An investigation into the relationship between commitment as loyalty: Commitment as a key mediating variable for loyalty

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AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN COMMITMENT AND LOYALTY:
COMMITMENT AS A KEY MEDIATING VARIABLE FOR LOYALTY

by

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A dissertation submitted in partial fulfillment of the requirements for the

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ABSTRACT

An Investigation into the Relationship between Commitment and Loyalty:
Commitment as a Key-Mediating Variable for Loyalty

by

Shiang-Lih Chen

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Many studies have verified that a service provider can benefit greatly from customer commitment and loyalty. However, there is a lack of consensus in the definition of commitment and loyalty constructs and ways of measuring them. As indicated by Pritchard, et al. (1999), there is a dearth of empirical consumer research examining the relationship between commitment and loyalty. Understanding the role that commitment plays in developing and explaining loyalty and the relationship between commitment and loyalty are critical in facilitating the evolution of loyalty.

This study empirically examined whether commitment is a key-mediating variable for loyalty. The relationships between commitment and loyalty constructs, and their antecedents and consequences were accessed.

Simultaneous multiple regressions were applied to test all one-tailed hypotheses at the .05 alpha level (n=290). Six hypothesized relationships proposed in this study were supported by the results of this study. The first three hypotheses were sustained,
indicating that a direct and positive relationship existed between benefit and commitment, between trust and commitment, and between personal identification and commitment. Furthermore, the fourth hypothesis was endorsed, denoting commitment directly influenced resistance to change to competitors. Finally, the fifth and sixth hypotheses were substantiated, indicating that resistance to change to competitors directly led to repeat purchase and partnership-like activities.

Conceptual and theoretical implications are discussed. General implications of the result from the research are presented. Limitations of this study are discussed. Finally, suggestions for future research were provided.
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CHAPTER 1

INTRODUCTION

Customer commitment and loyalty have been the focus of marketing scholars and practitioners for the past decade. Marketing managements' focus has evolved from transactions to developing and maintaining long-term relationships with customers. Consumer commitment plays a significant role in developing long-term relationships between a service provider and a customer (Morgan & Hunt, 1994; Bowen & Shoemaker, 1998). Therefore, understanding commitment, what leads to commitment, and the consequences of commitment are important areas of relationship marketing. At the same time, many studies have verified that a service provider can benefit greatly from customer loyalty (Richeld & Sasser, 1990; Gould, 1995; Wong, Dean, & White, 1999).

However, some definitional problems have been caused by the close association between loyalty and commitment. For instance, there is a lack of consensus in the definition of commitment and loyalty constructs and ways of measuring them (Pritchard, Howard, & Harvitz, 1992; Pritchard, Havitz, & Howard, 1999). Some researchers consider commitment and loyalty synonymous and use them interchangeably (Warnick, 1983; Buchanan, 1985; Assael, 1987; Bowen & Shoemaker, 1998). Other researchers regard commitment as part of loyalty. Selin, Howard, Udd and Cable (1988) state that commitment is the attitudinal component of loyalty. Likewise, Oliver's (1999) affective loyalty and conative loyalty and commitment are synonymous. Some researchers suggest

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that commitment is the antecedent of loyalty, which serves as a precursor to loyalty attitudes (Dick & Basu, 1994). Other researchers proclaim that commitment is an attitude, which produces various beneficial behaviors, including loyalty behaviors; in other words, commitment leads to loyalty, and loyalty is a result of commitment (Beatty, Kahle, & Homer, 1988; Bettencourt, 1997; Jacoby & Chesnut, 1978).

As indicated by Pritchard, et al. (1999), there is a dearth of empirical consumer research examining the relationship between commitment and loyalty. Understanding the role that commitment plays in developing and explaining loyalty and the relationship between commitment and loyalty is critical in facilitating the evolution of loyalty. Some researchers agree that commitment is a psychological dimension of loyalty and that a psychological attachment will distinguish a pure repeat behavior from true loyalty which means customers not only provide repeat business but also hold favorable attitudes towards the companies. Hence, investigating the relationship between commitment and loyalty becomes important (Day, 1969; Pritchard, et al., 1999). The purpose of this study was to empirically examine whether commitment is a key-mediating variable for loyalty. The relationships between commitment and loyalty constructs, and their antecedents and consequences were accessed. The results provide valuable insights into services marketing regarding how and why a sense of commitment and loyalty develops and the relationship between them.

**Theoretical Framework**

Repeat purchasing behavior without any consideration of the consumers' attitude was considered customer loyalty until Day (1969) proposed the two-dimensional concept
of loyalty. According to Day (1969), "loyalty should be evaluated with both attitudinal and behavioral criteria" (p. 30). In other words, true loyal customers should be those who purchase repeatedly and hold a favorable attitude toward the service provider.

Paralleling Day's (1969) theory, Jacoby and Kyner (1978) indicated that inferring loyalty or disloyalty solely from repeat purchase behavior is invalid. Other factors need to be assessed, such as consumer beliefs, affect, and intention (Oliver, 1999). An early study by Jacoby and Kyner (1973) developed a composite definition of loyalty which blended behavioral sequences and attitude components. This composite measure, which evaluates conceptualization of loyalty, has been commonly applied in much loyalty research and became the "definitive measurement standard of brand loyalty" (Selin, et al., 1988, p. 219). In the composite measure of loyalty, behavioral dimensions were measured by the frequency and the proportion of purchase; attitudinal dimensions were measured with levels of commitment and degrees of resistance to switch to competitors (Selin, et al., 1988).

Regarding commitment as a part of loyalty rather than as a distinct construct, however, contributes to the definitional problems between commitment and loyalty. When researchers measure both commitment and loyalty simultaneously, this adds to the confusion (Pritchard, et al., 1992; Pritchard, et al., 1999).

According to Fishbein and Ajzen (1973; 1975), people's attitudes are formed before their behavioral intentions are generated. In typical attitude models, cognitive elements precede affective components and lead to conative elements. In other words, in the consumer decision-making process, people form their beliefs about a brand's
attributes first (cognitive); then an attitude of liking is generated (affective); and finally, a behavioral intention or purchase outcome is produced (conative) (Holbrook, 1978).

Furthermore, Oliver (1999) indicated that the development of loyalty follows a cognitive-affective-conation pattern. There are four loyalty phases, and consumers can become loyal at each attitudinal stage. The first phase is cognitive loyalty. In this stage, loyalty indicates only that consumers prefer one brand to the alternatives, based upon only brand belief. The second phase is affective loyalty, in which a liking of the product and positive attitude toward the brand has been developed based upon continuous satisfying experiences. However, the level of commitment at the second phase is not strong enough to produce the intention to repurchase since research has shown that sometimes satisfied customers do not return (Richeld & Sasser, 1990). In the third loyalty phase, a brand-specific commitment to repurchase is generated. The intention to return has been formed at this phase. Finally, the return intention is “transformed into readiness to act” at the action loyalty phase (Oliver, 1999, p. 36). Once consumers have this deep level of commitment, they will possess the resistance to change to competitors’ offerings and switching behaviors will be minimized.

In Oliver’s work (1999), the occurrences of attitude and behavior have been sequenced. In the development of loyalty, an affective phase precedes an action phase. Nevertheless, Oliver (1999) did not distinguish commitment from loyalty and used affective loyalty and conative loyalty to refer to commitment.

Pritchard, et al. (1999) did distinguish commitment from loyalty. In their study resistance to change was an antecedent of loyalty. These researchers stated that resistance to change provided evidence of commitment. Thus, according to Pritchard, et
al. (1999), if there is resistance to change, there is commitment. They drew these conclusions from the results of three competing models (see Figure 1. 2, and 3). In the first model (Direct Effects Model, D-E-M I), they tested direct relationships among commitment antecedents (informational processes, identification processes, and volitional processes) and two commitment outcomes (resistance to change and loyalty). In the second model (Direct Effects Model II, D-E-M II), they tested both the direct and indirect relationships among the three commitment antecedents and loyalty. In this model, the three commitment antecedents could either directly cause loyalty or could indirectly lead to loyalty via the mediating variable, resistance to change. In the third model (Mediating Effects Model, M-E-M), they tested only the indirect relationships among the three commitment antecedents and loyalty outcome. In this model, the three commitment antecedents have a direct relationship with the mediating variable—resistance to change—and indirect relationships with loyalty.

![Diagram](image-url)

**Figure 1.** Direct Effects Model I, (D-E-M I)
Figure 2. Direct Effects Model II, (D-E-M II)

Figure 3. Mediating Effects Model, (M-E-M)

Source: Pritchard, et al. (1999)
Pritchard et al. (1999) determined the third model to be the best one among the three competing models because the antecedents were much more successful in explaining resistance to change than in explaining loyalty since the explained variance estimates were consistently higher for resistance to change than they were for loyalty. Furthermore, the existence of a mediating variable was supported when the antecedents were significant in the direct effect model (D-E-M) but they became non-significant, or their effects were substantially reduced, in the mediating model (M-E-M).

Grounded by Fishbein and Ajzen’s (1973; 1975) theory, this study supported Pritchard, et al.’s (1999) study which distinguished commitment from loyalty. Nevertheless, Prichard, et al.’s (1999) models tested only the evidence of commitment and failed to evaluate commitment itself and consider psychological attachment components. Other researchers state psychological attachment is critical in developing loyalty because loyalty is a behavior pledged or bound by commitment and commitment is a process involving the development of psychological attachment (Day, 1969; Kiesker, 1977; Buchanan, 1985; Backman & Crompton, 1991; Bettencourt, 1997). Hence, loyalty measurement should consider psychological attachment. Based upon the above premise, this study adds psychological attachment as a mediating variable for loyalty. In this study, both commitment and the evidence of commitment are measured. Commitment is measured by psychological attachment and evidence of commitment is measured by resistance to change to competitors.

Furthermore, in Pritchard, et al’s (1999) model, the following three commitment antecedent processes were involved: an informational process, an identification process, and a volitional process. The information process describes how people manage...
information about their product preferences. First, a person’s resistance to change to
competitors would be maximized when he or she is very confident about his or her
product choices; the more confidence a person possesses about his or her product
judgment, the more stable his or her brand attitude is. Second, a person’s product
preference will be stabilized when a person wants to avoid the psychological costs of
dissonance. In other words, when a person is loyal to a product, he or she will pay less
attention to competing products’ information. This is especially true when the new
information requires major cognitive rethinking.

The identification process indicates that a person tends to be committed to a
product when he or she can personally identify with the image and value of the product.
The volitional process investigates whether a person’s product preference is led by his or
her own free choice. According to Pritchard et al. (1999), the higher degree of volition
perceived by a person, the greater commitment is demonstrated by this person.

Nevertheless, other antecedents, which are not evaluated in Pritchard et al.’s
(1999) models, also have the capacity to serve as commitment’s antecedents, such as
benefits and trust (Dick & Basu, 1994; Bowen & Shoemaker, 1998). Therefore, building
on Pritchard et al.’s (1999) “Competing Model of Commitment and Its Link with
Loyalty” and other works from the literature, this study develops a relationship model
between commitment and loyalty. The model conceptualizes that commitment is a key
mediating variable for loyalty and that commitment can be measured by psychological
attachment. At the same time, loyalty is a behavior, led by commitment, that comprises
two components: repeat purchase and partnership-like behavior. The model further
suggests that benefits, trust, and personal identification are the antecedents of commitment and loyalty is the consequence of commitment.

Statement of Problem

The close association of commitment and loyalty has caused some definitional and measurement problems. Pritchard, et al. (1999) distinguished commitment from loyalty. However, they examined the evidence of commitment and failed to assess commitment itself and to assess the role psychological attachment plays in developing loyalty. Many researchers agree that commitment is a psychological attachment which customers possess toward a company and this psychological attachment leads to customers' loyalty behaviors. Therefore, this study tests whether commitment is a key-mediating variable for loyalty. This study investigated the relationship between commitment and loyalty as well as the antecedents and consequences of commitment and loyalty. Additionally, the study was conducted in a middle-scale business hotel to examine whether the hypothesized relationships would hold for this segment.

Objectives of the Study

Multiple research objectives, emanating from the proposed relationship model, are addressed in this dissertation. This dissertation proposes that commitment is a key mediating variable for loyalty since many researchers suggest that loyalty is a behavior resulting from commitment.

The primary goal of this study is to empirically examine whether commitment is a key-mediating variable of loyalty. In addition, the components of commitment and
loyalty are investigated. Furthermore, the antecedents and consequences of commitment and loyalty are tested. Six hypotheses will be used to accomplish these objectives.

Hypotheses

The six hypotheses to be tested are as follows:

H1: Benefits has a direct and positive effect on commitment.
H2: Trust has a direct and positive effect on commitment.
H3: Personal identification has a direct and positive effect on commitment.
H4: Commitment has a direct and positive effect on resistance to change to competitors.
H5: Resistance to change to competitors has a direct and positive effect on repeat purchase.
H6: Resistance to change to competitors has a direct and positive effect on partnership-like activities.

The statistical methods to be used to test the above hypotheses are discussed in Chapter 3.

Justification

The goal of this study is to understand the relationship between commitment and loyalty. The results will be valuable to marketing researchers who are interested in commitment and loyalty constructs and are looking for more research that examines the complicated relationship between commitment and loyalty. In addition, a proposed relationship model was tested in a hotel setting and the results should provide valuable insights to managers in the hotel industry by answering the following two questions: first,
do the proposed three commitment antecedents (benefits, trust, person identification) have significant impacts on the development of psychological attachment and resistance to change to competitors? second, does resistance to change have a significant, direct effect on loyalty? Furthermore, testing commitment as the key-mediating variable for loyalty will provide managers with a better understanding of whether benefits, trust, and personal identification directly cause loyalty, or whether they indirectly lead to loyalty via the mediating variable. Upon the evaluation of the effects of benefits, trust, and personal identification on loyalty, this study will determine whether the antecedents are magnified by way of the mediating variable. Hence, based on the results of this research, managers will know the specific area to emphasize to increase customer loyalty.

**Delimitations of the Study**

The delimitations contained in this study are listed below.

1. The research setting for this study was a business hotel. Thus, the application of the results of this study to other types of properties or to other segments of the hospitality industry may be limited.

2. Because a convenience sample was selected in a single business hotel, the results of this study may not be representative for all business travelers. Therefore, the results of the study may not be generalizable.

3. The model hypothesized in this study did not examine all the possible paths which are usually considered to be antecedents to commitment. Focusing on the main paths was the purpose of this study.
4. Because of privacy issues, there was no way to obtain non-respondents’ addresses or phone numbers to contact them. The inability to access the non-respondents to assess their bias is a limitation of this study.

Definitions

Benefits. Product and service benefits are the particular product and service attributes which are personally valuable to the customers (Meyers-Levy & Malaviya, 1999).

Trust. One party’s confidence in its exchange partner’s reliability and integrity; a willingness to rely on an exchange partner in whom one has confidence (Morgan & Hunt, 1994; Moorman, Desphande, & Zaltman, 1993).

Personal Identification. Personal identifying happens when there are consistencies or congruence between customers’ personal values and self-images and a company’s values and images (Crosby & Taylor, 1983).

Commitment. A psychological attachment or an affective attachment which produces an enduring desire to maintain long-term relationships. Resistance to change to competitors is the evidence of commitment (Beatty & Kahle, 1988; Bettencourt, 1997; Crosby & Taylor, 1983).

Resistance to Change to Competitors. A stable preference that is bound by an attitude of resistance to change. The degree of resistance displayed by customers when facing competitors’ promotions (Crosby & Taylor, 1983; Pritchard, et. al., 1999).

Loyalty. A behavior led by commitment that can be measured by two components: repeat purchase and partnership-like activities.

Figure 4 illustrates the relationship between commitment and loyalty.
Figure 4. The Relationship between Commitment and Loyalty: Commitment as a Key-Mediating Variable for Loyalty
CHAPTER 2

REVIEW OF LITERATURE

Introduction

In this chapter, a review of the current research on commitment and loyalty is presented. The review includes literature from relationship marketing, services marketing, hospitality marketing, psychology, consumer behavior, and organizational behavior. Following the literature review, a theoretically supported model of commitment and loyalty is presented (see Figure 7).

This model proposes that commitment is a form of psychological attachment that leads one to resist changing from one product/service provider to its competitors and that this psychological attachment is a key-mediating variable for loyalty. The causal relationship between commitment and loyalty is tested. In addition, the model suggests that benefits, trust, and personal identification are antecedents of commitment, and loyalty is a consequent behavior of commitment. Loyalty is examined by two elements: repeat purchase and partnership-like activities. Furthermore, resistance to change to competitors is considered to be an antecedent of loyalty. Through this literature review, conceptual support for the research hypotheses is provided.

The following sections provide detailed discussion of each construct in the model. First, the benefits, trust, and personal identification constructs are presented.
Second, the commitment and resistance to change to competitors constructs are discussed. Finally, the loyalty behavior construct is described.

Antecedents of Commitment

This dissertation defines commitment as a psychological attachment that a customer possesses toward a company. The antecedents of commitment tested in this dissertation are: benefits, trust, and personal identification. Each construct is discussed in the following sections.

Benefits

Product or service benefits result from the particular product/service attributes which are personally valuable to customers (Meyers-Levy & Malaviya, 1999). In order to make a commitment to a service provider, customers need to receive benefits from that service provider (Bowen & Shoemaker, 1998). Morgan and Hunt (1994) and Bowen and Shoemaker (1998) found a positive relationship between benefits and relationship commitment.

According to Berry (1995), service providers can offer three types of benefits to entice customers to maintain long-term relationships: core product performance benefits, social benefits, and risk-reducing benefits.

Core Product Performance Benefits

Core products performance benefits are benefits which customers look for from the purchase of the products. According to Berry (1995), this type of benefit is part of the service-delivery system and primarily provides solutions to customers' problems.
The specific desired benefits are different among customers in different segments (Mowen & Minor, 1994; Dube & Renaghan, 1999). For instance, the core product performance benefits which business travelers expect are different from those that pleasure travelers seek.

A hotel must first fulfill the common requirements of all target customers regarding the product features such as comfortable beds, soundproof rooms, secure environments, and free local phone calls. Additionally, the hotel also needs to cater to the different specifications of customers in each different segment; a hotel needs to accommodate diverse customer segments by delivering “the appropriate bundle of benefits for each segment” (Dube & Renaghan, 1999, p. 94). Hotel managers can utilize different product features to satisfy different customer segments’ specific requirements.

The product features, which must be present for business travelers to enjoy the hotel stay, might include office equipment that helps them work in the hotel room, including a fax machine and Internet access. On the other hand, pleasure travelers might search for travel-related sources including local information on tours, sightseeing, shopping, dining, and entertainment, to augment their hotel stay. Hence, a hotel should deliver the core product performance benefits by fulfilling the particular criteria of customers in each different segment.

A hotel can provide several attributes to its customers for creating value, for example, a hassle-free stay, occasional gifts, upgrades, local information and connections. Or the hotel may have a frequent-guest program that allows customers to earn points toward free accommodations (Bowen & Shoemaker, 1998). Once customers
receive benefits from the hotel, they are more likely to develop a positive attitude and commitment toward the hotel (Bowen & Shoemaker, 1998; Dube & Renaghan, 1999).

**Social Benefits**

Social benefits refer to the providers’ proactive service attitudes and personalized and customized services. These social benefits are similar to Gwinner, Gremler, and Bitner’s (1998) definition of customized benefits. According to these researchers, when service providers can tailor their services to meet customers’ special needs, the customers will perceive that they receive preferential treatment, including “extra attention or personal recognition, and special service not available to other customers” (p. 105).

According to Parasuraman, Zeithaml, and Berry (1991), the more personalized and customized services customers receive from service providers, the closer relationships customers will have with the service providers. Service providers may make their customers feel special and unique by utilizing information about past preferences to provide them with preferential treatment and additional services (Gwinner, et al., 1998). For instance, a hotel may expedite repeat customers’ registrations, comply with customers’ early check-in and late check-out requirements, and accommodate customers’ requests for specific rooms (Bowen & Shoemaker, 1998).

Moreover, “service augmentation” is a way to provide special treatment to customers (Berry, 1983; Gwinner, et al., 1998). For example, enhancing service encounters is one way to augment service. It is difficult for a hotel to differentiate itself by merely delivering “what is supposed to be delivered”; only when a hotel creates a successful service encounter will it become superior to its competitors. The interaction between employees and customers plays a critical role in satisfying customers and these
satisfied customers tend to have closer relationships with the service provider (Parasuraman, et al., 1991).

Risk-Reducing Benefits

The third type of benefits that service providers can offer to their customers is risk-reducing benefits (Berry, 1995). Risk-reducing benefits are similar to Gwinner, et al.'s (1998) definition of psychological benefits. According to Gwinner, et al., service providers may demonstrate their competency by constantly providing high-quality service that earn the customers' confidence and trust – this reduces their anxiety on future purchases. In this study, risk-reducing benefits are not included in the benefits construct but are included in the trust construct because trust is multidimensional and reducing perceived risk is only one dimension of trust. Therefore, in this study benefits are examined as one construct comprised of both core product performance benefits and social benefits.

The literature on benefits illustrates that when providers deliver superior value and offer extraordinary benefits to customers, customers are more likely to commit themselves to establish, develop, and maintain relationships with the providers (Morgan & Hunt, 1994; Berry, 1995; Bowen & Shoemaker, 1998; Dube & Renaghan, 1999). Thus, this study proposed a positive relationship between benefits and commitment.

The first hypothesis tested in this dissertation is H1:

Hypothesis 1-- Benefits has a direct and positive effect on commitment.
Trust

According to Morgan and Hunt (1994), trust is one party’s confidence in its exchange partner’s reliability and integrity. Based on Moorman, Desphande, and Zaltman’s (1993) definition, trust is “a willingness to rely on an exchange partner in whom one has confidence” (p. 82). Additionally, as Schurr and Ozanne (1985) postulated, trust is the “belief that a party’s word or promise is reliable and a party will fulfill its obligations in an exchange relationship” (p. 940).

Trust has been proven to be a powerful determinant of commitment in many different relationships, including the relationship between employees and organizations, buyers and suppliers, shoppers and retailers, customers and financial services, and travelers and hotels (Berry & Parasuraman, 1991; Bowen & Shoemaker, 1998; Morgan & Hunt, 1994; Sharma & Patterson, 1999). According to Morgan and Hunt (1994), trust leads to commitment. Earning customers’ trust is critical for a company to develop customers’ commitment toward it. Trust influences the level of a customer’s relationship commitment (Moorman, et al., 1993).

Schurr and Ozanne (1985) indicated that one party’s trust toward another party will significantly influence one party’s attitude and behavior toward the other party. When the trust level is low, less favorable attitudes and behaviors will be generated. In contrast, when one party highly trusts the other party, this party will hold a favorable attitude toward the other party, will desire to maintain the long-term relationship with the other party, and will coordinate and cooperate with the other party (Morgan & Hunt, 1994; Bowen & Shoemaker, 1998; Sharma & Patterson, 1999).
In order to make a commitment to a service provider, customers need to trust that service provider (Berry & Parasuraman, 1991; Bowen & Shoemaker, 1998; Sharma & Patterson, 1999). Dwyer, Schurr, and Oh (1987), Morgan and Hunt (1994), and Bowen and Shoemaker (1998) found a positive relationship between trust and relationship commitment. Accordingly, trust is decisive for continuity of a relationship between customers and service providers (Berry & Parasuraman, 1991; Sharama & Patterson, 1999).

Moorman, et al. (1993) postulated that trust exists when a party is confident in its partner and also is willing to rely on this partner. According to them, trust can be broken down into two components: customers' confidence in a company and customers' willingness to rely on the company. First, customers should feel that the company is trustworthy, which means customers believe and have confidence in the company's expertise and reliability to provide consistently high-quality service. Secondly, customers who trust the company are willing to rely on the company for providing the services.

Ultimately, along with the customers' confidence and reliance, customers will form alliances with the service providers when they trust the providers. Alliances between customers and service providers can be formed only when there is trust between these two parties (Berry, 1995). Customers who trust a company tend to be cooperative because a relationship based on trust is so valuable and customers will commit themselves to do things to benefit the company in order to maintain a mutually beneficial long-term relationship. Therefore, trusting customers may work jointly with companies to solve problems (Anderson & Narus, 1990).
In addition, trust plays a particularly critical role in developing customers’ psychological attachment and return intentions. Customers are motivated to maintain a relationship when they trust their service providers and have confidence in their service providers’ competencies and abilities (Bowen & Shoemaker, 1998; Sharma & Patterson, 1999).

Risks Associated with Purchase of Hospitality Services

In the hospitality industry, there is a high degree of risk associated with purchasing the hospitality services because of the intangibility, variability, and uncertainty of the hospitality services; therefore, developing customers’ trust is a risk-reduction strategy (Mitra, Resis, & Capella, 1999).

Unlike products and goods, whose quality customers can evaluate prior to purchase, hospitality services are intangible, and customers can neither obtain a great amount of information and knowledge of services beforehand nor can they evaluate the quality of the services until they experience them. This lesser amount of pre-purchase information is associated with an increased perceived risk of purchase (Zeithaml, 1981).

Various customers may perceive more risk associated with purchasing hospitality services because of their variability and non-standardized characteristics (Zeithaml, 1981). Because of the built-in variances among different employees’ customer service abilities, customers’ experiences will be different every time. In other words, customers’ previous satisfaction with the service does not guarantee they will definitely be satisfied next time; enormous uncertainty is inherent in the hospitality industry.
Developing Customer Trust to Reduce Perceived Risk Associated with Purchase of Hospitality Services

Because customers perceive high risks associated with the purchase of hospitality services, they will search for a hotel with the competency and ability on which they can rely to perform in an expected manner that will lead to positive outcomes for them (Morgan & Hunt, 1994). According to Parasuraman, Zeithaml, and Berry (1988), a service provider should display its reliability by performing “the promised service dependably and accurately” (p. 23). A hotel demonstrates its credibility by repeat and constant trustworthy performances (Lindskold, 1978).

A hotel can gain customers’ trust through its technical and functional qualities (Sharma & Patterson, 1999). Technical quality refers to core products, which relate to the hotel’s operational process (e.g., the hotel’s competency, consistency, honesty, integrity, and fairness). For example, the hotel may exhibit its competency and ability to perform well in the operational process by providing constant high-technical quality including accurate reservations, effective communication, and a safe environment in which customers may leave their valuables (Bowen & Shoemaker, 1998).

Functional quality refers to the interaction between employees and customers (e.g., employees’ responsiveness, helpfulness, and benevolence). According to Parasuraman, et al. (1988), employees’ knowledge and courtesy will inspire customers’ trust and confidence. For example, employees who have a professional appearances and behave in a professional manner, keep customers apprised of any relevant information, assure them that problems will be handled, are considerate of customers’ property, and have the customers’ best interests at heart are an example of high functional quality.
(Parasuraman, et al., 1988). Based on the previous rationale, the second hypothesis tested in this dissertation is H2:

Hypothesis 2-- Trust has a direct and positive effect on commitment.

**Personal Identification**

According to Crosby and Taylor (1983), personal identification is a process which happens when there are consistencies or congruencies between one's personal values and self-image and a company's values and image. Personal identification affects the relationship between customers and a company in two ways: before customers purchase the product/service and after customers purchase the product/service. First, customers' personal identifications influence their purchase decision; when customers can personally identify with a company's values and image, they tend to purchase the products/services from the company. Second, after customers purchase the product/service, their personal identifications with the company will also strengthen their psychological attachment toward the company (Dick & Basu, 1994; Pritchard, et. al., 1999).

Personal identification with a product or service leads to purchase decisions because customers' purchase behaviors are social behaviors. It has been well-documented that inferences of persons can be drawn based on the product/service they purchase. Therefore, some people communicate their self-defined images and social placement by the products/services with which they are associated. Hence, they will purchase the products/services which possess qualities that are similar to their perceived self-images (Solomon, 1983).

The criteria consumers use to judge products/services tend to focus on the social meanings inherent in the products/services, rather than the functional utilities of the
products/services (Assael, 1987). Sometimes customers do not know about a company's internal values and goals, and thus customers' identifications with a company may be based on the image of the company. For instance, customers of Four Seasons Hotels might not know that its mission statement is to: "create properties of enduring value using superior design and finishes and support them with a deeply instilled ethic of personal service"; nevertheless, customers know about the images which Four Seasons conveys to the public as luxury hotels, resorts, and resort clubs. Thus, the customer identifies with Four Seasons through its perceived public image (Four Seasons, 2001).

In addition to leading customers to purchase the products/services with which they can identify, customers' personal identifications with a company will further strengthen customers' psychological attachment to the company. According to O’Reilly and Chatman (1986), Dick and Basu (1994) and Pritchard, et al. (1999), an essential mechanism to developing psychological attachment is the identification process. Crosby and Taylor (1983) postulated that when customers' personal values and self-images are consistent with a company's image, customers tend to prefer that specific company and, furthermore, their resistance to change will be strengthened by this congruence. Additionally, customers' preferences will be solidified when their key goals, beliefs, certain important values, and self-images are satisfied through being continuously associated with that brand (Pritchard, et al., 1992). Moreover, personal identification has been proven to play an essential role in developing psychological attachment in many different relationships including the relationship between customers and a service provider, tourists and tour destination, and employees and an organization.
Pritchard, et al. (1999) found a positive relationship between personal identification and relationship commitment in service contexts. They found that in airline and hotel environments, "the more strongly consumers identified with the values and images embodied by a particular brand, the greater their sense of resistance to change that preference would become" (p. 335). A strong resemblance in leisure behavior indicated that participants committed to an activity or a provider because they found a congruence between the goals and values of the activity or the provider and their own. When persons can identify themselves with a certain activity or provider, their commitment will be strengthened (Buchanan, 1985).

Similarly, when tourists can identify with a destination, they will be motivated to visit that destination and they will develop favorable attitudes and psychological attachments toward the destination. Tourists choose a destination whose image matches their personal values and self-image; the congruency between the destination image and the tourist's self image motives them to visit that destination because this action will satisfy their self-congruence needs (Solomon, 1983; Assael, 1987; Sirgy & Su, 2000).

The effect of self-congruence has been extensively studied in travel behavior. Tourists' self-congruity is a process of matching tourists' self-images to a destination visitor image. Tourists perceive each destination differently because they use their self-concepts as cognitive references in evaluating the symbolic cues perceived by visitors of the destinations. In other words, "tourists perceived destinations differently in terms of the destinations' typical visitors" (Sirgy & Su, 2000, p. 341). When the consistency and the match between the destination visitors' image and the tourists' self-images are satisfied, tourists will be more likely to develop favorable attitudes toward that
destination (Sirgy & Su, 2000). According to Williams, Patterson, Roggenbuck, and Watson (1992), when tourists can identify themselves with a certain place, they will develop an emotional bond with, and psychological attachment to, the place.

Based upon the above premise, this study proposed a positive relationship between personal identification and commitment. The third hypothesis tested in this dissertation is H3:

Hypothesis 3-- Personal identification has a direct and positive effect on commitment.

Commitment

In this section, the distinction between commitment and loyalty is discussed. Then, the component of commitment, psychological attachment, is explained.

Distinction between Commitment and Loyalty

As previously discussed, there is no common agreement on the definitions of commitment and loyalty. Most commitment research proposes that commitment is an affective attachment or psychological attachment. In addition, this attachment will produce an enduring desire of maintaining a long-term relationship (Jacoby & Kyner, 1973; Morgan & Hunt, 1994; Bettencourt, 1997). Many researchers have indicated that commitment is an attitude which signifies an enduring desire to maintain a long-term relationship (Morgan & Hunt, 1994; Bettencourt, 1997; O’Reilly & Chatman, 1986; Oliver, 1999). Therefore, the central theme of commitment is a “psychological attachment” and a “desire” to maintain a long-term relationship, both affective and cognitive concepts rather than behavioral concepts.
Similarly, most loyalty research proclaims that loyalty is behavioral (Neal, 2000). Loyalty is a repeat purchase behavior led by favorable attitudes (Day, 1969; Backman & Crompton, 1991; Selin, et al., 1988), and loyalty is deemed as a consistent and biased purchase behavior resulting from the psychological decision-making and evaluative process (Jacoby & Kyner, 1973). Additionally, Oliver (1999) postulated that loyalty is a consistent repurchasing behavior, led by deep commitment and is resistant to switching behaviors induced by situational influences and competitors’ marketing efforts.

The author agrees there is a sequence that occurs between commitment and loyalty. Commitment leads to loyalty, and loyalty is a result of commitment. The rationale for considering commitment happening prior to loyalty behavior is derived from Fishbein and Ajzen’s (1973; 1975) and Ajzen & Fishbein’s (1977) cognition-affect-behavior intention model. According to Fishbein and Ajzen (1973; 1975), attitudes are predictors of behaviors. Consumers form their beliefs of products’ attributes through their cognitive-learning; consumers then generate affective responses and attitudes regarding their likes or dislikes for the products; and finally, the previous attitudes will lead to purchase behavior intentions and purchase behaviors (Fishbein & Ajzen, 1973, 1975).

The relationship between cognition, affect, and behavior has been examined in several service contexts, including sporting events, casinos, restaurants, hotels, and tourist destination settings (Baker, Hozier, & Rogers, 1994; Pettijohn, Pettijohn, & Luke, 1997; Tam, 2000; Wakefield & Blodgett, 1996). Wakefield and Blodgett (1996) applied Bitner’s (1992) servicescape to examine the relationship between customers’ awareness of a service setting’s environment dimension (cognition), customers’ internal responses
(affect), and customers' behaviors in leisure service settings (football and basketball stadiums and casinos). Based on Bitner's (1992) servicescape, when customers perceive the service environment positively, they will generate positive internal responses, such as favorable attitudes. Then, these internal responses will lead customers to patronize the service providers, stay longer, and repeat patronage. Wakefield and Blodgett's (1996) research results were consistent with Bitner's (1992) servicescape framework. In Wakefield and Blodgett's (1996) study, customers' positive responses (affect) to overall perceptions of servicescapes (cognition) resulted in customers' approach behaviors (behavior).

At the same time, in a restaurant setting, Pettijohn, Pettijohn, and Luke (1997) found that customers' cognitive evaluations of a fast food restaurant's attributes (i.e., price, food quality, speed of service, courtesy, cleanliness, store appearance, menu variety, and value) led to their satisfaction (cognition and affect). Then, customers' satisfaction influenced their future patronage behaviors.

Additionally, Tam (2000) applied the cognitive-affect-behavior model in a hotel setting. In Tam's study, customers first cognitively evaluated the hotel's performance and then generated emotional/affective responses (satisfaction or dissatisfaction). Finally, the affect led to customers' behaviors. Tam (2000) found that hotel customers' perceptions of service quality and the value provided by hotels influenced their satisfaction and their satisfaction directed their behavioral intentions of repurchase.

Moreover, it is appropriate to apply the cognitive-affect-behavior model to examine travelers' behaviors. According to Baker, Hozier, and Rogers (1994), the process of a traveler's destination selection follows the cognitive-affect-behavior pattern. First,
travelers generate their perceptions of the destination based upon the physical attributes of that tour destination (i.e., quality of experiences, attractions, and value/environment). In turn, those perceptions will lead travelers to develop positive or negative attitudes toward the destination. Furthermore, travelers' attitudes will lead to their preferences and the preferences will direct their behaviors to select or not select the destination.

It is suitable to apply the cognitive-affect-behavior model to analyze hotel customers. Hotel customers should develop their attitudes before their hotel stay behavior; in other words, customers' hotel stays are a rational result of their attitudes. For example, first-time customers may stay with a hotel based on their cognitive evaluations of the hotel. However, customers' repeat purchase behaviors will be led by the attitudes they developed from previous experiences. Satisfied customers are more likely to return to the hotel; conversely, dissatisfied customers tend not to return.

During the consumer purchase decision-making process, because of the high risk associated with the hotel purchase, hotel customers generally go through the pre-purchase information search process to form cognitive beliefs toward the hotel, and this belief leads to a purchasing decision. Then, hotel customers will develop their affect based on the hotel stay experience. In the future, whether customers return depends much more on their affect toward the hotel than on the cognitive beliefs about the hotel (Zeithmal, 1981).

According to Ray (1973), when consumers select services, their previous experiences play an important role (Zeithmal, 1981). Many researchers postulated that customer satisfaction leads to customer loyalty behaviors (Haskett, Jones, Loveman, Sasser, & Schlesinger, 1994; Dick & Basu, 1994; Zeithaml, Berry, & Parasuraman,
1996). For example, when customers derive favorable internal responses to a service provider from the experience, they desire to maintain a long-term relationship with the provider by returning, staying longer, and establishing affiliation and commitment (Bitner, 1992). Besides, when customers have a satisfying experience, they will develop positive attitudes toward the provider and thus generate favorable behaviors, including remaining loyal to the provider, spending more with the provider, and recommending the provider (Zeithaml, et al, 1996). The resulting internal responses and perceived satisfaction will cause loyal behaviors. Hence, hotel customers’ stays should pass through the cognitive-affect-behavior phases: a preferable cognitive evaluation initiates the first-time visit and positive experience leads to the repeat purchases.

Based upon the above premise, this dissertation considers commitment and loyalty as two distinctive constructs: commitment is an attitude and loyalty is a committed behavior. Commitment is a psychological attachment which pledges or binds individuals to loyalty behaviors (Backman & Crompton, 1991; Bettencourt, 1997; Day, 1969; Kiesler, 1977).

**Psychological Attachment**

Although numerous researchers have studied commitment and have yet to reach a consensus on a definition, the central theme in most commitment research suggest that commitment is a psychological attachment to a brand within a product class (Beatty & Kahle, 1988).

In leisure studies, Buchanan (1985) referred to commitment as affective attachment. In the consumer behavior area, Beatty and Kahle (1988) defined commitment as a representation of the “emotional or psychological attachment to a brand
within a product class” (p. 4). In services marketing, commitment measures customers' attitudes of attachment to a brand; commitment reflects customers' psychological attachment to a company (Bettencourt, 1997; Pritchard et al., 1999).

In this dissertation, commitment is defined as an affective construct, comprised of a process of psychological attachment leading to a desire to maintain a long-term relationship and resistance to change to competitors.

Two researchers, Oliver (1999) and Buchanan (1985), illustrated the developing process of psychological attachment in detail. The central theme regarding the process of psychological attachment development is similar between these two projects, even though these researchers use different terms to describe this progression. Following is an examination of the work of these two research projects.

**Oliver’s Loyalty Phases**

As mentioned, Oliver (1999) is one of the researchers who regarded commitment as a part of loyalty and used affective and conative loyalty to refer to commitment. In Oliver's (1999) four loyalty phases, the affective and conative loyalty phases illustrate the development process of psychological attachment (see Figure 5).

![Oliver's Loyalty Phases Diagram](image)

**Figure 5.** Oliver’s Loyalty Phases

Source: Oliver (1999)
Oliver (1999) demonstrated the progression of psychological attachment with four loyalty phases. According to Oliver, the four phases of loyalty development are: cognitive, affective, conative, and action.

Generally speaking, customers first cognitively evaluate all the available alternatives based on the brand attribute information, such as price and psychical features of the product/service. In the first phase, customers' choices are based only on cognitive evaluations. After cumulative satisfying experiences, customers will develop a liking and favorable attitude in the affective phase. In this phase, a psychological attachment is developed and persons are willing to maintain the relationship (Bendapudi & Berry, 1997; Oliver, 1999). Followed by the second affective phase is the brand-specific loyal phase. In this conative phase, customers deliberately maintain the relationships with the specific companies and their repeat purchase intentions are formed. Finally, the return intention will be transferred into readiness to act in the final action loyalty phase. Once customers reach this high level of commitment, their deep psychological attachment has led to their resistance to change to competitors and minimized their switching behaviors.

Buchanan’s Evolvement of Commitment

As previously discussed, Buchanan (1985) is one of the researchers who considered loyalty as a behavioral-format commitment. According to Buchanan, commitment includes a wide range of elements starting from affective attachment to loyalty behaviors (see Figure 6). Commitment is a process of the development of psychological attachment. There are three stages customers progress through to become committed to a service provider. First, customers may prefer a certain service provider due to simple cognitive evaluation. Second, after cumulative satisfying experiences,
customers form a favorable attitude and positive psychological attachment to the service provider and because of the psychological attachment, they will desire to maintain a long-term relationship with the service provider. Third, the psychological attachment will grow to generate customers’ repeat business and partnership-like activities.

Figure 6. Buchanan’s Evolvement of Commitment

Source: Buchanan (1985)

Buchanan (1985) proclaimed that psychological attachment evolves from the continuance level to the cohesion level and ends with the control level. At the continuance level, customers maintain the relationship with a company not out of strong positive affect but simply because they cognitively evaluate the company more preferably among all available alternatives.

As customers interact with the company and have positive experiences, their favorable attitude will advance into a positive psychological attachment at the cohesion level. At this level, because of the benefits customers receive from the company, customers will desire to maintain the relationship with the company to which they are psychologically attached (Buchanan, 1985).

Finally, the control level is the highest affective attachment level. In this level, customers will care about the success of the company and furthermore dedicate
themselves to maximizing the success of the company (Buchanan, 1985). For instance, when customers see an idea that they liked at another company, they will share the ideas with the company to which they are attached. Another example is when customers notice problems, they are more likely to take initiatives to inform the management.

Buchanan (1985) included both commitment attitude and loyalty behavior in his theory of commitment evolvement. He defined the loyalty behaviors—repeat purchase and partnership-like activities—as the highest affective attachment level—that is the control level of commitment.

Resistance to Change to Competitors

When a customer possesses a strong psychological attachment towards a company, he or she tends to be able to resist switching to competitors. In this study, resistance to change to competitors is assessed as the evidence of commitment.

Selin, et al. (1988) indicated that commitment should be assessed by the degree of resistance to competitors that customers display. Further, Pritchard et al. (1999) posited that resistance to change is principal evidence of commitment. Commitment is evidenced when customers not only possess psychological attachment but also demonstrate the resistance to change to competitors.

As explained in the previous section, when customers are psychologically attached to a company, they will desire to maintain a long-term relationship with the company. And, this psychological attachment further enables customers to conquer competitors’ attractive offerings and resist changing to competitors. Customers’ psychological attachment will lead to their resistance to counter-persuasions. According
to Dick and Basu (1994), when customers possess sufficient psychological attachment
toward a company, they "demonstrate enhanced resistance to persuasion attempts" (p. 107). Resistance to change is one effect of commitment. A positive relationship exists between degrees of commitment and resistance to change. When customers' psychological attachments are sufficient enough, they are more likely to resist changing to competitors and less likely to switch to other companies (Buchanan, 1985).

In consumer behavior, it is well accepted that individuals with strong attitudes tend to resist attitude change (Petty & Cacioppo, 1986). A high level of psychological attachment enables customers to thwart competitors' persuasive efforts and "individuals holding strong attitudes are likely to be defense motivated instead of accuracy motivated" (Ahluwalia, 2000, p. 218). In other words, when committed customers are confronted with competitors' offerings, they automatically defend their existing attitudes and will scrutinize the counter-information more critically. If competitors' offers are indeed difficult to refute, committed customers sometimes will decrease their cognitive evaluations of competitors' attractive offerings and emphasize their attitude-consistent beliefs (Ahluwalia, 2000).

Most empirical research suggests that commitment should demonstrate a lasting and stable preference, and resistance to change is proof of a stable preference (Crosby & Tayler, 1983; Pritchard, et al., 1999). According to Buchanan (1985), commitment denotes the willingness to perform consistent behaviors and reject alternative behaviors. Persistence is one characteristic inherent in commitment because commitment implies a "willingness to make short-term sacrifices to realize longer-term benefits" (Gundlach, Achrol, Mentzer, 1995, p. 78) despite competitors' marketing efforts. Thus, commitment
produces consistent behaviors over time. Hence, commitment leads to customers’ stable preferences, resistance to persuasive communications, and consistent behaviors (Pritchard, et al., 1992). Similar to Pritchard et al’s (1999) proposition that resistance to change is evidence of commitment, the author hypothesizes that there is a positive relationship between commitment and resistance to change to competitors.

The fourth hypothesis tested in this dissertation is H4:

H4: Commitment has a direct and positive effect on resistance to change to competitors.

Loyalty

Many researchers postulated that loyalty is a commitment behavior. Day (1969) indicated that loyalty is a repeat purchase behavior exhibited with favorable attitudes. Jacoby and Kyner (1973) defined loyalty as a consistent and biased purchase behavior resulting from the psychological decision-making and evaluative processes. Bettencourt (1997) referred to loyalty as a customer behavior indicator of repeat purchase and voluntary performance. Additionally, Oliver (1999) postulated that loyalty is a consistent repurchasing behavior generated by deep commitment despite possible switching behaviors induced by situational influences and competitors’ marketing efforts. Hence, the author regards loyalty as a committed behavior. Loyalty is evaluated solely as a behavioral construct in this dissertation.

Several loyalty behaviors that committed customers will demonstrate include, but are not limited to, repeat purchase and partnership-like activities. These loyalty behaviors are described in detail in the following section.
Repeat Purchase

Several researchers have shown that loyal customers maintain relationships with companies by providing repeat patronage (Haywood, 1988; Bowen & Shoemaker, 1998; Pritchard, et al., 1999; White & Schneider, 2000). Generally speaking, repeat purchases are measured by customers' intent to return, frequency of purchase, and proportion of purchase (Selin, et al., 1988; Backman & Crompton, 1991; Pritchard, et al., 1999).

Brown (1952) proposed four levels of customer repeat purchase behavior, depending on the sequences of purchasing a specific brand. When customers' purchase sequences are "AAAAAA," they demonstrate an undivided loyalty behavior. When customers purchase multiple brands in sequence (e.g., "ABABAB" or "AAABBB"), they exhibit divided loyalty behavior or unstable loyalty behavior. When customers never purchase the specific brand again ("ABCDEF"), there is no loyalty.

When customers have stronger attitudes toward one brand than to others, or they purchase one brand based upon their product-attribute evaluations, they are not making a commitment to a specific brand. Therefore, they may exhibit divided loyalty behaviors and unstable loyalty behaviors. At that time, customers may have intentions to return and provide repeat business but they may also hold multi-brand preferences. However, over time customers get valued benefits from one service provider more than another, identify with one service provider more than with another, and trust one service provider more than another. As a result, customers' psychological attachment will be strengthened, they will desire to continue their relationships with the service providers, and they will resist changing to competitors. Consequently, customers' undivided loyalty behaviors will have been developed.
According to Day (1969), loyal customers devote at least half of their product purchase to a single brand. Therefore, having repeat customers is not enough; a company needs customers who contribute most of their product purchases to the particular company. Similarly, hotels strive to obtain customers who stay with them most of the time when customers come to the area.

The most commonly applied method to investigate customers' brand loyalty is proportion of purchase (Jacoby & Kyner, 1973). Assessing customers' proportion of purchase will provide customers' relative brand preferences and their brand-specific loyalty (Day, 1969). The proportion of purchase reveals the strength of customers' brand-specific loyalty (Pritchard et al., 1992). Generally speaking, proportion of purchase is measured by a combination of two questions: (1) Please estimate how many times during the last 12 months you have stayed at a hotel in this area in general; (2) please estimate how many times during the last 12 months you have stayed at this hotel (Selin et al., 1988; Pritchard et al., 1999); or a single question asking customers whether they stay at this hotel exclusively when they come to this area (White & Schneider, 2000).

From a hotel's viewpoint, having loyal customers' repeat business not only directly contributes to the bottom line but also indirectly reduces the hotel costs and increases its employees' satisfaction. For instance, repeat customers will provide repeat business to the hotel, increase their volume of purchase, or agreeably pay a price premium (Zeithaml, et al., 1996). Loyal customers are more likely to pay the premium price for their favorite product and service. Besides, once repeat customers become familiar with the hotel's
product, they are more likely to try other products offered by the hotel and thus their spending will increase (Tepeci, 1999).

In addition, a hotel’s marketing costs will be lower when maintaining an existing customer than when attracting a new one because loyal customers have been immunized to the competitors’ marketing efforts and the money spent on advertising and promotion to acquire new customers can be saved. Moreover, a hotel’s labor costs will also be reduced because repeat customers are familiar with the hotel and thus ask fewer questions and require less assistance (Tepeci, 1999).

Furthermore, employees in the hospitality industry typically prefer a regular clientele because those regulars are customers who are satisfied with the services and having satisfied customers makes employees feel good about themselves. Also, repeat customers tend to treat employees in a pleasant manner and repeat customers’ preferences are much more predictable and easier to service (Haywood, 1988). Based on the previous discussion, the author hypothesized that there is a positive relationship between resistance to change to competitors and repeat purchase.

The fifth hypothesis tested in this dissertation is H5:

H5: Hypothesis -- Resistance to change to competitors has a direct and positive effect on repeat purchase.

**Partnership-Like Activities**

A voluntary partnership is influenced by customers’ commitment. Once customers commit to the relationship, they will cooperate with other members to work jointly to achieve the best outcome (Buchanan, 1985; Morgan & Hunt, 1994; Bendapudi & Berry, 1995). When customers psychologically attach to a company, they will show
concern about the success of the company and become advocates of the company. Once customers are highly committed to a company, they will form the allegiance with the company and will become the company's advocates (Bettencourt, 1997). Therefore, besides continuously purchasing the company’s product/service, the committed customers also express a preference for one company over others, praise the company, say positive things about the company to others, and recommend the company to others (Zeithaml, et al., 1996).

According to White and Schneider’s (2000) commitment classification, customers at the highest commitment level purchase exclusively from a particular company and care about the success of the company. They will become the company’s advocate and act as promoters of the company, including spreading positive word-of-mouth and recommendations.

Similarly, Bettencourt (1997) claims that committed customers will provide several voluntary performances, including helpful and discretionary behaviors that support the company’s competency to deliver quality service. Bettencourt (1997) proposed three categorical types of customer voluntary performances: first, customers’ suggestions for service improvement; second, customers’ cooperation and conscientiousness during the service encounters; and third, customers’ positive word-of-mouth and recommendations.

From a hotel’s standpoint, committed customers are those who voluntarily act as a hotel’s partner. Partnership actions include “strong word-of-mouth, business referrals, providing references, publicity, and serving on advisory boards” (Bowen & Shoemaker, 1998, p. 11). Loyal hotel customers will spread positive word-of-mouth about the hotel.
with which they have developed a relationship. Loyal customers' recommendations and positive word-of-mouth serve as a marketing force for a company; those partnership-like activities are the best available advertising a company can have (Raman, 1999).

Word-of-mouth and personal referrals are especially critical in marketing services. Because of the intangibility of service, before customers purchase services, they do not have any physical evidence to examine the quality of service. This service characteristics make service purchase decisions more risky and uncertain, and thus, customers rely on word-of-mouth and personal referrals heavily to reduce the perceived risk and uncertainty (Mangold, Miller, & Brockway, 1999).

Moreover, before purchasing a service, customers prefer receiving personal referrals and word-of-mouth information because they have great confidence in those personal information sources, and therefore, word-of-mouth and personal referrals substantially influence consumers' service purchases (Mangold, et al., 1999). Personal referrals not only impact new customers' choices of hotel but also the length of their stay. New customers who stay at the hotel because of personal referrals tend to stay longer and contribute more to the bottom line (Tepeci, 1999).

In conjunction with spreading positive word-of-mouth, loyal customers will also take pride in telling their business associates or friends about their favorite hotel since they are personally identified with the hotel. At the same time, they will be more likely to work jointly with the hotel when there are problems because they care about the success of the hotel and are willing to exert effort to maximize the success of the hotel. For example, loyal customers not only require less information themselves, but also serve as an information source for other customers. For example, customers have been
seen in hotels telling other guests about the great restaurants in the hotels. In casinos, customers have been observed explaining how a game or a player's club works to other customers. Additionally, passengers on planes have been seen explaining the lighting system or the audio/visual system to other customers. Furthermore, loyal customers may be willing to serve on a customer advisory board to provide constructive suggestions to hotel management and may also allow a hotel to use their names and positive comments in advertisements (Bowen & Shoemaker, 1998).

Drawing from the above discussion, the author hypothesized a positive relationship between resistance to change to competitors and partnership-like activities. The sixth hypothesis tested is H6:

Hypothesis 6—Resistance to change to competitors has a direct and positive effect on partnership-like activities.

Summary

In this chapter, support for the model shown in Figure 4 has been provided. The order of the variables has been supported as well as the proposed effect of the variables on each other. Figure 7 shows the model with the proposed hypotheses.
Figure 7. The Relationship between Commitment and Loyalty: Commitment as a Key-Mediating Variable for Loyalty
CHAPTER 3

METHODOLOGY

Introduction

Chapter 3 presents the research process in sequence. First, development of the survey instrument is provided; second, sampling procedures and sample size are described; third, data collection and handling process are presented; fourth, the data analysis applied to examine the relationships among the proposed commitment and loyalty model as shown in Figure 7 is explained; and finally, reliability and validity issues are discussed.

Development of the Survey Instrument

The measurement of the constructs and variables in this dissertation stems from prior research. Most of the measurements adopted are from previous studies' validated measurements. A summary of the constructs to be measured and the questions to measure them is provided below.

The purpose of conducting research is to continuously bring new ideas to the existing literature. Based on previous related studies, the author generated her own independent thought of each construct and several new dimensions have been added.
Therefore, this study does not apply the exact same measurement from previous studies to measure each construct.

In this study, the concept of each construct was derived from extensive study and based on previously validated material. The measurement of each construct was comprised of questions which were perceived by the author to best portray the idea of the construct. Furthermore, the measurement was empirically tested to examine whether the proposed notion and revised measurement worked as the author expected. The results of Principal Component Analysis indicated whether the revised measurements possessed sufficient reliability. Because researchers create new models building on existing models and empirically test them, it is hoped that the new models will bring new knowledge.

The purpose of this study is not to retest the reliability of previous measurement; rather, the objective of this study is to explore whether the proposed model works, and revised measurements were considered to be the measurement that best portrays the proposed constructs.

**Benefits**

In this study, benefits are measured by core product performance benefits and social benefits. This study first adopted the reliable measurement established by Bowen and Shoemaker's (1998) studies. Five questions came from Bowen and Shoemaker's measurement of benefits construct with a Cronbach's Alpha value of .72. In addition, this study added 2 questions which were not used in Bowen and Shoemaker's (1998) study regarding core product performance benefits and social benefits among business travelers. One reason for adding these questions was that this study was conducted among business travelers and the service features provided to facilitate business
travelers' work have been proven to be an important core product performance benefits (Bowen & Shoemaker, 1998; Bowen & Chen, 2001). Another reason for adding these two additional questions was that the results of Bowen and Shoemaker's (1998) and Bowen and Chen's (2001) studies indicated that providing room upgrades was considered to be an important benefit which could have effect on developing customers' feelings of loyalty.

Principal Component Analysis was applied to the collected data to explore whether the benefits scales proposed by this study really measured the benefits construct. Therefore, if the results showed that the added extra two questions do not measure the benefits construct, these two questions would not be included in the benefits construct. However, if the results indicated that the two questions measured the benefits construct, which means they load together with the reliable measurement adopted from Bowen and Shoemaker (1998), a new reliable measurement with solid literature review support will be generated. This new measurement will contribute to the benefits construct and measurement.

A 1 (strongly disagree) to 7 (strongly agree) scale was used. The questions used to measure the benefits construct are as follows:

- **BF01** When you return to this hotel, you expect your registration process to be expedited.
- **BF02** The hotel uses information from your prior stay to customize services for you.
- **BF03** The staff recognizes you when you arrive.
- **BF04** The hotel offers you a hassle-free stay.
- **BF05** Employees communicate the attitude that your problems are important to them.
- **BF06** This hotel offers technologically equipped guest rooms so that the room can be used as an office.
- **BF07** The hotel provides room upgrades when available.
Trust

Seven questions used to examine the trust construct came from scales constructed by Bowen and Shoemaker (1998) and Garbarino and Johnson (1999). The first six questions came from Bowen and Shoemaker’s (1998) measurement with a Cronbach’s alpha of .86. In addition, one question constructed by Garbarino and Johnson (1999) measuring the consistency and reliability of a hotel’s performance was added.

A 1 (strongly disagree) to 7 (strongly agree) scale was used. The questions used to measure the trust construct are as follows:

♦ TU01  You have confidence in this hotel.
♦ TU02  The management of this hotel knows the hotel business.
♦ TU03  If you ask management or an employee a question, they will be truthful with you.
♦ TU04  If you make a request at this hotel, no matter how trivial that request, it gets taken care of.
♦ TU05  When employees at this hotel say they will do something, you are sure it will get done.
♦ TU06  You feel that any communication, including reservations, with this hotel will always be accurately received and recorded or filed.
♦ TU07  The performance of this hotel always meets your expectations.

Personal Identification

Four questions used to test the personal identification construct were modified from scales constructed by Pritchard et al. (1999) and O’Reilly & Chatman (1986). The first three questions were adopted from Pritchard et al’s (1999) measurement of position involvement with an internal consistency of .84. In addition, a fourth question was revised from O’Reilly and Chatman’s (1986) internalization dimension of commitment measurement. The revision was necessary because O’Reilly and Chatman’s (1986) study was conducted to examine employee commitment and the notion of employee
commitment is different from customer commitment, and thus, modification is necessary when adopting employee commitment measurement to measure customer commitment.

A 1 (strongly disagree) to 7 (strongly agree) scale was used. The questions used to measure the personal identification construct are as follows:

- PI01 You prefer to stay at this hotel because its image comes closest to reflecting your lifestyle.
- PI02 When you stay at this hotel it reflects the kind of person you are.
- PI03 You prefer to stay at this hotel because its service makes you feel important.
- PI04 Your attachment to this hotel is primarily based on the similarity of your values and those represented by this hotel.

**Commitment (Psychological Attachment)**

Six questions are used to examine commitment (psychological attachment). The first five questions came from scales constructed by Sharma and Patterson (1999). This psychological attachment measurement possessed a Cronbach's alpha of .85. Additionally, one more question created for this study measuring customers' sense of belonging, which is commonly used to measure customer psychological attachment, was added (O'Reilly & Chatman, 1986; Sharma & Patterson, 1999; Garbarino & Johnson, 1999).

A 1 (strongly disagree) to 7 (strongly agree) scale was used. The questions used to measure the commitment construct are as follows:

- CM01 You are very committed to the relationship with this hotel.
- CM02 You intend to maintain your relationship with this hotel indefinitely.
- CM03 You should put maximum effort into maintaining your relationship with this hotel.
- CM04 You have a strong sense of loyalty toward this hotel.
- CM05 You are always on the lookout for an alternative hotel.
- CM06 You feel a sense of belonging to this hotel.
Resistance to Change to Competitors

The questions used in this study came from the scale developed by Pritchard et al.'s (1999) study to measure resistance to change, with an internal consistency of .81. A 1 (strongly disagree) to 7 (strongly agree) scale was used. The questions used to measure the resistance to change to competitors construct are as follows:

♦ RC01 Your preference to stay with this hotel would not willingly change.
♦ RC02 Even if close friends recommend another hotel, you would not change your preference for this hotel.
♦ RC03 To change your preference from this hotel would require major rethinking.
♦ RC04 It would be difficult to change your beliefs about this hotel.

Repeat Purchase

Previous studies measured repeat purchase by either customers’ intent to return or proportion of purchase (Selin, et al., 1988, Bowen & Shoemaker, 1998, Pritchard, et al., 1999). This study proposed that repeat purchase should be measured by both elements, and questions used to test repeat purchase behaviors were modified from scales constructed by Selin, et al. (1988), Bowen and Shoemaker (1998), and Pritchard, et al. (1999). The questions measure repeat purchase by both intent to return and proportion of purchase. A 1 (strongly disagree) to 7 (strongly agree) scale was used. The questions used to measure the repeat purchase construct are as follows:

♦ REP01 When you return to the area where the hotel is located, you … I “might or might not stay at this hotel” … 7 “will definitely stay at this hotel”
♦ REP02 Next time you come to this area, you would stay at another hotel* (*reverse coding)
♦ REP03 Proportion of purchase
   (1) Please estimate how many times during the last 12 months you have stayed at a hotel in this area in general.
(2) Please estimate how many times during the last 12 months you have stayed at this hotel.

**Partnership-Like Activities**

The literature has shown that many researchers infused partnership-like activities with other concepts, such as commitment and cooperation. Hence, there is no single set of partnership-like activities measurement that could be used in this study. For instance, in Bowen and Shoemaker's (1998) study, the measurement of partnership-like activities blended with their commitment measurement. In White and Schneider’s (2000) study, they considered partnership-like activities to be active advocacy behavior. Active advocacy is one of four components of their ladder placement scales that measures four behaviors: automaticity, exclusive, passive advocacy, and active advocacy.

Therefore, the questions used in this dissertation were modified from scales constructed by Bowen and Shoemaker (1998) and White and Schneider (2000) to best characterize the notion of partnership-like activities proposed by this study. The first five questions came from Bowen and Shoemaker’s study (1998), with a Cronbach’s alpha value of .65. Additionally, question six which measures whether customers will recommend this hotel to others was added. A 1 (strongly disagree) to 7 (strongly agree) scale was used. The questions used to measure the partnership-like activities construct are as follows:

- **PLA01** If there are problems with this hotel, you will work jointly with them to help improve the situation.
- **PLA02** You are more likely to tell management about problems that occur in this hotel than in other hotels.
- **PLA03** If you saw an idea that you liked at another hotel, you would share those ideas with the hotel management or employees.
- **PLA04** When the topic of hotels comes up in conversations, you go out of your way to recommend this hotel.
PLA05 You will allow your name and positive comments you made about the hotel to be used in an advertisement.

PLA06 You would highly recommend this hotel to your friends, relatives, and business associates.

Instrument Format

Section I of the survey instrument consists of a battery of 36 questions regarding the proposed model's seven constructs; these 36 questions were listed above.

Some of the measurements for commitment were developed for measuring commitment to brands. This dissertation examined the commitment hotel customers have to a specific hotel property rather than to a certain hotel brand. However, the concept of commitment toward a certain brand should be able to be applied to the commitment toward a particular hotel property.

The development of customers' product attitudes and brand attitudes is similar. Much research studying the influences of advertising on brand attitudes applied the similar idea of Fishbein and Ajzen's (1973; 1975) attitude-toward-the object model to assess customers' brand attitudes (Wansink & Ray, 2000; Funkhouser & Parker, 1999). In the attitude-toward-the-object model, attitudes toward the product are evaluated by the combination of customers' beliefs of whether a product possesses certain salient attributes and customers' evaluations of the positive or negative of each individual attribute. Likewise, in most brand attitudes' studies, brand attitudes are assessed by both customers' beliefs of whether the brand possesses certain salient attributes and customers' overall perceptions of the brands.
In Fishbein and Ajzen's model, customers' attitudes can be predicted by the combination of the customers' "evaluations and strength of the salient beliefs of the product via the following algebraic formula" (Mowen & Minor, 1998, p. 260):

\[
A_o = \sum_{i=1}^{n} b_i e_i
\]

where \( A_o \) = the overall attitude toward object \( o \)

\( b_i \) = the strength of the belief concerning whether object \( o \) has some particular attribute \( i \)

\( e_i \) = the evaluation of the goodness or badness of attribute \( i \)

\( n \) = the number of beliefs

The measurements that evaluate customers' product attitudes and brand attitudes are similar. Both measurements assess customers' beliefs of what specific salient attributes a product and a brand possess as well as customers' perceptions of whether the product or brand possess those attributes.

In the attitude-toward-the-object model, customers' attitudes toward the products came from their beliefs of whether certain products possess the salient attributes (extremely likely, extremely unlikely) and their evaluations of whether it is good or bad for the product to possess salient attributes (very good; very bad). Attitude toward an object is assumed to be "a sum of perceptions of different attributes of the object, each perception represented by the product of the value the individual places on that attribute and his estimate of achieving that value from that object" (Funkhouser & Parker, 1999, p. 27).
Similarly, customers form their brand attitudes based on the perceived quality of the brand (Riel, Lemmink, & Ouwersloot, 2001). The perceived quality is generated from customers' evaluations of the tangible and intangible features of the brand. For example, the tangible features will be the physical attributes associated with the brand, including product, price, distribution, and packaging; and the intangible features will be the added values that comes with the brand, such as quality and prestige (Blackston, 2000).

Most studies which assess customers' brand attitudes measure customers' beliefs of whether the brand possesses certain salient attributes (agree, disagree) and customers' overall perceptions of the brand (good, bad) (Amitava & Parkash, 1992). Grossman and Till (1998) conducted a research study to investigate whether customers' brand attitudes toward different brands of mouthwash would be influenced by the classical conditioning technique. This research evaluated customers' brand attitudes based on customers' beliefs of whether the certain mouthwash brand had several salient attributes and customers' overall perceptions of the brands (Grossman & Till, 1998).

Additionally, brand attitudes were evaluated by an experiment designed to explore whether different types of advertising will impact customers' brand attitudes toward different brands for four products: shampoo, cold remedy, beer, and antiperspirant (Sanjay & Kenneth, 1994). In their study, Sanjay and Kenneth applied comparative and noncomparative advertisements of the above-noted four products to investigate the relationships among customers' attitudinal effects under cognitive, customers' affective involvement conditions, and brand attitudes. The researchers assessed brand attitudes by
asking customers the importance of each test attribute (important, unimportant) and by asking customers' perceptions of the brands (good, bad).

Furthermore, a study conducted by Amitava and Prakash (1992) evaluated whether the delay of attitudes toward the advertising will impact customers' brand attitudes. The researchers assessed brand attitudes by asking customers' cognitive responses toward the brands (like or dislike).

Based upon the above analysis, it is reasonable to assume that the formation of customers' attitudes toward a particular product and their attitudes toward a specific product brand are similar. Both customers' product attitudes and brand attitudes are generated from customers' beliefs of whether a product or a brand possesses certain salient attributes, and their evaluation of the goodness or badness of possessing those attributes. Therefore, it is reasonable to consider that the attitudes customers have toward a particular hotel property will be similar to the attitudes customers have toward a hotel brand.

As discussed in the commitment section, the essence of commitment is universal. No matter if the commitment is between a seller and a buyer, a consumer and a brand product, a leisure activity participant and a certain service provider, a hotel customer and a particular hotel, or an employee and an organization, commitment is a desire to maintain a long-term relationship caused by one party's psychological attachment toward the other party. (Bowen & Shoemaker, 1998; Buchanan, 1985; Morgan & Hunt, 1994; O'Reilly & Chatman, 1986; Pritchard et al., 1999).

In addition, the antecedents and consequences of commitment are also similar in many different relationship. For instance, the antecedents of commitment between a
seller and a buyer include benefits, trust, and switching costs, and the consequences of commitment include propensity of stay and cooperation (Morgan & Hunt, 1994).

Likewise, the antecedents of commitment between a consumer and a product brand include switching costs and personal identifications, and the consequences include repeat purchase and partnership-like activity (Dick & Basu, 1994; Pritchard, et al., 1999). Similarly, the antecedents of commitment between a leisure activity participant and a certain service provider include benefits and personal identification and the consequences are repeat patronage, cooperation, and partnership-like activities (Buchanan, 1985). Also, the antecedents of commitment between a hotel customer and a particular hotel include benefits, trust, and switching costs, and the consequences are intent to return and partnership-like activities (Bowen & Shoemaker, 1998).

Based on the above analysis, it is reasonable to assume that the commitment in many types of relationship is alike, and the antecedents and consequences of commitment in different kinds of relationships are similar. Hence, it is acceptable to apply the concept generated from brand commitment literature to examine hotel customers' commitment toward a particular hotel property. The author felt comfortable using the questions that were originally developed for measuring brand in this study. Furthermore, it was not within the scope of this project to measure switching costs.

The survey instrument uses 7-point Likert scales. Likert scales require respondents to indicate a degree of agreement or disagreement with each of a series of statements. Likert scales are widely used in marketing survey research, especially for attitude measurement (Malhotra, 1999). Several advantages are evident in applying Likert scales: Easy to construct and administrate; generally follow from an appealing
model; usually possess high reliability; can be adopted to measure different kinds of
attitudes; and have generated meaningful results in many previous research studies
(Nunnally, 1978). Furthermore, most of the questions used in this study were modified
from existing studies, all of which used Likert scales. Thus, it is reasonable for this
dissertation to use Likert scales.

Once Likert scales are chosen, the range of the scale needs to be decided.
Generally speaking, 5-point and 7-point scales are most commonly applied in marketing
survey research. The odd-numbered Likert scale provides a midpoint, allowing
respondents who have neutral feelings to answer the questions. In addition, the wider the
range of the scale, the greater variances would be expected. However, a larger sample
size is required for the wider scale range. Therefore, when there is a limitation of
collecting data from a large sample size, a 5-point scale is recommended (Mayer, 1999).
In this study, collecting a large enough sample size was not regarded as a problem.
Therefore, applying a 7-point scale could be realized, and as previously discussed, most
of the questions in this dissertation were revised from previous measurements that used a
7-point scale.

Finally, the wording of the majority of the Likert scale questions follows a
positive format, which is consistent with the previous studies; only six of the questions
are worded in a negative manner. According to Malhotra (1999), it is important to
follow a consistent wording format when using Likert scales in a summated context so
that a high or low score consistently presents a favorable or unfavorable response.
Pre-Test

Two pretests were conducted at the same hotel property where the final data was collected. In order to prevent the survey distributors' pre-judgmental bias, the author approached customers who checked into the hotel from 10:00AM to 8:30 PM, Monday through Friday, April 23 to May 15.

For the first pretest, the author approached approximately 200 hotel customers. Thirty of them indicated that they did not want to participate and thus 170 surveys were distributed. Sixty-five valid responses resulted in a 38.2% response rate. For the second pretest, the author approached 210 hotel customers and distributed 190 surveys. Eighty-four valid responses resulted in a 44.2% response rate. The pretests explored problems in the survey instruments and process. First, the pretests revealed ambiguous and confusing wording in the questionnaire. Second, the preliminary principal component analysis revealed an adequate level of the validity and reliability of the survey measurement. Third, the pretest provided some insights regarding the response rate of final data collection and the effectiveness and efficiency of the survey distribution method. Revisions made due to the pretests are described in Chapter 4.

Sampling Procedures

Target Population

Before selecting the sample, a population must be defined. In this dissertation, the population is all business customers of a business hotel. Justification for choosing business customers rather than pleasure customers is supported by the fact that business customers make more frequent trips to hotel properties than pleasure customers.
According to Yesawich (1997), sometimes tourists will never return, even though satisfied with the hotel in which they stay, due to their desire to have different experiences by trying new destinations and new hotel properties. Because of the stay frequency, presumably, a higher possibility exists for business customers to feel committed to a particular hotel than do pleasure customers. Hence, customers who stay at the hotel for business purposes are a more suitable population for this dissertation. However, the relatively narrow definition of the population and the application of nonprobability sampling procedures limit the making of a generalization of all business-class hotel customers based upon the results of this dissertation.

Sampling Frame

After defining the target population, a sampling frame can be generated. According to Malhotra (1999), a sampling frame is a representation of the elements of the target population and provides a list of members from which the sample will be drawn (Churchill, 1995).

For this dissertation, the sampling frame is comprised of all hotel customers who checked in from Monday to Friday, 10:00AM to 8:30 PM. The time period of the sample frame is from May 18 to June 29. Participants were the hotel’s business customers filtered by the first screening question at the beginning of the survey questionnaire (see Appendix D).

Convenience Sampling

A convenience sampling technique is employed in this dissertation since the respondents in this dissertation are chosen primarily because they happened to stay in the hotel during the specific time periods. According to Malhotra (1999), convenience
sampling is a nonprobability sampling technique whose criteria of selecting sample elements is essentially decided by the researchers. Therefore, the results generated from convenience samples cannot be used to make theoretical, meaningful inferences to any definable populations. Nevertheless, according to Zikmund (1994), “convenience samples are best utilized for exploratory research when additional research will subsequently be conducted with a probability sample” (p. 368). As this dissertation is exploratory in nature, the incapability of generalizing the results to the entire group of business customers should not be considered a fatal flaw (Malhotra, 1999).

Moreover, based on the benefits of convenience sampling being the least expensive and least time-consuming of all sampling techniques, the limitation of generalizing the results to a larger population is acceptably balanced (Mayer, 1999).

Sample Size

Two major considerations influenced the decision of the sample size. First, the absolute precision desired in the study and a specified level of statistical significance. Second, the number of variables involved in the study and the statistical techniques to be applied will also impact the sample size. These two approaches are discussed in the following section.

Formulas which calculate the sample size based on the absolute precision approach to estimate a population parameter with either an acknowledged population variance or an unknown population variance do not apply to the case in this study. Since it is inappropriate to project the results generated from a convenience sample beyond the specific sample, the sample size criteria based on estimating the population parameter is not used.
Hence, the required sample size in this dissertation is primarily dependent upon the variables in the study and statistical techniques. This dissertation contains five independent variables (IV): benefits, trust, personal identification, commitment, and resistance to change to competitors. According to Green (1991), the rules of thumb for the cases-to-IV ratio are \( N \geq 50 + 8m \) \((m = \text{the number of IVs})\). Therefore, according to Green's (1991) formula, the required minimum sample size for this dissertation will be \( 90 [50 + (8 \times 5) = 90] \).

In conjunction with the case-to-IV ratio, the proposed statistical techniques—Principle Component Analysis (PCA) and path analysis—would also influence the required sample size.

Researchers have different opinions regarding the required sample size for factor analysis. Based on Comrey and Lee's (1992) sample size guideline for factor analysis, a sample with 50 cases is very poor; 100 cases is poor; 200 cases is fair; 300 cases is good; 500 is very good; and 1,000 is excellent. According to Tabachnick and Fidell (1996), no matter if the factor analysis is applied in an exploratory or confirmatory study, a minimum of 300 responses will be required. However, these authors state that 150 cases will be deemed sufficient when the factor solutions have many variables with high loading scores (Tabachnick & Fidell, 1996). Additionally, according to Hair, Anderson, Tatham and Black (1995), the rule of thumb for factor analysis is that, at the high end, there should be at least ten responses for each item and at the low end, five responses for each item is tolerable. In this dissertation, an adequate sample size for a 47-item survey instrument will be between 470 cases \((10 \times 47)\) and 235 cases \((5 \times 47)\).
Several guidelines regarding the required sample size for path analysis are set. Anderson and Gerbing (1988) indicated that a minimum sample size of 150 is needed to obtain the parameter estimates, which have the small enough standard errors of practical usage. At the same time, Hair et al. (1995) indicated the optimal sample size for employing path analysis will be 100 to 200. According to Hair et al. (1995), the rule of thumb for calculating the required sample size for multiple regression is 15 to 20 observations per independent variable. The criterion variable in this study, partnership-like activities, is predicted by a weighted, linear combination of five different independent variables, which requires a sample size ranging from 75 to 100 cases.

Although there are numerous guidelines researchers could follow when deciding the sample size, researchers need to be cautious about the large sample size recommended by the given guidelines. Sometimes, it is possible for the sample size to be too large and this leads to a result which significantly departs from zero in predicting negligible variance in the dependent variables. Hair et al. (1995) pointed out the concerns of a large sample size. These researchers suspected that over-sensitivity will be caused by a fairly large sample size, such as 400 to 500; this means that it is possible that the detected significant differences might be caused by the large sample size rather than the actual difference among the respondents. At the same time, large sample size will also contribute many more non-sampling errors, such as data key-in error, which might damage the quality of the data for analysis (Churchill, 1995).

Therefore, Tabachnick and Fidell (1996) indicated that in addition to considering the number of variables, researchers should also consider the statistical and practical reasons when deciding the sample size. Tabachnick and Fidell (1996) further
recommended researchers apply the "smallest number of cases that has a decent chance of revealing a relationship of a specific size" (p. 133).

According to the discussed guidelines, an adequate sample size for this dissertation with 47 items, 5 independent variables, and proposed statistic techniques of PCA and path analysis, a sample size between 200 to 300 would be appropriate. The author chose the number of 250 for the sample size. This size, chosen to accommodate the general sample size requirements for applying the proposed statistical techniques, would be large enough to detect legitimately significant differences and small enough to prevent the statistic tests' over-sensitivity toward slight variations.

Data Collection

A modified mail survey method was implemented to collect data in this dissertation. Generally speaking, a mail survey is a self-administered questionnaire sent to respondents through the mail. Respondents complete the questionnaire at their convenience and mail responses back to the researcher. The modified mail survey means that instead of mailing the questionnaires to the respondents, the survey questionnaires are distributed to guests when they are "in residence" at the hotel. After guests complete the surveys, they can return them to the hotel front desk (Churchill, 1995).

The rationale in choosing the modified mail surveys as the data collection method is that mail surveys are relatively low in cost. The author cannot afford the monetary costs involved in conducting personal interviews or telephone surveys. Additionally, the respondents might give more honest answers because of the anonymity and absence of interviewers.
Moreover, based on the 15% typical mailing surveys' response rate, the author had to deliver the survey to at least 1667 hotel guests in order to reach the required sample size of a minimum 250 responses (1667*15%=250). Collecting data at a business hotel property increases the incidence rate. In other words, the chances of getting eligible participants — customers who travel for business purposes — is relatively high.

The author was aware of the disadvantages of a mail survey and utilized several remedies to alleviate the possible downsides of applying this method. First, the low response rate, typically 15%, of mail surveys was a major limitation of choosing this method. Cover letters, monetary incentives, and follow-ups are important means to induce participants to complete and return the questionnaires (Zikmund, 1994).

In this study, the participants received a package containing a cover letter and a survey questionnaire (see Appendix A). The cover letter accompanying the questionnaire was designed to gain respondents' attention and cooperation. It explained why the study was important and why the respondents' opinions were important. In addition, the cover letter informed respondents that answering the questionnaire was not difficult and took only a short amount of time. Most importantly, the cover letter assured confidentiality to respondents (Zikmund, 1994).

In conjunction with attaching a cover letter, providing monetary incentives as a reward for respondents' participation will motivate them to return the questionnaire (Sekaran, 1992). In this dissertation, only the first pretest provided the incentives. Half of the surveys contained a $2 bill as a response incentive. The surveys were worded somewhat differently between the ones with the two-dollar incentive and those without.
an incentive in order to determine whether the two-dollar incentive better motivated respondents to return the surveys. The results are discussed in Chapter 4.

The second commonly mentioned pitfall of adopting mail surveys was the absence of the interviewers. Generally speaking, the absence of interviewers removes the possibility of respondents being influenced by the interviewer's bias and further entices respondents to reveal sensitive or socially undesirable information. However, because of this absence, respondents cannot clarify any ambiguous questions, and thus, respondents might fill out the questionnaire with misunderstanding and confusion (Zikmund, 1994). Since respondents filled out the questionnaires during the time they stayed at the hotel property, if they had any problems regarding the questionnaire, they could ask the author for explanations. Hence, the cover letter indicated the availability of clarification.

Data Analysis

Data Cleaning

Outliers

The presence of outliers will increase the possibility of making Type I and Type II errors because results will be overly influenced by the outliers. Thus, outliers were identified and removed before data analyses. Three steps used to handle outliers are as follows.

First step. The dataset was screened using univariate descriptive statistics and graphics to insure all values were within range and means and standard deviations were
reasonable. Then, each variable was explored by boxplot and stem-and-leaf graphics to ensure there were no outliers in each individual variable.

Second step. Before running the PCA, outliers need to be removed, because PCA is a technique particularly sensitive to outliers (Tabachnick & Fidell, 1996). Leverage and Mahalanobis distance were applied to identify the possible extreme values among independent variables. “Leverage assesses outliers in the set of IVs” (Tabachnick & Fidell, 1996, p. 134). “Mahalanobis distance is the distance of a case from the centroid of the remaining cases where the centroid is the point created by the means of all the variables” (Tabachnick & Fidell, 1996, p. 67). Leverage and Mahalanobis distance scores were saved as outputs from an exploratory regression, a regression which analyzed all independent variables and any one of dependent variables.

Third step. Before running the path analysis, Cook’s distance was utilized to detect the outliers among the independent variables on the dependent variables. Supposedly, all the cases should contribute equally to the regression solution. However, if some cases are distant from others, those remote cases will have much more impact on the regression coefficients. Therefore, Cook’s distance was used to estimate the size of the impact of each case on the solution by assessing the change in regression coefficients when a case was deleted.

This dissertation handled the outliers by implementing the combination of the visual inspections of the plotted outliers on the scatter diagram of Leverage, Mahalanobis distance, and Cook’s distance and the rule of thumb for Leverage, Mahalanobis distance, and Cook’s distance.
The rule of thumb for leverage is that when a case with a leverage value greater than \(2p/n\) (where \(p\) = number of variables and \(n\) = sample size), this case is suspected to be an outlier. In addition, the criterion for multivariate outliers is any value greater than the value when the Mahalanobis distance at \(p<0.001\) significant level when evaluating as \(X^2\) with degrees of freedom equal to the number of variables. Furthermore, based on Cook's distance, when a case with an influence scores higher than 1, this case is suspected to be an outlier. An influence score is “a product of leverage and discrepancy… leverage assesses outliers in the set of IVs and discrepancy measures the extent to which a case is in line with the others” (Tabachnick & Fidell, 1996, p.134).

**Missing Values**

In this study, twenty-five respondents were not included in the dataset because they skipped more than 30% of the 47 key questions used for model testing. Hence, 290 valid cases were included in the dataset. As previously discussed, outliers would be removed before data analysis and thus 279 cases were left for factor analysis and path analysis. However, each of the 47 key variables had missing values among these 279 cases. Hence, missing values needed to be handled.

The simplest way to handle missing values is to drop any case with missing values. However, simply deleting cases can result in substantial loss of responses when the missing values are scattered throughout cases and variables. Therefore, missing values need to be substituted with other values. Three common methods to handle missing values are substituting the missing values with a value from a well-educated guess, with a grand mean, and with an imputed value from regression results (Tabachnick & Fidell, 1996).
Replacing missing values with well-educated guesses by researchers can be deemed reasonable only when the researchers have prior knowledge and previous related work experience regarding the missing information, the sample size is large, and the number of missing values is small (Tabachnick & Fidell, 1996).

The second approach is to replace the missing values with the mean score of the variable. When other information is not accessible, the mean score is the best guess about the value of the variable. Replacing the missing values with the mean score is an effort to minimize the effect of the substitution, maintaining the unchanged mean of the variables, and thus, the other statistics, such as correlations, are not impacted much (Tabachnick & Fidell, 1996; Malhotra, 1999).

However, the researchers need to be aware of the loss in variance, since the missing values are replaced by the mean score, and the mean score might be closer to itself than to the missing value. Nevertheless, one alternative is to replace the missing value with the group mean instead of the overall mean. For instance, when the missing value is with a respondent who stays at the particular hotel averaging three times per year, the researcher will replace the mean score calculated using the respondents who also stayed at this hotel three times per year.

The other opinion on replacing missing values is to estimate missing values by regression. The missing values are predicted by the regression equation generated from the cases with complete data. The merit of using regression is that the replacement is more objective than the researcher's guesses and also the regression is not as blind as simply inserting the grand mean. However, four major downsides come along with using regression. First, because the missing value is predicted from other variables, the scores
will fit together better than they should. Second, the variance will be reduced because of
the closeness to the mean. Third, good independent variables are required because the
prediction of the missing values is derived from a regression equation, which uses the
variable with missing values (incomplete data) as dependent variable and the variables
without missing values (complete data) as IVs. Fourth, out-of-range estimates are not
acceptable. In other words, the estimates from regression can only be used when the
estimated value falls within the range of the values for complete cases (Tabachnick &
Fidell, 1996).

Balancing the advantages and disadvantages of the above three approaches, this
dissertation adopted the most conservative approach of replacing missing values with
mean scores. Additionally, substitution with group mean scores instead of grand mean
scores would be considered — depending on the pattern of missing values in the
collected data. The details of replacing missing values are presented in Chapter 4.

Factor Analysis

Factor analysis was used to assess the interrelationships among variables in order
to discover a smaller set of variables that can explain most of the information in the
original data. Diverse algorithms can be used for performing factor analysis. The
principal component analysis (PCA) and common factor analysis (CFA) are the two most
widely applied methods. Generally speaking, PCA is used for data reduction and CFA is
used to test theory and reveal other possible constructs.

In this dissertation, all constructs are measured with multiple variables. The use
of multiple variables increases the difficulties of interpretation and the possibility of
multicollinearity. Therefore, PCA was implemented to help to eliminate the
aforementioned problems by creating a smaller set of uncorrelated factors (Shoemaker, 1998). Four separate factor analyses were performed. The first one contained three commitment antecedents. The second one contained commitment items. The third one consisted of items measuring the resistance to change to competitors construct. The forth one was comprised of loyalty measurements.

The purpose of PCA is to produce the uncorrelated combinations of variables that resemble each variable as closely as possible. Since each combination should not be correlated to others, orthogonal rotation was used, and thus, Varimax rotation was applied. Additionally, several rules of thumb were used for determining the proper number of factors to extract, such as residual correlations, Cattell’s Scree Test, discontinuity, eigenvalue greater than 1, interpretability, stability, and over-factoring (Tabachnick & Fidell, 1983). This dissertation primarily followed the four guidelines: eigenvalue greater than 1, Cattell’s Scree Test, interpretability, and stability.

Guidelines are based on the notion that any factor with an eigenvalue of less than 1 is not as important as an observed variable (Hair et al., 1992). However, the problem with this automatic rule is that, after rotation, extracted factors often have eigenvalues greater than 1. Therefore, this dissertation considered eigenvalue greater than 1 to be a guide combined with the guidelines discussed below.

This dissertation also checked the Cattell’s Scree Test. In Cattell’s Scree Test, the number of factors was plotted against the proportion of variance. When the factor variance levels off, which means the factors are largely measuring random error, a natural break will appear. Therefore, the factors above this natural break point should be retained. This assumption is similar to the belief that when the last meaningful or
substantively important factor is extracted, the eigenvalues will show a discontinuity—a sharper drop than that for adjacent factors.

Furthermore, interpretation of the factors also influences the number of factors extracted. The extracted factors should make sense, given the researcher's knowledge of the variables and/or constructs. For instance, it is difficult to interpret when an extracted factor column does not have factor loadings; therefore, this dissertation made sure each factor possessed at least one variable. Additionally, stability of the factors affects the number of factors extracted. The author insured that the removal of one or more variables did not throw off the stability of the solution.

In conjunction with the aforementioned guidelines, this dissertation considered several requirements regarding factor loadings. According to Hair et al. (1992), factor loadings greater than .30 are considered significant; loadings greater than .40 are considered more important; loadings greater than .50 are considered very significant. Therefore, this dissertation applied the .40 as a cut-off point for the factor loadings. Additionally, each variable should load significantly on only one factor. It is problematic when a variable loads significantly on multiple factors. In this dissertation, when a variable has multiple loadings and each loading was fairly close, the variable was removed; when a loading on one factor appeared to be much higher than the loadings on the other factors, the variable was retained at the factor with the highest loading. Moreover, a variable not loading significantly on any factor indicated that this variable did not contribute much to any of the factors and should be removed.
Model Testing

The purpose of this dissertation is to examine the relationship among commitment, loyalty, and their antecedents and consequences. The path diagram in Figure 1 portrays the hypothetical relationships among the constructs.

Path Diagram

A path diagram is a graphic presenting the hypothesized relationships among a model’s constructs. Those relationships can be directly translated into the equations for analysis. For instance, numerical values resulting from regressions of each arrow in the path diagram indicate the relative strength of the causal influence (Loehlin, 1992). This dissertation has no intention to explore whether bi-directional relationships exist among the constructs — all relationships are presumed to be uni-directional.

The path diagram proposed that commitment is the psychological attachment possessed by customers toward a hotel. The three antecedents of commitment are benefits, trust, and personal identifications. The model proposed that there are direct and positive relationships between benefits and commitment, between trust and commitment, and between personal identifications and commitment. At the same time, commitment is the antecedent of resistance to change to competitors. Resistance to change to competitors directly influences repeat purchase and partnership-like activities.

The path diagram in Figure 1 can be expressed as follows:

\[
CM = f(BE, TU, PI) \\
RC = f(BE, TU, PI, CM) \\
RP = f(BE, TU, PI, CM, RC) \\
PLA = f(BE, TU, PI, CM, RC)
\]

And where

BE = benefits
TU = trust
In this dissertation, the relationship among commitment, loyalty, and their antecedents and consequences are investigated. Path analysis was employed to test the hypothesized relationships among constructs in this causal model (Pedhazur, 1982; Dillon & Goldstein, 1984; Tabachnick & Fidell, 1996). Each construct was tested by the factor scores generated by the factor analysis.

Path Analysis

Path analysis uses multiple linear regressions to solve a series of equations among causal models (Pedhazur, 1982). Path analysis can evaluate the direct effects, indirect effects, and total effects among the variables (Hair, et al. 1995). The effects are estimated by regression coefficients and are similar to the beta weights in regression analysis and express similar meanings.

For instance, in the proposed model, the effect of benefits on commitment is a direct effect and can be expressed as $p_{bc}$; the effect of benefits on resistance to change via commitment will be an indirect effect and can be expressed as $p_{bc}p_{cr}$; and the total effect between benefits and resistance to change will be $p_{br} + p_{bc}p_{cr} + (p_{tr} + p_{tc}p_{cr})r_{bt} + (p_{pic} + p_{pic}p_{cr})r_{bpi}$.

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Where

- $p_{br}$ symbols the direct effect of benefits construct on resistance to change construct;
- $p_{bc}$ symbols the direct effect of benefits construct on commitment construct ;
- $p_{cr}$ symbols the direct effect of commitment construct on resistance to change construct;
\( p_{tr} \) symbols the direct effect of trust construct on resistance to change construct;
\( p_{tc} \) symbols the direct effect of trust construct on commitment construct;
\( r_{bt} \) symbols the association between benefit construct and trust construct;
\( p_{pir} \) symbols the direct effect of personal identification construct on resistance to change construct;
\( p_{pic} \) symbols the direct effect of personal identification construct on commitment construct;
\( r_{bpi} \) symbols the association between benefit construct and personal identification construct.

Path analysis does not address the measurement reliability; it accepts the measures of the constructs under consideration, and uses multiple linear regression to solve for the relationships among the constructs based upon those measurements (Dillon & Goldstein, 1984; Fassinger, 1987). Generally speaking, path analysis is the preferable method applied in an exploratory study with newly developed measurements (Baloglu, 1996; Mayer, 1999; Lucas, 2000). According to Lucas (2000), “because of the reliability and validity of newly developed scales is less established, path analysis is recommended for exploratory research” (p. 51). Since the measurements in this dissertation are adopted from previous measurements, the reliability and validity of this newly developed scale has not been established. Hence, path analysis, which is suitable for exploratory studies with newly developed scales, was applied to test the proposed model.

Although path analysis does not assess how well a construct is measured by its various components, it has been referred as an effective methodology for hypothesis
testing in causal models (Dillon & Goldstein, 1984; Weinberg, 1982; Tabachnick & Fidell, 1996).

In addition to being cautious of the fact that path analysis does not account for measurement reliability, researchers also need to be aware that path analysis cannot confirm the models of causation; it can only verify whether the theoretical model is consistent with the empirical data. "Path analysis can not be used to establish a particular causal model as the true one ... there will always be alternative causal models that fit the same data equally well " (Weinberg, 1982, p. 1384). Therefore, path analysis cannot confirm causation of the theoretical model and is only capable of helping researchers eliminate the inadequate models among all plausible alternatives by not confirming causation. The purpose of this dissertation is not to reconfirm the existing validated causal model; rather, this dissertation intends to explore the interrelationships among the constructs and path analysis serves this purpose.

Assumptions of Multiple Regression

Before applying path analysis, the assumptions of multiple regressions were evaluated. According to Dielman (1996), the four major assumptions for linear regressions are: the relationship is linear; the disturbances have constant variances; the disturbances are independent; and the disturbances are normally distributed.

First, the linearity assumption was examined by plotting the residuals for dependent variables and independent variables. If the plots appear to show no visible pattern, the linearity assumption is not violated. Second, plots with the residuals versus the independent variables could check the assumption of constant variances. When the plots show the residual scattered randomly around zero, and there are no differences in
the amount of variation in the residuals regardless of the value of the variables, the constant variance assumption is assured. Third, the disturbances are independent when there is no autocorrelation problem and each observation is independent. This assumption can be evaluated by Durbin-Watson tests. A value of 2 on Durbin-Watson will be the cut off point for supporting the facts that observations are independent and there is no autocorrelation problem (Dielman, 1996). Fourth, the P-P plots of the regression residuals and cumulative probability distribution can be used to assess the assumption of the normality of distribution. The detail examinations of the assumptions were provided in Appendix D.

The independent variables should not be highly interrelated; therefore, multicollinearity was examined by Tolerance and VIF. In this dissertation, Collinearity Statistics with a tolerance larger than .1 and a VIF smaller than 10 and condition index smaller than 30 were the criteria for determining multicollinearity problems (Dielman, 1996; Tabachnick & Fiedll, 1996).

Finally, the results of hypotheses testing were reported at the significance level of .05; the most conventionally used significance level.

Reliability

According to Carmines and Zeller (1983), reliability refers to “the tendency toward consistency found in repeated measurements of the same phenomenon” (p. 12). Reliability indicates the extent to which the results obtained from a measurement scale are repeatable; the more consistent the results given by repeated measurements, the higher the reliability of the measuring procedure (Nunnally, 1978).
Reliability can be estimated after data collection. Four basic methods are used to estimate the reliability of the measurements: retest method, alternative-form method, split-half method, and internal consistency method. Among the above-mentioned methods, the internal consistency given by Cronbach’s alpha is the most common reliability estimating method (Carmines & Zeller, 1983; Malhotra, 1999).

Cronbach’s alpha is the average of all possible split-half coefficients resulting from different ways of splitting the scale items. The variables designed to measure a construct should share a common essence and the alpha values should reveal the degree to which the variables in the same construct are related. The value of Cronbach’s alpha coefficient ranges from zero to one. Generally speaking, in exploratory studies such as this dissertation, a Cronbach’s alpha value greater than .70 is considered to be adequate and acceptable (Nunnally, 1978). A Cronbach’s alpha value will be generated for each construct used in the model.

The measurement reliability in this dissertation was estimated by Cronbach’s alpha value with .70 as a threshold. In addition, as the number of the variables in the construct increases, the alpha coefficient tends to increase. Hence, the author was cautious about the increase of alpha value simply driven by the increased number of variables.

Validity

A research project needs to possess a certain level of reliability; however, having a highly reliable measure does not guarantee that the scale instruments are valid. A valid measurement should measure what the research purports to measure (Kerlinger &
Pedhazur, 1973). In order to obtain construct validity, research should be guided by a rigorous conceptual model, which indicates the relationships among each construct (Malhotra, 1996). The proposed model in this dissertation, which indicates how the constructs related to others, was developed under a rigorous theoretical framework as discussed in Chapter 2.

The following three basic types of validity can be employed to examine the research instrument validity: content validity, construct validity, and criterion-related validity (Carmines & Zeller, 1983). In order to possess content validity, research needs to “measure the full domain of content that is relevant to the particular measurement situation” and accurately ask the questions (i.e., specific words and form) (Carmines & Zeller, 1983, p.20). Content validity is also called face validity, which is a qualitative evaluation of how well the content of a scale instrument adequately covers the entire domain of the construct being measured. In this dissertation, content validity is developed through reviewing previous studies and modifying established validated measurements as illustrated in Chapter 2 as well as in the previous scale instrument formation section. Additionally, two pre-tests were conducted to help to increase the content validity of the scale instrument.

Moreover, three aspects are included in construct validity: nomological validity, convergent validity, and discriminant validity (Malhotra, 1999). First, nomological validity estimates whether the measure of a certain construct indeed correlates with the measures of other constructs, which is believed to be different but related. For instance, if a construct designed to measure customers’ resistance to change to competitors was compared to a construct designed to measure customers’ switching behaviors, the results
would be expected to be a moderate to high, negative correlation. Nevertheless, validating the relationships between the related but different constructs with proposed constructs is not the purpose of this study. Testing nomological validity in this study will increase the cost of the study, add more questions to the survey instrument, and require much more time from respondents. Therefore, this dissertation assesses the nomological validity by evaluating the proposed model. If the proposed model is supported, it implicitly provides support for nomological validity.

Second, the Pearson correlation coefficient would be applied to examine convergent validity. According to Malhotra (1999), convergent validity is the extent to which a measurement correlates positively with other measurements of the same construct. Similarly, Campbell and Fiske (1959) proposed a multitrait-multimethod matrix to demonstrate convergence. According to Campbell and Fiske (1959), when the same constructs, measured by different methods, display high correlations, it is indicative of convergent validity. For instance, if this dissertation applies two sets of measurement to measure the trust construct (one set is the 11 questions used in Bowen and Shoemaker’s (1998) study; the other set is the 3 questions used in Morgan and Hunt’s (1994) study) the scores obtained from the above two trust construct measurements should positively and significantly correlate with each other. However, it was not workable to put two different measurements to measure the same construct in this dissertation because the length of the survey questionnaire would be doubled possibly leading to a higher rate of incomplete responses. Hence, this study did not apply multitrait-multimethod matrices to assess convergent validity.
At the same time, Campbell and Fiske (1959) indicated that heterotrait-monomethod matrices could be used to examine convergent validity when the same method was applied to measure the constructs. The convergence was demonstrated when a variable correlates higher with the variables designed to measure the same construct than with the variables designed to measure different constructs (Campbell & Fiske, 1959). Therefore, this study evaluated convergent validity by the heterotrait-monomethod matrices.

Third, discriminant validity assesses "the extent to which a measure does not correlate with other constructs from which it is supposed to differ" (Malhotra, 1999, p. 283). According to Campbell and Fiske (1959), when dissimilar constructs show low correlations, it indicates discriminant validity. This study assessed discriminant validity by the heterotrait-monomethod matrices.

Additionally, a Pearson correlation matrix of all constructs was used to appraise discriminant validity. For instance, since the ultimate independent constructs were generated by using principal component extraction with Varimax rotation, the resulting constructs should be orthogonal and unrelated with each other.

Furthermore, according to Sharma and Patterson (1999), comparing the alpha coefficients of each construct and its correlation coefficients with other constructs can assess discriminant validity. If the alpha coefficient is higher than the across correlations, this provides evidence of discriminant validity. This study compared the values of Cronbach's alpha with the values of across constructs correlations to evaluate the discriminant validity.
Finally, the criterion validity will examined in this dissertation by the effectiveness of the regression equations. In some cases there can be limitations of applying criterion validation procedures to all measurement situations mostly because many measures simply do not have any existing relevant criterion variables. In this dissertation, predictor measurement and the criterion variable are in the same model; customers’ behavior can be predicted based on the precursors proposed in the model. For instance, certain specific behavioral traits that a loyal customer should demonstrate, such as providing repeat business and spreading positive word-of-mouth, can be predicted by customers’ resistance to change. One item of repeat purchase was not included in the model testing: proportion of purchase. Hence, the results of the regression equation with resistance to change construct and proportion of purchased revealed whether the resistance to change construct serves as a meaningful criterion to predict the expected relationship between resistance to change construct and repeat purchase construct so as to validate the criterion validity.

Hypotheses

The six hypotheses, which were tested through the model, are as follows:

H1: Benefits has a direct and positive effect on commitment.
H2: Trust has a direct and positive effect on commitment.
H3: Personal identification has a direct and positive effect on commitment
H4: Commitment has a direct and positive effect on resistance to change to competitors.
H5: Resistance to change to competitors has a direct and positive effect on repeat purchase.
H6: Resistance to change to competitors has a direct and positive effect on partnership-like activities.
CHAPTER 4

ANALYSIS AND RESULTS

Introduction

This chapter opens with a discussion of the revisions that were made after data analyses of the two pre-tests' results. Second, the response rates, respondents' demographic profile, and a descriptive summary of the data are presented. The third section of the chapter discusses the results of missing value analysis, exploratory factor analysis, and path analysis. Finally, the chapter concludes with an assessment of the model.

Revisions Due to the Pre-Tests

Two pretests were conducted at the business hotel used for the final data collection. In the first pretest, 170 survey questionnaires were distributed to the hotel customers. The author approached hotel customers immediately after they checked in, explained the nature of the study, and gave them a questionnaire. The hotel customers either returned the completed questionnaires to the front desk before they checked out or mailed the surveys back to the author with a self addressed stamped envelope that was provided with the survey. Among the 170 questionnaires, 86 included a $2 incentive. A total of sixty-five questionnaires were returned for a 38.2% response rate. The results

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indicated that the monetary incentive was not a factor since the response rate for the questionnaires without incentives was 36.9% \((31/84=36.9\%)\) and those with the incentives was 39.5\% \((34/86=39.5\%)\).

Based on the results of the first pretest, several revisions were made to the original questionnaire, thus, a second pretest was conducted. In the second pretest, the same survey distributing method was used but without any incentives.

The survey instrument for the second pretest excluded several questions which had many missing values from the first pretest instrument (see Appendix B). For example, more than 30\% of the respondents answered “Don’t Know” on three questions designed to measure commitment. Ten of those respondents told the author that they did not feel comfortable answering the questions with strong wording. In addition, several questions were added based on the results of preliminary Principle Component Analysis and the input from participants who finished the questionnaires and discussed their concerns with the author. For example, commitment and partnership-like activities constructs, originally proposed as one-dimensional constructs, appeared to have two dimensions. Commitment includes positive attitude and psychological attachment. Partnership-like activities include private and public partnership-like activities. Hence, several questions were added to assess these two constructs and to explore the components of these two constructs (see Appendix C).

The results of the second pretest reconfirmed that the $2 incentives were unnecessary since there was a 44.2\% \((84/190=44.2\%)\) response rate for the second pretest without any incentive. The responses on the second pretest indicated that
respondents were able to understand the questions better and did not have difficulty answering most of the questions.

Based on the results of the second pretest, some revisions were made to the formal survey questionnaire. For example, ambiguous questions were revised. In the second pre-test, the question designed to evaluate customers’ proportion of purchase was “a: Please estimate, in general, how many times per year do you stay at a hotel in the area where the selected hotel is located _______ times. b: Please estimate how many times per year do you stay at the selected hotel? _______ times.” These questions were designed to reveal the percentage of times a customer stayed at the selected hotel out of his or her total hotel stays at the same area. However, more than half of the customers answered the questions by how many months of their hotel stay instead of percentage. Therefore, in the formal questionnaire, this question was changed to a percentage format. Formal data collection was conducted from May 18, 2001 to June 29, 2001 using the same survey distribution method and the revised questionnaire (see Appendix D).

Response Analysis

A total of 900 survey questionnaires were distributed to hotel customers. A total of 330 responses were returned for an overall response rate of 36.67%. Forty out of the 330 that were returned were not usable; 15 respondents did not meet the travel frequency qualification to pass the filter question and 25 of them either skipped whole pages of the questionnaire or gave the same answer for the entire questionnaire. Thus, 290 surveys were usable, for a response rate of 32.22%.
Possible Non-Response Bias

According to Churchill (1995), several methods can increase response rate. For example, a cover letter along with the questionnaire describing the importance of respondents' participation can mitigate a low response rate and follow-ups can be used to reduce the impact of refusals. This study provided a cover letter along with the questionnaire. The methodology used in this study did not allow for a follow up to the non-respondents; the questionnaires were distributed to hotel customers who checked in to the hotel during predetermined periods of time and the author had no access to the hotel customers' information, such as names and addresses. Therefore, failure to understand non-responses was a limitation of the study.

Identification and Treatment of Outlying Observations

As discussed in Chapter 3, the presence of outliers will cause both Type I and Type II errors. Additionally, outliers will overly influence the data resulting in an analysis that may not accurately reflect the data (Tabachnick & Fidell, 1999).

Three techniques were utilized to examine the outliers. First, boxplot and stem and leaf graphics were used to detect univariate outliers. Nine observations were classified as outliers and were not included in the four quartiles in multiple univariate boxplots. Therefore, 281 cases were left for descriptive analysis. Second, before running factor analysis, two outliers determined by leverage and Mahalanobis's distance were removed from the dataset which resulted in 279 cases left for factor analysis. Before testing the proposed relationships in the model, Cook's distance was utilized to
detect the outliers. The rule of thumb for determining what constitutes an outlier is when a case has a Cook's distance influential score higher than 1. There was no case with Cook's distance greater than 1. At the same time, the plot of Cook's distance showed that no case was substantially larger than the remaining cases in the entire dataset. Therefore, no case was removed. As a result of outlier removal, 279 responses were used in path analysis for model testing.

**Demographic Profile of Respondents**

A demographic profile of the respondents is presented in Table 1. The majority of the respondents' were male (64%) and thirty-six percent of them were female. It is not unusual that the gender distribution skewed towards males since the hotel used for this study is marketed to the middle-scale business class which consists predominantly of males (Mayer, 1999). In addition, the household income level also demonstrated the typical customers staying in this type of property. Seventy-three percent of the respondents reported household income higher than $80,000. Fifty-four percent of the respondents were in the age group 30-49. The dominating race/ethnic group of the respondents was Caucasian (80%), followed by 5.5 percent Hispanic respondents. More than half of the respondents had college degrees and 31.3 percent of them had graduate degree. The results indicated that the respondents travel quite frequently: 47.4% of them travel more than 12 times per year and 10.5% travel 9 to 12 times a year.

In summary, the respondents were mostly educated, middle-aged, and high-income males who traveled on a frequent basis for business purposes. Unfortunately, the hotel did not track demographic characteristics of its guests, therefore, the hotel's
management would not confirm if the respondents to the study were similar to the hotel’s
guest profile.

Table 1  Respondents’ Profile

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (n=290)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>185</td>
<td>63.8</td>
</tr>
<tr>
<td>Female</td>
<td>105</td>
<td>36.2</td>
</tr>
<tr>
<td>Age (n=289)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-29</td>
<td>29</td>
<td>10.0</td>
</tr>
<tr>
<td>30-39</td>
<td>85</td>
<td>29.4</td>
</tr>
<tr>
<td>40-49</td>
<td>75</td>
<td>26.0</td>
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<tr>
<td>50-59</td>
<td>82</td>
<td>28.4</td>
</tr>
<tr>
<td>60-65</td>
<td>13</td>
<td>4.5</td>
</tr>
<tr>
<td>66+</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>Race (n=271)</td>
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<td></td>
</tr>
<tr>
<td>White</td>
<td>231</td>
<td>79.9</td>
</tr>
<tr>
<td>Hispanic</td>
<td>16</td>
<td>5.5</td>
</tr>
<tr>
<td>Asian</td>
<td>12</td>
<td>4.2</td>
</tr>
<tr>
<td>Black</td>
<td>8</td>
<td>2.8</td>
</tr>
<tr>
<td>Native American</td>
<td>4</td>
<td>1.4</td>
</tr>
<tr>
<td>Education (n=287)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School and Below</td>
<td>15</td>
<td>5.2</td>
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<tr>
<td>College Degree</td>
<td>157</td>
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<td>Graduate Degree</td>
<td>90</td>
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<tr>
<td>Other</td>
<td>25</td>
<td>8.7</td>
</tr>
<tr>
<td>Income (n=278)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $40,000</td>
<td>11</td>
<td>4.0</td>
</tr>
<tr>
<td>$40,001– $79,999</td>
<td>63</td>
<td>22.7</td>
</tr>
<tr>
<td>$80,000– $119,999</td>
<td>76</td>
<td>27.3</td>
</tr>
<tr>
<td>$120,000–$159,999</td>
<td>43</td>
<td>15.5</td>
</tr>
<tr>
<td>$160,000–$200,000</td>
<td>46</td>
<td>16.5</td>
</tr>
<tr>
<td>More than $200,000</td>
<td>39</td>
<td>14.0</td>
</tr>
<tr>
<td>Frequency (travel/year) (n=285)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 times</td>
<td>23</td>
<td>8.0</td>
</tr>
<tr>
<td>4 to 5 times</td>
<td>47</td>
<td>16.5</td>
</tr>
<tr>
<td>6 to 8 times</td>
<td>50</td>
<td>17.5</td>
</tr>
<tr>
<td>9 to 12 times</td>
<td>30</td>
<td>10.5</td>
</tr>
<tr>
<td>More than 12 times</td>
<td>135</td>
<td>47.4</td>
</tr>
</tbody>
</table>
Descriptive Statistics

This section reports the descriptive statistics for the 47 key items that were designed to test the constructs in the model. Table 2 listed items in each construct and the mean score and standard deviation for the items.

Table 2  Descriptive Statistics for the 47 Key Items

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF1: expedited registration</td>
<td>6.03</td>
<td>1.10</td>
<td>274</td>
</tr>
<tr>
<td>BF2: check in at a time that suits you</td>
<td>5.92</td>
<td>1.15</td>
<td>275</td>
</tr>
<tr>
<td>BF6: comfortable stay</td>
<td>6.08</td>
<td>.83</td>
<td>278</td>
</tr>
<tr>
<td>BF7: your problems are important to the employees</td>
<td>5.48</td>
<td>1.13</td>
<td>272</td>
</tr>
<tr>
<td>BF9: technologically equipped guest room</td>
<td>5.67</td>
<td>1.21</td>
<td>271</td>
</tr>
<tr>
<td>BF10: staff recognizes you</td>
<td>3.75</td>
<td>1.92</td>
<td>269</td>
</tr>
<tr>
<td>BF12: benefits for being a member of reward program</td>
<td>5.32</td>
<td>1.79</td>
<td>259</td>
</tr>
<tr>
<td>BF13: hassle-free stay</td>
<td>6.04</td>
<td>.90</td>
<td>277</td>
</tr>
<tr>
<td>BF14: amenities for you to conduct business</td>
<td>5.91</td>
<td>1.01</td>
<td>276</td>
</tr>
<tr>
<td>BF15: cancellation of reward programs</td>
<td>4.15</td>
<td>2.08</td>
<td>257</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TU4: you have confidence in the hotel</td>
<td>6.02</td>
<td>.87</td>
<td>278</td>
</tr>
<tr>
<td>TU8: the hotel is well managed</td>
<td>5.85</td>
<td>.92</td>
<td>276</td>
</tr>
<tr>
<td>TU11: you are sure employees will do what they say</td>
<td>5.55</td>
<td>1.12</td>
<td>271</td>
</tr>
<tr>
<td>TU18: employees will be truthful with you</td>
<td>5.79</td>
<td>.98</td>
<td>256</td>
</tr>
<tr>
<td>TU21: your request will be taken care of</td>
<td>5.32</td>
<td>1.16</td>
<td>256</td>
</tr>
<tr>
<td>TU24: you trust the employees</td>
<td>5.59</td>
<td>1.10</td>
<td>263</td>
</tr>
<tr>
<td>TU26: hotel offers a consistent level of service</td>
<td>5.84</td>
<td>.95</td>
<td>276</td>
</tr>
<tr>
<td>TU32: receiving a wake up call at an appropriate time</td>
<td>6.20</td>
<td>.99</td>
<td>269</td>
</tr>
<tr>
<td>Personal Identification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI3: hotel’s image closest to reflecting your lifestyle</td>
<td>4.70</td>
<td>1.59</td>
<td>272</td>
</tr>
<tr>
<td>PI16: hotel’s image impacts your hotel choice</td>
<td>4.63</td>
<td>1.60</td>
<td>273</td>
</tr>
<tr>
<td>PI19: the hotel gives a glimpse of the type of person you are</td>
<td>4.13</td>
<td>1.74</td>
<td>268</td>
</tr>
<tr>
<td>PI27: the hotel reflects the kind of person you are</td>
<td>3.99</td>
<td>1.63</td>
<td>272</td>
</tr>
<tr>
<td>PI28: the hotel’s service makes you feel important</td>
<td>4.32</td>
<td>1.63</td>
<td>275</td>
</tr>
<tr>
<td>PI31: your hotel selection is based on the similarity of your values and those represented by the hotel</td>
<td>4.45</td>
<td>1.57</td>
<td>270</td>
</tr>
<tr>
<td>PI45: you are proud to be associated with the hotel</td>
<td>4.59</td>
<td>1.65</td>
<td>269</td>
</tr>
<tr>
<td>Item</td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSY 5: you feel a sense of belonging to the hotel</td>
<td>4.67</td>
<td>1.60</td>
<td>275</td>
</tr>
<tr>
<td>PA 17: you would be happy to stay at the hotel</td>
<td>6.03</td>
<td>.85</td>
<td>278</td>
</tr>
<tr>
<td>PSY 25: you feel emotionally attached to the hotel</td>
<td>3.57</td>
<td>1.80</td>
<td>270</td>
</tr>
<tr>
<td>PA 30: favorable feelings toward the hotel</td>
<td>5.49</td>
<td>1.01</td>
<td>276</td>
</tr>
<tr>
<td>PSY 29: you would easily become as attached to another hotel as you</td>
<td>4.96</td>
<td>1.43</td>
<td>267</td>
</tr>
<tr>
<td>are to the selected hotel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA 34: you like the way you are treated at the hotel</td>
<td>5.79</td>
<td>.87</td>
<td>277</td>
</tr>
<tr>
<td><strong>Resistance to Change to Competitors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC 20: you would not change the preferences for the hotel even if</td>
<td>4.23</td>
<td>1.82</td>
<td>266</td>
</tr>
<tr>
<td>your close friends recommend other hotels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC 35: not willing to change your preference for this hotel</td>
<td>4.85</td>
<td>1.38</td>
<td>272</td>
</tr>
<tr>
<td>RC 38: to change your preference would require major thinking</td>
<td>4.32</td>
<td>1.65</td>
<td>272</td>
</tr>
<tr>
<td>RC 39: difficult to change your beliefs about the hotel</td>
<td>4.40</td>
<td>1.43</td>
<td>273</td>
</tr>
<tr>
<td>RC 40: you will stay in the selected hotel even if you can find a</td>
<td>4.49</td>
<td>1.68</td>
<td>264</td>
</tr>
<tr>
<td>less expensive room in another hotel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Repeat Purchase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REP 22: when you return to the area where the selected hotel is</td>
<td>5.79</td>
<td>1.06</td>
<td>275</td>
</tr>
<tr>
<td>located, you will stay at the selected hotel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REP 23: you don’t foresee yourself switching to a different hotel</td>
<td>5.58</td>
<td>1.32</td>
<td>273</td>
</tr>
<tr>
<td>REP 41: you would like to continue your relationship with the</td>
<td>5.62</td>
<td>.98</td>
<td>277</td>
</tr>
<tr>
<td>selected hotel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Partnership-Like Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 33: you would make an effort to help the hotel succeed</td>
<td>4.81</td>
<td>1.49</td>
<td>259</td>
</tr>
<tr>
<td>PLA 36: you would like to share the ideas you liked at another hotel</td>
<td>4.31</td>
<td>1.80</td>
<td>263</td>
</tr>
<tr>
<td>with the selected hotel’s management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 37: you go out your way to recommend the hotel</td>
<td>4.43</td>
<td>1.66</td>
<td>275</td>
</tr>
<tr>
<td>PLA 42: you are more likely to tell the management about problems</td>
<td>4.57</td>
<td>1.80</td>
<td>268</td>
</tr>
<tr>
<td>that occur in the selected hotel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 43: you would recommend the hotel to your friends, relatives,</td>
<td>5.71</td>
<td>1.01</td>
<td>278</td>
</tr>
<tr>
<td>and business associates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 44: you would serve on a customer advisory board</td>
<td>3.92</td>
<td>2.11</td>
<td>263</td>
</tr>
<tr>
<td>Item</td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>PLA46: if there are problems, you will work jointly with the hotel</td>
<td>4.45</td>
<td>1.60</td>
<td>264</td>
</tr>
<tr>
<td>PLA 47: you will allow your name and a positive comment be used in an advertisement</td>
<td>3.91</td>
<td>2.08</td>
<td>257</td>
</tr>
</tbody>
</table>

**Missing Value Analysis**

There were 279 cases left for factor analysis and path analysis. However, each of the 47 key variables had one or more missing values and only 170 cases were complete. Missing values were replaced to avoid losing the 109 cases. Before replacing the missing values, the pattern of the missing values was examined; failing to meet the necessary assumptions about randomness of the missing values would have led to biased and distorted results. In other words, if the values had not been randomly missing, replacing the missing values with listwise or pairwise estimation would have been inappropriate (SPSS, 1999).

Roderick J. A. Little's Chi-square statistic is a test for whether values are missing completely at random. The result of the Little’s chi-square was 4613.681 \((df = 4052; p\text{ value} = .000)\) indicating that the values were not missing randomly. Therefore, Expectation-Maximization (EM) and regression imputation methods were considered (SPSS, 1999). There is no rule of thumb for which method is better. However, scatterplots of observed and imputed values by both EM and regression imputation values showed that EM imputed values closer to the original observed values. The missing values program in SPSS version 10.0 was used to calculate the EM imputed values. The EM imputed values were applied to replace the missing values in this study.

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Results of Exploratory Factor Analysis

Because all constructs were measured by multiple survey items, Exploratory Factor Analysis (EFA) was applied to extract the proper combination of variables for each construct. As indicated in Chapter 3, all solutions used Principle Component Analysis with a Varimax rotation algorithm. Additionally, only variables with a factor loading greater than .4 are shown since a loading less than .4 did not strongly contribute to the factor.

Factor Analysis of the Reduced Dataset

Prior to using path analysis to test the six hypotheses, four separate factor analyses were performed on the reduced dataset. The first factor analysis contained 25 items measuring three commitment antecedents. The second factor analysis contained six items evaluating commitment. The third factor analysis consisted of five items assessing resistance to change to competitors. The fourth factor analysis comprised 12 items measuring loyalty—repeat purchase and partnership-like activities.

In this section, discussion of the results of the factor analyses and the reliability and validity of the constructs are reported.

Three Commitment Antecedents

A three-factor solution was specified in the factor analysis (see Table 3). This 3-factor solution explained 51.879% of the variance in the data. The first factor was labeled as the trust construct and had an Eigenvalue of 6.896; the second factor appeared to be the personal identification construct and had an Eigenvalue of 3.054; and the third factor relating to check-in and the registration process was labeled as the benefit construct and had an Eigenvalue of 1.420. The proposed three constructs were
supported, although some of the measures proposed to measure benefits did not appear to measure the construct.

The reliability tests showed that the new trust construct had a Cronbach’s alpha value of .902. The personal identification construct had a Cronbach’s alpha value of .896. The benefit construct had a Cronbach’s alpha value of .632.

The convergent and discriminant validities were assessed using a heterotrait-monomethod matrix, hence, calculating within correlations and between correlations. The within correlation is an average of the correlations of all items used in the same construct. Whereas, the between correlation is an average of the correlations among each item used in different constructs. The results indicated that all of the within correlations of each construct were higher than all of the between correlations of each construct. (Table 4).
Table 3  Factor Analysis of Three Commitment Antecedents

<table>
<thead>
<tr>
<th></th>
<th>Trust Identification</th>
<th>Personal Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF 13: hassle-free stay</td>
<td>.788</td>
<td></td>
</tr>
<tr>
<td>TU 26: hotel offers a consistent level of service</td>
<td>.768</td>
<td></td>
</tr>
<tr>
<td>TU 11: you are sure employees will do what they say</td>
<td>.739</td>
<td></td>
</tr>
<tr>
<td>TU 8: the hotel is well managed</td>
<td>.729</td>
<td></td>
</tr>
<tr>
<td>BF 14: amenities for you to conduct business</td>
<td>.711</td>
<td></td>
</tr>
<tr>
<td>BF 6: comfortable stay</td>
<td>.708</td>
<td></td>
</tr>
<tr>
<td>TU 18: employees will be truthful with you</td>
<td>.704</td>
<td></td>
</tr>
<tr>
<td>TU 21: your request will be taken care of</td>
<td>.691</td>
<td></td>
</tr>
<tr>
<td>TU 24: you trust the employees</td>
<td>.646</td>
<td></td>
</tr>
<tr>
<td>BF 7: your problems are important to the employees</td>
<td>.631</td>
<td></td>
</tr>
<tr>
<td>PI 27: the hotel reflects the kind of person you are</td>
<td>.895</td>
<td></td>
</tr>
<tr>
<td>PI 19: the hotel gives a glimpse of the type of person you are</td>
<td>.863</td>
<td></td>
</tr>
<tr>
<td>PI 28: the hotel’s service makes you feel important</td>
<td>.817</td>
<td></td>
</tr>
<tr>
<td>PI 31: your hotel selection is based on the similarity of your values and those represented by the hotel</td>
<td>.760</td>
<td></td>
</tr>
<tr>
<td>PI 3: hotel’s image closest to reflecting your lifestyle</td>
<td>.715</td>
<td></td>
</tr>
<tr>
<td>PI 45: you are proud to be associated with the hotel</td>
<td>.683</td>
<td></td>
</tr>
<tr>
<td>PI 16: hotel’s image impacts your hotel choice</td>
<td>.635</td>
<td></td>
</tr>
<tr>
<td>BF 1: expedited registration</td>
<td>.829</td>
<td></td>
</tr>
<tr>
<td>BF 2: check in at a time that suits you</td>
<td>.803</td>
<td></td>
</tr>
</tbody>
</table>

- Original propose to measure: BF = benefits, TU = trust, PI = personal identification

Table 4  The Heterotrait–Monomethod Matrix of Three Commitment Antecedents

<table>
<thead>
<tr>
<th></th>
<th>TU</th>
<th>PI</th>
<th>BF</th>
</tr>
</thead>
<tbody>
<tr>
<td>TU</td>
<td>.4859</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>.2244</td>
<td>.550</td>
<td></td>
</tr>
<tr>
<td>BF</td>
<td>.1609</td>
<td>.0495</td>
<td>.4623</td>
</tr>
</tbody>
</table>

- Numbers in the diagonal indicated the within correlations of each construct
- Numbers in the lower triangle indicated the between correlations of each construct

Commitment

Six items were used in the EFA for the commitment construct (see Table 5). Two factors were extracted: the first factor had an Eigenvalue of 2.547 and the second had an
Eigenvalue of 1.078. These two factors explained 63.12% of the variance in the data.

Three items loading heavily on factor 1 appeared to reflect the positive attitude customers feel toward the service providers. Three items loading heavily on factor 2 appeared to reflect the psychological attachment customers have toward the service providers.

The reliability tests showed that the first factor with three items had an alpha value of .746 and thus all these three items were included in this factor for the following path analysis. On the other hand, the three items in the second factor had an alpha value of .628. The alpha value became .677 after dropping PSY29. Therefore, only 2 items, PSY5 and PSY25, were used in factor 2 for the following analyses.

A heterotrait-monomethod matrix was applied to assess the convergent and discriminant validities. The results indicated that the within correlations of the positive attitude and psychological attachment constructs were higher than the between correlation of these two constructs (Table 6).

Table 5  Factor Analysis of Commitment

<table>
<thead>
<tr>
<th>Positive Psychological</th>
<th>Attitude</th>
<th>Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA 17: you would be happy to stay at the hotel</td>
<td>.860</td>
<td></td>
</tr>
<tr>
<td>PA 34: you like the way you are treated at the hotel</td>
<td>.815</td>
<td></td>
</tr>
<tr>
<td>PA 30: favorable feelings toward the hotel</td>
<td>.717</td>
<td></td>
</tr>
<tr>
<td>PSY25: you feel emotionally attached to the hotel</td>
<td></td>
<td>.874</td>
</tr>
<tr>
<td>PSY5: you feel a sense of belonging to the hotel</td>
<td></td>
<td>.825</td>
</tr>
</tbody>
</table>


- PA denotes positive attitude construct and PSY denotes psychological attachment construct.

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Table 6  

The Heterotrait – Monomethod Matrix of Commitment

<table>
<thead>
<tr>
<th></th>
<th>PA</th>
<th>PSY</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>.502</td>
<td></td>
</tr>
<tr>
<td>PSY</td>
<td>.2714</td>
<td>.514</td>
</tr>
</tbody>
</table>

- Numbers in the diagonal indicated the within correlations of each construct
- .2714 was the between correlation of these two constructs

Resistance to Change to Competitors

Five items were used in the EFA for the resistance to change to competitors construct (see Table 7). The results indicated that these 5 items loaded heavily on the same factor and had an Eigenvalue of 3.145 and explained 62.89% of the variance in the data. The reliability test indicated that the resistance to change to competitors construct possessed a Cronbach’s alpha value of .849.

Table 7  

Factor Analysis of Resistance to Change to Competitors

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Description</th>
<th>2way</th>
<th>3way</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC 38:</td>
<td>to change your preference would require major rethinking</td>
<td>.848</td>
<td></td>
</tr>
<tr>
<td>RC 39:</td>
<td>difficult to change your beliefs about the hotel</td>
<td>.806</td>
<td></td>
</tr>
<tr>
<td>RC 20:</td>
<td>you would not change the preferences for the hotel even if your close friends recommend other hotels</td>
<td>.787</td>
<td></td>
</tr>
<tr>
<td>RC 40:</td>
<td>you will stay in the selected hotel even if you can find a less expensive room in another hotel</td>
<td>.766</td>
<td></td>
</tr>
<tr>
<td>RC 35:</td>
<td>not willing to change your preference for this hotel</td>
<td>.755</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Loyalty: Repeat Purchase and Partnership-Like Activities

In this study, loyalty was measured by repeat purchase and partnership-like activities. Hence, a two-factor solution was specified in the factor analysis (see Table 8). This 2-factor solution explained 63.286% of the variance in the data. The first factor appeared to be the partnership-like activities construct and had an Eigenvalue value of 3.648. The second factor was the repeat purchase construct had an Eigenvalue of 1.415.

The first factor was labeled as partnership-like activities construct and had a Cronbach's alpha value of .803. The second factor was repeat purchase construct. Repeat purchase intention and proportion of purchase items loaded in the second factor and had an alpha value of .6147. However, the alpha value became .767 after dropping the proportion of purchase item. Therefore, only repeat purchase intention items were used in the repeat purchase construct for the following analyses.

The convergent and discriminant validities were assessed by a heterotrait-monomethod matrix. The results indicated that the within correlations of the constructs were higher than the between correlation of the constructs (Table 9).
Table 8: Factor Analysis of Loyalty

<table>
<thead>
<tr>
<th>Partnership-Like Activities</th>
<th>Repeat Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLA 44: you would serve on a customer advisory board</td>
<td>.769</td>
</tr>
<tr>
<td>PLA 46: if there are problems, you will work jointly with the hotel</td>
<td>.766</td>
</tr>
<tr>
<td>PLA 47: you will allow your name and a positive comment be used in an advertisement</td>
<td>.761</td>
</tr>
<tr>
<td>PLA 33: you would make an effort to help the hotel succeed</td>
<td>.689</td>
</tr>
<tr>
<td>PLA 36: you would like to share the ideas you liked at another hotel with the selected hotel’s management</td>
<td>.670</td>
</tr>
<tr>
<td>REP 22: when you return to the area where the selected hotel is located, you will stay at the selected hotel</td>
<td>.877</td>
</tr>
<tr>
<td>REP 23: you don’t foresee yourself switching to a different hotel</td>
<td>.847</td>
</tr>
<tr>
<td>REP 41: you would like to continue your relationship with the selected hotel</td>
<td>.663</td>
</tr>
</tbody>
</table>

- Original propose to measure: PLA = partnership-like activities, REP = repeat purchase.

Table 9 The Heterotrait – Monomethod Matrix of Loyalty

<table>
<thead>
<tr>
<th>PLA</th>
<th>REP</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLA</td>
<td>.4623</td>
</tr>
<tr>
<td>REP</td>
<td>.2797</td>
</tr>
</tbody>
</table>

- Numbers in the diagonal indicated the within correlations of each construct
- .2797 was the between correlation of these two constructs

Examination of the Assumptions of Using Path Analysis

Path analysis is a form of multiple regression and thus assumptions of linear regression were examined (see Appendix E).
Model Testing

In this study, commitment was proposed as a key-mediating variable for loyalty. The model investigated the direct paths among the three commitment antecedents and commitment and resistance to change, and between resistance to change and loyalty behavior constructs (Figure 8). In path analyses, each construct was tested using the factor scores generated by EFA. Factor scores were generated by two steps: 1. a case's data on each item is multiplied by the factor weight for that item; 2. the sum of these weight-times-data products for all items yields the factor scores.

The results of the path analyses indicated that the trust and personal identification constructs had direct and positive effects on the positive attitude construct. Additionally, the benefits, trust, and personal identification constructs directly and positively influenced the psychological attachment construct. Both the positive attitude and the psychological attachment constructs had positive effects on the resistance to change to competitors construct. Finally, the resistance to change to competitors construct directly influenced the repeat purchase and partnership-like activities constructs (Table 10; Figure 8).

The path analysis equations are summarized in the following paragraphs. All path coefficients are shown as standardized values and path coefficients at .05 significant level are shown in boldface type.

Based on the path analysis outcomes, the proposed six hypotheses were tested and the results are presented next.
H1: Benefits has a direct and positive effect on commitment

The proposed commitment construct broke down into two components: positive attitude and psychological attachment. The paths between three commitment antecedents and commitment were tested by the paths of both the relationships between the three commitment antecedents and the positive attitude construct and between the three commitment antecedents and the psychological attachment construct. Since the model proposed commitment to be psychological attachment, hypothesis testing presented the results of the paths between the three commitment antecedents and the psychological attachment construct. The results of the paths between the three commitment antecedents and the positive attitude construct are discussed following the hypothesis testing section.

\[
\text{Psychological Attachment} = 0.149 \times \text{Benefit} + 0.091 \times \text{Trust} + 0.681 \times \text{Personal Identification}
\]

H1 was supported. The coefficient on the benefits construct in the above equation is shown in bold type indicating this coefficient was significant at a .05 level. Thus, there was a positive relationship between benefits and psychological attachment indicating that benefits resulted in psychological attachment.

H2: Trust has a direct and positive effect on commitment

H2 was supported. There was a relationship between trust and psychological attachment because the coefficient on the trust construct in the above equation was significant at a .05 level. It indicates that trust resulted in psychological attachment.
**H3:** Personal identification has a direct and positive effect on commitment

H3 was supported. The coefficient on the personal identification construct in the above equation was shown in bold type with a positive sign indicating personal identification led to psychological attachment.

**H4:** Commitment has a direct and positive effect on resistance to change to competitors

Resistance to Change to Competitors = 

\[-0.022 \times \text{Benefit} + 0.099 \times \text{Trust} + 0.194 \times \text{Personal Identification} + 0.292 \times \text{Positive Attitude} + 0.360 \times \text{Psychological Attachment}\]

H4 was supported by the results of the study. The psychological attachment construct coefficient in the above equation is shown in bold type with a positive sign, indicating that psychological attachment directly and positively influenced resistance to change to competitors.

**H5:** Resistance to change to competitors has a direct and positive effect on repeat purchase

Repeat Purchase = 

\[0.161 \times \text{Benefit} + 0.217 \times \text{Trust} - 0.051 \times \text{Personal Identification} + 0.201 \times \text{Positive Attitude} + 0.009 \times \text{Psychological Attachment} + 0.416 \times \text{Resistance to Change to Competitors}\]

H5 was supported. The fifth hypothesis proposed that a direct path existed between resistance to change to competitors and repeat purchase. As seen in the above equation, there was a significant positive relationship between resistance to change to
competitors and repeat purchase, indicating that resistance to change to competitors led to repeat purchase.

**H6: Resistance to change to competitors has a direct and positive effect on partnership-like activities**

\[
\text{Partnership-Like Activities} = -0.037 \times \text{Benefit} - 0.096 \times \text{Trust} + 0.214 \times \text{Personal Identification} + 0.133 \times \text{Positive Attitude} + 0.154 \times \text{Psychological Attachment} + 0.288 \times \text{Resistance to Change to Competitors}
\]

H6 was supported. This hypothesis was tested in the above equation. A boldface type positive coefficient indicates that a direct and positive relationship between resistance to change to competitors and partnership-like activities was found.

The results of the paths between the three commitment antecedents and the positive attitude construct were investigated in the following the hypotheses: Hypothesis 7, 8, 9, and 10.

**H7: Benefits has a direct and positive effect on positive attitude**

\[
\text{Positive Attitude} = 0.013 \times \text{Benefit} + 0.768 \times \text{Trust} + 0.121 \times \text{Personal Identification}
\]

H7 was not supported. The coefficient on the benefits construct in the above equation is not shown in bold type. Hence, there was no relationship between benefits and positive attitude.
**H8: Trust has a direct and positive effect on positive attitude**

H8 was supported. The trust construct coefficient in the above equation was significant at a .05 level with a positive sign, indicating that H8 was supported and there was a positive relationship between trust and positive attitude. Thus, the data indicated trust led to a positive attitude.

**H9: Personal identification has a direct and positive effect on positive attitude**

H9 was supported. The personal identification construct coefficient in the above equation was shown in bold type, indicating it was significant at a .05 level. Hence, personal identification produced positive attitude.

**H10: Positive attitude has a direct and positive effect on resistance to change to competitors**

Resistance to Change to Competitors = -.022 * Benefit + .099 * Trust + .194 * Personal Identification + .292 * Positive Attitude + .360 * Psychological Attachment

H10 was supported. The coefficient on the positive attitude construct in the above equation is shown to be significant at a .05 level with a positive sign, and thus there was a positive relationship between positive attitude and resistance to change to competitors. Therefore, the data indicated that positive attitude led to resistance to change to competitors.
Table 10  Results of Path Analysis for the Full Model: Three Commitment Antecedents, Commitment, Resistance to Change to Competitors, and Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Positive Attitude</th>
<th>Psychological Attachment</th>
<th>Resistance to Change</th>
<th>Repeat Purchase</th>
<th>Partnership-Like Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DE</td>
<td>IE</td>
<td>DE</td>
<td>IE</td>
<td>DE</td>
</tr>
<tr>
<td>Benefit</td>
<td>n.s.</td>
<td>.149**</td>
<td>n.s.</td>
<td>.005</td>
<td>.161**</td>
</tr>
<tr>
<td>Trust</td>
<td>.768**</td>
<td>.091*</td>
<td>n.s.</td>
<td>.250</td>
<td>.217**</td>
</tr>
<tr>
<td>Personal Identification</td>
<td>.121**</td>
<td>.681**</td>
<td>.194**</td>
<td>.248</td>
<td>n.s.</td>
</tr>
<tr>
<td>Positive Attitude</td>
<td>.292**</td>
<td>.201**</td>
<td>.121</td>
<td>n.s.</td>
<td>.140</td>
</tr>
<tr>
<td>Psychological Attachment</td>
<td>.360**</td>
<td>n.s.</td>
<td>.150</td>
<td>n.s.</td>
<td>.104</td>
</tr>
<tr>
<td>Resistance to Change</td>
<td>.416**</td>
<td>.288**</td>
<td>.419</td>
<td>.472</td>
<td>.320</td>
</tr>
</tbody>
</table>

F-value 139.8 (.000) 89.4 (.000) 39.3 (.000) 40.5 (.000) 21.31 (.000)

R² .604 .494 .419 .472 .320

DE: Direct Effect
IE: Indirect Effect
*: Standardized beta weight is significant at 0.05 probability level
**: Standardized beta weight is significant at 0.01 probability level
ns: Not Significant
- Paths are shown with standardized beta weight
- n.s.: not significant
- * Standardized beta weight is significant at .05 level; ** Standardized beta weight is significant at .01 level

Figure 8. The Full Model of Relationship between Commitment and Loyalty: Commitment as a Key-Mediating Variable for Loyalty
Assessment of the Model

Commitment as a Key Mediating Variable for Loyalty

In this study, both commitment and resistance to change to competitors (the evidence of commitment) are mediating variables. The model was assessed in 2 steps: first, the intervention of commitment was evaluated; second, the intervention of resistance to change to competitors was evaluated.

The intervention of the mediating variable—commitment—was examined by the comparison of simple (direct) effects and compound (indirect) effects on resistance to change to competitors. The direct effects of independent variables on resistance to change to competitors were explored by regressing all variables preceding resistance to change to competitors.

As shown in Table 11 and 12, benefits, trust, and personal identification had a stronger effect on commitment than on resistance to change to competitors. The explained variance estimates for commitment were higher than those for resistance to change to competitors ($R^2$ values for commitment were .604 and .494; $R^2$ value for resistance to change was .352). Furthermore, when controlling for commitment, the originally significant effect that trust had on resistance to change to competitors became insignificant, and also the effect that personal identification had on resistance to change to competitors had been reduced from .474 to .194. In addition, the $R^2$ value for resistance to change increased from .352 to .419 when controlling for commitment.

As indicated by Dillon and Goldstein (1984) and Dielman (1996), the value of $R^2$ will increase by simply adding more independent variables to the regression; the value of $R^2$ will “artificially” increase even if the additional variables are explaining an
insignificant proportion of the variation in the dependent variables. Hence, a F statistic was applied to test whether the additional variables were useful in explaining any variation in dependent variable after taking account for the variation already explained by the original independent variables (Dileman, 1996).

The F statistic is generated by comparing the two regression models: full model and reduced model. The formula for F statistic is as follow,

$$ F = \frac{(SSE_R - SSE_F) / (K - L)}{MSE_F} $$

Where
- $SSE_R$ = the error sum of the squares from the reduced model
- $SSE_F$ = the error sum of the squares for the full model
- $K$ = the number of independent variables in the full model
- $L$ = the number of independent variables in the reduced model
- $MSE_F$ = the mean square error from the full model

Comparing the F statistic with the F critical ($\alpha; K-L, N-K-1$) will determine whether the additional variables contribute significantly in explaining the dependent variable. $\alpha$ is the significant level, $K$ is the number of independent variables in the full model, and $L$ is the number of independent variables in the reduced model. $N$ is the sample size.

In this case, the full model included commitment, whereas the reduced model excluded commitment. The independent variables for the full model were the three commitment antecedents and commitment. The independent variables for the reduced model were the three commitment antecedents. The dependent variable for both full model and reduced model was resistance to change to competitors. The full model could be expressed as $RC = f(BF, TU, PI, CM)$. Whereas, the reduced model could be expressed as $RC = f(BF, TU, PI)$.  

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The result ($F=15.72; P=.000$) indicated that commitment significantly contributed to the explanation of the variation in resistance to change to competitor. Thus, controlling for commitment in the model indeed significantly improved the explanation of the variation in resistance to change to competitors. Therefore, the results of this study provided the support for the intervention of commitment.

The intervention of the mediating variable — resistance to change to competitors — was examined by the comparison of simple (direct) effects and compound (indirect) effects on repeat purchase and partnership-like activities.

The direct effects of independent variables on repeat purchase were explored by regressing commitment and resistance to change to competitors with repeat purchase. As is shown in Table 13 and 14, positive attitude and psychological attachment had a stronger effect on resistance to change to competitors than on repeat purchase. The explained variance estimate for resistance to change to competitors was higher than that for repeat purchase ($R^2$ value for resistance to change to competitors was .400; $R^2$ value for repeat purchase was .327). In addition, when controlling for resistance to change in the model, the effect that positive attitude had on repeat purchase had been reduced from .526 to .370. Besides, the originally significant effect that psychological attachment had on repeat purchase became insignificant. Additionally, the $R^2$ value for repeat purchase increased from .327 to .423 when controlling for resistance to change to competitor in the model. The result of the F statistic ($F = 45.68; P = .000$) indicated that adding resistance to change to competitors to the model significantly contributed to the explanation of the variation in repeat purchase.
Similarly, positive attitude and psychological attachment had a stronger effect on resistance to change to competitors than on partnership-like activities. The explained variance estimate for resistance to change to competitors was higher than that for partnership-like activities ($R^2$ value for resistance to change to competitors was .400; $R^2$ value for partnership-like activities was .222). In addition, when controlling for resistance to change in the model, the originally significant effect that positive attitude had on partnership-like activities became insignificant, and the effect that psychological attachment had on partnership-like activities had been reduced from .429 to .260. Furthermore, the $R^2$ value for partnership-like activities increased from .222 to .282 (Table 13 and 14). The result of F statistic ($F=23.58; P=.000$) indicated that including resistance to change to competitors in the model significantly contributed to the explanation of the variation in partnership-like activities. Therefore, the results of the study provided the support for the intervention of resistance to change to competitors.
Table 11  Results of Path Analysis for Partial Model: Three Commitment Antecedents, Commitment and Resistance to Change to Competitors

<table>
<thead>
<tr>
<th></th>
<th>Positive Attitude</th>
<th>Psychological Attachment</th>
<th>Resistance to Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td>n.s.</td>
<td>.149**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Trust</td>
<td>.768**</td>
<td>.091*</td>
<td>n.s.</td>
</tr>
<tr>
<td>Personal Identification</td>
<td>.121**</td>
<td>.681**</td>
<td>.194**</td>
</tr>
<tr>
<td>Positive Attitude</td>
<td></td>
<td></td>
<td>.292**</td>
</tr>
<tr>
<td>Psychological Attachment</td>
<td></td>
<td></td>
<td>.360**</td>
</tr>
</tbody>
</table>

Resistance to Change

<table>
<thead>
<tr>
<th></th>
<th>F-value</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>139.8 (.000)</td>
<td>.604</td>
</tr>
<tr>
<td></td>
<td>89.4 (.000)</td>
<td>.494</td>
</tr>
<tr>
<td></td>
<td>39.3(.000)</td>
<td>.419</td>
</tr>
</tbody>
</table>

* Standardized beta weight is significant at 0.05 probability level
** Standardized beta weight is significant at 0.01 probability level
n.s.: Not Significant

Table 12  Results of Path Analysis for the Partial Model: Three Commitment Antecedents and Resistance to Change to Competitors

<table>
<thead>
<tr>
<th></th>
<th>Resistance to Change to Competitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td>n.s.</td>
</tr>
<tr>
<td>Trust</td>
<td>.355**</td>
</tr>
<tr>
<td>Personal Identification</td>
<td>.474**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>F-value</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>49.9(.000)</td>
<td>.352</td>
</tr>
</tbody>
</table>

** Standardized beta weight is significant at 0.01 probability level
• n.s.: Not Significant

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### Table 13  Results of Path Analysis for the Partial Model: Commitment, Resistance to Change to Competitors, and Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Resistance to Change</th>
<th>Repeat Purchase</th>
<th>Partnership-Like Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Attitude</td>
<td>.391**</td>
<td>.370**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Psychological Attachment</td>
<td>.497**</td>
<td>n.s.</td>
<td>.260**</td>
</tr>
<tr>
<td>Resistance to Change</td>
<td>.397**</td>
<td>.397**</td>
<td>.326**</td>
</tr>
<tr>
<td>F-value</td>
<td>92.0(.000)</td>
<td>66.9(.000)</td>
<td>35.9(.000)</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.400</td>
<td>.423</td>
<td>.282</td>
</tr>
</tbody>
</table>

** Standardized beta weight is significant at 0.01 probability level  
* n.s.: Not Significant

### Table 14  Results of Path Analysis for the Partial Model: Commitment and Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Repeat Purchase</th>
<th>Partnership-Like Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Attitude</td>
<td>.526**</td>
<td>.197**</td>
</tr>
<tr>
<td>Psychological Attachment</td>
<td>.225**</td>
<td>.429**</td>
</tr>
<tr>
<td>F-value</td>
<td>66.9(.000)</td>
<td>39.4(.000)</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.327</td>
<td>.222</td>
</tr>
</tbody>
</table>

** Standardized beta weight is significant at 0.01 probability level
The Effects that the Three Commitment Antecedents have on Commitment in the Full Model

Based on the results of the study, trust and personal identification generated positive attitude and psychological attachment. On the other hand, benefits did not have a direct effect on positive attitude, but led to psychological attachment (Table 10).

The Effects that the Three Commitment Antecedents have on Resistance to Change to Competitors in the Full Model

Based on the results of the study in Table 10, neither benefits nor trust had a direct effect on resistance to change to competitors. On the other hand, personal identification influenced resistance to change to competitors directly. The results provided the support for the intervention of commitment. For instance, there were no direct significant relationships between benefits and resistance to change to competitors and between trust and resistance to change to competitors. However, benefits and trust indirectly influenced resistance to change via commitment in the following paths: benefits positively influenced psychological attachment, psychological attachment positively contributed to resistance to change to competitors; trust positively influenced positive attitude and psychological attachment, positive attitudes and psychological attachment positively contributed to resistance to change to competitors.

Additionally, when controlling for commitment, the direct relationship between personal identification and resistance to change to competitors was still significant, indicating that personal identification influenced resistance to change to competitors both directly and indirectly. Furthermore, commitment served the function to magnify the...
effectiveness of personal identification on resistance to change to competitors. Without
the intervention of commitment, 35.2% of the variation in resistance to change to
competitors was explained by the three commitment antecedents, whereas, when
controlling for the commitment, 41.9% of the variation in resistance to change to
competitors was explained.

The Effects that Commitment have on Loyalty (Repeat Purchase
and Partnership-Like Activities) in the Full Model

As shown in Table 10, psychological attachment did not have a relationship with
repeat purchase. However, psychological attachment indirectly influenced repeat
purchase by having a direct effect on resistance to change to competitors. In addition,
positive attitude influenced repeat purchase both directly and indirectly. Nevertheless,
resistance to change to competitors served the function to magnify the effectiveness of
positive attitude on repeat purchase. Without the intervention of resistance to change to
competitors, 37.1% of the variation in repeat purchase was explained, whereas, when
controlling resistance to change to competitors, 47.2% of the variation in repeat purchase
was explained.

Moreover, positive attitude and psychological attachment did not have an effect
on partnership-like activities (Table 10). However, positive attitude and psychological
attachment indirectly influenced partnership-like activities by having a direct effect on
resistance to change to competitors.
The Effects that the Three Commitment Antecedents have on Loyalty
(Repeat Purchase and Partnership-Like Activities) in the Full Model

The results in Table 10 and 15 provided the support for the intervention of commitment and resistance to change to competitors. The three commitment antecedents had a stronger effect on commitment than on loyalty. The explained variance estimates for commitment were higher than those for loyalty ($R^2$ values for commitment were .604 and .494; $R^2$ values for loyalty were .333 and .237). Furthermore, when controlling for commitment and resistance to change to competitors, the effect that benefits had on repeat purchase had been reduced from .180 to .161 and the effect that trust had on repeat purchase had been reduced from .520 to .217. Also, the originally significant effect that personal identification had on repeat purchase became insignificant. At the same time, when controlling for commitment and resistance to change to competitors, the effect that personal identification had on partnership-like activities had been reduced from .571 to .214. Also, the originally significant effect that trust had on partnership-like activities became insignificant.

Moreover, according to the results, benefits and trust had both direct and indirect effects on repeat purchase and also personal identification had both direct and indirect effects on partnership-like activities. Nevertheless, the mediating variables—commitment and resistance to change to competitors — magnified the effectiveness of benefits, trust, personal identification had on loyalty. Without the intervention of commitment and resistance to change to competitors, 33.3% of the variation in repeat purchase was explained by the three commitment antecedents, whereas, when controlling the commitment and resistance to change to competitors, 47.2% of the variation in repeat purchase was explained.
purchase was explained. The result of the F statistic (F= 23.75; P=.000) indicated that adding commitment and resistance to change to competitors in the model significantly contributed to the explanation of the variation in repeat purchase. Similarly, without the intervention of commitment and resistance to change to competitors, 23.7% of the variation in partnership-like activities was explained by the three commitment antecedents, whereas, when controlling the commitment and resistance to change to competitors, 32% of the variation in partnership-like activities was explained. The result of the F statistic (F= 11.06; P=.000) indicated that including commitment and resistance to change to competitors in the model significantly contributed to the explanation of the variation in partnership-like activities.

Based on the results of the study shown in Table 10, both benefit and trust had an individual effect on repeat purchase but not on partnership-like activities. However, personal identification directly influenced partnership-like activities but not repeat purchase. There were no significant relationships between benefits and partnership-like activities, trust and partnership-like activities, and personal identification and repeat purchase. However, benefits and trust indirectly influenced partnership-like activities via commitment and resistance to change to competitors in the following paths: benefits positively influenced psychological attachment, psychological attachment positively contributed to resistance to change to competitors, resistance to change to competitors positively influenced partnership-like activities; trust positively influenced positive attitude and psychological attachment, positive attitudes and psychological attachment positively contributed to resistance to change to competitors, resistance to change to competitors positively influenced partnership-like activities (Figure 8). Furthermore,
personal identification influenced repeat purchase in the following indirect path: personal identification positively influenced positive attitude and psychological attachment, positive attitudes and psychological attachment positively contributed to resistance to change to competitors, resistance to change to competitors positively influenced repeat purchase.

Table 15  Results of Path Analysis for the Partial Model: Three Commitment Antecedents and Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Repeat Purchase</th>
<th>Partnership-Like Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td>.180**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Trust</td>
<td>.520**</td>
<td>.122*</td>
</tr>
<tr>
<td>Personal Identification</td>
<td>.176**</td>
<td>.471**</td>
</tr>
<tr>
<td>F-value</td>
<td>45.83 (.000)</td>
<td>28.44 (.000)</td>
</tr>
<tr>
<td>R²</td>
<td>.333</td>
<td>.237</td>
</tr>
</tbody>
</table>

* Standardized beta weight is significant at 0.05 probability level
** Standardized beta weight is significant at 0.01 probability level
n.s.: Not Significant

Reliability and Validity of the Study

The concept of measurement is crucial and thus the reliability and validity of the study are assessed.

Reliability

Reliability indicates the extent to which the results obtained from a measurement are repeatable. There are four basic methods to estimate the reliability of the measurements. They are: re-test method, the alternative-form method, the split-half method, and the internal consistency method. Generally speaking, among these methods,
the internal consistency given by Cronbach’s alpha is the most commonly used method. As indicated in Chapter 3, in this research, a Cronbach’s alpha value greater than .70 was considered adequate measurement reliability. Among the eight constructs in the model, six of them had an alpha value greater than .70 and two constructs had alpha values lower than .70. The last two were the benefits construct with an alpha value of .632 and the psychological attachment construct with an alpha value of .677. According to Malhotra (1999), an alpha value of .60 and below is an indication of unsatisfactory internal consistency; therefore this exploratory study possesses a satisfactory measurement reliability. The reliability for each of the construct has been previously reported. They are summarized in Table 16.

Table 16  **Internal Consistency of Scales (n=279)**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Number of Item</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td>2</td>
<td>.632</td>
</tr>
<tr>
<td>Trust</td>
<td>10</td>
<td>.902</td>
</tr>
<tr>
<td>Personal Identification</td>
<td>7</td>
<td>.896</td>
</tr>
<tr>
<td>Positive Attitude</td>
<td>3</td>
<td>.746</td>
</tr>
<tr>
<td>Psychological Attachment</td>
<td>2</td>
<td>.677</td>
</tr>
<tr>
<td>Resistance to Change to Competitors</td>
<td>5</td>
<td>.849</td>
</tr>
<tr>
<td>Repeat Purchase</td>
<td>3</td>
<td>.767</td>
</tr>
<tr>
<td>Partnership-Like Activities</td>
<td>5</td>
<td>.803</td>
</tr>
</tbody>
</table>

Furthermore, the value of alpha tends to increase as the number of items in a scale increases. In this study, the trust construct consisted of ten items and the personal identification construct consisted of seven items. In order to secure that the reliability estimates of these two constructs are not led by the abundant number of items, a Cronbach’s alpha with the four highest factor loadings items was applied. The alpha
estimate of four items included in trust was .820 and of four items included in personal identification was .890. The results alleviated the concern that the alpha values were a function of the number of scale items.

Validity

Validity refers to whether the measurement evaluates what the research purports to measure. As indicated in Chapter 3, three types of validity were assessed in this research: content validity, construct validity, and criterion-related validity.

Content validity was satisfied through the development of the model in Chapter 2. The measurements in this study were modified from established validated measurements. Additionally, modification after two pretests helped to increase the content validity of the scales. For instance, before the pretest, the author considered the commitment construct and the partnership-like activities construct to be a one-dimensional construct. Then, respondents from the two pretests indicated that there were two components within the commitment construct and two different types of partnership-like activities. Hence, more questions were added to the survey questionnaire to cover all of the possible dimensions of this construct.

Construct validity was assessed by three aspects: convergent validity, discriminant validity, and nomological validity.

As mentioned in Chapter 3, Campbell and Fiske’s heterotrait-monomethod matrix was applied to assess the convergent and discriminant validity. The results of the Heterotrait-Monomethod Matrices indicated that the variables designed to measure the same constructs displayed high correlations and the variables designed to measure the
different constructs displayed low correlations (see Table 4, 6, & 9). Therefore, the constructs in this model possess an adequate level of convergence and discriminability.

Furthermore, Pearson Correlation Coefficients were used to examine convergent validity. For example, repeat purchase intention and proportion of purchase items were designed to measure repeat purchase behavior. The Pearson Correlation Coefficients obtained from all items in these two variables were positive and significant at .05 level. Thus, the convergence of this research was further validated.

Moreover, discriminant validity is assessed by the extent to which a measure does not correlate with other measurements. According to Sharma and Patterson (1999), comparing the alpha coefficients of each construct and its correlation coefficients with other constructs can assess discriminant validity. If the alpha coefficient is higher than the across correlations, this provides evidence of discriminant validity. In this case, all the Cronbach's Alpha was higher than the across correlation. Thus, this study possessed a satisfactory discriminant validity (Table 17).

Additionally, nomological validity was assessed by evaluating the relationships among the constructs in the model. The proposed model was supported, indicating that the model constructs were related. At the same time, the correlation was not 1 among the proposed constructs, indicating those constructs are different. This result implicitly provided support for nomological validity (Table 10 and Table 18).

Finally, criterion validity is used to evaluate the effectiveness of how predictor measurements predict criterion variables. The research model proposed that resistance to change to competitors would predict loyalty behavior. An item measuring proportion of purchase in relation to customer repeat purchase behavior was not included in the model.
The result of regression analysis indicated that resistance to change to competitors had a positive, significant relationship with repeat purchase (t = 6.653; sig. = .01). Hence, this study demonstrated satisfactory criterion validity.

Table 17  Comparisons between the Cronbach’s Alpha Values and Across Correlations

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
<th>Across Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td>.632</td>
<td>.013</td>
</tr>
<tr>
<td>Benefit and Positive Attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefit and Psychological Attachment</td>
<td>.149</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>.902</td>
<td>.768</td>
</tr>
<tr>
<td>Trust and Positive Attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust and Psychological Attachment</td>
<td>.091</td>
<td></td>
</tr>
<tr>
<td>Personal Identification</td>
<td>.896</td>
<td>.121</td>
</tr>
<tr>
<td>Personal Identification and Positive Attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Identification and Psychological Attachment</td>
<td>.681</td>
<td></td>
</tr>
<tr>
<td>Positive Attitude</td>
<td>.746</td>
<td>.292</td>
</tr>
<tr>
<td>Positive Attitude and Resistance to Change to Competitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological Attachment</td>
<td>.677</td>
<td>.360</td>
</tr>
<tr>
<td>Psychological Attachment and Resistance to Change to Competitors</td>
<td>.360</td>
<td></td>
</tr>
<tr>
<td>Resistance to Change to Competitors</td>
<td>.849</td>
<td>.416</td>
</tr>
<tr>
<td>Resistance to Change to Competitors and Repeat Purchase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance to Change to Competitors and Partnership-Like Activities</td>
<td>.288</td>
<td></td>
</tr>
</tbody>
</table>

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Table 18  Correlation Analysis of Model Constructs

<table>
<thead>
<tr>
<th></th>
<th>Trust</th>
<th>Personal Identification</th>
<th>Benefit</th>
<th>Positive Attitude</th>
<th>Psychological Attachment</th>
<th>Resistance to Change</th>
<th>Like Activities</th>
<th>Repeat Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal</td>
<td>0.000</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefit</td>
<td>0.000</td>
<td>0.000</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>0.768</td>
<td>0.121</td>
<td>0.013</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>0.091</td>
<td>0.681</td>
<td>0.149</td>
<td>0.000</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance</td>
<td>0.355</td>
<td>0.474</td>
<td>0.035</td>
<td>0.391</td>
<td>0.497</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partnership-</td>
<td>0.122</td>
<td>0.471</td>
<td>-0.002</td>
<td>0.197</td>
<td>0.429</td>
<td>0.482</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Like Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeat Purchase</td>
<td>0.520</td>
<td>0.176</td>
<td>0.180</td>
<td>0.526</td>
<td>0.225</td>
<td>0.557</td>
<td>0.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

The Distinction between Commitment and Loyalty

One of the propositions of the model is that commitment and loyalty are different constructs. The author conducted a factor analysis to provide support for this proposition.

As discussed in Chapter 1 and 2, because of the close association between commitment and loyalty, there is a lack of consensus in the definition of commitment and loyalty constructs and ways of measuring them (Pritchard, et al., 1992; Pritchard, et al., 1999). Some researchers consider commitment and loyalty synonymous and use them interchangeably (Buchanan, 1985; Assael, 1987; Bowen & Shoemaker, 1998). Other researchers regard commitment as part of loyalty and state that commitment is the
attitudinal component of loyalty or that commitment is the same as affective loyalty and conative loyalty (Selin, et al., 1988; Oliver, 1999).

Pritchard, et al. (1999) distinguished commitment from loyalty and tested a model proposing commitment as an antecedent of loyalty. According to Fishbein and Ajzen's (1973; 1975) theory, a person's attitude leads to a person's behavior intention and behavior. Hence, this study supported Pritchard, et al.'s (1999) study considering commitment and loyalty to be two distinct constructs. The study's support for that loyalty and commitment were separate constructs was drawn from the result of the factor analysis. As shown in Table 19, the factor analysis using PCA separated the items used to measure commitment from the items used to measure loyalty (Table 19). The items used to measure commitment were not blended with items used to measure loyalty, indicating that commitment was not a component of loyalty. Hence, the notion that commitment and loyalty were two distinct constructs was supported in both conceptual and measurement aspects by Fishbein and Ajzen's theory (1973; 1975) and the results of this study.
### Table 19  
**Factor Analysis of the Commitment and Loyalty Constructs**

<table>
<thead>
<tr>
<th>Item</th>
<th>Partnership</th>
<th>Positive</th>
<th>Psychological</th>
<th>Repeat</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLA 44: you would serve on a customer advisory board</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 47: you will allow your name and a positive comment be used in an advertisement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 46: if there are problems, you will work jointly with the hotel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 36: you would like to share the ideas you liked at another hotel with the selected hotels' management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 33: you would make an effort to help the hotel succeed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA 37: you go out your way to recommend the hotel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA 30: favorable feelings toward the hotel</td>
<td>.833</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA 34: you like the way you are treated at the hotel</td>
<td>.722</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA 17: you would be happy to stay at the hotel</td>
<td>.719</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSY 29: you would easily become as attached to another hotel as you are to the selected hotel</td>
<td></td>
<td>.756</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSY 25: you feel emotionally attached to the hotel</td>
<td>.659</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSY 5: you feel a sense of belonging to the hotel</td>
<td>.651</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REP 23: you don't foresee yourself switching to a different hotel</td>
<td></td>
<td></td>
<td>.857</td>
<td></td>
</tr>
<tr>
<td>REP 22: when you return to the area where the selected hotel is located, you will stay at the selected hotel</td>
<td></td>
<td></td>
<td>.795</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.
CHAPTER 5

SUMMARY AND CONCLUSIONS

Introduction

Chapter 5 opens with a summary of findings. Second, conceptual and theoretical implications are discussed. Third, the general implications of the result from the research are presented. Forth, the limitations of this study are discussed. Finally, the chapter concludes with suggestions for future research.

Summary of Findings

Six hypothesized relationships proposed in this study were empirically supported by the results of this study. The results sustained the first three hypotheses, indicating that positive relationships among the three commitment antecedents and commitment existed. The results revealed that a direct and positive relationship existed between benefit and commitment, between trust and commitment, and between personal identification and commitment. Furthermore, the fourth hypothesis was endorsed, denoting commitment directly influenced resistance to change to competitors. Finally, the fifth and sixth hypotheses were substantiated, indicating that resistance to change to competitors directly led to repeat purchase and partnership-like activities.
Conceptual and Theoretical Implications

Commitment as a Key Medicating Variable

As discussed in Chapter 1, this study supported Pritchard, et al’s model (1999) regarding commitment as an antecedent of loyalty. However, Pritchard, et al (1999) considered the evidence of commitment — resistance to change to competitors—to be a key mediating variable for loyalty. They evaluated the evidence of commitment rather than measuring commitment itself. In addition, they failed to consider the psychological attachment element when assessing the development of loyalty. Previous literature on commitment and loyalty claims that commitment is a psychological attachment that a customer holds toward a company and this attachment plays a vital role in developing customer loyalty (Beatty & Kahle, 1988; Bettencourt, 1997; Crosby & Taylor, 1983). Therefore, building on Pritchard, et al’s (1999) model, this study proposed a model postulating commitment as a key mediating variable for loyalty and measured commitment as a psychological attachment.

The results of this study empirically supported the existence of commitment. As discussed in Chapter 4, the three commitment antecedents had stronger relationships with commitment than with resistance to change to competitors. Furthermore, the explained variance estimates for commitment were higher than that for resistance to change to competitors. Therefore, the results of this study empirically reinforced many researchers’ theories that psychological attachment plays an important role in developing loyalty, thus, the psychological attachment element should be considered when assessing the development of loyalty.
The Relationships between the Three Commitment Antecedents and Commitment

In this study, all the three commitment antecedents had a direct and positive effect on commitment.

Consistent with Bowen and Shoemaker's (1998) study, which found that benefits and trust led to commitment to the luxury hotel segment, the results of this study revealed that benefits and trust generated commitment at the middle class business hotel segment. However, the path coefficients of benefits and trust in Bowen and Shoemaker's (1998) study were greater than the coefficients in this study. It is possible that these two commitment antecedents might contribute more to customers' psychological attachment in a luxury hotel segment than in a middle class business hotel.

Additionally, in Pritchard, et al's study (1999), personal identification led to resistance to change to competitors. Similarly, the results of this study revealed that personal identification directly led to commitment and to resistance to change to competitors. Nevertheless, the personal identification construct contributed more to resistance to change to competitors in Pritchard, et al's (1999) study than in this study. There were two possible explanations for this difference. First, the data collected by Pritchard, et al (1999) came from customers of one airline and one chain hotel, whereas the data used in this study came from customers of one specific hotel property. The discrepancy might be attributed to the difference between the perceptions of hotel customers and airline customers. Second, whether the relationship between personal identification and resistance to change to competitors is direct or indirect might affect the outcome of the data analysis. In this study, personal identification indirectly influenced resistance to change to competitors through commitment, whereas in Pritchard, et al's
study (1999), personal identification influenced resistance to change to competitors directly.

**The Relationships between Commitment and Resistance to Change to Competitors**

In Pritchard, et al’s (1999) study, resistance to change to competitors was theorized as the evidence of commitment. They proposed that when there was a commitment, resistance to change to competitors would be demonstrated. However, they did not test this notion. The results of this study found that commitment indeed led to resistance to change to competitors, and therefore empirically supported Pritchard, et al’s theory.

**The Relationships between Resistance to Change to Competitors and Loyalty**

The results of this study were consistent with Pritchard, et al’s (1999) study, which found resistance to change to competitors led to loyalty behavior. In the business hotel customer segment, when customers demonstrated resistance to change to competitors, they provided repeat purchase behavior. Additionally, this study also measured another loyalty behavior—partnership-like activities—and found a positive relationship between resistance to change to competitors and partnership-like activities.

**The Relationships not Proposed by the Model**

Based on the literature review, only the direct paths among constructs were proposed in the model. Nevertheless, both direct and indirect paths among constructs in the proposed model were assessed. The results of path analyses revealed that several direct paths, which were not proposed by the model, existed. For instance, benefits and trust were proposed to directly influence commitment and had indirect relationships with repeat purchase via commitment and resistance to change to competitors. However, the
results denoted that benefits and trust had direct effects on both commitment and repeat purchase. Similarly, personal identification was proposed to have an indirect relationship with resistance to change to competitors and with partnership-like activities. However, the results found direct relationships between personal identification and resistance to change to competitors and between personal identification and partnership-like activities. Additionally, commitment was proposed to lead to loyalty behavior through resistance to change to competitors, whereas the results demonstrated that positive attitude directly influenced repeat purchase and psychological attachment directly influenced partnership-like activities.

Hence, the results of this study illustrated that in the business hotel customer segment, the three commitment antecedents not only directly led to commitment but also directly led to loyalty behavior. At the same time, in addition to indirectly influencing loyalty behavior by going through resistance to change to competitors, commitment also had a direct effect on loyalty behavior. Positive attitude directly led to repeat purchase.

**Oliver's Loyalty Phases**

As aforementioned, Oliver (1999) indicates that there are four phases in the progression of loyalty. They are cognitive loyalty, affective loyalty, conative loyalty, and action loyalty. This study empirically supported this notion. The results of the path analysis illustrated the process of the development of loyalty. According to Oliver (1999), customers have a liking for and favorable attitude toward the company in the cognitive loyalty phase. In this study, customers first held a positive attitude toward the hotel; this positive attitude was similar to Oliver's cognitive loyalty. Then, customers' positive attitude led to their psychological attachment toward the hotel and this
psychological attachment could be referred to Oliver's affect loyalty. Followed by that, the psychological attachment led to resistance to change to competitors. The resistance to change to competitors was similar to Oliver's conative loyalty. Finally, customers provided repeat purchases and partnership-like activities. Customers' repeat purchases and partnership-like activities were the action loyalty in Oliver's study. Hence, the results of study demonstrated a consistency with Oliver's Loyalty Phases' theory.

General Implications Arising from the Study

Academically, this research presents a workable model that explains commitment as a key mediating variable for loyalty. All six hypotheses are supported and the existence of the six paths are confirmed (Figure 8). Thus, this study has contributed valuable insights towards the understanding of the relationship between commitment and loyalty. From a practical viewpoint, hospitality managers will benefit from the results of this research. For example, this study provided managers an alternative approach to measure loyalty. Additionally, this study revealed that some benefits, which were designed by managers to differentiate themselves from competitors, were not perceived as benefits by customers. Finally, this study provided managers ways to strengthen customer loyalty.

Loyalty Measurement

As indicated by Pritchard, et al. (1999), marketing managers have repeatedly called for loyalty measurements, which evaluate both customers' purchase behavior and customers' commitment toward the company. Dick and Basu (1994) and Pritchard and Howard (1997) recommended a typology measurement, which assessed customers'
attitude and behavior to classify them into four loyalty types: non-loyalty, latent loyalty, spurious loyalty and true customers. When customers score low on both attitudinal and behavioral dimensions, they will be categorized as non-loyal customers. They possess neither psychological attachment toward the company nor repeat purchase intentions. When customers score high on attitudinal dimension and low on behavioral dimension, they will be categorized as latent-loyal customers. They do not indicate a high intention to purchasing products or services from the company repeatedly, despite the fact that they display a favorable attitude toward the company. When customers score low on attitudinal dimension and high on behavioral dimension, they will be categorized as spurious-loyal customers. These customers provide repeat business to the company, but they do not hold favorable attitudes toward the company. When customers score high on both attitudinal and behavioral dimensions, they will be categorized as true-loyal customers. They are not only psychologically attached to the company but they are also engaged in repeat purchase.

The above categorization can be used to identify the types of customers. However, this measurement is not capable of discerning the causal relationship between customer commitment and loyalty. For example, from the results of the categorization, managers simply know latent-loyal customers are the customers who display favorable attitudes toward the company yet these customers do not have strong repeat purchase intentions. Managers do not know the reasons for this behavior. Hence, managers lack specific direction to work on encouraging these customers’ repeat purchase.

On the other hand, the measurements developed in this study can determine the casual relationship between commitment and loyalty. Thus, the possible explanation for
this phenomenon might be explored. For instance, in this study the results indicated that personal identification leads to customers’ favorable attitude and psychological attachment but not to repeat purchase, whereas benefits and trust lead to repeat purchase. Therefore, the latent loyal customers might be the customers who personally identify with the company and display favorable attitude but do not demonstrate high return intentions. Based on these results, managers could stimulate the latent-loyal customers’ repeat purchase intentions by providing value-adding benefits to them and developing their trust. Furthermore, the results of this study indicated that benefits lead to repeat purchase but not to positive attitude. Therefore, the spurious loyal customers might be the customers who receive personally valuable benefits from the company and exhibit high return intentions but do not hold favorable attitude toward the company. Based on the results, managers could induce these spurious-loyal customers’ positive attitude by enhancing their confidence and trust toward the company.

This study was inspired by Pritchard and Howard’s (1997) call for more research to understand how customers’ behavioral and attitudinal traits are stimulated and inhibited. The measurements developed in this study provide managers with an alternative approach to determine the casual relationship between commitment and loyalty. Applying these measurements will help managers to identify the specific area that they can emphasize to strengthen customer loyalty.

**Identifying Value-Adding Benefits**

The results of the study indicated that four benefits blended with trust. They are: a comfortable stay, a hassle-free stay, customers’ problems are important to the employees, and hotel provided amenities customers need for conducting business.
A possible explanation for these four benefits not loaded together with other two benefits would be that customers felt they paid for a comfortable stay, a hassle free stay, a satisfactory interaction with employees, and amenities they need for conducting their business, whereas, they felt that the money they paid did not entitle them an expedited registration or a check-in time that suited them. The results revealed that the four items might be considered to be a “given” from the customers’ viewpoint. Customers did not perceive the items as benefits which provided extra value to their hotel stay. However, if a hotel does not provide them, it will breach the customers’ trust toward this hotel and customers may lose confidence in the hotel’s operational ability. Hotel managers should realize that some benefit features which were designed to differentiate a hotel from its competitors might not work as the managers expected.

Therefore, it would be in the best interest for hotel managers to make sure that they accommodate their guests with the requisites customers expect for the money they pay so that they will not breach customers’ trust. Furthermore, hotel managers should identify what particular service attributes are personally valuable to customers and customers perceive them as value-adding benefits. Thus, managers can provide customers with the identified benefits to differentiate the hotel from its competitors so as to create competitive advantage.

**Strengthen Customer Loyalty by Maximizing All the Three Commitment Antecedents**

The notion that commitment leads to loyalty behaviors has been empirically supported. Therefore, in order to induce customer loyalty behaviors, managers should focus on creating positive customer attitudes and on fostering customer psychological
attachment. The results of this study validate that trust and personal identification lead to positive attitudes, whereas benefits, trust, and personal identification generate psychological attachment and managers can acquire customer commitment and strengthen customer loyalty by emphasizing these commitment antecedents.

For instance, companies can provide enhanced core product performance benefits by adding value to their offerings so that they can deliver superior value to their customers. Once customers receive extraordinary benefits from the providers, customers are more likely to commit themselves to establish, develop, and maintain relationships with the providers (Morgan & Hunt, 1994; Berry, 1995; Bowen & Shoemaker, 1998).

Moreover, services providers can provide improved social benefits by educating their employees that customers need to be specially treated and recognized. Employees need to be able to recognize customers and make them feel that they are unique, special, and important to the property and let customers know that their business is appreciated. In addition, by recognizing customers, employees can also better understand customers' particular needs and wants so as to meet and exceed those needs and wants. Managers need to work on improving employees' interaction skills during the service encounters so that employees can provide a higher level of personalized services to customers.

In addition, service providers can earn customer trust in several ways. A service provider could alleviate customers' worries of the high risk associated with the purchase of hospitality services by exhibiting its reliability to deliver accurately and successfully what is supposed to be delivered all the time. For example, a hotel should demonstrate its professionalism to let customers recognize that the management of this hotel knows the business very well and customers can be confident giving this hotel their business.
Furthermore, a hotel could gain customers' trust through its technical and functional quality (Sharam & Patterson, 1999). The technical quality refers to core products, which relate to the hotel's operational process (e.g., the hotel's competency, consistency, honesty, integrity, and fairness). For example, during customers' stays, the hotel should exhibit its competency and ability to perform well in the operational process and provide constant, high-technical quality including accurate reservations, effective communication, and safe environments for customers to leave their valuables (Bowen & Shoemaker, 1998).

Functional quality refers to the interaction between employees and customers (e.g., employees' responsiveness, helpfulness, and benevolence) and hotel managers also need to train their employees to earn customers' trust (Morgan & Hunt, 1994). According to Parasuraman, et al., (1988), employees' knowledge and courtesy would inspire customers' trust and confidence. Therefore, hotel managers need to train all employees to be knowledgeable about their jobs and to possess the techniques and skills to perform their jobs well. In addition, employees need to understand that how they interact with customers is critical to earning customers' trust. For example, employees should be taught to present themselves professionally and to behave in a professional manner; to keep customers apprised of any relevant information; assure customers that problems will be handled; to consider customers' property; and, to have customers' best interests at heart (Parasuraman, et al., 1988). At any rate, employees should respond to customers' requests promptly – no matter how trivial the requests are. Furthermore, employees should always honor their word to customers; once employees say that they will do something for the customers, they should follow through and complete the task.
Finally, as indicated in this study, personal identification directly influenced psychological attachment, resistance to change to competitors, and partnership-like actives. Hence, in order to obtain customer loyalty, a service provider needs to be personally identified by its target customers. Services providers should target the exact market segment comprised of customers who can personally identify with the companies’ values and image. Companies need to learn more about their customers’ backgrounds, lifestyles, and psychological profiles so as to have a better understanding of customers’ values. And the information will facilitate the companies to effectively reach the target market segment. Those efforts may raise the possibility for customers to personally identify with a property.

Limitations of the Study

Separate Factor Analyses

Because the measurement of this study was newly developed with no existing validity and reliability, the author chose path analysis to test the proposed model. Therefore, the components for each construct were generated from four separate factor analysis instead of being produced by one factor analysis including all constructs in the model.

Generally speaking, factor analysis includes only independent variable items. The purpose of factor analysis is to produce the uncorrelated combination of variables that resemble each variable as closely as possible. The purpose of path analysis is to determine a causal relationship between independent variables and dependent variables, which contradicts with the notion of factor analysis. Therefore, four separate factor
analyses were conducted in this study. The first factor analysis included the ultimate independent variables: the benefits, trust, and personal identification constructs. The second factor analysis included all items used to measure commitment. The third factor analysis was conducted with all items used to measure resistance to change to competitors. The purpose of the second and third factor analyses was to evaluate whether all the items designed to measure commitment and resistance to change to competitors were really measuring these two constructs. Hence, the items, which did not contribute significantly to the factor with a factor loading higher than .4, were dropped and not included in the constructs. The fourth factor analysis included the ultimate dependent variables: repeat purchase and partnership-like actives.

Since the eight constructs in the model were not generated by a single factor analysis, significant correlations exist among some constructs. Nevertheless, as mentioned in Chapter 4, this study possessed an adequate level of discriminant validity because the dissimilar constructs displayed low correlations and the internal consistent coefficients within constructs were higher than the correlations among constructs.

**Loyalty Behavior Measurements**

In this study, most questions used to measure loyalty behavior were actually measuring behavioral intentions rather than actual behavior. In part this was due to the proportion of purchase question was removed from the model testing discussed in Chapter 4.

Type of the question designed to measure repeat purchase was worded as “when you return to the area where the selected hotel is located, you will stay at the selected hotel” and the question designed to measure partnership-like activities was worded as
"you would like to share the ideas you liked at another hotel with the selected hotels’ management." Hence, a mix of customers’ actual behaviors and behavioral intentions measured the loyalty behavior constructs in study.

Suggestions for Future Research

Concerns Raised by this Research

Benefits and Trust Blended Together

The result of the first factor analysis revealed that four benefits items loaded heavily in trust factor rather than in benefits factor. This is not a surprising finding since the overlapping of benefits and trust has been shown in previous studies. Samson and Wacker’s (1998) regarded reliability, a trust feature, as one element of perceived benefits. In Berry’s study (1995), he described that a risk-reduction benefit, which customers receive from aligning relationships with providers, is to reduce their uncertainty and vulnerability from the purchase. Similarly, Gwinner, et al., (1998), considered trust to be part of psychological benefits and used psychological benefits and trust interchangeably.

In this study, the four benefits items blended with trust are: “a comfortable stay, a hassle-free stay, customers’ problems are important to the employees, and hotel provided amenities customers need for conducting business.” The factor analysis separated these four benefits items from the other two benefits items: expedited registration and customers can check in at a time that suits them.
According to the Samson and Wacker (1998), "perceived benefits of a product are weighted against their cost of the product" (P. 217). Benefits are the particular product or service attributes which are personally valuable to the customers.

In this study, customers answered questions based on their perceptions of the selected hotel to which they felt they were loyal. More than 50% of the respondents indicated that the duration of the relationship between them and their selected hotels was more than five years. Almost 90% of them stayed in the selected hotel more than half of the time when they went to the area in which selected hotel was located. Based upon the duration of the relationship and the frequency of customers' hotel stay, it was reasonable to assume that the customers have had comfortable and hassle-free stays and had experienced satisfactory interactions with hotel employees. Therefore, it was a given that the hotel provided comfortable and hassle-free stays and employees communicated that customers' problems were important to them. Providing customers a comfortable and hassle-free stay was a minimum criterion a hotel ought to meet. Showing customers that their problems were important was an inherent feature possessed by hotel employees. On the other hand, if a hotel did not provide a comfortable and hassle-free stay or employees did not demonstrate their concern about customers' problems, it would diminish customers' trust toward the hotel's capability of providing high quality service.

Furthermore, since the majority of the participants in this study stayed at a hotel for business purposes, they expected the hotel to provide amenities they needed for conducting their business. Many hotels selected by the respondents for answering the questionnaires positioned themselves as business hotels. Therefore, offering amenities facilitating customers' business needs was not an extra feature which customers would
feel valuable; whereas, failing to accommodate customers with business necessary amenities would cause the customers to doubt the hotels' professionalism and expertise for being business hotels.

Based upon the above rationale, it was possible that the four items (a comfortable stay, a hassle-free stay, customers' problems are important to the employees, and hotel provided amenities customers need for conducting business) designed to measure benefits in this study might be actually measuring trust component.

Future research is strongly recommended to investigate benefits and trust in further detail. For example, future research could investigate which features are perceived by customers as value-adding benefits provided by service providers, and which features are requisites customers expect for the money they pay and service providers should offer so that they will not breach customers' trust.

Two Components of Commitment

According to Oliver (1999), commitment develops over time. Initially, in the cognitive loyalty phase, customers have a liking for and favorable attitude toward the companies. Then, in the affective loyalty phase, customers' psychological attachment develops after cumulative satisfying experiences. Following the second affective phase is the conative loyalty phase. In this phase, customers deliberately maintain the relationships with companies and possess brand-specific loyalty. Finally, in the action loyalty phase, customers provide repeat purchases to the companies.

In this study, the results of EFA revealed that the commitment construct consisted of two components: positive attitude and psychological attachment. Customers' feelings toward the hotel were differentiated at different levels. Positive attitude seemed to
precede psychological attachment, which appeared to develop after future experience with the hotel. At the same time, this psychological attachment led to resistance to change to competitors. Further research is recommended to investigate the development phases of commitment.

**Questions Used to Measure Resistance to Change to Competitors**

Most questions, which were used to measure resistance to change to competitors, evaluated whether customers would change their preferences and beliefs about the selected hotels. However, many participants told the author that those questions were not practical. They felt that a price-related question would be more realistic. Therefore, a statement addressing this matter was added to the study: you will stay in the selected hotel even if you can find a less expensive room in another hotel. Most participants felt that this question better reflects customers' resistance to change to competitors. Future research is recommended to ask pragmatic questions to measure resistance to change to competitors.

**Components of Partnership-Like Activities**

The results of the factor analysis revealed only one dimension of partnership-like activities. However, many participants told the author that there were two types of partnership-like activities: private and public. Due to some companies restraining their employees from making endorsements publicly, some questions, such as “you will allow your name and a positive comment be used in an advertisement,” used in this study did not accurately measure customers’ public partnership-like activities. Future research should put a filter question to screen out the respondents who are under such restrictions.
Replications of the Study

Once the researchers alleviate the aforementioned three concerns, four possible replications are desired. The replication is necessary and desirable to validate how robust this model is. If the proposed model can be generalized to other business environments or situations, the power of the model would be endorsed. Four different replications of this study are presented next.

First, this study collected data from hotel customers and it should be repeated in other service settings in which customer commitment plays an important role in customer loyalty behavior. For instance, Pritchard et al. (1999) tested their commitment and loyalty models among hotel and airlines customers. Buchanan (1985) collected data from health club members to evaluate customer commitment. Backman and Crompton (1991) collected data from golf club members to assess customer loyalty. Therefore, replications in other service settings within the hospitality environment, such as restaurants, casinos, airlines, health, and recreational facilities seem to be warranted by the results of this study.

Second, with significant modification to accommodate the specification of the service setting, the model might be applicable for measuring customer commitment and loyalty beyond the hospitality environment, in such settings as retail, insurance, and professional services. For example, Zeithaml, et al. (1996) evaluated customer loyalty behavior by collecting data from a computer manufacturer, retail business, and automobile and life insurers. Sharma and Patterson (1999) assessed customer commitment by collecting data from a financial firm’s clients. Future research might
replicate this study to other service settings to examine whether the model is applicable across consumer services.

Third, the study should be repeated in a different brand of middle-scale business hotels, especially those identified as competing brands to the hotel from this study. This effort would confirm whether similar results could be generated.

Fourth, the survey instrument could be applied to different market segments of the hotel industry, such as the upscale and economy class segments. Replicating the study at different types of hotel properties would reveal whether customers' responses would be influenced by their segments. The results would provide insight into whether the revealed relationships in this study appear to exist for other types of hotel properties.

Additionally, since the nature of business travelers and pleasure travelers is different, future research might also consider replicating this study with pleasure travelers to evaluate whether the model holds true. In general, there is greater trip occurrence for business travelers than for pleasure travelers. The purpose of travel is different between these two types of travelers and the desired amenities also vary. Therefore, the commitment antecedents for business travelers might be different from those for pleasure travelers. For instance, business travelers expect the hotels to provide consistent and reliable services. They might not want surprises. Hence, trust might be a foremost commitment antecedent for business travelers. On the other hand, pleasure travelers might care more about the ancillary amenities of the hotels to enhance their stays. Therefore, benefits might be a leading commitment antecedent for pleasure travelers. At the same time, loyalty behavior performed by business travelers and by pleasure travelers might be different. Loyal business travelers might provide repeat
purchase to the hotels more frequently than loyal pleasure travelers since pleasure travelers do not visit the same place as often as business travelers. Replicating this study to pleasure travelers can advance the understanding of the differences between business travelers and pleasure travelers.

Finally, future research may examine different commitment antecedents since many researchers indicated that many factors lead to commitment, such as informational process, customer satisfaction, subjective norm, and purchase habit (Pritchard et al., 1999; Dick & Basu, 1994; Beatty & Kahle, 1988).

This study was the first or one of the first to explore the relationship between commitment and loyalty. The results of this study found that commitment and loyalty were two separate constructs and commitment is the key-mediating variable for loyalty. Additionally, benefits, trust and personal identifications lead to commitment. This study served as the beginning step of an investigation into the complicated relationship between commitment and loyalty. More research should be conducted based on the results of this study.
APPENDIX A

COVER LETTER
Dear Guest:

I am a doctoral student in the College of Hotel Administration at the University of Nevada, Las Vegas (UNLV). The purpose of this survey is to learn how hotels can better serve their customers and create customer loyalty. This research is sponsored by myself and UNLV. The results of the surveys will be used to broaden the scope of understanding of business travelers.

The survey's success is dependent on your participation. It will take about five minutes for you to complete this survey. The information gathered from this survey will be used for research purposes. The individual survey responses will be anonymous.

Please return the completed questionnaire to the front desk before you check out. Or you can mail it back by the return stamped envelope. If you have questions about this study, you can reach me in the hotel lobby or you can contact Professor John Bowen, 702 895 0876. If you have any questions regarding your rights as a participant in this study, you may contact UNLV “Sponsored Programs” at 702-895-2794.

I appreciate your time and thoughts. Thank you for filling out the survey.

Sincerely,

Shiang-Lih Chen
shianglih@yahoo.com
702-616-9753
Please think about a business class hotel that you have stayed in during the last 12 months. Examples of business class hotels chains include Hilton, Sheraton, Hyatt, Marriott, Crown Plaza, Westin, Holiday Inn, Doubletree, Wyndam.

Did you stay in such a hotel at least 3 times during the last 12 months?
Yes ____ (CONTINUE)
No ____ (IF NO, PLEASE STOP AND RETURN THE SURVEY. THANKS)

A. Please think about a business class hotel which you are loyal to; this is a hotel to which you have an affinity and in which you really enjoy staying. If you tend to stay with the same hotel chain, please choose a specific hotel from this chain. If you have more than one business hotel that fits into this category, please choose the one you stayed in most recently. What is the name of the hotel? _________________. For the rest of the questionnaire, this hotel will be referred to as the selected hotel.

1. How many times do you stay overnight for business in the area where the selected hotel is located? ___ times. How many of these times you stay in the selected hotel? ___ times.

2. Your overall image of the selected hotel is:

<table>
<thead>
<tr>
<th>Slightly Positive</th>
<th>Very Positive</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

3. Your overall perception of the communication (letters, promotional material, advertising) you receive from the selected hotel is:

<table>
<thead>
<tr>
<th>Slightly Positive</th>
<th>Very Positive</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

4. Your past experience with the selected hotel has been:

<table>
<thead>
<tr>
<th>Slightly Positive</th>
<th>Very Positive</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

5. Your overall satisfaction of the service provided by the selected hotel is:

<table>
<thead>
<tr>
<th>Slightly Satisfied</th>
<th>Very Satisfied</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

6. When you return to the area where the selected hotel is located, you...

<table>
<thead>
<tr>
<th>Might or might not stay at the hotel</th>
<th>Will definitely stay at the hotel</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

B. Please continue to think about the business class hotel that you claimed you are loyal to. For each of the statements below please indicate your level of disagreement/agreement. If you do not know, circle x under "Don’t Know".

1. When you return to the selected hotel, you expect your registration process to be expedited.

2. The selected hotel has a frequent stayer program that allows customers to earn points toward free accommodations.

3. The staff at the selected hotel recognizes you when you arrive.

4. The selected hotel offers you a hassle-free stay.

5. The employees at the selected hotel communicate the attitude that your problems are important to them.

6. The selected hotel offers technologically equipped guest rooms so the room can be used as an office.

7. The selected hotel provides room upgrades

8. You have confidence in the selected hotel.
Please continue to think about the business class hotel that you claimed you are loyal to.

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>The selected hotel is well managed.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>If you ask the employees at the selected hotel a question, they will be truthful with you.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>If you make a request at the selected hotel, no matter how trivial that request, it gets taken care of.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>When employees at the selected hotel say they will do something, you are sure it will get done.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>You feel communications, including reservations, with the selected hotel will always be accurately received and recorded or filed.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>The performance of the selected hotel always meets your expectations.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>You stay at the selected hotel because its image comes closest to reflecting your lifestyle.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>When you stay at the selected hotel, it reflects the kind of person you are.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>You stay at the selected hotel because its service makes you feel important.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Your stay at the selected hotel is based on the similarity of your values and those represented by the hotel.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>You are proud to be associated with the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>You feel a sense of belonging to the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>You feel &quot;emotionally attached&quot; to the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>You would be happy to stay at the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>You like the way you are treated at the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>You think you could easily become as attached to another hotel as you are to the selected hotel.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>You have positive feelings toward the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>You desire to maintain your relationship with the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>You care about the long-term success of the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Your preference to stay with the selected hotel would not willingly change.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Even if close friends recommend another hotel, you would not change your preference for the selected hotel.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>To change your preference from the selected hotel would require major rethinking.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>It would be difficult to change your beliefs about the selected hotel.</td>
<td>1 2 3 4 5 6 7</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>In the future, you will stay at the selected hotel, even if you can find a less expensive room in another business class hotel.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please continue to think about the business class hotel that you claimed you are loyal to.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.</td>
<td>Next time you come to the area where the selected hotel is located, you would stay at another hotel.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>You would make an effort on behalf of the selected hotel to help it succeed.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>If there are problems with the selected hotel, you will work jointly with them to help improve the situation.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>You are more likely to tell management about problems that occur in the selected hotel than in other hotels.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>If you saw an idea that you liked at another hotel, you would share those ideas with the selected hotel’s management or employees.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>When the topic of hotels comes up in conversations, you go out of your way to recommend the selected hotel.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>You will allow your name and a positive comment you made about the selected hotel to be used in an advertisement.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>You would recommend the selected hotel to your friends, relatives, and business associates.</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
</tbody>
</table>

C. The following questions are for comparative purposes only.

1. Your Gender: Male ______ Female ______

2. Your age: ___ 21-29 ___ 30-39 ___ 40-49 ___ 50-59 ___ 60-65 ___ over 65

3. Your Race/National Origin:
   ___ Caucasian/White ___ African American/Black ___ Hispanic
   ___ Southeast Asian ___ Native American Indian, Native Alaskan ___ Other

4. Your Education Level:
   ___ High School and less ___ College degree
   ___ Graduate degree ___ Other: _______________ (Please specify)

5. Your Annual Household Income Before Tax:
   ___ Less than $39,999 ___ $40,000-$79,999 ___ $80,000-$119,999
   ___ $120,000-$159,000 ___ $160,000-$200,000 ___ More than $200,000

6. Do you use a credit card that allows you to earn points towards a specific hotel’s frequent guest program? Yes ___ No ___

7. Your Occupations? ______

8. If your hotel of choice is sold out, how many times do you feel it’s okay before you change hotels permanently? ___ 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 5+
APPENDIX C

REVISIONS DUE TO THE TWO PRE-TESTS
Revisions Due to the Two Pre-Tests

The results of the two pretests revealed that respondents had difficulty in answering many questions. The following two tables presented the changes which have been made.

Table C1: Items had been Removed

<table>
<thead>
<tr>
<th>Item</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td></td>
</tr>
<tr>
<td>BF 02: The selected hotel uses information from your prior stay to customize services for you.</td>
<td>More than 20% of the respondents answered “Don't Know” on this question. The possible explanation will be that this question was adopted from Bowen and Shoemaker’s (1998) study in luxury hotel customers’ study. Maybe, customized service happens more often in the luxury hotel segment rather than in the business hotel segment.</td>
</tr>
<tr>
<td>BF 07: The selected hotel provides room upgrades when available.</td>
<td>More than 20% of the respondents answered “Don't Know” on this question. Some of them said that how could they know when is available for upgrades.</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
</tr>
<tr>
<td>TU 02: The management of the selected hotel knows the hotel business.</td>
<td>More than 20% of the respondents answered “Don't Know” on this question. Some customers said they did not quite understand the question. Therefore, the wording of the question was changed into: the hotel is well managed (Bowen &amp; Shoemaker, 2000).</td>
</tr>
<tr>
<td>TU 06: You feel that any communication, including reservations, with the selected hotel will always be accurately received and recorded or filed.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers said how can they know about weather their files are accurately recorded or filed. Therefore, the question was changed to more directly relate to customers and thus the question will be easier for customers to answer. The question was changed to: When you stay at the selected hotel, if you ask for a wake up call, you can count on receiving the call at an appropriate time (Bowen &amp; Shoemaker, 2000).</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>TU 07: The performance of the selected hotel always meets your expectation.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers said they did not quite understand the question. Therefore, the wording of the question was changed into: the hotel offers a consistent level of service (Bowen &amp; Shoemaker, 2000; Garbarino &amp; Johnson, 1999).</td>
</tr>
<tr>
<td>Personal Identification PI 04: Your attachment to the selected hotel primarily based on the similarity of your values and those represented by the selected hotel.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers indicated the biggest problem in this question is “attachment.” Therefore, this question changed to: You stay at the selected hotel because its image comes closest to reflecting your lifestyle (O’Reilly &amp; Chatman, 1986).</td>
</tr>
<tr>
<td>Commitment CM 01: You are very committed to the relationship with the selected hotel.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers said the wording of this question was too strong, such as “very committed”. They didn’t feel like to answer the question with such strong wording.</td>
</tr>
<tr>
<td>CM 02: You intend to maintain your relationship with the selected hotel indefinitely.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers said they didn’t quite understand what “indefinitely” mean.</td>
</tr>
<tr>
<td>CM 03: You should put maximum effort into maintaining your relationship with the selected hotel.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers said the wording of this question was too strong, such as “maximum effort.” They didn’t feel like to answer the question with such strong wording.</td>
</tr>
<tr>
<td>CM 04: You have a strong sense of loyalty toward the selected hotel.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers said the wording of this question was too strong, such as “strong sense of loyalty.” They didn’t feel like to answer the question with such strong wording. Therefore, the question changed to: (1) You feel “emotionally attached” to the selected hotel. (2) You think you could easily become as attached to another hotel as you are to the selected hotel (Bowen &amp; Shoemaker, 2000).</td>
</tr>
<tr>
<td>CM 05: you are always on the lookout for an alternative hotel.</td>
<td>More than 20% of the respondents answered “Don’t Know” on this question. Some customers said that they didn’t quite understand the question. Additionally, they didn’t feel they are “always” look for alternative.</td>
</tr>
</tbody>
</table>
| Repeat Purchase
REP 01: When you return to the area where the selected hotel is located, you...1” might or might not stay at the selected hotel...7” will definitely stay at the selected hotel.” | More than 20% of the respondents answered “Don’t Know” on this question. The wording was changed to more direct. The question was changed to: When you return to the area where the selected hotel is located, you will stay at the selected hotel (Selin, et al., 1988). |
REP 02: Next time you come to this area, you would stay at another hotel.

More than 20% of the respondents answered “Don’t Know” on this question. The question take out the reserve direction and changed to: As long as you keep coming to the area where the selected hotel is located, you do not foresee yourself switching to a different hotel (White & Schneider, 2000; Ganesh, et al., 2000).

Table C2: Items had been Added

<table>
<thead>
<tr>
<th>Item</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF 02: You can check in at a time that suits you (Bowen &amp; Chen, 2001)</td>
<td>BF 06: You have a comfortable stay at the selected hotel (Bowen &amp; Chen, 2001)</td>
</tr>
<tr>
<td>BF 12: You receive benefits for being a member of the reward program at the selected hotel (Bowen &amp; Shoemaker, 2000)</td>
<td>BF 14: The selected hotel provides the amenities you need to conduct your business (Bowen &amp; Chen, 2001).</td>
</tr>
<tr>
<td>BF 15: If the selected hotel did not offer a reward program, you would not be as loyal as you are (Bowen &amp; Shoemaker, 2000).</td>
<td></td>
</tr>
</tbody>
</table>

Trust
TU 24: You can trust the employees of the selected hotel (Bowen & Shoemaker, 1998).

Personal Identification
PI 16: The image of the selected hotel played a major role in your decision to become a customer of the hotel (Ganesh, Arnold, & Reynolds, 2000).
PI 19: Your stay with the selected hotel gives a glimpse of the type of person you are (Pritchard & Howard, 1997)
PI 45: You are proud to be associated with the selected hotel (O’Reilly & Chatman, 1986).

Commitment: three questions were added for positive attitude dimension
CM 17: You would be happy to stay at the selected hotel (Bowen & Shoemaker, 2000; Sui, 2000).
CM 30: You have favorable feelings toward the selected hotel (Sui, 2000).
CM 34: You like the way you are treated at the selected hotel (Sui, 2000).
Resistance to change to competitors
RC 40: In the future, you will stay at the selected hotel, even if you can find a less expensive room in another business class hotel (Bowen & Shoemaker, 2001). ** This question was added because more than 10 respondents indicated price will be a more practical reason for them to change to competitors.

Repeat Purchase
REP 41: You would like to continue your relationship with the selected hotel (Morgan & Hunt, 1994; Sharma & Patterson, 1999)

Partnership-Like Activities
PLA 33: You would make an effort on behalf of the selected hotel to help it succeed (Bettencourt, 1997).
PLA 44: You would be willing to serve on a customer advisory board for the selected hotel. (Bowen & Shoemaker, 2000)
Please think about a business class hotel that you have stayed in during the last 12 months. Examples of business class hotels chains include Hilton, Sheraton, Hyatt, Marriott, Crown Plaza, Westin, Holiday Inn, Doubletree, Wyndam.

Did you stay in such a hotel at least 3 times during the last 12 months?
Yes (CONTINUE)
No (IF NO, PLEASE STOP AND RETURN THE SURVEY. THANKS)

A. Please think about a business class hotel which you are loyal to; this is a hotel to which you have an affinity and in which you really enjoy staying. If you tend to stay with the same hotel chain, please choose a specific hotel from this chain. If you have more than one business hotel that fits into this category, please choose the one you stayed in most recently. What is the name of the hotel? ______________. How long ago was your first visit to this hotel? _______ years.

For the rest of the questionnaire, this hotel will be referred to “the selected hotel.”

1. During the past year when you travel to the area where the selected hotel is located, what percent of the time did you stay at the selected hotel ______% what percent of the time did you stay at other hotels in the area ______%

2. Your overall image of the selected hotel is:
   Slightly Positive Very Positive Don’t Know
   1  2  3  4  5  6  7

3. Your overall perception of the communication (letters, promotional material, advertising) you receive from the selected hotel is:
   Slightly Positive Very Positive Don’t Know
   1  2  3  4  5  6  7

4. Your past experience with the selected hotel has been:
   Slightly Positive Very Positive Don’t Know
   1  2  3  4  5  6  7

5. Your overall satisfaction of the service provided by the selected hotel is:
   Slightly Satisfied Very Satisfied Don’t Know
   1  2  3  4  5  6  7

B. Please continue to think about the business class hotel that you claimed you are loyal to. For each of the statements below please indicate your level of disagreement/agreement. If you do not know, circle X under “Don’t Know”

1. When you return to the selected hotel, you expect your registration process to be expedited. 1  2  3  4  5  6  7  X

2. You can check in at a time that suits you. 1  2  3  4  5  6  7  X

3. You stay at the selected hotel because its image comes closest to reflecting your lifestyle. 1  2  3  4  5  6  7  X

4. You have confidence in the selected hotel. 1  2  3  4  5  6  7  X

5. You feel a sense of belonging to the selected hotel. 1  2  3  4  5  6  7  X

6. You have a comfortable stay at the selected hotel. 1  2  3  4  5  6  7  X

7. The employees at the selected hotel communicate the attitude that your problems are important to them. 1  2  3  4  5  6  7  X

8. The selected hotel is well managed. 1  2  3  4  5  6  7  X

9. The selected hotel offers technologically equipped guest rooms so that the room can be used as an office. 1  2  3  4  5  6  7  X

10. The staff at the selected hotel recognizes you when you arrive. 1  2  3  4  5  6  7  X

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Please continue to think about the business class hotel that you claimed you are loyal to.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 X</td>
<td>1 2 3 4 5 6 7 X</td>
<td></td>
</tr>
</tbody>
</table>

11. When employees at the selected hotel say they will do something, you are sure it will get done.

12. You receive benefits for being a member of the reward program at the selected hotel.

13. The selected hotel offers you a hassle-free stay.

14. The selected hotel provides the amenities you need to conduct your business.

15. If the selected hotel did not offer a reward program, you would not be as loyal as you are.

16. The image of the selected hotel played a major role in your decision to become a customer of the hotel.

17. You would be happy to stay at the selected hotel.

18. If you ask the employees at the selected hotel a question, they will be truthful with you.

19. Your stay with the selected hotel gives a glimpse of the type of person you are.

20. Even if close friends recommend another hotel, you would not change your preference for the selected hotel.

21. If you make a request at the selected hotel, no matter how trivial that request, it gets taken care of.

22. When you return to the area where the selected hotel is located, you will stay at the selected hotel.

23. As long as you keep coming to the area where the selected hotel is located, you do not foresee yourself switching to a different hotel.

24. You can trust the employees of the selected hotel.

25. You feel "emotionally attached" to the selected hotel.

26. The selected hotel offers a consistent level of service from one visit to the next.

27. When you stay at the selected hotel, it reflects the kind of person you are.

28. You stay at the selected hotel because its service makes you feel important.

29. You think you could easily become as attached to another hotel as you are to the selected hotel.

30. You have favorable feelings toward the selected hotel.

31. Your stay at the selected hotel is based on the similarity of your values and those represented by the hotel.

32. When you stay at the selected hotel, if you ask for a wake up call, you can count on receiving the call at an appropriate time.

33. You would make an effort on behalf of the selected hotel to help it succeed.
Please continue to think about the business class hotel that you claimed you are loyal to.

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>34. You like the way you are treated at the selected hotel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35. Your preference to stay with the selected hotel would not willingly change.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>36. If you saw an idea that you liked at another hotel, you would share those ideas with the selected hotel's management or employees.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>37. When the topic of hotels comes up in conversations, you go out of your way to recommend the selected hotel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>38. To change your preference from the selected hotel would require major rethinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>39. It would be difficult to change your beliefs about the selected hotel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>40. In the future, you will stay at the selected hotel, even if you can find a less expensive room in another business class hotel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>41. You would like to continue your relationship with the selected hotel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>42. You are more likely to tell management about problems that occur in the selected hotel than in other hotels.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>43. You would recommend the selected hotel to your friends, relatives, and business associates.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>44. You would be willing to serve on a customer advisory board for the selected hotel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>45. You are proud to be associated with the selected hotel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>46. If there are problems with the selected hotel, you will work jointly with them to help improve the situation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>47. You will allow your name and a positive comment you made about the selected hotel to be used in an advertisement.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

C. The following questions are for comparative purposes only.

1. Your Gender: Male_______ Female_______

2. Your Age:  ____ 20 & under  ____ 21-29  ____ 30-39  ____ 40-49  ____ 50-59  ____ 60-65  ____ 66+

3. Your Race/National Origin:
   ____ Caucasian/White  ____ African American/Black  ____ Hispanic
   ____ Southeast Asian  ____ Native American Indian, Native Alaskan
   ____ Other

4. Your Education Level:
   ____ High School and less  ____ College degree
   ____ Graduate degree  ____ Other: ______________________ (Please specify)

5. Your Annual Household Income Before Tax:
   ____ Less than $40,000  ____ $40,000 to $79,999  ____ $80,000 to $119,999
6. Do you use a credit card that allows you to earn points towards a specific hotel’s frequent guest program? Yes ___ No ___

7. Your Occupation? _______

8. On average, how many times per year do you stay in a business class hotel?
   ___ 3 times   ___ 4 to 5 times   ___ 6 to 8 times
   ___ 9 to 12 times   ___ More than 12 times

9. If your hotel of choice is sold out, how many times do you feel it’s Okay before you change hotels permanently? ___1 ___2 ___3 ___4 ___5 ___6 or more
APPENDIX E

EXAMINATION OF ASSUMPTIONS FOR REGRESSION

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Examination of Assumptions for Regression

According to Dielman (1996), four major assumptions for linear regressions are: the relationship is linear; the disturbances have constant variances; the disturbances are independent; and the disturbances are normally distributed.

First, the linearity assumption was examined by plotting dependent variables and independent variables. The plots showed that there was a straight line pattern in the scatter of the variables (see Figure E 1). Figure E 1 represents a typical scatterplot of a dependent variable on the horizon axis versus one of the independent variables on the vertical axis. As is evident from the plot, there was more or less a straight line pattern between dependent and independent variables, and thus the assumption of linearity was not violated.

![Figure E 1. Scatter Plot for Examining Linearity](image-url)
Second, the assumption of constant variances was examined by plotting the residuals versus the independent variables. From Figure E 2, the plots illustrated that the residuals scattered randomly around zero and there were no differences in the amount of variation in the residuals regardless of the value of the variables. Therefore, the constant variances assumption was assured.

Scatterplot

Dependent Variable: REGR factor score repeat purchase

![Figure E 2. Scatter Plot for Examining Constant Variance](image)

The third assumption was that the disturbances were independent which meant each observation was independent and there was no autocorrelation problem. The violation of this assumption happens most frequently in a subsequent time period. Since this study does not involve a time-series study, an autocorrelation problem should not have existed. Nevertheless, the Durbin-Watson test, a widely used test for autocorrelation, was applied.
A value of Durbin-Watson of 2 was used as the cut off point for supporting that observations were independent and there was no autocorrelation problem (Dielman, 1996). The values of Durbin-Watson from each regression were close to 2 indicating that the observations could be assumed to be independent.

Fourth, the P-P plots of the regression residuals and cumulative probability distribution were utilized to assess the assumption of the normality of distribution. As shown in Figure E 3, the P-P plot was more or less a straight line, which indicated that the normality assumption was satisfied.

![Normal P-P Plot of Regression Standardized Residuals](image)

**Figure E 3.** P-P Plot for Examining Normality

In addition to examining the regression assumptions, multicollinearity was assessed. In general, a tolerance of less than 0.1, a VIF of 10 or greater, and a condition
index of larger than 30 are indicative of multicollinearity problems for a variable (Dielman 1996; Tabachnick & Fidell, 1996). The result of each regression showed that the value of Tolerance from each regression was at least greater than .3, the value of VIF was smaller than 5, and the value of condition index was smaller than 5. Hence, multicollinearity was not a problem.
REFERENCES


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