also showed that of the two predictors, affect has a much stronger impact on satisfaction than value. Whether or not the customer is satisfied, depends more heavily on how they are made feel during the service encounter than on their perception of value. This finding is reinforced by the thinking of Cumby & Barnes (1997) who state that the affective element has an over-riding influence over all other elements of the service encounter. As previously mentioned, the affective element of the service encounter has traditionally received little attention in the service literature. However, this result indicates how important this affective element is and how it deserves further attention in future research.

4.14.1.2 Trust Equation

In this study, trust was predicted only by one variable, namely **satisfaction**. The results showed strong support for the hypothesised positive relationship between satisfaction and trust. Satisfaction accounts for 64.9% of the variance in trust, which is quite substantial for one single predictor. In order for consumers to be able to trust their service provider they must first be satisfied and in turn, higher satisfaction leads to higher trust. This result is consistent with previous research that showed a positive relationship between satisfaction and trust (Ganesan 1994; Gruen 1995; Tax et al. 1998). One female survey respondent (leisure; 25-49), described how Aer Lingus satisfies her needs as a passenger by always being ready to help her with her four young children. She continues to fly with Aer Lingus because she can trust them to always look after her and her children.

4.14.1.3 Affective Commitment Equation

In this study, affective commitment is determined by four variables, namely satisfaction, trust, freedom to choose and dependence, which all have a direct positive relationship with affective commitment. Together these four variables account for 66.8% of the variance in affective commitment. Although the relationship between **satisfaction** and affective commitment is mediated through trust, satisfaction also has a direct positive effect on affective commitment and is in fact, the strongest predictor of affective commitment in the variate. As stated in the literature review, some social psychologists state that satisfaction and commitment do not need be strongly correlated (e.g. Fehr 1988; Rusbult 1983), because commitment is possible without satisfaction. Given that satisfaction is the strongest predictor of affective commitment in this study, this result demonstrates that in order for affective commitment to be present in a relationship, the customer must be satisfied. Thus, the two variables should be highly correlated. A partner who is committed to a relationship, but is not satisfied, is most likely to be calculatively committed i.e. they are trapped in a dissatisfactory relationship. The relationship between satisfaction and calculative commitment is considered later in the section, where this discussion is elaborated on.

The importance of satisfaction in influencing affective commitment can be conveyed in the comments of one survey respondent (female, business, 25-49; nationality - American) whose preferred airline is Cathay Pacific. She describes how all her needs are satisfied by Cathay Pacific and in turn she considers herself to be very loyal. As discussed in chapter 2, loyalty is considered to be similar to affective commitment:

“I really like Cathay. Their service is excellent. The staff are brilliant compared to the US airlines. They fly direct to all my required destinations. Other airlines would have to stop. I seek the best package and Cathay usually provides that. They also allow last minute bookings... I consider myself to be loyal to Cathay and I won't be switching.”

Trust is the second most important predictor of affective commitment in the variate. Thus, if a customer believes their supplier to be honest i.e. keep its promises, and believes their supplier to be benevolent i.e. interested in the customer's welfare such as getting the customer to their destination safe and on time, then the customer is

more likely to be affectively committed. The result of a positive relationship between satisfaction and trust coincides with findings from previous research (Ganesan 1994; Gruen 1995; Tax et al. 1998; Wetzels et al. 1998). One exploratory interview respondent commented:

“If you went to an Aer Lingus member of staff and told them you’d just missed your flight or your car had broken down or whatever, I would trust the person to look at the passenger list and do the best that they could to get me on the next flight”.

Another female interview respondent (leisure, 50+) stated:

“I just trust them. I always feel that their aircrafts are well maintained, both mechanically and inside you know. They’re always nice and clean and I feel that there are safety measures put in place that maybe wouldn’t be with other airlines... Aer Lingus would definitely be my first choice of airline”.

It should be noted that the analysis showed satisfaction and trust to be highly correlated (756, $p < 0.01$). A high correlation is only to be expected given that satisfaction is a predictor variable of trust. However, in the affective commitment equation these two variables are included as independent variables, in which case the high correlation could cause problems of collinearity. However, given that both satisfaction and trust are statistically significant predictors of affective commitment and also, given that neither exceeded the cut-off measures for detecting collinearity as discussed in section 4.6.2, collinearity does not appear to be negatively affecting the results.

Another variable that is important for the establishment of affective commitment in a consumer-service provider relationship is **freedom to choose**. The freedom to choose variable was hypothesised to have a direct relationship with affective commitment and not a relationship mediated through trust. The positive relationship between the two variables demonstrates that greater freedom to choose contributes to greater affective commitment. This result is supported by previous research which also showed a positive relationship to exist (Pritchard et al. 1999; Salancik in Shamir 1988). The freedom to choose variable, otherwise known as volitional choice, applies particularly to the airline industry given that some passengers, such as business flyers, may not be free to choose their preferred airline. Thus, those passengers who freely choose which

airline they would like to fly with and are not constrained by any group, such as an employer or travel agency, are more likely be affectively committed to their airline. One survey respondent from Scotland (male, business, 25-49) commented as follows:

“I personally decide who I fly with. I like Aer Lingus and I don’t fly anything else even though I have other choices”.

The freedom variable has received little attention in the literature and may apply to other service industries, and thus deserves more attention in future research.

The final variable that positively impacts on affective commitment in this study is **dependence**. In the channel literature, dependence has been shown to have a negative effect on affective commitment (Kumar et al. 1995; Anderson & Weitz in Wetzels et al. 1998). The more dependent party fears exploitation resulting from dependence and as a result is motivated to continue the relationship more for calculative reasons than affective ones. Research carried out by Geyskens et al. (1996) and Wetzels et al. (1998) in the business-to-business literature also hypothesised that the relationship would be negative, however this hypothesis was not supported rather the relationship turned out to be positive. Dependence can positively impact affective commitment, when the more powerful partner does not act opportunistically.

As mentioned in chapter 2, there is very little literature on dependence in a consumer environment or on dependence and how it relates to other variables such as affective commitment. Bendapudi & Berry (1997) put forward a proposition in the service literature that the two variables are positively related, and indeed this study shows that they are. Perhaps consumer protection laws allay consumer fears of being exploited. Consumers have little reason to harbour negative feelings towards the more powerful service provider, with the result that consumer dependence positively impacts affective commitment. One female respondent (leisure, 50+) described a situation whereby no airline except for Aer Lingus, serviced the West of Ireland. However, Aer Lingus was very expensive. Then Ryanair began to service routes from the West of Ireland. She describes how she depends on Ryanair and how she is grateful for what they have done for the West:

“I depend on RA coming from the West. RA is the only choice really. Aer Lingus are prohibitive because they’re too expensive. They only lowered their prices when competition arrived. I feel very strongly about that. We’re lucky to have

Ryanair. Aer Lingus didn't service people from the West. The people from the West couldn't afford it. Ryanair opened it up; emigrants can come home now!" Clearly, this woman has strong positive feelings towards Ryanair despite being dependent on Ryanair.

Having considered the affective variable equations, the following section considers the calculative variables in the model and the equations relating to those variables.

4.14.2 Calculative Antecedent Variables & Calculative Commitment

The first calculative equation to be considered is dependence. Thereafter, the calculative commitment equation will be addressed.

4.14.2.1 Dependence Equation

Dependence acts as the mediating variable between the calculative antecedent variables and calculative commitment. Dependence was hypothesised to be determined by three calculative variables, namely value, size of investment and availability of quality alternatives, as well as two affective variables, namely satisfaction and trust. Only three of the variables have a statistically significant relationship with dependence and they are investment, availability and satisfaction. Together these variables account for 59.4% of the variance in dependence.

The strongest predictor of dependence in this study is **size of investment**. Investment positively impacts on dependence, thus the greater the size of the investment, the greater the dependence. Investment in a consumer service environment, which includes costs such as time, money, effort and grief, results in an increase in dependence. Thus, for airline passengers, the costs in terms of time, price and grief to switch to an alternate airline, result in a certain degree of dependence on their existing main airline. This relationship between investment and dependence has been shown to exist in previous studies in the channel and business-to-business literature (Anderson & Weitz 1992; Ganesan 1994; Heide & John 1988; Morgan & Hunt 1994). However, there is little empirical research on the relationship between size of investment and dependence in consumer services. Bendapudi & Berry (1997) put forward a proposition, that the greater the consumer's relationship-specific investments, the greater the customer's dependence on the service provider. The positive relationship

between investment and dependence confirms this proposition, although further research on this area is needed in consumer research to further investigate and confirm the result.

As mentioned in chapter 2, there are some who question the effectiveness of switching costs in consumer markets. O'Malley and Tynan (1999), for example, claim that switching costs are much less of an issue and less prevalent in consumer markets. This result shows that in the context of the airline industry and in accordance with the results of this study, switching costs result in some degree of dependence on the service provider and thus, do have an important role to play in a consumer service environment. The effort required to switch was described by one female survey respondent (leisure, 25-49):

"I've no time to change. It takes too much effort. I've been flying for years with Aer Lingus and I've come to rely on them"

One Ryanair respondent (male, business, 50+) described cost as a deterrent to switching:

"The travel department arranges flights and picks the cheapest airline. Ryanair offers the best value for money. We have other choices but it's difficult to switch because the cost is too high".

As discussed in chapter 2, frequent flyer programmes also create switching costs in the form of airmiles and other benefits, which are discussed in the following comments:

"The frequent flyer miles keep you there. It works out good, because you don't have to worry about switching" (female, leisure, <24).

Similarly, the following comment from a Dutch respondent (male, business, 25-49) concerns the frequent flyer programme of the Dutch national airline, KLM:

"The frequent flyer programme provides good benefits. It ensures that you get good treatment, such as check-in preferences. This is a major convenience; you avoid long queues. I would lose a lot if I changed especially in terms of flexibility and convenience".

Thus, frequent flyer programmes do provide some passengers with value and have the ability to create switching costs.

Availability of quality of alternatives was hypothesised to have a negative relationship with dependence. This relationship was confirmed. Thus, the lower the availability of quality alternatives, the greater the dependence. This result coincides with previous research in the channel and business-to-business literature, which postulates a negative relationship between the two variables (Anderson & Narus 1990; Anderson & Weitz 1989; Ganesan 1994; Han & Wilson 1993). There appears to be a lack of empirical results as to the relationship between availability of alternatives and dependence in the services literature. However, Bendapudi & Berry (1997) propose a negative relationship between the two variables. Similarly, Hocutt (1998) proposes a negative relationship between quality of alternatives and relative dependence in a doctor-patient relationship. The results of this research confirm these propositions for the context of this study in the airline industry.

The quality of available alternatives variable is particularly relevant to this study, given the lack of available alternatives at Dublin airport. As previously mentioned there are two main airlines, namely Aer Lingus and Ryanair which account for roughly three-quarters of business at Dublin airport. Thus, due to lack of quality available alternatives, passengers at Dublin airport are highly dependent on these two airlines, if they wish to fly from Dublin airport. One female leisure traveller (50+) stated:

“There is a severe lack of choice flying from Dublin. There needs to be more choices and destinations”.

Furthermore, one exploratory interview respondent (male, business, 25-49) described how he has to fly via London to get his desired destination:

“There are only one or two airlines that can really service Dublin, so you are really kind of tied to them. The sense of competition is not there. Aer Lingus have limited route availability. You have to fly to London and use it as a hub”.

Similar sentiments were expressed by many of the survey respondents, for example one male business traveller (25-49) stated the following:

“You don’t get much option for flights. There’s no direct flight from Dublin to Geneva, so you must go through London. There’s also not much choice going to Heathrow; Aer Lingus is the only one”.

Given that these two airlines take very different approaches to being competitive i.e. Ryanair concentrates on being a low fares airline and Aer Lingus aims to be a high quality service provider, passengers react very differently to the two main choices available to them. Many passengers feel there are no quality alternatives available to passengers flying from Dublin:

“Aer Lingus fly direct to my destination. There isn’t really a viable alternative. The only alternative is Ryanair and they are disgracefully poor. They are unreliable both for business and leisure purposes” (Male, Leisure, 25-49).

Alternatively, for some passengers Ryanair is the only available alternative:

“I buy purely for low price. RA is the only option I have” (Male, business, < 24).

One female leisure passenger contends that there are virtually no options available to her at Dublin Airport:

“I feel Aer Lingus have a monopoly. As the national airline they are far too expensive. They don’t service Ireland adequately. I’m flying to America today and Aer Lingus are too expensive to fly direct. I have to go to London to get cheaper prices” (female, leisure, 25-49)”.

As mentioned in chapter two, partners to a relationship may voluntarily forsake available alternatives. Voluntary forsaking of alternatives occurs because consumers make a conscious decision to frequent a particular service provider because of such factors as having high trust in, and satisfaction with the provider. The open-ended question in the survey provided some evidence of this situation.

“I feel safe and comfortable with Aer Lingus. I always pick them over other airlines. They are the Rolls Royce of airlines!” (Female, leisure, 50+).

“I purposely choose Aer Lingus. I would fly at a different time if it meant flying with them. I wait until they are available because they treat you well” (Male, leisure, 50+).

Similarly one Ryanair respondent (male, leisure, <24) expressed similar sentiments:

“I travel on a regular basis and choose Ryanair over others because it suits my needs. It’s convenient, cheap and easy to book over the internet”.

The third variable that had a positive relationship with dependence in this study is **satisfaction**. In the channel literature, Anderson & Narus (Geyskens et al. 1996) contend that there is a negative relationship between the two variables. The reason for

this contention is similar to the reasoning for the negative relationship between dependence and affective commitment in the channel literature, i.e. the dependent party's fear of exploitation reduces satisfaction with the relationship. However, from a services perspective, Bendapudi & Berry (1997) propose a positive relationship. This study confirms this positive relationship. The rationale behind this positive relationship put forward by Bendapudi & Berry is that a satisfied customer risks the possibility that available alternatives will not provide as much satisfaction as the existing provider. Thus, satisfaction acts as a kind of switching cost. However, just as satisfaction does not guarantee retention, satisfaction does not guarantee dependence. What satisfaction will do, is make consumer dependence more likely to occur.

In terms of **trust**, there is conflict in the literature as to whether there is a positive or negative relationship between these two variables. In accordance with a proposition from Hocutt (1998) in the service literature, the researcher hypothesised that there would be a positive relationship between trust and dependence. However, the results of this study do not support this proposition, instead there is a non-significant relationship between trust and dependence. This result does not necessarily imply that there is no relationship between the two variables as will now be explained. As discussed in section 4.6.2, satisfaction and trust correlate highly and when included together as independent variables in the dependence equation in this research, the two variables exhibited a certain degree of collinearity. As a result of this collinearity, there was not enough unique variance to justify the inclusion of both satisfaction and trust. Only one of these variables, namely satisfaction, was needed in the prediction process, thus making trust a non-significant predictor of dependence in this study.

Lastly, in terms of the dependence equation, **value** was hypothesised to have a positive relationship with dependence. However, results show that this relationship is statistically non-significant. This result is particularly surprising given that there is much consensus in the literature on the positive relationship between valued outcomes and dependence (e.g. El-Ansary & Stern in Frazier et al. 1989; Heide & John 1988). However, the literature on the positive relationship between these variables relates mainly to a business-to-business context, as does most of the literature on dependence. The valued outcomes that result from business relationships are sales and profits. However, the valued outcomes accruing to a consumer would not be sales and

profits. Thus, this study considered value from a consumer perspective i.e. consumer service value. This may be one explanation as to why the relationship between value and dependence is non-significant in this consumer-service study i.e. value in this study is conceptually and operationally different to value in the business-to-business studies. As a result the positive relationship between value and dependence in consumer services may not exist. However, even though value is defined differently in consumer services than it is in business-to-business literature, it still seems reasonable to hypothesise that if a consumer perceives their service provider to be offering good value, that they would in turn be more dependent. For example, many of the respondent who fly regularly with Ryanair claim that the value received, results in some type of dependence:

“Ryanair’s cheap price means I can fly more often for day periods. I’d stay longer if I had to pay more” (female, leisure, 25-49).

Nonetheless, the positive relationship between value and dependence was not demonstrated in this study.

The lack of a relationship between value and dependence means that the value variable is no longer linked to the calculative side of the conceptual model, i.e. after dependence, no variable links value to the calculative variables. Thus, value could be considered to be more of an affective than a calculative antecedent variable. Indeed, the correlations between the value and the affective variables are higher than the correlations between value and the calculative variables. As previously, mentioned there is a lack of research on the value concept in consumer services. Thus, future research is needed on the concept and perhaps this research could consider if value is an antecedent that leads consumers to be more affectively or calculatively committed.

The next equation to be considered is that of calculative commitment.

4.14.2.2 Calculative Commitment Equation

Calculative commitment was hypothesised to have three determinants, namely dependence, satisfaction and trust. However, only dependence is a statistically significant predictor of calculative commitment. In terms of **satisfaction** and calculative commitment, no statistically significant relationship was found. This is contrary to the results of Wetzels et al. (1998) who found a positive relationship

between the two variables in their business-to-business service study. Thus, while satisfaction is not related to calculative commitment in this study, it is related to affective commitment. This finding confirms the thinking in the literature review chapter that there is a need for conceptualising and operationalising commitment as a multidimensional construct. Satisfied customers are more likely to be affectively committed, but not more calculatively committed. Social psychologists such as Fehr (1988) and Rusbult (1983) contend that satisfaction and commitment need not be strongly correlated. However, it appears that while satisfaction and calculative commitment need not be strongly correlated, satisfaction and affective commitment do need to be correlated. This finding emphasises the importance of studying multidimensional commitment as opposed to global commitment.

Trust was also found not to be a significant predictor of calculative commitment. This finding is contrary to research carried out by Geyskens et al. (1996; 1998), which showed a negative relationship to exist between the two variables in a business-to-business context. Thus, from a consumer service perspective, the data in this study shows that such a relationship does not exist. The rationale for the negative relationship in the channel literature is that when trust is low, parties closely scrutinise the relationship. The decision to remain in the relationship is based on an analysis of benefits minus costs i.e. the decision is calculatively based (Geyskens et al. 1996; Wetzels et al. 1998). However, this study suggests that trust in ones airline, be it high or low, does not lead to being calculatively committed to that airline. These findings seem to suggest that, similar to value, trust is more associated with the affective side of the model and is predominantly an affective antecedent variable.

Dependence is the only significant predictor of calculative commitment in this study. This result of a positive relationship between the two variables is consistent with previous research (Ganesan in Wetzels et al. 1998; Geyskens et al. 1996; Wetzels et al. 1998). Bendapudi & Berry (1997) also put forward a proposition in the services literature that the stronger the dependence on a partner to achieve relational outcomes, the stronger the constraints to maintain the relationship. Thus, those airline passengers who are dependent on their airline are more calculatively commitment. The results of this study have shown that passengers come to depend on their airline for three reasons; investments which create switching costs, lack of availability of alternatives,

and satisfaction. Dependence then leads to calculative commitment. Calculative commitment is based on an economic rationale, i.e. the customer is motivated to stay in the relationship from an economic point of view. This thinking is expressed in the sentiments of one exploratory interview respondent (female, business, 25-49):

“I am dependent on Ryanair to get from A to B at a cheap price. I mean if they didn’t exist then I probably wouldn’t travel anything like I do. But because they do exist, I can; so from that point of view I am dependent”.

While dependence may have been the only significant predictor variable out of the three proposed predictors of calculative commitment in this study, the issue of the conceptual and operational distinction between these two variables must still be considered. As discussed, the factor analysis showed the two constructs to form only one factor. Conceptually, however, the concepts are considered to be distinct. Geyskens et al. (1996) put forward an argument as to why this is so. Dependence is quite a factual and definite phenomenon. It considers the structural elements that bind the customer to the relationship. Calculative commitment, on the other hand, is more of an attitudinal, psychological phenomenon. The structural constraints that act as a motivation for the continuance of the relationship are cognitively experienced (Gilliland & Bello 2002). For example, a customer may be dependent because the relationship provides valued outcomes not available elsewhere; the consumer’s motivation for continuing the relationship is that the consequence of not doing so might be the loss of the valued outcomes i.e. the customer is calculatively committed.

Operationally, the two concepts have also been shown to be distinct (see Geyskens et al. 1996; Wetzels et al. 1998). However, in this study, it appears that they are not so distinct. The researcher anticipated that this problem might arise. As discussed in chapter 2, it was considered that there could potentially be problems of multicollinearity, especially among the calculative variables, because of a lack of distinctiveness between the measures and due to overlapping items. This is one possible explanation as to why dependence and calculative commitment formed only one factor. As discussed in chapter 3, content overlap can occur because two constructs share common components. However, eliminating overlapping items may compromise the content validity of the scale (Spector 1994). Some constructs are not

easily distinguished. Spector continues by stating that overlap at the construct level is sometimes unavoidable and can be problematic to data interpretation.

One further explanation for the lack of distinctiveness between dependence and calculative commitment is that perhaps one of the constructs, most likely dependence, was inadequately defined for this consumer service study. It is most likely to be dependence because there is a acute shortage of research on dependence in consumer services, unlike calculative commitment which has previously been considered in a consumer service setting (e.g. Gruen et al. 2000). Dependence proved very difficult to measure because of the lack of previous research, thus measures had to be taken from the channel literature and not previous consumer service research. Carmines & Zeller (1994) state that when evidence relating to construct validity is negative i.e. empirical relationships are inconsistent with each other (in this case dependence and calculative commitment form only one factor instead of two), it is possible that the measure lacks construct validity. The measure of dependence might not be measuring what it is supposed to measure. However, whether or not dependence has been adequately measured in this study, will not be determined by the results of this study alone. Instead, construct validation requires different researchers to establish a pattern of consistent findings using different theoretical structures across a number of different studies (Carmines & Zeller 1994). This is a clear indication that future research in consumer services should consider the conceptualisation and operationalisation of consumer dependence.

The final equation relates to the behavioural consequence of the conceptual model, namely intention to continue.

4.14.3 Intention to Continue Equation

As hypothesised, both affective and calculative commitment are positively related to intention to continue. This finding concurs with the findings of research carried out by Wetzels et al. (1998). In terms of a **calculatively committed** customer with an intention to continue, one male respondent (business, 25-49) stated:

“Ryanair is the only option for me because of low price. There is no other airline I am planning to use”.

While both variables positively influence intention to continue, Wetzels et al. demonstrated that **affectively committed** partners show a stronger intention to stay than do calculatively committed partners. Furthermore, Kumar et al. (1994) showed that affective commitment is more strongly related to the positive consequences of commitment than calculative commitment in a channel setting. This result is also true of this research in a consumer service setting. Affective commitment is a stronger predictor of intention to continue than is calculative commitment. Thus, airline passengers who are affectively committed, have a stronger intention to continue doing business with their main airline than passengers who are calculatively committed. For example, one male respondent (leisure, 50+) described a critical incident whereby he had been travelling as a student and his flight was cancelled. Aer Lingus arranged for him to stay in a hotel, where he and his friends had a party. He stated: "It left a lasting impression on me that Aer Lingus look after you. That emotional feeling has never been displaced. Since then I've travelled with Aer Lingus whenever possible".

In this study, intention to continue was considered to be determined by only two variables, namely affective and calculative commitment. However, as mentioned in the regression analysis section, the optimal variate for intention to continue in this study includes size of investment, value, affective commitment and dependence. The issue of which variables are appropriate as determinants of intention to continue relates back to variable selection. Variable selection must be taken very seriously, especially omission of relevant variables. There is a strong need for theoretical and practical support for all variables included or excluded in analysis (Hair et al. 1995). However, only a few studies have considered the antecedents to the intention to continue variable. Kumar et al. (1994) considered only multidimensional commitment (consisting of affective, calculative and moral commitment) as an antecedent to intention to continue. Wetzels et al. (1998) also considered multidimensional commitment as an antecedent to intention to stay but considered one further variable, namely satisfaction. However, the results showed that satisfaction did not have a significant positive relationship with intention to stay. Jones et al. (2000), on the other hand, found a positive relationship between core-service satisfaction and repurchase intentions. Finally, Garbarino & Johnson (1999) found that global commitment and trust positively affected future intentions for highly relational customers. Thus, there are very mixed results in the literature as to the determinants of intention to continue.

Whether or not the optimal variate in this research (i.e. investment, value, affective commitment and dependence) is theoretically and statistically the best predictor group of intention to continue, will only be determined by further research. However, if it proves to be the optimal variate, this will have implications for calculative commitment given that it is not included. Also, Farrell & Rusbult (Gruen 1995) state that commitment is a stronger predictor of intention to remain in a relationship than satisfaction. The optimal variate shows this to be true insofar as satisfaction is not included in the variate, but only one dimension of commitment, namely affective commitment, is included. This emphasises the importance of affective commitment over calculative commitment in determining the likelihood of intention to continue. In sum, intention to continue is an important variable and as such it warrants further research to determine which variables are the best predictors of it.

4.14.4 Subgroups Differences

Having addressed the findings relating to objective 2, the next section considers the third and final objective, which concerns the analysis carried out on the subgroupings. The subgroups to be considered include gender, airline groupings, business Vs leisure, freedom to choose grouping, frequent flyer member grouping, and age grouping.

4.14.4.1 Gender Differences

In terms of gender differences, the results of the t-test show that females are more **affectively committed** than males. This finding is similar to that of Shemwell et al. (1994) who found some support for the hypothesis that females exhibit higher affective commitment to service providers than males. Similarly, in the social psychological literature, Sabatelli & Cecil-Pigo (1985) also reported a difference between husbands and wives, with wives being more committed. This result further emphasises the findings of the exploratory interviews, whereby women showed stronger preferences and feelings towards their main airline than did men. Thus, female airline passengers are more likely to be affectively committed to their main airline than are male passengers.

In terms of **calculative commitment**, there was no significant difference found between men and women in this study. Similarly, neither group shows a stronger **intention to continue** the relationship with their service provider.

In terms of **trust**, Shemwell et al. (1994) found that women have more trust in their service provider than do men. However, this result was not demonstrated in this study. There is no significant difference between men and women and their level of trust. Male and female passengers do not feel differently in terms of the honesty (e.g. arriving at destinations on time) and benevolence (e.g. flying safe and secure planes) of their main airline. However, the results did show a significant difference between males and females in terms of their **satisfaction**. Females are more satisfied with their main airline than males. In sum, females differ significantly from males on two of the affective variables of this model, namely affective commitment and satisfaction.

4.14.4.2 Comparison Between Airline Groupings

As mentioned in chapter 1, some of the respondents of the exploratory interviews showed clear preferences for one airline over another. Thus, the researcher was interested to determine if passengers of the airline groupings differ in terms of any of the commitment model constructs. Four airline groupings were compared, namely, Aer Lingus, Ryanair, British Airways and Others, where the other group constitutes all other airlines used by the respondent group. The results show that Aer Lingus, the Irish National Carrier, scores higher on **affective commitment** than either Ryanair or British Airways. Thus, Aer Lingus passengers are more affectively committed than Ryanair and British Airways passengers. In fact, the results are the same across all the affective variables; Aer Lingus passengers are more **satisfied** than either Ryanair or British Airways passengers; Aer Lingus passengers show higher levels of **affect** than the other two airlines; and finally, Aer Lingus passengers are more **trusting**² of their airline than passengers of Ryanair and British Airways are trusting of their airline. This result coincides somewhat with recent research (Browne 2000), which showed that Aer Lingus passengers scored higher on SERVQUAL scores than Ryanair passengers.

² It should be noted, for the trust variable, there was a violation of homogeneity of variance assumption. However, ANOVA is robust to violation of this assumption (Shemwell et al. 1994) so the results for the trust variable are still reported.

In terms of trust, there was a perception among many passengers that Aer Lingus is a very safe, trustworthy airline and in many cases is safer than other airlines.

“I prefer Aer Lingus. They are safer than any others e.g. Turkish Airlines” (female, business, 50+).

“I feel Aer Lingus is much more reliable and the staff are well trained. I feel safer with them. They don’t rush you. They serve you a drink to calm you. Ryanair shove you on and give you a bumpier ride” (Female, leisure, <24).

Some respondents tried to rationalise their thinking as to why Aer Lingus are safer:

“I feel safer flying Aer Lingus. Ryanair are worrying they’re so cheap” (Female, leisure, 25-49).

“The only positive thing about Ryanair is they are cheap. You pay a higher price for Aer Lingus but you feel more secure” (Female, leisure, <24).

“It’s worth it to sacrifice a few pounds if I’m going to get the comfort and the safer feeling” (male, leisure, 50+).

This is similar to a price-quality relationship, whereby some passengers perceive that paying a higher price ensures better safety measures have been put in place. However, one male respondent (business, 25-49) aptly commented that “sometimes it’s actually perception rather than reality” that influences consumer thinking on the differences between airlines.

In relation to the overall service experience with Aer Lingus as opposed to Ryanair, one exploratory interview respondent (male, business, 25-49) commented:

“I’m always under the impression that Aer Lingus are trying hard to take care of the passenger in flight, whether that’s the way they meet and greet, the way they help passengers to their seat, the way they are assisting in putting away baggage or whether they are serving refreshments, they’re oriented to the customer on board. Whereas Ryanair have a slightly different attitude, and different behaviours. They’re either trying to flog you duty free you don’t want or they’re objecting to you getting up to go to the toilet, bus conductors, you know!”.

Many respondents also discussed problems they’ve had with the check-in facilities at Ryanair:

“if you don’t check-in more than an hour beforehand they sell your ticket on to someone else, they won’t let you board, they charge you an extra £25 and they’re just absolutely the worst, but then you are paying nothing to fly with them

anyway. Once I checked in 30 minutes before the cut-off and they tried to deny me my seat on the plane and they got very stroppy with me. They are very rude people” (female interview respondent, leisure, 25-49).

Some respondents described the experience of flying Ryanair as similar to a bus journey.

“There’s no seat allocation. It’s like turning up for the bus. You’re conscious the normal comfort is missing” (Male, business, 25-49).

“It’s like travelling steerage. There’s a cattle-rush towards the seats” (female, leisure, 25-49)

“Ryanair have a herding mentality. Michael O’Leary has a greedy image” (male, leisure, 25-49).

“Ryanair is very distinctive. I’ve heard them describe passengers as self-loading cargo (male, business, 50+).

In terms of Aer Lingus scoring higher on the affective variables than British Airways, two respondents commented as follows:

“I would say there is a friendlier atmosphere relatively speaking on an Aer Lingus flight, but you know the British Airways flight is very professional” (male, business, 50+).

“I lived in the US for six years and I’d have flown basically any airline that flies between the US and Ireland as well as the UK, such as British Airways and Delta. So I’ve flown a lot of different airlines and I’d say in general Aer Lingus is friendlier and offers a better service than them all” (male interview respondent, business, 25-49).

One interesting finding shows that Ryanair passengers score significantly higher on perceived level of **value**, than any of the other three groupings i.e. Aer Lingus, British Airways and Other. This result is not particularly surprising given that Ryanair is a low fares airline, with its main competitive advantage being low prices. However, it does highlight that while Aer Lingus achieves competitiveness by concentrating on treating passengers well and satisfying their needs, Ryanair concentrates on offering lower fares and providing their passengers with good value for money. The following are some comments from exploratory interview and survey respondents.

“I’m not committed to Ryanair. But they are a brilliant airline, offering very cheap prices” (Female, business, 25-49).

“Well I mean lets face it you can go to London on Ryanair for £30-40 and it takes £120-150 to go Aer Lingus. I would of thought Ryanair’s price differential would be a serious factor. Why pay £80-90 for a cup of tea and pack of pretzels with Aer Lingus as it were!?” (Male interview respondent, business, 50+).

“If I think I got a reasonable price then I do think I’m getting value for money. But I mean BA and Aer Lingus the price just goes to ludicrous amounts of money if you leave it too late to book, if it’s high season or a bank holiday and I just think it’s outrageous” (Female interview respondent, leisure, 25-49).

Some respondents expressed sentiments that very much captured the value trade-off discussed in chapter 2. The value trade-off refers to what is given up (all costs to the consumer) in comparison to what is received in return (what is received from the airline).

“For the price it’s great. I can tolerate the inconvenience, for example, being 40 minutes late. It’s good value for money. I get what I pay for and I have no gripes. I plan a month or two ahead. You can’t beat it” (Male, business, 50+).

“I accept what they are offering. I know what to expect. I’m not flying for comfort, just because it’s cheap” (Female, leisure, 50+).

However, for some passengers, the cheap prices offered by Ryanair is not enough to provide value.

“Ryanair keep costs down but customer relations suffer. They are inflexible in applying regulations. They take minimum responsibility e.g. for lost baggage or flights being non-refundable or returnable. They’re not that great to fly with, they’re just cheap (Female, leisure, 25-49).

“They’re rude, they’re usually late and they lose your baggage. Forget cheap price! If something goes wrong what good is it (Male, business, 25-49).

“Ryanair fly odd times. Aer Lingus have more convenient flight times. The options are to waste the morning and get it for cheap with Ryanair or to utilise the morning and pay expensive to fly Aer Lingus (Male, business, 25-49).

In terms of **intention to continue**, both Aer Lingus passengers and Ryanair passengers show a higher intention to continue than do British Airways passengers. Again, this result is not surprising given that Aer Lingus scored higher than British Airways on affective variables and Ryanair scored higher than British Airways on value. Thus, the higher scores on these variables positively impact on intention to continue for Aer Lingus and Ryanair. Incidentally, there were no differences across any of the airlines in terms of their calculative commitment. It had been anticipated that Ryanair passengers may be more calculatively committed because of the economic rationale for flying Ryanair i.e. lower airfares. However, this anticipated outcome was not supported by the data. No airline grouping is any more calculatively committed than any other.

Given that the research was carried out in Ireland, the results could be considered to be slightly biased insofar as the Irish airlines are bound to score higher than a British airline in an Irish survey. However, comparison across nationality showed that Irish passengers are more affectively committed than British passengers (analysis not displayed). Whether this result is due to Irish passengers genuinely being more affectively committed, or cultural differences such as Irish passengers being more generous with their ratings in surveys, will require further research.

4.14.4.3 Business Vs Leisure Passengers

Surprisingly, business passengers differed from leisure passengers only in terms of two variables in the model, namely freedom to choose and value. Not surprisingly, leisure passengers perceive that they have greater **freedom to choose** than business passengers. As mentioned in chapter two, leisure passengers are more likely to have greater freedom to choose their preferred airline, except for package holidays and perhaps when a travel agent organises the flight, but even then the consumer is likely to stipulate their preferred airline. Business flyers on the other hand, are often dictated to by an employer as to which airline they may fly with, as is illustrated by the following comment:

“My company dictates who I fly with. I have no input. The secretary finds the best flight and I’m just given the details” (Female, business, 25-49).

In terms of **value**, again the leisure passengers believe that they receive higher value than the business group. Perhaps this is because leisure passengers pay for the flight out of their own pocket and seek out the best deal until they are happy they are receiving value. Business passengers on the other hand, especially those who fly on behalf of an employer, have their flight paid for by their employer, in which case they are not particularly concerned with value as much as their employer might be. Business travellers are less price sensitive than leisure travellers (Gilbert 1996). One male interview respondent commented:

“Ryanair are much cheaper than Aer Lingus. That’s why a lot of personal travel is going Ryanair and a lot of corporate travel is going Aer Lingus. I mean the value for money for a lot of people going Aer Lingus is that they are not paying for it themselves” (male interview respondent, business, 50+).

Furthermore, business class passengers are charged a higher price than economy travellers for the advantages of travelling business e.g. extra leg-room. One company director (male, business, 25-49) stated that the “business fare is very expensive”. He added that he flies economy class in order to set an example for his staff. Thus, perhaps leisure travellers perceive that they get greater value, for getting the same flight as a business class passenger at a cheaper price, but without the business class perks.

4.14.4.4 Freedom to Choose Groupings

The freedom to choose group was split into two groups. Group one consisted of those with little or no freedom to choose and group two consisted of those with greater or total freedom to choose. As might be expected, the group with greater freedom to choose scored higher on many of the variables, including all the affective variables i.e. **affect**, **satisfaction**, **trust** and **affective commitment**. The main study showed that greater freedom to choose positively impacts on affective commitment. This result confirms passengers with greater freedom to choose are more affectively committed, as well as showing that they have higher feelings of affect, are more satisfied and are more trusting than those with less freedom to choose. Furthermore, passengers with greater freedom to choose perceive that they receive greater **value**, are more **dependent** and ultimately have a greater **intention to continue** flying with their main airline than the other group. These results clearly indicate that from an airline’s point of view, it is preferable for passengers to have freedom to choose who

they fly with. Those passengers who are constrained in choosing their airline for whatever reason, are likely to be less affectively committed and have a weaker intention to continue flying with that airline. For example, one respondent commented:

“My company decides that I fly with British Airways. I have no choice. But for my own personal choice, I wouldn’t choose British Airways” (male, business, 25-49).

“My company picks Ryanair because they have a convenient service. But I’d rather fly business class with another airline like BA” (female, business, 25-49).

“Aer Lingus would definitely be preferential. So whenever the company allows it we go for Aer Lingus over Ryanair” (male interview respondent, business, 25-49).

Furthermore, some respondents stated that while they fly with one airline when flying for business on behalf of an employer, that in their own personal lives they choose according to the best price. Clearly, passengers with less freedom to choose their airline have a weaker intention to continue flying with that airline.

4.14.4.5 Member of Frequent Flyer Programme of Main Airline

The researcher was interested in determining if those passenger who are members of the frequent flyer programme (FFP) of their main airline, differed significantly from those passengers who are not. Of all the variables in the commitment model, the two groups only differed in terms of one variable and that was **value**. This result is very surprising insofar as the group who are not a member of their main airline’s FFP perceive that they receive greater value. The result is surprising because one of the aims of the airline loyalty programme is to provide the members with greater value. Results from the exploratory interviews and the open-ended question on the survey suggested that many frequent flyer members, especially business passengers value some of the perks of the schemes.

“The lounges, the status... it’s comfortable for me waiting for connections. You’re treated very well. The staff are friendly. The frequent flyer programme affords much priority. If I go on stand-by, there’s a good chance I’ll get a flight. So those services I definitely feel are valuable and the points certainly influence your choice between airlines” (male interview respondent, business, 50+).

However, there was a feeling that the value provided by the schemes had come at a cost.

“But you are paying a lot for them. You know you are either paying an awful lot in terms of mileage travel and/or an awful lot in terms of the ticket price that you paid” (female, business, 25-49).

Furthermore the real worth or value of the programmes was questioned.

“I may have built up a huge number of airmiles but the fact that I may have been a frequent traveller for 30-40 years makes no difference, if in two years time I end up having little airmiles. They’d forget about it” (male interview respondent, business, 50+).

Some of the leisure passengers were also critical of the value of the frequent flyer programmes.

“It’s too difficult to get any points as a leisure traveller. You have to be flying all over the world to get enough” (male, leisure, 25-49).

“If you do fly a lot with the same airline, you do kind of think, well I should be getting something more, some loyalty from the airline, as opposed to just you being loyal to the airline...though you do get the measly TAB points (Aer Lingus points) occasionally. It’s a waste of wallet space with this TAB card. I’m thinking of throwing mine away” (male interview respondent, leisure, 25-49).

“The points expire quite quickly. So if you were to go on an annual long haul holiday it actually wouldn’t do you any good even though you are spending an awful lot of money on them” (female interview respondent, leisure, 25-49).

Thus, it appears that the frequent flyer programmes are not providing as much value as passengers would like.

The same analysis was also carried out on passengers who are a member of any airline FFP to see if they differed from those passengers who are not a member of any FFP. The analysis above considered only members who are frequent flyers with their main airline, whereas this analysis considers members who are frequent flyers with any airline. The exact same finding as above resulted i.e. the only variable on which the members and non-members differed was **value** and again, non-members perceive that they receive greater value. As such, there is no need to re-discuss the result.

4.14.4.6 Age Groups

Research carried out by Bettencourt (1997) suggested that older consumers are more likely to perform voluntary behaviours, such as spread positive word-of-mouth, in consumer-service provider relationships. In this research, the 50-65 age category differed from two younger age categories, 25-34 and 35-44, on two constructs. The older age category scored higher on levels of **affective commitment** and **perceived value**. Thus, the older age category is more likely to be affectively committed and believe that they receive greater value than the two younger age categories. Possibly, the older age category is more conservative and stick with the airline they know and have grown attached to. Also, this age category (50-65) is likely to be one of the highest income earners, which may mean they have a higher disposable income than the other age categories, leading them to believe they receive greater value.

4.15 CONCLUSION

This chapter provided a comprehensive analysis of the research data. Internal consistency analysis and factor analysis were used to purify the measurement instrument. These efforts to purify the instrument resulted in substantial improvements in the main survey instrument over and above the initial pretest measurement instrument. The scales of the final instrument demonstrated good reliability, as was evidence by high Cronbach alphas and high item-total correlations, and demonstrated good unidimensionality, as shown by factor analysis. Only two scales from the main survey instrument, namely value and availability of quality alternatives, needed to be modified slightly, with each having one item removed. Thus objective one, which aimed to provide a measurement instrument with good psychometric properties that would enable the model to be tested, appears to have been achieved.

In accordance with objective two, empirical testing of the hypothesised model was undertaken, by means of regression analysis. Within the regression analysis procedure advanced diagnostics were used to thoroughly check the data and ensure correct interpretation of the results. For example, the variables were tested to see did they meet the assumptions of multiple regression analysis; where an assumption was

violated, a remedy was sought. A two-part procedure was used to assess the degree of multicollinearity within each equation, in order to assess the impact of multicollinearity on the results and their interpretation. Furthermore, a four-step procedure was used to identify influential observations, which is an essential stage in interpreting the results of regression analysis. A number of influential observations were removed from each equation, with the result that prediction was substantially improved and standard error of the estimate reduced. These steps and procedures are quite lengthy and make the regression process quite time-consuming especially when there are six regression equations to be analysed. However, they are a necessary part of the multiple regression procedure and were not ignored as is often the case in studies involving multiple regression analysis.

The results from this study provide adequate support for the conceptual framework. Thirteen of the seventeen hypothesised relationships are supported by the regression analysis. Furthermore, the model explains a substantial amount of variance of each dependent variable.

The third and final objective of the research concerns the comparison of the subgroups. This analysis was very much exploratory in nature; no formal hypotheses were tested. The results showed some interesting differences between some of the subgroups, e.g. females being more affectively committed than males.

The conclusions and implications resulting from the research are discussed in the next chapter.

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CHAPTER 5

CONCLUSIONS AND RESEARCH IMPLICATIONS

5.1.1 CONCLUSION

This study proposed a relationship marketing model, which aimed to identify the antecedents and one consequence of multidimensional commitment. The context of the study related to a consumer service model of commitment tested on passengers of the airline industry. The problem to be addressed involved testing this conceptual model. The sub-objectives of the research were (1) to develop measurement instrument with good psychometric properties that would test the model, (2) to test the hypothesised relationships of the model and (3) to compare sub-groups within the respondent population.

5.1.1 Objective 1 – Measurement Instrument with Good Psychometric Properties

In terms of objective one, i.e. a measurement instrument with good psychometric properties, the final instrument appeared to have good psychometric properties. The measurement instrument demonstrated good reliability, as evidenced by high Cronbach alpha scores (all above 0.79) and high item-total correlations, and also demonstrated good unidimensionality, as shown by factor analysis.

5.1.2 Objective 2 – Test Hypothesised Relationships of Model

Empirical testing of the hypothesised model was conducted by means of regression analysis, in line with objective 2 of the research. In total, there were six regression equations to be analysed. The regression results provide adequate support for the conceptual framework. Thirteen of the seventeen hypothesised relationships were supported. Furthermore, the model explains a substantial amount of variance of each dependent variable.

The results of the regression analysis were considered in relation to the six regression equations. In terms of the **satisfaction** equation, both affect and value are positively related to satisfaction as hypothesised. However, of the two variables, affect is a much stronger predictor of satisfaction. Thus, the often ignored affective element or ‘how we make them feel’ (Cumby & Barnes 1997) is more important than value in

determining customer satisfaction. The affective element has received far less attention in consumer research in comparison to value. Clearly, affect is an important variable that warrants further research. The second affective equation considered **trust**, which was predicted only by one variable in this study, namely satisfaction. As expected, there is a strong positive relationship between the two variables. The greater the satisfaction with the service provider the greater the trust.

The third equation relates to **affective commitment**. Affective commitment has four significant predictors, which are all positively related to it. Despite the relationship between satisfaction and affective commitment being mediated through trust, satisfaction also has a direct relationship and turns out to be the strongest predictor of affective commitment. This result is interesting given that some social psychologists (e.g. Rusbult 1983) claim that satisfaction and commitment need not be strongly correlated because it is possible to be committed without being satisfied. Other researchers advocate creating high switching barriers to 'lock-in' customers; for example, Kalwani & Narayandas (1995) suggest that "firms can lock up a customer base" (see also Johnson 1991). Thus, commitment is achieved by locking-in the customer, i.e. the customer is calculatively committed. However, the results of this research indicate that while satisfaction does not need to be strongly correlated with calculative commitment (evidenced by the non-significant relationship), it most definitely needs to be correlated with affective commitment. This finding emphasises the need for considering commitment as a multidimensional construct, given that satisfaction is related to one dimension of commitment and not the other.

Trust has a strong positive relationship with affective commitment and is the next most important predictor of it. In relation to trust and satisfaction as independent variables in this equation, there did appear to be signs of high collinearity between the two variables. However, neither exceeded cut-off points for the multicollinearity diagnostics; hence it was unnecessary to remove either one. Thus, multicollinearity did not appear to be negatively affecting the results for the affective commitment equation. The final two predictors of affective commitment were freedom to choose and dependence. As expected the greater the freedom to choose the greater the affective commitment i.e. passengers with greater freedom to choose, e.g. leisure passengers, are more affectively committed. In terms of dependence, it also positively

impacts on affective commitment. Much of the channel literature has shown the relationship between the two to be negative, because the weaker party fears it may be exploited by the stronger party. However, such fears do not appear to be present for consumers of this study, which is demonstrated by the positive relationship.

Dependence was hypothesised to be predicted by five independent variables. However, only three of them have a statistically significant relationship with dependence. Trust was likely not to have been included because of the high correlation between it and satisfaction. After satisfaction was included in the equation, there was not enough unique variance in trust to justify its inclusion. It is surprising that value was a non-significant predictor of dependence, given the importance of valued outcomes in determining dependence in the channel literature. The lack of the relationship means that value is more related to the affective side of the model, than the calculative side. One possible explanation as to why the relationship between value and dependence is non-significant in this study is that this positive relationship between value and dependence has previously only been considered from a business-to-business context. Value in this consumer service study is conceptually and operationally different to value in the business-to-business studies. As a result the positive relationship between value and dependence in consumer services may not exist.

As expected size of investment and satisfaction are positively related to dependence, while availability of alternatives is negatively related. Size of investment is the best predictor of dependence in this study. Investments such as time and airmiles create switching costs for some airline passengers. Contrary to the thinking of some researchers, switching costs do have a role to play in consumer markets. Availability of quality alternatives is also an important predictor of dependence, especially for the context of this study, whereby there are few alternatives available at Dublin airport. The main point to be noted in relation to the dependence from a consumer service perspective is that there is a lack of research on dependence and the other calculative variables. Further research is most definitely needed in this area.

The **calculative commitment** equation had only one significant predictor, namely dependence. Surprisingly, contrary to previous research findings, neither satisfaction

nor trust was significantly related to calculative commitment. Dependence on the other hand, is strongly positively related to calculative commitment. However, this result is only to be expected given that the factor analysis showed the two variables to load highly on the one factor. Perhaps the lack of distinction may be due to overlapping constructs or poor operationalisation of the dependence construct. This lack of distinction was anticipated by the researcher. Some of the antecedent variables in this study are operationally quite similar. This is particularly true of the calculative commitment variables. The problem is further confounded by confusion of antecedent variables with actual measures of the variables in the literature. It is clear that the conceptual and operational distinction between the calculative commitment and dependence requires further research from a consumer service context.

The final equation relates to **intention to continue**. As expected, both affective and calculative commitment are positively related to intention to continue. Furthermore, as shown by previous research (e.g. Wetzels et al. 1998) affective commitment is a stronger predictor of intention to continue than is calculative commitment. Thus, passengers who commit to a relationship with their airline because they desire to do so, are more likely to remain in that relationship than those who commit because they are constrained. Constrained relationships are likely to last only as long as the constraints do. Despite the positive relationships between affective and calculative commitment and intention to continue, they may not be the optimal variate for predicting intention to continue. Further regression analysis showed that the combination of size of investment, value, affective commitment and dependence explains much more of the variance than the two above-mentioned variables. Intention to continue is a very important behavioural consequence, which requires further research to determine its optimal set of predictor variables.

5.1.3 Objective 3 – Comparison of Subgroups within Respondent Population

The third and final objective of the research concerned the comparison of the subgroups. This was very much an exploratory part of the research and as such, there were no formal hypotheses to be tested. There were various subgroups to be compared on the basis of the variables in the model. T-tests and ANOVA were used to examine the differences. Interestingly, the **gender** subgroup shows that females are

more affectively committed to their main airline than males, as well as being more satisfied. This finding has implications for the airline industry, as will be discussed in the implications section. In terms of the **airline groupings**, passengers of Aer Lingus are more affectively committed, satisfied and more trusting than Ryanair or British Airways passengers. Alternatively, Ryanair passengers perceive that they receive greater value than either Aer Lingus or BA passengers. This finding is not particularly surprising, given that Aer Lingus aims to be a full-service provider and provide the customer with a pleasurable flying experience. Ryanair, on the other hand aims to be a low-fare provider, hence they are perceived as offering the best value. **Business and leisure** passengers differ only on two variables and they are freedom to choose and value. In both cases, leisure passengers score higher, believing they have more freedom to choose and receive greater value than business passengers. In terms of value, business passengers may be less concerned with value for money given that it is usually their employer who pays for the flight.

In terms of the **freedom to choose groupings**, the group with greater freedom to choose scores higher on a number of variables including affective commitment, affect, satisfaction, trust and intention to continue. Not surprisingly, passengers with greater freedom to choose are more positively oriented towards their main airline. **Members of FFPs** differed from non-members only on one variable and that was value, with non-members believing they receive greater value. This result is surprising considering that FFPs are intended to increase customer value. Perhaps the value created by the FFP comes at too high a price to be considered to be value for money. Finally, in terms of age, the **age category 50-65** scored higher on levels of affective commitment and perceived value than two younger age categories, 25-34 and 35-44. It is likely that the older age category are more conservative than the younger ones, and thus have grown attached to their main airline. Furthermore, they are likely to have greater disposable income, with the result that they perceive they receive greater value for money.

5.2 RESEARCH IMPLICATIONS

The last section of the thesis concerns the implications of the research. This section is considered under two headings, namely theoretical and managerial implications. Theoretical implications are considered first and address theoretical issues arising from the research, as well as directions for future research. Thereafter, managerial issues and recommendations are discussed.

5.2.1 Theoretical Implications

Theoretical implications and directions for future research are considered under various headings below.

5.2.1.1 Commitment in Consumer Services

The most important theoretical implication for this study is the need for more studies on commitment in consumer services. The model in this study acts as one of only a few studies of commitment in consumer services. Similar to a claim made by Garbarino & Johnson (1999), this research represents one of only a few empirical examinations of relationship marketing concepts in the consumer marketplace. Further research is needed on defining and measuring commitment in consumer research. Indeed, further research will assist in confirming or contradicting the results of this research.

5.2.1.2 Multidimensional Commitment

The dearth of research is particularly apparent in relation to multidimensional commitment. While there may be little research on commitment in consumer services, there is even less research on multidimensional commitment in this context. This study represents one of the few consumer service models that considers commitment to be a multidimensional as opposed to a global construct. The importance of considering both affective and calculative commitment can be seen by the differing effects of these commitment dimensions in relation to other variables in the model. For example, affectively committed airline passengers show a greater intention to continue flying with their main airline than do calculatively committed passengers. Furthermore, satisfaction affects the two dimensions in different ways. Satisfaction is

very strongly correlated with affective commitment, while there is a non-significant relationship between it and calculative commitment. Thus, it is important to conceptualise and operationalise commitment as being multidimensional.

5.2.1.3 Calculative Variables

The calculative side of the model led to various complications during the research process such as problems finding distinct measures, overlapping items and lack of operational distinction between dependence and calculative commitment. It is clear that further research is needed in relation to the calculative variables in the model. Consumer service research is too focused on variables such as satisfaction and quality, with the result that other important variables such as switching costs, dependence and calculative commitment are often ignored. Further efforts are needed to conceptualise and operationalise the calculative antecedents in a consumer service environment. Dependence in particular, is in need of attention given that there is little if any empirical research relating to it in a consumer service setting.

5.2.1.4 Problems Encountered during the Literature Review

The problems encountered in this study are not specific to this research. As mentioned in the literature review, there are many problems in the relationship marketing literature, relating to conceptual and empirical distinction between variables. Over time, future research should determine which conceptualisations yield the most reliable and best explanations. As Garbarino & Johnson (1999) state: "Ideally, measures should be developed that discriminate among the various relational constructs and can be generalised to a broad set of contexts". In relation to the conceptual model of this study, future research might avoid some of the above-mentioned problems by including fewer calculative variables in the model. The problem with including all calculative variables as separate constructs, is that not many other studies have done so. Studies that considered dependence would generally not also consider availability of alternatives and investment, but rather would use one of these variables to measure dependence. One possible solution might be to leave out dependence with the result the dependence antecedents (Value, Availability and Investment) would lead directly into calculative commitment. This would help to avoid the problem of overlapping constructs and the lack of empirical distinction between dependence and calculative commitment encountered in this study.

5.2.1.5 Variables in need of Further Research

Within the conceptual model there are various variables that are in need of further research. Trust was not significantly related to dependence as hypothesised. However, this non-significant relationship is most likely due to the high collinearity between satisfaction and trust. Further research is needed to confirm this finding. Although there is strong support in the literature as to the relationship between value and dependence, these variables were not significantly related in this study. Further research is needed to determine if value is definitely not associated with dependence, which would mean that value is an affective antecedent as opposed to a calculative one. Furthermore, satisfaction and trust were not related to calculative commitment in this study. Further research is needed to fully confirm that there is no significant relationship between calculative commitment and these two variables.

5.2.1.6 Alternative Relationships

Although the model represents an interpretation of relevant research, there are other variables that could be considered in future research. Other possible variables to examine include communication between company and customer, relationship proneness i.e. some consumers are more willing to form relationships than others, length of relationship, and level of involvement and how they affect commitment to the relationship.

5.2.1.7 Subgroup Research

The subgroup analysis, which considered the differences among the respondent population, showed some interesting findings such as women being more affectively committed. The subgroup analysis was very much exploratory given that there is little marketing research on demographic differences such as gender and age differences as well as research on other differences such as those between business and leisure passengers. Future research might consider conducting research on demographic and other group differences.

5.2.1.8 Established Scales

As mentioned previously, there is a lack of established, multiple item scales for many of the investigated constructs. This is a limitation not only of this study but also of the

literature. The development of these scales would help to better understand commitment and the antecedent constructs.

5.2.1.9 Structural Equation Modelling

The conceptual model was analysed using multiple regression analysis. However, structural equation modelling may have been more appropriate as previously mentioned (section 3.8.2.1). Thus, the conceptual model could be analysed by using structural equation modelling in order to confirm the results of this study.

5.2.1.10 Mitigating Factors

Chapter one of this study considered the factors that are conducive to relationship building such as high involvement, frequency of contact and need for customisation. Given that the airline industry is not readily characterised by many of these variables, they could mitigate against relationship building in this industry. Future research might treat these factors as moderators of the relationships to determine their effects¹.

5.2.1.11 Examine Interaction

The conceptual model in this research is additive. There is no question of interaction within the research problem at least. Interaction may exist between the independent variables. For example, individuals may have little affective commitment to a relationship but leaving would mean sacrificing invested resources. The presence of switching costs can mean that customers are very dissatisfied but do not defect because of high switching costs. Thus, further research could determine how satisfaction and switching costs interact to influence multidimensional commitment. In a channel research context, Geyskens et al. (1996) found that the main reason for the reduction of the negative effect of dependence on affective commitment is due to trust. Trust can act to reduce this negative effect of dependence and potential exploitation on affective commitment. This finding could be investigated from a consumer service perspective. Furthermore, if the ideal relationship is characterised by high levels of both affective and calculative commitment as discussed in chapter one, future research should investigate this thinking to see how the different levels of each type of commitment interact to form the ideal relationship i.e. one characterised

¹The researcher wishes to thank Lance Bettencourt for offering this suggestion.

by high dedication and high constraints. Interaction could also be considered in the subgroup analysis. For example, this research considered only leisure versus business passengers, however the interaction effect of leisure males versus business males and leisure females versus leisure females could also be considered.

5.2.1.12 Measure Commitment of both sides of the Dyad

As previously mentioned in the limitations sections, this study considers only the consumer perspective on commitment, as opposed to considering both the buyer and seller perspectives. Most models consider only one side of the dyad, usually the buyer. One exception is Ganesan (1994) who focuses on both buyer and seller from a channel literature perspective. However, future research might consider measuring commitment of both the buyer and the seller in consumer services. It is important not only to consider customer commitment but also the commitment of the company to the customer. Unless the customer feels that the relationship is two-way, i.e. the firm is also committed, there is little chance for relationship development².

5.2.2 Managerial Implications

There are various managerial implications to be made in relation to the hypothesised model as well as the subgroup analysis, which will now be considered.

5.2.2.1 Hypothesised Model

Firstly, in terms of the **satisfaction** equation, the results showed that of the two predictor variables, i.e. affect and value, that affect is more important in predicting satisfaction. Thus, how the customer is made feel is more important than perceived value in satisfying the customer. This finding has implications for low fare airlines, such as Ryanair, that concentrate solely on low prices and value for money. Satisfaction is a key relational variable. If low fare airlines are to satisfy their passengers in the long term they should not neglect the affective dimension of the relationship in favour of concentrating purely on low fares.

The importance of **affective commitment** has been well documented throughout this study. Thus, it is necessary for airlines to be aware of the drivers of affective

² The researcher would like to thank James Barnes for making this useful comment.

commitment. The key driver of affective commitment in this study is satisfaction. If airlines are to retain affectively committed customers who desire to remain in long-term relationships, the most important driver that they must consider is satisfaction. Thus, it is important for airlines to continually monitor customer satisfaction, to ensure a reasonable level of satisfaction is maintained. However, as pointed out in the literature review, just as satisfaction does not guarantee retention, similarly, satisfaction is unlikely to guarantee commitment.

The importance of satisfaction is further emphasised by the strong influence that satisfaction has on **trust**. This study showed that trust is dependent on satisfaction. Trust is particularly important in light of the recent terrorist attacks on September 11th 2001 in America. The attacks have resulted in increased passenger anxiety when flying, thus it is important for passengers to trust their airline. Airlines can instil trust by making promises and keeping them, for example, promises of increased security measures. Furthermore, trust can be instilled by acting in the interests of the customer e.g. not implementing costs cuts that might jeopardise customer safety.

Another important driver of affective commitment is freedom to choose. Airline passengers with greater freedom to choose are more likely to be affectively committed. Alternatively, passengers with little freedom to choose, for example business passengers are less likely to affectively commit to an airline. Indeed, many of the business passengers commented during the open-ended question of the survey, that they would not fly for leisure purposes with the airline that they use for business purposes. If this is the case for many business passengers, the airlines may need to create some type of incentive, to encourage business passengers to fly with that airline for leisure purposes as well. One incentive that airlines are using is frequent flyer miles but passengers who are not members of the airline FFP cannot avail of these benefits. Thus, an incentive that targets all business flyers is needed.

Finally, dependence positively impacts on affective commitment. The literature proposes that dependence need not negatively influence affective commitment as long as the powerful party does not act opportunistically. Given that there are only two main alternatives available at Dublin airport, many passengers are dependent on one or both these options. However, there have been signs of these alternate airlines acting

opportunistically. For example, many passengers commented on the exorbitant prices charged by Aer Lingus in the past, as well as currently at high season. Furthermore, Ryanair receives a disproportionately large number of complaints regarding unexplained delays and lost/damaged luggage (Grennan 2000). Such practices could lead consumers to resent this asymmetrical dependence situation and ultimately lead to dependence negatively impacting on affective commitment.

In terms of **dependence**, there are three important predictors of dependence. The first is size of investment. High investment is the most important factor in creating customer dependence in this study. Investment such as time, money, effort and loyalty points, all constitute investments, which create switching costs and ultimately create dependence. This finding reaffirms the importance for airlines to create some form of structural bond that ties the consumer to the relationship.

As expected, the lower the availability of alternatives the higher the consumer dependence on the airline. Airlines have little control over the entry of new airlines to the market. However, they can concentrate on other elements of their offering that will help them resist competition from available alternatives. For example, airlines can concentrate on building both the affective and calculative elements of the relationship. As mentioned, the most effective relationship is one characterised by high levels of affective and calculative commitment. High affective commitment results in passengers with a strong desire to remain in the relationship, while high constraints helps the relationship to weather periods of low satisfaction.

Finally, in relation to dependence, the third factor that results in increased dependence in this study is satisfaction. Customers who are satisfied with their airline, come to depend on the airline given that they may not receive such satisfaction levels elsewhere. Again, the importance of satisfaction as a key relational variable is confirmed. Satisfaction is important in influencing both the affective and calculative antecedent variables of the model (i.e. trust and dependence respectively).

Just as it is important for airlines to be aware of the drivers of affective commitment, it is also important that they are aware of the factors that contribute to **calculative commitment**. Dependence is the only significant predictor of calculative commitment

in this study. As mentioned, it is important for airlines not only to build affective commitment but also calculative commitment. Thus, passengers who depend on their airline for reasons such as having invested highly in the relationship, or not having available alternatives, are ultimately calculatively committed to that airline.

As previously mentioned, affective commitment is a stronger predictor of **intention to continue** than calculative commitment. Kumar et al. (1994) argue that consequences of affective commitment are superior to those of calculative commitment e.g. willingness to invest more as well as resistance to act opportunistically. Thus, given the choice between establishing closeness through affective or calculative commitment, it would appear that the former would be more attractive to both parties. Calculatively committed passengers have a weaker intention to continue and are more likely to switch if the opportunity arises. Thus, airlines should concentrate on building the factors that contribute to affective commitment i.e. satisfaction, trust, and dependence. The other affective variable, namely the freedom to choose variable, is not directly under the control of airlines. By concentrating and building on the affective variables that are under their control, airlines will assist in creating a base of affectively committed customers who have a strong intention to continue the relationship. Airlines might consider initiating some kind of reward system to encourage staff to maintain affective relationships (Wetzels et al. 1998).

Intention to continue is a particularly important variable from a management point of view, given that it is a behavioural variable, while most of the other variables in the model are attitudinal. Thus, it is important for an airline to be aware of the drivers of intention to continue. As mentioned, the optimal variate for this study includes, size of investment, value, affective commitment and dependence. It would appear that these four variables supersede satisfaction and calculative commitment in predicting future intentions. In terms of satisfaction, Bettencourt (1997) states that managers are fully aware of the importance of managing customer satisfaction, but less aware of the importance of understanding customer commitment. Commitment is related to many beneficial customer behaviours, as well as being subject to less measurement problems than satisfaction (Beaton & Beaton 1995). Thus commitment, especially affective commitment, may be a better performance measure for managers to consider than satisfaction.

5.2.2.2 Subgroup Differences

One of the most interesting findings from the subgroup analysis was that of **gender differences**. The results showed that females are more affectively committed to their main airline than are males. Furthermore, females show higher levels of satisfaction towards their main airline than males. Thus, airlines should make a special effort to satisfy and build affective commitment of females. Airlines should be more inclined to engage in relationship-enhancing strategies for women, e.g. marketing efforts might consider targeting females with different campaigns than those used for males in order to build a strong base of affectively committed females.

In terms of the **airline groupings**, Aer Lingus scored very highly on all the affective variables. The core values of professionalism, intuition and intimacy that are central to the Aer Lingus philosophy appear to be effective and have resulted in affectively committed customers. Higher levels of affective commitment among Aer Lingus passengers means they are more likely to continue their relationship in the long term. Aer Lingus also scored higher on the affective variables of affect, satisfaction and trust. In relation to trust, many of the respondents commented on how they believe Aer Lingus to be a much safer airline than other airlines. Some of the respondents felt that the low fare airlines, such as Ryanair, could not be as safe because they are cheaper. This is similar to the price-quality relationship, whereby higher price means higher quality and better safety measures. Thus, low fare airlines may need to initiate efforts to change customer perceptions about trusting the safety measures of such airlines.

Not surprisingly Ryanair scored higher in terms of perceived value than any other airline grouping. Thus, the low fare approach of Ryanair provides Ryanair passengers with good value. Indeed, this low fare approach is proving very successful given that Ryanair continues to report high profits while other full-service airlines are facing falling profits and staff redundancies. Business travellers, the most profitable segment for full service providers, are increasingly travelling low fare airlines (Aughney 2001). Furthermore, the European corporate travel index shows that 53% of business travellers would use 'no frills' airlines (Business Europe 2000). These may be signals that full-service carriers may have to reduce their fares to compete. Guider (2000)

states that national carriers such as Aer Lingus are losing trade by their refusal to reduce their fares. This does not mean neglecting the full service approach, rather it means any performance improvements must be achieved through reduced costs. There is still a desire among passengers to fly full-service airlines, as was evident by respondent comments during the open-ended question. However, such airlines will have to learn to operate more efficiently and cut costs.

While the above comments suggest that it is only Aer Lingus that needs to adapt, it seems that Ryanair may also need to make some modifications. Ryanair aims to be the lowest fares provider and relies on cost-cutting to maintain a competitive advantage. However, price discounts are generally not considered a strong tool for building loyalty. Price sensitive customers are the least loyal and most likely to cut back during downturns. Cost cutting strategies can be copied, especially by established market leaders (Lawton 1999). Lawton continues that Ryanair can only sustain its competitive advantage in the long-term if it complements low fares with increased brand loyalty, achieved through high levels of customer satisfaction. Ryanair is quite a controversial airline and some respondent comments reflect Ryanair in a bad light, such as those suggesting Ryanair treats passengers like cattle. Ryanair modelled itself on Southwest Airline. While Ryanair copied their cost cutting approach, it has paid less attention to Southwest's customer service philosophy. Southwest Airlines makes a policy of involving customers in its fun. Staff have been known to hide in overhead lockers and the pilots and cabin crew make an effort to humour the customers (Tomkins in Clutterbuck & Goldsmith 1998). Some of the American research respondents commented on Southwest as having one of the lowest complaint records, having an excellent FFP, as well as having staff that treat the customers very well due to high staff morale. Ryanair could ensure its long-term competitiveness by emulating not just Southwest's cost-cutting strategy, but employing its corporate culture for good customer service as well.

In terms of the **business Vs leisure** grouping, leisure passengers perceive that they receive greater value than business passengers. Given that most business travel is paid for by the company, business travellers tend to be less price sensitive. Thus, airlines should continue to concentrate on providing leisure passengers with high value. The group with greater **freedom to choose** scored higher than the group with little

freedom to choose on many important variables, such as satisfaction, trust, affective commitment, value and intention to continue. Clearly, passengers with less freedom to choose e.g. business passengers are less positively oriented towards their main airline. As discussed, there needs to be some incentive to entice business passengers to fly with that airline when they have greater freedom to choose, such as when flying for leisure purposes.

Surprisingly, passengers who are not **members of FFP** perceive that they receive greater value than members of programmes. This is perhaps one indication to airlines that the value provided by FFPs comes at too high a price. The customer believes they are paying for the benefits of the FFP. Many of the respondents, especially leisure passengers were quite critical in their comments about the value of FFPs. They stated that it is difficult to accumulate enough points as a leisure passenger because they do not fly frequently enough and points expire quickly. However, they commented that they would still like some form of recognition if they continually fly with one airline. Perhaps airlines need to review the value that FFP provide, especially to leisure passengers. In terms of age, the older **age category**, 50-65, scored higher than two younger age categories, 25-34 and 35-44, on two variables, affective commitment and value. This segment is likely to be a very profitable segment given that 50-65 year olds are at the peak of their earning potential. Thus, airlines should place more emphasis on this segment in its relational strategies.

The End

I hope you have enjoyed my thesis!

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BIBLIOGRAPHY

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APPENDICES

CHAPTER 1 APPENDIX

**RELATIONSHIP MARKETING IN CONSUMER
SERVICES**

APPENDIX A

RELATIONSHIP MARKETING

History shows that relationships have always existed in business since the time of barter and trading goods. Such relationships developed naturally as buyers and sellers developed trust and friendships while trading (Wilson 1995). There are also many examples of how 'corner shop retailers' knew their customers by name and aimed to satisfy their individual needs (Grönroos 1996). RM is by no means a new phenomenon. However, despite the long-term existence of relationships in business, the theory of RM is still considered to be in its infancy (Bejou 1997).

RM has received much attention both in academic and industrial literature. It has been described as one of the most powerful ideas in current marketing (Hogg et al. 1993). Berry (1995) states that it is a potent strategy for today and tomorrow and warrants the attention it is receiving. Palmer (Bennet 1996) claims it goes to the very core of marketing. However, the term RM should not be construed as a romantic notion about the ideal relationship between buyers and sellers. The ideal relationship rarely exists except in romantic novels; RM represents an attempt to sustain harmony in the market (Gummesson 1995). Relationships are not simple and automatically harmonious, as they are often considered to be.

Defining Relationship Marketing

Despite the popularity of RM in the services literature and direct marketing, there is little consensus as to what RM actually is (Barnes 1995; Bejou 1997; Dwyer et al. 1987; El-Ansary 1997; Evans and Laskin 1994; Gummesson in Blois 1996; Morgan & Hunt 1994; Sheaves & Barnes 1996). Though there is no single accepted definition it is agreed that RM is a customer centred approach whereby a firm seeks long-term business relations with prospective and existing customers (Evans and Laskin 1994).

From Transaction Marketing to Relationship Marketing

RM signifies a move away from attempting to maximise profits on individual transactions to establishing dependable and permanent relationships with customers (Beaton & Beaton 1995; Dwyer et al 1987). It represents a shift from short-term transactional orientation to a relational orientation. Approaches to marketing can be placed along the continuum with transaction marketing at one end and RM at the other (Grönroos 1991; 1994; Ganesan 1994; Gruen 1995; Kalwani & Narayandas 1995; Mohr & Nevin 1990; Shemwell et al. 1994; Jackson 1985; Glynn & Lehtinen 1995; Barnes 1993; Voss & Voss 1997).

In terms of the differences between transactional and relational exchanges, transactional exchanges are discrete, involve minimal customer contact and price is usually a big issue (Grönroos 1994; Barnes 1994; Barnes 1995; Dwyer et al. 1987; Christopher et al. 1991). Relational exchanges on the other hand are of long duration, transpire over time, have a high frequency of contact, are characterised by trust and commitment and price is less important (Dwyer et al. 1987; El-Ansary 1997; Barnes 1994; Barnes 1995). Transaction marketing focuses on seeking new customers while RM aims to build long-term relationships.

Paradigm shift in Marketing

Some academics believe that a paradigm shift has taken place (Brodie et al. 1997; Pels 1999; Gummesson 1995; Webster 1992; Sheth & Parvatiyar 1995; Parvatiyar & Sheth 1997; Beaton & Beaton 1995; Gummesson 1994). Grönroos (1996) claims RM is the biggest paradigmatic shift marketing theory and practice has seen in the last fifty years. He further states that “we live in the 1990s and we cannot continue to live with a paradigm from the 1950s and 1960s” (Grönroos 1994).

The new paradigm has brought about a shift from transaction to RM. One of the notable results of this shift is a move towards a service society (Glynn & Lehtinen 1995; Gummesson 1995). Every firm must become what is essentially a service firm. Grönroos (1994) states that every firm, whether it is a service firm or a manufacturing firm has to learn to compete in a service economy. Firms that continue to compete as if core product is the most important offering will eventually fail.

PROBLEMS FACING THE NEW PARADIGM

As previously mentioned, many academics (e.g. Grönroos 1994) believe a paradigm shift is underway. However, RM is not the panacea for the marketing world. It is dangerous to envision RM as the “Mills and Boon” version in which the supplier and customer become involved in an ever-deepening meaningful relationship (Christy et al. 1996). Despite being relatively new RM is experiencing some problems. Gruen (1995) states that business-to-consumer relationships present a host of interesting challenges to researchers and marketing practitioners alike.

Customer receptivity to relationship marketing: The literature on RM informs the reader that it is now possible for all sorts of organisations to create one-to-one relationships with customers (Sheth & Parvatiyar 1995; Christy et al. 1996; Dwyer et al. 1987; Bejou & Palmer 1998). Restaurants, hotels, airlines and retailers can learn the names, habits and expectations of customers; they may even become friends (Gummesson 1994). Sheth & Parvatiyar (1995) state that consumers are also willing to accept relationships with marketers and that evidence for this is the uptake of membership in frequent flyer programmes and store membership cards. Gummesson (1995) claims relationships provide consumers with security. People in close relationships trust each other and want to do repeat business. But the question needs to be asked whether or not customers really want relationships. Blois (1996) states that if suppliers do not evaluate consumer willingness to enter relationships, there is a danger of RM going the way the marketing paradigm did...doing things to the customer for the suppliers benefit.

Existence of a Relationship: There are many problems inherent in initiating supplier-customer relationships. Firms understand that it is important to build relationships and retain customers. However, they do not appear to have as great an understanding of how to build a positive, mutually rewarding relationships with the customer (Sheaves & Barnes 1996). There is an assumption that a relationship can be formed with any customer in any situation (Barnes 1994b). However, consumers may be less ready to enter into relationships than suppliers are aware. Attempts to involve the customer may be seen as “cheeky, presumptuous and intrusive” especially where emotional involvement with the supplier is low (Mitchell in Christy et al. 1996). But often the customer does not believe or is not even aware that any such relationship exists. No

matter how great the effort of the firm to build a relationship, the customer must perceive the relationship to be in existence (Barnes 1997b; Barnes et al. 1999; Liljander & Strandvik 1995; Sheaves & Barnes 1996). A relationship does not exist unless both the company and the customer perceives a relationship to be in place.

Terminology but not the philosophy: Certain critics suggest that marketers are using the RM terminology while failing to understand the philosophy. “Relationship marketing is powerful in theory but troubled in practice” (Fournier et al. 1998). Gummesson (1995) states that while there might be a paradigmatic shift, it is confined to textbooks, classrooms and scholarly research and has not reached the real world. RM is used as the latest buzzword. Many of the problems relate to an inability to properly implement RM. O’Malley and Tynan (1999) claim that in many cases RM means a resource shift from above to below the line i.e. from advertising to direct marketing. Given that there is such a poor understanding of RM, anything that is intended to increase customer patronage is termed ‘relationship marketing’. This would explain the variety of approaches to loyalty building across many industries including direct and database marketing, loyalty programmes, frequency marketing and relationship development programmes (Barnes 1997b). Many such programmes have little to do with building genuine customer relationships. It is clear that much improvement is needed before RM can be properly implemented in the industry.

APPENDIX B**Impetus for Relationship Marketing in Services**

Apart from the limitations of traditional marketing mix for services marketing, there are other reasons why RM is receiving increasing attention in services. Berry (1995) lists a number of factors which are discussed below.

Repeated Interaction: Service firms, as opposed to firms that deliver tangible goods, have the greatest potential to benefit by implementing RM (Sheaves & Barnes 1996). This is because a relationship is essentially a people-centred concept (Sheaves & Barnes 1996) and services are delivered by service people who interact with customers and have the opportunity to build genuine relationships. Berry (1995) states that the reality is that relationships are formed with people rather than goods. Repeated contact between customer and service provider facilitates RM. Barlow (1992) states that it appeals to people to be dealt with on a one-to-one basis. These customer-provider contact points have been referred to as 'Moments of truth' (Normann in Glynn & Lehtinen 1995). During these encounters the customer forms impressions of the service provider. Positive encounters have the potential to enhance the relationship.

Technological capabilities: Traditionally, the size of mass markets hindered the development of supplier-customer relationships. But improvements in information and communication technology helped extend the concept of RM into consumer markets (Bejou & Palmer 1998; Gruen 1995; Jüttner & Wehrli 1994; Blattberg & Deighton 1991; Copulsky & Wolf 1990; Shani & Chalasani 1992; O'Malley and Tynan 1999; Christy et al. 1996; Sheth & Parvatiyar 1995; El-Ansary 1997). In particular, the huge uptake in direct and database marketing facilitated RM in consumer markets. Technological advances made it possible to track customer buying preferences, communicate with customers and customise service on a large scale basis (Berry 1995). This is especially true for the airline industry where technology allows companies to learn individual customer characteristics and preferences and to use this information to customise promotions to individual customer needs (Copulsky and Wolf 1990).

Benefits to customer: the benefits of RM are well documented from a company perspective but less so from a consumer perspective. Some of the most obvious consumer benefits are tangible rewards that result from joining a loyalty scheme such as a frequent flyer programme. Sheth & Parvatiyar (1995) consider 'choice reduction' to be of benefit to the consumer, insofar as consumers like to reduce the complexity of the buying decision by lowering the number of services under consideration. Many service customers, especially those highly involved, desire continuity with the same service provider and hence form a relationship (Berry 1995). Berry goes on to say that such relationships help to reduce risk insofar as the service provider becomes knowledgeable about the customer's needs. Finally, Berry (1995) mentions social benefits. Repeated contacts between customer and service provider may result in friendship.

Benefits to the company: The most obvious benefit to the supplier in a relationship is that of 'customer retention economics'. It is widely documented that it is more expensive to obtain new customers than to service existing accounts (Kalwani &

Narayandas 1995; Glynn & Lehtinen 1995; Reichheld & Sasser 1990; Berry 1995; Glynn & Lehtinen 1995; Sheaves & Barnes 1996; Sheth & Parvatiyar 1995; Crosby et al. 1990; Bhattacharya 1998; Grönroos 1994). Reichheld and Sasser (1990) in particular have demonstrated that it is more profitable to keep customers for the long-term. This involves keeping existing customers happy rather than devoting resources to acquiring new customers. The cost of recruiting a new customer as opposed to retaining an existing one can be up to five times more (Gummesson 1994). Mittal & Lassar (1998) state that established customers are easier to service and give the example of a repeat airline passenger who is somewhat familiar with procedures and as such may require less employee time.

Apart from the economics of retention, other benefits include reduced consumer price sensitivity (Grönroos 1994; O'Malley and Tynan 1999), opportunities for cross and up-selling (Glynn & Lehtinen 1995; Kalwani & Narayandas 1995; O'Malley & Tynan 1999) and positive word-of-mouth spread by satisfied customers (Berry 1995; Glynn & Lehtinen 1995). Finally, the supplier gains a better understanding of customer's needs over time which in turn could lead to more efficient marketing and administration skills (Kalwani & Narayandas 1995) as well as providing ideas for new products (Glynn & Lehtinen 1995).

CHAPTER 2 APPENDIX

RELATIONSHIP MARKETING MODEL OF COMMITMENT

Appendix A
Previous Research in Marketing and Channel Literature on Relationship Commitment and Related Constructs

Author(s)	Focus	Model	Industry	Data Collection	Sample Size	Variables	Measures	Validation	Model Estimation
Bettencourt 1997	An empirical investigation of a model of antecedents of customer voluntary performance (i.e. helpful behaviours of customers that improve service quality)	The model investigates the relationships between three social exchange antecedents and three customer voluntary performance dimensions	Consumer services: Customers of the grocery retail industry	Self-administered questionnaire distributed by students (53 students each recruited 5 respondents – friends, family or strangers)	230 surveys; used 215	Independent: commitment, satisfaction and perceived social support Dependent: Loyalty, cooperation and participation	Measures consisted of items created from conceptual definitions and literature review as well as existing measures	Confirmatory factor analysis provides support for factor conceptualisation revealed Alpha coefficients acceptable internal consistency of the dimensions	The path relationships were analysed by structural equation modelling
Ganesan 1994	Determinants of long-term orientation in buyer-seller relationships (retail-vendor relationship)	Developed a model where long-term orientation is a function of mutual dependence and trust	Channel Industry: Vendor: senior sales reps or sales managers Retailer: men's and women's clothing, accessories, jewellery retailers.	Predominantly quantitative with some preliminary qualitative research. Mail survey of retail buyers and their vendors	124 retail buyers 52 vendors	Dependent variable: Long-term orientation. Mediating variables: Trust, mutual dependence. Determinants: environmental uncertainty, transaction-specific investments, reputation, experience and satisfaction	Multiple-item measures were developed for each construct	Item analysis and exploratory factor analysis were used to clarify scales. Resulting items were tested for unidimensionality and convergent and discriminant validity using a confirmatory factor analytic procedure (LISREL 7.16)	Retailer data: LISREL 7.16 with sample covariance matrix and input matrix. Vendor data: multiple regression
Garbarino & Johnson 1999	The role of overall satisfaction, trust and commitment in predicting future intentions of customers with transactional and relational exchange orientations	Two models; one for customers with a high relational orientation where trust and commitment were mediators. The second was a model for less relational customers where overall satisfaction was a mediator	Consumer services: (Theatre-goers) Subscribers (considered to be relational customers for research purposes), occasional subscribers and individual ticket buyers (both treated as transactional customers for research purposes)	Questionnaire: Administered by mail by selecting a random selection of theatre goers from a theatre mailing list	Mailed 1000 (250 current subscribers), 375 occasional subscribers and 375 individual ticket buyers. 401 returned (represents 40% response)	Exogenous: Actor satisfaction, preference for familiar actors, play attitudes, theatre facility attitudes. Endogenous: Overall satisfaction, trust, commitment, future intentions	Measures were taken directly from previous studies as well as being adapted to suit the context of this study	Confirmatory factor analysis showed that measures demonstrated acceptable levels of fit, convergent validity, discriminant validity and reliability.	The hypothesised structural models were tested using LISREL VIII and the covariance matrices

Author(s)	Focus	Model	Industry	Data Collection	Sample Size	Variables	Measures	Validation	Model Estimation
Geyskens, Steenkamp, Scheer & Kumar 1996	Cross-cultural study (USA & Netherlands) of dealer's commitment to their supplier and the role of interdependence structure and trust in shaping this commitment	No model as such, but offer a set of hypotheses concerning the joint impact of trust and interdependence on both affective and calculative commitment	Channel Industry: automobile dealers and suppliers	Mail survey	USA: Mailed 1640 automobile dealers; received 453 (28% response); used 417. Netherlands: 1600 dealers; received 309 (19% response)	Dependent: Calculative and affective commitment. Independent: Trust (honesty & benevolence); Dependence (motivational investment & replaceability)	Measures consisted of established measures as well as measures developed specifically for this study	Internal consistency; Two-factor model; overall fit indices with findings supporting convergent validity	OLS regression
Gundlach, Achrol & Mentzer 1995	Study on the effect of the credibility and proportionality of commitment inputs on the development of relational social norms, opportunism and long-term commitment intentions	No model developed, but tested various hypotheses relating to the constructs of the study	Channel Industry: Manufacturer and distributor exchange relationships.	Quantitative (Manufacturer-distributor behavioural simulation) Questionnaires (distributed on two occasions over the 10 week testing period)	130 manufacturer-distributor observations	Key construct: Commitment (3 dimensions – inputs, attitudinal & temporal). Credibility and proportionality of commitment, relational social norms, and opportunism	Multiple-item scales were developed for the study	Principal component factor loadings tested for evidence of unidimensionality & assessed nomological validity Reliability, coefficient alphas	Multiple regression was used for testing the hypothesised relationships
Morgan & Hunt 1994	Theorise that commitment and trust are key variables that mediate successful relationship marketing	KMV Model: Model relationship commitment and trust as key mediating variables These two variables mediate between five antecedents and five outcomes	Channel Industry: Automobile tyre retailers	Preliminary qualitative research followed by self-administered questionnaire involving two phases	Phase 1: Distributed 341 to trade associations; response 49 (14.37% response) Phase 2: Mailed random sample of 1000; 129 responded (12.9%) Overall sample size: 204 (14.6% response)	Antecedents: Relationship benefits, relationship termination costs, shared values, communication, opportunistic behaviour Mediators: Trust and commitment Outcomes: Acquiescence, co-operation, propensity to leave, functional conflict, and uncertainty	Measures were taken from previous research; some were used directly and some were modified. A small number of items were developed for the study	Measures were analysed for validity and reliability in accordance with the guidelines for structural equation modelling	Correlation provided an initial test of the hypotheses, supporting all of the hypotheses. The model was tested using LISREL VII and the covariance matrix

Author(s)	Focus	Model	Industry	Data Collection	Sample Size	Variables	Measures	Validation	Model Estimation
Sharma & Patterson 1999	Modelling the antecedents of commitment in the context of professional consumer services i.e. personal financial planning services	Conceptual model: The study models antecedents of client relationship commitment in the context of professional services	Professional consumer services: Personal financial planning services	Exploratory: In-depth interviews were used to gain insight into client-relationship and financial planner relationships and to develop hypotheses. Descriptive: Mail survey	25 in-depth interviews. Mailed 900 questionnaires; response 201 usable questionnaires (23% response)	Dependent variable: relationship commitment Exogenous: communication effectiveness, technical quality and functional quality Endogenous: Trust	Most measures were either adopted from previous published works. Otherwise they were developed specifically for this study	Multi-item indicators developed specifically for this study were assessed for reliability, convergent validity and unidimensionality	Causal path analysis. Regression analysis which supported all hypothesised relationships
Wetzels, de Ruyter & van Birgelen 1998	To develop a conceptual framework in order to study relational commitment and its relationship with various antecedents and consequences	Conceptual framework: Test a model which incorporates antecedents and consequences of commitment in a comprehensive framework	Business-to-business; the relationship of business customers with service engineers of a major Dutch office equipment manufacturer	Quantitative: Mail survey (stratified random survey – randomly selected from database)	1,988 mailed; 572 usable questionnaire returned (28.8% response)	Antecedents: Technical quality, functional quality, trust (benevolence) and dependence. Focal constructs: affective commitment and calculative commitment. Consequence: Intention to stay	Constructs were measured using established scales	Structural equation modelling was used to validate the constructs (confirmatory factor analysis). Reliability was also tested using composite reliability	Hypotheses were tested using path analysis using PRELIS and LISREL 7

Social Psychological Model of Commitment

Author(s)	Focus	Model	Context	Data Collection	Sample Size	Variables	Measures	Validation	Model Estimation
Caryl Rusbult 1980a	Examination of commitment processes in friendships	Investment model argues that an individual's commitment to his/her relationship should increase to the extent that he/she is satisfied, has no acceptable alternatives and has invested heavily in it	Interpersonal relationships; same sex or cross-sex friendships. The investment model has also been applied in romantic involvements and business associations (job commitment). All research provided consistently good support for the model	Exploratory questionnaire distributed to students	114 male and female students (completed experimental questionnaire in partial fulfilment of course requirements); 173 distributed; 122 returned (71%)	Dependent: Commitment. Independent: Rewards and costs of the relationship, magnitude of investment, quality of best available alternative friendship and degree of satisfaction	Developed specifically for the study	Reliability: Computed reliability coefficients. Validity: Convergent and discriminant validity were assessed (each set of specific measures was regressed onto the parameter index)	Multiple Regression

CHAPTER 3 APPENDIX

RESEARCH METHODOLOGY

APPENDIX A

HYPOTHESES

Direct and Indirect Determinants of Affective Commitment

Hypotheses		Relevant Literature
H1	There is a positive relationship between affect and satisfaction	Cumby & Barnes 1997
H2	There is a positive relationship between satisfaction and trust	Anderson & Narus 1990
H3	There is a positive relationship between satisfaction and affective commitment	Wetzels et al. 1998
H4	There is a positive relationship between freedom to choose and affective commitment	Pritchard et al. 1999
H5	There is a positive relationship between trust and affective commitment	Geyskens et al. 1996
H6	There is a positive relationship between dependence and affective commitment	Geyskens et al. 1996

Interrelationships between Affective and Calculative Variables

Hypotheses		Relevant Literature
H7	There is a positive relationship between trust and dependence	Hocutt 1998
H8	There is a positive relationship between satisfaction and dependence	Bendapudi & Berry 1997
H9	There is a positive relationship between value and satisfaction	Wilson & Mummalaneni 1986

Direct and Indirect Determinants of Calculative Commitment

Hypotheses		Relevant Literature
H10	There is a negative relationship between satisfaction and calculative commitment	Wetzels et al. 1998
H11	There is a negative relationship between trust and calculative commitment	Geyskens et al. 1996
H12	There is a positive relationship between dependence and calculative commitment	Geyskens et al. 1996
H13	There is a positive relationship between value and dependence	Heide & John 1988
H14	There is a negative relationship between availability of alternatives and dependence	Anderson & Narus 1990
H15	There is a positive relationship between investment and dependence	Ganesan 1994

Consequences of Commitment

Hypotheses		Relevant Literature
H16	There is a positive relationship between affective and calculative commitment and intention to continue	Wetzels et al. 1998
H17		

APPENDIX B**INFORMAL INTERVIEW QUESTION SHEET****GENERAL INFORMATION**

How often do you fly?

Who do you predominantly fly with?

Do you fly predominantly for business or leisure purposes?

Are you a member of a FFP?

When answering the rest of the questions, answer them in relation your main airline where your main airline is the airline you most frequently fly with.

RELATIONSHIP WITH AIRLINE

Do you consider that you have a 'relationship' with your airline?

Describe this 'relationship'?

COMMITMENT TO AIRLINE

Are you committed to that airline?

Describe what this commitment means to you.

Do you choose freely to fly with your airline?

FACTORS THAT CONTRIBUTE TO COMMITMENT**Affective/positive factors**

Why are you committed/ why do you fly with X?

Are you satisfied with X?

What makes you satisfied/dissatisfied?

How are you made feel when you fly X?

Do you trust X as an airline?

Why do you trust/distrust X?

Calculative/negative factors

Do you value X as an airline? Does X provide you with value?

What factors do you value? (Listen for factors such as convenience and price)

Do you have any available alternatives to X?

Have you invested highly in the 'relationship' with X?

What have you invested?

Do these investments create a barrier to you switching to an alternative airline?

Are you dependent on X as an airline?

Why are you dependent?

APPENDIX C

METHODS OF CONDUCTING SURVEY RESEARCH

Telephone interview: telephone interviews involve the presentation of the questionnaire by telephone (Tull & Hawkins 1990).

Mail survey: Mail survey interviews may be delivered in a number of ways, but are generally mailed to the respondent and the completed questionnaire is returned to the researcher (Tull & Hawkins 1990). Mail surveys involve self-completion questionnaires insofar as they are completed by the respondents on their own (Hague 1994).

A mail survey would not be possible for this research given that the sampling frame is no longer available. The other possible option, which was chosen for this research, is that of conducting personal interviews with respondents at Dublin airport.

Criteria for Selection of Survey Method

In choosing a survey method, the “primary consideration is which technique is capable of generating the *appropriate information* from the *appropriate sample* at the *lowest cost*” (Tull & Hawkins 1990). See table below.

Strengths of the Survey Methods

Criterion	Mail	Telephone	Personal
Ability to handle complex questionnaires	Poor	Good	Excellent
Ability to collect large amounts of data	Fair	Good	Excellent
Accuracy on ‘sensitive’ questions	Good	Good	Fair
Control on interviewer effects	Excellent	Fair	Poor
Degree of sample control	Fair	Excellent	Fair
Time required	Poor	Excellent	Good
Probable response rate	Fair	Fair	Fair
Cost	Good	Good	Fair

Note: Personal interviews are based on mall-intercept
Adapted from Tull & Hawkins (1990)

The following represent various criteria used to decide on an appropriate survey method:

Complexity of questionnaire: Mail surveys are not suited to complex questionnaires as they are confusing to respondents (Tull & Hawkins 1990). The questionnaire in this research will be quite complex, which supports the use of personal interviews in this study. Face-to-face interviews undertaken by an experienced researcher can cope with more difficult questions than those used in a self-completion questionnaire. Questions laid out in a grid (which is the case for this research) are much more suited to interviews, which are administered by a trained interviewer but are off-putting in a self-completion questionnaire (Hague 1994).

Amount of Data: The amount of data to be generated leads to two issues; the time and effort required by respondents to complete the questionnaire. Personal interviews tend to take more time than other types of interview. In the defence of personal interviews, social motives have a role to play. Respondents may consider it to be

impolite to terminate an interview in a face-to-face situation. However, refusal rates for interviews that are longer than five minutes can be up to 20-40 per cent (Tull & Hawkins 1990). In terms of effort, personal surveys generally require less effort from respondents than mail survey, providing the interviewer fills in the question and relieves the respondent of this task. Questionnaires in this research will be completed by the interviewer which will relieve the respondents of the burden of filling out a complex questionnaire.

Accuracy of resultant data: Data accuracy can be affected by a number of factors, e.g. interviewer, sampling, questionnaire design (Tull & Hawkins 1990). Of particular interest to personal interviews is the effects of the interviewers on the research. For example, interviewer's appearance, manner of speaking, intention and unintentional cues, age, social class etc. can affect responses (Tull & Hawkins 1990). In turn, each respondent may receive a slightly different interview. Questionnaire designs that reduce interviewer freedom can reduce some of this interviewer bias, as can careful selection of interviewers. Another potential problem is interviewer cheating, which involves the interviewer falsifying parts of the interview. In order to avoid the problems of cheating as well as bias caused by using different interviewers, only one interviewer will conduct all the interviews for this research, namely the researcher.

Time requirements: Mail surveys take the longest time (Tull & Hawkins 1990). There is little the interviewer can do to shorten this time. A mail survey involving only one follow-up mailing will require a minimum of three weeks for data collection. Telephone surveys, on the other hand, generally require the least total time for completion (Tull & Hawkins 1990). Total time for personal interviews can be reduced by increasing the number of interviewers. Given that only one interviewer has permission to collect data at Dublin Airport, data collection time cannot be reduced by extra interviewers.

Cost: The cost varies with type of interview, nature of questionnaire, response rate required, geographic area covered and time at which survey is made (Tull & Hawkins 1990). Personal interviews, particularly home or office interviews are much more expensive. Intercept interviews are more economical (Tull & Hawkins 1990). Cost in this research, is being kept to a minimum by using the researcher as the only interviewer.

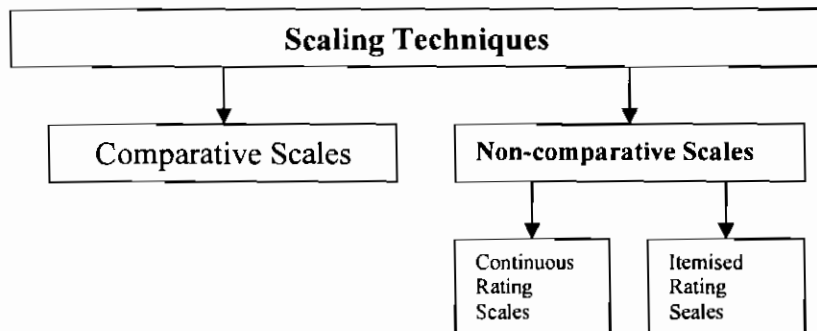
The interest factor: This factor considers the interest that the respondent has in the subject. Postal surveys should only be used where the respondent is likely to be highly motivated to answer (e.g. survey of people who've just bought a new car) (Hague 1994). Potential respondents of this research are unlikely to be highly interested in the topic of commitment to their airline, meaning that a postal survey is less appropriate.

APPENDIX D

SCALE CLASSIFICATIONS

Scales can be classified into **comparative and non-comparative** (Malhotra 1996). Malhotra continues that comparative scales involve the direct comparison of stimulus objects. They require the respondent to evaluate the object with direct reference to a specified standard (Tull & Hawkins 1990). Comparative scales are also referred to as non-metric scales because they use non-metric data. Examples of comparative scales include rank order and paired comparison. Noncomparative scales, on the other hand, involves each stimulus object being scaled independently of the other objects in the stimulus set (Malhotra 1996). The respondent is not provided with a standard to use in assigning the rating. Such scales are also referred to as metric scales because they use metric data.

Noncomparative techniques can be further classified as continuous and itemised rating scales (Malhotra 1996). According to Tull & Hawkins (1990) rating scales “require the respondent to place an attribute of the object being rated at some point along a numerically valued continuum or in one of a numerically ordered series of categories”.



Continuous rating scales are also referred to as graphic rating scales. They require respondents to indicate the rating assigned by placing a mark at the appropriate point on a line that runs from one extreme attitude to the other (Malhotra 1996). These scales are easily constructed but are not as reliable as itemised scales and are thus, seldom used in marketing research (Tull & Hawkins 1990).

Itemised non-comparative rating scales provide respondents with a scale that has a number of brief descriptions associated with each category (Malhotra 1996). Itemised rating scales are widely used in marketing research and are the building block for more complex attitude scales (Tull & Hawkins 1990). “*Attitude scales* are carefully constructed sets of rating scales designed to measure one or more aspects of an individual’s attitude toward some object” (Tull & Hawkins 1990). Such questions can be problematic insofar answers to attitudinal question may need considerable interpretation (Hague 1994). Unlike behavioural questions which collect factual

information, attitudinal questions need interpretation to make sense. Such interpretations are typical of the problems faced by researcher dealing with attitudinal questions (Hague 1994).

Commonly used itemised rating scales include semantic differential and Likert scales (Malhotra 1996; Tull & Hawkins 1990). No one rating scale is better than another, instead scales must be adjusted to suit the research and respondent. The choice of scale depends on information required, characteristics of the respondent, proposed means of administration and cost of technique (Tull & Hawkins 1990).

Semantic Differential Scale: The most common form of semantic differential requires respondents to rate the object on a number of itemised, seven-point rating scales bounded at each end by one of two bipolar adjectives (Tull & Hawkins 1990). For example, hot appears at one end and cold at the other and they are separated by seven blank spaces, one of which the respondent ticks. The versatility of the semantic scale makes it a popular marketing research scale (Malhotra 1996).

APPENDIX E**THEORY OF SUMMATED RATING SCALES**

The basic idea for summated measurement is derived from classical test theory (Spector 1994). Classical test theory provides a model for assessing random measurement error (Carmines & Zeller 1994).

Every variable has a true and observed score (Churchill 1979; Spector 1994; Tull & Hawkins 1990). A true score is a theoretical value that cannot be directly observed. The actual score is the score actually derived after the measurement process. The observed score comprises the true score plus random error (Spector 1994). Ideally, the scores for the true and observed score are the same, but this is seldom achieved (Churchill 1979; Tull & Hawkins 1990). Only when measurement is perfectly reliable and valid would the observed score equal the true score (Spector 1994). Such scores are considered to be hypothetical and unobservable (Carmines & Zeller 1994). In reality, errors influence the measurement, so that the observed score does not equal the true score.

If “a measure is valid, it is reliable, but...the converse is not necessarily true” (Churchill 1979). If something is being measured wrong, it will continue to be measured wrong while repeated results are consistent or reliable (Carmines & Zeller 1994). This is because the observed score, even with no random error present (reliability relates to random error), could still be made up of the true score plus systematic error. Reliability is “a necessary but not a sufficient condition for validity” (Churchill 1979).

Classical test theory is an oversimplification insofar as it does not take account of bias (Spector 1994). Bias is comprised of systematic or non random influences on observed scores. Researchers recognise that their scales may be contaminated by bias. One such source of bias is the persistent tendency to respond in the socially acceptable direction (i.e. social desirability). Researchers continue to use classical theory under the assumption that it represents a reasonably close approximation of the measurement situation (Spector 1994). Hence, Spector continues that validation is very important in ensuring that the scale measured what it was intended to measure and not bias.

APPENDIX F

MEASURES OF CONSTRUCTS

PRETEST MEASURES	MAIN SURVEY MEASURES
<p>AFFECT</p> <ol style="list-style-type: none"> 1. I like the way I am treated by the staff at my main airline 2. I am treated with respect by the staff at my main airline 3. My main airline is very willing to listen to me if something goes wrong 4. The staff at my main airline are very friendly towards me 	<p>AFFECT (No changes made)</p> <ol style="list-style-type: none"> 1. I like the way I am treated by the staff at my main airline 2. I am treated with respect by the staff at my main airline 3. My main airline is very willing to listen to me if something goes wrong 4. The staff at my main airline are very friendly towards me
<p>TRUST</p> <ol style="list-style-type: none"> 1. I feel that my airline is open and honest 2. My main airline is truly sincere in its promises 3. I trust my main airline to get me to my destination at the stated time 4. My main airline treats me fairly and justly 5. I feel that my main airline can be counted on to help me in any situation 6. I feel safe and secure with my main airline 7. My main airline can be trusted 	<p>TRUST (No changes made)</p> <ol style="list-style-type: none"> 1. I feel that my airline is open and honest 2. My main airline is truly sincere in its promises 3. I trust my main airline to get me to my destination at the stated time 4. My main airline treats me fairly and justly 5. I feel that my main airline can be counted on to help me in any situation 6. I feel safe and secure with my main airline 7. My main airline can be trusted
<p>SATISFACTION</p> <ol style="list-style-type: none"> 1. I am satisfied with the in-flight service of my main airline 2. I am satisfied with the comfort provided by my main airline 3. I am satisfied with the check-in services of my main airline 4. Compared to other airlines, I am satisfied with my main airline 5. In general, I am satisfied with my main airline 	<p>SATISFACTION</p> <ol style="list-style-type: none"> 1. I am satisfied with the in-flight service of my main airline 2. I am satisfied with the comfort provided by my main airline 3. My main airline satisfies my needs as an airline passenger 4. Compared to other airlines, I am satisfied with my main airline 5. In general, I am satisfied with my main airline
<p>VOLITION</p> <ol style="list-style-type: none"> 1. I control the decision on whether I fly with my main airline 2. I freely choose to fly with my main airline from available alternatives 	<p>VOLITION (No changes made)</p> <ol style="list-style-type: none"> 1. I control the decision on whether I fly with my main airline 2. I freely choose to fly with my main airline from available alternatives

<p>AFFECTIVE COMMITMENT</p> <ol style="list-style-type: none"> 1. I feel a strong sense of belonging to my main airline 2. I fly with my main airline because it is the best choice for me 3. The identity of my main airline has a great deal of personal meaning for me 4. I deal with my main airline because I want to, not because I have to 5. I have an emotional attachment to my main airline 	<p>AFFECTIVE COMMITMENT</p> <ol style="list-style-type: none"> 1. I feel a strong sense of belonging to my main airline 2. I fly with my main airline because it is the best choice for me 3. The identity of my main airline has a sense of personal meaning for me 4. I deal with my main airline because I want to, not because I have to 5. I fly with my main airline because I enjoy dealing with it as an airline
<p>CALCULATIVE COMMITMENT</p> <ol style="list-style-type: none"> 1. It would be an inconvenience to me if I decided I wanted to drop my main airline 2. Right now, staying with my main airline is a matter of necessity as much as desire 3. A major reason I continue to fly with my airline is that dropping it would require considerable sacrifice – another airline may not match the overall benefits I have here 4. It would be hard for me to leave my main airline right now, even if I wanted to 5. Sometimes I get the feeling I am trapped when dealing with my main airline 	<p>CALCULATIVE COMMITMENT</p> <ol style="list-style-type: none"> 1. It would be an inconvenience to me if I decided I wanted to drop my main airline 2. Right now, staying with my main airline is a matter of necessity as much as desire 3. A major reason I continue to fly with my airline is that dropping it would require considerable sacrifice – another airline may not match the overall benefits I have here 4. It would be hard for me to leave my main airline right now, even if I wanted to 5. One of the consequences of dropping my main airline would be the lack of available alternatives
<p>VALUE</p> <ol style="list-style-type: none"> 1. Overall, the services provided by my main airline are good value for money 2. The price paid for the services of my main airline is acceptable 3. Overall, the schedule convenience of my main airline is of high value to me 4. Considering the costs of a flight with my airline, in comparison to what I receive in return, I believe I am getting value 5. Overall, the value to me of my main airline's services is high 	<p>VALUE</p> <ol style="list-style-type: none"> 1. Overall, the services provided by my main airline are good value for money 2. The price paid for the services of my main airline is acceptable 3. Overall, the schedule convenience of my main airline is of high value to me* 4. Considering the costs of a flight with my airline, in comparison to what I receive in return, I believe I am getting value 5. Overall, the value to me of my main airline's services is high <p>* Item deleted based on reliability and validity analysis</p>

Note: Bolded items represent changes made between pilot and main survey

<p>SIZE OF INVESTMENT</p> <ol style="list-style-type: none"> 1. All things considered, I would lose a lot in changing my main airline 2. Generally speaking, the costs in time, money, effort, and grief to switch my main airline would be high 3. Considering everything, the costs to stop flying with my main airline and start up with an alternative airline would be high 	<p>SIZE OF INVESTMENT (No change)</p> <ol style="list-style-type: none"> 1. All things considered, I would lose a lot in changing my main airline 2. Generally speaking, the costs in time, money, effort, and grief to switch my main airline would be high 3. Considering everything, the costs to stop flying with my main airline and start up with an alternative airline would be high
<p>AVAILABILITY OF ALTERNATIVES</p> <ol style="list-style-type: none"> 1. If I needed to change my main airline, there are other good airlines to choose from 2. There are other available airlines that fly to my required destination(s) 3. I would probably be happy with the services of another airline 4. Compared to my main airline, there are other airlines with which I would probably be equally or more satisfied 	<p>AVAILABILITY OF ALTERNATIVES</p> <ol style="list-style-type: none"> 1. If I needed to change my main airline, there are other good airlines to choose from 2. There are other available airlines that fly to my required destination(s) * 3. If my main airline closed operations, I would have many options for a new airline as good as my former airline <p>* Item deleted based on reliability and validity analysis</p>
<p>DEPENDENCE</p> <p>Measure 1</p> <ol style="list-style-type: none"> 1. My main airline is important to me for flying purposes 2. I am dependent on my main airline <p>Measure 2</p> <ol style="list-style-type: none"> 1. About how many during the last 12 months have you flown with your most often used airline? 2. About how many times during the last 12 months have you used airlines in general? 	<p>DEPENDENCE</p> <p>Measure 1</p> <ol style="list-style-type: none"> 1. My main airline is important to me for flying purposes 2. I depend on my main airline for my flying needs 3. It would be difficult to replace my main airline with another airline <p>Measure 2*</p> <ol style="list-style-type: none"> 1. About how many times (return flights) during the last 12 months have you flown with your most often used airline? 2. About how many times (return flights) during the last 12 months have you used airlines in general? <p>*Measure 2 not used in analysis because of low correlation with Measure 1</p>
<p>INTENTION TO CONTINUE</p> <ol style="list-style-type: none"> 1. Considering all the benefits and the drawbacks, I feel I will stay with my main airline for a long time 2. I expect to continue flying with my main airline for a long time 	<p>INTENTION TO CONTINUE</p> <ol style="list-style-type: none"> 1. Considering all the benefits and the drawbacks, I feel I will stay with my main airline for a long time 2. I expect to continue flying with my main airline for a long time

Note: Bolded items represent changes made between pilot and main survey

APPENDIX G – ORIGINAL VERSION OF QUESTIONNAIRE

CUSTOMER-SERVICE PROVIDER QUESTIONNAIRE

My name is Ceara Cooper and I am a masters research student from Dublin Institute of Technology. I am carrying out research on commitment of passengers to their airline.

You may find the task of completing the questionnaire difficult but I hope you will take it seriously and do the best you can. I feel I am doing important research and would greatly appreciate your co-operation. The survey is being carried out for educational purposes and is not being carried out in conjunction with any particular airline. Your individual responses will remain anonymous and confidential.

SECTION ONE – FLYING PATTERNS

1. On average, how many times do you fly per annum? _____
2. With which airline do you predominantly fly? (List airlines in order of usage, where (1) is the airline you use most, (2) is the airline you use second most and so on). Most used airline (1) _____ Second most used airline (2) _____ Third most used airline (3) _____
3. Roughly how many years have you been dealing with each of these airlines? Years with most used airline (1) _____ Years with second most used airline (2) _____ Years with third most used airline (3) _____
4. Do you fly predominantly for business or leisure purposes? Please tick (✓) one of the appropriate options. Predominantly for business purposes <input type="checkbox"/> Predominantly for leisure purposes <input type="checkbox"/> 50% for business: 50% for leisure <input type="checkbox"/>
5. Are you a member of any frequent flyer programme? (Please list the programmes you are a member of in the space allocated below). (1) _____ (2) _____ (3) _____

SECTION 2 – STAFF TREATMENT OF PASSENGERS

Using a scale that goes from 1 to 10, where 1 means strong disagreement and 10 means strong agreement, how much do you agree with the following statements? Please tick (✓)

	Strongly Disagree					Strongly Agree				
	1	2	3	4	5	6	7	8	9	10
I like the way I am treated by the staff at my main airline										
I am treated with respect by my airline										
My main airline is very willing to listen to me										
My main airline is very friendly towards me										

SECTION 3 – SATISFACTION WITH AIRLINE

Please indicate by ticking the appropriate box (✓), your satisfaction (or agreement) with the following statements.

	Very Satisfied			Very Dissatisfied	
	5	4	3	2	1
Based on <i>all of your own experience</i> , how satisfied overall are you with your main airline's service?					
	Very Dissatisfied			Not at all dissatisfied	
	5	4	3	2	1
Based on <i>all of my own experience</i> with my main airline, I am...					
	Very Satisfied			Very Dissatisfied	
	5	4	3	2	1
Compared to other, similar airlines that you have done business with, how would you rate your satisfaction with this airline?					
	Strongly Agree			Strongly Disagree	
	5	4	3	2	1
In general, I am satisfied with my main airline					

SECTION 4 – TRUST IN THE AIRLINE

In this context, trust in your airline refers to the ability of your main airline to keep its word, as well as its ability to treat you well under any circumstances.

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree				Strongly Agree		
	1	2	3	4	5	6	7
My airline is primarily interested in its own welfare (R)							
There are times when my airline cannot be trusted (R)							
My airline is perfectly honest and trustful with me							
I feel that I can trust my airline completely							
My airline is truly sincere in its promises							
I feel that my airline does not show me enough consideration (R)							
My airline treats me fairly and justly							
I feel that my main airline can be counted on to help me							

SECTION 5 – FREEDOM OF CHOICE

This section considers how free you are to decide which airline you fly with. For example, corporate travel managers might dictate with which airline business passengers fly.

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree				Strongly Agree		
	1	2	3	4	5	6	7
My decision to fly with my main airline was freely chosen from several alternatives							
I do not control the decision on whether to fly with my main airline (R)							
I am fully responsible for the decision to fly with my main airline							

SECTION 6 – DESIRE TO FLY WITH MAIN AIRLINE

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree				Strongly Agree			
	1	2	3	4	5	6	7	
I feel a strong sense of belonging to my main airline								
I feel as if my main airline’s problems are my own								
My main airline has a great deal of personal meaning for me								
I enjoy discussing my main airline with other people								
I feel like “part of the family” at my main airline								
I have little, if any, emotional attachment with my main airline (R)								

SECTION 7 – VALUE PROVIDED BY MAIN AIRLINE

A.

	Good value for money				Very poor value for money			
	1	2	3	4	5	6	7	
This service provided by my main airline is very...								
	Very Economical				Very Uneconomical			
	1	2	3	4	5	6	7	
For the price paid the service of my airline is...								
	Very Acceptable				Very Unacceptable			
	1	2	3	4	5	6	7	
The price paid for my airline’s service is...								

B.

	Very Low		Average					Very High	
	1	2	3	4	5	6	7	8	9
Overall, the value of my main airline’s services to me are...									
Compared to what I had to give up, the overall ability of my main airline to satisfy my needs is...									

SECTION 8 – SIZE OF INVESTMENT

This section refers to the extent to which you have ‘invested’ in your dealings with your main airline. For example, you may have spent a lot of money on flights, accumulated many airmiles or exerted much time and effort in finding flights. The following statements aim to ascertain if what you have ‘invested’ would deter you from using another airline.

Using a scale that goes from 1 to 5, where 1 means strong disagreement and 5 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree			Strongly Agree	
	1	2	3	4	5
All things considered, I would lose a lot in changing my main airline					
Generally speaking, the costs in time, money, effort, and grief to switch my main airline would be high					
Overall, I would spend a lot and lose a lot if I changed my main airline					
Considering everything, the costs to stop flying with my main airline and start up with an alternative airline would be high					

SECTION 9 – AVAILABILITY OF ALTERNATIVES

The following section considers whether you have the option of flying with airlines, other than your main airline.

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree				Strongly Agree		
	1	2	3	4	5	6	7
If I needed to change my main airline, there are other good airlines to choose from							
I would probably be happy with the products and services of another airline							
Compared to my main airline, there are other airlines with which I would probably be equally or more satisfied							
Compared to my main airline, there are not very many other airlines with whom I could be satisfied (R)							

SECTION 10 - DEPENDENCE

A. Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
My main airline is important to me							
I am dependent on my main airline							

B.

Please estimate how many times during the last 12 months you have flown with your main airline _____
Please estimate how many times during the last 12 months you have used airlines in general _____

SECTION 11 – COMPULSION TO FLY WITH MAIN AIRLINE

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
Too much in my life would be disrupted if I decided I want to drop my main airline							
Right now, staying with my main airline is a matter of necessity as much as desire							
I feel I have too few options to consider dropping my main airline							
One serious consequence of dropping my main airline would be the scarcity of available alternatives							
A major reason I continue fly with my main airline is that dropping my membership would require considerable personal or professional sacrifice – another airline may not match the overall benefits I have here.							

SECTION 12 – INTENTION TO CONTINUE

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements?

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
Considering all the benefits and drawbacks, I feel that I will still be with my main airline in two years							
It is highly unlikely that I will want to terminate my dealings with my main airline in the next two years							

SECTION 13 – BACKGROUND INFORMATION

The following information is required purely for classification purposes. It would be greatly appreciated if you could take the time to fill it out.

Gender Male
Female

Occupation _____

In what year were you born? _____

What is the highest educational level you have attained? _____

What is your nationality? _____

In which country do you currently live? _____

APPENDIX H – FINAL VERSION OF QUESTIONNAIRE

CUSTOMER-SERVICE PROVIDER QUESTIONNAIRE

My name is Ceara Cooper and I am a masters research student from Dublin Institute of Technology. I am carrying out research on passengers' opinions of their airline.

I feel I am doing important research and would greatly appreciate your co-operation. The research is being carried out for educational purposes and is not sponsored by any particular airline. Your individual responses will remain **anonymous and confidential**.

SECTION 1 – FLYING PATTERNS

On average, how many times do you fly (return flights) per annum? _____

For what purpose do you mostly use airlines? Please tick (✓) one of the appropriate options.

- mostly for business purposes
 mostly for leisure/ pleasure purposes

With which airline do you fly most often? List airlines in order of usage, where (1) is the airline you use most, (2) is the airline you use second most.

- (1) _____ most often used airline
 (2) _____ second most used airline

About how long (in years) have you used your most often used airline?
 _____ time with most used airline

About how many times (return flights) during the last 12 months have you flown with your most often used airline? _____

About how many times (return flights) during the last 12 months have you used airlines in general? _____

List any frequent flyer programmes that you belong to in the spaces provided below:

- (1) _____
 (2) _____
 (3) _____

Please answer all remaining questions with regard to your main airline i.e. the airline with which you mainly fly. Alternatively, if you have more than one main airline, please answer with respect to the one you used last.

With your main airline, do you mainly fly long-haul or short-haul

Which cabin class do you normally fly with your main airline?

- Economy class
 First class
 Business class

The following sections include various statements that relate to your opinion about your main airline. The last page of the questionnaire is left blank for your comments if you wish to make any.

SECTION 2

Using a scale that goes from 1 to 7, where 1 means strong disagreement and 7 means strong agreement, how much do you agree with the following statements? Circle one number for each statement.

	Strongly Disagree		Neutral			Strongly Agree	
I like the way I am treated by the staff at my main airline	1	2	3	4	5	6	7
I am treated with respect by the staff at my main airline	1	2	3	4	5	6	7
My main airline is very willing to listen to me	1	2	3	4	5	6	7
The staff at my main airline are very friendly towards me	1	2	3	4	5	6	7

SECTION 3

	Strongly Disagree		Neutral			Strongly Agree	
I feel that my airline is open and honest	1	2	3	4	5	6	7
My main airline is truly sincere in its promises	1	2	3	4	5	6	7
I trust my main airline to get me to my destination at the stated time	1	2	3	4	5	6	7
My main airline treats me fairly and justly	1	2	3	4	5	6	7
I feel that my main airline can be counted on to help me in any situation	1	2	3	4	5	6	7
I feel safe and secure with my main airline	1	2	3	4	5	6	7
My main airline can be trusted	1	2	3	4	5	6	7

SECTION 4

	Strongly Disagree		Neutral			Strongly Agree	
I am satisfied with the in-flight service of my main airline	1	2	3	4	5	6	7
I am satisfied with the comfort provided by my main airline	1	2	3	4	5	6	7
My main airline satisfies my needs as an airline passenger	1	2	3	4	5	6	7
Compared to other airlines, I am satisfied with my main airline	1	2	3	4	5	6	7
In general, I am satisfied with my main airline	1	2	3	4	5	6	7

SECTION 5

	Strongly Disagree		Neutral			Strongly Agree	
I feel a strong sense of belonging to my main airline	1	2	3	4	5	6	7
I fly with my main airline because it is the best choice for me	1	2	3	4	5	6	7
The identity of my main airline has a sense of personal meaning for me	1	2	3	4	5	6	7
I deal with my main airline because I want to, not because I have to	1	2	3	4	5	6	7
I fly with my main airline because I enjoy dealing with it as an airline	1	2	3	4	5	6	7

SECTION 6

	Strongly Disagree		Neutral			Strongly Agree	
I control the decision on whether I fly with my main airline	1	2	3	4	5	6	7
I freely choose to fly with my main airline from available alternatives	1	2	3	4	5	6	7

SECTION 7

	Strongly Disagree		Neutral			Strongly Agree	
Overall, the services provided by my main airline are good value for money	1	2	3	4	5	6	7
The price paid for the services of my main airline is acceptable	1	2	3	4	5	6	7
Overall, the schedule convenience of my main airline is of high value to me	1	2	3	4	5	6	7
Considering the costs of a flight with my airline, in comparison to what I receive in return, I believe I am getting value	1	2	3	4	5	6	7
Overall, the value to me of my main airline's services is high	1	2	3	4	5	6	7

SECTION 8

	Strongly Disagree		Neutral			Strongly Agree	
All things considered, I would lose a lot in changing my main airline	1	2	3	4	5	6	7
Generally speaking, the costs in time, money, effort, and grief to switch my main airline would be high	1	2	3	4	5	6	7
Considering everything, the costs to stop flying with my main airline and start up with an alternative airline would be high	1	2	3	4	5	6	7

SECTION 9

	Strongly Disagree		Neutral			Strongly Agree	
Considering all the benefits and the drawbacks, I feel I will stay with my main airline for a long time	1	2	3	4	5	6	7
I expect to continue flying with my main airline for a long time	1	2	3	4	5	6	7

SECTION 10

	Strongly Disagree		Neutral			Strongly Agree	
If I needed to change my main airline, there are other good airlines to choose from	1	2	3	4	5	6	7
There are other available airlines that fly to my required destination(s)	1	2	3	4	5	6	7
If my main airline closed operations, I would have many options for a new airline as good as my former airline	1	2	3	4	5	6	7

SECTION 11

	Strongly Disagree		Neutral			Strongly Agree	
It would be an inconvenience to me if I decided I wanted to drop my main airline	1	2	3	4	5	6	7
Right now, staying with my main airline is a matter of necessity as much as desire	1	2	3	4	5	6	7
A major reason I continue to fly with my airline is that dropping it would require considerable sacrifice – another airline may not match the overall benefits I have here	1	2	3	4	5	6	7
It would be hard for me to leave my main airline right now, even if I wanted to	1	2	3	4	5	6	7
One of the consequences of dropping my main airline would be the lack of available alternatives	1	2	3	4	5	6	7

SECTION 12

	Strongly Disagree		Neutral			Strongly Agree	
My main airline is important to me for flying purposes	1	2	3	4	5	6	7
I depend on my main airline for my flying needs	1	2	3	4	5	6	7
It would be difficult to replace my main airline with another airline	1	2	3	4	5	6	7

SECTION 13 – BACKGROUND INFORMATION

The following information is required purely for classification purposes. It would be greatly appreciated if you would provide this information.

Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>
Occupation	_____	
Age group	15-24 <input type="checkbox"/>	
	25-34 <input type="checkbox"/>	
	35-44 <input type="checkbox"/>	
	45-49 <input type="checkbox"/>	
	50-65 <input type="checkbox"/>	
	65+ <input type="checkbox"/>	
Educational level attained?	Primary school <input type="checkbox"/>	
	Junior Cert <input type="checkbox"/>	
	Leaving Cert <input type="checkbox"/>	
	Third Level <input type="checkbox"/>	
	Post-graduate <input type="checkbox"/>	
What is your nationality?	_____	
In which country do you currently live?	_____	

I have a good relationship with my main airline, to which I am committed!

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

PLEASE COMMENT

THANK YOU EVER SO MUCH FOR YOUR PARTICIPATION. I APPRECIATE IT VERY MUCH.

APPENDIX I**RELIABILITY METHODS****Test-retest Reliability**

Test-retest reliability examines measurement consistency over time (Mowday et al. 1979; Spector 1994; Tull & Hawkins 1990). "It is literally how well a scale correlates with itself, across repeated administrations to the same respondents" (Spector 1994). This involves giving the same test to the same people after a certain amount of time (Carmines & Zeller 1994). Responses to the test should correlate across time, given that they reflect the same variable. This method has some limitations. Various factors result in different responses over time. One such factor is 'overestimation due to memory' (Carmines & Zeller 1994). Respondents will remember their first responses and aim to achieve consistency by answering in the same way. These memory effects result in inflated reliability estimates. Thus, even a weak items would correlate highly over two administrations.

Alternative-Form Method

The alternative-form method is similar to the retest method except that the same test is not given on the second occasion, rather an alternative form of the test is administered (Carmines & Zeller 1994). The two tests are designed to be as similar as possible and are intended to measure the same thing (Tull & Hawkins 1990). The correlation between the two forms provides the reliability estimate. The main limitation of this method lies with constructing alternative forms of the test.

Split-half Reliability

Split-half reliability is the simplest type of internal comparison. It is obtained by comparing the results of half the items on a multi-item measure with the results from the remaining items (Tull & Hawkins 1990). The total set of items is divided into two halves and the scores are correlated to obtain an estimate of reliability (Carmines & Zeller 1994). This method is also subject to limitations. There are different ways that the items can be split, with the result that each split will probably result in slightly different correlation between the two halves (Carmines & Zeller 1994). This in turn will lead to different reliability estimates even though the same items were administered at the same time.

In concluding the reliability section, Tull & Hawkins (1990) claim that no one reliability method is better than any other, yet some researchers would disagree. Churchill (1979) contends that the retest method is not recommended because of its limitations and Carmines & Zeller (1994) state that the retest as well as the split-halves methods are not recommended for estimating reliability. Similarly, the alternative form method is impractical insofar as a second test must be constructed. Carmines & Zeller continue that the coefficient alpha provides an excellent technique for assessing reliability. The coefficient alpha is being used in this research.

APPENDIX J**DETAILS OF INCENTIVES**

Pens: After contacting the marketing department of Grants of Ireland (Wine and Spirit Merchants), a supply of pens was kindly provided. The pen was an attractive fountain pen with a 'Dublin Dry Gin' logo.

Chocolate: The researcher contacted the marketing department of Cadburys Ireland (Chocolate Manufacturer) and asked them if they would share the cost of buying chocolate bars or indeed provide the researcher with chocolate bars to give to respondents who answered the questionnaire (See letters on following pages). Unfortunately, Cadbury said that their sponsorship and advertising budget was fully committed and that they could not provide any chocolate. The researcher still wished to reward the respondents with some chocolate so paid from the chocolate from her research expense account.

Fax

To: Frank Dillon (Promotions Manager) **From:** Ceara Cooper

Fax: 8472794 **Date:** March 8, 2001

Phone: **Pages:** 1

Re: Research Sponsorship **CC:**

Urgent **For Review** **Please Comment** **Please Reply** **Please Recycle**

Hello Frank Dillon,

My name is Ceara Cooper and I am a masters research student from the Dublin Institute of Technology, Mountjoy Square. Earlier today, I spoke to Colette from the sales and marketing department about the possibility of research sponsorship by Cadbury's and she directed me to you.

Currently, I am collecting data by means of a questionnaire at Dublin Airport. The questionnaire is quite lengthy so when respondents are finished I give them a bar of Cadbury's chocolate by means of reward. But this is proving quite costly, so it occurred to me that Cadbury's might have the resources to provide the chocolate for my research.

I realise this is short notice, given that I have already started the research, but I only thought of the idea after beginning the research. Is there any possibility that Cadbury's might provide the chocolate for the remainder of my research or perhaps reimburse me for the chocolate I purchase from now on, if I tell each of the respondents that Cadbury is sponsoring the research.

I plan to collect about 250 questionnaires from both business and leisure passengers. To date, I have collected 80 questionnaires already.

I look forward to your response on this matter.

Regards,

Ceara Cooper

Ceara Cooper
Masters Research Student
Dublin Institute of Technology
23 Mountjoy Square, Dublin 1

e-mail <ceara.cooper@dit.ie>

Tel. + 353 1 8558445

Fax. + 353 1 8558443



CADBURY IRELAND
SALES LIMITED

COOLOCK, DUBLIN 5
TELEPHONE 01-8480000
FACSIMILE 01-8472794

RATHMORE CO. KERRY
TELEPHONE 064-58004
FACSIMILE 064-58368

Ms. Ceara Cooper
Masters Research Student
DIT
23 Mountjoy Square
Dublin 1

15th March 2001

Dear Ms. Cooper,

Thank you for your recent letter.

Unfortunately our sponsorship and advertising appropriation is fully committed and we therefore regret that it is not possible to support you in your venture.

However, we would like to take this opportunity to wish you success with your endeavour and hope you understand and appreciate our position.

Again, thank you for writing to us.

Yours sincerely

P.P. Behrnde Byrne

A.F. Dillon

APPENDIX K

NON-PROBABILITY SAMPLING METHODS

“A **convenience sample** is one in which the only criterion for selecting the sampling units is the convenience to the sampler” (Tull & Hawkins 1990). Respondents are often selected because they are in the right place at the right time (Malhotra 1996). It is the least expensive and least time-consuming sampling method. It is often used in exploratory situations and is not recommended for descriptive or causal research (Malhotra 1996). The major problem with convenience sampling is that it limits the generalisability of results (Bettencourt 1997; Keaveney 1995; Morgan & Hunt 1994; Olivia et al. 1992). It is not theoretically meaningful to generalise the results to a population.

Judgement sampling “is a form of convenience sampling in which the population elements are selected based on the judgement of the researcher” (Malhotra 1996). The researcher exercises judgement as to which elements would be representative of the population of interest. “A **purposive sample** is one that is purposefully chosen to be non-representative, to achieve some specific objective” (Tull & Hawkins 1990). Such samples frequently ‘over-represent’ heavy users, frequent viewers, potential users and so on. Obviously, results cannot be generalised to larger populations without appropriate weighting (Tull & Hawkins 1990).

APPENDIX L**SAMPLE SIZE DECISIONS**

Determination of sample size is complex and involves several qualitative and quantitative considerations (Malhotra 1996). According to Tull & Hawkins (1990) sample size determination is taught by one method in statistics class and practised by a different approach in the field. One of the reasons for this is that sampling theory ignores costs and considers only the value of information provided by sample sizes (Tull & Hawkins 1990). Tull & Hawkins continue that there are various methods of determining sample size and they are roughly listed in order of sophistication:

1. Unaided judgement – arbitrary approach which does not consider precision of sample results or cost of obtaining sample.
2. All you can afford – concentrates on cost of information but fails to consider its value.
3. The size of samples in similar studies – sample sizes for previous research relating to this study range from as low as 50 to as many as 600. (See summary of previous research in Appendix of chapter 2).
4. Required size per cell – used in this study and discussed in methodology chapter.
5. Use of traditional statistical model – this method is used to determine size for simple random sampling (Malhotra 1996). Thus, given that nonprobability sampling is being used, this method is inappropriate.

APPENDIX M

VARIANCE & FACTOR ANALYSIS

Before selecting an appropriate form of factorial analysis, it is necessary to understand the types of variance. According to Hair et al. (1995) there are three kinds of variance, (1) common (2) specific (unique) (3) error. **Common** variance is shared with all other variables in the analysis (Hair et al. 1995). **Specific** variance accounts for the variation which is specific or unique to a variable and not shared with any other variable (Bryman & Cramer 1999). **Error** variance is variance due to unreliability in the data gathering process, measurement error etc. (Hair et al. 1995). **Total variance** is the sum of the three types of variance (Bryman & Cramer 1999).

The proportion of common variance in a variable is known as the **communality** (Field 2000; Hair et al. 1995). A variable with no specific or error variance has a communality of 1, while a variable that shares none of its variance with any other variable has a communality of 0. Field (2000) continues, that common variance is of more interest than other types, given that FA aims to find common underlying dimensions. Communalities should be assessed to ensure they meet acceptable levels of explanation. According to Hair et al. (1995) at least one-half of the variance of each variable must be accounted for i.e. communalities less than .50 have insufficient explanation.

Unique variance and the Approaches to Factor Analysis

The difference between principal-component analysis and common FA relates to how each deals with unique variance. **Principal component analysis** takes all the variance of a variable into account i.e. common, specific and error variance. Thus, it assumes all variance is common, making the communality of every variable 1 (Field 2000). **Common factor analysis**, on the other hand, only analyses common variance i.e. specific and error variance are excluded (Bryman & Cramer 1999). Variance for common FA varies between 0 and 1 (Bryman & Cramer 1999).

APPENDIX N

CRITERIA FOR EXTRACTING FACTORS

Latent root criterion: This is the most commonly used technique (Hair et al. 1995). It is also referred to as **Kaiser's Criterion** (Bryman & Cramer 1999; Field 2000). This criterion considers the eigenvalue, which indicates the importance of a factor. The eigenvalue represents the amount of variance explained by a factor (Field 2000; Spector 1994). Under this criterion, only the factors having latent roots or eigenvalues greater than 1 are considered significant (Bryman & Cramer 1999; Hair et al. 1995). The rationale is that any individual factor should account for the variance of at least a single variable if it is to be retained (Hair et al. 1995). It is recommended for situations where the number of variables is less than 30 and the average communality is greater than .70 or when the number of participants is greater than 250 and the mean communality is greater than or equal to .60 (Stevens in Bryman & Cramer 1999). SPSS uses Kaiser's criterion by default.

A Priori criterion: Under this criterion, the analyst already knows how many factors to extract before undertaking analysis. The analysis then stops when the desired number of factors has been reached. This is appropriate when **testing theory or hypotheses** about the number of factors to be extracted (Hair et al. 1995).

Scree plot: The scree test provides a curve which is used to evaluate the cut-off point (Hair et al. 1995). The graph indicates the importance of each factor. Typically, there will be a few factors with high values and many with low values (Field 2000). The cut-off point is the point of inflexion of the curve.

APPENDIX O**CAUTION WHEN USING FACTOR ANALYSIS**

Carmines & Zeller (1994) warn that if the results of a FA are interpreted without theoretical guidance, there is the chance that misleading conclusions will be drawn concerning the validity of the measures. Carmines & Zeller cite the example of a two factor solution of a self-esteem scale which offered spurious evidence about the 'dual theoretical dimensionality' of the scale. The FA showed that the self-esteem scale showed not one single dimension but two distinct components – a positive and negative factor. Carmines & Zeller continue that the supposed dual dimensionality may actually be due to nonrandom measurement error, namely response set among the two sets of scale items. That is, some respondent have a tendency to respond to a questionnaire in a particular manner, irrespective of the content. This is a clear possibility given that items worded positively loaded higher on the positive self-esteem factor (Carmines & Zeller 1994). It is not unusual to find somewhat higher correlations among items which are worded in the same direction than among items which differ in the direction of their wording.

FA does not provide evidence of theoretical dimensionality underlying items. FA simply redefines and simplifies the correlation matrix. It cannot differentiate between interpretations, it only reflects the differential pattern of correlations among scale items (Carmines & Zeller 1994). Consequently, Spector (1994) warns that great caution must be used with this approach. Any group of correlated items is bound to result in factors that can be given meaning. Spector relates a story about a colleague who once observed several experienced researchers going over results of FA. After some time they were very satisfied with their interpretation of the results only to be told that the print-out was an error – it was nothing more than random numbers. Interpreting exploratory results must be done with great caution.

Hair et al. (1995) warn that when interpreting results of FA, the researcher needs to consider two things; the conceptual underpinnings of the variables and the use of the researcher's own judgement. FA is only a tool of theoretical analysis, not a replacement for it. It is an aid to the assessment of empirical measures (Carmines & Zeller 1994). It will always produce factors and requires much subjective judgement. Items in each factor are subjectively and conceptually examined to determine if they form a conceptually meaningful factor (Spector 1994).

APPENDIX P

Geometric approach to bivariate regression (the scatterplot): The linear model conveyed by the equation can be represented on a co-ordinate system with a horizontal X-axis and a vertical Y-axis (Tacq 1997). The co-ordinate system is known as a scatter diagram. A preliminary indication of the power of the regression model (or how well the equation accounts for variation in the dependent variable) is provided by the scatter plot (Lewis-Beck 1993). The closer the regression line to the points, the better the equation 'fits' the data. This visual inspection is the first step in determining the 'goodness of fit' of a model. If the points do not follow a linear pattern then a non-linear model may have to be chosen as a starting point (Tacq 1997).

Slope: The slope indicates the average change in Y associated with a unit change in X (Lewis-Beck 1993). The slope (b1) estimate suggests only the average change in Y caused by a unit change in X. Relationships between social science variables are inexact; there is always an error term (Lewis-Beck 1993), thus the average is the best prediction possible.

Intercept: The intercept is so-called because it indicates the point where the regression line 'intercepts' the Y-axis (Lewis-Beck 1993). It estimates the average value of Y when X equals zero (e.g. a person's income with 0 years of education) (Lewis-Beck 1993). The intercept is also known as the constant (b0). There are some cautions that must be observed when interpreting the intercept.

- 1) Caution is needed when predictions for Y are based on X values beyond the range of data (Lewis-Beck 1993). The constant can only be interpreted within the range of values for the independent variable. In some cases an intercept of zero is not possible (e.g. a household of zero), so the intercept alone does not have practical sense (Hair et al. 1995). Yet the use of the intercept is still valid.
- 2) With negative intercepts, where $X=0$, Y would be negative. This is sometimes unrealistic, e.g. it makes no sense to receive a minus income. In such case the intercept is nonsensical if taken literally (Lewis-Beck 1993). It is a constant that must always be added to the slope 'bX' if it is to be properly estimated.

Minimising the Sum of Squared Errors (Ordinary Least Squares): Regression analysis aims to find the function ($Y_i = b_0 + b_1X_i$) which represents the best linear relationship between X and Y better than any other function. This is done by calculating b_0 and b_1 (regression coefficients). Assuming the scatter diagram shows a linear pattern, the straight line that gives the best fit must be chosen. Where the line does not predict perfectly, prediction error has occurred. Prediction error is used as a means to assess the adequacy of prediction (Hair et al. 1995). Summing the prediction error for all the observations would yield a total prediction error. Total prediction error is an inadequate measure of error because the positive errors tend to cancel out the negative errors (Lewis-Beck 1993). This is overcome by squaring each error. The aim then becomes one of selecting the straight line, which minimises the sum of the squares of the errors (SSE) (Lewis-Beck 1993). This criterion is known as ordinary least squares and is the criterion most often used to find the line of best fit (Tacq 1997). The least squares criterion estimates the parameters in such a way that the total error is minimised (Malhotra 1996). The least square equation fits the data set better than any other linear equation.

APPENDIX Q**Correlation Coefficient (r)**

The correlation coefficient is used to assess the relationship between Y and X (Hair et al. 1995). Two variables are said to be correlated if changes in one variable are associated with changes in the other variable. The sign of this coefficient (+r, -r) signifies the slope of the regression line. The correlation coefficient varies between -1 and +1, where:

- 0 = means absence of relationship between Y and X1,
- 1 = means perfect positive relationship,
- 1 = means perfect negative relationship (Tacq 1997).

The Coefficient of Determination (R²)

This determination coefficient is a measure of the proportion of variance of the dependent variable that is explained by the independent variable. The possible values of the measure range from '+1' to '0' (Tacq 1997). At one extreme, where R²=1, the independent variable completely accounts for all variation in the dependent variable. All observations are on the regression line and Y can be predicted without error so long as the value of X is known (Lewis-Beck 1993). Where R²=0, the independent variable accounts for no variation in the dependent variable. Thus, the two variables are totally independent and knowledge of X is of no use in predicting Y. Usually R² falls somewhere in between these extremes (Lewis-Beck 1993). The closer R² is to one the more variation in Y is explained by X. This also means the regression line fits the points better. For example, a value of 0.56 means the independent variable accounts for an estimated 56% of the variation in the dependent variable.

R² Versus r

According to Lewis-Beck (1993) the relationship between the coefficient of determination, R² and the estimate of correlation coefficient, r is the following:

$$R^2 = r^2$$

This equality suggests a problem with r, which is commonly used as a measure of association. The r can inflate the importance of the relationship between X and Y. For example, a correlation of 0.5 suggests that ½ of Y is being explained by X, since perfect correlation is 1.0. But r = 0.5 means that X explains only 25% of the variation in Y (because r²=0.25) leaving ¾ of the variation unaccounted for.

This equation is misleading, in so far as R² will equal r² only at extreme measures, when r = ±1 or 0. By relying on r rather than R², the impact of X on Y can seem much greater than it is. To assess the strength of the relationship between the independent variable and the dependent variable, the R² is the preferred measure (Hair et al. 1995; Lewis-Beck 1993). For example, R²=.75, means that 75 per cent of the variation in Y is explained by the X. The corresponding r value offers the sign as additional information but can mislead analysts to believe a stronger relationship exists (Hair et al. 1995).

APPENDIX R**Interpreting the Parameter Estimates**

The intercept is represented by b_0 and is equal to the average value of Y when each independent variable equal zero (Berry & Feldman 1993; Lewis-Beck 1993). Interpreting the slope (b_k) in multiple regression is slightly more complex: b_k is equal to the average change in Y (or change in expected value of $Y - E(Y)$) associated with a unit change in X_k , when all other independent variables are held constant (Berry & Feldman 1993; Lewis-Beck 1993; Tacq 1997). By controlling the other variables, the effect of X_k can be determined without any distortions from the other independent variables (Lewis-Beck 1993). This is known as the partial slope or the **partial regression coefficient** (Lewis-Beck 1993).

The effects of the other independent variables needs to be controlled because when the independent variables are correlated, they 'share' predictive power. When predicting the overall variate, direct correlations are not used because shared variance would be 'double counted' (Hair et al. 1995). The partial correlation isolates the incremental predictive power of one independent variable from the variate (Hair et al. 1995). It can be used to identify independent variables that have the greatest incremental predictive power in the regression variate. Thus the partial correlation represents the correlation between two variables while controlling the effects of additional variables. There are two forms of correlation; **part and partial correlation**. The two forms differ insofar as partial correlation removes the effects of other independent variables from X_k and Y , while part correlation removes the effects only from X_k (Hair et al. 1995; Sabatelli & Cecil-Pigo 1985). The part correlation represents the unique relationship predicted by an independent variable after predictions shared with all other independent variables are taken out (Hair et al. 1995).

APPENDIX S

Significance Test for Regression Coefficients

Statistical significance of the linear relationship is considered by examining the hypotheses. There are two basic hypotheses, the null and the alternative. The null hypothesis states that X is not associated with Y; hence, the slope, β , is zero in the population (Lewis-Beck 1993). That is, there is no linear relationship between X and Y (Malhotra 1996). The alternative hypothesis states that X is associated with Y; hence, the slope is not zero in the population (Lewis-Beck 1993), i.e., there is a relationship.

H0: $\beta = 0$ (null hypothesis)

H1: $\beta \neq 0$ (alternative hypothesis)

In order to test the hypotheses an interval is created around the slope estimate, b (Lewis-Beck 1993). The most commonly used interval is that of the **two-tailed** 95% confidence interval. A two-tailed test means that the hypothesis about the effect of X on Y is non-directional (Lewis-Beck 1993). A *t* statistic with $n-2$ degrees of freedom is used (Malhotra 1996). If the value of zero does not fall within this interval (for two tailed tests, 0 is not contained), the null hypothesis is rejected and the alternative hypothesis is accepted, i.e. the slope estimate, b, is significantly different from zero, at the .05 level.

Error Types: If the null hypothesis is in fact correct, but is rejected, a **Type I error** is committed. To avoid this error a 99% confidence interval could be employed instead. This interval broadens the acceptance region of the null hypothesis. But efforts to reduce Type I error result in a trade-off whereby, there is an increase in the risk of committing Type II error (Lewis-Beck 1993). A **Type II error** occurs if the null hypothesis is accepted when it is actually false (Lewis-Beck 1993).

One-tailed tests are used when some knowledge exists as to the sign of the slope (Lewis-Beck 1993).

H0: $\beta = 0$ (null hypothesis)

H1: $\beta > 0$ (alternative hypothesis)

Where the level of confidence is fixed, it is easier to find statistical significance with one-tailed test than with two; it is much more likely that the two-tailed interval will capture zero (Lewis-Beck 1993). If the researcher has any prior knowledge it makes sense to use the one-tailed test (Lewis-Beck 1993).

Significance Test for Coefficient of Determination

In multiple regression, testing must not only be carried out on the specific partial coefficients (as described above) but also on the overall significance of the regression equation. The null hypothesis for the overall test is that the coefficient of multiple determination in the population is zero:

H0: $R^2 = 0$

The overall test can be conducted using the F statistic (Hair et al. 1995; Malhotra 1996).

Cramer (1972) cautions the analyst about interpreting significance results. When R^2 is tested and a conclusion is made that it is zero, the analyst must also conclude that all regression coefficients are zero (Cramer 1972). Geary and Leser (Cramer 1972) note that if one looks at this test and finds one or more regression coefficients significant but at the same time finds that R^2 is zero, one would be inclined to give precedence to the test for regression as a whole and to consider the entire equation as doubtful.

APPENDIX T**REGRESSION ASSUMPTIONS****Linearity of the phenomenon**

Linearity is an implicit assumption of all multivariate techniques (Hair et al. 1995). According to Tacq (1997) linearity is an 'old sore' of statistics. A linear function is naturally desirable as it is easy to calculate and interpret however plots of the data seldom follow the pattern of a nice straight line (Tacq 1997). As a result, a linearity test is always necessary. For bivariate regression, linearity can be assessed by examining the scatterplot or by examining the residuals of simple regression (Hair et al. 1995). Examination of residuals is also used for multiple regression (MR). Any consistent curvilinear pattern in the residuals indicates that the predictive accuracy of the model and validity of the coefficients could be improved by taking corrective action i.e. transforming the data (Hair et al. 1995).

Constant Variance of the Error Term

Homoscedasticity refers to the assumption that the dependent variable exhibits equal variance across the range of independent variables (Hair et al. 1995). It ensures that the variance of the error term is constant for all values. One of the most common violation assumptions is the presence of unequal variances or heteroscedasticity (Hair et al. 1995). Violation of this assumption is quite serious; the least squares estimate would remain unbiased but the significance tests and the confidence intervals could be wrong (Lewis-Beck 1993). Diagnosis is made with residual plots or otherwise using statistical tests (Hair et al. 1995). The residuals are plotted against the predicted dependent values and compared to the null plot (a plot which does not violate any of the assumptions); a consistent pattern is shown if the variance is not constant (Hair et al. 1995).

Independence of the Error Terms

Regression analysis assumes each predicted value is independent i.e. any predicted value is not related to any other prediction (Hair et al. 1995). Lewis-Beck (1993) states that this is difficult to meet in nonexperimental research. When the residuals are plotted, the residuals are independent if the pattern appears random and similar to the null plot of residuals (Hair et al. 1995). Violation of this assumption means the least squares parameter estimates will be biased (Lewis-Beck 1993). Violations can be identified by consistent patterns in the residuals.

Error term is normally distributed

One of the most frequently occurring violations is non-normality of the independent or dependent variables (Hair et al. 1995). The frequency distribution of a variable that conforms to a normal curve has a symmetric bell-shape, with 95% of the observations falling within (plus or minus) two standard deviations of the mean (Lewis-Beck 1993). A visual inspection can be conducted to test for normality. Another preliminary check means counting the number of observations above and below the mean, to ensure half are in either direction (Lewis-Beck 1993). Hair et al. (1995) state that a simple diagnostic for a set of predictor variables is a histogram of residuals, but a better method is the use of normal probability plots (Hair et al. 1995). The normal distribution makes a straight diagonal line and the plotted residuals are compared with

this diagonal. If a distribution is normal the residual line closely matches the diagonal (Hair et al. 1995). The procedure is the same for the dependent and independent variables. A more formal measure involves the skewness statistic (Hair et al. 1995; Lewis-Beck 1993). Where the skewness value is zero, the distribution is normal.

There is some disagreement in the literature as to how serious the violations of the regression assumptions are, with some considering the violations to have little effect on results, whereas others consider violations to render the results useless (Lewis-Beck 1993). Some of the assumptions are robust, e.g. the normality assumption can be ignored when sample size is large enough (Lewis-Beck 1993). In contrast, specification error caused by omitting variables, creates serious estimation problems, that can only be rectified by including the missing variables. Hair et al. (1995) claim that all too often such analysis is not performed and violations of assumptions are not uncovered. Hair et al. recommend that these methods be applied to each set of data and regression model in order to increase confidence in the results.

CHAPTER 4 APPENDIX

ANALYSIS & FINDINGS

APPENDIX A

Reliability Analysis Output for Pretest Data

AFFECT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
AFFECT1	15.1379	17.4803	.9255	.8594	.8915
AFFECT2	14.7241	17.2783	.8179	.7211	.9237
AFFECT3	15.4138	16.3941	.7912	.6842	.9384
AFFECT4	14.9310	18.1379	.8802	.7982	.9064
Alpha = .9345		Standardized item alpha = .9397			

TRUST

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
TRUST1	28.8276	59.4335	.9094	.9374	.8833
TRUST2	29.0000	59.6429	.8500	.8701	.8906
TRUST3	29.2069	61.0985	.7073	.5975	.9106
TRUST4	28.3103	64.6502	.8273	.8255	.8941
TRUST5	29.0345	68.4631	.6940	.6420	.9076
TRUST6	27.4483	78.3990	.4636	.5953	.9265
TRUST7	27.8276	67.2192	.7828	.7668	.8995
Alpha = .9155		Standardized item alpha = .9156			

SATISFACTION

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
SATIS1	19.3793	21.8867	.5598	.4961	.7391
SATIS2	19.0690	20.1379	.5814	.5467	.7286
SATIS3	18.4828	25.8300	.1832	.1668	.8427
SATIS4	19.2759	17.4212	.6648	.6675	.6973
SATIS5	18.8276	17.1478	.8346	.7600	.6333
Alpha = .7791		Standardized item alpha = .7726			

FREEDOM TO CHOOSE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
FREED1	5.4138	4.2512	.7415	.5499	n/a
FREED2	4.7931	3.0271	.7415	.5499	n/a
Alpha = .8446		Standardized item alpha = .8516			

AFFECTIVE COMMITMENT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
ACOMMIT1	14.7241	27.0640	.7888	.6371	.6627
ACOMMIT2	13.6207	25.8867	.5904	.6780	.7168
ACOMMIT3	14.8276	29.1478	.4514	.5466	.7651
ACOMMIT4	13.8621	25.4803	.5759	.6451	.7238
ACOMMIT5	15.6552	33.2340	.3864	.4228	.7787
Alpha = .7737		Standardized item alpha = .7813			

DEPENDENCE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
DEPEND1	4.0690	3.4236	.2290	.0524	n/a
DEPEND2	4.9655	2.3202	.2290	.0524	n/a
Alpha = .3669		Standardized item alpha = .3726			

VALUE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
VALUE1	19.1034	33.0246	.8443	.8312	.9427
VALUE2	19.2069	32.5271	.9287	.8995	.9295
VALUE3	18.6897	35.5074	.7429	.5718	.9588
VALUE4	19.2069	29.1700	.9135	.9095	.9320
VALUE5	19.1034	30.5961	.9141	.9092	.9304
Alpha = .9508		Standardized item alpha = .9516			

INVESTMENT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
INVEST1	6.9286	14.4392	.7374	.5710	.9219
INVEST2	7.1786	11.3373	.8853	.7933	.7952
INVEST3	7.5357	12.1098	.8184	.7324	.8555
Alpha = .9041		Standardized item alpha = .9040			

AVAILABILITY

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
AVAIL1	15.4138	8.3941	.5289	.5473	-.0150
AVAIL2	15.0690	8.3522	.3101	.5802	.2557
AVAIL3	14.7931	12.8128	.2624	.2021	.3382
AVAIL4	15.2414	15.5468	-.0871	.2714	.6081
Alpha = .4182		Standardized item alpha = .4105			

CALCULATIVE COMMITMENT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
CCOMMIT1	14.3793	31.3153	.4104	.5400	.7613
CCOMMIT2	13.9655	29.1059	.6365	.4859	.6879
CCOMMIT3	14.9310	26.7808	.6148	.5749	.6886
CCOMMIT4	15.3448	26.7340	.7422	.6273	.6466
CCOMMIT5	15.4483	31.9704	.3192	.5012	.7974
Alpha =	.7629		Standardized item alpha = .7710		

INTENTION TO CONTINUE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
INTENT1	4.9655	2.1773	.8732	.7624	n/a
INTENT2	4.7586	2.4754	.8732	.7624	n/a
Alpha =	.9313		Standardized item alpha = .9323		

APPENDIX B

Pilot Test Factor Analysis

Trust – Affect Factor Analysis

The items from trust and affect scales are considered next (correlation .739, $p < 0.01$). The overall correlations are significant at the 0.001 level according to the Bartlett test. The KMO (overall measure of sampling adequacy), with a value of 0.867, is 'great'. Finally, the items along the diagonal of the anti-image correlation (not displayed) are greater than 0.5, indicating the sample is adequate for factor analysis.

Bartlett test of Sphericity: 305.736 (significance = .000)
Kaiser-Meyer-Olkin (KMO): 0.867

Table 1 Rotated Component Matrix

	Component		Communality
	1	2	
TRUST1	.870	.393	.911
TRUST2	.908	.232	.878
TRUST3	.760	.282	.657
TRUST4	.695	.577	.815
TRUST5	.684	.354	.593
TRUST6	.357	.421	.305
TRUST7	.692	.458	.689
AFFECT1	.310	.909	.921
AFFECT2	.320	.854	.832
AFFECT3	.365	.764	.717
AFFECT4	.351	.870	.879
Eigenvalue	4.169	4.027	
% of variance	37.902	36.612	Total 74.513

From table 1 it can be seen that all the trust items, excluding item 6, load onto the trust scale. This is consistent with the reliability and item-analysis, where item 6, lowered the internal consistency of the scale.

Affective Commitment – Satisfaction Factor Analysis

Affective commitment and satisfaction are significantly correlated (.665) at the 0.001 level. The Bartlett test of overall correlations is significant and the KMO is well above 0.5. The anti-image correlation matrix (not displayed) does not indicate any offending coefficients along the diagonal.

Bartlett test of Sphericity: 166.943 (significance = .000)
Kaiser-Meyer-Olkin (KMO): .737

Table 2 Rotated Component Matrix

	Component		Community	
	1	2		
ACOMMIT1	<u>.607</u>	.311	.567	.787
ACOMMIT2	<u>.881</u>	.184	.144	.832
ACOMMIT3	-3.569E-02	.115	<u>.939</u>	.895
ACOMMIT4	<u>.828</u>	.260	.135	.771
ACOMMIT5	3.435E-02	.170	<u>.801</u>	.672
SATIS1	.101	<u>.782</u>	.380	.766
SATIS2	5.595E-02	<u>.876</u>	.141	.790
SATIS3	<u>.674</u>	-.144	-.148	.496
SATIS4	.560	<u>.675</u>	6.071E-02	.773
SATIS5	.607	<u>.678</u>	5.981E-02	.831
Eigenvalue	3.076	2.412	2.124	
% of variance	30.765	24.123	21.242	Total 76.130

Surprisingly, three factors are displayed from the items of the two scales (see table 2). However, the results can be explained. The internal consistency analysis for affective commitment showed that two items (3 and 5) lowered the coefficient alpha and item-total correlation. Thus, these two affective commitment items form two separate factors. Items 1,2 and 4 load on factor one and items 3 and 5 load on factor three. In terms of satisfaction, again the results highlight that item 3 does not load highly on the satisfaction scale.

Freedom of Choice – Intention to Continue Factor Analysis

Freedom of choice and intention to continue are significantly correlated (.640) at the 0.001 level. In terms of the tests for intercorrelations, the Bartlett test is significant at the .001 level. The overall KMO value is greater than the 0.5 cut-off point, as are the pairs of items along the diagonal of the anti-image correlation.

Bartlett test of Sphericity: 83.664 (significance = .000)
Kaiser-Meyer-Olkin (KMO): .639

Table 3 Rotated Component Matrix

	Component		Community
	1	2	
FREED1	.203	<u>.924</u>	.895
FREED2	.409	<u>.837</u>	.868
INTENT1	<u>.858</u>	.464	.952
INTENT2	<u>.956</u>	.203	.956
Eigenvalue	1.86	1.811	
% of variance	46.493	45.275	Total 91.768

The results in table 3 are quite clear and unambiguous. All items loaded on the expected scale. The two factors represent 91.76% of the variance of the 4 items.

Value – Size of Investment Factor Analysis

The correlation coefficient of value and size of investment is .670 and is significant at the 0.001 level. According to the Bartlett test the overall correlation matrix is statistically significant at the 0.01 level. The KMO measure of sampling adequacy displays a value of .795, which is a 'good' value. The diagonal values of the anti-

image correlation are all above 0.5, indicating the adequacy of the sample for any given pair of items.

Bartlett test of Sphericity: 228.422 (significance = .000)
Kaiser-Meyer-Olkin (KMO): .795

As expected, five items load onto the first factor to form the value scale (see table 4). The other three items load onto the second factor forming the size of investment scale. Together, the two factors account for 84.71% of the in the eight items.

Table 4 Rotated Component Matrix

	Component		Communality
	1	2	
VALUE1	<u>.822</u>	.368	.810
VALUE2	<u>.893</u>	.327	.904
VALUE3	<u>.818</u>	.194	.707
VALUE4	<u>.894</u>	.303	.891
VALUES5	<u>.866</u>	.377	.892
INVEST1	.504	<u>.710</u>	.759
INVEST2	.336	<u>.898</u>	.919
INVEST3	.207	<u>.923</u>	.896
Eigenvalue	4.101	2.677	
% of variance	51.257	84.713	84.713 Total

Dependence – Size of Investment Factor Analysis

As previously mentioned, items that are factor analysed need to be adequately correlated. The dependence scale from the pilot study had quite low internal consistency reliability (i.e. low alpha and item-total correlation), hence it did not correlate highly with many of the variables. Dependence only correlated significantly with three other variables, one of those being investment. The correlation between dependence and investment was 0.346 ($p < 0.05$).

Table 5 Correlation Matrix

	INVEST1	INVEST2	INVEST3	DEPEND1	DEPEND2
INVEST1	1.000				
INVEST2	.755	1.000			
INVEST3	.665	.855	1.000		
DEPEND1	.615	.414*	.336*	1.000	
DEPEND2	.017	.075	-.012	.186	1.000

All correlations are significant at $P < 0.01$ unless otherwise stated (* $p < 0.05$)

Bolded items mean $p > 0.05$ i.e. values are insignificant

The correlation matrix displaying the investment and dependence items can be seen in table 5. The first indication that there are problems with the dependence scale is indicated by the lack of significant correlation between DEPEND2 and any of the investment items.

Overall, however the Bartlett test shows the correlations to be significant and the KMO is greater than the cut-off point of 0.5.

Bartlett test of Sphericity: 66.978 (significance = .000)
Kaiser-Meyer-Olkin (KMO): .685

Another indication of the inadequacy of the dependence measure is demonstrated by the diagonal value of DEPEND2 in the anti-image correlation matrix (table 6). The 0.244 value does not meet the 0.5 cut-off.

Table 6 Anti-image Correlation Matrix

	INVEST1	INVEST2	INVEST3	DEPEND1	DEPEND2
INVEST1	.737	-.435	-6.734E-02	-.526	.163
INVEST2	-.435	.665	-.724	4.918E-02	-.176
INVEST3	-6.734E-02	-.724	.702	4.725E-02	.130
DEPEND1	-.526	4.918E-02	4.725E-02	.677	-.225
DEPEND2	.163	-.176	.130	-.225	.244

Bolded figures are measures of Sampling Adequacy (MSA) for individual items

From the component matrix (table 7) it can be seen that one of the dependence items loads onto the same factor as the investment items. The other dependence item forms a separate factor. Clearly there are problems with the dependence scale.

Table 7 Rotated Component Matrix

	Component 1	Component 2	Communality
DEPEND1	.604	.461	.577
DEPEND2	-4.126E-02	.936	.878
INVEST1	.898	.102	.816
INVEST2	.923	3.053E-02	.853
INVEST3	.890	-9.110E-02	.800
Eigenvalue	2.816	1.109	
% of variance	56.324	22.182	78.506 Total

Calculative Commitment – Quality of Available Alternatives Factor Analysis

The final two scales to be factor analysed are calculative commitment and quality of available alternatives. The correlation between the two variables is -0.698 ($p < 0.001$ level). The Bartlett test is statistically significant at the 0.001 level. The KMO is greater than the 0.5 cut-off point. These tests suggest that factor analysis can be carried out on the data.

Bartlett test of Sphericity: 138.079 (significance = .000)
Kaiser-Meyer-Olkin (KMO): .583

Examination of the anti-image matrix (table 8) suggests that there may potentially be problems with some of the variables. The values for AVAIL3, AVAIL4, and CCOMMIT1 fall in the unacceptable range, below the 0.5 level.

Table 8 Anti-image Correlation Matrix

	AVAIL1	AVAIL2	AVAIL3	AVAIL4	CCOMMIT1	CCOMMIT2	CCOMMIT3	CCOMMIT4	CCOMMIT5
AVAIL1	.629	-.568	-1.023E-02	.212	.452	-.421	-.207	.567	.133
AVAIL2	-.568	.651	6.795E-02	-7.869E-02	-.358	.340	.355	-.342	.364
AVAIL3	-1.023E-02	6.795E-02	.427	-.444	-.124	-.244	.486	-.158	.302
AVAIL4	.212	-7.869E-02	-.444	.459	.492	-.157	-.340	.332	-.228
CCOMMIT1	.452	-.358	-.124	.492	.442	-.578	-.503	.330	.141
CCOMMIT2	-.421	.340	-.244	-.157	-.578	.571	9.051E-02	-.353	-.272
CCOMMIT3	-.207	.355	.486	-.340	-.503	9.051E-02	.560	-.556	.309
CCOMMIT4	.567	-.342	-.158	.332	.330	-.353	-.556	.621	-.290
CCOMMIT5	.133	.364	.302	-.228	.141	-.272	.309	-.290	.739

Bolded figures are measures of Sampling Adequacy (MSA) for individual items

The component matrix (table 9) confirms that problems do exist. Items 3 and 4 in the Availability scale form a separate factor to items 1 and 2. This result is consistent with the reliability analysis, whereby the inclusion of items 3 and 4 in the Availability scale resulted in a lowering of the alpha and item-total correlations. In terms of calculative commitment, item 5 is not loading on the calculative scale. This result also reinforces the results of the internal consistency analysis where item 5 was causing problems.

Table 9 Rotated Component Matrix

	Component		Communality	
	1	2	3	
AVAIL1	<u>-.839</u>	-.229	.111	.769
AVAIL2	<u>-.891</u>	-3.429E-02	-4.528E-02	.797
AVAIL3	-.113	-4.622E-02	<u>.921</u>	.863
AVAIL4	.400	-.484	<u>.550</u>	.697
CCOMMIT1	-4.484E-02	<u>.918</u>	-.154	.869
CCOMMIT2	.461	<u>.673</u>	.367	.799
CCOMMIT3	.405	<u>.621</u>	-.427	.732
CCOMMIT4	.471	<u>.713</u>	-.174	.761
CCOMMIT5	<u>.884</u>	-8.768E-02	8.603E-02	.797
Eigenvalue	3.341	2.201	1.544	
% of variance	37.118	24.460	17.151	Total

APPENDIX C

Reliability Analysis Output for Main Survey Data

AFFECT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
AFFECT1	16.3539	11.7255	.8408	.7721	.8887
AFFECT2	16.2387	11.7940	.8783	.8110	.8787
AFFECT3	16.9630	10.6226	.7456	.5623	.9312
AFFECT4	16.2469	11.5338	.8380	.7111	.8887
Alpha = .9199		Standardized item alpha = .9268			

TRUST

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
TRUST1	31.0206	46.6814	.6705	.5335	.9008
TRUST2	31.2140	45.3920	.6950	.5695	.8984
TRUST3	30.9712	44.5240	.6110	.4394	.9114
TRUST4	30.6543	43.7974	.8304	.6917	.8835
TRUST5	31.1481	43.3912	.7667	.6102	.8904
TRUST6	30.1481	47.8788	.7280	.6125	.8964
TRUST7	30.4486	44.6451	.8383	.7380	.8837
Alpha = .9087		Standardized item alpha = .9132			

SATISFACTION

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
SATIS1	21.1440	22.1899	.7366	.5495	.9003
SATIS2	21.3004	22.0953	.7404	.5867	.8995
SATIS3	20.8971	22.8613	.8131	.6911	.8849
SATIS4	21.0658	22.1196	.7587	.6846	.8952
SATIS5	20.8272	22.6725	.8470	.7795	.8787
Alpha = .9114		Standardized item alpha = .9142			

FREEDOM TO CHOOSE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
FREED1	5.1358	3.7212	.8247	.6801	N/A
FREED2	5.3004	4.0953	.8247	.6801	N/A
Alpha = .9034		Standardized item alpha = .9039			

AFFECTIVE COMMITMENT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
ACOMMIT1	17.4938	30.4328	.6616	.6068	.8157
ACOMMIT2	16.2675	34.9901	.4432	.2873	.8673
ACOMMIT3	17.7284	29.3226	.6822	.6364	.8100
ACOMMIT4	17.1276	27.9299	.7171	.6288	.8003
ACOMMIT5	17.0288	28.8380	.7943	.6727	.7807
Alpha =	.8480	Standardized item alpha =	.8463		

VALUE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
VALUE1	20.7037	23.3168	.8000	.7489	.8586
VALUE2	20.8313	22.5458	.8111	.7860	.8557
VALUE3	20.5350	28.5804	.4544	.2809	.9277
VALUE4	20.8148	21.9284	.8831	.8140	.8381
VALUE5	20.6708	24.1887	.7747	.6542	.8650
Alpha =	.8949	Standardized item alpha =	.8917		

QUALITY OF AVAILABLE ALTERNATIVES

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
AVAIL1	9.8519	24.5482	.4499	.4471	.3279
AVAIL2	9.2716	8.7028	.2942	.0868	.7935
AVAIL3	10.5309	23.0269	.4502	.4534	.2816
Alpha =	.4800	Standardized item alpha =	.6666		

SIZE OF INVESTMENT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
INVEST1	7.9012	12.9571	.7818	.6138	.9204
INVEST2	8.2305	11.2938	.8703	.7677	.8471
INVEST3	8.1893	10.8566	.8509	.7473	.8654
Alpha =	.9165	Standardized item alpha =	.9170		

DEPENDENCE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
DEPEND1	8.7819	10.4688	.6970	.4917	.8334
DEPEND2	9.1646	8.7827	.7725	.5968	.7556
DEPEND3	9.8313	8.0747	.7373	.5524	.7987
Alpha = .8557		Standardized item alpha = .8595			

CALCULATIVE COMMITMENT

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
CCOMMIT1	16.4979	35.3254	.6395	.4403	.8458
CCOMMIT2	16.5062	34.4989	.6697	.4746	.8385
CCOMMIT3	16.8066	33.6525	.7542	.5955	.8190
CCOMMIT4	17.2428	31.8871	.7184	.5284	.8261
CCOMMIT5	16.9300	32.4042	.6513	.4325	.8454
Alpha = .8636		Standardized item alpha = .8657			

INTENTION TO CONTINUE

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
INTENT1	5.0494	2.2290	.8967	.8041	.
INTENT2	4.8765	2.3483	.8967	.8041	.
Alpha = .9454		Standardized item alpha = .9455			

APPENDIX D

Affective Commitment – Item 2 Factor Analysis

Both rotated component matrices show that item 2 (ACOMMIT2) loads highly on Affective commitment as opposed to the other factor.

Rotated Component Matrix

	Component	
	1	2
ACOMMIT1	.362	.703
ACOMMIT2	.190	.565
ACOMMIT3	.215	.795
ACOMMIT4	.254	.801
ACOMMIT5	.374	.801
TRUST1	.758	.186
TRUST2	.758	.240
TRUST3	.599	.360
TRUST4	.848	.258
TRUST5	.753	.364
TRUST6	.753	.285
TRUST7	.815	.365

Rotated Component Matrix

	Component	
	1	2
ACOMMIT1	.354	.707
ACOMMIT2	.163	.575
ACOMMIT3	.226	.779
ACOMMIT4	.193	.826
ACOMMIT5	.274	.848
AFFECT1	.887	.254
AFFECT2	.916	.222
AFFECT3	.785	.316
AFFECT4	.868	.281

Dependence-Calculative Commitment Factor Analysis

Rotated Component Matrix

	Component		Communality
	1	2	
CCOMMIT1	.540	.523	.565
CCOMMIT2	.870	.167	.785
CCOMMIT3	.730	.441	.728
CCOMMIT4	.719	.425	.698
CCOMMIT5	.557	.530	.592
DEPEND1	.218	.847	.765
DEPEND2	.337	.824	.793
DEPEND3	.531	.704	.778
Eigenvalue	2.854	35.670	71.305
% of Variance	2.851	35.635	

Total Variance Explained - Dependence-Calculative Commitment Factor Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.041	63.008	63.008	5.041	63.008	63.008	2.854	35.670	35.670
2	.664	8.297	71.305	.664	8.297	71.305	2.851	35.635	71.305

APPENDIX E

Casewise Diagnostics - Residuals

Case Number	Unstandardized Predicted Value	Unstandardized Residual	Deleted Residual	Adjusted Predicted Value	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual
1	12.26709	2.73291	2.81951	12.18049	-.54312	.84686	.86018	.85970
2	12.63872	2.36128	2.37849	12.62151	-.41866	.73170	.73437	.73365
3	14.87136	3.12864	3.24532	14.75468	.32901	.96949	.98740	.98735
4	14.71590	-8.71590	-9.32390	15.32390	.27695	<u>-2.70085</u>	<u>-2.79347</u>	<u>-2.83462</u>
5	15.42010	-1.42010	-1.47537	15.47537	.51278	-.44006	-.44854	-.44778
6	9.68616	-2.68616	-2.75857	9.75857	-1.40743	-.83238	-.84352	-.84301
7	14.68313	2.31687	2.36422	14.63578	.26598	.71794	.72524	.72452
8	18.79146	.20854	.21379	18.78621	1.64180	.06462	.06543	.06529
9	11.76375	4.23625	4.42407	11.57593	-.71168	1.31271	1.34150	1.34378
10	13.16750	-3.16750	-3.26708	13.26708	-.24158	-.98153	-.99684	-.99683
11	13.13225	-5.13225	-5.25761	13.25761	-.25339	-1.59036	-1.60967	-1.61512
12	13.47247	.52753	.53191	13.46809	-.13945	.16347	.16415	.16381
13	17.56170	1.43830	1.47504	17.52496	1.22997	.44570	.45135	.45059
14	12.98340	.01660	.01691	12.98309	-.30324	.00514	.00519	.00518
15	17.39205	2.60795	2.69442	17.30558	1.17316	.80814	.82143	.82087
16	10.25306	2.74694	2.78324	10.21676	-1.21759	.85121	.85682	.85634
17	9.28664	-.28664	-.29468	9.29468	-1.54123	-.08882	-.09006	-.08987
18	12.02267	1.97733	2.04396	11.95604	-.62497	.61273	.62297	.62216
19	12.94394	-4.94394	-5.27970	13.27970	-.31645	-1.53201	-1.58318	-1.58826
20	15.95548	1.04452	1.09151	15.90849	.69207	.32367	.33087	.33025
21	11.13709	3.86291	3.92887	11.07113	-.92154	1.19702	1.20720	1.20837
22	12.13988	1.86012	1.91142	12.08858	-.58572	.57641	.58430	.58349
23	14.06412	6.93588	7.03589	13.96411	.05868	<u>2.14927</u>	<u>2.16471</u>	<u>2.18181</u>
24	14.86302	.13698	.14033	14.85967	.32622	.04245	.04296	.04287
25	13.90209	1.09791	1.10633	13.89367	.00442	.34022	.34152	.34088
26	13.85068	4.14932	4.30468	13.69532	-.01280	1.28578	1.30963	1.31162
27	15.09376	5.90624	6.02168	14.97832	.40350	1.83020	1.84800	1.85753
28	11.94915	1.05085	1.06155	11.93845	-.64959	.32563	.32729	.32667
29	15.15039	4.84961	4.90537	15.09463	.42246	1.50278	1.51139	1.51552
30	16.86366	-6.86366	-7.06781	17.06781	.99621	<u>-2.12689</u>	<u>-2.15829</u>	<u>-2.17521</u>
31	18.13869	2.86131	2.98103	18.01897	1.42320	.88665	.90501	.90466
32	12.39791	-1.39791	-1.44603	12.44603	-.49931	-.43318	-.44057	-.43982
33	20.60561	-3.60561	-3.71584	20.71584	2.24934	-1.11729	-1.13424	-1.13493
34	14.16960	-2.16960	-2.20472	14.20472	.09400	-.67231	-.67773	-.67695
35	11.49091	3.50909	3.61357	11.38643	-.80305	1.08738	1.10345	1.10396
36	15.61956	5.38044	5.44082	15.55918	.57958	1.66727	1.67660	1.68307
37	19.16798	1.83202	1.87196	19.12804	1.76789	.56770	.57385	.57304
38	13.84788	5.15212	5.41209	13.58791	-.01373	1.59652	1.63630	1.64215
39	16.06695	-7.06695	-7.20290	16.20290	.72940	<u>-2.18988</u>	<u>-2.21085</u>	<u>-2.22928</u>
40	15.70364	2.29636	2.39014	15.60986	.60773	.71159	.72597	.72525
41	14.07575	-2.07575	-2.11637	14.11637	.06258	-.64323	-.64949	-.64869
42	11.95883	3.04117	3.09200	11.90800	-.64635	.94239	.95023	.95003
43	14.63360	3.36640	3.52720	14.47280	.24939	1.04317	1.06779	1.06811
44	14.23945	2.76055	2.80875	14.19125	.11740	.85543	.86286	.86240
45	16.71406	-1.71406	-1.75238	16.75238	.94611	-.53115	-.53705	-.53624
46	13.30675	-2.30675	-2.35899	13.35899	-.19495	-.71481	-.72286	-.72213
47	16.32249	4.67751	5.03028	15.96972	.81498	1.44945	1.50311	1.50714
48	13.40608	-.40608	-.41053	13.41053	-.16168	-.12584	-.12652	-.12626
49	14.52012	.47988	.49337	14.50663	.21139	.14870	.15078	.15047

Case Number	Unstandardized Predicted Value	Unstandardized Residual	Deleted Residual	Adjusted Predicted Value	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual
50	14.20934	-.20934	-.21097	14.21097	.10731	-.06487	-.06512	-.06498
51	10.70500	-.70500	-.71893	10.71893	-1.06624	-.21846	-.22061	-.22017
52	14.48581	-2.48581	-2.52133	14.52133	.19990	-.77029	-.77578	-.77512
53	13.11189	1.88811	1.92839	13.07161	-.26021	.58508	.59129	.59048
54	7.86997	-3.86997	-3.96553	7.96553	-2.01565	-1.19921	-1.21393	-1.21515
55	17.50057	3.49943	3.56557	17.43443	1.20950	1.08439	1.09459	1.09505
56	12.21724	-1.21724	-1.25624	12.25624	-.55981	-.37719	-.38319	-.38250
57	11.38542	3.61458	3.76794	11.23206	-.83838	1.12007	1.14359	1.14433
58	14.73487	-1.73487	-1.74552	14.74552	.28331	-.53759	-.53924	-.53843
59	14.59503	-3.59503	-3.61914	14.61914	.23648	-1.11402	-1.11775	-1.11834
60	19.72941	-1.72941	-1.81890	19.81890	1.95591	-.53590	-.54959	-.54878
61	15.60685	-2.60685	-2.64944	15.64944	.57532	-.80780	-.81437	-.81379
62	20.14257	.85743	.88127	20.11873	2.09427	.26570	.26937	.26884
63	15.52407	1.47593	1.50242	15.49758	.54760	.45736	.46144	.46067
64	13.94048	.05952	.06031	13.93969	.01728	.01844	.01857	.01853
65	13.80906	1.19094	1.21716	13.78284	-.02673	.36905	.37308	.37241
66	16.16583	-13.16583	-13.72626	16.72626	.76252	-4.07978	-4.16571	-4.31800
67	17.05589	-2.05589	-2.11352	17.11352	1.06058	-.63707	-.64594	-.64514
68	14.53142	-2.53142	-2.55435	14.55435	.21518	-.78443	-.78797	-.78734
69	12.60041	-3.60041	-3.65248	12.65248	-.43149	-1.11568	-1.12372	-1.12435
70	13.56460	.43540	.44735	13.55265	-.10860	.13492	.13676	.13648
71	12.91451	-1.91451	-1.93486	12.93486	-.32630	-.59326	-.59641	-.59559
72	8.65932	-1.65932	-1.74202	8.74202	-1.75131	-.51419	-.52684	-.52604
73	9.64070	2.35930	2.48590	9.51410	-1.42266	.73109	.75045	.74976
74	16.24747	-2.24747	-2.30667	16.30667	.78985	-.69644	-.70555	-.70480
75	10.02790	1.97210	2.00950	9.99050	-1.29299	.61111	.61688	.61607
76	11.72336	3.27664	3.31546	11.68454	-.72520	1.01535	1.02135	1.02144
77	12.45175	-.45175	-.46781	12.46781	-.48128	-.13999	-.14245	-.14216
78	12.58612	-.58612	-.59171	12.59171	-.43628	-.18163	-.18249	-.18212
79	15.58999	2.41001	2.46066	15.53934	.56967	.74681	.75461	.75393
80	14.56002	-.56002	-.56521	14.56521	.22475	-.17354	-.17434	-.17398
81	11.81446	.18554	.19004	11.80996	-.69470	.05749	.05819	.05807
82	15.51225	-.51225	-.53013	15.53013	.54364	-.15873	-.16148	-.16115
83	11.63744	3.36256	3.39643	11.60357	-.75398	1.04198	1.04721	1.04743
84	15.06187	-.06187	-.06319	15.06319	.39281	-.01917	-.01938	-.01934
85	11.46669	.53331	.54394	11.45606	-.81116	.16526	.16690	.16656
86	20.41096	.58904	.61136	20.38864	2.18415	.18253	.18596	.18558
87	19.27629	1.72371	1.76383	19.23617	1.80416	.53414	.54032	.53951
88	14.43916	-4.43916	-4.48461	14.48461	.18428	-1.37559	-1.38262	-1.38529
89	11.07311	-2.07311	-2.16370	11.16370	-.94297	-.64241	-.65629	-.65550
90	17.87188	1.12812	1.16647	17.83353	1.33385	.34958	.35547	.35481
91	9.17672	-4.17672	-4.41367	9.41367	-1.57804	-1.29427	-1.33047	-1.33265
92	15.80974	1.19026	1.22730	15.77270	.64326	.36883	.37453	.37385
93	15.99044	-2.99044	-3.12364	16.12364	.70378	-.92667	-.94708	-.94687
94	19.50285	-3.50285	-3.58920	19.58920	1.88003	-1.08545	-1.09875	-1.09923
95	9.08437	2.91563	3.05076	8.94924	-1.60897	.90349	.92419	.92390
96	7.06139	-1.06139	-1.10378	7.10378	-2.28643	-.32890	-.33540	-.33477
97	16.97860	.02140	.02172	16.97828	1.03470	.00663	.00668	.00667
98	8.32864	.67136	.70479	8.29521	-1.86205	.20804	.21316	.21273
99	9.53111	.46889	.47924	9.52076	-1.45936	.14530	.14689	.14659
100	15.57996	-.57996	-.58572	15.58572	.56632	-.17972	-.18061	-.18024

Case Number	Unstandardized Predicted Value	Unstandardized Residual	Deleted Residual	Adjusted Predicted Value	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual
101	10.22533	-4.22533	-4.28148	10.28148	-1.22688	-1.30933	-1.31800	-1.32006
102	10.14085	.85915	.87673	10.12327	-1.25516	.26623	.26894	.26841
103	15.98939	-3.98939	-4.15702	16.15702	.70343	-1.23622	-1.26192	-1.26351
104	17.71763	.28237	.28782	17.71218	1.28219	.08750	.08834	.08816
105	19.11455	-1.11455	-1.14011	19.14011	1.75000	-.34537	-.34931	-.34866
106	15.91604	.08396	.08603	15.91397	.67886	.02602	.02634	.02628
107	14.13954	-2.13954	-2.18668	14.18668	.08394	-.66299	-.67026	-.66948
108	10.69179	5.30821	5.40286	10.59714	-1.07066	1.64489	1.65949	1.66569
109	15.06858	2.93142	2.95514	15.04486	.39506	.90838	.91205	.91172
110	17.14582	.85418	.86881	17.13119	1.09070	.26469	.26695	.26642
111	8.87333	-5.87333	-5.99929	8.99929	-1.67964	-1.82001	-1.83942	-1.84878
112	10.43253	-2.43253	-2.47620	10.47620	-1.15749	-.75378	-.76052	-.75984
113	10.01957	-3.01957	-3.09104	10.09104	-1.29578	-.93569	-.94670	-.94649
114	17.60642	2.39358	2.42550	17.57450	1.24495	.74171	.74664	.74594
115	13.21294	1.78706	1.80584	13.19416	-.22636	.55377	.55667	.55586
116	10.92230	8.07770	8.93338	10.06662	-.99347	<u>2.50309</u>	<u>2.63233</u>	<u>2.66603</u>
117	11.70143	-2.70143	-2.73210	11.73210	-.73255	-.83711	-.84185	-.84133
118	14.28169	3.71831	3.81889	14.18111	.13154	1.15222	1.16770	1.16860
119	8.61075	4.38925	4.47466	8.52534	-1.76757	1.36013	1.37329	1.37588
120	15.09046	-2.09046	-2.12383	15.12383	.40239	-.64778	-.65293	-.65214
121	10.70256	-7.70256	-8.09642	11.09642	-1.06706	<u>-2.38684</u>	<u>-2.44711</u>	<u>-2.47338</u>
122	12.85940	1.14060	1.15119	12.84881	-.34476	.35345	.35508	.35443
123	13.46067	7.53933	8.02811	12.97189	-.14340	<u>2.33626</u>	<u>2.41080</u>	<u>2.43576</u>
124	12.54312	.45688	.46367	12.53633	-.45068	.14158	.14262	.14233
125	14.01411	-2.01411	-2.04768	14.04768	.04193	-.62413	-.62931	-.62850
126	12.52983	1.47017	1.48531	12.51469	-.45513	.45557	.45791	.45715
127	13.19667	-.19667	-.20043	13.20043	-.23181	-.06094	-.06152	-.06139
128	16.15023	1.84977	1.88310	16.11690	.75729	.57320	.57834	.57753
129	12.96587	-.96587	-.99894	12.99894	-.30910	-.29930	-.30438	-.30380
130	11.17176	-3.17176	-3.23620	11.23620	-.90993	-.98285	-.99279	-.99276
131	14.49540	3.50460	3.55931	14.44069	.20311	1.08599	1.09444	1.09490
132	8.26887	-.26887	-.27904	8.27904	-1.88207	-.08332	-.08488	-.08470
133	20.74417	-1.74417	-1.85900	20.85900	2.29574	-.54048	-.55799	-.55717
134	18.61855	.38145	.38972	18.61028	1.58390	.11820	.11948	.11923
135	8.42687	-4.42687	-4.51235	8.51235	-1.82915	-1.37178	-1.38496	-1.38767
136	16.59605	-2.59605	-2.65143	16.65143	.90659	-.80445	-.81299	-.81241
137	15.65647	1.34353	1.35949	15.64051	.59194	.41633	.41879	.41806
138	16.14230	1.85770	1.89821	16.10179	.75464	.57566	.58190	.58109
139	8.78909	2.21091	2.25248	8.74752	-1.70785	.68511	.69152	.69076
140	11.65313	-.65313	-.68423	11.68423	-.74872	-.20239	-.20715	-.20673
141	12.40546	-3.40546	-3.56884	12.56884	-.49678	-1.05527	-1.08029	-1.08067
142	11.07487	-1.07487	-1.10633	11.10633	-.94237	-.33308	-.33792	-.33728
143	11.80323	4.19677	4.26342	11.73658	-.69846	1.30048	1.31077	1.31277
144	11.33115	2.66885	2.76680	11.23320	-.85655	.82701	.84205	.84153
145	13.98604	-5.98604	-6.06657	14.06657	.03253	-1.85493	-1.86737	-1.87729
146	11.97240	3.02760	3.09268	11.90732	-.64181	.93818	.94821	.94801
147	15.40853	.59147	.60749	15.39251	.50891	.18328	.18575	.18537
148	20.81207	.18793	.19493	20.80507	2.31848	.05823	.05931	.05918
149	13.52794	-.52794	-.53210	13.53210	-.12088	-.16360	-.16424	-.16390
150	11.52798	-2.52798	-2.61847	11.61847	-.79063	-.78336	-.79726	-.79664
151	14.86321	-2.86321	-2.90887	14.90887	.32628	-.88724	-.89429	-.89391

Case Number	Unstandardized Predicted Value	Unstandardized Residual	Deleted Residual	Adjusted Predicted Value	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual
152	6.72072	-2.72072	-2.82020	6.82020	-2.40052	-.84309	-.85836	-.85788
153	17.77485	.22515	.22848	17.77152	1.30135	.06977	.07028	.07014
154	17.77485	.22515	.22848	17.77152	1.30135	.06977	.07028	.07014
155	9.60549	-.60549	-.61757	9.61757	-1.43445	-.18763	-.18949	-.18910
156	11.85766	-3.85766	-3.89630	11.89630	-.68023	-1.19540	-1.20137	-1.20250
157	15.07288	1.92712	1.95359	15.04641	.39650	.59717	.60126	.60045
158	21.59174	-.59174	-.62073	21.62073	2.57958	-.18337	-.18780	-.18742
159	12.50210	-1.50210	-1.51920	12.51920	-.46442	-.46547	-.46811	-.46733
160	12.18567	-4.18567	-4.24747	12.24747	-.57038	-1.29704	-1.30658	-1.30854
161	13.50803	-.50803	-.51366	13.51366	-.12754	-.15743	-.15830	-.15797
162	18.76287	2.23713	2.34063	18.65937	1.63223	.69323	.70909	.70834
163	16.51999	1.48001	1.55948	16.44052	.88112	.45862	.47077	.47000
164	17.55528	2.44472	2.51414	17.48586	1.22782	.75756	.76824	.76758
165	12.95070	2.04930	2.07799	12.92201	-.31419	.63503	.63946	.63866
166	16.47163	1.52837	1.55827	16.44173	.86492	.47361	.47822	.47744
167	12.76822	-.76822	-.77542	12.77542	-.37530	-.23805	-.23917	-.23869
168	17.90710	.09290	.09486	17.90514	1.34564	.02879	.02909	.02903
169	10.77828	7.22172	7.46288	10.53712	-1.04170	<u>2.23784</u>	<u>2.27490</u>	<u>2.29529</u>
170	11.80447	2.19553	2.25457	11.74543	-.69804	.68034	.68943	.68866
171	17.64377	-4.64377	-4.72961	17.72961	1.25746	-1.43899	-1.45223	-1.45566
172	9.25992	-6.25992	-6.62622	9.62622	-1.55018	-1.93980	-1.99575	<u>-2.00848</u>
173	14.54913	-.54913	-.55608	14.55608	.22111	-.17016	-.17124	-.17089
174	14.20272	.79728	.80353	14.19647	.10510	.24706	.24803	.24753
175	14.92049	3.07951	3.11409	14.88591	.34547	.95427	.95961	.95945
176	19.32750	1.67250	1.70942	19.29058	1.82131	.51827	.52396	.52315
177	15.07331	5.92669	6.03926	14.96074	.39665	1.83654	1.85390	1.86355
178	16.39419	2.60581	2.65945	16.34055	.83899	.80748	.81575	.81517
179	16.21853	-.21853	-.22274	16.22274	.78016	-.06772	-.06837	-.06822
180	17.63858	.36142	.37485	17.62515	1.25572	.11200	.11406	.11382
181	17.57427	.42573	.44036	17.55964	1.23418	.13192	.13417	.13389
182	8.34506	-5.34506	-5.51663	8.51663	-1.85655	-1.65631	-1.68268	-1.68925
183	13.63718	.36282	.36874	13.63126	-.08429	.11243	.11334	.11311
184	14.83089	-.83089	-.83579	14.83579	.31546	-.25747	-.25823	-.25772
185	19.16798	1.83202	1.87196	19.12804	1.76789	.56770	.57385	.57304
186	11.47232	-5.47232	-5.60189	11.60189	-.80927	-1.69574	-1.71570	-1.72281
187	15.60824	-2.60824	-2.73481	15.73481	.57579	-.80823	-.82761	-.82706
188	15.90337	2.09663	2.12783	15.87217	.67462	.64970	.65451	.65372
189	15.26861	-1.26861	-1.29253	15.29253	.46205	-.39311	-.39680	-.39609
190	9.39848	.60152	.61686	9.38314	-1.50378	.18640	.18876	.18838
191	15.50610	1.49390	1.51627	15.48373	.54158	.46293	.46638	.46561
192	13.88582	-.88582	-.90180	13.90180	-.00103	-.27450	-.27696	-.27642
193	9.11556	2.88444	2.96189	9.03811	-1.59852	.89382	.90574	.90540
194	15.76481	2.23519	2.25161	15.74839	.62822	.69263	.69517	.69441
195	19.25118	1.74882	1.79008	19.20992	1.79576	.54192	.54827	.54746
196	15.40620	.59380	.59881	15.40119	.50813	.18400	.18478	.18440
197	11.38512	-8.38512	-8.45594	11.45594	-.83848	<u>-2.59835</u>	<u>-2.60930</u>	<u>-2.64202</u>
198	9.86687	-4.86687	-5.00616	10.00616	-1.34692	-1.50813	-1.52956	-1.53392
199	10.18451	2.81549	2.88163	10.11837	-1.24054	.87245	.88264	.88223
200	12.34581	2.65419	2.75177	12.24823	-.51675	.82247	.83745	.83692
201	18.29724	-.29724	-.30807	18.30807	1.47629	-.09211	-.09377	-.09357
202	12.15231	-1.15231	-1.16918	12.16918	-.58155	-.35707	-.35968	-.35902
203	13.37827	.62173	.64183	13.35817	-.17100	.19266	.19575	.19535

Case Number	Unstandardized Predicted Value	Unstandardized Residual	Deleted Residual	Adjusted Predicted Value	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual
204	10.36113	.63887	.65280	10.34720	-1.18140	.19797	.20012	.19971
205	19.92146	1.07854	1.10824	19.89176	2.02022	.33421	.33878	.33815
206	12.91181	-1.91181	-1.93351	12.93351	-.32721	-.59243	-.59578	-.59497
207	16.65697	-10.65697	-10.86503	16.86503	.92699	<u>-3.30234</u>	<u>-3.33442</u>	<u>-3.40829</u>
208	12.80668	-1.80668	-1.81637	12.81637	-.36242	-.55985	-.56135	-.56053
209	12.65646	.34354	.35011	12.64989	-.41272	.10646	.10747	.10724
210	12.53394	5.46606	5.62553	12.37447	-.45375	1.69380	1.71833	1.72549
211	14.33442	3.66558	3.78219	14.21781	.14920	1.13588	1.15380	1.15461
212	13.51353	-1.51353	-1.52633	13.52633	-.12570	-.46901	-.47099	-.47021
213	16.28479	-2.28479	-2.33357	16.33357	.80235	-.70800	-.71552	-.71478
214	10.93973	-.93973	-.96432	10.96432	-.98763	-.29120	-.29499	-.29442
215	14.09852	3.90148	4.13030	13.86970	.07020	1.20898	1.24392	1.24537
216	12.32948	2.67052	2.77670	12.22330	-.52222	.82753	.84382	.84331
217	15.41863	-1.41863	-1.43126	15.43126	.51229	-.43960	-.44155	-.44080
218	11.14880	.85120	.92227	11.07773	-.91762	.26377	.27456	.27402
219	18.02435	-6.02435	-6.14872	18.14872	1.38491	-1.86680	-1.88598	-1.89628
220	14.62227	2.37773	2.39810	14.60190	.24560	.73680	.73995	.73924
221	11.30621	2.69379	2.74341	11.25659	-.86490	.83474	.84239	.84188
222	14.61681	-1.61681	-1.65654	14.65654	.24377	-.50101	-.50713	-.50633
223	11.78380	-8.78380	-9.04863	12.04863	-.70497	<u>-2.72189</u>	<u>-2.76262</u>	<u>-2.80228</u>
224	13.94614	2.05386	2.07654	13.92346	.01917	.63644	.63995	.63915
225	13.67320	1.32680	1.37101	13.62899	-.07223	.41114	.41794	.41721
226	17.75105	-2.75105	-2.86905	17.86905	1.29338	-.85248	-.87058	-.87013
227	10.04320	2.95680	3.00467	9.99533	-1.28787	.91624	.92363	.92334
228	14.18161	-.18161	-.18306	14.18306	.09803	-.05628	-.05650	-.05638
229	11.85429	.14571	.14689	11.85311	-.68136	.04515	.04534	.04524
230	11.67526	.32474	.33443	11.66557	-.74131	.10063	.10212	.10191
231	11.67526	.32474	.33443	11.66557	-.74131	.10063	.10212	.10191
232	11.54751	.45249	.46062	11.53938	-.78410	.14022	.14147	.14118
233	8.80885	2.19115	2.34544	8.65456	-1.70123	.67899	.70248	.70173
234	14.69582	1.30418	1.32855	14.67145	.27023	.40413	.40789	.40717
235	10.19576	5.80424	6.01889	9.98111	-1.23678	1.79860	1.83155	1.84076
236	15.40173	-.40173	-.41064	15.41064	.50663	-.12449	-.12586	-.12560
237	13.28984	4.71016	4.81470	13.18530	-.20061	1.45957	1.47568	1.47937
238	14.06354	.93646	.94136	14.05864	.05849	.29019	.29095	.29038
239	17.36358	-5.36358	-5.50778	17.50778	1.16363	-1.66205	-1.68424	-1.69083
240	13.82659	.17341	.17503	13.82497	-.02086	.05374	.05399	.05387
241	17.47914	.52086	.52868	17.47132	1.20233	.16140	.16261	.16228
242	13.10684	-3.10684	-3.22229	13.22229	-.26190	-.96274	-.98046	-.98038
243	10.56187	1.43813	1.48046	10.51954	-1.11417	.44564	.45215	.45139

APPENDIX F

Diagnostic Measures for Identifying Influential Observations

Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA INVEST	Standardized DFBETA SATIS	Standardized DFBETA AVAIL
1	6.43721	0.00391	.02660	1.03853	0.15304	0.07155	-0.01471	0.04049	-0.00768
2	.75586	0.00066	.00312	1.01915	0.06265	0.00737	-0.01631	-0.02625	0.00536
3	7.70444	0.00606	.03184	1.03795	0.19067	0.09276	-0.09933	0.01155	<u>-0.15276</u>
4	14.78468	<u>0.09073</u>	<u>.06109</u>	<u>0.89756</u>	<u>-0.74867</u>	<u>0.12893</u>	<u>-0.35969</u>	<u>0.48256</u>	<u>-0.30832</u>
5	8.06894	0.0013	<u>.03334</u>	1.06019	-0.08833	-0.03859	-0.06623	0.01515	-0.01887
6	5.35629	0.0032	.02213	1.03451	-0.13841	-0.07845	0.03133	0.1039	-0.00166
7	3.85015	0.00179	.01591	1.03279	0.10357	-0.02173	0.05253	0.03428	0.05372
8	4.94995	0.00002	.02045	1.05142	0.01036	-0.00185	0.00195	-0.00383	-0.00411
9	9.27807	0.0133	<u>.03834</u>	1.02329	<u>0.28295</u>	-0.05552	<u>-0.22272</u>	-0.0595	-0.08711
10	6.38045	0.00521	.02637	1.0316	-0.17675	-0.06219	0.12556	-0.06233	0.10897
11	4.77425	0.01055	.01973	0.98368	-0.25242	-0.10011	<u>0.13599</u>	<u>-0.1512</u>	0.12019
12	.99910	0.00004	.00413	1.03352	0.01493	-0.00554	-0.00226	0.00567	0.00402
13	5.03068	0.00087	.02079	1.04648	0.07201	-0.04035	0.0539	0.00441	0.03502
14	3.45597	0.00000	.01428	1.04492	0.00071	0.00025	0.00034	-0.00015	0.00028
15	6.77076	0.00373	.02798	1.04173	0.14947	0.04263	-0.06374	0.02309	<u>-0.13112</u>
16	2.16049	0.00162	.00893	1.02008	0.09844	0.05095	-0.06136	-0.02994	-0.01077
17	5.60910	0.00004	.02318	1.05426	-0.01505	-0.00775	0.01144	0.00701	0.00494
18	6.89312	0.00218	.02848	1.04988	0.11421	0.06135	0.05383	0.00967	0.03852
19	14.39374	<u>0.02837</u>	<u>.05948</u>	1.02766	<u>-0.4139</u>	<u>-0.37165</u>	0.07216	<u>0.1452</u>	<u>0.23292</u>
20	9.42253	0.00082	<u>.03894</u>	1.06887	0.07005	0.01393	0.05137	0.02451	0.02474
21	3.06728	0.00415	.01267	1.00531	0.15791	-0.01861	-0.11814	-0.00115	-0.00609
22	5.49889	0.00157	.02272	1.0449	0.0969	0.0235	0.02944	-0.06549	0.0287
23	2.44403	0.01126	.01010	<u>0.92299</u>	<u>0.26199</u>	-0.10238	-0.12228	-0.01139	-0.04228
24	4.78087	0.00001	.01976	1.05073	0.0067	-0.00143	0.00542	-0.00071	0.00459
25	.84576	0.00015	.00349	1.03051	0.02985	-0.01359	0.00012	0.00886	0.0102
26	7.73788	0.0107	.03197	1.01872	0.25379	<u>0.16523</u>	-0.0972	0.0113	<u>-0.15608</u>
27	3.64347	0.01113	.01506	0.95852	<u>0.25969</u>	<u>-0.18784</u>	0.04148	0.01369	0.10914
28	1.44367	0.00018	.00597	1.03333	0.03297	-0.01027	-0.00913	-0.00916	0.01324
29	1.75483	0.00438	.00725	0.97892	0.1625	-0.10711	0.03114	0.01136	0.05687
30	5.99417	<u>0.02309</u>	.02477	<u>0.93761</u>	<u>-0.37514</u>	-0.10613	0.03397	<u>-0.27164</u>	<u>0.19263</u>
31	8.72281	0.00571	<u>.03604</u>	1.04664	0.18505	-0.05365	0.04563	-0.12101	-0.02149
32	7.05771	0.00111	.02916	1.0558	-0.0816	-0.01183	-0.03531	-0.03799	-0.04131
33	6.18315	0.00656	.02555	1.02309	-0.19844	0.01044	-0.04084	-0.04102	0.11777
34	2.86012	0.00124	.01182	1.03024	-0.08614	0.00968	-0.00092	0.02739	-0.00049
35	6.00136	0.00604	.02480	1.02409	0.19049	-0.0791	-0.01329	-0.11376	0.08691
36	1.68945	0.00526	.00698	0.96555	0.17829	-0.10689	-0.00178	0.04295	0.00941
37	4.16710	0.00120	.01722	1.03935	0.08461	-0.04349	0.03428	0.0202	-0.00794
38	10.62867	<u>0.02252</u>	<u>.04392</u>	1.00645	<u>0.36888</u>	<u>0.20341</u>	-0.00161	-0.10695	<u>-0.12882</u>
39	3.57193	0.01567	.01476	<u>0.92255</u>	<u>-0.30921</u>	<u>-0.1759</u>	<u>-0.15355</u>	0.03985	0.0622
40	8.49936	0.00359	<u>.03512</u>	1.05342	0.14656	0.1128	0.05494	-0.03456	-0.04406
41	3.64873	0.00138	.01508	1.03465	-0.09074	0.05194	-0.00118	-0.04036	-0.03741
42	2.98291	0.00252	.01233	1.01923	0.12283	0.04194	-0.05588	0.06195	-0.01632
43	10.03703	0.00908	<u>.04148</u>	1.04404	0.23345	0.06882	-0.01994	<u>-0.18386</u>	-0.07768
44	3.15629	0.00217	.01304	1.02408	0.11395	-0.07618	0.03957	-0.01241	0.07262
45	4.29584	0.00107	.01775	1.04099	-0.08018	-0.03213	-0.01187	0.04086	0.03995
46	4.36319	0.00197	.01803	1.03512	-0.10867	-0.08436	0.00784	0.06458	0.04518
47	<u>15.97550</u>	<u>0.0284</u>	<u>.06601</u>	1.04144	<u>0.4139</u>	0.00727	0.10836	<u>0.26878</u>	0.02355
48	1.62256	0.00003	.00670	1.03649	-0.01321	0.00408	-0.00616	0.00281	-0.00927
49	5.62010	0.00011	.02322	1.05392	0.02523	-0.0071	0.0132	-0.01553	0.01226
50	.87191	0.00001	.00360	1.03356	-0.00573	0.00006	0.00103	-0.00271	0.0005
51	3.69341	0.00016	.01526	1.04467	-0.03095	0.0054	-0.00274	0.00091	-0.02092

Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA INVEST	Standardized DFBETA SATIS	Standardized DFBETA AVAIL
52	2.41373	0.00143	.00997	1.0246	-0.09266	0.06235	-0.01675	-0.02279	-0.04715
53	4.05895	0.00124	.01677	1.03834	0.08624	-0.02568	0.04269	-0.03845	0.0603
54	4.83584	0.00606	.01998	1.01242	-0.19095	-0.03036	0.04712	0.03137	-0.10925
55	3.49285	0.00377	.01443	1.01378	0.15054	-0.10476	0.04852	0.03011	0.02236
56	6.51855	0.00078	.02694	1.05464	-0.06847	-0.01688	0.03144	0.00579	0.01697
57	8.85406	0.00925	<u>.03659</u>	1.0343	0.23571	<u>0.1712</u>	-0.07445	0.06737	-0.07703
58	.48145	0.0003	.00199	1.02442	-0.0422	-0.00646	0.00933	-0.00131	0.01705
59	.61637	0.0014	.00255	1.00034	-0.09159	0.01	0.01005	-0.0328	0.00799
60	10.91024	0.0026	<u>.04508</u>	1.07055	-0.12483	-0.03167	-0.04172	-0.02258	0.04416
61	2.89364	0.00181	.01196	1.02507	-0.10401	0.07468	-0.00641	-0.02372	-0.02561
62	5.54980	0.00034	.02293	1.05227	0.04482	-0.01671	0.00901	0.00159	-0.01787
63	3.27168	0.00064	.01352	1.03849	0.06172	0.01136	0.02674	-0.00437	0.00406
64	2.18440	0.00000	.00903	1.03934	0.00214	-0.00116	-0.00071	0.00064	0.00021
65	4.21586	0.00051	.01742	1.04458	0.05525	-0.03978	0.01511	0.0145	0.03889
66	8.88468	<u>0.12311</u>	<u>.03671</u>	<u>0.67761</u>	<u>-0.89088</u>	-0.1281	<u>0.41204</u>	<u>-0.33136</u>	<u>0.5927</u>
67	5.60387	0.00195	.02316	1.04336	-0.10802	0.06988	-0.07282	0.00371	-0.05896
68	1.17661	0.00094	.00486	1.01882	-0.07494	-0.00548	0.0346	0.00267	0.03914
69	2.45356	0.00304	.01014	1.0077	-0.1352	0.04202	0.07499	-0.05681	-0.00433
70	5.46908	0.00009	.02260	1.05335	0.02261	-0.00908	0.01301	0.00725	0.01808
71	1.54885	0.00063	.00640	1.0273	-0.0614	-0.03727	0.02208	-0.00059	0.02476
72	10.49263	0.00231	<u>.04336</u>	1.06927	-0.11744	0.00468	0.04632	-0.03178	-0.02671
73	11.32861	0.00504	<u>.04681</u>	1.06542	0.17368	-0.04022	-0.05286	0.04249	0.06384
74	5.21530	0.00219	.02155	1.03952	-0.11439	0.08125	-0.04126	0.0291	-0.04561
75	3.50752	0.0012	.01449	1.03512	0.08483	0.04321	-0.00068	-0.03376	0.02849
76	1.83803	0.00206	.00760	1.01074	0.11119	-0.00868	-0.00409	0.05017	0.06121
77	7.31362	0.00012	.03022	1.06162	-0.02681	-0.01147	-0.01308	-0.00327	-0.01044
78	1.28866	0.00005	.00533	1.0346	-0.01778	0.00569	-0.0012	0.0065	-0.00987
79	3.98569	0.00199	.01647	1.03225	0.1093	0.02681	-0.04084	0.04969	-0.06971
80	1.22902	0.00005	.00508	1.03442	-0.01676	-0.00059	-0.00251	-0.00558	-0.00134
81	4.73584	0.00001	.01957	1.05049	0.00904	0.00537	0.00026	-0.00176	-0.00033
82	7.16542	0.00015	.02961	1.06079	-0.03011	-0.02275	-0.01325	0.00111	0.00696
83	1.41740	0.00184	.00586	1.00759	0.10512	0.05004	-0.02558	0.01619	0.00665
84	4.08438	0.00000	.01688	1.04768	-0.00283	-0.0004	-0.00012	0.00159	0.00073
85	3.73388	0.00009	.01543	1.0454	0.02352	-0.00698	-0.01338	-0.00494	0.00179
86	7.83850	0.00022	.03239	1.06363	0.03612	0.00238	0.00119	0.00588	-0.02573
87	4.50867	0.00113	.01863	1.04183	0.08231	-0.03536	0.05045	0.01474	0.00449
88	1.45689	0.00326	.00602	0.98705	-0.14018	0.04858	0.01764	0.04859	0.00166
89	9.13679	0.00314	<u>.03776</u>	1.0589	-0.13703	0.03283	0.01854	-0.07457	-0.05012
90	6.96090	0.00072	.02876	1.05718	0.06542	0.01673	0.03656	0.03451	-0.00376
91	11.99596	<u>0.01674</u>	<u>.04957</u>	1.03621	<u>-0.31741</u>	0.10938	<u>0.23128</u>	-0.08419	-0.02243
92	6.30777	0.00073	.02607	1.05386	0.06595	0.0266	-0.02599	0.01913	-0.04648
93	9.32422	0.00666	<u>.03853</u>	1.04728	-0.19984	-0.06385	-0.02318	0.09862	0.07068
94	4.82626	0.00496	.01994	1.01926	-0.17259	0.02986	-0.00844	-0.04056	0.09782
95	9.72341	0.0066	<u>.04018</u>	1.05023	0.1989	-0.01378	<u>-0.13164</u>	-0.09709	-0.00337
96	8.29715	0.00075	<u>.03429</u>	1.06362	-0.0669	-0.03812	0.01602	0.02544	-0.01356
97	2.59489	0.00000	.01072	1.04114	0.00082	-0.00016	0.00061	0.00027	0.00022
98	10.48457	0.00038	<u>.04332</u>	1.07554	0.04747	0.01108	0.00114	0.01428	0.02192
99	4.22996	0.00008	.01748	1.04776	0.02178	0.00116	-0.01417	-0.00776	0.00128
100	1.38383	0.00005	.00572	1.03503	-0.01796	-0.0077	-0.0052	0.00877	0.00634
101	2.17796	0.00385	.00900	0.99445	-0.15218	-0.08253	0.09165	0.03422	0.01503
102	3.85834	0.00025	.01594	1.04477	0.0384	0.00282	-0.0039	0.00445	0.01778
103	8.76294	0.01115	<u>.03621</u>	1.02642	-0.259	-0.07088	0.03802	<u>0.19779</u>	<u>0.14106</u>
104	3.58648	0.00003	.01482	1.04528	0.01225	-0.00011	-0.00019	0.00333	-0.00685

Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA INVEST	Standardized DFBETA SATIS	Standardized DFBETA AVAIL
105	4.42892	0.00047	.01830	1.04598	-0.0528	-0.00556	-0.00244	0.0023	0.03874
106	4.80537	0.00000	.01986	1.05087	0.00412	-0.00077	0.00101	-0.00297	0.00005
107	4.22126	0.00165	.01744	1.03643	-0.09937	0.05613	0.00129	0.04561	-0.02633
108	3.24357	0.00818	.01340	0.97328	0.22242	-0.02501	-0.12732	0.10484	0.04341
109	.94630	0.00112	.00391	1.01241	0.08201	-0.01184	0.01125	0.02225	0.00278
110	3.07916	0.0002	.01272	1.04138	0.03487	-0.00168	0.01739	0.00746	-0.00222
111	4.08514	0.01209	.01688	0.96109	<u>-0.27075</u>	<u>-0.1564</u>	<u>0.18142</u>	0.09438	0.034
112	3.27215	0.00173	.01352	1.02891	-0.10181	-0.05246	0.03527	-0.04098	-0.00724
113	4.59961	0.00354	.01901	1.02637	-0.14562	0.01405	0.09663	0.06493	-0.00744
114	2.18887	0.00124	.00904	1.02479	0.08614	-0.01003	0.02136	0.01213	-0.03261
115	1.52099	0.00054	.00629	1.02837	0.05698	0.01423	0.0211	-0.01767	0.02057
116	<u>22.18393</u>	<u>0.12234</u>	<u>.09167</u>	<u>0.94935</u>	<u>0.86771</u>	0.02358	<u>0.14964</u>	<u>-0.79286</u>	<u>0.22705</u>
117	1.72076	0.00134	.00711	1.01887	-0.08965	-0.03726	0.00817	0.04948	-0.01421
118	5.37790	0.00615	.02222	1.01759	0.1922	0.05488	-0.06757	0.08572	-0.08795
119	3.62334	0.00612	.01497	0.99671	0.19193	0.08153	-0.06473	-0.03236	0.06523
120	2.80665	0.00113	.01160	1.03087	-0.0824	-0.03508	-0.008	-0.05545	0.02094
121	10.77641	<u>0.05103</u>	<u>.04453</u>	<u>0.92468</u>	<u>-0.5593</u>	<u>-0.23324</u>	<u>-0.29162</u>	<u>0.03315</u>	<u>-0.28929</u>
122	1.22927	0.0002	.00508	1.03191	0.03414	0.02432	-0.00597	-0.00148	-0.00813
123	13.73795	<u>0.0628</u>	<u>.05677</u>	<u>0.94102</u>	<u>0.62019</u>	<u>0.53437</u>	-0.10728	<u>-0.32393</u>	<u>-0.37655</u>
124	2.54553	0.00005	.01052	1.04039	0.01735	0.00396	-0.00921	-0.00449	-0.00578
125	2.97181	0.0011	.01228	1.03238	-0.08114	-0.05745	-0.01538	-0.02798	0.01463
126	1.47204	0.00036	.00608	1.03077	0.0464	0.03198	0.00639	-0.00949	0.00176
127	3.54992	0.00001	.01467	1.04523	-0.00849	-0.00276	0.00056	-0.00223	0.00087
128	3.28756	0.001	.01358	1.03537	0.07752	-0.02176	0.01838	-0.04705	-0.00091
129	7.01415	0.00053	.02898	1.05832	-0.05621	-0.01696	0.01652	0.02079	0.01937
130	3.82261	0.00334	.01580	1.02069	-0.1415	-0.05495	0.06866	0.02481	0.02068
131	2.72337	0.00312	.01125	1.01051	0.13679	0.02193	-0.08618	0.03673	-0.08881
132	7.82792	0.00005	.03235	1.06431	-0.01648	-0.00384	0.00235	0.01231	-0.00581
133	13.95211	0.00342	<u>.05765</u>	1.08463	-0.14296	-0.04034	-0.05193	-0.06335	0.05164
134	4.13377	0.00005	.01708	1.04753	0.01755	0.00282	0.00664	-0.00657	-0.00803
135	3.58838	0.00617	.01483	0.99575	-0.19283	-0.06754	0.11018	0.00742	-0.04362
136	4.05888	0.00235	.01677	1.03017	-0.11866	0.03199	-0.0711	-0.07559	-0.03972
137	1.84576	0.00035	.00763	1.03328	0.04557	-0.01166	0.00231	0.03363	-0.00205
138	4.16857	0.00123	.01723	1.03911	0.08581	-0.01641	0.02483	0.05438	0.01232
139	3.47040	0.0015	.01434	1.03239	0.09472	0.03098	-0.04183	-0.0255	0.02744
140	10.00147	0.00034	<u>.04133</u>	1.07336	-0.04511	0.00861	0.02154	-0.01118	-0.00116
141	10.08313	0.00933	<u>.04167</u>	1.04354	-0.23671	0.01623	<u>0.13462</u>	-0.03695	0.04815
142	5.88398	0.00056	.02431	1.05266	-0.0577	-0.01674	0.05013	0.01493	0.02916
143	2.78745	0.00455	.01152	0.99748	0.16544	0.00702	-0.04167	-0.09606	0.01566
144	7.57170	0.00434	.03129	1.04439	0.16122	-0.01044	<u>-0.1284</u>	0.0141	-0.04991
145	2.21667	0.00782	.00916	0.95104	-0.21775	0.06975	-0.03939	-0.07202	-0.09274
146	4.09597	0.00322	.01693	1.02412	0.13898	0.03298	0.04354	-0.02387	0.06454
147	5.38644	0.00016	.02226	1.05256	0.03051	-0.01792	0.00962	0.00741	0.01466
148	7.69192	0.00002	.03178	1.06379	0.01142	-0.00088	0.00188	0.00456	-0.00629
149	.89536	0.00004	.00370	1.03307	-0.01455	0.00653	0.00299	-0.00272	-0.00363
150	7.36678	0.00379	.03044	1.04543	-0.15072	0.02909	-0.01915	-0.03532	-0.07556
151	2.80345	0.00213	.01158	1.02113	-0.1129	0.07024	0.00739	-0.04015	-0.02596
152	7.54058	0.00449	.03116	1.04352	-0.16404	-0.0447	0.06231	-0.00154	-0.05902
153	2.53012	0.00001	.01046	1.04073	0.00853	0.00028	0.00553	0.00174	-0.00076
154	2.53012	0.00001	.01046	1.04073	0.00853	0.00028	0.00553	0.00174	-0.00076
155	3.73714	0.00012	.01544	1.0452	-0.02671	0.00767	0.01216	-0.00053	-0.01318
156	1.40427	0.00241	.00580	0.99869	-0.12035	0.01489	0.06979	-0.03232	-0.01415
157	2.28327	0.00083	.00943	1.0303	0.07037	0.00001	0.01062	0.04943	0.00001

Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA INVEST	Standardized DFBETA SATIS	Standardized DFBETA AVAIL
158	10.30666	0.00029	<u>.04259</u>	1.07499	-0.04148	0.00064	0.00043	0.0029	0.03095
159	1.72782	0.00042	.00714	1.03163	-0.04986	-0.03413	-0.00757	0.00549	-0.00236
160	2.52515	0.0042	.01043	0.99666	-0.159	-0.04217	0.03789	-0.05194	-0.00008
161	1.65743	0.00005	.00685	1.03641	-0.01663	-0.00764	-0.00623	0.00451	-0.00303
162	9.70439	0.00388	<u>.04010</u>	1.05956	0.15235	0.00886	-0.05868	0.02684	-0.1239
163	11.33615	0.00198	<u>.04684</u>	1.07472	0.10891	0.09006	0.03125	-0.02635	-0.05188
164	5.68700	0.00279	.02350	1.03916	0.12935	0.07807	0.05432	-0.028	-0.05979
165	2.34527	0.00095	.00969	1.02933	0.07557	-0.02871	-0.0305	-0.01398	0.00804
166	3.64770	0.00075	.01507	1.03972	0.06678	-0.03777	0.03925	0.00336	0.03152
167	1.25172	0.00009	.00517	1.03381	-0.02311	0.01056	0.00248	-0.0059	-0.01179
168	4.00180	0.00000	.01654	1.0473	0.00422	-0.00249	0.00238	0.00182	0.00117
169	6.82436	<u>0.0288</u>	<u>.02820</u>	<u>0.92844</u>	<u>0.41944</u>	<u>0.16833</u>	<u>-0.15703</u>	<u>0.19284</u>	-0.02623
170	5.34097	0.00213	.02207	1.04066	0.11293	0.01192	0.00606	-0.09406	0.0267
171	3.39658	0.0065	.01404	0.99011	-0.19792	0.12394	-0.03029	-0.01698	0.01187
172	12.38204	<u>0.03884</u>	<u>.05117</u>	0.98073	<u>-0.48585</u>	<u>0.1836</u>	<u>0.36256</u>	-0.0713	-0.02646
173	2.02630	0.00006	.00837	1.0379	-0.01922	-0.00183	-0.01168	-0.00735	-0.00764
174	.88746	0.00008	.00367	1.03213	0.02192	0.0019	0.01174	0.00607	0.00882
175	1.69096	0.00172	.00699	1.01326	0.10166	-0.01116	-0.04998	-0.00441	-0.05089
176	4.22989	0.00101	.01748	1.04107	0.07772	-0.03811	0.04151	0.01956	-0.0003
177	3.51475	0.01088	.01452	0.95747	0.25683	<u>-0.20018</u>	0.00604	0.04245	0.08615
178	3.88533	0.00228	.01606	1.0293	0.11696	-0.06365	-0.02915	0.00557	-0.02683
179	3.58331	0.00002	.01481	1.04535	-0.00947	0.00196	-0.00572	-0.00493	-0.00306
180	7.66994	0.00008	.03169	1.06344	0.02193	0.00772	0.01532	0.00296	0.00036
181	7.04015	0.0001	.02909	1.06044	0.02481	0.0035	-0.00819	0.01265	-0.01722
182	6.53067	0.01515	.02699	0.98497	<u>-0.30265</u>	-0.11823	0.05918	<u>0.20382</u>	-0.08338
183	2.88532	0.00003	.01192	1.04207	0.01444	-0.00068	0.00403	0.00627	0.00511
184	.42358	0.00007	.00175	1.03001	-0.0198	-0.00476	-0.00011	0.00593	0.00654
185	4.16710	0.0012	.01722	1.03935	0.08461	-0.04349	0.03428	0.0202	-0.00794
186	4.60135	0.01162	.01901	0.97412	<u>-0.26509</u>	0.0723	-0.06089	-0.09478	<u>-0.20492</u>
187	10.20347	0.00554	<u>.04216</u>	1.05695	-0.18219	-0.01177	-0.10093	0.02959	-0.0409
188	2.55210	0.00106	.01055	1.02972	0.07974	-0.02964	0.02802	-0.01505	0.0118
189	3.48214	0.00049	.01439	1.04087	-0.05439	0.0366	0.00381	0.00888	-0.00759
190	5.02186	0.00015	.02075	1.0509	0.03008	0.00907	-0.00497	-0.02165	0.00793
191	2.57382	0.00054	.01064	1.03533	0.05697	-0.00188	-0.00039	0.02629	-0.00835
192	3.29202	0.00023	.01360	1.04217	-0.03712	-0.007	-0.02044	0.0226	-0.01281
193	5.33194	0.00367	.02203	1.03155	0.14836	0.03716	-0.01245	0.05911	0.07165
194	.76843	0.00059	.00318	1.02065	0.05951	-0.00359	0.00201	-0.00784	-0.02158
195	4.58223	0.00118	.01893	1.04193	0.08409	-0.04657	0.02911	0.00439	-0.00957
196	1.02770	0.00005	.00425	1.03345	0.01693	-0.00678	0.00661	0.00766	0.00517
197	1.03095	0.00958	.00426	<u>0.86839</u>	-0.24281	0.02381	0.05655	0.00609	-0.12556
198	5.73761	0.01116	.02371	0.99408	<u>-0.2595</u>	-0.10452	<u>0.14177</u>	-0.1228	0.02597
199	4.55819	0.00305	.01884	1.02925	0.13521	0.02221	-0.03369	0.08322	0.04233
200	7.58577	0.0043	.03135	1.04466	0.16047	0.01873	0.05828	0.09716	0.07744
201	7.51262	0.00005	.03104	1.06283	-0.01786	-0.00372	-0.01009	-0.01095	0.00109
202	2.49548	0.00032	.01031	1.03731	-0.04344	-0.02897	-0.00375	0.01488	0.00003
203	6.58123	0.00021	.02720	1.05782	0.03512	-0.001	0.00263	0.01333	0.00581
204	4.16931	0.00015	.01723	1.047	0.02949	0.01901	-0.02106	-0.01066	-0.01242
205	5.49041	0.00053	.02269	1.05088	0.05612	-0.00452	0.01441	0.0115	-0.02784
206	1.72007	0.00067	.00711	1.02805	-0.06339	0.01308	0.01328	-0.0426	-0.01648
207	3.63823	<u>0.03618</u>	.01503	<u>0.78381</u>	<u>-0.47622</u>	-0.01539	<u>-0.20163</u>	0.06565	0.04856
208	.29499	0.00028	.00122	1.023	-0.04105	-0.02228	0.01194	0.00514	0.00656
209	3.54409	0.00004	.01464	1.045	0.01483	0.00685	-0.00327	-0.01205	-0.00402
210	5.86439	0.01436	.02423	0.97913	<u>0.29473</u>	-0.02001	-0.0725	<u>0.12926</u>	0.01314

Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA INVEST	Standardized DFBETA SATIS	Standardized DFBETA AVAIL
211	6.46506	0.00706	.02672	1.02315	0.20593	0.00131	0.09806	-0.01704	0.0664
212	1.03390	0.00031	.00427	1.02858	-0.04325	-0.00727	0.01458	-0.02646	0.00712
213	4.06272	0.00182	.01679	1.03409	-0.10444	0.01232	0.03177	0.03297	0.0565
214	5.17417	0.00038	.02138	1.05021	-0.04762	-0.02938	0.0005	0.02136	-0.00296
215	12.41079	0.01512	<u>.05128</u>	1.044	<u>0.3016</u>	0.04534	-0.03348	<u>0.27282</u>	-0.02462
216	8.25870	0.00472	<u>.03413</u>	1.0474	0.16816	0.08931	-0.12208	0.01665	-0.11283
217	1.13944	0.00029	.00471	1.02973	-0.04159	0.01458	-0.02151	0.00858	-0.01375
218	<u>17.65293</u>	0.00105	<u>.07295</u>	1.10922	0.07918	0.06802	-0.04047	-0.0171	-0.05599
219	3.89899	0.01224	.01611	0.95607	<u>-0.27246</u>	0.09183	<u>-0.20892</u>	0.04381	-0.06395
220	1.05964	0.00078	.00438	1.02022	0.06842	-0.03603	0.02085	-0.00648	0.02956
221	3.38066	0.00218	.01397	1.02596	0.11425	0.04268	-0.07927	0.03711	-0.03605
222	4.80870	0.00105	.01987	1.04408	-0.07938	0.00211	-0.04814	0.00396	-0.03308
223	6.08696	<u>0.03835</u>	<u>.02515</u>	<u>0.86821</u>	<u>-0.48658</u>	<u>0.27156</u>	0.09948	-0.00254	<u>-0.22926</u>
224	1.64679	0.00075	.00680	1.02631	0.06716	-0.0322	0.02616	0.02229	0.04503
225	6.80734	0.00097	.02813	1.05519	0.07616	-0.00778	0.01615	-0.0638	0.0158
226	8.95753	0.00542	<u>.03701</u>	1.04933	-0.18021	-0.05125	0.04038	0.08261	<u>0.14006</u>
227	2.85921	0.0023	.01181	1.01999	0.11748	0.05843	-0.01508	-0.00236	0.03862
228	.92310	0.0000	.00381	1.03381	-0.00504	-0.00012	0.00077	-0.00286	0.00037
229	.94720	0.00000	.00391	1.03394	0.00407	-0.00008	-0.00194	0.00071	0.00071
230	6.01224	0.00005	.02484	1.056	0.0176	-0.0037	0.00173	-0.00075	0.00965
231	6.01224	0.00005	.02484	1.056	0.0176	-0.0037	0.00173	-0.00075	0.00965
232	3.27340	0.00006	.01353	1.04359	0.01892	-0.00755	0.00318	-0.00257	0.01492
233	14.92345	0.00579	<u>.06167</u>	1.08427	0.18621	0.09611	0.01932	0.08635	0.05325
234	3.44344	0.00052	.01423	1.04047	0.05566	0.01456	-0.00862	0.002	-0.01749
235	7.63479	<u>0.02068</u>	<u>.03155</u>	0.97643	<u>0.354</u>	<u>0.23209</u>	<u>-0.12976</u>	<u>-0.21788</u>	-0.10618
236	4.25277	0.00006	.01757	1.04801	-0.0187	-0.01036	0.00109	0.00869	0.01044
237	4.25899	0.00806	.01760	0.99197	0.2204	-0.10417	0.11709	0.043	<u>0.18748</u>
238	.26381	0.00007	.00109	1.02885	0.02101	0.00678	0.00398	0.00056	-0.00022
239	5.33977	0.01271	.02207	0.97986	<u>-0.27724</u>	<u>-0.14979</u>	-0.08579	0.01423	0.12543
240	1.24444	0.00000	.00514	1.0352	0.00521	0.0036	0.00157	-0.00033	-0.00034
241	2.58626	0.00007	.01069	1.04041	0.01989	-0.00702	0.01355	-0.00207	0.00321
242	7.67483	0.00595	.03171	1.03818	-0.18899	-0.06259	-0.02904	0.12275	0.00587
243	5.92415	0.001	.02448	1.05043	0.07745	0.00691	-0.02893	0.01063	0.01158

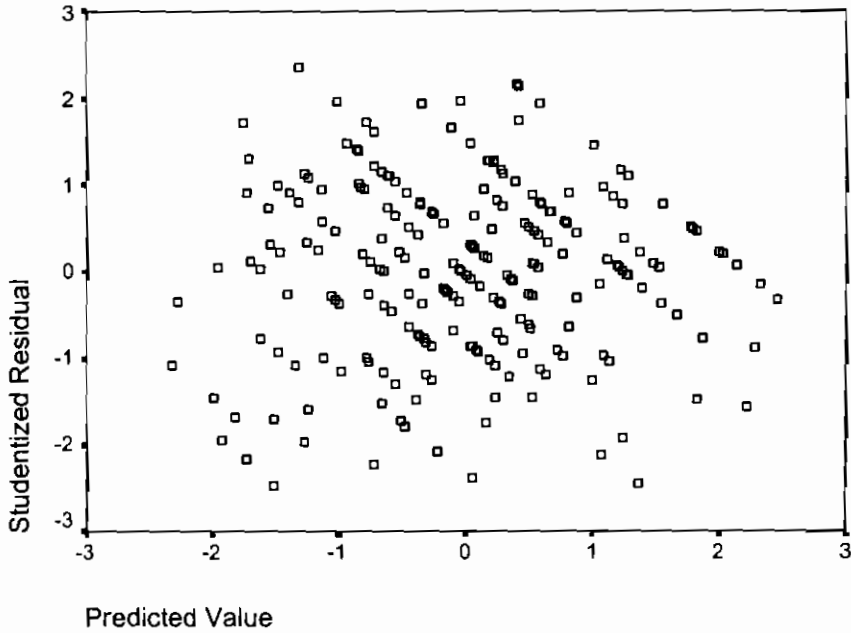
Underlined items exceed the cut-off points for the various diagnostic measures

Bolded items of the COVRATIO contribute positively to parameter estimation

APPENDIX G

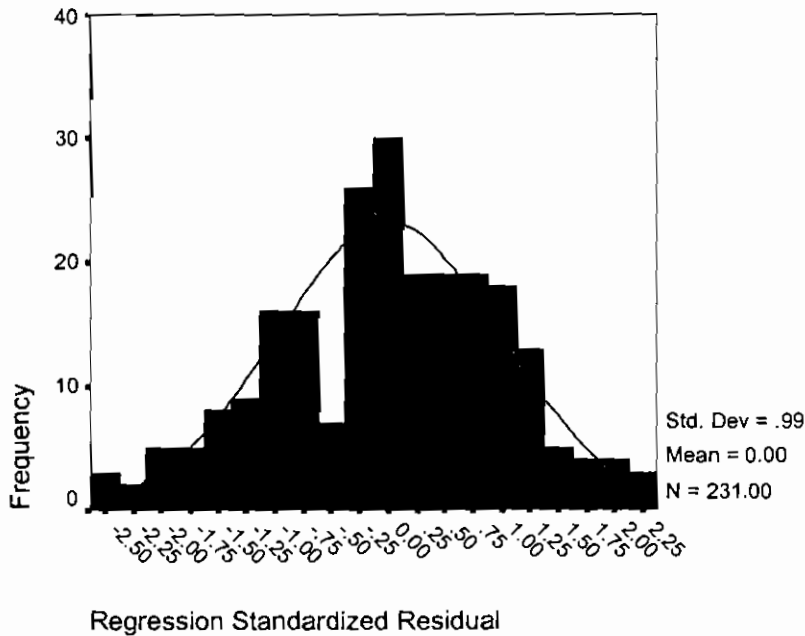
Analysis of Residuals with the Influential Cases Removed (Dependence Equation)

Scatterplot - Analysis of Studentised Residuals

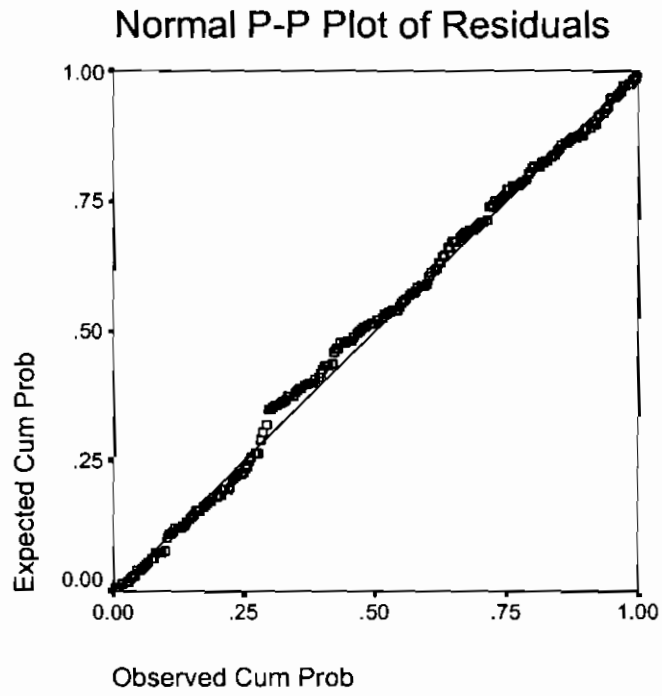


Histogram of Residuals with the Influential Cases removed

Histogram - Dependence Equation



Normal P-P Plot of Residuals with Influential cases removed



APPENDIX H

Model estimation with 12 influential cases removed – using stepwise procedure

Model Summary

Five Independent Variables Entered using Stepwise Method	
Multiple R	.769
Multiple R ²	.591
Adjusted R ²	.586
Standard error of estimate	2.629

Predictors: (Constant), Invest, Avail, Satis, Value, Trust

Dependent Variable: Depend

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	2267.042	3	755.681	109.373	.000
Residual	1568.395	227	6.909		
Total	3835.437	230			

Variables in the Equation

	Standard Error of			t value	Significance	Variables not in Equation		
	Coefficients	Coefficient	Standardised Coefficients			Partial Correlation	t value	Significance
	B	Std. Error	Beta					
(Constant)	8.720	1.023		8.524	.000			
INVEST	.409	.039	.507	10.546	.000			
AVAIL	-.452	.063	-.322	-7.154	.000			
SATIS	.173	.033	.241	5.237	.000			
TRUST						-.009	-.128	.898
VALUE						-.080	-1.201	.231

APPENDIX I

Satisfaction Equation

Before examining the regression equation, it is necessary to examine the Pearson correlation coefficients. Table 1 shows the correlation matrix for the Satisfaction equation. Affect has a large positive correlation with Satisfaction, thus it is likely that Affect will best predict Satisfaction. Given that the correlation coefficient between Affect and Value is quite low (0.326), it is unlikely that there will be high collinearity.

Table 1 Correlations

	SATIS	AFFECT	VALUE
SATIS	1.000		
AFFECT	.708	1.000	
VALUE	.449	.326	1.000

All correlations are significant at the 0.01 level

Estimating the Regression Model and Assessing Overall Fit

The next stage in the process involves estimating the regression model (Hair et al. 1998). The approach to variable selection was the confirmatory method. The results are displayed in table 2.

Table 2 Model Summary

Two Independent Variables Entered using the Enter Method	
Multiple R	.745
Multiple R ²	.555
Adjusted R ²	.551
Standard error of estimate	3.920
Durbin-Watson	2.132

Predictors: (Constant), AFFECT, VALUE

Dependent Variable: SATIS

Analysis of Variance					
	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	4593.689	2	2296.845	149.463	.000
Residual	3688.162	240	15.367		
Total	8281.852	242			

Variables in the Equation						
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.691	1.401		1.921	.056	
AFFECT	.827	.060	.629	13.800	.000	.665
VALUE	.266	.050	.243	5.342	.000	.326

The R², which assesses the goodness of fit of the regression equation, is reasonably high at 0.555 (.745² = .555). Thus, 55.5% of the observed variability in the dependent variable, Satisfaction, is explained by the two independent variables.

The overall regression **F-test** examines the significance of the overall model. The F-statistic demonstrates statistical significance for this equation ($p < 0.001$), therefore

the null hypotheses that there is no linear relationship between Satisfaction and the two independent variables can be rejected. Thus, the value for the R² is significantly different from zero.

The next part of the output concerns the **parameters** of the model. All the coefficients are positive indicating that the value of the dependent variables increases as the independent variable increases.

The **t-statistic** is used to test the statistical significance of the individual regression coefficients. While both the independent variables are statistically significant ($p < 0.001$), the Affect variable is a much greater contributor to Satisfaction because of its higher t-value.

Assessing the Assumption of no Multicollinearity

Multicollinearity was assessed using the VIF (Variance Inflation Factor) and tolerance values. The cut-off values for these two detection methods are listed below.

If VIF is greater than 10 there is cause for concern
 If tolerance is below 0.1 there is cause for concern

The results displayed in table 3, show that there is no cause for concern. The VIF values are low and the tolerance values are high indicating that there is little collinearity.

Table 3 Assessing Tolerance and VIF Values

Variable	Tolerance	Variance Inflation Factor (VIF)
AFFECT	.893	1.119
VALUE	.893	1.119

Assessing condition indices and decomposition of coefficient: The two steps involved in assessing the condition indices and decomposition of the coefficients are outlined below. In terms of step one, no condition index exceeds the cut-off of 15 (see table 4). Thus, there is no need to carry out the second step on the test. Collinearity does not appear to be a problem for the Satisfaction equation.

1. Condition indices higher than 15-30 are identified
2. Variance proportions for all condition indices exceeding the threshold are examined. A collinearity problem is indicated when any identified index accounts for a substantial proportion of variance (.90 or more) for two or more of the coefficients.

Table 4 Assessing Condition Indices & Decomposition of Coefficient

Dimension	Eigenvalue	Condition Index			
			Constant	AFFECT	VALUE
1	2.942	1.000	.00	.00	.01
2	3.833E-02	8.761	.10	.20	.98
3	1.970E-02	12.221	.90	.79	.02

Dependent Variable: SATIS

Identifying Influential Observations

The following section determines if there are any outliers, leverage points or influential observations affecting estimation of the satisfaction equation.

Table 5 contains a summary of all the cases that exceed the threshold values for each of the diagnostic measures.

Table 5 Summary of Diagnostic tests for Influential Observations

Diagnostic Measure	Threshold Value	Calculated Value	Observations Exceeding Threshold
Standardised residual	$> \pm 2$		4, 6, 55, 116, 123, 132, 190, 205, 215, 235
Studentised residual	$> \pm 2$		4, 6, 55, 116, 123, 132, 190, 205, 215, 235
Studentised deleted residual	$> \pm 2$		4, 6, 55, 116, 123, 132, 190, 205, 215, 235
Leverage	$2(k+1)/n$.0246914	
Mahalanobis distance	> 15		
SDFBeta	$\pm 2/\sqrt{n}$	± 0.1283	4, 55, 123, 205
Cook's Distance	$4/(n-k-1)$.0166667	4, 55, 116, 123, 132, 205, 215, 235
COVRATIO	$1 \pm 3(p/n)$	Upper: 1.037037 Lower: 0.962963	4, 116, 123, 132, 190, 215, 235
SDFFIT	$2\sqrt{p/(n-p)}$	0.2236068	4, 55, 116, 123, 132, 190, 205, 215, 235

k = number of independent variables

p = number of independent variables plus constant

n = sample size

Note: Cases exceeding upper limits for the COVRATIO are not displayed, since these cases are beneficial and do not need to be removed.

There were 10 cases that continually exceeded threshold values. Table 6 shows the residual values for these 10 cases. Each of the 10 cases exceeds the cut-off value of ± 2 for the standardised, studentised and studentised deleted residuals.

Outliers and influential observations can also be graphically represented for each independent variable by means of **partial regression plots** (Hair et al. 1998). The partial regression plots displaying the influential observations are contained in the assumption section (Figures 2 and 3).

Table 6 Casewise Diagnostics - Residuals

Case Number	Actual Value	Predicted Value	Residual	Deleted Residual	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual	
1	4	21	30.38545	-9.38545	-9.55230	.93572	<u>-2.39417</u>	<u>-2.41536</u>	<u>-2.44016</u>
2	6	14	22.11207	-8.11207	-8.17742	-.96321	<u>-2.06934</u>	<u>-2.07766</u>	<u>-2.09223</u>
3	55	35	26.69708	8.30292	8.43657	.08915	<u>2.11803</u>	<u>2.13501</u>	<u>2.15108</u>
4	116	10	28.94085	-18.94085	-19.05801	.60415	<u>-4.83170</u>	<u>-4.84662</u>	<u>-5.09212</u>
5	123	11	23.55666	-12.55666	-12.84128	-.63164	<u>-3.20313</u>	<u>-3.23923</u>	<u>-3.30554</u>
6	132	15	25.98236	-10.98236	-11.07454	-.07489	<u>-2.80154</u>	<u>-2.81327</u>	<u>-2.85487</u>
7	190	16	27.87528	-11.87528	-11.93855	.35958	<u>-3.02931</u>	<u>-3.03737</u>	<u>-3.09103</u>
8	205	32	23.38772	8.61228	8.85122	-.67042	<u>2.19694</u>	<u>2.22721</u>	<u>2.24590</u>
9	215	35	24.88863	10.11137	10.20443	-.32593	<u>2.57935</u>	<u>2.59119</u>	<u>2.62274</u>
10	235	13	22.08391	-9.08391	-9.17123	-.96967	<u>-2.31725</u>	<u>-2.32836</u>	<u>-2.35020</u>

Furthermore, table 7 shows the same 10 cases exceeding the cut-off values for the various diagnostic measures.

Table 7 Diagnostic Measures for Identifying Influential Observations

	Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA AFFECT	Standardized DFBETA VALUE
1	4	3.23107	.03457	.01335	.95726	-.32535	.08455	-.26451	.18524
2	6	.93806	.01159	.00388	.96667	-.18779	-.15280	.09556	.05321
3	55	2.83775	.02446	.01173	.97139	.27291	-.01755	-.13134	.22684
4	116	.49176	.04843	.00203	.74803	-.40048	.14978	-.08790	-.17247
5	123	4.36781	.07928	.01805	.90559	-.49766	-.22637	-.14957	.44908
6	132	1.01822	.02214	.00421	.92338	-.26154	-.07052	-.10071	.18064
7	190	.28675	.01639	.00118	.90506	-.22563	.02391	-.10480	.05305
8	205	5.53696	.04587	.02288	.97749	.37409	.07910	-.27720	.28365
9	215	1.21116	.02060	.00500	.93853	.25162	.10726	.06320	-.18638
10	235	1.30818	.01737	.00541	.95461	-.23042	-.15880	.17296	-.04209

Across most of the measures, a number of observations have emerged as potentially negative influential points. These cases were checked for entry errors and other correctable reasons but none were found. Thus, the ten cases identified were removed, with the result that various improvements could be noted (see table 8). Overall prediction improved, with the R^2 changing from .555 to .657, an improvement of 10.2%. Also, the standard error decreased from 3.920 to 3.227, an improvement of 17.6%. Thus, removal of the ten influential cases resulted in quite a substantial improvement in estimation of the equation.

Table 8 Model estimation with 10 influential cases removed

Overall Finalised Regression Model Results

Two Independent Variables Entered using the Enter Method

Multiple R	.811
Multiple R^2	.657
Adjusted R^2	.654
Standard error of estimate	3.227
Durbin-Watson	2.239

Predictors: (Constant), AFFECT, VALUE

Dependent Variable: SATIS

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	4595.279	2	2297.639	220.576	.000
Residual	2395.803	230	10.417		
Total	6991.082	232			

Variables in the Equation

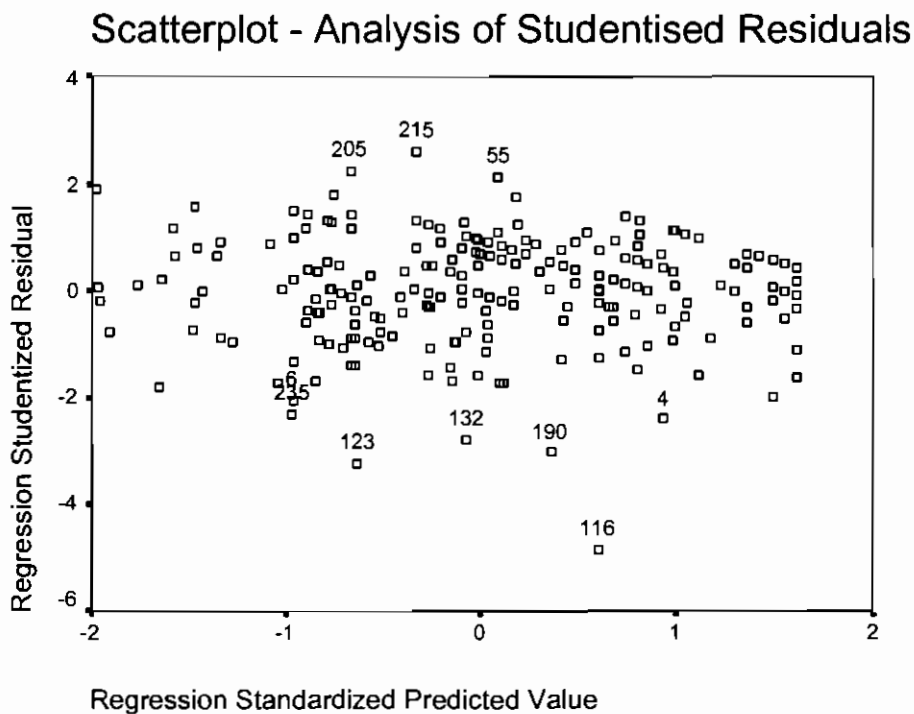
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.967	1.165		2.546	.012	
AFFECT	.876	.050	.715	17.355	.000	.753
VALUE	.212	.042	.206	5.011	.000	.314

Evaluating the Variate for the Assumptions of Regression Analysis

The assumptions to examine are linearity, homoscedasticity, independence of the residuals, and normality. The principal measure used in evaluating the regression variate is the residual.

Linearity: The linearity assumption is assessed through analysis of residuals and partial regression plots (Hair et al. 1998). In terms of **analysis of residuals**, the pattern of studentised residuals in figure 1 shows randomly dispersed residuals and there is no consistent curvilinear pattern. This result is one indication of a linear relationship in the data. There are however some outlying observations, which are not consistent with the other data points. As discussed in the previous section on the dependence equation, these points were removed which helps to remedy the situation of outlying observations.

Figure 1



In terms of the **partial regression plots**, no non-linear pattern is shown. The relationship between Affect and Satis (figure 2) is much more defined than that of Value and Satis (figure 3). This explains why Affect has a much stronger and more significant effect on Satis, than does Value. Finally, in terms of linearity, it appears that the assumption has been met for each independent variable.

Figure 2

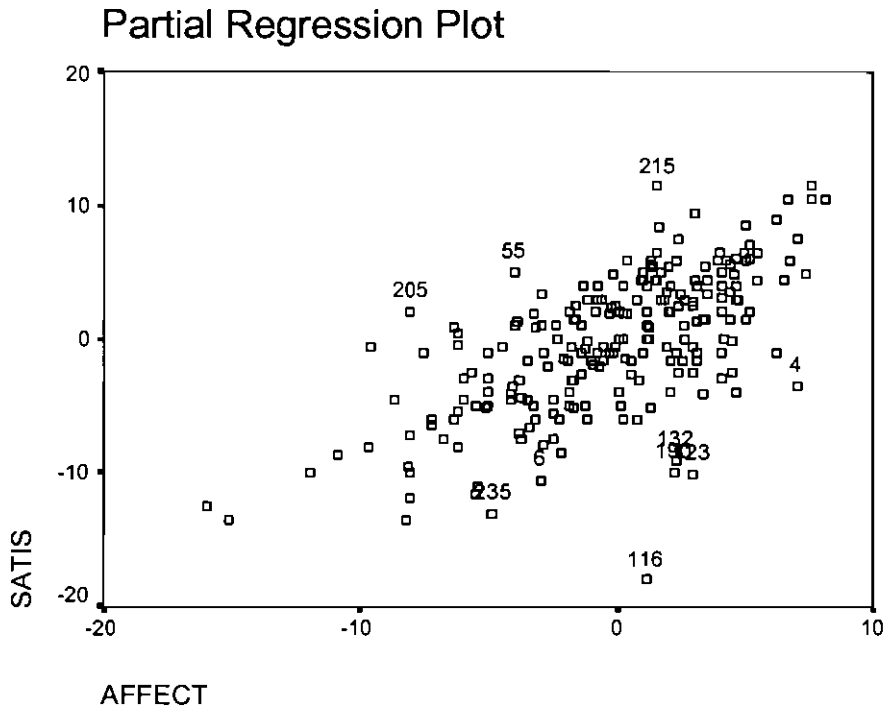
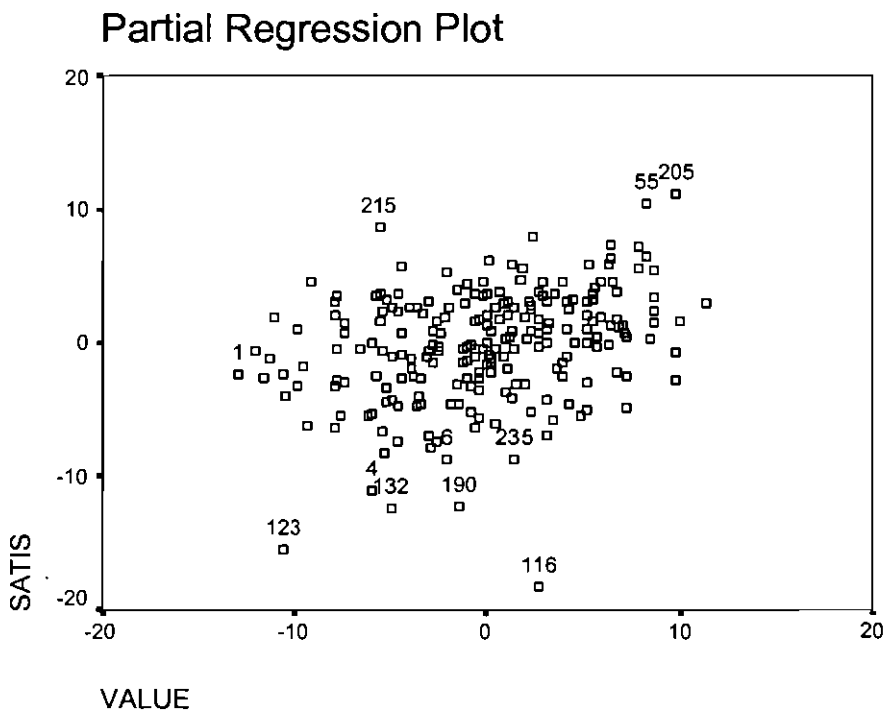


Figure 3



Constant Variance of the Error Term (Homoscedasticity): Analysis for homoscedasticity is again made by examining the residuals (Figure 1). If the influential points (highlighted values) were not included, the residual plot would appear to show no pattern of increasing or decreasing residuals. This finding indicates the presence of homoscedasticity i.e. the dependent variable displays equal levels of variance across the range of predictor variables.

Independence of the residuals: According to the **Durbin-Watson statistic**, with a value very close to 2 (Durbin value = 2.132, table 2), the residuals appear to be uncorrelated.

Normality: The test of normality is carried out by examining the histogram of residuals and the normal probability plot of residuals. In terms of the histogram of residuals (See Figure 4), the distribution is roughly normal, displaying a bell-shaped curve.

Figure 4

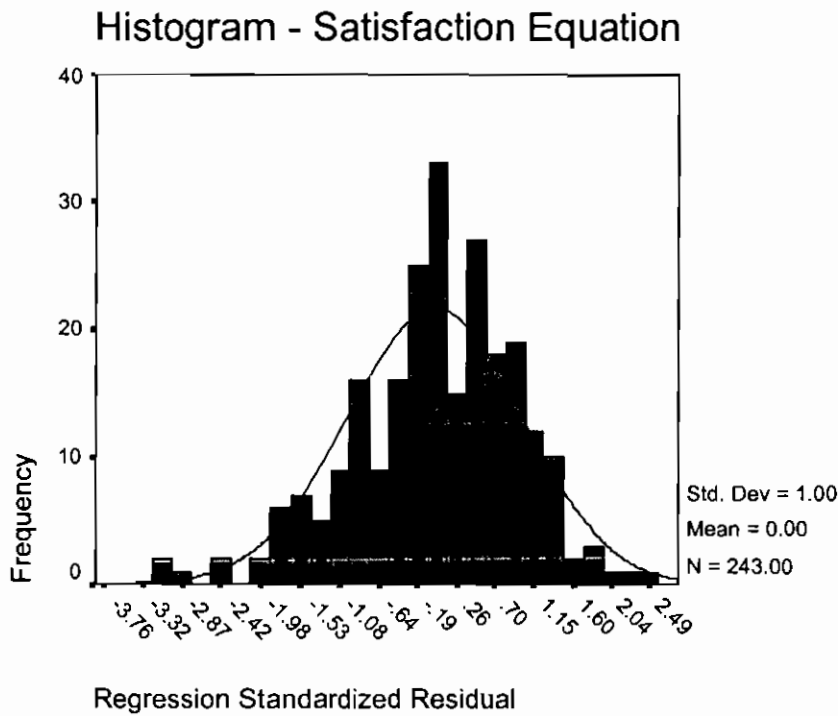
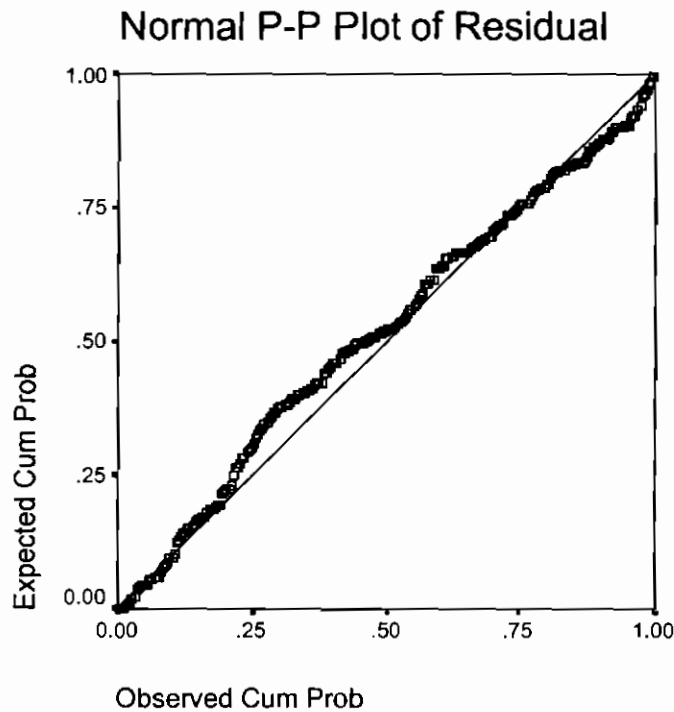


Figure 5 shows the **normal probability plot** for what is roughly a normally distributed data set. The residual line closely approximates the diagonal.

Figure 5



Interpreting the Regression Variate

At this stage, the finalized model with the cases removed (See table 8, previously displayed), is used to determine the relative impact of each independent variable on the dependent variable. This is done by means of the standardized beta values. For this equation, Affect (beta = .715) is by far the more important of the two predictors of Satis. Value has a much smaller beta (.206). This supports the lower univariate correlation with between Value and Satis.

Alternative Regression Models

As with the previous equation, an additional method (other than confirmatory) was used to estimate the model. The stepwise procedure was used and produced the exact same results, i.e. the R^2 , the standard error, the beta coefficients etc. were all exactly the same for both procedures. This result is only to be expected given that only two predictors were included and both were statistically significant when used in each estimation method. The results for the stepwise model are not displayed given that the outcome is the same as for the confirmatory method.

APPENDIX J

Trust Equation

Before examining the regression equation, it is necessary to examine the Pearson correlation coefficients. Table 1, shows the correlation between Trust and Satis (.756). This correlation is quite high and while there will be no collinearity for this equation (collinearity exists among independent variables) there is a certain amount of shared variance between the two variables. This was shown in previous equations where Trust and Satis were included together as independent variables and displayed signs of high collinearity.

Table 1 Pearson Correlations

	TRUST	SATIS
TRUST	1.000	
SATIS	.756	1.000

All correlations are significant at the 0.01 level.

Estimating the Regression Model and Assessing Overall Fit

The next stage involves estimating the regression model. The output for the Trust equation is displayed in table 2. For this data, R has a value of .756 and because there is only one predictor this value represents the simple correlation also. The R^2 has a value of .571, which indicates that Satisfaction accounts for 57% of the variation in Trust.

Table 2 Model Summary

One Independent Variable Entered using the Enter Method	
Multiple R	.756
Multiple R ²	.571
Adjusted R ²	.569
Standard error of estimate	5.109
Durbin-Watson	2.054

Predictors: (Constant), SATIS

Dependent Variable: TRUST

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	8370.259	1	8370.259	320.670	.000
Residual	6290.687	241	26.102		
Total	14660.947	242			

Variables in the Equation

	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	9.485	1.513		6.270	.000	
SATIS	1.005	.056	.756	17.907	.000	.756

The F-ratio is 320.67 and is significant ($p < 0.001$). Thus, it can be concluded that the simple regression model predicts trust better than using the mean value of trust. The Satisfaction coefficient is positive. It represents the change in the outcome variable

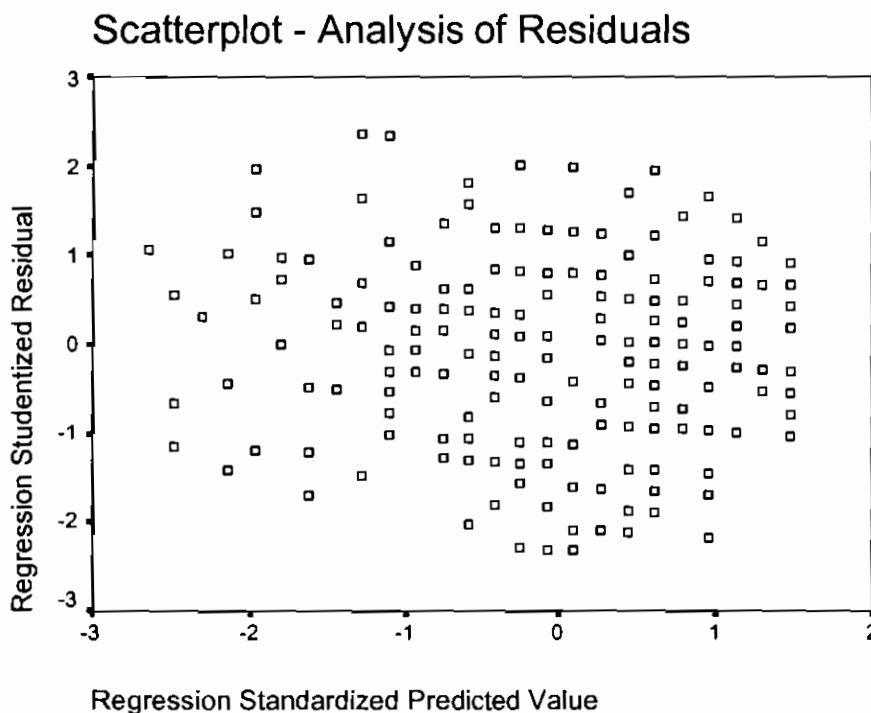
(trust) resulting from a unit change in Satis. With a high t-value (17.907) and a significance level of 0.001, it is unlikely that this result occurred by chance.

Evaluating the Variate for the Assumptions of Regression Analysis

The assumptions to examine are linearity, homoscedasticity, independence of the residuals, and normality. The principal measure used in evaluating the regression variate is the residual.

Linearity: The linearity assumption can be evaluated by plotting the studentised residuals against the predicted values. The pattern of studentised residuals in figure 1, shows randomly dispersed residuals and there is no consistent curvilinear pattern. This result is indicative of a linear relationship in the data (Norusis 2000).

Figure 1

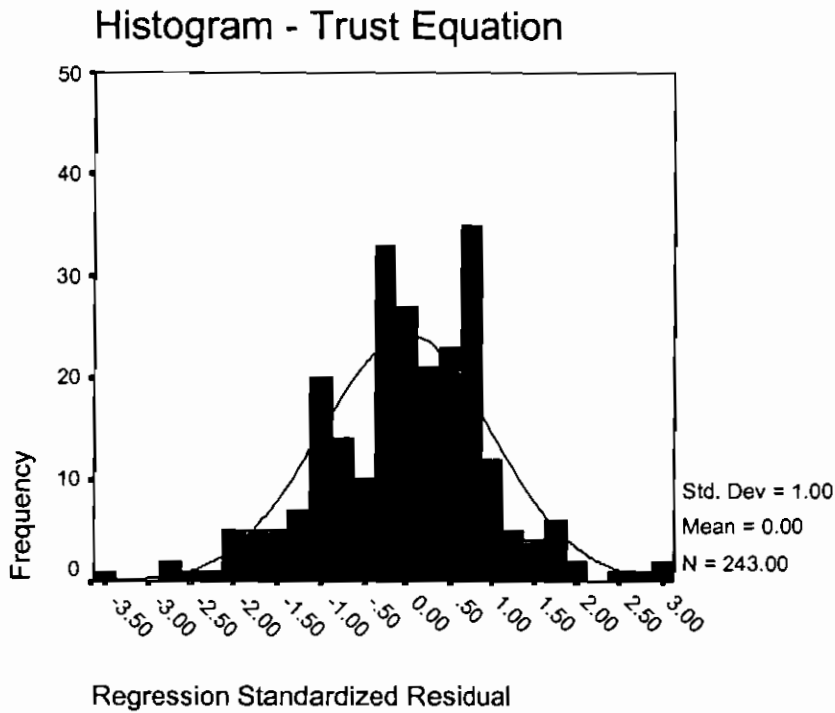


Constant Variance of the Error Term (Homoscedasticity): Analysis for homoscedasticity is again made by examining the residuals (Figure 1). There does not appear to be any consistent pattern in the data points. The residuals are scattered randomly around the horizontal line. Thus, it can be concluded that homoscedasticity is present i.e. the variance is constant.

Independence of the residuals: The **Durbin-Watson statistic**, with a value extremely close to 2 (Durbin value = 2.054), indicates that the residuals are uncorrelated.

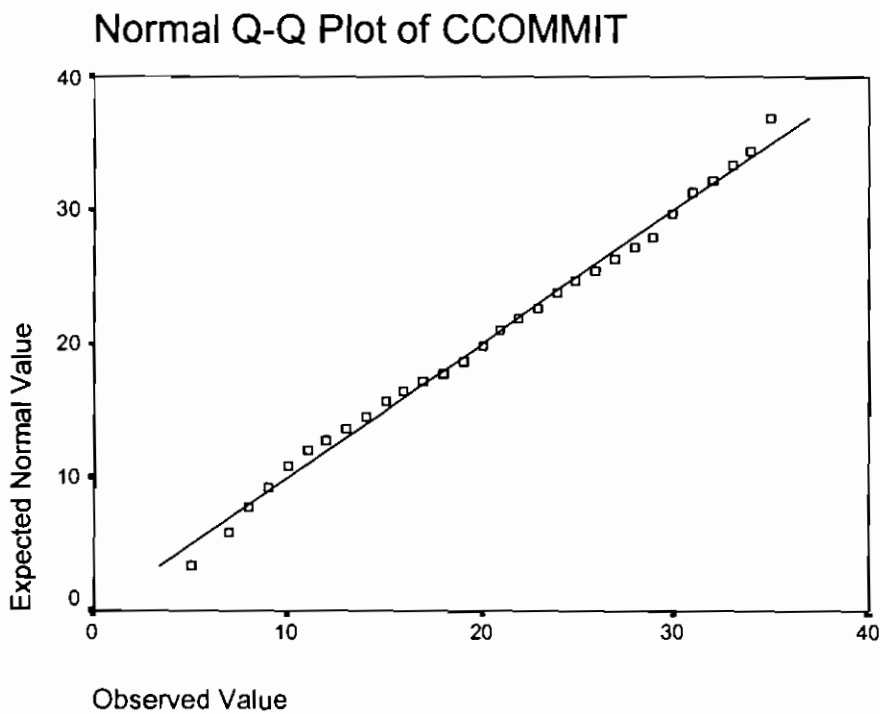
Normality: The test of normality is carried out by examining the histogram of residuals. In terms of the **histogram of residuals** (See Figure 2), the distribution is roughly normal, displaying a bell-shaped curve.

Figure 2



The Q-Q plot (See figure 3) also demonstrates that the data comes from a normal population, because the points fall more or less on the straight line (Norusis 2000). Thus, based on these tests, there is not enough evidence to reject the assumption of normality.

Figure 3



Identifying Influential Points

As with the multiple regression procedure, the data is examined for influential cases. A small number of cases may have an undue influence on the regression model (Norusis 2000). It is undesirable for the regression model to depend heavily on a small number of points. Thus it is necessary carry out some tests of the residuals. For the purposes of simple regression it is not necessary to examine all the diagnostics used in multiple regression. Diagnostics that are used include the standardised, studentised, and studentised deleted residuals. Other relevant diagnostics include the DFFIT and the DFBETA. Cases that exceed the cut-off values for the various diagnostics are highlighted in table 3.

Table 3 Residuals & Diagnostic Measures

Case Number	Actual Value	Predicted Value	Residual	Standardized Residual	Studentized Residual	Studentized Deleted Residual	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA SATIS	
1	4	46	30.59726	15.40274	<u>3.01479</u>	<u>3.02619</u>	<u>3.07897</u>	<u>.26798</u>	<u>.21896</u>	<u>-.18029</u>
2	31	49	36.62919	12.37081	<u>2.42135</u>	<u>2.42642</u>	<u>2.45151</u>	.15869	.01592	.01866
3	32	23	33.61322	-10.61322	<u>-2.07734</u>	<u>-2.08230</u>	<u>-2.09692</u>	-.14500	-.08127	.05332
4	43	42	28.58661	13.41339	<u>2.62542</u>	<u>2.63940</u>	<u>2.67283</u>	<u>.27619</u>	<u>.24802</u>	<u>-.21580</u>
5	47	23	40.65049	-17.65049	<u>-3.45475</u>	<u>-3.46651</u>	<u>-3.54891</u>	<u>-.29306</u>	<u>.12973</u>	<u>-.18357</u>
6	89	30	40.65049	-10.65049	<u>-2.08463</u>	<u>-2.09173</u>	<u>-2.10659</u>	-.17396	.07700	-.10897
7	95	45	34.61855	10.38145	<u>2.03197</u>	<u>2.03638</u>	<u>2.04986</u>	.13505	.05739	-.02954
8	98	17	29.59193	-12.59193	<u>-2.46463</u>	<u>-2.47570</u>	<u>-2.50258</u>	<u>-.23743</u>	<u>-.20506</u>	<u>.17426</u>
9	106	45	34.61855	10.38145	<u>2.03197</u>	<u>2.03638</u>	<u>2.04986</u>	.13505	.05739	-.02954
10	116	35	19.53870	15.46130	<u>3.02625</u>	<u>3.08261</u>	<u>3.13871</u>	<u>.60856</u>	<u>.60378</u>	<u>-.57295</u>
11	200	24	35.62387	-11.62387	<u>-2.27515</u>	<u>-2.27986</u>	<u>-2.30006</u>	-.14806	-.03966	.00782
12	215	31	44.67178	-13.67178	<u>-2.67599</u>	<u>-2.69388</u>	<u>-2.72970</u>	<u>-.31615</u>	<u>.21802</u>	<u>-.26244</u>
13	233	14	28.58661	-14.58661	<u>-2.85505</u>	<u>-2.87025</u>	<u>-2.91454</u>	<u>-.30117</u>	<u>-.27045</u>	<u>.23531</u>

A number of cases appear to exceed the cut-off for each of the diagnostics (4, 43, 47, 98, 116, 215, 233). Similar to the procedure for the multiple regression equations, these 7 influential cases were deleted with the result that there were improvements in model estimation. (See table 4 for final regression model results). The R^2 improved from .571 to .649 (7.8%). Also, the standard error reduced from 5.109 to 4.500, an improvement of 11.9%.

Table 4 Model estimation with 7 influential cases removed**Overall Finalised Regression Model Results**

One Independent Variable Entered using the Enter Method	
Multiple R	.805
Multiple R ²	.649
Adjusted R ²	.647
Standard error of estimate	4.500
Durbin-Watson	1.970
Predictors: (Constant), SATIS	
Dependent Variable: TRUST	

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	8744.522	1	8744.522	431.860	.000
Residual	4738.156	234	20.249		
Total	13482.678	235			

Variables in the Equation

	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	8.023	1.383		5.800	.000	
SATIS	1.063	.051	.805	20.781	.000	.805

Interpreting the Regression Variate

At this stage, the finalized model with the cases removed (See table 4), is used to determine the relative impact of the independent variable on the dependent variable. This is done by means of the standardized beta value. In simple regression the standardised coefficient is equivalent to the multiple R of 0.805. With a beta value of 0.805, satisfaction is a strong and important predictor of trust.

APPENDIX K - Affective Commitment Equation

Table 1 shows the correlation matrix for the Affective commitment equation. The highlighted column shows the correlations between the predictor variables and the outcome variable, affective commitment. The table shows that Satisfaction and Trust correlate most highly with affective commitment. In terms of intercorrelations between predictor variables, all correlations are moderate, apart from the correlation between Satis and Trust. This high correlation was also highlighted in the dependence equation.

Table 1 **Pearson Correlations**

	ACOMMIT	SATIS	TRUST	FREED	DEPEND
ACOMMIT	1.000	.685	.666	.485	.398
SATIS	.685	1.000	.756	.320	.335
TRUST	.666	.756	1.000	.318	.312
FREED	.485	.320	.318	1.000	.211
DEPEND	.398	.335	.312	.211	1.000

All correlations are significant at the 0.01 level

Estimating the Regression Model and Assessing Overall Fit

The next stage involves estimating the regression model (Hair et al. 1998). The approach to variable selection was the same as that used for the dependence equation i.e. the confirmatory approach. The results are displayed in table 2.

Table 2 **Model Summary**

Four Independent Variables Entered using the Enter Method	
Multiple R	.777
Multiple R ²	.603
Adjusted R ²	.596
Standard error of estimate	4.290
Durbin-Watson	1.922

Predictors: (Constant), SATIS, TRUST, FREED, DEPEND
Dependent Variable: ACOMMIT

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	6657.939	4	1664.485	90.426	.000
Residual	4380.908	238	18.407		
Total	11038.848	242			

Variables in the Equation

	Standard		Standardised Coefficients Beta	t value	Significance	Partial Correlation
	Coefficients B	Error of Coefficient Std. Error				
(Constant)	-5.599	1.467		-3.818	.000	
SATIS	.397	.073	.344	5.407	.000	.331
TRUST	.244	.055	.281	4.460	.000	.278
FREED	.458	.078	.256	5.855	.000	.355
DEPEND	.219	.068	.142	3.233	.001	.205

The R^2 , which assesses the goodness of fit of the regression equation, is reasonably high at 0.603 ($.777^2 = .603$). Thus, the predictor variables explain 60.3% of the variability in the dependent variable, affective commitment.

The **F-ratio** tests the significance of the overall model. It tests the hypothesis that the amount of variation explained by the regression model, is more than the variation explained by the average (i.e. that the R^2 is greater than zero) (Hair et al. 1998). For this equation the F-ratio is statistically significant ($p < 0.001$), hence the regression model is a better predictor of affective commitment than the mean.

Examining Statistical Significance: Although the overall model is statistically significant as shown by the F-ratio, it is still necessary to test the significance of the individual regression coefficients. This is carried out by means of the t-statistic. For this model, all of the coefficients are statistically significant predictors of affective commitment ($p \leq 0.001$). As previously mentioned, the smaller the value of the significance and the larger the value of t, the greater the contribution of that predictor. Thus, due to higher t-values, Satis and Freed are slightly greater contributors to Acommit. It is worth noting that although there appears to be a high level of collinearity between trust and satisfaction, both variables are nonetheless statistically significant predictors of affective commitment. The same collinearity was present in the dependence equation, yet only one of the variables, namely satisfaction, significantly predicted dependence. Perhaps this is because the correlations between Acommit and Satis (0.685) and Acommit and trust (0.666) are much greater than those of Depend-Satis and Depend-Trust (.335 and .312 respectively). Hence, there is much more unique variance available between Acommit and Satis and Trust to justify the inclusion of both as significant predictors of Acommit.

Assessing the assumption of no multicollinearity

Multicollinearity was assessed using the VIF (Variance Inflation Factor) and tolerance values. The cut-off values for these two detection methods are listed below.

If VIF is greater than 10 there is cause for concern
 If tolerance is below 0.1 there is cause for concern

The results displayed in table 3, are very similar to those of the dependence equation. They suggest that there are no serious violations of the cut-off values i.e. no VIF is greater than 10 and no tolerance is below 0.1. However, as with the dependence equation, trust and satisfaction are again different to the other values. Their values are higher for the VIF when lower figures indicate little collinearity and they are lower for tolerance when higher figures indicate little collinearity.

Table 3 Assessing Tolerance and VIF Values

Variable	Tolerance	Variance Inflation Factor (VIF)
SATIS	.413	2.421
TRUST	.420	2.383
FREED	.874	1.144
DEPEND	.870	1.150

Assessing condition indices and decomposition of coefficients: The two steps involved in assessing the condition indices and decomposition of the coefficients are outlined below. In terms of step one, the condition index value for dimension 4 is close to the cut-off criterion of 15 and the value for dimension 5 exceeds the cut-off of 15 (see table 4). Neither of the identified indices exceed the cut-off criterion for step two, i.e. neither index has two coefficients that both exceed .90. However, as with the dependence equation, there is one dimension, namely 5, that has two coefficients that almost exceed the cut-off and these are Satis and Trust (underlined values). Thus, there may be high collinearity between two of the predictors, Satis and Trust. However, given that both are statistically significant predictors of affective commitment and that neither exceeded the measures for detecting collinearity (they came close but did not exceed the threshold values) the collinearity problem does not appear to be too serious.

1. Condition indices higher than 15-30 are identified
2. Variance proportions for all condition indices exceeding the threshold are examined. A collinearity problem is indicated when any identified index accounts for a substantial proportion of variance (.90 or more) for **two or more** of the coefficients.

Table 4 Assessing Condition Indices & Decomposition of Coefficient

Dimension	Eigenvalue	Condition Index					
			Constant	SATIS	TRUST	FREED	DEPEND
1	4.819	1.000	.00	.00	.00	.00	.00
2	8.465E-02	7.545	.01	.00	.00	.88	.19
3	5.888E-02	9.046	.03	.05	.05	.11	.78
4	2.672E-02	13.430	.95	.12	.08	.00	.03
5	1.116E-02	20.783	.01	<u>.83</u>	<u>.87</u>	.00	.00

Identifying influential observations

The following section determines if there are any outliers, leverage points or influential observations affecting estimation of the affective commitment equation.

Table 5 contains a summary of all the cases that exceed the threshold values for each of the diagnostic measures.

Table 5 Summary of Diagnostic tests for Influential Observations

Diagnostic Measure	Threshold Value	Calculated Value	Observations Exceeding Threshold
Standardised residual	$> \pm 2$		3, 47, 60, 107, 119, 132, 144, 148, 237
Studentised residual	$> \pm 2$		3, 47, 60, 107, 119, 132, 144, 148, 237
Studentised deleted residual	$> \pm 2$		3, 47, 60, 107, 119, 132, 144, 148, 237
Leverage	$2(k+1)/n$	0.04115	47
Mahalanobis distance	> 15		47
SDFBeta *	$\pm 2 / \sqrt{n}$	± 0.1283	3, 47, 107, 119, 132, 148
Cook's Distance	$4 / (n - k - 1)$	0.0168	3, 47, 107, 132, 148
COVRATIO	$1 \pm 3(p/n)$	Upper: 1.0617 Lower: 0.9382	3, 107, 144, 148, 237
SDFFIT	$2 \sqrt{p / (n-p)}$	0.28988	3, 47, 107, 119, 132, 148

* = isolated values are those that exceed the threshold value for two or more variables

Upper limits for the COVRATIO are not displayed

k = number of independent variables; p = number of independent variables plus constant; n = sample size

There were 9 cases that continually exceeded threshold values. Table 6 shows the residual values for these 9 cases. Each of the 9 cases exceeds the cut-off value of ± 2 for the standardised, studentised and studentised deleted residuals.

Outliers and influential observations can also be graphically represented for each independent variable by means of **partial regression plots** (Hair et al. 1998). The partial regression plots displaying the influential observations are contained in the assumption section (Figures 2 - 5).

Table 6 Casewise Diagnostics - Residuals

Case Number	Actual Value	Predicted Value	Residual	Deleted Residual	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual	
1	3	8	19.68708	-11.68708	-11.85126	-.32877	-2.72403	-2.74310	-2.78166
2	47	33	21.93038	11.06962	11.89627	.09892	2.58012	2.67472	2.71014
3	60	18	26.88449	-8.88449	-8.98013	1.04342	-2.07080	-2.08192	-2.09672
4	107	16	26.15143	-10.15143	-10.34136	.90367	-2.36610	-2.38813	-2.41219
5	119	5	14.07925	-9.07925	-9.24473	-1.39790	-2.11620	-2.13540	-2.15162
6	132	20	11.27705	8.72295	9.09852	-1.93214	2.03315	2.07646	2.09112
7	144	13	24.11913	-11.11913	-11.19346	.51621	-2.59166	-2.60030	-2.63250
8	148	16	29.27964	-13.27964	-13.59131	1.50006	-3.09523	-3.13134	-3.19118
9	237	35	24.59725	10.40275	10.48903	.60736	2.42468	2.43471	2.46043

Furthermore, table 7 shows the same 9 cases exceeding the cut-off values for the various diagnostic measures.

Table 7 Diagnostic Measures for Identifying Influential Observations

Case No.	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA SATIS	Standardized DFBETA TRUST	Standardized DFBETA FREED	Standardized DFBETA DEPEND
3	2.35660	.02114	.00974	.88194	-.32969	-.07317	-.06863	.17452	.06160	-.21601
47	15.82020	.10685	.06537	.94221	.74060	.02884	.50324	-.65168	.02263	.31770
60	1.58148	.00933	.00654	.94163	-.21754	.11575	.01706	-.04237	-.08920	-.08929
107	3.44854	.02134	.01425	.92156	-.32994	.09712	.11547	-.22160	-.11801	.13144
119	3.33599	.01662	.01379	.94402	-.29048	-.19039	.06599	-.00450	.20356	-.04643
132	8.99364	.03713	.03716	.97219	.43391	.25688	-.27633	.23330	-.21020	-.09883
144	.61121	.00904	.00253	.89013	-.21524	.04032	-.10857	.05692	-.04832	.03332
148	4.55365	.04603	.01882	.84696	-.48889	.26717	-.25672	.18369	-.09436	-.25277
237	.99495	.00983	.00411	.90774	.22409	-.07213	.03668	-.03639	.03345	.13077

Across most of the measures, a number of observations have emerged as potentially negative influential points. These cases were checked for entry errors and other correctable reasons but none were found. Thus, the nine cases identified above were removed, with the result that various improvements can be noted. The final model results can be seen in table 8. Overall prediction improved, with the R² changing from .603 to .668, an improvement of 6.5%. Also, the standard error decreased from 4.29 to 3.831, an improvement of 10.6%. Thus, removal of the nine influential cases resulted in improvement in estimation of the affective commitment equation.

Model estimation with 9 influential cases removed

Table 8 Model Summary

Four Independent Variables Entered using the Enter Method	
Multiple R	.817
Multiple R ²	.668
Adjusted R ²	.662
Standard error of estimate	3.831
Durbin-Watson	1.896
Predictors: (Constant), SATIS, TRUST, FREED, DEPEND	
Dependent Variable: ACOMMIT	

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	6762.595	4	1690.649	115.170	.000
Residual	3361.631	229	14.680		
Total	10124.226	233			

Variables in the Equation

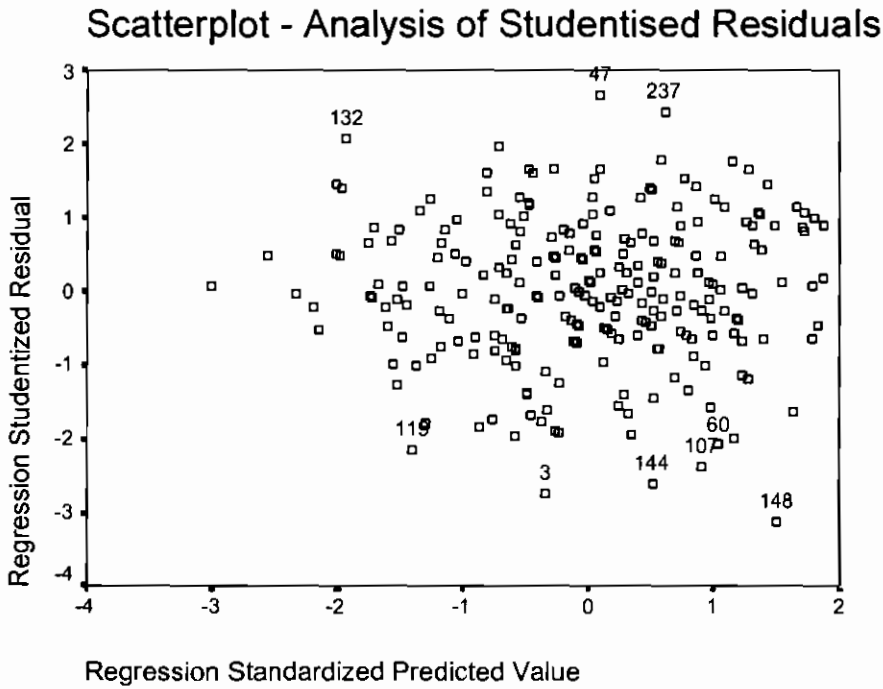
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	-6.285	1.334		-4.711	.000	
SATIS	.397	.068	.352	5.857	.000	.361
TRUST	.259	.051	.307	5.067	.000	.317
FREED	.477	.071	.272	6.742	.000	.407
DEPEND	.226	.062	.150	3.671	.000	.236

Evaluating the Variate for the Assumptions of Regression Analysis

The assumptions to examine are linearity, homoscedasticity, independence of the residuals, and normality. The principal measure used in evaluating the regression variate is the residual.

Linearity: The linearity assumption is assessed through analysis of residuals and partial regression plots (Hair et al. 1998). In terms of **analysis of residuals**, the pattern of studentised residuals in figure 1, does not indicate the existence of a nonlinear relationship in the data.

Figure 1



In terms of the **partial regression plots**, no non-linear patterns are shown (Figures 2-5). Thus, it appears that the assumption of linearity appears to have been met for each independent variable.

Figure 2

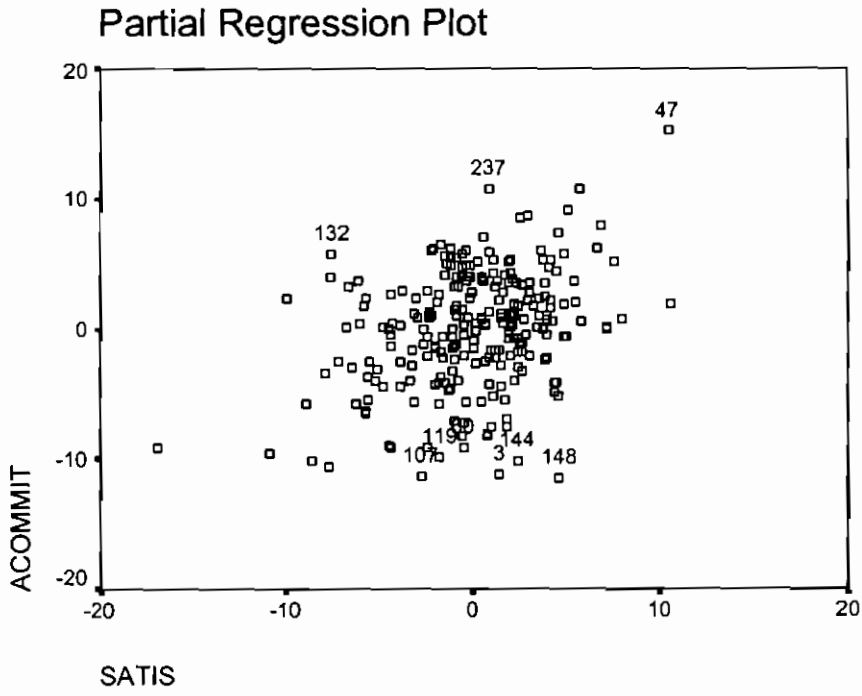


Figure 3

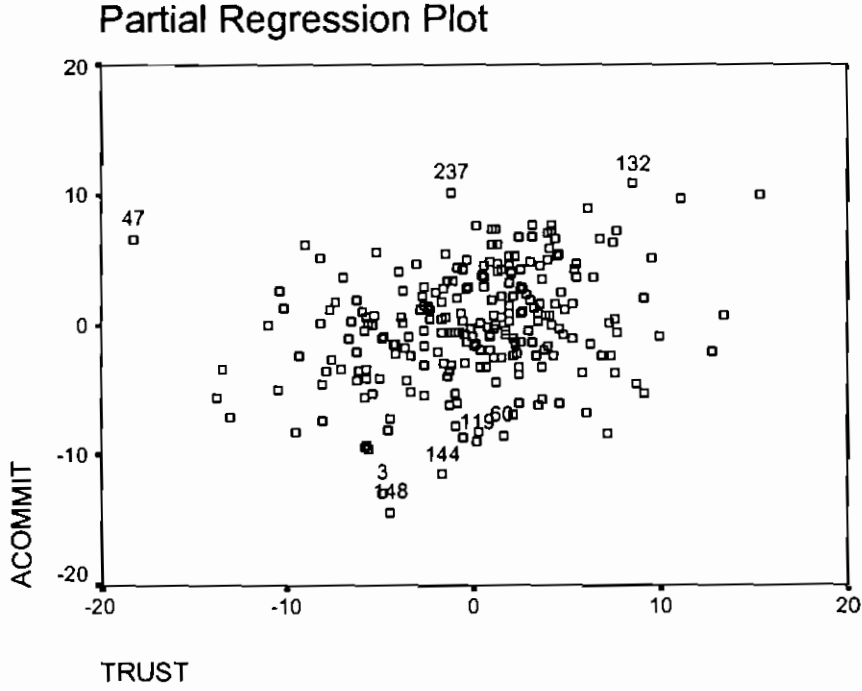


Figure 4

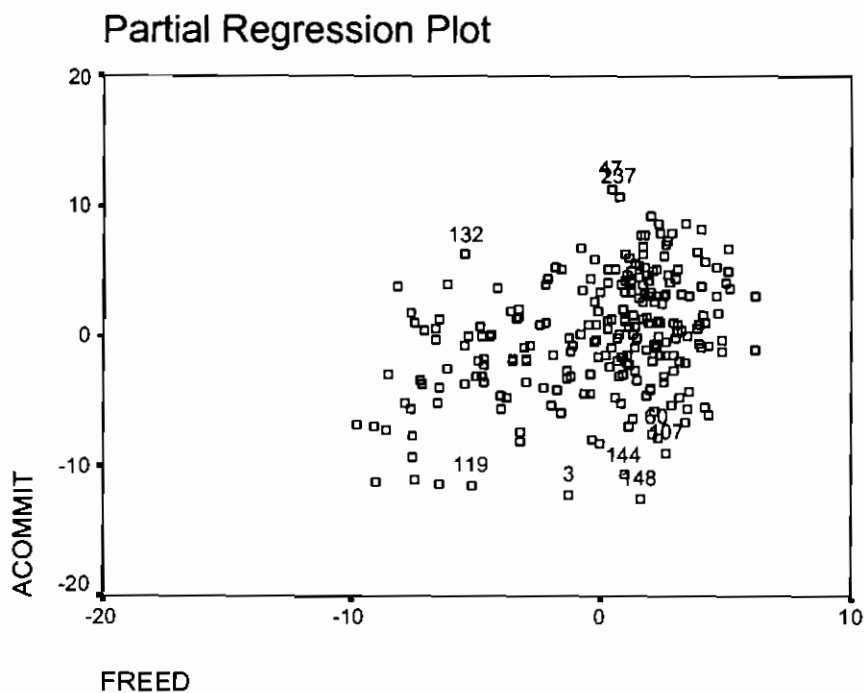
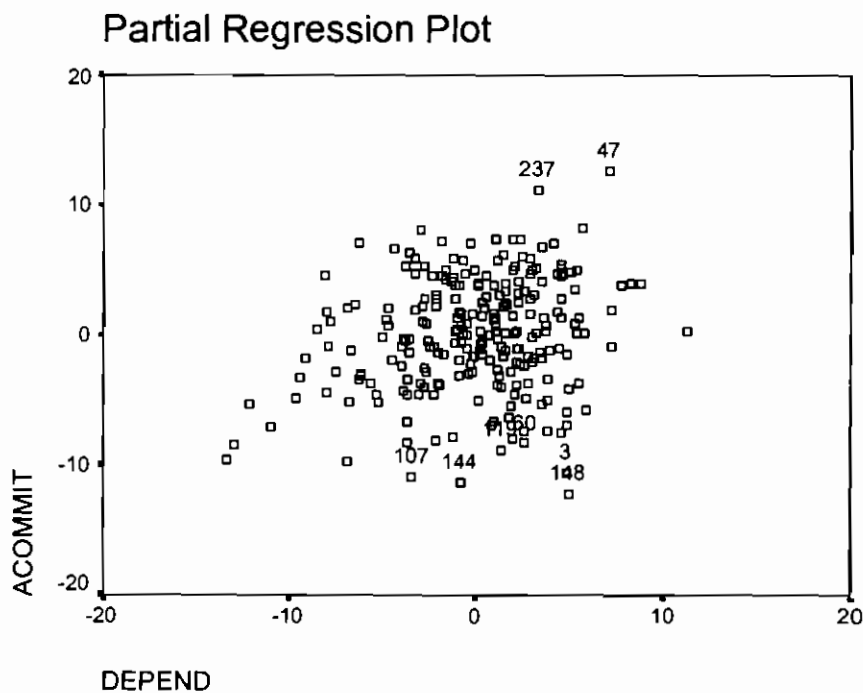


Figure 5



Constant Variance of the Error Term (Homoscedasticity): Analysis for homoscedasticity is again made by examining the residuals (Figure 1). If the influential points (highlighted values) were not included, the residual plot would appear to show no

pattern of increasing or decreasing residuals. This finding indicates the presence of homoscedasticity or constant variance.

Independence of the residuals: According to the **Durbin-Watson statistic**, with a value very close to 2 (Durbin value = 1.922, table 2), the residuals appear to be uncorrelated.

Normality: The test of normality is carried out by examining the **histogram of residuals** and the normal probability plot of residuals. In terms of the histogram of residuals (See Figure 6), the distribution is roughly normal, displaying a bell-shaped curve.

Figure 6

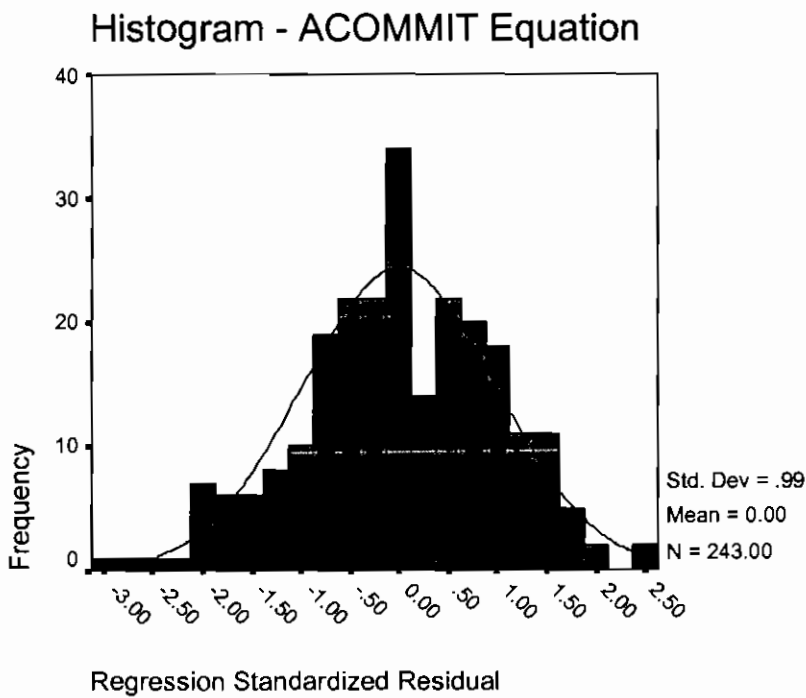
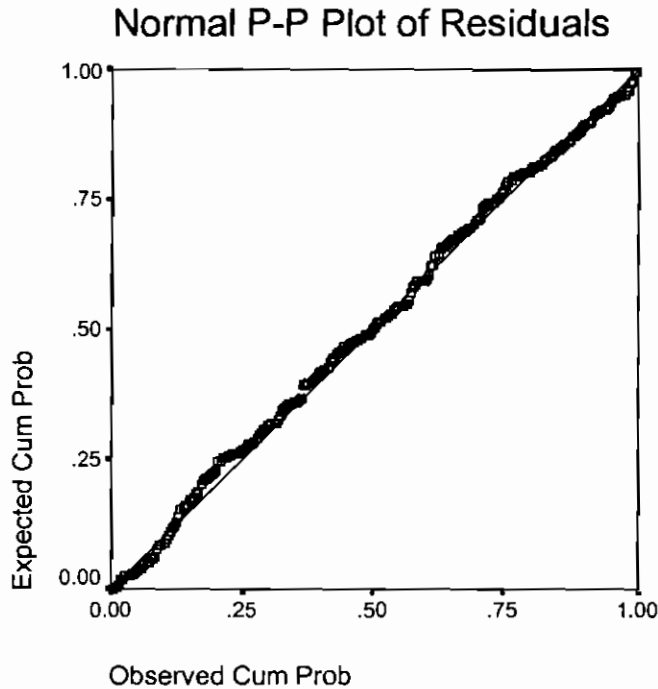


Figure 7 shows the **normal probability plot** for what is roughly a normally distributed data set. The residual line quite closely approximates the diagonal.

Figure 7



Interpreting the Regression Variate

At this stage, the finalized model with the cases removed, is used to determine the relative impact of each independent variable on the dependent variable, affective commitment. This is done by means of the standardized beta values. For this equation, Satis (beta = .352) is the most important predictor of Acommit, and is marginally more important than Trust (beta = .307). Freed (beta = .272) is the third most important predictor, followed finally by Depend (.150), which has the smallest beta value.

Evaluating Alternative Regression Models

Having used the confirmatory approach as the estimation method for the above results, the model was re-estimated using the stepwise method. It is advisable to use an alternative model in order to search for additional explanatory power and confirmation of earlier results (Hair et al. 1998). The results for the stepwise procedure produced the exact same results, i.e. the R^2 , the standard error, the beta coefficients etc. were all exactly the same for both procedures. The results are the same because all four predictors of affective commitment were significant for both estimation procedures, hence there could be no difference given that each procedure was estimating the same model.

APPENDIX L – Calculative Commitment Equation

The calculative commitment equation has as its predictor's, dependence, satisfaction and trust. Table 1 shows the correlation matrix for the Ccommit equation. As with previous equations that contained Satis and Trust as independent variables, the high correlation between these variables (.756) is likely to cause collinearity problems. The correlation between Ccommit and Depend is very high (.799). This is not surprising given that the findings of the factor analysis showed that these two variables loaded on the one factor.

Table 1 **Correlations**

	CCOMMIT	DEPEND	SATIS	TRUST
CCOMMIT	1.000	.799	.235	.234
DEPEND	.799	1.000	.335	.312
SATIS	.235	.335	1.000	.756
TRUST	.234	.312	.756	1.000

All correlations are significant at the 0.01 level.

Estimating the Regression Model and Assessing Overall Fit

The output for the Ccommit equation is displayed in table 2. While the R^2 is quite high (.639) a closer inspection reveals that most of the variance is explained by only one variable, namely dependence. By examining the 'R square change' (not displayed) it can be seen that dependence results in a change of .638 in the R^2 , satisfaction contributes .001 and trust contributes nothing. Satis and Trust are not only bad predictors of Ccommit, but they are also not statistically significant ($p > 0.05$). Although, Satis and Trust have been shown to display a high degree of collinearity in previous equations, this collinearity should preclude only one of the variables and not both of them from being included in the equation. The fact that both variables are not included in the equation suggests that after Depend was included in the equation, Satis and Trust did not exhibit enough unique variance for inclusion.

Table 2 **Model Summary**

Three Independent Variables Entered using the Enter Method	
Multiple R	.800
Multiple R^2	.639
Adjusted R^2	.635
Standard error of estimate	4.302
Durbin-Watson	1.954

Predictors: (Constant), TRUST, DEPEND, SATIS
Dependent Variable: CCOMMIT

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	7845.432	3	2615.144	141.293	.000
Residual	4423.564	239	18.509		
Total	12268.996	242			

Variables in the Equation

	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	3.685	1.444		2.553	.011	
DEPEND	1.319	.067	.810	19.558	.000	.785
SATIS	-6.207E-02	.073	-.051	-.849	.397	-.055
TRUST	1.736E-02	.054	.019	.319	.750	.021

Thus, given that Satis and Trust are not significant predictors of Ccommit, this equation will be treated as a simple regression equation with dependence as the sole predictor of Ccommit. Results for this simple regression equation are displayed in table 3. The R^2 is only slightly lower for the simple regression equation than the multiple regression one, given that Satis, which contributed .001 to the R^2 , is no longer included. The significant F-ratio indicates that the overall model is significant ($p < 0.001$).

Table 3 Model Summary

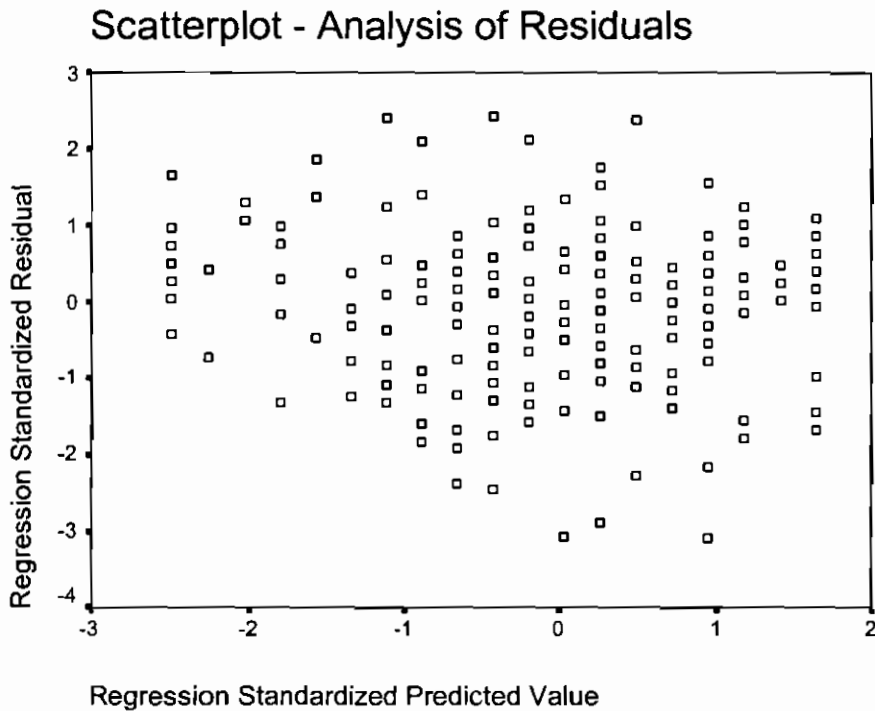
One Independent Variable Entered using the Enter Method						
Multiple R	.799					
Multiple R ²	.638					
Adjusted R ²	.637					
Standard error of estimate	4.292					
Durbin-Watson	1.947					
Predictors: (Constant), DEPEND						
Dependent Variable: CCOMMIT						
Analysis of Variance						
	Sum of Squares	df	Mean Square	F Ratio	Sig.	
Regression	7828.575	1	7828.575	424.889	.000	
Residual	4440.421	241	18.425			
Total	12268.996	242				
Variables in the Equation						
	Standard Error of Coefficients		Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.928	.919		3.187	.002	
DEPEND	1.301	.063	.799	20.613	.000	.799

Evaluating the Variate for the Assumptions of Regression Analysis

The assumptions to be examined are linearity, homoscedasticity, independence of the residuals, and normality.

Linearity: The pattern of studentised residuals in figure 1, shows that residuals are randomly dispersed and there is no consistent curvilinear pattern. This result is indicative of a linear relationship in the data.

Figure I

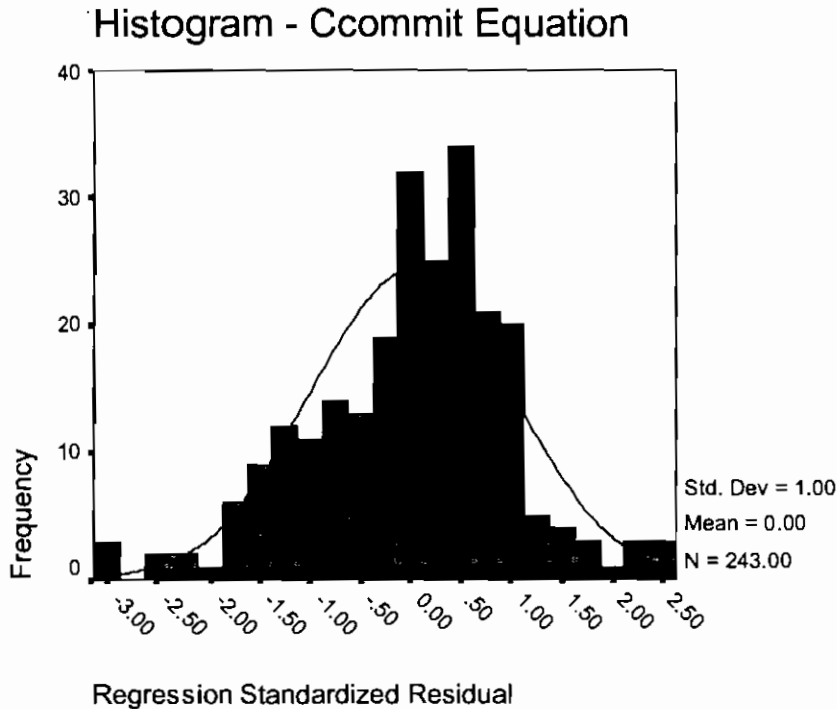


Constant Variance of the Error Term (Homoscedasticity): Analysis for homoscedasticity is again made by examining the residuals (Figure 1). There does not appear to be any consistent pattern in the data points. The residuals are scattered randomly around the horizontal line. Thus, it can be concluded that homoscedasticity is present i.e. the variance is constant.

Independence of the residuals: The **Durbin-Watson statistic** value is close to 2 (Durbin value = 1.947), thus the residuals are unlikely to be correlated.

Normality: The test of normality is carried out by examining the histogram of residuals. In terms of the **histogram of residuals** (See figure 2), the distribution is roughly normal, displaying a bell-shaped curve.

Figure 2



Identifying Influential Points

Cases that exceed the cut-off values for the various diagnostic measures are highlighted in table 4.

Table 4 Residuals and Diagnostic Measures

Case Number	Actual Value	Predicted Value	Residual	Standardized Residual	Studentized Residual	Studentized Deleted Residual	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA Depe	
1	3	17	26.34396	-9.34396	<u>-2.17685</u>	<u>-2.18535</u>	<u>-2.20275</u>	<u>-.19491</u>	<u>.08500</u>	<u>-.1331</u>
2	30	25	15.93689	9.06311	<u>2.11141</u>	<u>2.11925</u>	<u>2.13484</u>	<u>.18413</u>	<u>.15808</u>	<u>-.1221</u>
3	39	25	14.63601	10.36399	<u>2.41448</u>	<u>2.42576</u>	<u>2.45083</u>	<u>.23722</u>	<u>.21619</u>	<u>-.1761</u>
4	93	29	19.83954	9.16046	<u>2.13409</u>	<u>2.13868</u>	<u>2.15479</u>	<u>.14137</u>	<u>.06844</u>	<u>-.0281</u>
5	94	34	23.74220	10.25780	<u>2.38974</u>	<u>2.39583</u>	<u>2.41985</u>	<u>.17289</u>	<u>-.02520</u>	<u>.0751</u>
6	107	8	18.53866	-10.53866	<u>-2.45517</u>	<u>-2.46119</u>	<u>-2.48754</u>	<u>-.17431</u>	<u>-.11401</u>	<u>.0691</u>
7	108	14	23.74220	-9.74220	<u>-2.26962</u>	<u>-2.27541</u>	<u>-2.29547</u>	<u>-.16400</u>	<u>.02390</u>	<u>-.0711</u>
8	119	29	19.83954	9.16046	<u>2.13409</u>	<u>2.13868</u>	<u>2.15479</u>	<u>.14137</u>	<u>.06844</u>	<u>-.0281</u>
9	165	10	22.44131	-12.44131	<u>-2.89843</u>	<u>-2.90480</u>	<u>-2.95089</u>	<u>-.19577</u>	<u>-.01077</u>	<u>-.0481</u>
10	210	13	26.34396	-13.34396	<u>-3.10872</u>	<u>-3.12086</u>	<u>-3.17929</u>	<u>-.28132</u>	<u>.12269</u>	<u>-.1921</u>
11	222	29	19.83954	9.16046	<u>2.13409</u>	<u>2.13868</u>	<u>2.15479</u>	<u>.14137</u>	<u>.06844</u>	<u>-.0281</u>
12	228	8	21.14043	-13.14043	<u>-3.06130</u>	<u>-3.06762</u>	<u>-3.12283</u>	<u>-.20081</u>	<u>-.05529</u>	<u>-.0051</u>
13	233	7	17.23778	-10.23778	<u>-2.38508</u>	<u>-2.39217</u>	<u>-2.41605</u>	<u>-.18644</u>	<u>-.14478</u>	<u>.1021</u>
14	239	29	18.53866	10.46134	<u>2.43716</u>	<u>2.44313</u>	<u>2.46883</u>	<u>.17300</u>	<u>.11315</u>	<u>-.0681</u>

A number of cases appear to exceed the cut-off for each of the diagnostics (3, 30, 39, 165, 210, 228, 233). Similar to the procedure for the multiple regression equations, these 7 influential cases were deleted with the result that there were improvements in the model estimation. The R² improved from .638 to .696 (5.8%). Also, the standard error reduced from 4.292 to 3.890, an improvement of 10.33%.

Table 5 Model estimation with 7 influential cases removed**Overall Finalised Regression Model Results**

One Independent Variable Entered using the Enter Method	
Multiple R	.835
Multiple R ²	.696
Adjusted R ²	.695
Standard error of estimate	3.890
Durbin-Watson	1.969

Predictors: (Constant), DEPEND

Dependent Variable: CCOMMIT

Analysis of Variance					
	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	8123.077	1	8123.077	536.828	.000
Residual	3540.800	234	15.132		
Total	11663.877	235			

Variables in the Equation						
	Standard Error of Coefficients		Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.590	.841		3.080	.002	
DEPEND	1.337	.058	.835	23.170	.000	.835

Interpreting the Regression Variate

At this stage, the finalized model with the cases removed (See table 5), is used to determine the relative impact of the independent variable on the dependent variable. This is done by means of the standardized beta value. In simple regression the standardised coefficient is equivalent to the multiple R of 0.835. With a beta value of 0.835, dependence is a strong and important predictor of calculative commitment.

APPENDIX M

Intention to Continue Equation

The final equation to be examined is that of the outcome variable, intention to continue. Intention to continue has two predictor variables, namely affective and calculative commitment. Before examining the regression equation, it is necessary to examine the Pearson correlation coefficients. Table 1, shows the correlation matrix for the Intent equation. The correlation between Acommit and Intent is higher than that of the correlation between Ccommit and Intent. Thus, it is likely that Acommit will be a better predictor of Intent than Ccommit. The correlation between the two predictors (i.e. Acommit and Ccommit) is quite low (.266), which suggests that high collinearity is unlikely.

Table 1 Correlations

	INTENT	ACOMMIT	CCOMMIT
INTENT	1.000		
ACOMMIT	.624	1.000	
CCOMMIT	.482	.266	1.000

All correlations are significant at the 0.01 level

Estimating the Regression Model and Assessing Overall Fit

As with previous equations, the approach to variable selection was the confirmatory method. The results are displayed in table 2.

Table 2 Model Summary

Two Independent Variables Entered using the Enter Method	
Multiple R	.705
Multiple R ²	.497
Adjusted R ²	.493
Standard error of estimate	2.097
Durbin-Watson	2.003

Predictors: (Constant), CCOMMIT, ACOMMIT

Dependent Variable: INTENT

Analysis of Variance					
	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	1044.969	2	522.485	118.781	.000
Residual	1055.697	240	4.399		
Total	2100.667	242			

Variables in the Equation						
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	1.982	.536		3.696	.000	
ACOMMIT	.233	.021	.534	11.248	.000	.588
CCOMMIT	.141	.020	.340	7.171	.000	.420

The R², the goodness of fit statistic, is quite moderate with a value of .497 (.705² = .497). Thus, approximately 50% of the observed variability in the dependent variable,

Intent, is explained by the two independent variables. Additional variables, not represented in this equation, are needed to explain the other 50%.

The **F-ratio**, which tests the significance of the overall model, is statistically significant ($p < 0.001$). This indicates that the regression model is a better predictor of Intent than the mean. All the **coefficients** are positive indicating that the value of the dependent variables increases as the independent variable increases.

The **t-statistic** is used to test the statistical significance of the individual regression coefficients. While both independent variables are statistically significant at the 0.001 level, the Acommit variable is a better contributor to Satis because of its higher t-value.

Assessing the Assumption of no Multicollinearity

Multicollinearity was firstly assessed using the VIF (Variance Inflation Factor) and tolerance values. The cut-off values for these two detection methods are listed below.

If VIF is greater than 10 there is cause for concern
If tolerance is below 0.1 there is cause for concern

The results displayed in table 3 shows that there is no cause for concern. The VIF values are low and the tolerance values are high indicating that little collinearity is present.

Table 3 Assessing Tolerance and VIF Values

Variable	Tolerance	Variance Inflation Factor (VIF)
Acommit	.929	1.076
Ccommit	.929	1.076

Assessing Condition Indices and Decomposition of Coefficients: The two steps involved in assessing the condition indices and decomposition of the coefficients are outlined in table 4. In terms of step one, no condition index exceeds the cut-off of 15. Thus, there is no need to carry out the second step in the test. Collinearity does not appear to be a problem for the intent equation.

1. Condition indices higher than 15-30 are identified
2. Variance proportions for all condition indices exceeding the threshold are examined. A collinearity problem is indicated when any identified index accounts for a substantial proportion of variance (.90 or more) for two or more of the coefficients.

Table 4 Assessing condition indices and decomposition of coefficient

Dimension	Eigenvalue	Condition Index			
			Constant	ACOMMIT	CCOMMIT
1	2.887	1.000	.01	.01	.01
2	7.141E-02	6.358	.01	.49	.76
3	4.177E-02	8.313	.98	.50	.23

Identifying influential observations

The following section determines if there are any outliers, leverage points or influential observations affecting estimation of the intention equation.

Table 5 contains a summary of all the cases that exceed the threshold values for each of the diagnostic measures.

Table 5 Summary of Diagnostic tests for Influential Observations

Diagnostic Measure	Threshold Value	Calculated Value	Observations Exceeding Threshold
Standardised residual	$> \pm 2$		3, 66, 73, 91, 107, 119, 135, 139, 140, 172, 182, 190, 218
Studentised residual	$> \pm 2$		3, 66, 73, 91, 107, 119, 135, 139, 140, 172, 182, 190, 218
Studentised deleted residual	$> \pm 2$		3, 66, 73, 91, 107, 119, 135, 139, 140, 172, 182, 190, 218
Leverage	$2(k+1)/n$.0246914	119, 140
Mahalanobis distance	> 15		
SDFBeta	$\pm 2/\sqrt{n}$	± 0.1283	3, 66, 73, 91, 107, 119, 135, 139, 140, 172, 182, 190, 218
Cook's Distance	$4/(n-k-1)$.0166667	3, 66, 73, 91, 107, 119, 135, 139, 140, 172, 182, 190, 218
COVRATIO	$1 \pm 3(p/n)$	Upper: 1.037037 Lower: 0.962963	3, 73, 91, 107, 135, 140, 172, 190, 218
SDFFIT	$2\sqrt{p/(n-p)}$	0.2236068	3, 66, 73, 91, 107, 119, 135, 139, 140, 172, 182, 190, 218

Upper limits for the COVRATIO are not displayed

k = number of independent variables; p = number of independent variables plus constant; n = sample size

There were 13 cases that continually exceeded threshold values. Table 6 shows the residual values for these 13 cases. Each of the 13 cases exceeds the cut-off value of ± 2 for the standardised, studentised and studentised deleted residuals.

Table 6 Casewise Diagnostics - Residuals

Case Number	Actual Value	Predicted Value	Residual	Deleted Residual	Standardized Predicted Value	Standardized Residual	Studentized Residual	Studentized Deleted Residual	
1	3	12	6.23952	5.76048	5.88052	-1.77402	2.74659	2.77506	2.81481
2	66	12	7.76689	4.23311	4.31167	-1.03900	2.01835	2.03699	2.05054
3	73	2	8.18939	-6.18939	-6.26697	-.83568	-2.95110	-2.96954	-3.01933
4	91	14	8.14609	5.85391	5.90332	-.85652	2.79114	2.80290	2.84399
5	107	14	6.83526	7.16474	7.29850	-1.48733	3.41615	3.44789	3.52921
6	119	2	7.23083	-5.23083	-5.46265	-1.29697	-2.49406	-2.54873	-2.57855
7	135	2	6.88402	-4.88402	-4.95972	-1.46387	-2.32870	-2.34668	-2.36912
8	139	3	7.67481	-4.67481	-4.75025	-1.08331	-2.22895	-2.24686	-2.26614
9	140	5	10.84344	-5.84344	-6.03265	.44154	-2.78615	-2.83090	-2.87338
10	172	2	8.61190	-6.61190	-6.66600	-.63235	-3.15255	-3.16542	-3.22690
11	182	2	6.46151	-4.46151	-4.55671	-1.66719	-2.12725	-2.14982	-2.16630
12	190	2	7.17115	-5.17115	-5.23556	-1.32569	-2.46560	-2.48091	-2.50811
13	218	2	7.55035	-5.55035	-5.65372	-1.14321	-2.64641	-2.67094	-2.70588

Outliers and influential observations can also be graphically represented for each independent variable by means of **partial regression plots** (Hair et al. 1998). The partial regression plots displaying the influential observations are contained in the assumption section (Figures 2 and 3).

Furthermore, table 7 shows the same 13 cases exceeding the cut-off values for the various diagnostic measures.

Table 7 Diagnostic Measures for Identifying Influential Observations

	Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value	COVRATIO	Standardized DFFIT	Standardized DFBETA Intercept	Standardized DFBETA ACOMMIT	Standardized DFBETA CCOMMIT
1	3	3.94441	.05350	.01630	.93736	.40635	.33863	-.34829	-.00639
2	66	3.41320	.02567	.01410	.97882	.27934	.18962	.03806	-.24420
3	73	1.99974	.03684	.00826	.91638	-.33803	-.23149	-.03321	.27315
4	91	1.02949	.02210	.00425	.92412	.26127	.20863	-.04649	-.16155
5	107	3.43904	.07398	.01421	.88569	.48220	.41393	-.07515	-.38295
6	119	9.27387	.09596	.03832	.97392	-.54283	-.19966	.47941	-.31092
7	135	2.69755	.02845	.01115	.95913	-.29494	-.26754	.08582	.20569
8	139	2.84719	.02715	.01177	.96537	-.28787	-.21159	-.01378	.24217
9	140	6.59434	.08650	.02725	.94413	-.51705	-.02217	-.38505	.38170
10	172	.96827	.02733	.00400	.89829	-.29190	-.19686	-.01123	.20027
11	182	4.06005	.03287	.01678	.97561	-.31644	-.27913	.06236	.25013
12	190	1.98109	.02555	.00819	.94835	-.27991	-.23846	.20940	.03215
13	218	3.42864	.04429	.01417	.94219	-.36927	-.20731	.32129	-.13298

Across most of the measures, 13 cases have emerged as potentially negative influential points. These cases were checked for entry errors and other correctable reasons but none were found. Thus, the 13 cases identified were removed, with the result that various improvements can be noted. Overall prediction improved, with the R^2 changing from .497 to .578, an improvement of 8.1%. By removing these influential cases, the two commitment variables account for more than 50% of the variance of Intent. Also, the standard error decreased from 2.097 to 1.689, an improvement of 19.45%. Thus, removal of the thirteen influential cases resulted in an improvement in estimation of the equation, particularly in relation to the improvement of the standard error.

Model estimation with 13 influential cases removed

Table 8 Model Summary

Two Independent Variables Entered using the Enter Method	
Multiple R	.760
Multiple R ²	.578
Adjusted R ²	.574
Standard error of estimate	1.689
Durbin-Watson	2.137

Predictors: (Constant), CCOMMIT, ACOMMIT

Dependent Variable: INTENT

Analysis of Variance

	Sum of Squares	df	Mean Square	F Ratio	Sig.
Regression	885.794	2	442.897	155.168	.000
Residual	647.928	227	2.854		
Total	1533.722	229			

Variables in the Equation

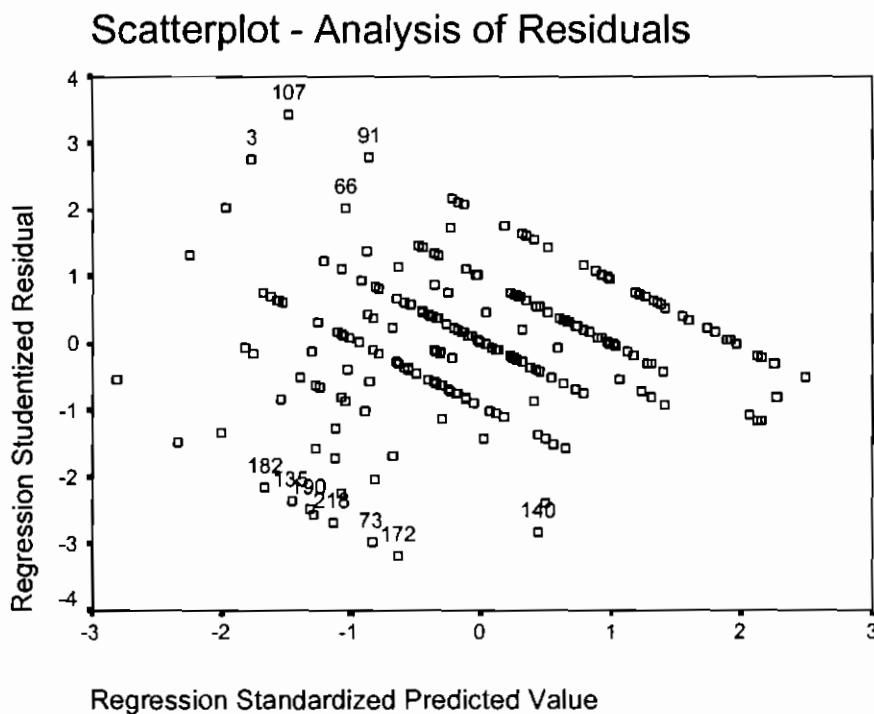
	Standard Coefficients	Standard Error of Coefficient	Standardised Coefficients	t value	Significance	Partial Correlation
	B	Std. Error	Beta			
(Constant)	2.415	.458		5.270	.000	
ACOMMIT	.226	.017	.581	12.940	.000	.652
CCOMMIT	.133	.017	.355	7.910	.000	.465

Evaluating the Variate for the Assumptions of Regression Analysis

The assumptions to examine are linearity, homoscedasticity, independence of the residuals, and normality.

Linearity: This assumption is assessed through analysis of residuals and partial regression plots (Hair et al. 1998). In terms of **analysis of residuals**, the pattern of studentised residuals in figure 1 shows randomly dispersed residuals. There is no consistent curvilinear pattern. This result is one indication of a linear relationship in the data. There are however some outlying observations, which are not consistent with the other data points. Removal of these points would help remedy the situation.

Figure 1



In terms of the **partial regression plots**, no non-linear pattern is shown. The relationship between Acommit and Intent (figure 2) is better defined than that of Ccommit and Intent (figure 3). This explains why Acommit has a more significant effect on Intent (i.e. higher t-value), than Ccommit. The relationship between Ccommit and Intent is less well defined, both in slope and in the regression equation (evidenced by smaller coefficient, beta value and t-value). Finally, in terms of linearity, it appears that the assumption has been met for each independent variable.

Figure 2

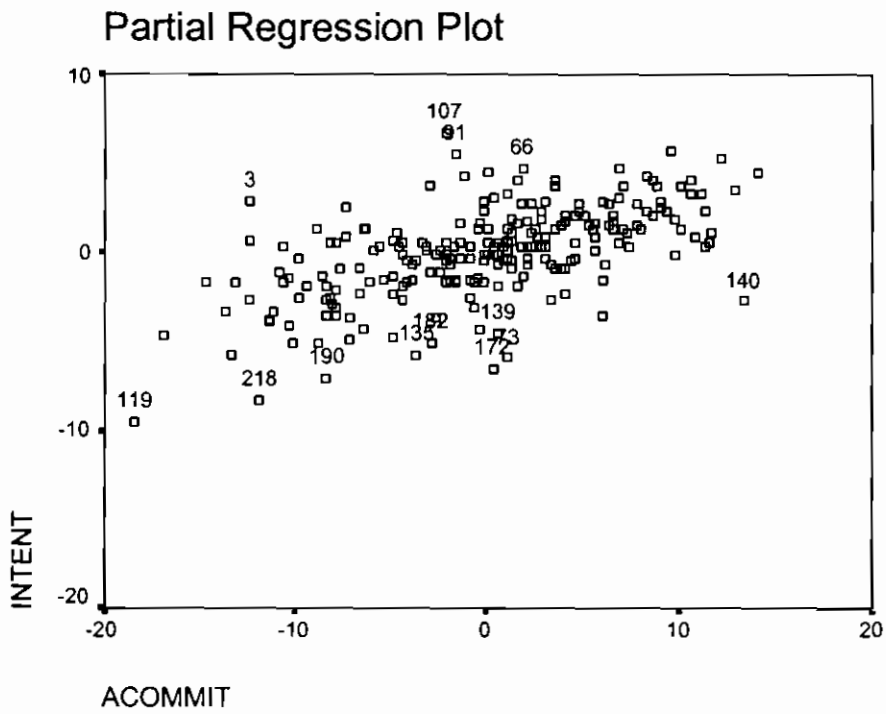
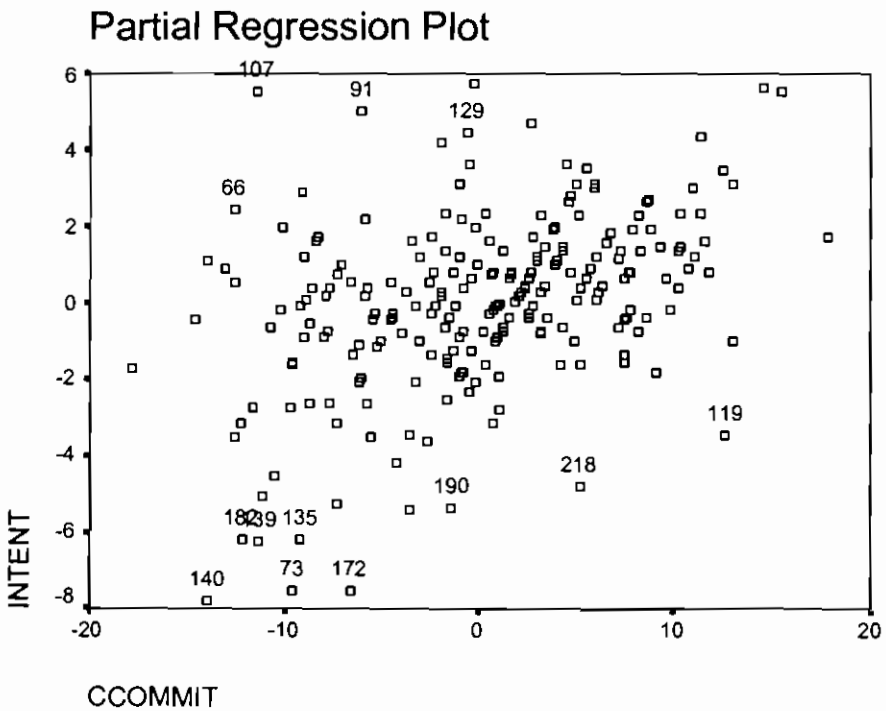


Figure 3



Constant Variance of the Error Term (Homoscedasticity): Analysis for homoscedasticity is again made by examining the residuals (Figure 1). The residual plot does not appear to approximate a null plot (i.e. homoscedasticity – constant variance). There is some evidence of heteroscedasticity. The residuals are forming a diamond shape, and are quite triangular on the right hand side. According to Hair et

al. (1998) these shapes are evidence of heteroscedasticity. Norusis (2000) states that if the variance of the dependent variable is not constant, the values of the dependent variable can be transformed. Various transformation options are available as a remedy for heteroscedasticity, including the square root, the log of the variable (Norusis 2000) and the inverse (Hair et al. 2000). Each of these transformations methods was performed on the dependent variables but without success. The result in each case was a lowering of the R^2 , very little change in the residual plot and a less well defined normal p-p plot. Thus, the variables were used in their original format.

Independence of the residuals: The **Durbin-Watson statistic**, with a value extremely close to 2 (Durbin value = 2.003), indicates that the residuals are uncorrelated.

Normality: The test of normality is carried out by examining the histogram of residuals and the **normal probability plot** of residuals. In terms of the histogram of residuals (Figure 4), the distribution is roughly normal, displaying a bell-shaped curve.

Figure 4

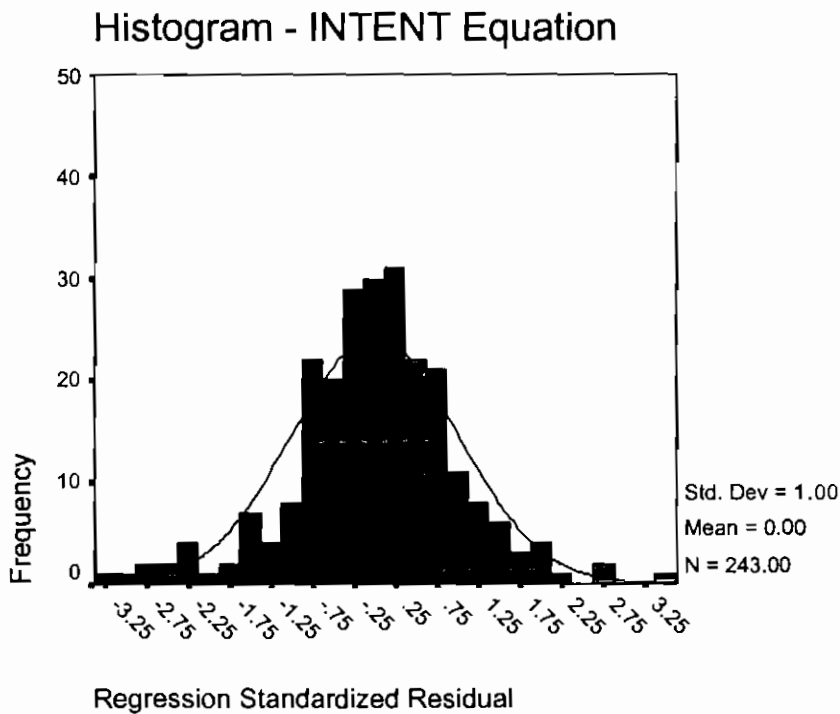
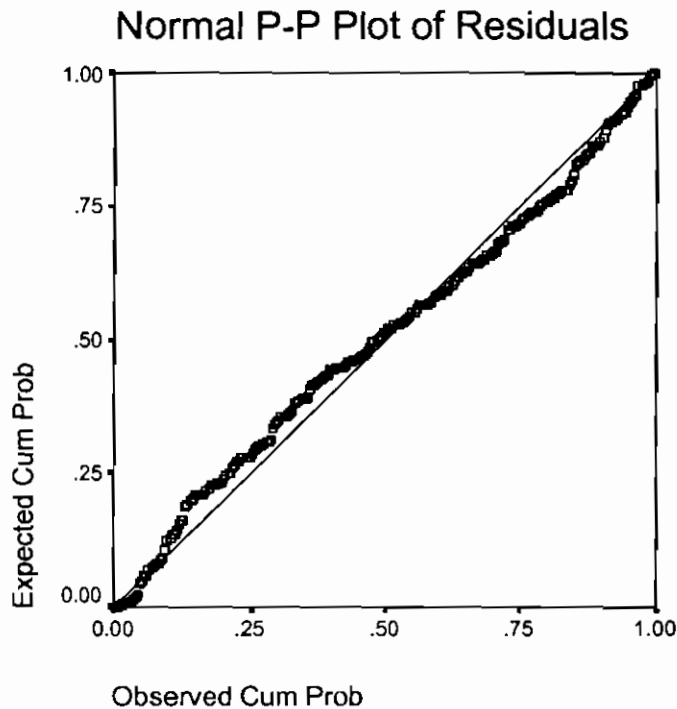


Figure 5 shows the **normal probability plot** for what is roughly a normally distributed data set. The residual line quite closely approximates the diagonal.

Figure 5



Interpreting the Regression Variate

At this stage, the finalized model with the cases removed (See table 8), is used to determine the relative impact of each independent variable on the dependent variable. This is done by means of the standardized beta values. For this equation, Acommit (beta = .581) is a more important predictor of Intent than Ccommit (beta = .355). This supports the lower univariate correlation with between Ccommit and Intent.

Alternative Regression Models

As with the previous equation, an additional method (other than confirmatory) was used to estimate the model. The stepwise procedure was used and, as expected, produced the exact same results, i.e. the R^2 , the standard error, the beta coefficients etc. were all exactly the same for both procedures. This result is only to be expected given that only two predictors were included and both were statistically significant when used in each estimation method. The results for the stepwise model are not displayed given that the outcome is the same as for the confirmatory method.

Exploring Relationships between Predictor Variables & Intention to Continue

The intention to continue equation was considered to have two predictor variables, namely Acommit and Ccommit. However, these variables together account for less than 50% of the variance in Intention (without removing influential cases). There are other variables that correlate more highly with Intention than Acommit and Ccommit. Further regression analysis shows that the optimal variate for Intention includes Invest, Value, Acommit and Depend. Together these four variables account for 63.6% of the variance in Intention (without removing influential cases). However, this equation is not being considered and will be further discussed in the findings section.

APPENDIX N

Business Vs Leisure Groupings

Freedom to choose: The Levene test is significant ($p < 0.05$); the variances are significantly different, therefore the assumption of homogeneity of variances has been violated. There are adjustments that can be made when variances are not equal. The test statistic used is the 'Equal variances not assumed'. According to this test the t test is significant ($t = -2.743$, $p < 0.01$), hence there is a significant difference between the means. As might be expected, leisure passengers perceive they have greater freedom to choose their airline, than do business passengers.

Freedom to Choose

Business Vs Leisure	N	Mean	Std. Deviation	Std. Error Mean
Business	110	9.70	4.170	.398
Leisure	133	11.05	3.309	.287

Value: The second variable that showed significant differences for business and leisure passengers was value.

Value

Business Vs Leisure	N	Mean	Std. Deviation	Std. Error Mean
Business	110	24.85	6.102	.582
Leisure	133	26.75	5.908	.512

The Levene test for equality of variances is insignificant ($p > 0.05$), meaning the assumption has not been violated. The t-test for equality of means is statistically significant ($t = -2.467$, $p < 0.05$), thus there are significant differences between the two groups. The leisure passenger group believes they receive better value for money than the business group.

APPENDIX O - Freedom to Choose groupings

Affective Commitment: The Levene test for equality of variances is insignificant ($p > 0.05$), meaning the assumption has not been violated. The t-test for equality of means is statistically significant ($t = 6.079$, $p < 0.001$), thus there are significant differences between the two groups. The group with greater freedom to choose (≥ 7) is significantly more affectively committed. In terms of the other affective variables i.e., affect, satisfaction and trust, the results are very similar to those for affective commitment. In each case, the group with greater freedom to choose had significantly higher means for affect, satisfaction and trust. Results for these variables are not displayed.

Affective Commitment

Freedom Groupings	N	Mean	Std. Deviation	Std. Error Mean
≥ 7	197	22.60	6.427	.458
< 7	46	16.33	5.727	.844

Calculative Commitment: Although there are differences between the means of the two groups in relation to calculative commitment, the difference is not significant ($t = 1.868$, $p > 0.05$). Thus, the freedom groupings do not differ in terms of their calculative commitment.

Calculative Commitment

Freedom Groupings	N	Mean	Std. Deviation	Std. Error Mean
≥ 7	197	21.41	6.864	.489
< 7	46	19.24	7.970	1.175

Value: The test for homogeneity of variance for satisfaction shows no significant differences for the two groups (Levene test, $p > 0.05$). Examination of the t-test results for Value, reveal that there is a significant difference between the means of the two samples ($t = 5.554$, $p < 0.001$). The group with greater freedom to choose believe they receive greater value than those with less freedom to choose.

Value

Freedom Groupings	N	Mean	Std. Deviation	Std. Error Mean
≥ 7	197	26.87	5.847	.417
< 7	46	21.67	5.112	.754

Intention to Continue: The Levene test for equality of variances is insignificant ($p > 0.05$), meaning the assumption has not been violated. The t-test for equality of means is statistically significant ($t = 5.775$, $p < 0.001$), thus there are significant differences between the two groups. The group with greater freedom to choose (≥ 7) has a greater intention to continue than the group with less freedom to choose.

Intention to Continue

Freedom Groupings	N	Mean	Std. Deviation	Std. Error Mean
≥ 7	197	10.42	2.661	.190
< 7	46	7.80	3.188	.470

APPENDIX P

Age Groups

Affective commitment: The Levene statistic indicates that the homogeneity of variance assumption has not been violated ($p > 0.05$). Thus, unequal sample sizes should not impact on the statistical test for differences. The F ratio shows that there are significant differences between the groups ($F = 3.914, p < 0.01$).

Table 1 Affective Commitment Descriptives

Age Category	N	Mean	Std. Deviation	Std. Error
15-24	38	20.37	6.704	1.088
25-34	78	20.37	5.646	.639
35-44	45	19.93	6.860	1.023
45-49	19	22.26	8.218	1.885
50-65	53	24.77	6.761	.929
65+	10	20.70	6.800	2.150
Total	243	21.41	6.754	.433

Post hoc procedures using the Scheffe test (table2) show where the differences lie between the groups. The differences lie between the 50-65 age category and two others i.e., 25-34 and 35-44, with the 50-65 age category having significantly higher means than the aforementioned categories. Thus, the 50-65 age category of respondents is more affectively committed.

Table 2 Multiple Comparisons: Affective Commitment

			Mean Difference (I-J)	Std. Error	Sig.
Scheffe	50-65	15-24	4.41	1.394	.080
		25-34	4.40*	1.168	.016
		35-44	4.84*	1.330	.024
		45-49	2.51	1.754	.842
		65+	4.07	2.261	.663

* The mean difference is significant at the .05 level

Note: Results are displayed only for the 50-65 age category, the only category with statistically significant differences

Value: The homogeneity of variance assumption has not been violated as is evidenced by the Levene statistic ($p > 0.05$). The next test to be conducted was the F statistic, which indicated that significant differences existed between the groups in terms of value ($F = 3.610, p < 0.01$).

Table 3 Value Descriptives

Age Category	N	Mean	Std. Deviation	Std. Error
15-24	38	26.32	4.551	.738
25-34	78	24.81	6.037	.684
35-44	45	24.22	6.501	.969
45-49	19	26.05	6.433	1.476
50-65	53	28.64	5.968	.820
65+	10	25.30	5.012	1.585
Total	243	25.89	6.059	.389

Post hoc procedures using the Scheffe test (table 4) shows that, as with the affective commitment variable, the differences lie between the 50-65 age category and two others i.e., 25-34 and 35-44, with the 50-65 age category having significantly higher means than the aforementioned categories. Thus, the 50-65 age category of respondents believe they receive greater value.

Table 4 Multiple Comparisons: Value

			Mean	Std. Error	Sig.
			Difference		
			(I-J)		
Scheffe	50-65	15-24	2.33	1.255	.633
		25-34	3.83*	1.051	.023
		35-44	4.42*	1.196	.020
		45-49	2.59	1.578	.747
		65+	3.34	2.035	.746

* The mean difference is significant at the .05 level