The Role of Affect in Service Encounter Satisfaction: An Experimental Study.

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The role of affect in service encounter satisfaction: An experimental study

Jayanti, Rama Kumari, Ph.D.

The Louisiana State University and Agricultural and Mechanical Col., 1992
THE ROLE OF AFFECT IN SERVICE ENCOUNTER SATISFACTION: AN EXPERIMENTAL STUDY

A Dissertation
Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy in The Interdepartmental Programs in Business Administration

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ABSTRACT

The objective of the dissertation was to address the influence of affect towards service provider on service encounter satisfaction. The following research questions were examined: (1) the impact of affect towards the service provider on perceived performance and satisfaction; (2) the relative influence of affective versus cognitive variables in explaining satisfaction with services; (3) the explanatory ability of the disconfirmation model of satisfaction within the context of services.

An experimental study was designed to address the above questions. Two factors, affect towards the service provider labeled Evaluative Impression of the service provider and Interaction Style (one dimension of perceived performance) of the service provider were manipulated in a 3 (Positive Evaluative Impression, Negative Evaluative Impression and Neutral Evaluative Impression) X 2 (Positive versus Negative Interaction Style) design. The dependent variables of interest were Perceived Performance and Satisfaction with the service provided.

The experimental stimuli were six videotapes, each of which showed a spokesperson introducing a hypothetical scenario and the proposed manipulations to the audience followed by an interaction between a doctor and a patient. A total of 198 students participated in six computer lab sessions, where they watched the videotape of the interaction and responded on the computer regarding their perceptions of the quality of care provided.

A 3 X 2 full factorial MANOVA was performed on the experimental data. The results indicated that Interaction style had a major impact on the satisfaction with the physician. An interaction between Evaluative Impression and Interaction Style also achieved significance. To address the structural relationships among the model components, additional data was collected in two of the cells, positive evaluative impression/positive interaction style (The Affect Group) and neutral evaluative impression/positive interaction style (The Cognitive Group).
The hypothesized relationships were tested using structural equation analysis. Results indicated that the Affect-Based Model of Service Encounter Satisfaction provides a better fit to the data compared to the Disconfirmation Model. The main limitations of the study are its artificial nature and high correlations found among measures of performance, disconfirmation and satisfaction. The positive influence of Evaluative Impression on perceived performance is suggested to have significant theoretical and managerial implications.
CHAPTER ONE

THE RESEARCH TOPIC

Service industries now constitute an important part of the national economy. An average American consumer spends more than half of his earnings on the consumption of services but is thoroughly discontented at the way services are delivered (Heskett 1986; Koepp 1987). This escalating economic activity in the services sector coupled with increasing consumer dissatisfaction with the quality of services provided make it imperative for marketers to design and control marketing strategies that enhance the profitability of the service firms through the adoption of the marketing concept.

Consumer satisfaction occupies a central position in the marketing concept and is recognized as the means through which firms can achieve increased profitability. Several authors have conceptualized and operationalized customer satisfaction processes with products (Oliver 1980; Churchill and Surprenant 1982; Tse and Wilton 1988), but the examination of the satisfaction formation process for services is rare (Liechty and Churchill 1979; Smith and Houston 1983; Solomon, Surprenant, Czepiel and Gutman 1985; Hill 1986).

This dissertation proposes an affect-based model of service satisfaction in which the role of affect towards the service provider is elaborated. Specifically, an attempt is made to integrate the psychological research in person perception with the satisfaction literature in marketing. It is argued that affective responses towards service providers determine a large portion of the variance in service satisfaction.

The purpose of chapter one is to introduce the research topic and provide a foundation for the proposed affect-based model of service satisfaction. Accordingly, a description of the
peculiar characteristics of services compared to goods is presented next, followed by a brief review of satisfaction research. The role of affect in satisfaction processes is elaborated next along with the presentation of the proposed model of service satisfaction. A brief description of the proposed dissertation research, the research questions to be addressed and the contributions of the dissertation to the literature conclude Chapter One.

Distinctive Features of Services

An understanding of the peculiar characteristics of services is necessary before a discussion of the consumer evaluation processes of the service encounter can be undertaken. Accordingly, the four variables that marketers have used most to differentiate goods from services (1) Intangibility (2) Inseparability (3) Heterogeneity and (4) Perishability (Bateson 1977, Berry 1980) will be discussed next.

Intangibility

A service is a process, a performance, a deed or an effort and thus cannot be seen, felt, tasted or touched as contrasted to a tangible product (Rathmell 1966; Bateson 1977; Shostack 1977; Berry 1980; Lovelock 1981). Bateson (1977) quotes intangibility as the most distinguishing dimension of services compared to goods. Many authors have emphasized this "experiential" aspect of the services, elaborating on the accompanying marketing problems (Liechty and Churchill 1979; Parasuraman, Zeithaml and Berry 1985). According to Berry (1980) intangibility has two meanings; (1) that which cannot be touched, impalpable and (2) that which cannot be easily defined, formulated or grasped mentally. Consequently, consumers may perceive a lack of both pre and post-purchase evaluative criteria with regard to services (George, Weinberger and Kelly 1985).
High intangibility implies that consumers may form fewer expectations about the service involved (Hill 1986) and hence experience difficulties in arriving at satisfaction judgments even after consumption of the service (Smith and Houston 1983).

**Inseparability**

Services involve close interaction between the provider and the consumer making the manufacturing of service indistinguishable from its actual delivery (Carmen and Langeard 1980; Levitt 1981). Thus, inseparability makes it necessary for the service marketer to pay particular attention to the process factors involved in the service delivery, since "how" a service is delivered may become the only tangible evidence of service quality for the consumer. This "functional" dimension of the service quality (Gronroos 1982) directly affects satisfaction by influencing consumer perceptions. Thus, consumer satisfaction with a service involves matching the abilities of the customer with those of the service provider (Hill 1986).

**Heterogeneity**

There is a large human component involved in the performance of many services (Berry 1980; Zeithaml 1981; Shostack 1977). Consequently, there may be a lack of consistency in the quality of service delivered across different encounters. Heterogeneity leads to high experience qualities, since it is difficult to make pre-purchase evaluations of the service even if the consumer uses the same service provider regularly. It follows that the outcomes of the people-based services tend to be less standardized and more variable than that of goods (Berry 1980; Langeard et al. 1981).

**Perishability**

Perishability involves the inability to inventory services (Bessom and Jackson 1975; Thomas 1978). This inherent characteristic of the service poses several problems in the design
of service strategy. Specifically, service marketers find it difficult to synchronize supply and demand. Service capacity must be built to service peak demand because inventories cannot be held. Excess demand at peak times, like airline tickets at vacation time cannot be satisfied whereas idle capacity drains resources during non peak periods. A classification scheme developed by Nelson (1970) provides further insight into the peculiar characteristics of services.

**Search, Credence and Experience Qualities**

Nelson (1970) distinguished between two qualities of consumer goods, search qualities and experience qualities. Search qualities imply attributes which a consumer can evaluate before the purchase of a product. These include style, color, price, package and so on; attributes which are tangible. Examples of products high in search qualities include most household goods such as furniture, appliances and clothing. Experience qualities, on the other hand, imply attributes which can only be evaluated after purchase or consumption. Taste and durability fall under this category, attributes which are mostly intangible. Examples of this category include services such as haircuts and vacations.

Darbi and Karni (1973) added a third dimension to this classification by introducing "credence qualities". These qualities involve attributes which a consumer cannot evaluate even after consumption. Examples of services high in credence qualities involve services of surgeons (most operations) and services of automobile mechanics (tune ups).

Many authors have distinguished services from goods on a number of important dimensions. Some authors have arrayed goods and services on a continuum from easy to evaluate to difficult to evaluate (Zeithaml 1981), whereas others have voiced disagreement over according special status to services, arguing that it is dysfunctional to do so (Wyckham, Fitzroy and Mandry 1975). Not withstanding the controversy, it is accepted in the services literature now that services differ from goods on several important dimensions.
In summary, the distinctive features of intangibility, inseparability, heterogeneity and perishability force consumers to use different evaluative criteria for services compared to goods. The peculiar features of services also make it difficult to measure or control consumer satisfaction with services. As the service satisfaction for most customers is the satisfaction derived out of the personal encounter, some understanding of the service encounter is warranted.

The Service Encounter

The service encounter is the dyadic interaction between a customer and a service provider (Surprenant and Solomon 1987). Many services are high in experience and credence qualities (like physician and legal services) and thus are dominated by a high degree of person to person interaction (Shostack 1977; Czepeil, Solomon, Surprenant and Gutman 1985; Solomon, Surprenant, Czepeil and Gutman 1985). Both the functional quality (how the service is delivered) and the technical quality (what is delivered) assume importance in the consumer analysis of the service encounter (Gronroos 1982). However, most research has concentrated on the functional element of the service, recognizing that the attitudes and behaviors of the service personnel substantially influence satisfaction judgments.

Bitner (1990) demonstrated that lack of explanations given by service personnel for service failure constitutes a major source of dissatisfaction with travel services. Solomon et al (1985) have analyzed service encounter in terms of "role performances" and have suggested that congruence between provider role and customer role may lead to service satisfaction.
Service Encounter Satisfaction

The centrality of service satisfaction in promoting repeat patronage, positive word of mouth and a positive image of the service warrants increased attention to the study of this concept. Traditionally, consumer researchers have emphasized a cognitive orientation to the study of information processing strategies and post-purchase evaluations undertaken by consumers (Fishbein and Ajzen 1975; Bettman 1979; Oliver 1980; Churchill and Surprenant 1982). The disconfirmation paradigm is a prime example of this tradition.

The Disconfirmation Paradigm

The disconfirmation paradigm is widely accepted in the marketing literature as the dominant explanation for the satisfaction formation processes in the product domain. Briefly, the disconfirmation paradigm holds that satisfaction is related to the size and direction of the disconfirmation experience, where disconfirmation is defined as the discrepancy between a person's initial expectations and perceived performance. An individual's expectations are confirmed when a product performs as expected, negatively disconfirmed when the product performs more poorly than expected and positively disconfirmed when the product performs better than expected (Churchill and Surprenant 1982). Figure 1.1 describes the traditional disconfirmation model.

The purely cognitive orientation implied by the disconfirmation framework has come under attack from researchers who feel that affect is fundamental to social experience (Zajonc 1980; Cohen 1981; Sujan 1985; Westbrook 1987). Specifically, Westbrook (1987) argues that affective processes or subjective feelings influence consumer decision making processes by their impact on consumer motivation. Cohen (1981) questions the rationale behind the belief that evaluation is the end result of a feature/attribute based information processing rule. These authors call for a more inclusive treatment of affect in models of consumer behavior.
Perceived Performance

P > E
Positive Disconfirmation
Satisfaction

P = E
Confirmation
Indifference

P < E
Negative Disconfirmation
Dissatisfaction

Expectations


Figure 1.1. The Disconfirmation Paradigm
Zajonc (1980) spurred the research on affective processes by proposing that affect and cognition represent two independent and distinct systems. Meanwhile, a separate stream of marketing research in classical conditioning pioneered by Mitchell and Olson (1981) and Gorn (1982) established feelings as a conceptually distinct and important construct in the advertising domain. Gardner (1985) established mood as an important contextual variable and studied its effect on consumer evaluations.

The Applicability of the Disconfirmation Model for Services

Notwithstanding the provocative findings from the above mentioned research, there have been recent calls in the literature to adopt the disconfirmation paradigm as an equally appropriate framework to explain satisfaction with services (Smith and Houston 1983; Hill 1986). The present study argues that due to the peculiar characteristics of services, satisfaction processes for services may be different from those of products.

Many researchers, even those working within the disconfirmation paradigm, have warned that satisfaction models may differ across product categories (Olshavsky and Miller 1972; Churchill and Surprenant 1982). According to Anderson (1973) "disconfirmation of expectations for products for which consumers make deep personal and financial commitments may have substantially different effects on consumer perceptions of performance than less personal, lower cost and less ego-related goods" (p.43). Anderson’s view is especially appropriate to services since as a class they constitute a category to which consumers make deep personal commitment (examples may be hairstyling services and health care services). Accordingly, the present study argues for the inclusion of affect towards the service provider in models of satisfaction formation processes with services.

Researchers working both in the product domain (Hoffman 1986; Peterson, Hoyer and Wilson 1986; Westbrook 1987) and the services area (Booms and Bitner 1981; Grove and Fisk 1983; Solomon et al., 1985) have argued for a more affect based model of consumer
satisfaction. Specifically, Westbrook (1987) in his study of affective responses to products found that affective variables alone explained as much variance in satisfaction judgments as cognitive variables. Additionally, Lutz (1986) suggests that as the proportion of experience attributes in a situation increases, quality tends to be an affective judgement. As the difference between service quality and service satisfaction is only temporal (Parasuraman, Zeithaml and Berry 1986), the same can also be argued for service satisfaction.

**The Role of Affect in Satisfaction with Services**

The peculiar characteristics of services, as discussed above, make objective evaluation of service encounter difficult, if not impossible. Intangibility implies a lack of pre-purchase evaluative criteria for the service to be performed and inseparability heightens the perceived risk of the consumer. Heterogeneity and perishability enhance the uncertainty faced by the consumer, especially in the case of services high in experience and credence qualities. Many researchers have suggested that a combination of intangibility, heterogeneity and inseparability leads to the formation of fewer expectations in the case of services, specially services high in experience and credence qualities (Zeithaml 1981; Smith and Houston 1983; Hill 1986). Additionally, it may be argued that consumers place less confidence in the expectations that they do have regarding the service.

Social psychologists have found that high uncertainty coupled with a decrease in the configuration of available information, as is the case with "pure" services, constrains individuals to depend more on affective evaluation and rely less on semantic judgments (Kahneman and Tversky 1972; Srull and Wyer jr 1980; Taylor 1982; Fiske and Pavelchak 1987). When judging people, information relevant to a particular judgment is almost always incomplete, resulting in greater uncertainty (Taylor 1982).

In a service encounter context, consumers often lack complete, reliable, predictive information about service providers, as a result of which they may depend more on simple
heuristics to make an overall evaluation of the service situation. One such simple heuristic may be the customers’affect towards the service provider. In most service encounters, there is high interaction between the service provider and the consumer. This interaction facilitates the elicitation of affective responses towards service providers in consumers. These affective responses are suggested to influence the post-purchase evaluation processes of consumers.

The categorization approach has been shown to be a valid framework to study affective responses in interpersonal exchanges by social psychologists (Fiske 1982; Fiske, Neuberg, Beattie and Milberg 1987; Fiske and Neuberg 1990). This study will use the categorization approach as a theoretical framework to conceptualize affect towards the service provider.

A Categorization Approach to Service Satisfaction

Categorization is the process through which affect is generated towards target persons in interpersonal exchanges (Fiske 1982, Sujan 1985). The fundamental premise of the categorization approach is that people can be grouped at varying levels of specificity (Sujan and Dekleva 1987). For instance, services can be grouped under a broad, general category of "medical services" or under a less general category of "psychiatric services", and finally at a more specific level of "Mayo Clinic" services. According to this approach, if a stimulus person can be categorized as a member of a previously established category, the evaluations of the stimulus person would be guided by the category "schema" (Cohen 1981; Fiske and Pavelchak 1987).

A schema is "an internal structure developed through experience which organizes incoming information relative to previous experience" (Mandler and Parker 1976). This process of retrieving evaluations based on the schema is termed "schema-driven affect" (Fiske 1982). Schematic responses have been shown to be rapid and spontaneous compared to responses based on thoughtful attention to a stimulus person’s attributes (Fiske et al., 1987). Fiske and Pavelchak (1987) argue for a conceptual distinction between a schema and a
category. Accordingly, a category contains instances of a class, whereas a schema contains the features typical of the category.

It is important to recognize that consumers' repertoire of categories may include categories charged with different affects in varying levels of intensity. It follows that if a consumer recognizes a stimulus to be a member of a particular category charged with a particular affect, the stimulus should invoke the same affect. Fiske (1982) found support for this conceptualization by showing that when a stimulus person was a good match to the subject's positively charged, idiosyncratic schema of "old flame", the stimulus person elicited positive affect. On the other hand, when the stimulus person matched a negatively charged, culturally stereotyped schema of a "politician", negative affect was elicited.

In summary, the categorization model posits that category-based affect forms the basis of evaluations made of target persons in interpersonal exchanges. Applying the categorization theory to service encounters, it is suggested that the categorization of service providers may constitute the basis for affective responses towards service providers. These affective responses, in turn, may influence evaluations of service providers. Since the evaluation of service providers constitutes the evaluation of a service encounter, it is reasonable to argue that affect towards the service provider may explain considerable variance in satisfaction with services.

The categorization approach has been usefully applied to study consumer evaluation processes by several researchers. Sujan (1985) examined the categorization processes within the framework of information processing strategies employed by consumers. Sujan and Dekleva (1987) studied the usefulness of the concept in explaining comparative advertising effects. Meyers-Levy and Tybout (1989) investigated the hierarchial nature of product categories and present an alternative operationalization of categorization process. Sujan and Bettman (1989) explored the relationship between brand positioning strategies and consumers' category perceptions. However, the above research is limited to the product domain and the
ability of the categorization approach to explain evaluation of service providers is yet to be established. This dissertation attempts to fill this gap by proposing a more comprehensive model of satisfaction which includes affective reactions of consumers towards service providers. The research questions addressed by the dissertation are specified next.

Research Questions

(1) What is the influence of affective reactions towards service providers on perceived performance and satisfaction judgments?

(2) What is the relative importance of affective responses compared to more cognitively-driven judgments of satisfaction?

(3) Is the disconfirmation model an adequate framework to model satisfaction with professional services?

The Dissertation Research

This dissertation proposes an affect-based model of service satisfaction to address the research questions raised above. A description of the proposed model follows.

An Affect-Based Model of Service Encounter Satisfaction

The proposed model investigates the role of affective responses of consumers in explaining satisfaction with services. The model addresses two separate but related research issues. The first issue concerns the impact of affective responses towards service providers on perceived performance and service encounter satisfaction. The second issue pertains to the relative importance of affective responses compared to cognitive judgments in explaining service encounter satisfaction.
According to the categorization model, which is used as a theoretical framework to conceptualize affect towards the service provider, people’s past experiences with a prototype generalize to form a "knowledge structure", which includes affective reactions and is drawn upon when making evaluative judgments about specific others. In a service encounter context, the model proposes that due to the lack of objective cues to evaluate service performance, consumers evaluate service providers by assessing the goodness of fit between them and the particular affect-laden global category cued by the encounter. If the particular category cued generates positive affect then the affect toward the service provider may also be positive. Negative affect associated with a category would generate negative evaluations of service providers belonging to that particular category. For example, if a consumer encounters a psychiatrist, he is immediately categorized under psychiatric services and the evaluations of the psychiatrist are guided by the consumer’s prior experiences with the category schema.

Thus, according to the categorization model the affect generated towards the service provider may most likely be recalled and used as a basis for future responses, while the original information which cued the affect is either forgotten or ignored. Categorization is heavily influenced by the configuration of available information. If the available information is ambiguous and is limited, category-based processing takes precedence (Fiske and Neuberg 1990). For this reason, services high in experience and credence qualities and which are delivered on a person to person basis would be more appropriate to study in the context of the proposed model.

In the context of service encounter satisfaction, consumers often face limited information and high uncertainty, due to the heterogeneity and inseparability of the service involved. Thus, it is reasonable to argue that the dominant mode of information processing may be category-based. Applying the categorization theory to service encounter evaluation, it is proposed that affect towards the service provider may positively influence the perceived performance of the service provider and service encounter satisfaction.
Contributions of the Research

Consumer satisfaction has been traditionally studied with the goal of understanding consumers better so that their needs can be fulfilled by the marketing activity. Central to this notion is the idea that a product is a bundle of benefits delivered to cater to the needs of consumers and not simply a tangible object. The recognition of this intangible dimension has opened up a whole new perspective to the study consumer psychology and research on consumer satisfaction is prime example of this new view. Consumer satisfaction occupies a central position in the marketing concept and thus warrants continuing efforts in the development and validation of the concept.

Conceptually, the proposed dissertation makes a number of contributions to the satisfaction research. By specifically modelling the affective responses of consumers toward the service provider, the proposed model provides a new dimension to the analysis of post-purchase evaluations and enhances the explanatory ability of the satisfaction model. The study of affect in connection with satisfaction judgments does not de-emphasize the importance of the more cognitively oriented disconfirmation approach, but provides a more comprehensive view of satisfaction processes. The categorization framework adopted in this study is not only a useful starting point to the study of affect in satisfaction judgments, but also provides an alternative approach to the strict cognitive orientation in the study of satisfaction.

Managerial contributions of the proposed dissertation fall into a number of categories. With the growth of consumerism and the perception of decreasing quality of goods and services offered in the market place, research on consumer satisfaction assumes significant importance (Koeppl 1987). The study of individual service encounters warrants closer attention, since service satisfaction is intimately related to the evaluation of individual service encounters (Surprenant and Solomon 1987; Bitner 1990). The proposed dissertation attempts to refine our understanding of the service encounter by incorporating the affective dimension into the analysis.
The study of affective responses of consumers should allow greater flexibility in the design of services as well as communication of service attributes. Many service organizations have witnessed the exodus of their customers with departing service personnel. This implies that consumers develop strong attachment with their doctors, hairdressers, chartered accountants and baby sitters and are likely to follow them when they move instead of switching to others. Understanding these affective reactions to service providers would help service industries to design their offerings better and retain their customer base. By studying the impression formation processes, service industries can enhance customer satisfaction by paying particular attention to non verbal cues present in the service environment. This has implications for training and marketing to the employees and suggests that they should be treated as internal customers (Berry 1980).

Results demonstrating the importance of expectations in enhancing satisfaction can lead to the design of more realistic promotional strategies by service industries. Additionally, investigation of the importance of perceived performance would lead to increased attention to performance evaluations.

**Organization of the Study**

The proposed dissertation is divided into five parts. Chapter One provides an introduction to the proposed study. Chapter Two reviews extant literature in the areas of product satisfaction, service satisfaction and categorization theory. This chapter also presents the proposed affect-based model of satisfaction along with the research hypotheses. Chapter Three describes the methodology and research design and the results from the pretests done for scale development. Chapter Four provides details of the study carried out as well as the analysis and results of the study. Finally, Chapter Five concludes the dissertation by drawing implications from the research and suggesting future research directions.
CHAPTER TWO

LITERATURE REVIEW

The purpose of the dissertation is to propose and test a model of service satisfaction formation which incorporates the affective reactions of consumers toward service providers. Towards that end, this chapter reviews relevant research in each of the areas of model components and identifies the major research questions of interest to this study.

Chapter Two is organized around three sections. The first section reviews literature in the area of categorization theory, the second section reviews literature in the area of product satisfaction and service satisfaction. The third section presents the proposed model and the research hypotheses. Finally, conclusions are drawn from the chapter discussion.

Categorization Theory

Categorization is considered fundamental to social activity across a variety of situations (Mervis and Rosch 1981). Categorization allows one to simplify and reduce an otherwise potentially overwhelming number of stimuli. There is one basic, fundamental level at which individuals naturally categorize stimulus persons. This basic level is consistent across people (examples may be sex, race, politicians, handicapped people) and includes a few "rich" and "distinct" categories that maximize parsimony. The number of attributes making up the category determines its richness, whereas distinctiveness differentiates the category under consideration from other categories at the same level (Cantor and Mischel 1979).
Categorization encourages: (a) selective attention to person attributes and (b) the transfer of expectations grouped under a category label to the stimulus person (Hastie 1980; Fiske and Taylor 1984; Neuberg and Fiske 1987). The expectations attached to the category label combine to determine the impressions formed of that particular individual (Cohen 1981; Fiske and Pavelchak 1987; Pavelchak 1989). Once impressions are formed they become tenacious, with perceivers biased toward maintaining consistency (Nisbett and Ross 1980; Taylor 1982). Subsequent behaviors of the stimulus person, if consistent with the category label are attributed to the individual's "real self", whereas inconsistent behaviors tend to be attributed to situational influences (Cantor and Mischel 1979).

Forming first impressions of people is a pervasive social phenomenon. People make snap judgments about others in a variety of social settings and usually find enough proof to justify those judgments (Schneider, Hastorf & Ellsworth 1979). These inferences may be based on physical appearance (skin color, age, sex) or social roles (e.g., expectations regarding how a lawyer or doctor is supposed to behave) and induce systematic biases in information processing (Ross 1977).

According to Taylor:

information about people is more ambiguous, less reliable, and more unstable than is information about objects...since people do not wear their personal attributes on their faces the way objects wear their color, shape or size. Thus, personal attributes must be inferred rather than observed directly. People have intentions, not all of which are directly stated. Although objects maintain their attributes cross-situationally and over time, people’s motives change from situation to situation and goals change from minute to minute as well as over the lifetime; thus even an accurate inference in one situation may have little predictive utility. The impossibility of having complete, reliable, predictive information about people and social interactions suggests that people adopt heuristics that enable them to make inferences and predictions from what scanty and unreliable data are available (Taylor 1982, p. 191)
The above observations are applicable in the context of a service encounter as well. Consumers face difficulty in inferring the attributes, goals and motives of the service provider, and even if they are successful in making an accurate inference in one encounter, it has poor predictive ability due to the cross-situational variability of the behavior of service providers. The complexity of the service environment, especially in services with high experience and credence qualities suggest that consumers depend on simple heuristics to arrive at evaluations of service providers. The present research is based on the premise that one such heuristic may be the "impression" formed of the service provider.

Solomon Asch (1946) pioneered research on psychological inferences and organizational processes which are crucial to the formation of first impressions. Asch specified two competing models of evaluative impressions: the configural model and the elemental model. The "Configural Model" following Gestalt principles, proposes that an overall impression is formed from the configuration of available information inferred from a person’s perceived attributes.

The "Elemental Model" on the other hand, posits a simple additive process where final impressions are based on the sum of the impressions of the individual characteristics of the stimulus person. In this model, the evaluative meaning of each attribute is computed independently of the other attributes present. These independent evaluations are combined to form a summary judgement of final impression. Asch’s preferred mode was configural, for he endorsed the view that impressions are organized around a central core. However, it is noteworthy that later research followed the elemental tradition more closely than the configural model as illustrated by research on information integration theory (Anderson 1974) and multiattribute attitude models (Fishbein and Ajzen 1975).

It is important to note that, "category", "prototype", "stereotype" and "schema" have been used interchangeably in the literature. All four terms refer to well developed expectations and beliefs based on an individual’s prior experiences (social stereotypes are generally believed
to have negative connotations compared to social categories). Similarly, Asch's "Configural Model" Fiske's (1982) "Category-based Model" and "Holistic Processing" refer to processing of information relative to prior stored knowledge and are used interchangeably in the literature. Some empirical evidence concerning the categorization processes in person perception is presented next.

**The Effects of Categorization**

Recently, researchers in social psychology have proposed models of person perception which integrate both the cognitive and affective processes involved in impression formation (Fiske and Pavelchak 1987; Fiske, Neuberg, Beattie and Milberg 1987; Fiske and Neuberg 1990). These researchers have refined the categorization model to include affective reactions to stimulus persons and proposed a continuum model of impression formation.

The continuum model posits that perceivers move along the continuum of impression formation with categorization and attribute-based processes anchoring the two ends of the continuum (Fiske and Neuberg 1990). Though categorization is suggested to be the preferred mode, the interpretive ease of the configuration of available information as well as the motivational influences of the perceiver determine the position of the perceiver on the processing continuum (Fiske and Neuberg 1990).

**Category-Based Affect Model**

Recently, programmatic research undertaken by Susan Fiske and her colleagues explored the role of affective responses to stimulus persons within the framework of categorization (Fiske 1982; Fiske and Pavelchak 1987; Neuberg and Fiske 1987; Fiske, Neuberg, Beattie and Milberg 1987; Fiske and Neuberg 1990). According to this line of research, people form impressions of others through a variety of processes that range from primarily category-based to primarily attribute-based, depending chiefly on the configuration
of available information and motivational influences present at the time of forming impressions. The continuum model posits that people's preferred mode of impression formation is category-based.

Affective reactions are primed through the process of matching up the perceived attributes of an individual to attributes of the cued category and if the congruence is high, the affect stored with the category is spontaneously transferred to the target individual. This affect which is specific to a category but is transferred to that stimulus perceived to be a good match to the global category is referred to as "category-based affect". When a stimulus is assimilated to a category, the perceiver does not respond to the idiosyncratic features of the stimulus any more but to the characteristics it has in common to other prototypes of the category (Hoffman 1986).

Category-based affect is related to "affect referral" (Wright 1975). Affect referral refers to the generalization of a global affective judgment associated with the consumption of a particular product to new instances of the same consumption experience. In other words, prior consumption experience is necessary for the transfer of affect. Categorization also implies transfer of affect from the category to the stimulus person. However, with categorization no previous experience with the specific instance is assumed - a global affective reaction is retrieved from memory and applied to the stimulus instance regardless of familiarity with the stimulus (Sujan 1985). The informational conditions under which categorization assumes importance are (Fiske and Pavelchak 1987):

1. **The available attributes cue an appropriate category in memory:** The affect stored with the category is assumed to be transferred to the target person only when an appropriate category is available and accessible in memory. If the incoming information is incongruent with any of the categories available in memory, categorization fails and more
attribute oriented processing may take place

(2) The available attributes fit a category label that is also available: In some instances, the category label is the strongest cue available in memory because of its salience in a given situation. If a person goes to a hospital and sees someone with a white smock and a stethoscope, he is immediately categorized as a doctor, since that is the most salient category label available in that situation.

(3) The label is the only information available: There are other instances where perceivers have only the category label to arrive at their judgments. For example, if a person comes to know that the family which recently moved next door belongs to a doctor but has not yet met the doctor, the expectations regarding the next door neighbor may be based on the category label because that is the only information available to the perceiver.

The research paradigm generally used to test the continuum model involves laboratory experimentation. The research design consists of two stages. Initially, the content and affect associated with the category are assessed. Next, the process of categorization itself is tested.

The first stage involves a series of pretests. In these pretests, subjects expectations' and knowledge of attributes associated with various categories are assessed. The affect associated with the category is usually elicited by way of a single-item, global likability judgment of the category. In the second stage, the experimenter constructs stimuli from the attributes mentioned by the majority of subjects in the pretest. The match or mismatch to the category is manipulated with the intention of evoking either category-based or attribute-oriented responses. In the match condition, attributes consistent with the category are
presented to the subjects, whereas in the mismatch condition, attributes which are pretested to be inconsistent with the category are presented (this is usually achieved by selecting two categories and counterbalancing the attributes across the two categories to create match or mismatch conditions). The dependent variables of interest usually are response time and stimulus evaluations.

In one of the earlier studies, Fiske and Gup (1980) selected two pairs of negatively evaluated college stereotypes: Engineer/Artist and ROTC member/Homosexual. Behavioral attributes consistent with one stereotype but inconsistent with another were identified in a pretest (e.g., an engineer is more likely to work on a computer all night compared to an artist). Subjects were shown a number of slides, among which the four slides pretested to elicit the four chosen categories were randomly included. For example, the slide which was supposed to elicit the category of ROTC member showed a student in military garb. Along with the category label slides, two consistent and two inconsistent behavioral slides were also presented. The hypothesis tested was that upon successful categorization, the affect associated with the category should be transferred to the target individual. Evaluation was the main dependent variable. The results confirmed the hypothesis by showing that for both the stereotypes consistent behaviors elicited more negative evaluations compared to inconsistent behaviors.

In a study which specifically tested the implications of schematic congruence, Fiske, Neuberg, Beattie and Milberg (1987) tested the proposition that a positively laden category would produce positive affect as a result of a perceived match between stimulus person and the category. In an investigation of three categories consisting of an old flame category, a politician category and a campus stereotype (an idiosyncratic category held by Carnegie-Mellon students), Fiske et al., found that a positively charged category elicits positive affect whereas a negatively laden category elicits negative affect. It was also found that affect triggered by categorization acts as a guide to action. When presented with several photographs, some
which conformed to the subject's prototypic old flames and some that did not, the subjects consistently preferred the photographs of people who fit their prototypes as partners for a date (Fiske, Neuberg, Beattie and Milberg 1987).

Fiske, Neuberg, Beattie and Milberg (1987) tested the hypothesis that category-based responses are faster compared to more analytical processes. This study is especially relevant to the study of service encounters, since job-category labels were used to investigate the categorization processes. Four conditions were designed. The two category-based conditions were (1) label plus consistent attributes (consistent condition) and (2) label plus uninformative attributes (label focus condition). The two attribute oriented conditions were (1) label plus inconsistent attributes (inconsistent condition) and (2) uninformative label plus attributes (attribute focus condition). In the test of categorization processes, the consistent condition described the stimulus person as a "sales clerk" and presented attributes such as pushy, insensitive, pleasant, insincere and fawning, pretested to be consistent with this category label. The label focus condition presented the label as "construction worker" but gave uninformative attributes such as ordinary, normal, nice, typical and unremarkable which again were pretested to be neutral attributes.

The latency (response time) of the likability judgement was the primary dependent variable. In both of the above conditions designed to elicit categorization processes, it was found that subjects were able to reach a likability response faster than those subjects presumably using more attribute-oriented processes.

The Role of Schematic Expectations on Evaluations

The normative aspect of the categories has attracted some research attention in social psychology (Higgins and Rholes 1976; Rothbart, Evans and Fulero 1979; Taylor and Crocker 1981). Taylor and Crocker (1981) studied the impact of expectations on evaluations by suggesting that schema-relevant expectations are generated prior to social interactions and the
stimulus person is judged against these expectations. If the stimulus person violates normative expectations relevant to the schema evoked, he/she would be evaluated negatively, although the attributes which violate expectations may receive positive evaluation independently. For example, a salesperson who recites poetry is not perceived to be a good salesman even by people who like poetry.

The role of schematic expectations in impression formation was also studied by Coover and Reeder (1990, experiment 2). The purpose of the study was to test the proposition that observers rely on a set of schematic expectations to relate personality dispositions to relevant behaviors. It was hypothesized that when a target individual was described to be "moral", subjects would rate subsequent behaviors of that target person to be more moral than immoral, compared to a target person who was initially described as immoral. The experimental design was a 3(impression target: individual, meaningful group, aggregate) x 2(morality of initial behavior: moral vs immoral) x 2(morality of predicted behavior: moral vs immoral) factorial with repeated measures. The results confirmed that when an individual was initially categorized as moral, subjects predicted significantly more moral behaviors from that individual compared to a person who was initially categorized as immoral.

The above studies indicate that schematic expectations influence target evaluations. When a stimulus person is perceived to be a good fit to the category cued, the expectations specific to the category would guide evaluations of that stimulus person. For instance, if a stimulus person is categorized as a surgeon, he is evaluated against the standard of what is generally expected of surgeons.

In summary, the following conclusions can be drawn from the studies discussed above:

(1) Affect is cued as a result of perceived match between the category and the stimulus person
(2) Positively charged categories elicit positive affect whereas negatively charged categories elicit negative affect
(3) When there is a mismatch between the stimulus person and the category cued, categorization fails and more attribute-based processes take place.

(4) Category-based processes are faster compared to attribute-based processes, since prior knowledge facilitates evaluations by making the reactions to the category almost automatic.

Marketing Studies on Categorization

The categorization approach has attracted some research attention in marketing. Sujan (1985) used a categorization framework to study evaluations of product categories based on consumer prior knowledge. Specifically, the hypothesis tested was that product evaluations differ between expert consumers and novices depending on the degree of category knowledge possessed. Two product types within a product category, 35 mm SLR’s and 110mm cameras were the focus of the study. By providing information that either matched or mismatched the category knowledge for the particular type of camera shown to subjects, a 2(novice vs expert) x 2(match/mismatch) x 2(110 vs 35mm cameras) factorial design was constructed. Specifically, the results demonstrated that:

(1) Product information perceived to be consistent with category knowledge elicited category-based processing

(2) Category-based processing took precedence over attribute oriented processes when product information was consistent with category knowledge

(3) Product information perceived to be discrepant from category knowledge elicited attribute-oriented processing
Expert consumers engaged in more elaboration of the product information provided compared to their novice counterparts.

Experts reached their evaluations faster than novices.

These results are in general agreement with Fiske’s (1982) results.

The importance of normative expectations pertaining to the category in selling encounter evaluations has been studied by Sujan, Bettman and Sujan (1986). As is typical with the categorization research, the contents and affect associated with the categories of a clothing salesman and a computer salesperson were established through a series of pretests. The pretests indicated that a clothing salesperson typically uses a product oriented approach with consumers whereas a computer salesperson uses a more consumer oriented approach in dealing with consumers. It was also established that a clothing salesperson elicited positive affect whereas a computer salesperson elicited negative affect.

The dependent variables of interest in this study were product evaluations and recall of product features. A 2(positive/negative salesperson schema) X 2(match/mismatch to schema) X 2(strong/weak arguments) analysis of design was employed in the study. The study provided support for the hypothesis that when the particular salesperson encountered matched the consumers' previously established schema for that salesperson category, the sales encounter evaluation would be guided by the affect generated by the sales encounter, that is the impressions created by the salesperson. This study is particularly relevant to the present dissertation, since it analyzed selling encounters and demonstrated the applicability of the category-based affect model to situations where intangibility and heterogeneity create uncertainty in consumer evaluations. However, this study does not extend the influence of affect into post-purchase evaluations, that of satisfaction with the encounter.

In a recent study on the effect of congruence between the spokesperson and the brand being advertised, Misra and Beatty (1990) used a category-based affect model to demonstrate
that schematic congruence transfers the spokesperson’s affect to the advertised brand. This study suggests that people have well developed person schemas for celebrity spokespersons and when the celebrity spokesperson endorses a particular brand, the degree of congruence between the schema for the celebrity and the advertised brand influences the effectiveness of the advertisement. A 3(congruent/incongruent/irrelevant conditions) X 2(spokespersons) factorial design was utilized to test the hypothesis. The results provided support for the hypothesized transfer of affect generated by the spokesperson to the advertised brand when there was high congruence between the spokesperson and the advertised brand. Although not directly related to the present study, the above research suggests that the categorization approach has wide applicability to various marketing problems.

Taken together, these studies suggest the importance of a categorization approach in explaining a number of marketing phenomena. Although product evaluations are shown to be affected by a consumer’s category knowledge, there is no research which has extended this theoretical explanation beyond evaluations to consumer satisfaction processes. For instance, all the studies reviewed so far, both in social psychology and marketing have used the dependent measures of person (product) evaluations, response time and recall of information provided at the time of the experiment. None of the studies have studied the influence of affect on post-purchase processes, especially satisfaction. However, the empirical evidence reviewed so far suggests a direct link between affect and product evaluations. Based on this evidence, it is reasonable to propose a relationship between affect and evaluation of service providers.

**Applicability of Affect-Based Processing to Service Evaluations**

Service encounters, especially for those services high in experience and credence qualities, are characterized by uncertainty, ambiguity and lack of pre-purchase information (Berry 1980; Zeithaml 1981). More often than not, a category label is the only information
available to consumers under these circumstances. Consequently, consumers may depend more on the likability dimension of the service encounter to arrive at their satisfaction judgments than on a rational evaluation of all the available objective dimensions of the service encounter.

For example, let's take an encounter between a doctor and a patient. The patient's evaluation of the encounter largely depends on the intangible dimensions of the interaction such as the likability of the doctor. The reason is that the patient in many cases is not knowledgeable enough to objectively understand the medical technology. Moreover, he/she may not be willing to invest in the cognitive effort needed to thoroughly evaluate all the technical details of the interaction. This suggests that he/she depends upon an outside anchor to base his satisfaction judgment, and this anchor may be the evaluative impression which constitutes the consumers' affective reaction towards the doctor. The affect model proposed in this dissertation is thus highly applicable to situations such as the one described above.

The study of prior knowledge as an important determinant of consumer evaluations of service encounters is not new to services literature. Smith and Houston (1983) proposed service satisfaction as a function of fulfillment of "script-defined expectations". Script-defined expectations pertain to the normative aspect of schemas. Scripts are "a predetermined, stereotyped sequence of actions that define a well known situation" (Schank and Abelson 1977, p.41). According to this conceptualization, consumers have stored knowledge about the actions, actors and objects involved in service transactions through socialization and repeated participation in service encounters. As a result of this prior experience, consumers develop expectations pertaining to the services involved.

Smith and Houston (1983) suggest that service satisfaction is based on a comparison of performance attributes with script-defined expectations. There is no empirical evidence supporting this conceptualization yet, but script-defined expectations may be thought of as related to category-based expectations. Specifically, scripts pertain to event schemata or
sequences, whereas category-based expectations pertain to descriptive attributes around which information is organized. As it is well established in the services literature that an overall evaluation of the service encounter is a cumulative function of performance on individual attributes (Parasuraman, Zeithaml and Berry 1985), category-based expectations may be more appropriate to study in the context of service encounter satisfaction than script-based expectations.

The influence of first impressions of service providers as well as service institutions on service encounter satisfaction has been alluded to by many authors in the services literature. Although not tested empirically, Bitner (1990) suggested that the demeanor of service personnel and other patrons present in the service facility help customers to "categorize" the firm and to form pre-experiential expectations of the service encounter. Similarly, others have noted the potential importance of categorization in a service encounter (Grove and Fisk 1983; Solomon, Surpreant, Czepeil and Gutman 1985; Baker 1987). For example, Miller (1985) proposes that the affective dimension in a service encounter becomes the most salient determinant of a consumer's overall satisfaction with the service. In other words, the affect generated by the evaluative impressions formed of service providers may be an important but neglected aspect of consumer satisfaction with services.

The above discussion suggests that affect-based approach to services marketing is appropriate since in most instances the service provider is the service from the consumer point of view. Moreover, the three conditions necessary to encourage affect-based processing are present in service encounters. For instance, there is low informational content in the encounter for consumer to evaluate the service provider objectively. More often than not, a category label is the only information available to the consumers in a service encounter. Finally, most service providers follow well established scripts to conduct their business, which makes categorization easier for consumers.
Based on the empirical evidence discussed regarding the pertinence of categorization processes in explaining the evaluative judgments made of target persons, this dissertation uses a theoretical framework of categorization to explore the role of affect in service encounter satisfaction. It is suggested that person perception research is especially appropriate to services, which are mainly people based and possess high interaction between the consumer and the service provider. No research to date has integrated the insights from the literature on impression formation in social psychology with satisfaction judgments in a marketing context, especially in a services marketing context. The dissertation attempts to fill this gap by exploring the role of affect in satisfaction with service encounters. Towards that end, the satisfaction research both in the product and services domain is reviewed next.

**Product Satisfaction**

Consumer satisfaction has been the focus of considerable research in marketing. The disconfirmation paradigm is considered to be the dominant approach to the study of consumer satisfaction. A brief description of the conceptualization of satisfaction in the literature is provided next followed by a review of studies on the disconfirmation framework.

**Conceptualization of Satisfaction**

Satisfaction has been defined in a number of ways in the product satisfaction literature. The common theme underlying all these definitions is an emphasis on the individual consumer. Table 2.1 summarizes the most commonly used definitions of satisfaction in the literature. It is evident from Table 2.1 that the conceptualization of satisfaction falls into four categories: fulfillment of needs and desires; utilitarian; pleasure/ displeasure; and expectancy disconfirmation. However, if needs and desires constitute the basis of expectation formation and if people are assumed to compare their expectations regarding costs to perceived rewards,
Table 2.1
A Summary of Various Definitions of Satisfaction

<table>
<thead>
<tr>
<th>Author/year</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fulfillment of Needs and Desires</strong></td>
<td></td>
</tr>
<tr>
<td>Andreasen (1977)</td>
<td>the extent to which consumer needs and wants are met.</td>
</tr>
<tr>
<td>Handy (1977)</td>
<td>perceived extent to which product and service alternatives desired by consumers are incorporated into a specific choice in the market.</td>
</tr>
<tr>
<td><strong>Utilitarian</strong></td>
<td></td>
</tr>
<tr>
<td>Howard and Sheth (1969)</td>
<td>the buyer’s cognitive state of being adequately or inadequately rewarded for the sacrifices he has undergone.</td>
</tr>
<tr>
<td><strong>Pleasure/Displeasure</strong></td>
<td></td>
</tr>
<tr>
<td>Aeillo, Czepeil and Rosenberg (1977)</td>
<td>an overall post-usage response to different facets of product.</td>
</tr>
<tr>
<td>Hunt (1977)</td>
<td>an evaluation rendered that the experience was at least as good as it was supposed to be.</td>
</tr>
<tr>
<td>Landon (1977)</td>
<td>the extent to which consumers are pleased with products in the market place.</td>
</tr>
<tr>
<td>LaTour and Peat (1979)</td>
<td>a general evaluative response to a product similar to attitude, perhaps one measure of attitude.</td>
</tr>
<tr>
<td>Westbrook and Reilly (1983)</td>
<td>an emotional state resulting from an evaluation of one's experiences in connection with an object, action, or condition.</td>
</tr>
</tbody>
</table>
### Table 2.1 (Cont)

**A Summary of Various Definitions of Satisfaction**

<table>
<thead>
<tr>
<th>Author/year</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expectancy Disconfirmation</strong></td>
<td></td>
</tr>
<tr>
<td>Swan and Combs (1976)</td>
<td>the extent to which consumer predictions concerning the performance of product are fulfilled.</td>
</tr>
<tr>
<td>Miller (1977)</td>
<td>the result of an interaction of levels of expectations about anticipated performance and evaluations of perceived performance.</td>
</tr>
<tr>
<td>Oliver (1980)</td>
<td>a function of the expectation (adaptation) level and perceptions of disconfirmation</td>
</tr>
<tr>
<td>Engel and Blackwell (1982)</td>
<td>an evaluation that the chosen alternative is consistent with prior beliefs with respect to that alternative.</td>
</tr>
<tr>
<td>Churchill and Surprenant (1982)</td>
<td>an outcome of purchase and use resulting from the buyer’s comparison of the rewards and costs of the purchase in relation to the anticipated consequences.</td>
</tr>
</tbody>
</table>
### Table 2.1 (Cont)

**A Summary of Various Definitions of Satisfaction**

<table>
<thead>
<tr>
<th>Author/year</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service Satisfaction</strong></td>
<td></td>
</tr>
<tr>
<td>Smith and Houston (1983)</td>
<td>the degree to which script-defined expectations are met by the service provider.</td>
</tr>
<tr>
<td>Solomon et al (1985)</td>
<td>a function of the congruence between perceived role behavior and expected role behavior.</td>
</tr>
<tr>
<td>Bitner (1990)</td>
<td>a comparison of perceived performance with prior expectations.</td>
</tr>
</tbody>
</table>
then the first and second conceptualizations of satisfaction can be subsumed under the expectancy disconfirmation framework. The major drawback of the expectancy disconfirmation conceptualization seems to be its inability to encompass the "feelings" generated by the consumption process. And, as argued by Westbrook (1987) feelings may form an integral basis of the consumption experience. It is interesting to note that consumer dissatisfaction research has made feelings central to the conceptualization of dissatisfaction.

Researchers in consumer dissatisfaction/complaint behavior have included feelings of frustration, anger and disgust in their theoretical models (Day and Landon 1977; Richins 1983; Folkes 1984). However, the same cannot be said about satisfaction research. The inclusion of affect items in scales measuring satisfaction is usually couched in the expectancy disconfirmation framework and is not given recognition as a separate distinct phenomenon.

LaTour and Peat (1979) argue that satisfaction is similar to attitude in many respects since satisfaction entails simply an evaluative response to a product. However, this conceptualization neglects the temporal ordering of the evaluative response. Satisfaction by definition is a post-purchase phenomenon whereas attitudes can be both pre and post-purchase. Another distinction is that satisfaction is an evaluative response towards the "consumption experience" and not towards the product, per se.

Oliver’s (1977) conceptualization of satisfaction as a function of the gap between expectations and perceived performance has gained widespread usage. A number of recent studies on satisfaction have adopted this conceptualization with the argument that the idea of "compared to.." something is inherent in any satisfaction judgement.

The traditional disconfirmation paradigm assumes that the exact confirmation of expectations is the definition of satisfaction. However, later researchers, notably Woodruff, Cadotte and Jenkins (1983) argue that an exact confirmation would produce neither satisfaction nor dissatisfaction, but only a feeling of indifference. Woodruff et al (1983) suggest that there is a "zone of indifference" around a certain level of expected product
performance which is equivalent to a product norm. Only that performance which is superior enough to fall outside this zone is recognized as different from the product norm and is evaluated as satisfaction. The reverse is true for dissatisfaction.

In summary, there are diverse views in the present literature regarding the conceptualization of satisfaction. The one aspect of satisfaction which many researchers seem to agree on is the idea of comparison to something, either needs and desires, or expectations. The disconfirmation of expectations is an appealing conceptualization from this standpoint, since it depends on the adaptation level theory which posits human reaction to be a function of a comparison to a previously established standard.

**The Disconfirmation Paradigm**

The disconfirmation paradigm can be thought of as a subset of the "adaptation level" theory proposed by Helson (1948). Adaptation level theory posits that one perceives stimuli only in relation to an adapted standard. The standard is a function of perceptions of the stimulus itself, the context and psychological and physiological characteristics of the organism (Oliver 1980). As applied to the satisfaction theory, one’s level of expectation about the product performance acts as an adaptation level. Post-purchase evaluation of the deviation from this adaptation level results in satisfaction when the product performs as expected or exceeds expectations, whereas dissatisfaction occurs when the product performs worse than expected. Satisfaction is thus viewed as an additive combination of the expectation level and the resulting disconfirmation.

The traditional disconfirmation paradigm as described by Churchill and Surprenant (1982), "holds that satisfaction is related to the size and direction of the disconfirmation experience, where disconfirmation is related to the person's initial expectations" (p.491). An individual's expectations are (1) confirmed when a product performs as expected (2) negatively disconfirmed when the product performs more poorly than expected and (3) positively
disconfirmed when the product performs better than expected. The disconfirmation paradigm thus views satisfaction as a function of expectations, perceived performance and disconfirmation. These concepts are reviewed in the following three sections.

**Expectations**

Expectations are generally viewed as belief probabilities of attribute occurrence (Olson and Dover 1976). According to Oliver (1980), these beliefs perform two functions, that of providing a foundation for attitude formation and serving as an adaptation level for subsequent satisfaction decisions. Different types of expectations have been described in the literature (Miller 1977; Tse and Wilton 1988): ideal, expected, minimum tolerable and deserved. Ideal expectations refer to what can be and is a function of prior experience, learning, advertising and word of mouth information. Expected expectations are derived from past average performance. The least acceptable level of performance comprises the minimum tolerable expectations. The deserved expectation introduces an equity dimension by an evaluation of rewards and costs involved in the purchase.

LaTour and Peat (1979) argue that expectations conceptualized as belief probabilities would not account for the consumer’s affective response to obtained attributes in determining satisfaction. They cite the example of a consumer who is forced to buy an inferior brand due to unavailability of his favored brand. He may have poor expectations about his buy and may find his expectations confirmed after use, but still be dissatisfied. The disconfirmation framework would fail to explain such a situation.

Most research on satisfaction has followed Oliver’s view of treating expectations as the sum of belief evaluation products in the multiattribute tradition with the argument that one’s expectations involve not only the probability of whether a particular outcome occurs or not, but also an evaluation of that outcome (Oliver 1980, Oliver and Bearden 1983).
Churchill and Surprenant (1982) view expectations as anticipated performance and measure them as a function of prior consumption experience and information provided before the experiment.

**Perceived Performance**

Perceived performance is usually treated as a standard of comparison. Evaluations of performance have been shown to be influenced by purchase related variables (such as convenience, accessibility, personal treatment etc.), product related variables (such as cost, quality, aesthetic aspects etc.), post-purchase related variables (such as decision analysis, environmental effects etc.), and psychological variables (such as image consistency, lifestyle etc) (Olshavsky and Miller 1972; Olson and Dover 1976; Liechty and Churchill 1979).

Both Churchill and Surprenant (1982) and Tse and Wilton (1988) argue for inclusion of a direct linkage between perceived performance and satisfaction on theoretical grounds. According to the above researchers, perceived performance is central to any model of satisfaction, since satisfaction is a post-purchase evaluation and is influenced by perceived performance. Perceived performance has been measured by Churchill and Surprenant (1982) and Tse and Wilton (1988) as a sum of attribute specific performance evaluations and global performance evaluations.

**Disconfirmation**

Disconfirmation is an "intervening distinct cognitive state resulting from the comparison process and preceding a satisfaction judgement" (Oliver 1980, p.460). Oliver (1980) maintains that disconfirmation has an independent, additive effect on satisfaction judgments. Both the subtractive disconfirmation approach, which views disconfirmation as the algebraic difference between expectations and perceived performance as well as the subjective disconfirmation approach which views disconfirmation as a distinct psychological state arising
out of a subjective evaluation of the discrepancy between expectations and performance, have been used in the marketing literature. LaTour and Peat (1979) and Trawick and Swan (1980) use the subtractive approach whereas Oliver (1980), Churchill and Surprenant (1982) and Tse and Wilton (1988) used the subjective approach to measure disconfirmation. Oliver and DeSarbo (1988) suggest that some consumers are more expectation or disconfirmation driven than others, resulting in different effects of expectations and disconfirmation on satisfaction decisions. Hence, it is important to take into account individual differences while modeling satisfaction processes.

In summary, the disconfirmation paradigm conceptualizes satisfaction as a function of expectations, performance and disconfirmation. Empirical support for the type of linkages between these constructs is reviewed next.

**Empirical Evidence for the Disconfirmation Model**

As Latour and Peat (1979) point out, some of the inconsistencies found across various studies on satisfaction may be a result of different operationalizations of the constructs involved. It is thus important to understand the methodologies used to study satisfaction in the past literature. This section reviews the empirical studies on satisfaction and is organized chronologically.

Empirical support for the disconfirmation paradigm comes from experimental studies done by Oliver (1980), Churchill and Surprenant (1982), and Tse and Wilton (1988). Experimental studies conducted by Cardozo (1965), Olshavsky and Miller (1972), Anderson (1973), Olson and Dover (1976) provide support for two linkages: (1) a positive relationship between expectations and perceived performance and (2) a positive relationship between perceived performance and quality evaluations. However, these studies were done within the context of investigating the effect of puffery in advertisements on product evaluations. As such, LaTour and Peat (1979) argue that these studies cannot be classified as providing
support for the disconfirmation model of satisfaction since these studies did not include satisfaction in their investigation.

Accordingly, the present discussion treats the studies done before Oliver’s (1977) study as providing support for the part of the disconfirmation framework, but not studies on satisfaction per se. Oliver (1977) used the two variable expectancy, disconfirmation model and did not include performance in his studies. Most of the later studies have followed this tradition. Hence, these studies are referred to as two-variable expectancy disconfirmation studies. Churchill and Surprenant (1982) and Tse and Wilton (1988) are the only researchers who tested the full disconfirmation model with all the linkages included. Accordingly, these studies are referred to as full disconfirmation model studies. The particular model of satisfaction used is specified while reviewing each study.

Earlier Studies on Product Evaluations

In one of the earliest studies on the impact of expectations on perceived performance, Cardozo (1965) found that subjects who perceived product performance to be lower than expected (negative disconfirmation) rated product quality lower than those who had low expectations about product performance. These results were interpreted by Cardozo (1965) as providing support for a "contrast effect" which posits that consumers magnify discrepant product performance and hence would be dissatisfied with performance levels lower than expectations. However, later studies done by Olshavsky and Miller (1972), Anderson (1973) and Olson and Dover (1976) support an assimilation effect interpretation rather than a contrast effect by pointing out a methodological flaw in Cardozo’s study. In Cardozo’s study subjects were asked to leaf through catalogs which contained pens with an average price of either .39 cents or $1.95 to manipulate low or high expectations. Thus, subjects who provided product evaluations in the low expectation condition were using the .39 cents pen as an anchor, whereas in the high expectation condition, the subjects’ anchor was a $1.95 pen.
Olshavsky and Miller (1972) studied the effects of overstatement as well as understatement of product quality on product ratings for a reel type tape recorder and found an assimilation effect. However, they caution that product evaluations may differ across product categories dependent upon the complexity of the product involved. This study suggests that involvement and familiarity with the products may mediate the effects of expectations on product evaluations.

Anderson (1973) provided support for an assimilation-contrast hypothesis with his study on ball point pens. He found that discrepant product performance which exceeds the subject’s zone of acceptance resulted in a contrast effect. He concluded that expectancy disconfirmation may vary depending on the meaning of products used in the experiment for consumers. For those products which entail deep personal and/or financial commitment from consumers, performance may exert a stronger effect on satisfaction compared to less involving products.

Olson and Dover’s (1976) study differs from earlier studies in that subjects used the product prior to reporting their evaluations. Thus, they assessed actual product performance, not vicarious experience. These researchers also found support for a possible assimilation effect by showing that perceived performance assimilated towards expectations. However, their results attained only marginal significance (p <.10).

Swan and Combs (1976) employed the critical incident method to study subject’s experiences of satisfying and dissatisfying purchases. Subjects were asked to recall both satisfying and dissatisfying experiences and their perceived reasons for their evaluations. Expectations were found to have strong impact on subjects’ disconfirmation.

Valle and Wallendorf (1977) found that subjects made frequent references to pre-purchase expectations in evaluating product performance in an open ended response task. Their study provides support for the positive relationship between expectations and perceived performance.
Expectancy-Disconfirmation Model

Oliver (1977, 1980) in two multi-stage field studies found that pre-purchase expectations were uncorrelated with subsequent expectancy disconfirmation and established an independent, additive status for disconfirmation in the satisfaction model. However, Oliver's studies did not include performance measures in satisfaction models and hence could not assess the effects of performance on satisfaction judgments. In this respect, his studies may be called incomplete. A notable feature of Oliver's design is that he used a fairly long time period of seven months to assess the disconfirmation effect. Perhaps this may have contributed to the independent disconfirmation effects he found in his study. However, his results cast doubt on several earlier studies which found an assimilation effect in product evaluations, which may have been chiefly due to recency effects.

Swan (1977) and Swan and Trawick (1980) also provide support for Oliver's two variable model of satisfaction. Swan and Trawick (1980) included perceived product performance in their model and demonstrated that both performance and disconfirmation affect satisfaction.

The Full Disconfirmation Model

Churchill and Surprenant (1982) pooled the findings from major studies on satisfaction and investigated all four variables proposed by the disconfirmation model. Due to the wide variety of products used in previous studies, they selected both a durable product and a non-durable product in their study. In fitting the disconfirmation model to the data from both types of products, they found that the disconfirmation model explained most of the variation in satisfaction with the chrysanthemum plant (non-durable) whereas performance alone provided a parsimonious explanation of satisfaction with the video disc player (durable). This study substantiates the possibility suggested earlier by Olshavsky and Miller (1972) that satisfaction processes may vary across product categories.
Bearden and Teel (1983) as well as Oliver and Bearden (1983), with the help of a two-stage panel study found additional support for the disconfirmation model. Oliver and Bearden (1983) investigated the effects of involvement on satisfaction judgments. The disconfirmation model was found to adequately explain the data when both the low involvement and high involvement groups were pooled together. However, when the sample was split according to the level of involvement, the results were inconsistent. Specifically, the disconfirmation model was supported in the low involvement group, but in the high involvement group the model reached only marginal significance.

Several methodological problems cast doubt on the conclusions arrived in this study. The type of product selected, an appetite suppressant, as noted by authors themselves is a "strong disconfirmation" type of product. Splitting the sample based on the mean ratings on involvement scale into low and high groups may be artificial considering the type of product involved. Expectations were measured as a weighted sum of beliefs and evaluations instead of the usual scale of predictions regarding product attributes. Most importantly, disconfirmation was measured as a function of problems encountered and benefits provided by the product. These scales would result in some manipulations being stronger than others. As Tse and Wilton (1988) point out, it is important to balance the strength of expectations and performance manipulations in studies of satisfaction. Some of the inconsistencies regarding the strength of the various linkages reported in previous studies may be simply due to the stronger influences of those variables.

Studies done by Woodruff, Cadotte and Jenkins (1983), Caddotte, Woodruff and Jenkins (1987) and Tse and Wilton (1988) elaborate on the standard of comparison used in satisfaction studies. Woodruff et.al., (1983) feel that expectations may not be the only standard used by consumers in arriving at disconfirmation judgments. They found support for a new construct of comparison, experience-based norms, which they defined as a standard derived from past experiences with known brands. It reflects the performance a consumer
believes a brand should provide to meet needs/wants. While reporting support for the
disconfirmation model, Cadotte et al (1987) conclude that the standard of comparison may
differ according to the use situation.

Tse and Wilton (1988) tried to replicate the direct relationship between perceived
performance and satisfaction as proposed by Churchill and Surpremant (1982) as well as
investigate the possibility of multiple comparison standards for satisfaction judgments. Based
on their findings, they argue for the inclusion of a direct linkage from perceived performance
to disconfirmation and satisfaction as well as the existence of multiple comparison standards
in satisfaction formation. Oliver and Desarbo (1988) compared the attribution, equity and
expectancy disconfirmation theories of satisfaction and reported results supporting the
disconfirmation model, thus corroborating earlier findings demonstrating the strength of the
disconfirmation model in explaining satisfaction.

Westbrook (1980, 1987) argued that Oliver’s disconfirmation theory was too
deterministic and satisfaction might not be solely a cognitive phenomenon. He proposed that
general affective states like moods and positive dispositions of consumers might affect the
satisfaction with the consumption experience. Based on temporal stability, he proposed four
different affective influences:

1. **Stable/generalized affective influences** are basic personality
dispositions (eg. optimism and pessimism) and enduring,
global attitude structures (eg. life satisfaction)

2. **Transient/generalized affective influences** are represented by
various elements of mood, such as elation, depression,
tranquility etc.

3. **Stable/consumer domain affective influences** are attitudes
towards consumption and market place. Consumer attitudes
towards dealers, services offered in the market place,
consumerism and consumer discontent are some examples of this category

4. **Transient/consumer domain affective influences** are temporary attitudes of favorability or unfavorability towards consumption. Examples may include temporary favorable attitudes generated towards retail institutions due to their promotional activities (Westbrook 1980, p.50)

His study with two types of products, footwear and automobiles yielded inconsistent results across product types. For footwear the traditional disconfirmation model performed well whereas for automobiles the affective influences explained satisfaction better. Westbrook (1980) interpreted these results as suggestive of the variability of satisfaction formation processes across product categories.

Westbrook and Reilly (1983) extended research on job satisfaction to the consumer satisfaction domain and suggested that "satisfaction is the pleasurable emotional state resulting from the appraisal of a product, service, retail outlet or consumer action as leading to or achieving one’s values"(p.257). Under this formulation, expectancy disconfirmation was seen as a specific type of value judgement. They argued that satisfaction as an end result of a cognitive appraisal process does not capture the pleasurable emotions consumers experience on fulfillment of their needs/desires or values.

Based on above reasoning, the authors proposed the "value percept-disparity model" which posits that consumers compare perceived performance of a product to values or desires/wants and satisfaction is inversely related to the disparity between perceptions and wants. The authors tested this theory in the context of automobile purchases and found support for the disconfirmation model rather than the proposed model in a causal modeling approach. They attributed the lack of support to measurement problems and conclude that satisfaction theory needs further refinement.
Westbrook (1987) investigated the influence of affective responses on satisfaction, complaint behavior and word of mouth activity. The author argued for an equal if not more important role for affect compared to cognitive variables. Affect was defined as a class of phenomena characterized by a subjective feeling state commonly accompanied by emotions and moods. Affect was measured using a modified version of DES II scale developed by Izard (1977). In a consumption context, only those affects which delegate the causal agency to the manufacturer or the seller were chosen as appropriate. The study also examined the dimensionality of the affect. Affect towards products chosen for the study was shown to be a function of two distinct, independent dimensions of positive and negative affect.

In a field study of automobile owners and CATV subscribers, the author found that affective responses explained as much variance in satisfaction as cognitive/semantic variables and this relationship was not mediated by expectation and disconfirmation beliefs. The author suggested that affective responses constitute more primitive and naive responses on behalf of the consumers and hence their greater explanatory power compared to cognitive responses which involve higher levels of information processing. This study suggests the possibility that satisfaction may not be a function of an exclusive cognitive comparison process and researchers should examine affective influences as well towards further development of satisfaction theory.

In summary, although substantial empirical evidence exists in support of the basic disconfirmation paradigm, the choice of methodologies and measures across studies makes generalizations difficult. Table 2.2 summarizes the major studies done with respect to product satisfaction.
Table 2.2
Summary of Major Studies on Satisfaction with Products

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Type of Study</th>
<th>Type of Product</th>
<th>Measured Variables</th>
<th>Time Frame</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardozo 1965</td>
<td>Experiment</td>
<td>Ball Point Pens</td>
<td>Expectations</td>
<td>One stage</td>
<td>Contrast effect</td>
</tr>
<tr>
<td>Olshavsky &amp; Miller (1972)</td>
<td>Experiment</td>
<td>Tape Recorder</td>
<td>Expectations, Performance</td>
<td>One stage</td>
<td>Assimilation effect</td>
</tr>
<tr>
<td>Anderson (1973)</td>
<td>Experiment</td>
<td>Ball Point Pens</td>
<td>Expectations</td>
<td>One stage</td>
<td>Assimilation -Contrast</td>
</tr>
<tr>
<td>Olson &amp; Dover (1976)</td>
<td>Experiment</td>
<td>Coffee</td>
<td>Expectations</td>
<td>One stage</td>
<td>Possible Assimilation</td>
</tr>
<tr>
<td>Swan &amp; Combs (1976)</td>
<td>Critical Incident Technique</td>
<td>Clothing</td>
<td>Not Applicable</td>
<td>One stage</td>
<td>Possible Contrast</td>
</tr>
<tr>
<td>Oliver (1977)</td>
<td>Experiment</td>
<td>Automobile</td>
<td>Expectations</td>
<td>One stage</td>
<td>Independent effect of Disconfirmation</td>
</tr>
<tr>
<td>Swan (1977)</td>
<td>Field Study At Mall</td>
<td>Shopping</td>
<td>Expectations, Disconfirmation Satisfaction</td>
<td>Two stage</td>
<td>Satisfaction = f(expectations, Disconfirmation)</td>
</tr>
<tr>
<td>Author/Year</td>
<td>Type of Study</td>
<td>Type of Product</td>
<td>Measured Variables</td>
<td>Time Frame</td>
<td>Conclusions</td>
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<tr>
<td>Valle &amp; Wallendorf (1977)</td>
<td>Survey</td>
<td>Self designated</td>
<td>Expectations, Performance</td>
<td>One stage</td>
<td>Expectations impact Performance</td>
</tr>
<tr>
<td>Swan &amp; Trawick (1979)</td>
<td>Telephone survey</td>
<td>Bread, Meat, Movies</td>
<td>Product evaluations</td>
<td>One stage</td>
<td>Product Importance impacts Evaluations</td>
</tr>
<tr>
<td>Oliver (1980)</td>
<td>Field Study</td>
<td>Flu Shots</td>
<td>Expectation Disconfirmation Satisfaction</td>
<td>Two stage</td>
<td>Satisfaction = f(Expectations, Disconfirmation)</td>
</tr>
<tr>
<td>Westbrook (1980)</td>
<td>Survey</td>
<td>Automobiles, Footwear</td>
<td>Affective influences, Satisfaction</td>
<td>One stage</td>
<td>Auto Satisfaction = f(Affect)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Footwear Satisfaction = f(Disconfirmation)</td>
</tr>
<tr>
<td>Churchill &amp; Surprentant (1982)</td>
<td>Experiment</td>
<td>VDP, Plant</td>
<td>Expectations, Performance</td>
<td>Two stage</td>
<td>VDP Satisfaction = f(Performance)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plant Satisfaction = f(Disconfirmation)</td>
</tr>
</tbody>
</table>
### Table 2.2 (Cont)

**Summary of Major Studies on Satisfaction with Products**

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Type of Study</th>
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<th>Measured Variables</th>
<th>Time Frame</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bearden &amp; Teel (1983)</td>
<td>Panel Study</td>
<td>Auto repair Complaints</td>
<td>Expectations Disconfirmation Satisfaction</td>
<td>Two stage</td>
<td>Support for Disconfirmation Model</td>
</tr>
<tr>
<td>Oliver &amp; Bearden (1983)</td>
<td>Panel Study</td>
<td>Diet Suppressant</td>
<td>Expectations Disconfirmation Satisfaction Involvement</td>
<td>Two stage</td>
<td>Disconfirmation impacts Satisfaction</td>
</tr>
<tr>
<td>Westbrook (1987)</td>
<td>Field Study</td>
<td>Auto CATV users</td>
<td>Affect, Satisfaction Complaints WOM</td>
<td>One stage</td>
<td>Affect influences Satisfaction</td>
</tr>
<tr>
<td>Cadotte, Woodruff &amp; Jenkins (1987)</td>
<td>Panel Study</td>
<td>Restaurant Services</td>
<td>Standard of comparison, Performance, Disconfirmation Satisfaction</td>
<td>Two stage</td>
<td>Support for Disconfirmation Model</td>
</tr>
</tbody>
</table>
### Table 2.2 (Cont)

**Summary of Major Studies on Satisfaction with Products**

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Type of Study</th>
<th>Type of Product</th>
<th>Measured Variables</th>
<th>Time Frame</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oliver &amp; Desarbo (1988)</td>
<td>Simulation</td>
<td>Stocks</td>
<td>Attribution</td>
<td>One stage</td>
<td>Support for disconfirmation &amp; performance models</td>
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<td></td>
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<td>Expectancy</td>
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<td>performance</td>
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<td>Disconfirmation</td>
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<td>Equity</td>
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<tr>
<td>Tse &amp; Wilton (1988)</td>
<td>Experiment</td>
<td>Record Player</td>
<td>Expectations</td>
<td>One stage</td>
<td>Performance impacts satisfaction directly and support for disconfirmation model</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Performance</td>
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</tbody>
</table>
Compared to product satisfaction research, the study of service satisfaction is a fairly
new area of inquiry. The recognition that the peculiar characteristics of services make their
evaluation processes different from those of products have laid the foundation for research into
service satisfaction (Liechty and Churchill 1979). Meanwhile, a separate stream of research
on individual service encounters (Shostack 1977, 1984; Parasuraman, Zeithaml and Berry
1985; Czepeil et al., 1985; Solomon et al. 1985; Surprenant and Solomon 1987) has
established that service satisfaction is a function of careful monitoring of the service
encounter (Bitner 1990).

Smith and Houston (1983) propose that satisfaction with a service is the degree to
which script-defined expectations are met. A script is a stereotypical sequence of every day
actions which are so well practiced that their retrieval becomes automatic. Scripts provide a
basis for organizing information and specifying expectations for the service offering. These
type of expectations which are derived out of scripts are termed "script-defined expectations".
Hence, according to this conceptualization satisfaction with both products and services involve
a comparison process, but in the case of services the standard of comparison involves script-
based expectations whereas in case of products the expectations are much more product
specific. Empirical proof is yet to be established for this proposition.

Solomon, Surprenant, Czepeil and Gutman (1985) were some of the earliest
researchers to recognize the importance of the dyadic interaction between service provider and
customer in generating satisfaction with the service. They analyzed individual service
encounters in terms of role performances and suggested that many service encounter problems
are a direct consequence of the inability of participants to read from a common script. The
disparity between role expectations and perceived behavior leads to dissatisfaction.
In summary, a role theoretical analysis of the service encounter suggests that satisfaction is a function of congruence between perceived behavior and the behavior expected by role players. However, this conceptualization still awaits empirical validation.

In one of the few empirical studies on service encounter evaluation, Surprenant and Solomon (1987) studied the influence of predictability and personalization on service satisfaction. In a simulated experiment in the context of banking services they found that satisfaction increased as a function of number of service options offered and employee friendliness. However, perceptions of employee effectiveness decreased as the amount of programmed personalization (amount of non task information, commonly called "small talk") increased in the service offering. The results of this study suggest that greater personalization of the service does not always translate into higher satisfaction with the offering.

In a recent study on service satisfaction, Dube-Rioux (1990) examined the relative importance of cognitive evaluations and affective responses in explaining satisfaction with restaurant services. The affect scale was operationalized as a function of five positive and five negative feelings following Abelson et al's (1982) conceptualization. On the basis of regression analysis, results demonstrated the superiority of the affective reports over cognitive evaluations in predicting satisfaction. This study is particularly relevant to the present study, since it provides preliminary empirical evidence for the importance of affective responses in service encounter evaluations.

However, several shortcomings limit the generalizability of the above results. First, the overall sample size used was only fifty two, making it difficult to draw any kind of meaningful conclusions from the study. Second, both positive and negative affect groups were pooled together into an emotional category. The dimensionality of the affective responses was not examined and a regression approach was used to analyze the data. Finally, the traditional disconfirmation approach was not compared against the proposed theoretical framework. The present study overcomes the above problems by using a more appropriate sample size as
dictated by the sampling theory and examining the effect of both positive and negative affective responses in explaining service encounter satisfaction. The study also investigates the dimensionality of the affective responses, uses an experimental and a causal modeling approach to study the role of affective responses. The present study examines a different service category, that of health care services which are higher in credence qualities than restaurant services. Finally, the results of the empirical examination of the proposed theoretical model are compared to the results of the existing disconfirmation model.

Service dissatisfaction has attracted some research attention in the literature. Day and Bodur (1977) studied seventy three categories of services in an attempt to establish the critical determinants of service dissatisfaction. Consumers cited careless performance as the most critical element in generating dissatisfaction. Quelch and Ash (1981) also report results consistent with Day and Bodur (1977) study.

In two recent studies on service dissatisfaction, Bitner and her colleagues (Bitner, Booms and Tetreault 1989; Bitner 1990) found that lack of employee responses to service failures, lack of empathy towards consumer needs and desires and unsolicited actions by employees were major sources of dissatisfaction with services. In her study on travel agent services, Bitner (1990) found that consumers were more dissatisfied when they perceived the cause of service failure to be within the control of service organizations than when it was not. Although she uses the traditional disconfirmation framework to examine her theory, Bitner (1990) does not include expectations and perceived performance in her model as she holds disconfirmation constant. Her results suggest that explanations and offers to compensate for the service failure as well as physical surroundings affect consumer evaluations of the service.

The role of expectations in service encounter satisfaction is a problematic issue. Westbrook (1980) in his study on automobiles and footwear suggests that under some conditions expectations may be formed "after" the consumption experience ("that's what I must have expected"). Smith and Houston (1983) suggest that expectation formation
processes for goods and services may differ due to the lack of pre-purchase evaluative criteria for services. They suggest that expectations about a service encounter may be tied much more to the "script" consumers have about the encounter.

Most often, what consumers expect from a service provider may not correspond to what he/she actually wants from that service encounter. For instance, a particular customer hears so much about this hairdresser and watches their ads on TV, but when she enters the hairdressing salon she still is not sure if the hairdresser is going to be good for her. The reason is that unlike products, in a service encounter, the product delivered is different for each consumer, and it gives each consumer a different consumption experience. As such, there may be some form of expectations present in a service encounter, but they may not be specific to a consumer's own consumption experience. Consequently, their impact on satisfaction processes may be weak compared to affective responses towards specific service providers. Westbrook and Reilly (1983) call this a limitation of the disconfirmation paradigm, in that it does not sufficiently distinguish between cognitive and evaluative dimensions.

The above discussion suggests that the role of expectations in service satisfaction is not properly defined. Due to the uncertainty involved in many services with high experience and credence qualities, this study suggests that consumers use an outside anchor to form expectations about services. This outside anchor may be word of mouth or advertising, but as suggested above these may not provide enough information about specific consumption experience. This dissertation argues that prior knowledge structures stored in consumer's memory may act as an outside anchor in determining service satisfaction.

In summary, provider performance appears to be a key variable in explaining satisfaction/dissatisfaction with a service. However, there is a paucity of research in determining the factors that impact perceived performance. This study addresses this issue by proposing that marketing mix variables influence service satisfaction by their impact on perceived performance. The specific marketing mix variables chosen for study will be
elaborated at the time of discussion of the proposed model of service encounter satisfaction. Additionally, although the traditional disconfirmation model has been suggested as an equally appropriate framework to examine service satisfaction, the full set of interrelationships in the disconfirmation model have not been empirically tested in a service context.

Evaluation of the Satisfaction Literature

The literature review suggests several deficiencies and gaps in our understanding of the satisfaction concept. Specifically, the types of products studied and the time frame used to measure the constructs may have contributed to the inconsistency of results obtained.

An examination of the type of products used in different studies (Table 2.2) reveals that for products which are less ego involving and which probably evoke limited problem solving processes, the basic disconfirmation model provides good explanation of satisfaction. However, for products which involve extended problem solving processes, the results are inconsistent across studies. The supposedly high involvement products (since involvement is not measured but is implicit due to implied psychological and monetary costs) used in Oliver’s (1977) study and Westbrook’s (1980, 1987) studies yielded different results.

In Oliver’s (1977) study with automobiles, the independent effect of disconfirmation was the dominant effect and he failed to find any effect of expectations on satisfaction. Oliver (1980) used flu shots to study expectancy disconfirmation. Flushots do not represent a typical product category in the consumption domain. Flu shots are taken because they have to be taken, and there are no perceived alternatives to flushots in the marketplace. Moreover, consumers do not generally pay for the shots and the situation studied may not represent a typical exchange in the marketplace. This may create problems with the specification of the model and raise doubts regarding the results reported. Oliver and Bearden (1983) used an appetite suppressant to study satisfaction. For the overall model, they found the two-variable expectancy disconfirmation explanation adequate.
In Westbrook’s (1987) study with autos and CATV users, he found affect to influence satisfaction and disconfirmation failed to approach significance. It should be noted that both Oliver (1980) and Westbrook (1987) used the two variable expectation, disconfirmation model in their studies and did not include performance as an independent variable. Westbrook (1980) used a single disconfirmation measure in his study on footwear and automobiles and found that for footwear, disconfirmation influenced satisfaction, whereas auto satisfaction was a function of affective feelings. He did not include either expectations or performance in his study. Churchill and Surprenant (1982) found performance to influence satisfaction in the VDP study. They tested the full disconfirmation model with all the variables included. Tse and Wilton (1988) found similar results for a record player.

Within the disconfirmation framework, surprisingly few studies deal with less ego involving products. There are only two studies which invoke limited problem solving processes. Westbrook’s study of footwear and Churchill and Surprenant’s plant study can be classified in this category. Again, Westbrook used only the disconfirmation measure, without either expectations or performance and found support for the relationship between disconfirmation and satisfaction. Churchill and Surprenant found support for the full disconfirmation model for the plant study.

In summary, the diversity of products used as well as the diversity in the methodologies used make interpretation difficult for the studies on satisfaction with different products. Unless a product taxonomy is used with similar methodologies across products so that reasonable comparisons can be made, the efficacy of the disconfirmation model in explaining satisfaction remains unestablished.

The time frame used to conduct the study (one stage vs two stage) may have implications for the results obtained. Oliver (1980) argues for a three stage design where the effects of expectation on performance, and the effects of disconfirmation on satisfaction may be separated without the recency effects. However, until a comparison of results from studies
done with one stage, two stage or three stage design are undertaken, this implication remains tentative.

**Methodological Concerns**

As noted above, different studies on satisfaction have used different measures as well as methodologies in the study of the concept. The results obtained may have differed as a function of the methodologies employed.

Different authors have operationalized expectations, disconfirmation and satisfaction in different ways. The inclusion of perceived performance in the satisfaction model is fairly new and as such it is measured in a fairly consistent way, as the sum of performance on various product attributes. A brief review of measures used for the constructs of expectations, disconfirmation and satisfaction follows.

**Expectations:** refer to the subjectively perceived likelihood of obtaining one or more particular outcomes (Westbrook 1980). However, including the evaluation component into this conceptualization in the true multiattribute tradition leads to complications in the operationalization of the concept. The earlier studies on product evaluations (Cardozo 1965; Olshavsky and Miller 1972; Anderson 1973) manipulated expectations and did not measure it. Olson and Dover (1976), Oliver (1977, 1980), Oliver and Bearden (1983) adopt Fishbein scaling by using belief-evaluation products to operationalize expectations. Bearden and Teel (1983) measure expectations as a sum of belief scores following the multiattribute tradition but omit the evaluation component, under the assumptions of constant positive evaluation for each attribute and over time stability of attribute evaluations. However, they provide no rationale for these assumptions. Churchill and Surprenant (1982), Westbrook (1987) as well as Tse and Wilton (1988) measure expectations as a sum of attribute specific beliefs and overall global evaluation of those beliefs.
The differences in measuring expectations may have contributed to the expectation effect being stronger in some studies compared to the performance effect in other studies, lending credence to Tse and Wilton's (1988) call to balance the expectation and performance manipulations. Research examining the effect of different operationalizations of expectations on satisfaction judgments may be useful in solving the inconsistencies in results found across studies.

**Perceived Performance:** Perceived performance is usually treated as a standard of comparison. Evaluations of performance have been shown to be affected by purchase related variables (such as convenience, accessibility, personal treatment etc), product related variables (such as cost, quality, aesthetic aspects etc), post-purchase related variables (such as decision analysis, environmental effects etc), and psychological variables (such as image consistency, lifestyle etc) (Olshavsky and Miller 1972; Olson and Dover 1976; Liechty and Churchill 1979).

Both Churchill and Surprenant (1982) and Tse and Wilton (1988) argue for inclusion of a direct linkage between perceived performance and satisfaction on theoretical grounds. According to the above researchers, perceived performance is central to any model of satisfaction since satisfaction is a post-purchase evaluation and is influenced by perceived performance. Perceived performance has been measured by Churchill and Surprenant (1982) and Tse and Wilton (1988) as a sum of attribute specific performance evaluations and global performance evaluations.

**Disconfirmation:** Subjective disconfirmation represents an "intervening distinct cognitive state resulting from the comparison process and preceding a satisfaction judgement" (Oliver 1980, p.460). There are two approaches to measuring disconfirmation, as a subtractive function of expectations and perceived performance or as a subjective evaluation of the difference between product performance and a comparison standard. Many of the marketing studies favor a subjective approach with the argument that many products cannot be judged objectively by consumers.
Within the subjective disconfirmation framework, Oliver (1980) and Westbrook (1980, 1987) use a rating scale of both benefits and problems (much less than expected - much greater than expected). Churchill and Surprenant (1982) use attribute specific and a global measure of disconfirmation (worse than expected to better than expected). There seems to be some uniformity in the operationalization of disconfirmation measure with researchers favoring a subjective evaluation of the comparison between expectations and perceived performance.

Satisfaction: is primarily conceptualized as an evaluative response to a consumption experience (Hunt 1977). As such various researchers have operationalized it as either an overall evaluation of various attributes of the product or as a summary measure of satisfaction with each attribute and an overall evaluation of the product. Oliver (1980) measures satisfaction as an emotional response with a six item Likert scale. Churchill and Surprenant (1982) measure satisfaction by using belief and affect multi-item measures as well as both verbal and faces scales to assess global satisfaction. These scales are reported to have high reliability (belief = .87, affect = .91). In contrast, Westbrook (1980, 1987) favors a delighted-terrible scale with a reliability of .81. In a comparison of different measures of satisfaction Westbrook (1980) reported higher internal consistency for Likert, S-D, and Verbal measures compared to other measures. LaTour and Peat (1979) argue that the discriminant validity of the satisfaction construct is not established.

In summary, it is apparent from the above review that there is some disagreement as to the conceptualization as well as the operationalization of different constructs in the disconfirmation paradigm. Specifically, the following gaps are identified in the literature:

1. The adequacy of disconfirmation explanation for service satisfaction has not been demonstrated in the literature
2. The role of affective influences on satisfaction needs to be
studied in a services context

(3) The impact of pre-experience expectations on satisfaction judgments for services need to be studied, as it is not clear whether expectations influence satisfaction at all in a services context. It can be easily argued that the ambiguity of the service encounter hinders the formation of any pre-purchase expectations.

(4) The uncertainty involved in the service evaluation implies that consumers attach increased importance to performance. The specific factors that influence perceived performance in a services context need to be addressed.

(5) The independent role of disconfirmation in influencing service satisfaction needs to be examined.

It is evident from the above review of the literature that there are major deficiencies in our understanding of satisfaction processes for services. This study proposes a model of service satisfaction to address the deficiencies noted above. An elaboration of the model follows.

**An Affect-Based Model of Service Encounter Satisfaction**

The proposed affect-based model of service encounter satisfaction extends the disconfirmation model by including affective reactions of consumers towards service providers. According to the model, consumers’ past experiences with service providers form a means of grouping different members into a distinct category. This grouping reduces the cognitive effort involved in processing information pertaining to each member of the category and thus can be viewed as a simplification process. By categorization, expectations as well as reactions to
behaviors are stored in memory in an easily accessible manner and as soon as the consumer perceives a specific service provider as a good match to the preconceived category, the affect associated with the category is retrieved and applied to the stimulus person. Thus, the model hypothesizes categorization as antecedent to the affect towards the specific service provider. Affect towards the stimulus person is termed an "evaluative impression" of the service provider and is suggested to influence perceived performance as well as the satisfaction with the service provider.

Due to the lack of objective evaluative criteria to assess service encounters, several researchers suggest that perceived provider performance is the key variable in explaining satisfaction/dissatisfaction with a service. In the product domain, perceived performance is conceptualized as the sum of performances on discrete product attributes. However, the same may not be true in the case of services. Booms and Bitner (1981) argue that the traditional marketing mix variables, defined as the controllable variables that an organization can coordinate to satisfy its target market may differ for services compared to products. The close interaction necessary between service providers and consumers due to the intangibility and inseparability of the service encounter implies that the physical surroundings and employee behaviors become surrogate cues to assess perceived performance and indirectly influence service encounter satisfaction. Additionally, it was argued elsewhere that "how" the service is delivered (functional quality) as well as "what" actually is delivered (technical quality) both impact perceived performance in the context of services (Gronroos 1982).

Based on the above argument, Booms and Bitner (1981) proposed expanded marketing mix variables directly influencing perceived performance. These include the traditional four P's of product, price, place, promotion, and three additional variables of physical surroundings (all environmental cues), participants (all human actors) and process (procedures and mechanisms). Bitner (1990) presented empirical evidence to support the proposition that the attitudes and behaviors of service personnel influence satisfaction with services. This study was done in the
context of travel services and there is no empirical evidence yet to establish the generalizability of this new proposition. In an effort to extend the theoretical framework proposed by Bitner (1990) the present study will also incorporate the marketing mix variables in the model of service satisfaction. The proposed conceptual model is presented in Figure 2.1.

According to the model, categorization forms the basis of affect generated towards the service provider. Specifically, if the affect associated with the category is positive then a match between the information available to the consumer and the category knowledge will elicit a positive evaluative impression of the service provider. On the other hand, if the available information does not match the category knowledge, a negative evaluative impression is suggested to be elicited in the context of a service encounter, since a mismatch to the category knowledge violates expectations associated with the category and is inherently frustrating to consumers. Due to the affective nature of the evaluative impressions, it may be reasonable to argue that favorable evaluative impressions facilitate positive perceptions of performance and hence result in a positive evaluation of the service encounter. Evaluative impressions are thus hypothesized to be positively related to perceived performance as well as satisfaction.

The conceptual model also proposes that the marketing mix variables of product, price, promotion, place, physical surroundings, participants and process influence perceived performance and expectations positively. Support for this proposition comes from the argument presented earlier that the peculiar characteristics of services encourage the use of surrogate cues in service evaluation.

Categorization theory suggests that consumer’s accumulated knowledge about situations, people and events forms the basis of person perception. It follows that this accumulated knowledge leads to the formation of expectations attached to the category label. Based on the above argument, it is proposed that categorization forms the basis of expectations about the service encounter.
Figure 2.1. A Conceptual Model of Service Encounter Satisfaction
The individual difference variables of involvement and familiarity are proposed to lead to differences in the processing of social information, since individuals differ in their accumulated knowledge about social categories (Fiske, Kinder and Larter 1983; Sujan 1985). There is empirical evidence that high involvement with the category leads to high familiarity with the category (Burton and Netemeyer 1990). Additionally, Sujan, Bettman, and Sujan (1987) empirically established that high knowledge leads to well developed expectations about the category. Involvement is thus hypothesized to impact familiarity positively. Familiarity in turn impacts expectations and perceived performance positively. Expectations are hypothesized to impact performance positively, disconfirmation negatively and satisfaction positively. Performance on the other hand, impacts disconfirmation and satisfaction positively. Disconfirmation and satisfaction are related positively.

The proposed model suggests a general framework for programmatic research on service encounter satisfaction. As an initial step towards understanding the evaluation processes involved in service encounter satisfaction, an experimental study is designed to test a portion of the model. The focus of the proposed experiment is the relationship between evaluative impressions and various components of the disconfirmation paradigm as well as the relationship between selected elements of the marketing mix and satisfaction. Due to the wide scope of the proposed marketing mix elements, it is deemed appropriate to select one of the variables, that of participants as the focus of this study. Specifically, "interaction style" of the service provider is selected for inclusion in the experimental design.

Interaction style is defined as the "perceived attitudes and behaviors of service personnel in the provision of the core service" and can be thought of as analogous to the "functional quality" (how the service is delivered) of the service. In the services literature, perceived performance is hypothesized as a function of three dimensions, that of personal qualities of the service provider, professional qualities of the service provider and access mechanisms of cost and convenience (Smith, Bloom and Davis 1986). Interaction style of the
service provider corresponds to the first dimension, that of the personal qualities of the service provider. To distinguish between the interaction style of the service provider and perceived performance, interaction style is defined and measured with relation to the personal qualities of the service provider (friendliness, caring, sympathy etc.) and perceived performance is conceptualized and measured as the professional qualities of the service provider (expertise, competence, knowledgeability etc.). This distinction was maintained throughout the experimental study. Interaction style is hypothesized to influence perceived performance and satisfaction positively.

The selection of evaluative impressions and interaction style for study is prompted by several considerations. First, the relationships between evaluative impressions, interaction style and disconfirmation variables have not been studied before in the services literature and thus there is no guidance as to the impact of affective reactions on consumer satisfaction. Second, the proposed relationships are not intuitively clear, thus the study may have theoretical implications for a more complete understanding of service encounter satisfaction. Finally, the findings would have direct managerial implications by providing insights as to the importance of affective cues in the service environment. The empirical model also corresponds to the main research question of interest to this study, the role of affect in service encounter satisfaction. Additionally, the model will also allow testing the relative influence of affective reactions compared to cognitive judgments.

Familiarity with the service category and involvement are not included for empirical investigation due to the nature of the proposed study. An experimental study is proposed to test the relationships postulated. This experimental study involves a convenience sample and it would be difficult to elicit differential levels of familiarity and involvement with a homogenous convenience sample. For this reason, familiarity and involvement are not included in the empirical model.
To assess the impact of affect on service encounter satisfaction, two factors are proposed to be manipulated. These are the interaction style of the service provider and evaluative impression of the service provider. The dependent variables of interest are the perceived performance and satisfaction judgements. The interaction style of the service provider is manipulated with the intention of studying its effect on perceived performance and satisfaction and not to study its effect on expectations as proposed in the conceptual model. A longitudinal study is required to study the effect of interaction style on expectations. As an experimental study was proposed the linkage between interaction style and expectations was eliminated in the experiment. By manipulating interaction style (positive versus negative) and the evaluative impression (positive evaluative impression, neutral evaluative impression and negative evaluative impression), a 3 X 2 factorial design is obtained. The exact experimental procedure will be discussed in a later section. The research hypotheses derived out of the proposed model are discussed next. For ease of analysis, hypotheses for perceived performance and satisfaction are presented separately.

Research Hypotheses

The Impact of Evaluative Impression on Perceived Performance

The proposed model suggests that the evaluative impression of service provider influences perceptions of performance. Specifically, if subjects have a priori knowledge about the occupational role of the target person, the evaluations made are based more on category knowledge rather than on idiosyncratic knowledge specific to the situation or person involved (Cohen 1981). This process should be more pronounced when perceivers lack objective information about the target person.

In the context of a service encounter, it can be argued that consumers rely more on category-based knowledge of the service provider rather than on information provided by the service institution due to the variability and intangibility of the services, particularly for those
services which are high in experience qualities. The high variability of the service performance prevents consumers from extending the service specific information from one context to another. Intangibility may deter consumers from generating enough motivation to process service specific information. Moreover, research in consumer decision making which demonstrated the simplification strategies consumers adopt to limit cognitive effort in making consumption related decisions (Olshavsky and Granbois 1979) suggests that category knowledge may be used as a surrogate for information specific to the service provider. Categorization in turn, encourages affect-based processing as empirically established by Fiske and her colleagues.

A positive evaluative impression towards service provider would elevate perceptions of performance compared to a negative evaluative impression, since consumers tend to depend on simple heuristics to evaluate service encounters. Similarly, a neutral evaluative impression should facilitate more favorable perceptions of performance compared to negative evaluative impression. Thus,

**H1a.** A positive evaluative impression will create more positive perceptions of performance compared to a negative evaluative impression.

**H1b.** A positive evaluative impression will create more positive perceptions of performance compared to a neutral evaluative impression.

**H2.** A neutral evaluative impression will create more positive perceptions of performance compared to a negative evaluative impression.
The Impact of Interaction Style on Perceived Performance

The perceived behaviors of the service providers has been shown to influence the perceived performance by providing clues to customers regarding what to expect in the service encounter (Surprenant and Solomon 1987, Bitner 1990). Surprenant and Solomon (1987) found that the three personalization strategies (option personalization, programmed personalization and customized personalization) adopted by service firm personnel differentially impact satisfaction. Bitner (1990) demonstrated the effect of explanations given by service providers in the event of a service failure on satisfaction. Based on these findings the interaction style of the service provider is proposed to impact performance positively.

H3. A positive interaction style will create more positive perceptions of performance compared to a negative interaction style.

The Impact of Evaluative Impression and Interaction Style on Perceived Performance

A positive evaluative impression of service providers is suggested to prompt consumers to make allowances in the "functional" performance of the service (Czepeil et al 1985). Service providers who create a positive image of themselves are rated more favorably compared to those who create not so positive image of themselves, given the same level of objective performance. It follows that favorable evaluative impressions would dampen the effect of interaction style on performance. Specifically,

H4a. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.
H4b. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H4c. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a neutral evaluative impression/positive interaction style.

H5a. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.

H5b. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H5c. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a neutral evaluative impression/negative interaction style.

H6a. A neutral evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H6b. A neutral evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.

The hypotheses for the impact of evaluative impression on satisfaction, the impact of interaction style on satisfaction and the impact of evaluative impression and interaction style on satisfaction follow the same rationale as that provided for perceived performance and are presented next.
The Impact of Evaluative Impression on Satisfaction

H7a. A positive evaluative impression will create more positive perceptions of satisfaction compared to a negative evaluative impression.

H7b. A positive evaluative impression will create more positive perceptions of satisfaction compared to a neutral evaluative impression.

H8. A neutral evaluative impression will create more positive perceptions of satisfaction compared to a negative evaluative impression.

The Impact of Interaction Style on Satisfaction

H9. A positive interaction style will create more positive perceptions of satisfaction compared to a negative interaction style.

The Impact of Evaluative Impression and Interaction Style on Satisfaction

H10a. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.

H10b. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H10c. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a neutral evaluative impression/positive interaction style.
H11a. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.

H11b. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H11c. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a neutral evaluative impression/negative interaction style.

H12a. A neutral evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H12b. A neutral evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.

The Relative Importance of Affective versus Cognitive judgments

The second research question of interest to this study is the explanatory ability of affective reactions compared to cognitive judgments in explaining satisfaction. Once again, a portion of the conceptual model proposed (p.61) was tested to investigate the second research question. The proposed empirical model is presented in Figure 2.2. The two exogenous variables of expectations and evaluative impressions are proposed to influence the three endogenous variables of perceived performance, disconfirmation and satisfaction. In this stage of the analysis, the interaction style of the service provider was held constant across the two groups on which the empirical model was tested. Accordingly, it was felt that a separate
measure of interaction style would not add to the explanatory ability of the model because of
the high correlation expected between interaction style and perceived performance (the reader
may recall that interaction style was defined as one dimension of perceived performance).
Thus, the interaction style measure was pooled with the perceived performance measure and
perceived performance was treated as a bidimensional construct with personal and professional
qualities of the service provider, for this stage of the analysis. The hypothesized relationships
between various components of the model are shown in Figure 2.2.

To facilitate the investigation of the relative influence of affective versus cognitive
processes in determining the level of subjects' satisfaction, the proposed model was estimated
with two separate groups of subjects. The first group pertained to the positive evaluative
impression/positive interaction style condition of the experimental design discussed in an earlier
section. In this group the evaluative impression of the service provider was experimentally
manipulated to be positive. Additional data was collected in this experimental cell to facilitate
the investigation. A complete discussion of the procedure followed to investigate the proposed
empirical model will be provided in Chapter Three. As the subjects in this group were
experimentally induced to use their positive impressions of the service provider to determine
their level of satisfaction, this group of subjects is referred to as The Affect Group throughout
the study.

The second group pertained to the neutral evaluative impression/positive interaction
style condition of the experimental design. In this group the evaluative impression of the
service provider was manipulated to be neutral. Once again, additional data was collected in
this cell to facilitate testing of the proposed model. As the subjects were experimentally
induced to use cognitive processes to determine their level of satisfaction, it was proposed that
this group would follow the predictions made by the disconfirmation model more closely. Due
to the cognitive processes involved this group of subjects is referred to as The Cognitive Group
throughout the study.
Figure 2.2. Hypothesized Relationships among Model Components
It is important to note that the same empirical model proposed in Figure 2.2 was tested in both The Affect Group and The Cognitive Group. It was tested with different groups of subjects, so that the relative importance of the affective variables as compared to the cognitive variables in explaining satisfaction with professional services could be investigated.

Three sets of hypotheses are proposed, corresponding to the three stages of testing procedure devised to investigate the second research question of the relative importance of affective versus cognitive variables in explaining satisfaction. The first set pertains to the Affect Group, the second to the Cognitive Group and the third pertains to a comparison across both groups. Each set of hypotheses will be elaborated next.

**The Affect Group**

It was argued earlier that consumers may face difficulty in coming up with pre-purchase expectations due to the peculiar characteristics of services as well as lack of evaluative criteria for service encounters. Consequently, under conditions of uncertainty and limited information, an affect-based model is proposed to be more appropriate to explain satisfaction with services. Thus, in the Affect Group, evaluative impression of the service provider becomes a more important determinant of satisfaction compared to cognitively-based expectations and disconfirmation. The following hypotheses are proposed for the Affect Group:

- **H13a.** Evaluative impression is positively related to performance.
- **H13b.** Evaluative impression is negatively related to disconfirmation.
- **H13c.** Evaluative impression is positively related to satisfaction.
- **H14a.** Perceived performance is positively related to disconfirmation.
- **H14b.** Perceived performance is positively related to satisfaction.
- **H15.** Disconfirmation is positively related to satisfaction.
H16a. The relationship between evaluative impression and performance is stronger compared to the relationship between expectations and performance.

H16b. The relationship between evaluative impression and satisfaction is stronger compared to the relationship between expectation and satisfaction.

H17. Affect-based evaluative impressions contribute significant explanatory power to service encounter satisfaction model.

The Cognitive Group

In the Cognitive Group, evaluative impression of the service provider was manipulated to be neutral and subjects were experimentally motivated to engage in cognitive processes to determine their level of satisfaction. Under conditions of neutral evaluative impression, consumers are suggested to generate enough motivation to form pre-purchase expectations and rationally use those expectations to evaluate the performance of the service provider. Thus, the Cognitive Group is hypothesized to follow the predictions made by the disconfirmation model more closely. The following hypotheses are proposed for the Cognitive Group:

H18a. Expectations are positively related to performance.

H18b. Expectations are negatively related to disconfirmation.

H18c. Expectations are positively related to satisfaction.

H19a. Perceived performance is positively related to disconfirmation.

H19b. Perceived performance is positively related to satisfaction.

H20. Disconfirmation is positively related to satisfaction.
H21. The relationship between expectation and performance is stronger compared to the relationship between evaluative impression and performance.

H22. The relationship between expectation and satisfaction is stronger compared to the relationship between evaluative impression and satisfaction.

Comparison Across Groups

The structural relationships between various components of the model are proposed to differ across the two groups. In the Affect Group, evaluative impression and perceived performance are hypothesized to exert a dominant influence on satisfaction compared to expectations and disconfirmation, due to the affect-based route followed by subjects. Similarly, expectations and disconfirmation are hypothesized to achieve significance compared to evaluative impression and perceived performance in the Cognitive Group. Specifically,

H23. The relationship between evaluative impression and perceived performance is stronger in the Affect Group compared to the Cognitive Group.

H24. The relationship between expectations and perceived performance is stronger in the Cognitive Group compared to the Affect Group.

H25. The relationship between performance and disconfirmation is stronger in the Cognitive Group compared to the Affect Group.

H26. The relationship between disconfirmation and satisfaction is stronger in the Cognitive Group compared to the Affect Group.
H27. The relationship between performance and satisfaction is stronger in the Affect Group compared to the Cognitive Group.

Conclusions

In summary, the above discussion suggests that the categorization approach is a useful framework to explore in the process of service satisfaction formation. The peculiar characteristics of services entail different evaluation processes for services compared to goods. Service satisfaction thus, is seen as a function of affective processes rather than cognitive processes as typically conceptualized in the product domain. The addition of the affective dimension to the analysis of satisfaction with services should provide a more complete understanding of the concept than a purely cognitive model of satisfaction. The proposed model:

1. investigates service satisfaction within a new framework, that of affect-based evaluations, thus extending previous research in this area
2. studies the influence of affective reactions toward service providers on satisfaction judgments
3. examines the impact of one of the marketing mix variables, that of interaction style on perceived performance and satisfaction judgments
4. estimates the explanatory ability of the disconfirmation model within the services context.
CHAPTER THREE

METHODOLOGY

The purpose of Chapter Three is to present the proposed methodology to test the conceptual model used in the study. This chapter has four sections. The first section describes the research design by providing details on the service category chosen, sample design and data collection procedures. The second section discusses the stimulus development process by describing the pretests done to operationalize the evaluative impression towards stimulus person. The third section elaborates on the operational measures chosen and the questionnaire development process. Finally, the fourth section discusses the proposed data analysis to test the various model relationships postulated in Chapter Two.

Research Design

Research Setting

The main purpose of this dissertation is to study the role of affect in the formation of service encounter satisfaction. In Chapter Two, it was argued that affect towards the service provider (termed evaluative impression in this study) becomes an important determinant of satisfaction when the service involved is high in experience and/or credence qualities. As the available pre-purchase evaluative cues and information content involved with a service encounter decrease, consumer reliance on heuristics should increase. Accordingly, for those
services where the interaction between the service provider and the consumer is high, affect becomes an important contributor to consumer satisfaction. So, two requirements for a setting in which to test the model are that the service category chosen be high in experience and credence qualities and the potential for interaction between the service provider and consumer is high.

The above criteria suggest that health care services would be ideally suited as a context in which to study the proposed model. Health care services are high in experience and credence qualities and the typical interaction between the doctor and patient is extensive.

Apart from the above reasons, Americans spent $620 billion on health care services in 1988, which represents more than 11% of the GNP. Additionally, in a recent Louis Harris poll, 89% of Americans surveyed expressed dissatisfaction at the quality of their health care and indicated that the health care system needed a complete overhaul (Buckner 1990). A study by Quelch and Ash (1981) on professional services supports this finding by reporting that consumers perceive medical services to be the most dissatisfying of all professional services. The sheer amount of money spent on health care services coupled with the pervasive consumer dissatisfaction with the quality of health care received, makes health care services an important service category for marketers to study.

Sampling Frame, Sample Design and Sample Size

The sampling frame chosen for the study consists of a convenience sample of students from a large southern university. This choice was prompted by the nature of the proposed investigation. The study of affect requires that the stimuli presented to the sample have experimental impact and be capable of eliciting affect towards the service provider. Traditional paper and pencil tests have been criticized by many social psychologists as ineffective for studying the complexity of affect in interpersonal relationships (Cohen 1981; Fiske 1982).
For this reason, it was decided to present experimental stimuli through a visual medium, by means of a videotape.

Although the presentation of stimuli through videotape is more realistic, it involves a tradeoff in the loss of generalizability. A video presentation implies the use of a convenience sample, since it is difficult to make a video presentation to a randomized sample of the relevant population. Due to the exploratory nature of the research reported here, and the considerations presented above, a convenience sample was deemed to be appropriate to test the model.

The goal of the research described here was theory testing rather than effects application to real world settings (Calder, Phillips and Tybout 1981). As such, falsification test procedures are of more interest than the research context. Theory falsification procedures require that the respondents provide a rigorous test of the theory and do not impose any restrictions on the type of sampling frame used. A representative sample is not a necessary precondition for theory testing because the goal of this type of research is not a statistical generalization of the findings. Calder, Phillips and Tybout (1981) advocate the use of maximally homogenous samples as a means to achieve an ideal theory falsification test. Heterogenous samples pose a threat to statistical conclusion validity (Cook and Campbell 1975) and increase the probability of Type II error. College students constitute a homogenous, valid sample base for health care services, since many students have experience with health care services during their stay in college.

Pretest results using a sample of college students from the same population as that intended for the study, revealed that most students from the convenience sample population have a reasonable knowledge level of doctors in general, have interacted with doctors for a variety of illnesses and hold strong feelings about the type and quality of health care provided to them. Moreover, students are known to regularly engage in rational information processing activities because of their occupation and environment and thus provide a more conservative test of the influence of affect on service evaluations.
The selection of sample size is an important issue in research design. The sample size should be large enough to protect against Type II errors, detect important differences with high probability, and still be small enough to prevent Type I errors (Neter, Wasserman and Kutner 1985). Determining sample size involves using one of three methods: (1) controlling for Type I and Type II errors, (2) controlling the widths of desired confidence intervals or (3) a combination of the two. The first approach was used in this study. It involves specification of: (1) the alpha level at which the risk of making a Type I error is to be controlled, (2) the magnitude of the minimum range (delta) of the factor level means (mu) as well as the standard deviation of the probability distribution of the dependent variables (sigma) and (3) the level of beta at which the risk of making a Type II error is to be controlled. Tables are provided which give the calculated sample sizes once the above specifications are made (Neter, Wasserman and Kutner 1985).

For this study, a standard alpha level of .05 was chosen. The Beta level was also chosen as .05. The power desired was obtained by 1 - B which equals .95. By entering the delta over sigma of 1.00, for a 3x2 design, a sample size of 29 was obtained for each cell in the design. This sample size is the minimum required to provide a rigorous test of the model. This requirement was adhered to in the proposed experiment and a total of 197 students provided their responses in the study (33 in five cells and 32 in one cell).

Data Collection Procedure

An experimental design was planned to test the proposed hypotheses. An experiment was chosen over a cross-sectional survey design for several reasons. The first reason involves the goals of the dissertation. As mentioned earlier, the study of affect is facilitated by laboratory experimentation, as opposed to survey design since experiments afford greater flexibility in the testing process as well as the ability to impose controls on the extraneous variables influencing the respondents. An experimental design also provides a high degree of
statistical conclusion validity, as well as construct validity, and also provides a stronger test of theory (Calder, Phillips and Tybout 1981). This study manipulated two factors, evaluative impression towards the service provider and interaction style, to study the role of affect in service encounter satisfaction. An efficient way of administering the manipulations is through experimentation. Finally, experiments provide an opportunity to control extraneous sources of variance (such as history and maturation effects) and help establish temporal antecedence among variables of interest.

A computer interface was developed to collect data. Computer software was utilized to program the questionnaire into a PC and the subjects were asked to provide their responses directly on the computer terminal. This procedure would ease the rigors of data collection and coding as well as introduce some novelty for subjects in responding to the questionnaire. A simulation of an interaction between a doctor and a patient was presented on a videotape with the proposed manipulations and the subjects were asked to respond to various questions on affect and satisfaction after viewing the videotape. The exact plan of the experiment is presented next.

**Experimental Procedure**

The experimental design corresponded to the two basic research questions raised in the previous chapter. The first question involves the role of affect in satisfaction judgments and the second question concerns the relative importance of affective evaluations as compared to cognitive judgments in determining consumer satisfaction with services. To test the first research question two factors were manipulated. The first manipulation concerned the evaluative impression of the stimulus doctor (positive evaluative impression, neutral evaluative impression and negative evaluative impression) and the second manipulation involved the interaction style of the service provider (positive versus negative), thus yielding a 3 X 2 experimental design. Positive, neutral and negative evaluative impressions and positive versus
negative interaction style were manipulated to address the first research question, the impact of affect on perceived performance and satisfaction with the services.

Evaluative impression of the stimulus doctor was manipulated utilizing the categorization approach. As discussed previously, stimulus information perceived to be in congruence with a previously established category in subjects' minds was proposed to elicit the same affect associated with the category. A detailed discussion of the type of manipulations used will be provided in the stimulus development section.

The neutral evaluative impression condition was added with the intention of ensuring the use of cognitive processes by subjects. The addition of this condition facilitated the test of the second research question, the relative strength of affective versus cognitive processes in explaining variance in satisfaction judgments. The first concern to be addressed before a discussion of the details of this manipulation is whether affect and cognition fall on a single continuum. This conceptualization was based on the extensive research on categorization processes reported by Fiske and her colleagues. Within this research framework, categorization processes which represent affective responses and piecemeal processing which represent cognitive reasoning are depicted on a single continuum. Empirical evidence indicates that people move along this continuum depending on the informational circumstances. Information which is readily available to categorize a person would lead to affective processes whereas information perceived to be discrepant with the category and hence requires elaboration would lead to relatively individuating processes (Fiske, Neuberg, Beattie and Milberg 1987; Fiske and Neuberg 1990). A similar approach was utilized in this research where evaluative impression was hypothesized as a continuum and depending on the informational conditions people move along this continuum from positive evaluative impression to negative evaluative impression.

To ascertain that subjects used neutral evaluative impression to report their level of satisfaction, some guidance was sought from past literature. Studies involving manipulation
of affect versus cognition suggest two possibilities to achieve this goal (Sujan 1985; Neuberg and Fiske 1987). The first alternative involves accuracy-driven attention to attribute information. If the subjects are led to believe that it is important to form an accurate impression of the target individual, greater attention will be paid to attribute information. The second choice is suggested by the cognitive response literature which ascertains the use of cognitive processes by giving instructions to think and write down all thoughts passing through their minds while making evaluations.

A combination of the above procedures was used. A spokesperson on a videotape introduced the scenario to the students. The spokesperson introduced himself as the marketing director of a hospital located in a nearby town. He informed the students that the hospital was seeking help from unbiased consumers in evaluating the performance of its physicians. For the neutral evaluative impression condition, the spokesperson emphasized the importance of student responses to both the individual doctors and the hospital by informing that the hospital was planning to make policy changes in their recruitment efforts, based on the feedback received from students.

Next, the spokesperson introduced the evaluative impression manipulation (positive, neutral or negative in affective quality) by providing a description of the physician. The evaluative impression manipulation was designed using the typical attributes associated with a doctor’s category, based on the insights gained from the pretests. In summary, the stimulus doctor was introduced by the spokesperson along with a positive description (pretested to elicit positive evaluative impression), a negative description (pretested to elicit negative evaluative impression) and a neutral description along with instructions to think carefully (pretested to elicit neutral affect). Following the stimulus presentation, dependent measures of evaluative impression of the doctor and response time were assessed. Additionally, subjects’ expectations about the performance of the doctor were also assessed.
At this point, the spokesperson presented a scenario where the type of illness and details regarding the doctor visit were described. The second manipulation of interaction style of the doctor during the office visit was introduced next, to assess the impact of positive (neutral/ negative) evaluative impression and negative (positive) interaction style on perceived performance and satisfaction. The results are suggested to be managerially important. A positive relationship between evaluative impressions and satisfaction would suggest that the importance attached to the functional performance of the service may be misplaced. A detailed discussion of the procedures used to develop the evaluative impression and interaction style manipulations will be provided in the stimulus development section.

After this scenario presentation, manipulation check for the interaction style of the doctor was administered. A multi-item scale was constructed to assess the effects of interaction style manipulation. After the administration of the manipulation check, various measures pertaining to overall evaluation, perceived performance, disconfirmation, satisfaction with the care provided by the doctor were administered. Finally, all subjects were debriefed and dismissed. The plan of the experiment is summarized in Table 3.1.

**Manipulation checks**

**Affect versus Cognition**

To check the effectiveness of the manipulations between these two conditions, data was pooled across the positive and negative evaluative impression conditions and compared to the neutral evaluative impression group. The subjects in the positive and negative evaluative impression conditions were proposed to use their evaluative impression towards the stimulus doctor to make their judgments regarding the doctor, whereas the subjects in the neutral evaluative impression condition were proposed to use cognitive processes to make the same judgement. The dependent measure of interest was response time. Compared to the affect group, the cognition group was proposed to take more time in providing their evaluations.
1. Scenario presentation by the spokesperson on the videotape, along with the description of the physician designed to elicit one of the following: positive evaluative impression, neutral evaluative impression and negative evaluative impression.

2. The picture of the physician described above was shown at this point.

3. The evaluative impression of the doctor shown on the videotape and response time were assessed (manipulation checks).

4. The expectations regarding the doctor's performance were assessed.

5. The spokesperson introduced another scenario where the subject was told that he/she had to visit the doctor for a minor cold, cough and fever along with a brief description of the setting and the doctor.

6. A hypothetical interaction between the doctor and the subject was presented from the subject’s point of view. The interaction style of the stimulus doctor was manipulated (positive versus negative). The effects of the interaction style manipulation was assessed on a multi-item scale (manipulation check).

7. Measures of perceived performance, disconfirmation and satisfaction were administered.

8. Subjects were debriefed and dismissed.
Positive versus Negative Evaluative Impressions

The first two groups received either positive or negative evaluative impression manipulations. The dependent measures for this manipulation involved the evaluative impression scale. A positive evaluative impression was proposed to produce significantly higher ratings on all the dependent measures compared to the negative evaluative impression group.

Positive versus Negative Interaction Style

The second manipulation, that of interaction style of the stimulus doctor was checked by measuring its effect on a multi-item scale developed for the purpose. The ratings were proposed to be significantly more positive for positive interaction style group compared to negative interaction style group. The manipulations and manipulation checks are summarized in Table 3.2.

Stimulus Development Procedure

It was proposed earlier that the categorization approach should be used to conceptualize the direction of affect towards the stimulus person. The test of categorization involves extensive pretesting to establish consensual categories of interest and to assess the typical features and affect associated with the category. This information is necessary to construct stimulus material to be presented to subjects. A typical experiment to establish categorization process was described in Chapter Two. Briefly, in the first stage of the experiment, pretests are conducted to develop stimulus material and in the second stage the same stimulus material is presented to elicit the categories hypothesized in the first stage. The experiment conducted in this study also followed the same procedure. The first stage of pretests which aided in the stimulus development will be described next.
Table 3.2

Manipulations and Manipulation Checks

<table>
<thead>
<tr>
<th>Manipulation</th>
<th>Description</th>
<th>Manipulation Checks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluative Impression</td>
<td></td>
<td>1. Ratings</td>
</tr>
<tr>
<td>Positive</td>
<td>&quot;Dr. Harrison is knowledgeable, caring, and takes time to listen to his patients problems. He likes to keep up with all the new diagnostic procedures and always explains the medical terminology to his patients in plain english. Most of his patients feel that he is warm, friendly, open minded and sympathetic. He is highly regarded by his colleagues and enjoys a good reputation among his patients,&quot; along with the presentation of the picture of the doctor on the video</td>
<td>a. Evaluative Impression</td>
</tr>
<tr>
<td>Evaluative Impression</td>
<td></td>
<td>b. Response Time</td>
</tr>
<tr>
<td>Manipulation</td>
<td>Description</td>
<td>Manipulation Checks</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td><strong>Evaluative Impression</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>&quot;Dr. Harrison is a little arrogant, close-minded and opinionated. Some of his patients describe him as indifferent, busy and uncaring. It seems like he is the kind of person who wants to be in charge of the situation all the time and strongly believes that he is the only one who can make decisions about what is wrong with his patients. He is always busy., invariably his patients end up waiting for a long time before they can see him. He feels that most patients exaggerate their problems just to get attention,&quot; along with the presentation of the picture of the doctor on the video.</td>
<td>1.Ratings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a.Evaluative Impression</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b.Response Time</td>
</tr>
<tr>
<td>Neutral</td>
<td>&quot;Dr. Harrison is a normal kind of a guy, methodical and ordinary. He is married, has two children. He likes to play golf on week week ends and is a member of the AMA,&quot; along with the presentation of the picture of the doctor on the video.</td>
<td>1.Ratings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a.Evaluative Impression</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b.Response Time</td>
</tr>
</tbody>
</table>
Table 3.2 (Cont)

Manipulations and Manipulation Checks

<table>
<thead>
<tr>
<th>Manipulation</th>
<th>Description</th>
<th>Manipulation Checks</th>
</tr>
</thead>
</table>

Interaction Style

Positive
- Personal qualities of the doctor, a script containing qualities attributed to a positive interaction style is developed eg. friendly, caring, concerned and sympathetic

Negative
- Personal qualities of the doctor, script containing qualities attributed to a negative interaction style is developed eg. unfriendly, not caring, bored and indifferent

1. Interaction style
A series of four pretests were done to assess the typical features and affect associated with the category of doctors. The first issue was to establish that occupation is a potentially important category in peoples' minds and that various occupational categories elicit different affects. The second pretest was carried out to specifically test the direction of affect in the physician category. The purpose of the third pretest was to understand the typical versus atypical attributes of doctors as well as the subjects' expectations regarding the interaction style of the doctor. The results of this pretest were proposed to be used in the construction of the stimulus material. Finally, the last pretest was conducted to test the efficacy of the proposed manipulation of evaluative impression. The four pretests will be described in detail next.

**Pretest One**

Sixty undergraduate students participated in the first pretest. Two categories, physicians and lawyers were chosen to test the hypothesis that different occupational categories may elicit different affects. Half the subjects were presented with a description of a doctor and the other half with a description of a lawyer.

For purposes of this study, category-based affect was defined as a global emotional response associated with the most accessible and available category triggered in consumer memory. These emotional feelings are suggested to decay over time to form a generalized affective response towards the category. To assess the affect associated with the category of doctors, some of the emotional typologies used in the psychological discipline were taken as a starting point. These typologies include those developed by Nowlis (1965), Osgood (1966), Frijda (1970), Wells et al (1971), Izard (1977), Schlinger (1979), Plutchik (1980), and Aaker and Bruzzone (1981).

In consumer research, Batra and Ray (1986) and Holbrook and Batra (1987) used these typologies to develop an "emotional response profile" to study emotions in the context of
product consumption. Another useful typology used in political cognition literature is one used by Abelson, Kinder, Peters and Fiske (1982). This typology consists of an affect check list where subjects are asked about their feelings towards target persons.

A total of 15 feelings (both positive and negative) deemed to be appropriate in a service encounter context, were drawn from the typologies cited above and were presented to the pretest subjects. The subjects were instructed to think back to their past experiences with doctors (lawyers) and indicate on a seven point agree-disagree scale, their feelings towards the category of doctors (lawyers). The scales used in Pretest One are presented in Appendix 1.

The responses to the 15 items of feelings were summed to form an index of likability. Negative affects were reverse scored. Results indicated that the doctors' category elicits significantly more positive affect compared to the lawyers' category (Doctors, mean = 2.6, below the midpoint of 4, where 1 = strongly agree and 7 = strongly disagree, s.d = 1.2 ; Lawyers, mean = 4.9, s.d = .94). The difference between the two categories was significant (F = 61.7, p < .01).

Subjects were also asked, in a free elicitation task, to list attributes characteristic of and common to the category of physicians (Sujan 1985). The salient attributes mentioned in descending order of frequency were, knowledgeability, caring, good listening skills, friendliness and sympathy. A list of all the attributes mentioned and the number of subjects mentioning those particular attributes is provided in Table 3.3.

Some of the other attributes mentioned as typical of physician's category were gentle, thorough, easy to talk to, trustworthy, credible, empathetic and intelligent. Idiosyncratic attributes mentioned by only one or two subjects were eliminated (eg. loyal, straight forward, organized and flexible).
<table>
<thead>
<tr>
<th>Attributes</th>
<th>Number of Mentions</th>
<th>N = 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledgeability</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Caring</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Good Listener</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Friendliness</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Quick service</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Sympathy</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Not rushed</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Talks Clearly</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Concerned</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Interested</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Honest</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>
The results of the first pretest provided tentative evidence that the affect associated with the physicians category is positive. Additionally, the free elicitation task indicated that occupation is a potentially important category in subjects’ minds by eliciting consensual attributes thought to be typical of the category of doctors. To confirm these insights, a second pretest was conducted on a different sample.

**Pretest Two**

In this pretest, 30 subjects drawn from the same population were given a description of a doctor and were asked to respond to a global likability scale comprising of four items of good-bad, pleasant-unpleasant, nice-awful and likable-dislikable. Additionally, a list of eight attributes (knowledgeable, caring, concerned, understanding, sympathetic, friendly, good listener and professional) drawn from the previous pretest was presented and students were asked to choose among four professionals (accountant, lawyer, doctor and an architect) who would ideally fit those attributes. The scales used in Pretest Two are included in Appendix 2.

The results were in general agreement with those obtained in the first pretest. The average likability of physician category was positive (mean = 2.1, below the midpoint of 3, s.d = .2, where 1 = positive, 5 = negative). Results also revealed that 79% of the subjects chose the doctor, 14% chose an architect, 5% chose an accountant and 2% chose a lawyer as an ideal description of the attributes presented. The results of these two pretests indicated that the subjects held consensually understood physician schemas and that the affect associated with the category was positive.

**Pretest Three**

The third pretest was intended to assess subjects’ perceptions regarding attributes thought to be atypical of the doctors’ category and also attributes designed to elicit neutral evaluative impression. Subjects’ expectations regarding the level of interaction style of the
doctor were also examined. Once again, 30 undergraduate students were recruited for the purpose of the pretest. These subjects were requested to write down the attributes which according to them were not typical of doctors in general, in a free elicitation format. A set of nine attributes (methodical, ordinary, doctor, normal etc) were selected from a review of the categorization research to elicit neutral evaluative impression towards the stimulus person. These attributes were presented to the subjects and the intensity of their affective reaction was assessed on a five point likability scale comprising of four items of good-bad, pleasant-unpleasant, nice-awful and likable-dislikable.

Next, subjects were presented with a hypothetical scenario where they were told that they had received a job offer from a company and that they were required to get a physical before they could formally join the company. The subjects were then instructed to imagine that they made a decision to go to a doctor and get the physical. They were then asked to report the quality of care expected from the doctor in the above scenario.

The information requested was useful in the development of the stimulus videotape containing the encounter between a doctor and a patient. The scales used in Pretest Three are included in Appendix 3.

An analysis of the free elicitation format indicated that subjects perceive arrogance to be the most atypical attribute of a doctor. Close-mindedness, not listening to the patients problems, over-prescribing and being late for the appointments were other atypical attributes mentioned in descending order of frequency. Some of the other atypical attributes mentioned by only one or two subjects (like unhealthiness and smoking) were eliminated. Four attributes among the set of nine were found to elicit neutral evaluative impression on the likability scale (mean 3.1; sd .41 where 1 = positive and 5 = negative). These items were ordinary, methodical, normal and usual. These four attributes were used in the description designed to elicit neutral evaluative impression.
From the descriptions provided by the subjects, a positive interaction style of the service encounter was characterized by a caring attitude, genuine interest in the patient's well-being, gentleness and friendliness. The set of typical, atypical and neutral attributes obtained in the present pretest were used in the development of the descriptions of doctors to manipulate positive, neutral and negative evaluative impression towards the stimulus doctor. For example, in the positive evaluative impression condition the doctor was described as knowledgeable, reputable, understanding and sympathetic, along with some elaboration on those attributes. In the negative evaluative impression condition, the same doctor was described as arrogant, rushed, close-minded, late etc. In the neutral evaluative impression condition, the doctor was described as normal, ordinary, methodical and usual. The information on the interaction style of the doctor was used to develop the service encounter video.

Pretest Four

The fourth pretest was carried out to test the effects of match versus mismatch to the category of physicians. It was proposed earlier that a match to the category established in the subjects' mind will elicit the affect associated with the category and a mismatch will produce negative affect. The manipulation of positive versus negative evaluative impression was proposed to be achieved through the manipulation of match versus mismatch to the category. Pretest three aided in the provision of information necessary to test the success of the manipulation of evaluative impression towards the stimulus doctor. The purpose of pretest four was three fold. First, the manipulation of the evaluative impression of the stimulus doctor needed to be tested. Second, the reliability of the evaluative impression scale (the details of the scale development are provided in the scale development section) was assessed. Finally, from the insights gained from the previous pretests, a set of items designed to elicit neutral evaluative impression were selected. A description of the stimulus doctor with those neutral
attributes was also tested to assess the success of this manipulation. The development of the stimulus material used in the pretest will be described next.

The attributes mentioned as congruent with the category of physicians were taken as a starting point. A scenario was designed where the subjects were told that they had a minor cold, cough and fever and were instructed to imagine that they had to visit Dr. Harrison who was described in one of the following three ways: (1) Dr. Harrison had attributes which were pretested to be congruent with the category (and hence elicited positive evaluative impression), (2) Dr. Harrison had attributes which were pretested to be deviant with the category (and elicited negative evaluative impression), and (3) Dr. Harrison had attributes pretested to elicit a neutral evaluative impression. For example, the description designed to elicit positive evaluative impression characterized Dr. Harrison as knowledgeable, reputable and caring etc. On the other hand, the description designed to elicit negative evaluative impression characterized Dr. Harrison as arrogant, close-minded and opinionated. The description designed to elicit neutral evaluative impression described Dr. Harrison as a normal doctor, methodical and ordinary.

Sixty undergraduate students participated in the fourth pretest. The subjects were informed by the researcher that the study involved the assessment of subjects' impressions of physicians. They were told to follow instructions at the beginning of the questionnaire and read the description of Dr. Harrison carefully. They were told that after viewing a videotape of Dr. Harrison they were to respond to the statements concerning their impression of Dr. Harrison.

Subjects were instructed to imagine that they had cold, cough and fever and decided to visit Dr. Harrison. Next, a description of Dr. Harrison was provided. Twenty subjects received the description designed to elicit positive evaluative impression and twenty others received the description designed to elicit negative impression. The remaining subjects responded to the description designed to elicit neutral evaluative impression. After the
description a close-up shot of Dr. Harrison was shown on the videotape, following which the subjects were instructed to respond to the evaluative impression scale and a global likability scale.

The dependent measures of interest were the evaluative impression of the doctor and a global likability scale. Results indicated that the manipulations produced effects which were in the expected direction. The positive evaluative impression group rated Dr. Harrison more positively than the negative evaluative impression group (mean = 4.9 (sd = 1.08) compared to 2.5 (sd = .81) on a seven point scale where 1 = negative and 7 = positive). The neutral evaluative impression group rated Dr. Harrison as an average doctor (mean = 3.7 (sd = .94)). The difference between the three groups was significant (F = 54.77, p < .001). Moreover, subjects in the positive evaluative impression group perceived Dr. Harrison to be more likable than those in the negative evaluative impression group (mean = 5.2 (sd = 1.75) compared to 3.1 (sd = .84) on a nine point scale where 1 = negative and 9 = positive). The difference between the two categories was again significant (F = 25.66, p < .001). The reliability of the evaluative impression scale was found to be .94, estimated by the internal consistency method. The details of the Pretest Four are provided in Appendix 4.

The series of pretests done are summarized in Table 3.4. The proposed operationalization of various constructs in the model is presented next.

**Construct Operationalization**

Service encounter satisfaction was proposed to be a function of: (1) evaluative impression; (2) interaction style; (3) expectations; (4) perceived performance; and (5) disconfirmation. The next section will discuss the way these constructs are typically operationalized in the literature as well as their operationalization for this study. Additionally, the chief dependent measure of interest, satisfaction, will be discussed in detail within the
## Table 3.4

### Summary of Pretests

<table>
<thead>
<tr>
<th>Pretest</th>
<th>Purpose of the Pretest</th>
<th>Sample</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>to establish occupation as a potential category and to establish the affect associated with doctors’ category</td>
<td>60</td>
<td>Doctors elicit a consensual category and the affect associated with doctors’ category is positive</td>
</tr>
<tr>
<td>2</td>
<td>to validate the affect associated with the doctors’ category</td>
<td>30</td>
<td>Doctors’ category elicits positive affect</td>
</tr>
<tr>
<td>3</td>
<td>to assess subjects expectations regarding the interaction style of doctors</td>
<td>35</td>
<td>Caring attitude, friendliness, concern etc. mentioned as typical interaction style attributes</td>
</tr>
<tr>
<td>4</td>
<td>to test the effectiveness of evaluative impression manipulation</td>
<td>50</td>
<td>Effects of the manipulation in the expected direction</td>
</tr>
</tbody>
</table>
context of its methodological implications. First, the proposed operationalization of all the constructs is presented followed by a detailed discussion on the scale development procedure for all the scales involved.

**Evaluative Impression**

An evaluative impression is defined as "a subjective feeling towards a target person based on the most available category in memory". The category-based affect literature reviewed in Chapter Two operationalized feelings towards target individuals on a unidimensional scale by instructing respondents to form an impression of the person or evaluating the person on a global basis (Cohen 1981; Fiske, Neuberg, Beattie and Milberg 1987). Sujan (1985) measured product evaluations based on verbal protocol data.

The evaluative impression of the doctor was manipulated (positive, neutral and negative) to assess its impact on perceived performance and satisfaction. A scale was developed to check the manipulation of evaluative impressions. A set of semantic differential items assessing the effect of the evaluative impression manipulation was constructed for the purposes of this study, keeping in view the guidelines proposed by Churchill (1979).

**Interaction Style**

Interaction style is defined as the "perceived behaviors and attitudes of the service personnel in the provision of the core service". Being a process measure, it was operationalized as subjective perceptions of the personal qualities of the service provider.

Interaction style was manipulated (positive versus negative) to assess its impact on perceived performance and satisfaction. There is no guidance in the literature as to the operationalization of this construct since it has been proposed as a significant explanatory marketing mix variable only recently. A multi-item scale to check the effect of the manipulation was constructed for the purposes of this study following guidelines set down for
the scale development in the literature (Churchill 1979). It should be noted that interaction
style measure was used only in the experimental study designed to address the first research
question, the role of affect in service encounter satisfaction. As it was held constant in the
second stage of the analysis, it was pooled with the perceived performance measure and
perceived performance was treated as a bidimensional construct of personal qualities and
professional qualities of the physician.

Expectations

Expectations are typically measured as belief probabilities regarding specific product
outcomes. As discussed in Chapter Two, some researchers have adopted the Fishbein tradition
of scaling expectations as a sum of belief evaluation products (Olson and Dover 1976; Oliver
1977, 1980). However, some other researchers have measured expectations as a sum of
attribute specific beliefs and overall global evaluation of those beliefs (Churchill and Surprenant
1982; Tse and Wilton 1988). Due to the good reliabilities as well as convergent and
discriminant validities reported by Churchill and Surprenant (1982) for the attribute specific
belief probabilities, the same procedure was adopted in this study. The specific items used will
be further discussed in the scale development section.

Perceived Performance

The measurement of perceived performance is fairly recent, with only Churchill and
Surprenant (1982) and Tse and Wilton (1988) measuring it as a distinct construct in
satisfaction formation. Following the procedure for the measurement of expectations, Churchill
and Surprenant (1982) measured perceived performance as a sum of multi-item attribute
specific performance and a single item overall global performance. This study followed the
same procedure. Perceived performance on specific aspects of physician service as well as
a global performance measure were summed to form an index of perceived performance.
Disconfirmation

As noted in Chapter Two, there are two approaches to modeling disconfirmation, as a subtractive function of expectations and perceived performance or as a subjective evaluation of the difference between expectations and perceived performance. Due to the problem of lower reliabilities noted for the subtractive approach (Prakash and Lounsbury 1983), many researchers favor a subjective approach to modeling disconfirmation (Oliver 1977, 1980; Westbrook 1980; Churchill and Surprenant 1982). Moreover, subjective disconfirmation is more appropriate in a service encounter context, since consumers may not be able to evaluate service performance on objective criteria. Accordingly, a subjective approach to measuring disconfirmation was utilized in this study. The worse-than-expected to better-than-expected scale used by Oliver (1980) and Westbrook and Oliver (1981) was used in the present study.

Satisfaction

Being an evaluative response, satisfaction has been variously operationalized in the literature. Oliver (1980) measured satisfaction as an emotional response with a six item Likert scale. The reported reliability of this six item scale was .82. Churchill and Surprenant (1982) measured satisfaction by using belief and affect multi-item measures as well as both verbal and faces scale to assess global satisfaction. The reliabilities reported for these scales were high (belief = .87, affect = .91). Westbrook (1980, 1987) used a delighted-terrible scale with a reliability of .81. In a comparison of different measures of satisfaction, Westbrook and Oliver (1981) found Likert, semantic differential and verbal measures to have high internal consistency. Additionally, a combination of both open ended questions regarding the overall satisfaction experienced as well as the level of satisfaction experienced with different aspects of service, is suggested to result in a superior measure (Locker and Dunt 1978).

The present study used a Likert scale to assess satisfaction with different aspects of service as well as global satisfaction, a verbal scale comprised of items with a delighted -
Table 3.5
Steps Involved in Scale Development

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Specification of the dimensions of physician evaluation</td>
</tr>
<tr>
<td>(2)</td>
<td>Generate items from this domain either from past literature or by means of qualitative techniques such as focus groups</td>
</tr>
<tr>
<td>(3)</td>
<td>Conduct a pretest of the items on a preliminary sample</td>
</tr>
<tr>
<td>(4)</td>
<td>Purify the scale by factor analysis and internal consistency estimates. Eliminate redundant items, items with low item to total correlations and poorly worded items.</td>
</tr>
<tr>
<td>(5)</td>
<td>Pretest the revised questionnaire on another sample. Establish reliability and validity of the final scales to be used in the study.</td>
</tr>
</tbody>
</table>
terrible format and a completely satisfied to not at all satisfied format, and also open ended questions regarding the quality of service received. The multi step process utilized to develop all the scales described above will now be discussed in detail.

Scale Development Procedure

The procedure adopted to develop scales for the present study followed the recommendations made by Churchill (1979). Table 3.5 describes the five steps involved in scale development. It should be noted that although the procedure for development of scales is similar for all the scales involved, the scales for expectations, perceived performance, disconfirmation and satisfaction will be discussed together since these four scales are constructed with relation to each other. For example, an item constructed for measuring expectations may read "I expect the doctor to examine me thoroughly", on a five point agree-disagree scale. The corresponding item for perceived performance would read "The doctor examined me thoroughly" on a five point agree-disagree scale. For the disconfirmation measure the same item would read "The extent to which the doctor examined me thoroughly was..." on a five point better than expected to worse than expected scale. For the satisfaction measure, the item would read "Are you dissatisfied or satisfied with the doctor's thoroughness of the exam" on a five point completely dissatisfied to completely satisfied scale. Thus, the scale development procedure is discussed for two sets of constructs: evaluative impressions and (2) expectations, perceived performance, disconfirmation and satisfaction. A detailed discussion of the construct operationalization follows.

Evaluative Impression

Three indices of emotional responses are widely used in the marketing literature to assess consumer's emotions towards products. The first is the PAD (Pleasure, Arousal and Dominance) paradigm developed by Mehrabian and Russell (1974). The second is the index
of eight basic emotions developed by Plutchik (1980). The third is the DES II scale which represents ten fundamental types of affect developed by Izard (1977). The PAD paradigm represents three emotional dimensions of Pleasure (e.g., happy, pleased, content), Arousal (e.g., frenzy, excitement, stimulation) and Dominance (e.g., control, autonomy, dominant). The PAD paradigm has been used by Donovan and Rossiter (1982) and Holbrook, Chestnut, Oliva and Greenleaf (1984).

Plutchik (1980) proposed eight basic emotional categories consisting of (1) fear; (2) anger; (3) joy; (4) sadness; (5) acceptance; (6) disgust; (7) expectancy; and (8) surprise. Holbrook and Westwood (1986) used this typology to examine emotional responses to advertisements. The Izard (1977) typology comprises of ten basic emotions. These are (1) interest; (2) joy; (3) anger; (4) disgust; (5) contempt; (6) distress; (7) fear; (8) shame; (9) guilt; and (10) surprise. This typology was used by Westbrook (1987) in his study on affective responses towards automobiles and cable television services.

Yet another study of interest to the present investigation is the study by Abelson, Kinder, Peters and Fiske (1982). The focus of this study was a comparison of semantic judgments and affective responses in predicting evaluations of political candidates. A factor analysis conducted on the various affect items used in Abelson et al.’s study, yielded two independent dimensions of positive and negative feelings. Due to the dynamism involved in person perception, it is entirely possible that people can feel both positive and negative about the same person. This is not necessarily true for semantic judgments since people are driven by consistency pressures and may not evaluate a person as both good and bad at the same time.

In Abelson et al.’s study, items of happy, hopeful, liking, proud and sympathetic loaded on the positive factor whereas items of afraid, angry, disgusted, disliking, frustrated, sad and uneasy loaded on the negative factor. Thus, Abelson et al.’s (1982) study demonstrated the
coexistence of both positive and negative feelings and also showed that affective responses predict evaluation of candidates better than semantic judgments.

Westbrook (1987) and Edell and Burke (1987) provide corroborative evidence of the coexistence of positive and negative feelings in product and advertising domains respectively. Westbrook (1987) in his study on automobiles and cable television services demonstrated that joy, interest and surprise loaded on the positive factor whereas anger, disgust and contempt loaded on the negative factor. In the advertising domain, Edell and Burke (1987) identified three factors of upbeat feelings, negative feelings and warm feelings which contributed substantially to the explanation of variance in attitude towards advertisement.

From the discussion above, it is evident that there is some guidance regarding the typology of emotions used in past literature. The question now is deciding on the relevance of various emotions proposed earlier to study in a service encounter context. Westbrook (1987) delineates a way to address this relevance question. Relevance of emotions is determined through the examination of processes through which affect is elicited. According to Westbrook (1987):

..affects are held to arise as a function of the individual’s evaluation of the meaning, causes, consequences, and/or personal implications of a particular stimulus (p.259)

Westbrook (1987) concludes that in the context of a consumption experience, those affects which attribute the causal agency to the product or its seller may influence consumer evaluations. In a service encounter context, as the product is the service provider, it is reasonable to argue that only those emotions which attribute the causal agency to the service provider are relevant to study. Accordingly, from the emotional indices discussed earlier, a list of nine emotions were selected as relevant for the study of service encounters. These nine emotions are (1) anger; (2) fear; (3) happiness; (4) frustration; (5) liking; (6) sympathy; (7) surprise; (8) interest; and (9) disgust. For all these emotions, it can be seen that the attribution of causal agency is the service provider. From the insights drawn from Abelson et al.'s
research, this study views affect towards professional service providers as consisting of two independent dimensions of positive and negative feelings.

The feelings studied in Abelson's study were taken as a starting point to study feelings towards doctors in the present study. In a study intended to judge the effect of emotions on advertising response, Holbrook and Westwood (1986) developed an index of emotional responses based on Plutchik's (1980) emotional index. The authors translated each feeling into a set of adjectives to reduce the burden on respondents. For example, the emotion, "anger" was converted into a set of three adjectives, "hostile", "annoyed" and "irritated". The same procedure was followed in the present study. All the nine emotions selected (anger, fear, happiness, frustration, liking, sympathy, surprise, interest and disgust) were translated into corresponding adjectives.

An initial battery of 19 adjectives was generated which represented the scale to measure evaluative impressions. Evaluative impression was measured in connection with a specific person and as such a semantic differential scale was deemed to be more appropriate. Accordingly, evaluative impressions was measured with a semantic differential scale comprising of items selected from the emotional indices literature discussed above. Appendix 6 provides a description of the scale items included in the study.

Expectations, Interaction Style, Perceived Performance, Disconfirmation and Satisfaction

The literature on patient satisfaction and service quality was considered as relevant in specifying the dimensions of physician evaluations. The service quality literature was also deemed relevant since quality of the service constitutes the most salient dimension of satisfaction with the physician. There are three dimensions of satisfaction with physicians identified both in the patient satisfaction literature and health care marketing literature. These three dimensions are: (1) Professional qualities of the physician which correspond to the competence of the physician and technical quality of the service (Gronroos 1982), (2) Personal
qualities of the physician which correspond to the provision of information and communication skills of the physician and the functional element of the service, and (3) Access mechanisms of cost, payment structure, location, waiting time and convenience of the service (Hulka and Zyzanski 1982; Tucker and Tucker 1985).

In the marketing literature, Smith, Bloom and Davis (1985) propose three domains which correspond to the three dimensions proposed by Hulka and Zyzanski (1982). These three domains are: (1) instrumental domain (professional competence), (2) expressive domain (personal qualities), and (3) access mechanisms. In the service quality literature Brown and Swartz (1989) identified six dimensions of physician service quality. These are (1) physician interactions; (2) staff interactions; (3) diagnostic; (4) professional competence; (5) time convenience; and (6) location convenience. Parasuraman, Zeithaml and Berry (1986) identified five dimensions of tangibles, reliability, responsiveness, assurance and empathy in a study on service quality involving five different services.

The different dimensions identified in both service quality and patient satisfaction literature, may be reevaluated to fit the basic three dimensions of physician care identified by Hulka and Zyzanski (1982). For instance, the six dimensions identified by Brown and Swartz (1989) may be combined to form three dimensions by pooling diagnostic ability with professional competence and time and location convenience with staff interactions to form access mechanisms. This results in three dimensions of physician interactions, professional competence and access mechanisms which are comparable to Hulka and Zyzanski's factor structure. Likewise, the five dimensions of tangibles, reliability, responsiveness, assurance and empathy can be recast into professional competence (reliability and responsiveness), personal qualities (empathy) and access mechanisms (tangibles and assurance) to fit the three dimensions identified in the patient satisfaction literature.

In summary, three dimensions of physician care were identified as appropriate to study consumer satisfaction with physician services. These dimensions were (1) professional
competence of the physician (2) personal qualities of the physician and (3) access mechanisms. However, as the experiment planned to test the model involves a simulation of the service encounter between a doctor and a patient, it was decided that only two factors, the professional qualities and personal qualities of the physician were appropriate to study. The reasoning behind this was that the subjects will not be in a position to respond to the statements pertaining to assess mechanisms since the simulation will not allow the subjects to have any choice regarding these issues. Additionally, since interaction style constitutes the personal qualities dimension of the doctor, and perceived performance addresses the professional qualities dimension of the doctor, these two constructs consisted of only one dimension of physician care. The rest of the constructs, expectations, disconfirmation and satisfaction consisted of two dimensions of personal qualities and professional qualities of the physician.

From the literature identified above, an initial pool of 76 items were generated to measure expectations, interaction style, perceived performance, disconfirmation and satisfaction. Out of these 76 items, 34 items pertained to professional competence and 42 to personal qualities. By eliminating poorly worded items and redundant items, a final pool of 22 items was retained to be pretested. As discussed before the scales for expectations, interaction style and perceived performance were scaled on a five point agree-disagree scale whereas disconfirmation was scaled using a five point worse-than-expected to better-than-expected scale. Satisfaction was measured using a five point completely dissatisfied to completely satisfied scale. There were also a verbal scale, a delighted - terrible scale and an open ended question to assess respondent’s global satisfaction. Table 3.6 provides a summary of initial battery of items generated to measure each construct. A copy of the measurement instrument developed along with the entire experimental procedure is provided in Appendix 6. Table 3.7 provides a summary of the construct operationalization.
Table 3.6

A Description of Constructs and Initial Battery of Items

<table>
<thead>
<tr>
<th>Construct</th>
<th>Initial Battery of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Evaluative Impressions</td>
<td>19</td>
</tr>
<tr>
<td>(Two dimensions)</td>
<td></td>
</tr>
<tr>
<td>2. Expectations</td>
<td>22</td>
</tr>
<tr>
<td>(Two dimensions)</td>
<td></td>
</tr>
<tr>
<td>3. Interaction Style</td>
<td>10</td>
</tr>
<tr>
<td>3. Perceived Performance</td>
<td>12</td>
</tr>
<tr>
<td>4. Disconfirmation</td>
<td>22</td>
</tr>
<tr>
<td>(Two dimensions)</td>
<td></td>
</tr>
<tr>
<td>5. Satisfaction</td>
<td>22</td>
</tr>
<tr>
<td>(Two dimensions)</td>
<td></td>
</tr>
<tr>
<td>Global Satisfaction</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 3.7
Construct Operationalization

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Operationalization</th>
<th># Items</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations</td>
<td>Belief probabilities</td>
<td>Sum of attribute specific beliefs on a Likert scale</td>
<td>14</td>
<td>.97</td>
</tr>
<tr>
<td>Evaluative Impression</td>
<td>Subjective feeling towards the stimulus person</td>
<td>An index of emotional responses on a semantic differential scale</td>
<td>15</td>
<td>.94</td>
</tr>
<tr>
<td>Interaction Style</td>
<td>Perceived attitudes and behaviors of service personnel</td>
<td>Sum of specific personal attributes on a Likert scale</td>
<td>8</td>
<td>.87</td>
</tr>
<tr>
<td>Perceived Performance</td>
<td>Evaluation of performance on core service attributes</td>
<td>Sum of attribute specific performance evaluations; Likert; Global evaluation</td>
<td>6</td>
<td>.89</td>
</tr>
<tr>
<td>Disconfirmation</td>
<td>Subjective evaluation of the difference between expectations and perceived performance</td>
<td>Sum of attribute specific disconfirmation, Worse-Than to Better-Than scale</td>
<td>14</td>
<td>.95</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Subjective evaluation of the gap between expectations and performance</td>
<td>Sum of attribute specific satisfaction, Likert scale; Verbal scale</td>
<td>14</td>
<td>.97</td>
</tr>
</tbody>
</table>
The pretests conducted to purify the scales and assess their reliability and validity will be described next.

**Description of the Pretest**

The sample utilized to conduct the pretest designed to validate the measurement instrument consisted of 200 students from a large southern university. The pretest questionnaire included scales pertaining to the measurement of the following constructs: expectations, perceived performance, disconfirmation and satisfaction with the physician. The pretest carried out to test the reliability of the evaluative impression scale was described in the last section. First, the reliability and validity concerns will be addressed followed by a discussion of the dimensionality of the scales pretested.

**Reliability**

Peter (1979) defines reliability as the agreement between two separate attempts to measure the same construct, using maximally similar methods. Perfect reliability eliminates random error from measurement. The most common method of assessing reliability is the "internal consistency" method. The internal consistency method involves an analysis of variances and covariances of the component measures of a construct. Cronbach’s Alpha is the commonly used index of reliability.

It is generally agreed that a Cronbach’s alpha of .70 is acceptable in theory testing research (Nunnally 1978). The major problems with Cronbach’s alpha involve its assumptions of equal units of measurement in each item and perfect measurement. The structural equation modeling technique is suggested to overcome the above deficiencies (Bagozzi 1980). Research using the LISREL technique can utilize the squared multiple correlation reported as a default value as an indicator of reliability.
In the present study, all the scales were tested for reliability using Cronbach's alpha initially. Items with corrected item-total correlations below .40 were eliminated and reliability assessed again. After deleting items with low item-total correlations (< .4) fifteen items in the evaluative impression scale; fourteen items in the expectations scale; eight items in the interaction style scale; seven items in the perceived performance scale; fourteen items in the disconfirmation scale; and fourteen items in the satisfaction scale were retained. The reliabilities of the scales pretested ranged from a high of .97 for expectations and satisfaction scales to a low of .87 for interaction style. Table 3.7 summarizes the number of items used for each construct and their respective reliabilities for all the scales pretested. Appendix 6 presents the entire measurement instrument developed after the pretest.

Construct Validity

Construct validity is a necessary condition for theory development and testing (Churchill 1979; Peter 1979). Bagozzi (1980) defines construct validity as the degree to which a concept achieves theoretical and empirical meaning within the overall structure of one's theory. In other words validity is the accuracy of the indicants purporting to measure a latent construct. Both convergent and discriminant validities are necessary to establish construct validity. Convergent validity refers to the degree to which two or more attempts to measure the same construct by independent measurement procedures are in agreement. Discriminant validity on the other hand, requires that a measure not correlate highly with measures from which it is supposed to differ (Churchill 1979).

A convenient way of establishing both convergent and discriminant reliability is the multitrait-multimethod matrix (Campbell and Fiske 1959). The multitrait-multimethod matrix determines convergent and discriminant validities through an analysis of the correlations between two or more traits measured by two or more methods. The major disadvantage of
MTMM matrix is the assumption of orthogonality of methods. Moreover, two maximally different methods of measuring constructs is rarely feasible in marketing.

The present study assessed the convergent and discriminant validity by means of an examination of correlations between constructs and the statistical significance of those correlations. Table 3.8 reports the correlations and significance levels for all the variables used in the pretest. The highest correlations were between interaction style and performance, disconfirmation and satisfaction, performance and disconfirmation, performance and satisfaction and finally between disconfirmation and satisfaction. Although the disconfirmation model suggests a high correlation between these variables, there is also a possibility of method variance. In the final study, method variance was minimized by measuring performance, disconfirmation and satisfaction apart and not together, as was done in the pretest. The evaluative impression scale seemed to have achieved good discriminant validity. It had a low and non-significant correlation with expectations and a low correlation with disconfirmation as suggested by the proposed affect-based model of service satisfaction. As discussed in Chapter Two, evaluative impression is suggested to be spontaneous and is elicited by consumers as a means to achieve cognitive efficiency. As such, it is hypothesized to have low correlations with cognitive variables of expectations and disconfirmation.

The Dimensionality of the Scales

All the scales were factor analyzed to assess the dimensionality of the scales. The evaluative impression scale was hypothesized to be a function of two independent dimensions of positive and negative affects. The initial analysis identified three factors with 65% of variance explained. The first factor had the largest eigenvalue (16.1) and explained 59% of the total variance. The remaining two factors had eigenvalues of just above one. All the factor loadings were substantial, the smallest being .58. Due to the dominant single factor extracted, it was decided to consider evaluative impression towards doctors to be unidimensional and
Table 3.8

Pearson Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>Eimp</th>
<th>Exp</th>
<th>Ints</th>
<th>Perf</th>
<th>Discon</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eimp</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exp</td>
<td>-.002</td>
<td>1.00</td>
<td>(.97)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ints</td>
<td>.247</td>
<td>.077</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perf</td>
<td>.212</td>
<td>.123</td>
<td>.865</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disc</td>
<td>.176</td>
<td>.010</td>
<td>.802</td>
<td>.769</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Sat</td>
<td>.249</td>
<td>.022</td>
<td>.906</td>
<td>.864</td>
<td>.789</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Significance levels in parentheses*
positive. The factor analysis provided tentative evidence that evaluative impression towards doctors is unidimensional and positive. Table 3.9 summarizes the results of the principal components analysis for evaluative impression.

The interaction style of the doctor was proposed to be a function of a single dimension of the personal qualities of the doctor. The factor analysis identified a single factor with an eigenvalue of 11.5 with 62% of the variance explained. Table 3.10 summarizes the items and their respective loadings.

As discussed in section 3.2, all the scales comprising the disconfirmation model (expectations, disconfirmation and satisfaction), except for the performance scale were hypothesized to be a function of two dimensions, professional qualities and personal qualities. Accordingly, a factor solution was estimated using principal components analysis. Contrary to the predictions made, for all the three scales the principal components analysis identified a dominant single factor with eigenvalue more than one.

The expectations scale produced a single factor with an eigenvalue of 8.91 and with 64% of variance explained. Table 3.11 summarizes the items in the factor and its respective loadings. The same procedure was followed for disconfirmation and satisfaction scales also. The disconfirmation scale produced a single factor with an eigenvalue of 11.6 and with 82.6% of variance explained. The satisfaction scale also produced a single factor with an eigenvalue of 13.8 and with 86.3% of variance explained.

The performance scale was hypothesized to be a function of a single dimension, that of the professional qualities of the physician. The first factor in the performance scale had a eigenvalue of 12.5 with 59% of variance explained. Table 3.12, 3.13 and 3.14 summarize the factor loadings for the performance, disconfirmation and satisfaction scales respectively.
Table 3.9
Principal Component Analysis: Evaluative Impression
Description of Items and Factor Loadings

<table>
<thead>
<tr>
<th>Description of Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>.72</td>
</tr>
<tr>
<td>Likable</td>
<td>.75</td>
</tr>
<tr>
<td>Pleasant</td>
<td>.78</td>
</tr>
<tr>
<td>Nice</td>
<td>.63</td>
</tr>
<tr>
<td>Incompetent*</td>
<td>.61</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>.72</td>
</tr>
<tr>
<td>Anxious*</td>
<td>.64</td>
</tr>
<tr>
<td>Truthful</td>
<td>.62</td>
</tr>
<tr>
<td>Interesting</td>
<td>.71</td>
</tr>
<tr>
<td>Honest</td>
<td>.67</td>
</tr>
<tr>
<td>Unfriendly</td>
<td>.73</td>
</tr>
<tr>
<td>Intelligent</td>
<td>.66</td>
</tr>
<tr>
<td>Disreputable</td>
<td>.79</td>
</tr>
<tr>
<td>Candid</td>
<td>.64</td>
</tr>
<tr>
<td>Calm</td>
<td>.62</td>
</tr>
</tbody>
</table>

* items reverse scored
Table 3.10
Principal Component Analysis: Interaction Style
Description of Items and their Respective Loadings

<table>
<thead>
<tr>
<th>Description of Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spent enough time</td>
<td>.69</td>
</tr>
<tr>
<td>Did not listen to my problems*</td>
<td>.72</td>
</tr>
<tr>
<td>Spoke clearly</td>
<td>.67</td>
</tr>
<tr>
<td>Unfriendly*</td>
<td>.66</td>
</tr>
<tr>
<td>Caring</td>
<td>.72</td>
</tr>
<tr>
<td>Sympathetic</td>
<td>.68</td>
</tr>
<tr>
<td>Understood needs</td>
<td>.64</td>
</tr>
</tbody>
</table>

*Item reverse scored
Table 3.11
Principal Component Analysis: Expectations
Description of Items and their Respective Loadings

<table>
<thead>
<tr>
<th>Description of Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledgeability</td>
<td>.79</td>
</tr>
<tr>
<td>Listening skills</td>
<td>.79</td>
</tr>
<tr>
<td>Spend enough time</td>
<td>.86</td>
</tr>
<tr>
<td>Incompetent*</td>
<td>.75</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>.83</td>
</tr>
<tr>
<td>Unprofessional*</td>
<td>.76</td>
</tr>
<tr>
<td>Caring</td>
<td>.70</td>
</tr>
<tr>
<td>Inefficient*</td>
<td>.76</td>
</tr>
<tr>
<td>Understand needs</td>
<td>.64</td>
</tr>
<tr>
<td>Sympathetic</td>
<td>.70</td>
</tr>
<tr>
<td>Unfriendly*</td>
<td>.63</td>
</tr>
<tr>
<td>Capability to handle</td>
<td></td>
</tr>
<tr>
<td>problems</td>
<td>.69</td>
</tr>
<tr>
<td>Speak clearly</td>
<td>.81</td>
</tr>
</tbody>
</table>

*Item reverse scored
Table 3.12

Principal Component Analysis: Perceived Performance
Description of Items and their Respective Loadings

<table>
<thead>
<tr>
<th>Description of Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>.81</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>.76</td>
</tr>
<tr>
<td>Incompetent*</td>
<td>.87</td>
</tr>
<tr>
<td>Knowledgeable</td>
<td>.86</td>
</tr>
<tr>
<td>Efficient</td>
<td>.80</td>
</tr>
<tr>
<td>Warned about possible side effects</td>
<td>.66</td>
</tr>
<tr>
<td>Ability to handle problems</td>
<td>.61</td>
</tr>
<tr>
<td>Overall, Dr. Harrison was a good doctor</td>
<td>.83</td>
</tr>
</tbody>
</table>

* Item reverse scored
### Table 3.13

Principal Component Analysis: Disconfirmation
Description of Items and their Respective Loadings

<table>
<thead>
<tr>
<th>Description of Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening skill</td>
<td>.71</td>
</tr>
<tr>
<td>Amount of time spent</td>
<td>.57</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>.70</td>
</tr>
<tr>
<td>Competence</td>
<td>.81</td>
</tr>
<tr>
<td>Knowledgeability</td>
<td>.81</td>
</tr>
<tr>
<td>Level of professionalism</td>
<td>.80</td>
</tr>
<tr>
<td>Understandability</td>
<td>.64</td>
</tr>
<tr>
<td>Friendliness</td>
<td>.73</td>
</tr>
<tr>
<td>Efficiency</td>
<td>.74</td>
</tr>
<tr>
<td>Sympathy</td>
<td>.71</td>
</tr>
<tr>
<td>Concern</td>
<td>.78</td>
</tr>
<tr>
<td>Ability to understand needs</td>
<td>.77</td>
</tr>
<tr>
<td>Ability to handle problems</td>
<td>.60</td>
</tr>
</tbody>
</table>
Table 3.14
Principal Component Analysis: Satisfaction
Description of Items and their Respective Loadings

<table>
<thead>
<tr>
<th>Description of Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening skill</td>
<td>.71</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>.81</td>
</tr>
<tr>
<td>Competence</td>
<td>.82</td>
</tr>
<tr>
<td>Knowledgeability</td>
<td>.80</td>
</tr>
<tr>
<td>Efficiency</td>
<td>.69</td>
</tr>
<tr>
<td>Level of professionalism</td>
<td>.87</td>
</tr>
<tr>
<td>Understandability</td>
<td>.72</td>
</tr>
<tr>
<td>Friendliness</td>
<td>.79</td>
</tr>
<tr>
<td>Caring</td>
<td>.74</td>
</tr>
<tr>
<td>Sympathy</td>
<td>.73</td>
</tr>
<tr>
<td>Ability to understand needs</td>
<td>.67</td>
</tr>
<tr>
<td>Ability to handle problems</td>
<td>.53</td>
</tr>
<tr>
<td>Amount of time spent</td>
<td>.60</td>
</tr>
</tbody>
</table>
In summary, the pretest provided evidence of good reliabilities for all the scales used in the study. Contrary to the proposed dimensionality of the expectations, disconfirmation and satisfaction scales, the factor analyses identified a single dominant factor for all the three scales. Based on the evidence provided by the principal components analysis, all the scales in the study are treated as unidimensional. The model testing procedure will be discussed next.

**Model Testing**

The study of the proposed relationships was conducted using a MANOVA and structural equation methodology. Two of the three research questions proposed to be addressed by this dissertation pertain to the impact of affect on satisfaction with services and the relative importance of affective judgments compared to cognitive judgments in service encounter satisfaction. The significance of the relationships posited for the first research question was tested using a MANOVA approach. In the second stage, a structural equation analysis was conducted on two of the groups to test the strength of the structural relationships in the proposed model and to ascertain the relative importance of cognitive versus affective judgments in service encounter satisfaction. Accordingly, there are two sets of hypotheses pertaining to the two broad research questions raised above. For ease of analysis, the hypotheses pertaining to perceived performance and the hypotheses pertaining to satisfaction are summarized separately in the MANOVA section. A summary of proposed hypotheses for the MANOVA section is presented in Table 3.15 and Table 3.16. A summary of proposed hypotheses for the LISREL analysis will be presented in a later section.

**The Influence of Evaluative Impression and Interaction Style on Perceived Performance and Satisfaction**

Hypotheses 1 to 12 pertain to the impact of evaluative impression and interaction style on perceived performance and satisfaction judgments. To test these hypotheses two
Table 3.15

A Summary of Proposed Hypotheses for Perceived Performance

The Impact of Evaluative Impression on Perceived Performance

H1a. A positive evaluative impression will create more positive perceptions of performance compared to a negative evaluative impression.

H1b. A positive evaluative impression will create more positive perceptions of performance compared to a neutral evaluative impression.

H2. A neutral evaluative impression will create more positive perceptions of performance compared to a negative evaluative impression.

The Impact of Interaction Style on Perceived Performance

H3. A positive interaction style will create more positive perceptions of performance compared to a negative interaction style.

The Impact of Evaluative Impressions and Interaction Style on Perceived Performance

H4a. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.

H4b. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H4c. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a neutral evaluative impression/positive interaction style.

H5a. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.

H5b. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.
H5c. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a neutral evaluative impression/negative interaction style.

H6a. A neutral evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H6b. A neutral evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.
Table 3.16
A Summary of Proposed Hypotheses for Satisfaction

The Impact of Evaluative Impression on Satisfaction

H7a. A positive evaluative impression will create more positive perceptions of satisfaction compared to a negative evaluative impression.

H7b. A positive evaluative impression will create more positive perceptions of satisfaction compared to a neutral evaluative impression.

H8. A neutral evaluative impression will create more positive perceptions of satisfaction compared to a negative evaluative impression.

The Impact of Interaction Style on Satisfaction

H9. A positive interaction style will create more positive perceptions of satisfaction compared to a negative interaction style.

The Impact of Evaluative Impressions and Interaction Style on Satisfaction

H10a. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.

H10b. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H10c. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a neutral evaluative impression/positive interaction style.

H11a. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.

H11b. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a neutral evaluative impression/positive interaction style.
H11c. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a neutral evaluative impression/negative interaction style.

H12a. A neutral evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H12b. A neutral evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.
factors were manipulated, interaction style of the service provider (positive versus negative), and the evaluative impression of the stimulus doctor (positive, neutral and negative). Figure 3.1 presents the experimental design.

Due to the multiple dependent variables of perceived performance and satisfaction, a MANOVA was deemed to be the appropriate statistical technique to test for overall group differences. When there are multiple dependent variables, a series of F tests would inflate the Type I error and also fail to test for the hypothesis that a combination of the dependent variables may provide evidence of overall group differences. MANOVA solves these problems by providing a single overall test of group differences at a specified alpha level (Wilke's Lambda) and also tests the linear combination of the multiple dependent variables in explaining overall group differences (Dillon and Goldstein 1984). MANOVA makes the assumptions of multivariate normality, equal covariances across groups and independent observations.

Hypotheses 1 to 3 and 7 to 9 pertain to the main effects of evaluative impression and interaction style on perceived performance and satisfaction. First, overall group differences were tested for significance using a non significant Wilke's Lambda and a significant F value. Individual tests of the hypotheses were then conducted by using univariate ANOVA tests. The significance of the group differences were assessed by an F test. Hypotheses 4 to 6 and 10 to 12 pertain to the interaction effects of evaluative impressions and interaction style on perceived performance and satisfaction. These relationships were tested using univariate ANOVA tests.

The second set of hypotheses pertain to the relative importance of affective responses compared to cognitive judgments in explaining satisfaction. As the strength of the structural relationships between various constructs in the model were of primary interest, it was decided to test these hypotheses using a structural equation modeling technique. However, since the study manipulated two factors, it violates one of the
Figure 3.1. Experimental Design

<table>
<thead>
<tr>
<th>Interaction Style</th>
<th>Positive</th>
<th>Negative</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Negative</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>
assumptions of structural equation modeling, that of equal covariances across cells in the research design. According to Bagozzi and Yi (1989):

Some researchers... performed causal analysis on aggregate samples formed by collapsing across all cells in their designs. The validity of these approaches depends on the assumption that the measurement properties and causal paths are invariant across cells. Because experimental manipulations are designed to influence one or more variables and employ different stimuli to do so, the required invariances are unlikely to hold in collapsing across cells (p.271).

Two factors were manipulated in the present study. The equal covariances assumption will not hold for all six cells and hence the use of structural equation modeling to test the proposed hypotheses becomes problematic.

To overcome the above problem, two conditions from the 3 X 2 design were selected for estimation by structural equation models. These conditions were positive evaluative impression/positive interaction style and neutral evaluative impression/positive interaction style (Cells 1 and 5). The positive evaluative impression/positive interaction style cell was labeled as the Affect Group and the neutral evaluative impression/positive interaction style cell was labeled as the Cognitive Group. These two cells differed only in their emphasis on evaluative impression (positive versus neutral). The interaction style was held constant across the two cells. Otherwise, the two cells were identical in all other respects. It should be noted that these two groups will be referred to again in the discussion of the LISREL analysis.

The Full Model as presented in Figure 2.2 (p.71) was estimated for both the groups thus avoiding aggregation of data across cells. The test of the strength of relationships between the proposed constructs in these two groups would allow us to address a managerially relevant question: given the same level of performance, would creation of positive affect enhance the level of subject’s satisfaction with the service encounter?
Accordingly, these two groups were deemed appropriate to use with structural equation analysis.

As suggested by Anderson and Gerbing (1988), the measurement model was evaluated first by testing for the dimensionality of the scales and assessing the internal consistency of all the measures in the study.

**The Dimensionality of the Scales**

The dimensionality of the different scales developed to test the significance of the model was assessed by a confirmatory factor analysis. Confirmatory factor analysis is an efficient way of ascertaining internal consistency of measures (Anderson and Gerbing 1982, 1988). The main advantage of this approach over existing methods is that it allows simultaneous estimation of both the parameters linking empirical indicators to latent, unobservable variables (the measurement model) and the parameters linking the unobserved variables to each other (structural model) (Bagozzi 1980). It provides an efficient testing of hypotheses while simultaneously taking into account measurement error. Internal consistency of the measures was assessed by examining the squared multiple correlations, composite reliabilities and average variance extracted. Discriminant validity was assessed by utilizing various testing procedures developed in the literature (Bagozzi 1980; Fornell and Larcker 1981; Anderson and Gerbing 1988). These testing procedures will be elaborated further in Chapter Four.

**Testing for Overall Model Fit**

A test of the overall goodness of fit between the proposed model and the sample variance-covariance matrix is provided by a Chi-square test. A small chi-square value is preferred, since a large chi-square value implies the significance of the null model. This means that the power of the statistical test to reject the significance of the model is not
known. This also is exactly the reverse of a conventional hypotheses testing procedure and several researchers have criticized this aspect of the chi-square test (Fornell and Larcker 1981). The sensitivity of the chi-square test to sample size poses additional problems for researchers (Bearden, Sharma and Teel 1982). When the sample size is too small, it was shown that even weak relationships achieve statistical significance. On the other hand, when the sample size is too large, even reasonable theories are rejected by failing to achieve statistical significance (Bagozzi 1980). With large samples, Bearden, Sharma and Teel (1982) advocate the use of Bentler and Bonnett’s (1980) Normed Fit Index to overcome this problem. An NFI of .90 is suggested to provide a reasonable fit to the model. The Normed Chi-Square is also proposed as a measure to correct for the problems associated with sample size (Carmines and McIver 1981). Another problem identified with the Chi-square goodness of fit index is the ease with which a GFI of unity can be obtained (Dillon and Goldstein 1984). A very high GFI can be obtained by freeing most of the parameters, since the maximum likelihood estimation procedure used to calculate the GFI, improves the fit by increasing the number of parameters to be estimated. Hence, estimating more parameters increases GFI artifactually, giving a false impression of a good fit of the data to the model.

A number of alternatives to overcome the above problems are proposed in the literature. An AGFI (Adjusted goodness of fit) which indicates the amount of both variances and covariances accounted for by the model is proposed by Joreskog and Sorbom (1989). An average of the residual variances and covariances, RMSR (root mean square residual), is now available to compare the estimated models. A low RMSR indicates a good fit. As discussed above, the NFI (Bentler and Bonnett 1980) and the Normed Chi-Square (Carmines and McIver 1981) correct for the sensitivity of chi-square to sample size.

It is obvious from the above discussion that multiple indicants of overall fit of the model are better than depending on any single indicator. Accordingly, the present study
utilized Chi-square (non significant p > .05); Normed Chi-Square (2 - 3); GFI (> .90); AGFI (> .90); RMSR (.03 - .08); and NFI (> .90) to evaluate the goodness of fit of the model.

Competing Models Analysis

The third research question proposed by the study, the adequacy of the disconfirmation approach to model satisfaction with professional services was addressed by using a competing models analysis in each of the two groups. The competing models analysis approach also provided tentative evidence regarding the performance of the affective variables compared to the cognitive variables in explaining service encounter satisfaction. First, the Full Model of service encounter satisfaction as shown in Figure 2.2 (p.71) was estimated using LISREL VII (Joreskog and Sorbom 1989) in the Affect Group. Next, the paths from expectations to perceived performance, disconfirmation and satisfaction and the path from evaluative impression to disconfirmation were constrained to equal zero and the model was estimated again. The constraints imposed eliminated expectations and disconfirmation from the model. This competing model was termed as "affect-based model" and consisted of a single exogenous variable of evaluative impressions and two endogenous variables of perceived performance and satisfaction. The fit of this model was compared to the fit of the Full Model. In the next stage, the paths from evaluative impression to perceived performance, disconfirmation and satisfaction were constrained to equal zero resulting in the elimination of evaluative impression from the model. This second competing model was thus made equivalent to the traditional disconfirmation model of satisfaction and consisted of a single exogenous variable of expectations and three endogenous variables of perceived performance, disconfirmation and satisfaction. The fit of this model was compared to the fit of the affect-based model as well as the Full Model.
A Parsimonious Fit Index (PFI) is recommended in the literature for intermodel comparisons (James, Mulaik and Brett 1982). The PFI was calculated using the formula: \( \frac{DF_{\text{proposed}}}{DF_{\text{null}}} \). A difference between .06 to .09 in the PFI's compared, is taken as evidence of good model differences. Along with the overall indices of fit discussed earlier, the PFI was also taken into consideration in evaluating the explanatory ability of each of the competing models as compared to the Full Model. The same procedure was repeated with the Cognitive Group and the explanatory ability of the competing models compared against the Full Model was evaluated in a similar way.

**Evaluation of the Structural Model**

Apart from testing for the overall goodness of fit of the measurement model, the individual hypothesized linkages between latent variables also need to be addressed. Prior to the evaluation of significance of the hypothesized paths, the individual item reliabilities, composite reliabilities and the variance explained by the indicators were evaluated. Individual item reliabilities greater than .5, composite reliabilities greater than .6, explained variance greater than .5 were taken as evidence of internal consistency (Bagozzi and Yi 1988). As discussed in an earlier section, the LISREL analysis deals with the two groups of interest, the Affect Group and the Cognitive Group. For ease of analysis, the hypotheses pertaining to the LISREL stage of the analysis are divided into three parts. The first set of hypotheses addresses the Affect Group, the second set addresses the Cognitive Group and the third set addresses the Comparison Across the Groups. A summary of the proposed hypotheses is presented in Table 3.17.

Hypotheses 13a to 13c pertain to the structural relationships between evaluative impression and various components of the model. These relationships were tested for significance by examining the t-values of the parameter estimates and by looking at the magnitude of the standardized beta coefficients. Additionally, the strength of the
Table 3.17
A Summary of Proposed Hypotheses for the LISREL Analysis

The Relative Importance of Affective versus Cognitive Judgments

The Affect Group

H13a. Evaluative impression is positively related to performance.
H13b. Evaluative impression is negatively related to disconfirmation.
H13c. Evaluative impression is positively related to satisfaction.

H14a. Perceived performance is positively related to disconfirmation.
H14b. Perceived performance is positively related to satisfaction.

H15. Disconfirmation is positively related to satisfaction.

H16a. The relationship between evaluative impression and performance is stronger compared to the relationship between expectations and performance.
H16b. The relationship between evaluative impression and satisfaction is stronger compared to the relationship between expectation and satisfaction.

H17. Affect-based evaluative impressions contribute significant explanatory power to service encounter satisfaction model.

The Cognitive Group

Effects of Expectations, Performance and Disconfirmation

H18a. Expectations are positively related to performance.
H18b. Expectations are negatively related to disconfirmation.
H18c. Expectations are positively related to satisfaction.

H19a. Perceived performance is positively related disconfirmation.
H19b. Perceived performance is positively related to satisfaction.

H20. Disconfirmation is positively related to satisfaction.
H21. The relationship between expectation and performance is stronger compared to the relationship between evaluative impression and performance.

H22. The relationship between expectation and satisfaction is stronger compared to the relationship between evaluative impression and satisfaction.

Comparison Across Groups

H23. The relationship between evaluative impression and perceived performance is stronger in the Affect Group compared to the Cognitive Group.

H24. The relationship between expectations and perceived performance is stronger in the Cognitive Group compared to the Affect Group.

H25. The relationship between performance and disconfirmation is stronger in the Cognitive Group compared to the Affect Group.

H26. The relationship between disconfirmation and satisfaction is stronger in the Cognitive Group compared to the Affect Group.

H27. The relationship between performance and satisfaction is stronger in the Affect Group compared to the Cognitive Group.
relationships was assessed by setting the paths to zero and reestimating the model. A significant drop in the Chi-Square was taken as evidence of the strength of the relationship.

Hypotheses 14a and 14b pertain to the relationship between perceived performance and disconfirmation and satisfaction. These paths were tested for significance using the t-values and the strength of the relationship was assessed using the same approach as mentioned earlier.

Hypothesis 15 concerns the relationship between disconfirmation and satisfaction and was tested using a similar approach as discussed above. Hypotheses 16a and 16b pertained to a comparison of the strength of the relationship between evaluative impressions and perceived performance/satisfaction compared to the strength of the relationship between expectations and perceived performance/satisfaction. These hypotheses were tested using the difference in Chi-Square criterion. The model was estimated first with all the parameters set free. Later, the paths from evaluative impression to performance/satisfaction and expectation to performance/satisfaction were set equal. A significant difference in Chi-Square was taken as evidence of the difference in the strengths of the parameter estimates.

Hypothesis 17 pertains to the overall explanatory ability of the evaluative impression construct. To test the contribution of this variable to the entire model, all the paths from evaluative impression were set to zero and the model was estimated again. A significant difference in Chi-Square was used as evidence of the strength of the relationship between evaluative impression and various other components of the model.

Hypotheses 18a, 18b, and 18c pertain to the relationship between expectations and perceived performance, disconfirmation and satisfaction. These relationships were tested by examining the standardized parameter estimates and by assessing the significance of the drop in chi-square when these paths were set to zero. Hypothesis 19a, 19b and 20 propose a positive relationship between perceived performance and disconfirmation,
perceived performance and satisfaction, disconfirmation and satisfaction. These hypotheses were tested by examining the direction and strength of the parameter estimates.

Hypotheses 21 and 22 pertain to a comparison of the relationship between expectation and performance/satisfaction and between evaluative impression and performance/satisfaction. These hypotheses were tested by means of a comparison of the standardized parameter estimates and differences in chi-square tests.

Finally, hypotheses 23 to 27 propose differences across two groups in the strengths of the relationships between various constructs. These hypotheses were examined using a stacked approach. First, the Full Model in both the groups was estimated with all the paths set free. Next, the relationships to be tested were constrained to be either equal or zero and the model was reestimated in both the groups. The overall fit of the constrained model was then compared against the fit of the full model with all parameters set free. A statistically significant drop in the fit of the constrained model was taken as evidence of the strength of the relationship tested.

Conclusions

The methodology to test the model was presented in this chapter. The research setting, sample size and sampling frame were discussed in detail. The development of the stimulus material, and pretests done to establish consensual category of physicians were delineated next. The scale development procedure, reliability and validity concerns were also addressed. The details of the final study carried out and the results of the various analyses performed will be presented in Chapter Four. Chapter Five will discuss the significance of the results, draw conclusions from the research and will elaborate on the conceptual and managerial implications along with future research directions.
CHAPTER FOUR
ANALYSIS AND RESULTS

As discussed in Chapter Three, the analysis of the proposed model was conducted in two stages. In the first stage, an experimental design was set up to examine the effects of manipulating evaluative impression and interaction style on perceived performance and satisfaction. A MANOVA analysis was performed to investigate overall mean differences in the dependent measures due to treatment effects. In the second stage, additional data was collected in two of the cells, those of Positive Impression/Positive Interaction Style (The Affect Group) and Neutral Impression/Positive Interaction Style (The Cognitive Group). The objective was to examine differences in the structural relationships among the various components of the model for subjects using an affective versus a cognitive approach to satisfaction judgements, while holding interaction style constant. A structural equation analysis using LISREL VII (Joreskog and Sorbom, 1989) was performed on this data to compare the pattern of relationships among the affect and cognitive groups.

Chapter Four is organized to describe the results of the two stages of the analysis. Section One describes the experiment carried out. Section Two addresses the psychometric properties of the sample. Section Three presents the results of the MANOVA analysis. Section Four deals with the structural equation analysis, LISREL VII. Finally, Section Five summarizes the analyses performed and the results obtained.
The Nature of the Experiment

Experimental Stimuli

The stimuli were six videotapes designed to match the manipulations proposed. By combining the evaluative impression manipulation (positive, negative and neutral) and the type of interaction style (positive, negative) six videotapes were generated. Each videotape corresponded to each of the six cells in the design (see Figure 3.1, page 126, for the identity of cells). Thus, the first videotape contained a positive description of the doctor and a positive interaction style, the second too had a positive description but negative interaction style, the third contained a negative description and positive interaction style, the fourth had a negative description and negative interaction style, the fifth contained a neutral description of doctor and positive interaction style and finally, the sixth videotape had a neutral description and a negative interaction style. The quantity of attribute information provided was balanced across all cells, as well as the amount of time spent on introducing each of the manipulations and the administration of the manipulations themselves.

Treatment Factors

The experiment consisted of two treatment factors, Evaluative Impression of the physician (positive, neutral and negative) and the Interaction Style of the physician (positive versus negative). As mentioned before, evaluative impression of the doctor was manipulated by providing information that either matched or mismatched the category of physicians. Positive evaluative impression was evoked by providing attribute information that matched the category of a physician, negative evaluative impression was evoked by using attribute information that mismatched the category of the physician. Neutral evaluative impression was evoked by providing information that had low information quality regarding the individual doctor.
The interaction style of the doctor was manipulated by introducing different personal qualities of the doctor. In the positive interaction style condition, the doctor’s behavior was consistent with personal qualities that were pretested to be positive (e.g. friendly, concerned and warns about side effects). In the negative interaction style condition, on the other hand, the doctor’s behavior was consistent with personal qualities that were pretested to be negative (e.g. unfriendly, not concerned and does not warn about side effects).

Subjects

Undergraduate students were recruited for participation in the study. A total of 198 students participated in six computer lab sessions to provide their perceptions regarding the quality of care delivered by Dr. Harrison, whom they had seen on the video screen. There were 33 students in five cells and 32 students in one cell. Additional data was collected in two of the cells, positive evaluative impression/positive interaction style and neutral evaluative impression/positive interaction style, to be used in the LISREL analysis. A total of 201 and 171 (including the original 33 subjects) respondents provided their responses in these cells respectively.

Procedure

As detailed in the experimental stimuli section, six videotapes were designed corresponding to the six manipulations proposed. Each videotape typically pictured a spokesperson, who introduced himself as the marketing director of a local hospital chain. The spokesperson then described the importance of marketing research to the hospital administration and requested the students to participate in evaluating one of the doctors who worked for the hospital. He then provided a description of the doctor which matched one of the three evaluative impression manipulations. After the description, the target doctor was shown on the video screen. At this point the spokesperson advised the students to stop
watching the TV screen and provide their responses to the evaluative impression scale on the computer.

After the students completed responding to the evaluative impression and expectations measures, a message appeared on the computer screen, requesting the students to watch the video screen again to see the doctor actually treating a patient. At this point, the spokesperson reappeared on the screen and explained the purpose of showing the interaction between the doctor and the patient. He then requested the students to watch all the details of the interaction and respond to the statements regarding the quality of care provided. The interaction between the doctor and the patient was then shown on the video screen with the necessary manipulations. After viewing this segment, students responded to the measures of interaction style, perceived performance, disconfirmation and satisfaction. At the end of the experiment the students provided written protocols regarding their cognitive responses during the study tasks, after which they were debriefed and dismissed.

The experiment was conducted in the computer lab of the business school and lasted about thirty minutes. The next section will provide details regarding the psychometric characteristics of the sample.

**Psychometric Properties**

The reliability and validity concerns about the data were addressed by means of a confirmatory factor analysis (Anderson and Gerbing 1988). It was decided to carry out the confirmatory factor analysis on the two samples where additional data was collected to facilitate the structural equation analysis. As detailed before, additional data was collected in two of the cells: positive evaluative impression/positive interaction style (from here on called The Affect Group) and neutral evaluative impression/positive interaction style (from here on The Cognitive Group), to facilitate the structural equation analysis. These two samples differed
only in their emphasis on evaluative impression; in one group the evaluative impression being positive and in the other the evaluative impression was manipulated to be neutral. Interaction style was held constant in both groups. The decision to use these two samples was prompted by two reasons. First, individual cells had only 33 subjects each and a confirmatory factor analysis on that few respondents would be untenable. Second, to draw meaningful conclusions from both stages of the analysis, it was felt necessary to maintain uniformity across scales in both the analyses. A confirmatory factor analysis on the expanded data base would fulfill both the goals. The scales identified as reliable and valid in the confirmatory analysis were used in all further analyses.

At all the stages of the analyses, criteria set forth by Bagozzi and Yi (1988) to evaluate structural equation models were used as a guideline. These criteria for evaluation of structural equation models are summarized in Table 4.1. The details of the confirmatory factor analysis will be presented next.

**Confirmatory Factor Analysis**

All the seventy two items in the five measures which were identified in the pretest were subjected to confirmatory factor analysis with the intention of examining the individual item reliabilities as well as the convergent and discriminant validity of the measures. The analysis was first carried out on The Affect Group and was validated on The Cognitive Group (a description of these two groups is provided in Chapter Three, p.127 and 128). There are no clear guidelines in the literature regarding the use of a hold-out sample to validate the reliability of the items. Since the same items have to be used across samples for purposes of comparison, it is necessary that the selected items be reliable across both samples.

However, there are no guidelines regarding the procedure to be followed to obtain a reliable solution which can be used across samples. For instance, it is not clear whether to validate the solution obtained on one sample on the second sample or to pool the data across
Table 4.1
A Summary of Evaluation Criteria for Structural Equation Analysis

Preliminary Fit Criteria

- Absence of negative error variances
- Absence of non-significant error variances
- Absence of correlations greater than one
- Absence of factor loadings too small (<.5) or too large (> .95)
- Absence of very large standard errors

Measurement Model

- Achievement of high individual item (> .5) and composite (> .6) reliabilities
- Average variance extracted (> .5)
- Normalized residuals less than 2
- Modification indices less than 3.84

Overall Model Fit

- Nonsignificant Chi-Square (\( p > .05 \))
- Incremental fit index (> or = .9)
- GFI and AGFI (> or = .9)
- Low root mean square residuals
- Satisfactory coefficient of determination

both the samples and perform confirmatory analysis on the pooled data.

To overcome this problem, both methods were used in this study. First, confirmatory analysis was performed on the Affect Group and the solution obtained was validated on the Cognitive Group. Next, data was pooled across both the samples and confirmatory analysis was performed on this pooled data. A discussion of the confirmatory analysis performed on the Affect Group is provided next, after which the validation of the solution on the Cognitive Group and the solution obtained with the pooled data are discussed.

The results of the confirmatory factor analysis were first scanned for negative error variances; non-significant error variances; factor loadings (< .5 or > .95); correlations greater than one and finally, very large standard errors. Following that, the measurement model was evaluated, once again as per the criteria set forth by Bagozzi and Yi (1988). Items with low squared multiple correlations (< .5) and high standardized residuals (> 2) were eliminated. It was also ascertained that all constructs had high composite reliabilities ( > .6), and average variance extracted ( > .5). The items identified in each of the constructs in the confirmatory analysis after taking care of the above criteria will be detailed next.

**Evaluative Impression**

There were fifteen items in the evaluative impression scale initially (Appendix 6, Questionnaire). Five items were found to have acceptable individual reliabilities out of these fifteen items. Items 1,4,6,8 and 10 were retained for further analysis. These were good, nice, trustworthy, truthful and honest. All the retained items had individual item reliabilities higher than .5. The factor loadings were satisfactory ( > .7). The composite reliability of the evaluative impression scale was .92 and the average variance extracted was .68.
Expectations

The expectations scale had fourteen items identified by the pretest. Out of these fourteen items, eight items were found to have low individual reliabilities and high standardized residuals. After deletion, six items, good listener, spends enough time, completely trustworthy, caring, sympathetic and understands needs, were retained. The composite reliability of these items was .92 and average variance extracted was .66.

Perceived Performance

Perceived performance had fifteen items initially. The confirmatory analysis identified several items with low reliabilities and high standardized residuals. After deleting these items, items 3, 8, 14 and 15 were retained for further analysis. These items were professional, trustworthy, capable and overall performance. The composite reliability of this revised scale was .88 and the average variance extracted was .66.

Disconfirmation

The disconfirmation scale was comprised of fourteen items. Out of these fourteen items, four items were retained by the confirmatory factor analysis. These were items 5, 6, 7 and 13. The items were identified as competence, knowledgeability, professionalism and ability. The composite reliability of this scale was .87 and average variance extracted was .64.

Satisfaction

There were fourteen items in the satisfaction scale initially. Several items were found to have low reliabilities in this scale as identified by the confirmatory factor analysis. The retained items were efficiency, understanding, caring nature, ability to understand and ability to handle problems. The composite reliability of this revised scale was .92 and average variance extracted was .66.
The overall measurement model fit statistics for the Affect Group were, Chi-Square with 242 degrees of freedom = 458.86, p-value < .001. The Normed Chi-Square index (Carmines and McIver 1981) was 1.89, GFI .848, AGFI .812, the Normed Fit Index (Bentler and Bonnett 1980) was .88 and the RMSR was .050. The results of the confirmatory analysis for Affect Group are summarized in Table 4.2. In summary, out of a total of seventy two items, twenty four items met the criteria set forth and were retained by the confirmatory analysis for further investigation.

The same solution was used for the confirmatory analysis in the Cognitive Group also. The results produced some items which were found to have low individual reliabilities (< .5). Specifically, item 5 of the evaluative impression scale, item 6 of the expectations scale, items 1 and 2 of perceived performance scale and finally items 1, 2 and 4 of the disconfirmation scale were found to have individual item reliabilities that were lower than .5. All the scales had satisfactory composite reliabilities but the average variance extracted for the evaluative impression scale (.43) and the disconfirmation scale (.46) were slightly lower than the .5 criterion. However, to preserve the same measurement structure across the two groups in order to test the hypothesized relationships, these scale items were retained.

The Cognitive Group measurement model had a Chi-Square of 747.30 with 242 degrees of freedom and a p value of .000. The Normed Chi-Square index was 3.09 and the GFI was .723. The AGFI was .657, the normed fit index was .75 and the RMSR was .086. Table 4.3 summarizes the results of confirmatory factor analysis for the Cognitive Group.

As an additional check on the factor structure data was pooled across the two groups and the confirmatory factor analysis was performed again. Table 4.4 summarizes the results obtained with the pooled data. The factor structure obtained with the pooled data was slightly different than the one obtained with the Affect Group. The pooled data retained five items in the evaluative impression scale, six in the expectations scale, four in the perceived
<table>
<thead>
<tr>
<th>Items</th>
<th>Item Reliabilities</th>
<th>Factor Loadings</th>
<th>Composite Reliability</th>
<th>Average Variance</th>
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<td>5.Honest</td>
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<td>6.Sympathetic</td>
<td>.63</td>
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<td><strong>Perceived Performance</strong></td>
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Table 4.2 (Cont)

The Affect Group
LISREL Item Reliabilities, Factor Loadings, Composite Reliabilities and Average Variance Extracted

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<tr>
<th>Items</th>
<th>Item Reliabilities</th>
<th>Factor Loadings</th>
<th>Composite Reliability</th>
<th>Average Variance</th>
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<tr>
<td><strong>Disconfirmation</strong></td>
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</tr>
<tr>
<td>2. Knowledgeability</td>
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<td>.785</td>
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</tr>
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<td>3. Trustworthy</td>
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<td>.786</td>
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<td></td>
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<td>4. Capability</td>
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<tr>
<td><strong>Satisfaction</strong></td>
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<td>.796</td>
<td>.92</td>
<td>.66</td>
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<td>2. Trustworthy</td>
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<td>3. Caring Nature</td>
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<td>4. Ability To Understand</td>
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<td>5. Capability</td>
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Chi-Square with 289 Degrees of Freedom = 458.86 (p < .001)
Chi-Square/df = 1.59
Goodness Of Fit Index = .848
Adjusted Goodness Of Fit Index = .812
Normed Fit Index = .88
Root Mean Square Residual = .050
Table 4.3
The Cognitive Group
LISREL Item Reliabilities, Factor Loadings, Composite Reliabilities and Average Variance Extracted

<table>
<thead>
<tr>
<th>Items</th>
<th>Item Reliabilities</th>
<th>Factor Loadings</th>
<th>Composite Reliability</th>
<th>Average Variance</th>
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<td><strong>Evaluative Impression</strong></td>
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<td>.880</td>
<td>.91</td>
<td>.63</td>
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<td>2.Spends Enough Time</td>
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<td>6.Sympathetic</td>
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Table 4.3 (Cont)
The Cognitive Group
LISREL Item Reliabilities, Factor Loadings, Composite Reliabilities and Average Variance Extracted

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<th>Items</th>
<th>Item Reliabilities</th>
<th>Factor Loadings</th>
<th>Composite Reliability</th>
<th>Average Variance</th>
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<td>4. Capability</td>
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<td><strong>Satisfaction</strong></td>
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<td>1. Efficiency</td>
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<td>5. Capability</td>
<td>.77</td>
<td>.877</td>
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</table>

Chi-Square with 242 Degrees of Freedom = 747.30 (p < .001)
Chi-Square/df = 3.09
Goodness Of Fit Index = .723
Adjusted Goodness Of Fit Index = .657
Normed Fit Index = .75
Root Mean Square Residual = .086
Table 4.4

Pooled Data

LISREL Item Reliabilities, Factor Loadings, Composite Reliabilities and Average Variance Extracted

<table>
<thead>
<tr>
<th>Items</th>
<th>Item Reliabilities</th>
<th>Factor Loadings</th>
<th>Composite Reliability</th>
<th>Average Variance</th>
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<td><strong>Evaluative Impression</strong></td>
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<td>2.Likable</td>
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<td><strong>Expectations</strong></td>
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</tr>
<tr>
<td>1.Good Listener</td>
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<td>2.Spends Enough Time</td>
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<td>4.Speaks Clearly</td>
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Table 4.4 (Cont)

Pooled Data
LISREL Item Reliabilities, Factor Loadings, Composite Reliabilities and Average Variance Extracted

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<tr>
<th>Items</th>
<th>Item Reliabilities</th>
<th>Factor Loadings</th>
<th>Composite Reliability</th>
<th>Average Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disconfirmation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Caring nature</td>
<td>.45</td>
<td>.810</td>
<td>.73</td>
<td>.58</td>
</tr>
<tr>
<td>2. Trustworthy</td>
<td>.50</td>
<td>.710</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Capability</td>
<td>.54</td>
<td>.620</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Efficiency</td>
<td>.60</td>
<td>.774</td>
<td>.93</td>
<td>.64</td>
</tr>
<tr>
<td>2. Professionalism</td>
<td>.61</td>
<td>.781</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Trustworthy</td>
<td>.62</td>
<td>.789</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Caring nature</td>
<td>.68</td>
<td>.824</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Sympathetic</td>
<td>.56</td>
<td>.751</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ability to Understand Needs</td>
<td>.76</td>
<td>.873</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Capability</td>
<td>.67</td>
<td>.821</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi-Square with 252 Degrees of Freedom = 1614.26 (p < .001)
Chi-Square/df = 6.41
Goodness Of Fit Index = .742
Adjusted Goodness Of Fit Index = .692
Normed Fit Index = .74
Root Mean Square Residual = .291
performance scale, three in the disconfirmation scale and finally seven items in the satisfaction scale. All the scales had satisfactory composite reliabilities and average variances extracted.

The overall measurement model fit statistics for this sample were Chi-Square with 252 degrees of freedom 1614.26 with a p value < .001. The Normed Chi-Square was 6.41, GFI was .742 and AGFI was .692. The Normed Fit Index was .74 and the RMSR was .291.

The overall fit statistics indicated that the solution obtained for the Affect Group may be a better fit to the data compared to the model fit obtained for the Cognitive Group and the Pooled Data. Consequently, the twenty four items retained by the confirmatory factor analysis in the Affect Group were used in all further analyses, that is both in MANOVA and LISREL analyses.

It was felt necessary to include a common set of items across all disconfirmation model (expectations, perceived performance, disconfirmation and satisfaction) scales in order to facilitate judgements regarding the operation of the disconfirmation model in the study. Accordingly, it may be noted that there were three items (Trustworthy, Caring nature, Capability) common to all the scales in the disconfirmation model (i.e., expectations, perceived performance, disconfirmation and satisfaction), 3 additional items in the expectations scale, 1 additional item each in the perceived performance scale and the disconfirmation scale, and finally 2 additional items in the satisfaction scale (Table 4.2 and Table 4.3).

Although extensive pretesting was conducted to develop all the items, the confirmatory factor analysis necessitated eliminating a number of items. One reason for this may be that the video tape which depicted the doctor-patient interaction did not give out enough information to subjects to respond to all aspects of the measures. It may be recalled that the videotape was not developed at the time of the pretest. In fact, the development of the videotape was facilitated by the pretesting done. In the final analysis, it is possible that the subjects could not comprehend information pertaining to some of the items, from the scenario in the video tape. This loss of information may have caused the elimination of more items than
expected in the confirmatory analysis. The construct validity of the items retained by the confirmatory analysis will be addressed next.

Construct Validity

The study used only a single method to measure most of the proposed constructs. Consequently, both convergent and discriminant validities were assessed by looking at the pattern of correlations among various items used to measure all the constructs and also between-construct correlations. The within-construct correlations suggested that most of the items had high and significant correlations with other items measuring the same latent variable and low and non-significant correlations with items measuring other constructs in the model. One exception to this pattern was the perceived performance measure. Three items in the perceived performance measure had significantly high correlations with two of the items in the satisfaction measure (.72 and .61). The intercorrelation between performance and satisfaction suggested a slight lack of discriminant validity between those two constructs.

In addition to the within-construct correlations, the average variance extracted from each of the scales also provided evidence of good convergent validity (Fornell and Larcker 1981). As shown in Table 4.2, all the scales in the Affect Group exceeded the average variance extracted criterion of .5 (Bagozzi and Yi 1988).

A preliminary check on the discriminant validity of the measures was done by examining the off-diagonal elements in the phi matrix from the confirmatory factor analysis. The off-diagonal elements of the phi matrix represent between construct correlations and a less than one correlation between any two constructs provides evidence of discriminant validity of those measures (Bagozzi 1980). Table 4.5 summarizes the between construct correlations for the Affect Group. As can be seen from Table 4.5, all the correlations satisfy this condition. However, it should be noted that perceived performance had a high correlation with
Table 4.5

Between Construct Correlations for the Affect Group

<table>
<thead>
<tr>
<th></th>
<th>Performance</th>
<th>Disconfirmation</th>
<th>Satisfaction</th>
<th>Evaluative Impression</th>
<th>Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perf</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disc</td>
<td>.76 (0.04)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sat</td>
<td>.87 (0.02)</td>
<td>.71 (0.04)</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eimp</td>
<td>.48 (0.06)</td>
<td>.07 (0.07)</td>
<td>.36 (0.06)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Exp</td>
<td>.40 (0.06)</td>
<td>.23 (0.07)</td>
<td>.38 (0.06)</td>
<td>.54 (0.06)</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* standard errors in parenthesis
disconfirmation (.76) as well as with satisfaction (.87). Similarly, disconfirmation had a high
correlation with satisfaction (.71).

Two other tests were performed in addition to the one described above, in an attempt
to further estimate the extent of discriminant validity among all measures. First, a testing
procedure devised by Fornell and Larcker (1981) was utilized to test for discriminant validity.
According to Fornell and Larcker (1981) discriminant validity could be assessed by examining
whether the average variance extracted from two constructs exceeded the square of the
correlation between those constructs (Fornell and Larcker 1981). As can be seen from Table
4.2 and Table 4.3, the average variance extracted from the evaluative impression scale was
.68, which was greater than the square of the correlation between evaluative impression and
expectations (.29). The average variance extracted out of the expectations scale (.66) was
also greater than .29. The average variance extracted from perceived performance was .66
and the square of the correlation between performance and disconfirmation was .57, which
was also less than the average variance extracted out of disconfirmation (.64). The average
variance extracted out of satisfaction was .66 and the square of the correlation between
performance and satisfaction was .75, which falls short of the criterion. The average variance
extracted out of disconfirmation was .64 and the square of the correlation between
disconfirmation and satisfaction was .50, which was also less than the average variance
extracted out of the satisfaction measure.

The second test involved an assessment of confidence intervals (plus or minus two
standard deviations) around the phi correlation (Anderson and Gerbing 1988). Discriminant
validity of the measures is supported if the confidence interval around the correlation failed to
include a value of 1. The confidence interval for the correlation between evaluative impression
and expectations (.44, .64), between evaluative impression and perceived performance (.36,
.60), between evaluative impression and disconfirmation (-.07, .14), between evaluative
impression and satisfaction (.24, .48) did not include a value of 1. Similarly, the confidence
interval for the correlation between expectations and perceived performance (.28, .52),
between expectations and disconfirmation (.09, .37), between expectations and satisfaction
(.26, .50) did not include a value of 1. The confidence interval for the correlation between
perceived performance and disconfirmation (.68, .84), between perceived performance and
satisfaction (.83, .91) and between disconfirmation and satisfaction (.63, .79) suggested that
the measures achieved good discriminant validity.

In summary, except for the measures of perceived performance and satisfaction, all the
measures exhibited good discriminant validity. Correlated dependent variables may not pose
a big problem in MANOVA analysis since some degree of correlation is expected among
dependent variables in MANOVA, but high correlations among latent variables may pose a
problem in LISREL analysis. This problem will be addressed in detail in Chapter Five.

Apart from the scales retained by the confirmatory factor analysis, the MANOVA
analysis also used a manipulation check, interaction style, to test the success of the interaction
style manipulation. This scale was used only in the MANOVA analysis and the reliability of this
manipulation check was assessed through an internal consistency analysis. The details of the
reliability check on the interaction style measure will be presented next.

**Interaction Style**

There were eight items in the interaction style scale. All eight items were subjected
to an internal consistency analysis. Items with low item-total correlations (< .4) were removed
from the scale and the reliability was assessed again. This procedure yielded six items to be
used as a measure of interaction style in further analyses. These items were spent enough
time; spoke clearly; unfriendly; caring; sympathetic; and understood patient’s needs. The
reliability alpha for this scale, as calculated by the internal consistency method was .96. This
scale was used as a manipulation check for the interaction style manipulation. The details of
the MANOVA analysis will be provided next.
MANOVA Analysis

A 3 X 2 full factorial MANOVA analysis was performed on the experimental data to assess mean differences across cells due to treatment effects. First, the effects of manipulations will be addressed followed by the experimental results.

Manipulation Checks

Two treatment factors were manipulated in the study, evaluative Impression (positive, negative and neutral) and interaction Style (positive versus negative). The dependent variables of interest were perceived performance and satisfaction. Table 4.6 summarizes the effects of the manipulations and the analysis of the manipulation checks. All the manipulation check means were in the expected direction and significant differences were found across conditions.

The mean score of evaluative Impression manipulation check was significant ($F\{2,194\} = 41.91, p < .001$). Subjects in the positive evaluative impression group had significantly more positive perceptions of the physician compared to the neutral group (means 3.80, sd .69 compared to 3.30, sd .74, where 5 is positive and 1 is negative) or the negative group (means 3.80, sd .69 compared to 2.53, sd .64). Additionally, the neutral group had significantly more positive perceptions of the physician compared to the negative group (means 3.30, sd .74 compared to 2.53, sd .64).

The interaction style manipulation also was successful ($F\{1,195\} = 851.49, p < .001$). Subjects in the positive interaction style condition rated the physician higher on the interaction style scale (mean 4.01, sd .57 compared to 1.72, sd .52, where 5 is positive and 1 is negative).

The manipulation of affect versus cognition followed the methodology used by Sujan (1985). Response time was used as a manipulation check to assess the processing differences between the affect and the cognition group. The manipulation of affect versus cognition was
Table 4.6
Effects of Manipulations

<table>
<thead>
<tr>
<th>Manipulation Check</th>
<th>Means Across Conditions</th>
<th>F Value (df)</th>
<th>P &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos Neu Neg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluative Impression</td>
<td>3.80 3.30 2.53</td>
<td>41.91 (2,194)</td>
<td>.001</td>
</tr>
<tr>
<td>Pos Neg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction Style</td>
<td>4.01 1.72</td>
<td>851.49 (1,195)</td>
<td>.001</td>
</tr>
<tr>
<td>Affect Cognition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response Time</td>
<td>1.48 2.09</td>
<td>27.55 (1,195)</td>
<td>.001</td>
</tr>
</tbody>
</table>
found to be significant ($F_{[1,195]} = 27.55, p < .001$). Subjects in the affect group took significantly less time to arrive at their evaluative impression judgement (mean 1.48 seconds, sd .39 compared to 2.09 seconds, sd .89) than subjects in the cognitive group to arrive at the same judgement. Figure 4.1, 4.2 and 4.3 represent the evaluative impression, interaction style and affect manipulation check scale means graphically.

The manipulations of evaluative impression and interaction style were also examined to assess the degree of confounding between the two manipulations (Perdue and Summers 1986). According to Perdue and Summers (1986), any two manipulations are considered to be confounded if the effect of one manipulation inadvertently influences the impact of the second manipulation. In the context of the present study, the two manipulations would be confounded if the evaluative impression manipulation not only influenced subjects' perceptions of the impression of the physician, but also impacted the manipulation of interaction style. To check for the confounding effect, Perdue and Summers (1986) recommend that we assess the effect of one manipulation on other.

As suggested by Perdue and Summers (1986), a one-way ANOVA was conducted with interaction style as the dependent variable and the three evaluative impression conditions (positive, neutral and negative) and two interaction style conditions (positive versus negative) as treatment factors. A significant main effect due to the manipulation of interaction style, a non-significant main effect due to the manipulation of evaluative impression and a non-significant interaction effect between interaction style and evaluative impression would suggest a lack of confounding between interaction style manipulation and evaluative impression manipulation.

The results of the confounding check supported a main effect due to interaction style manipulation ($F_{[1,191]} = 920.13, p < .001$) with an effect size of .81. A main effect due to the manipulation of evaluative impression was also significant with ($F_{[2,191]} = 3.36, p < .037$) with an effect size of .004. An examination of the interaction between interaction style and
Figure 4.1. Manipulation Check Means: Evaluative Impression

Figure 4.2. Manipulation Check Means: Interaction Style
Figure 4.3. Manipulation Check Means for Affect
evaluative impression revealed a significant effect with \( F[2,191]=5.76, \ p < .004 \) and with an effect size of .008. The significance of results suggested that subjects responded to the interaction style manipulation check not only based on their reaction to the interaction style manipulation but also partially based on their reaction to the manipulation of evaluative impression.

However, Perdue and Summers (1986) also advocate the evaluation of the seriousness of the confounding when the confounding checks are significant.

...if the significance tests suggest that the manipulations are confounded, the researcher should evaluate whether the degree of confounding present is serious enough to impair an unambiguous evaluation of the results of the main experiment....when in the analysis of the manipulation check for A the effect sizes for B and AB are much smaller than that for A, their statistical significance probably should not be of great concern. (Perdue and Summers (1986) p.323).

The effect size for the interaction style manipulation, in the confounding check analysis was .81 as compared to the effect sizes of .004 and .008 for the evaluative impression manipulation and the interaction between evaluative impression and interaction style respectively. The magnitude of the effect size for the interaction style manipulation as compared to the effect sizes for both evaluative impression and the interaction suggests that the interaction style manipulation was independent of any serious confounding. Furthermore, if interaction style manipulation was confounded by the evaluative impression manipulation, perceptions of performance and satisfaction should be elevated in the positive evaluative impression/negative interaction style condition and should be attenuated in the negative evaluative impression/positive interaction style condition. However, as revealed in the hypotheses testing section (which will be discussed shortly), this was not the case. In both the conditions, subjects' perceptions of performance and satisfaction were independent of the direction of the evaluative impression manipulation. Based on the evidence of the magnitude of the effects and the independence of the two manipulations, it was concluded that confounding did not pose a problem in subsequent analyses.
The MANOVA Analysis

The MANOVA results suggested that the interaction between evaluative impression and interaction style was significant for both the dependent measures. The interaction effect will be addressed first, after which the main effects will be discussed.

Evaluative Impression X Interaction Style: An interaction between evaluative impression and interaction style was found to be significant ($F[4,382] = 3.74, p < .005$) with a Wilk’s Lamda of .92 and an effect size of .04. The significance of the interaction suggested that the effect of evaluative impression on perceived performance and satisfaction was mediated by interaction style. The interaction was ordinal in nature, with positive interaction style producing higher ratings of both perceived performance and satisfaction regardless of the evaluative impression condition. On the other hand, evaluative impression did exert some influence on perceived performance and satisfaction judgements in the negative interaction style condition. Figure 4.4 illustrates the nature of the interaction and the mean scores on both performance and satisfaction. The main effects of evaluative impression and interaction style will be detailed next.

Evaluative Impression: The results failed to support a main effect of evaluative impression on perceived performance and satisfaction with the physician. Informational conditions congruent with eliciting positive, neutral or negative evaluative impression did not result in significant differences in both perceived performance and satisfaction ($F[4,382] = 1.91, p < .107$) with a Wilk’s Lamda of .96. The significance of the interaction between evaluative impression and interaction style may have contributed to the lack of significance of a main effect of evaluative impression on perceived performance and satisfaction.

Interaction Style: A main effect for interaction style on perceived performance and satisfaction was supported ($F[2,190] = 513.07, p < .001$) with a Wilk’s Lamda of .15 and an effect size of .84. Subjects’ perceptions of the interaction style were significantly different in the positive interaction style condition compared to their counterparts in the negative
Figure 4.4. Dependent Measures for Evaluative Impression and Interaction Style
interaction style group. Table 4.7 summarizes the MANOVA results across all dependent variables.

A step-down analysis was also performed to assess the incremental variance explained in each of the dependent measures by the treatment factors. The step-down F test for the interaction effect suggested a significant effect for both perceived performance with \( F[2,191] = 4.34, p < .014 \) and satisfaction \( F[2,190] = 3.26, p < .040 \).

The step-down F test for the interaction style effect revealed a significant effect for both perceived performance \( F[1,191] = 844.54, p < .001 \) and satisfaction \( F[1,190] = 34.31, p < .001 \). In summary, the step-down analysis suggested that both the interaction between evaluative impression and interaction style, and interaction style had an independent, additive effect on both perceived performance and satisfaction. Due to the significance of the interaction effect, evaluative impression failed to impact either perceived performance or satisfaction with the physician. To explore the results further, separate analysis of variance were conducted for each of the dependent variables. Due to the significance of the interaction effect, the interaction effects will be described first followed by main effects. A summary of individual cell means is provided in Table 4.8 for ready reference. Table 4.9 provides a summary of proposed hypotheses for the dependent variable, perceived performance.

**Interaction Effects: Perceived Performance**

Hypothesis 4 through 6 proposed a significant interaction between evaluative impression and interaction style. Positive evaluative impression/positive interaction style condition was hypothesized to create more positive perceptions of performance compared to:

(a) negative evaluative impression/negative interaction style condition (Hypothesis 4a)

(b) negative evaluative impression/positive interaction style condition (Hypothesis 4b)
### Table 4.7

**Multivariate and Univariate Analysis of Variance Results**

<table>
<thead>
<tr>
<th>Treatment Variables</th>
<th>Criterion Variables</th>
<th>Wilks' Lambda</th>
<th>F Value</th>
<th>df</th>
<th>P &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evaluative Impression</strong></td>
<td>Perceived Performance, Satisfaction</td>
<td>.96</td>
<td>1.91</td>
<td>4,382</td>
<td>.107</td>
</tr>
<tr>
<td><strong>Interaction Style</strong></td>
<td>Perceived Performance, Satisfaction</td>
<td>.15</td>
<td>513.07</td>
<td>2,190</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Evaluative Impression X Interaction Style</strong></td>
<td>Perceived Performance, Satisfaction</td>
<td>.92</td>
<td>3.74</td>
<td>4,382</td>
<td>.005</td>
</tr>
<tr>
<td><strong>Univariate</strong></td>
<td><strong>Evaluative Impression</strong></td>
<td>Perceived Performance</td>
<td>_</td>
<td>2.03</td>
<td>2,191</td>
</tr>
<tr>
<td></td>
<td>Satisfaction</td>
<td>_</td>
<td>2.48</td>
<td>2,191</td>
<td>.086</td>
</tr>
<tr>
<td><strong>Interaction Style</strong></td>
<td>Perceived Performance</td>
<td>_</td>
<td>844.54</td>
<td>1,191</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Satisfaction</td>
<td>_</td>
<td>918.12</td>
<td>1,191</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Evaluative Impression X Interaction Style</strong></td>
<td>Perceived Performance</td>
<td>_</td>
<td>4.34</td>
<td>2,191</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td>Satisfaction</td>
<td>_</td>
<td>7.55</td>
<td>2,191</td>
<td>.001</td>
</tr>
</tbody>
</table>
Table 4.8
A Summary of Cell Means

**Evaluative Impression**

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction Style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.28*</td>
<td>3.90</td>
<td>4.00</td>
</tr>
<tr>
<td>4.31**</td>
<td>3.73</td>
<td>3.97</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.49</td>
<td>1.72</td>
<td>1.37</td>
</tr>
<tr>
<td>1.35</td>
<td>1.57</td>
<td>1.32</td>
</tr>
</tbody>
</table>

* Means for Perceived Performance
** Means for Satisfaction
Table 4.9
A Summary of Proposed Hypotheses for Perceived Performance

The Impact of Evaluative Impression on Perceived Performance

H1a. A positive evaluative impression will create more positive perceptions of performance compared to a negative evaluative impression.

H1b. A positive evaluative impression will create more positive perceptions of performance compared to a neutral evaluative impression.

H2. A neutral evaluative impression will create more positive perceptions of performance compared to a negative evaluative impression.

The Impact of Interaction Style on Perceived Performance

H3. A positive interaction style will create more positive perceptions of performance compared to a negative interaction style.

The Impact of Evaluative Impressions and Interaction Style on Perceived Performance

H4a. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.

H4b. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H4c. A positive evaluative impression/positive interaction style will create more positive perceptions of performance compared to a neutral evaluative impression/positive interaction style.

H5a. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.

H5b. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H5c. A positive evaluative impression/negative interaction style will create more positive perceptions of performance compared to a neutral evaluative impression/negative interaction style.

H6a. A neutral evaluative impression/positive interaction style will create more positive perceptions of performance compared to a negative evaluative impression/positive interaction style.

H6b. A neutral evaluative impression/negative interaction style will create more positive perceptions of performance compared to a negative evaluative impression/negative interaction style.
Hypothesis 4c).

The analysis of variance results provided mixed support for the hypotheses. The positive evaluative impression/positive interaction style condition generated significantly different perceptions of performance compared to the negative evaluative impression/negative interaction style condition ($F[1,64] = 282.20, p = <.001$) with an effect size of .81. The magnitude of the effect was computed (Keppel 1985), using the formula:

$$\omega^2 = \frac{SS_{\text{effect}} - (df_{\text{effect}}) (MS_{\text{error}})}{MS_{\text{error}} + SS_{\text{total}}}$$

Subjects in the positive evaluative impression/positive interaction style condition perceived the physician more positively than subjects in the negative evaluative impression/negative interaction style condition (Means 4.28 versus 1.72, sd .60 and .63 respectively). Thus, Hypothesis 4a was supported.

There were also significant differences in perceptions of performance between the positive evaluative impression/positive interaction style condition and the negative evaluative impression/positive interaction style condition ($F[1,64] = 5.45, p < .023$), with an effect size of .06. Subjects in the positive evaluative impression/positive interaction style condition generated significantly higher perceptions of performance compared to the negative evaluative impression/positive interaction style condition (Means 4.28 versus 3.90, sd .60 and .65 respectively). Thus, Hypothesis 4b was supported.

Hypothesis 4c proposed a significant difference between positive evaluative impression/positive interaction style and neutral evaluative impression/positive interaction style conditions. The analysis of variance results supported this hypothesis only marginally ($F[1,64] = 3.00, p < .088$). There were marginal differences in the perceptions of performance among positive evaluative impression/positive interaction style subjects and neutral evaluative
impression/positive interaction style subjects (Means 4.28 versus 4.00, sd .60 and .56 respectively). Thus, Hypothesis 4c received only weak support.

It was also hypothesized that the positive evaluative impression/negative interaction style condition would generate significantly more positive perceptions of performance compared to:

(a) negative evaluative impression/negative interaction style
   (Hypothesis 5a)

(b) negative evaluative impression/positive interaction style
   (Hypothesis 5b)

(c) neutral evaluative impression/negative interaction style condition (Hypothesis 5c).

No significant differences were found between the positive evaluative impression/negative interaction style condition and the negative evaluative impression/negative interaction style condition (F[1,63] = 2.47, p < .121). Subjects in the positive evaluative impression/negative interaction style condition perceived the physician to be lower in performance compared to the subjects in the negative evaluative impression/negative interaction style condition (Means 1.49 versus 1.72, sd .59 and .63 respectively). Thus, Hypothesis 5a was not supported.

The analysis of variance results achieved significance for differences among the positive evaluative impression/negative interaction style condition and the negative evaluative impression/positive interaction style condition (F[1,63] = 237.60, p < .001) with an effect size of .78. However, examination of the means suggested that the effect was in opposite direction to that proposed. Contrary to Hypothesis 5b, negative evaluative impression/positive interaction style subjects generated higher perceptions of performance compared to their counterparts in the positive evaluative impression/negative interaction style condition (Means 1.49 versus 3.90, sd .59 and .65 respectively). Thus, Hypothesis 5b was not supported.
Hypothesis 5c proposed significant differences in perceived performance between the positive evaluative impression/negative interaction style condition and the neutral evaluative impression/negative interaction style condition. The difference was not supported ($F[1,63] = .82, p < .369$), although the means suggested that the subjects in the positive evaluative impression/negative interaction style condition perceived the physician to be slightly better in performance compared to those in neutral evaluative impression/negative interaction style condition (Means 1.49 versus 1.37, sd .59 and .41 respectively). Thus, Hypothesis 5c was not supported.

Hypothesis 6a proposed significant differences in perceived performance among subjects in the neutral evaluative impression/positive interaction style and the negative evaluative impression/positive interaction style condition. Analysis of variance results failed to support the proposed differences ($F[1,64] = .33, p < .567$). Subjects in the neutral evaluative impression/positive interaction style condition did not perceive the physician to be significantly better in performance than subjects in the negative evaluative impression/positive interaction style condition (Means 4.00 versus 3.90, sd .55 and .65 respectively). Thus, Hypothesis 6a was not supported.

Hypothesis 6b proposed that subjects in the neutral evaluative impression/negative interaction style condition would perceive higher levels of performance than their counterparts in the negative evaluative impression/negative interaction style condition. The analysis of variance results suggested significant differences among the groups ($F[1,64] = 6.39, p < .014$) with an effect size of .08. However, a closer examination of the means revealed that the difference was in the opposite direction to that proposed. Subjects in the neutral evaluative impression/negative interaction style condition had significantly lower perceptions of performance compared to those in negative evaluative impression/negative interaction style condition (Means 1.37 versus 1.72, sd .41 and .63 respectively). Thus, Hypothesis 6b was not supported.
Main Effects: Perceived Performance

Hypothesis 1a proposed that more favorable perceptions of performance would be generated in the positive evaluative impression condition, compared to negative evaluative impression condition. The analysis of variance results with perceived performance as the dependent variable, failed to support a main effect of evaluative impression on perceived performance. The positive evaluative impression condition did not generate significantly different perceptions of performance compared to negative evaluative impression condition ($F[1,64] = .13, p < .716$). An examination of the means revealed that the positive evaluative impression condition generated slightly more positive perceptions of performance (Mean = 2.90, sd = .60) compared to negative evaluative impression (Mean = 2.81, sd = .65). Thus, Hypothesis 1a was not supported.

Hypothesis 1b proposed that more favorable perceptions of performance would be created as a result of a positive evaluative impression compared to a neutral evaluative impression. The analysis of variance results failed to achieve significance ($F[1,64] = .69, p < .408$). The means were not significantly different across the two conditions (2.90 versus 2.69, sd .56 and .75 respectively), suggesting that subjects in the positive evaluative impression condition did not differ from their counterparts in the neutral evaluative impression condition in their perceptions of performance of the physician. Thus, Hypothesis 1b was not supported.

Hypothesis 2 proposed that more favorable perceptions of performance would be generated in the neutral evaluative impression condition compared to the negative evaluative impression condition. A test of this hypothesis failed to achieve significance ($F[1,64] = .28, p < .601$). Subjects in the neutral evaluative impression condition did not perceive the physician differently than the subjects in the negative evaluative impression condition (Means 2.69 versus 2.81, sd .56 and .65 respectively). Thus, Hypothesis 2 was not supported.
Hypothesis 3 proposed a significant main effect of interaction style on perceived performance. Specifically, it was hypothesized that positive interaction style would generate higher perceptions of performance compared to negative interaction style. The analysis of variance results supported a significant main effect between the two groups ($F[1,195] = 811.46, p < .001$) with an effect size of $.80$. Subjects in the positive interaction style condition perceived the physician to perform better compared to the subjects in the negative interaction style condition (Means 4.06 versus 1.53, sd .61 and .58). Thus, Hypothesis 3 is supported. Table 4.10 summarizes the results for perceived performance.

**Satisfaction**

Table 4.11 provides a summary of proposed hypotheses for the dependent variable, satisfaction. The proposed hypotheses for the dependent variable, satisfaction, followed the same reasoning as that of perceived performance. The analysis of variance results followed the same pattern with few exceptions. Once again, the interaction effects will be detailed first followed by main effects.

**Interaction Effects: Satisfaction**

Hypothesis 10 through 12 proposed a significant interaction between evaluative impression and interaction style in explaining satisfaction with the physician. Positive evaluative impression/positive interaction style condition was hypothesized to create more satisfaction compared to:

(a) negative evaluative impression/negative interaction style condition (Hypothesis 10a)

(b) negative evaluative impression/positive interaction style condition (Hypothesis 10b)
<table>
<thead>
<tr>
<th>Proposed Hypotheses</th>
<th>Cells</th>
<th>Means</th>
<th>F Value (p &lt; )</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Impact of Evaluative Impression on Perceived Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1a. 1 + 2 &gt; 3 + 4</td>
<td>2.90 &gt; 2.81</td>
<td>.13 (.716)</td>
<td>Not Supported</td>
<td></td>
</tr>
<tr>
<td>1b. 1 + 2 &gt; 5 + 6</td>
<td>2.90 &gt; 2.69</td>
<td>.69 (.408)</td>
<td>Not Supported</td>
<td></td>
</tr>
<tr>
<td>H2. 5 + 6 &gt; 3 + 4</td>
<td>2.69 &gt; 2.81</td>
<td>.28 (.601)</td>
<td>Not Supported</td>
<td></td>
</tr>
<tr>
<td>The Impact of Interaction Style on Perceived Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3. 1 + 3 + 5 &gt; 2 + 4 + 6</td>
<td>4.06 &gt; 1.53</td>
<td>811.46 (.001)</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>The Impact of Evaluative Impression and Interaction Style on Perceived Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H4a. 1 &gt; 4</td>
<td>4.28 &gt; 1.72</td>
<td>282.20 (.001)</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>4b. 1 &gt; 3</td>
<td>4.28 &gt; 3.90</td>
<td>5.45 (.023)</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>4c. 1 &gt; 5</td>
<td>4.28 &gt; 4.00</td>
<td>3.00 (.088)</td>
<td>Marginally Supported</td>
<td></td>
</tr>
<tr>
<td>H5a. 2 &gt; 4</td>
<td>1.49 &lt; 1.72</td>
<td>2.47 (.121)</td>
<td>Not Supported</td>
<td></td>
</tr>
<tr>
<td>5b. 2 &gt; 3</td>
<td>1.49 &lt; 3.90</td>
<td>237.60 (.001)</td>
<td>Supported (Wrong Direction)</td>
<td></td>
</tr>
<tr>
<td>5c. 2 &gt; 6</td>
<td>1.49 &gt; 1.37</td>
<td>.82 (.369)</td>
<td>Not Supported</td>
<td></td>
</tr>
<tr>
<td>H6a. 5 &gt; 3</td>
<td>4.00 &gt; 3.90</td>
<td>.33 (.567)</td>
<td>Not Supported</td>
<td></td>
</tr>
<tr>
<td>6b. 6 &gt; 4</td>
<td>1.37 &lt; 1.72</td>
<td>6.39 (.014)</td>
<td>Not Supported (Wrong Direction)</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.11
A Summary of Proposed Hypotheses for Satisfaction

The Impact of Evaluative Impression on Satisfaction

H7a. A positive evaluative impression will create more positive perceptions of satisfaction compared to a negative evaluative impression.

H7b. A positive evaluative impression will create more positive perceptions of satisfaction compared to a neutral evaluative impression.

H8. A neutral evaluative impression will create more positive perceptions of satisfaction compared to a negative evaluative impression.

The Impact of Interaction Style on Satisfaction

H9. A positive interaction style will create more positive perceptions of satisfaction compared to a negative interaction style.

The Impact of Evaluative Impressions and Interaction Style on Satisfaction

H10a. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.

H10b. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H10c. A positive evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a neutral evaluative impression/positive interaction style.

H11a. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.

H11b. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H11c. A positive evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a neutral evaluative impression/negative interaction style.

H12a. A neutral evaluative impression/positive interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/positive interaction style.

H12b. A neutral evaluative impression/negative interaction style will create more positive perceptions of satisfaction compared to a negative evaluative impression/negative interaction style.
(c) neutral evaluative impression/positive interaction style condition
(Hypothesis 10c).

The analysis of variance results provided partial support for the hypotheses. The positive evaluative impression/positive interaction style condition generated significantly different perceptions of satisfaction compared to the negative evaluative impression/negative interaction style condition ($F[1,64] = 385.75, p < .001$), with an effect size of .85. Subjects in the positive evaluative impression/positive interaction style condition were more satisfied with the physician than subjects in the negative evaluative impression/negative interaction style condition (Means 4.31 versus 1.57, sd .56 and .57 respectively). Thus, Hypothesis 10a was supported.

The positive evaluative impression/positive interaction style condition also generated significantly different levels of satisfaction compared to the negative evaluative impression/positive interaction style condition ($F[1,64] = 12.15, p < .001$), with an effect size of .14. Subjects in the positive evaluative impression/positive interaction style condition generated significantly higher levels of satisfaction compared to the negative evaluative impression/positive interaction style condition (Means 4.31 versus 3.73, sd .56 and .75 respectively). Thus, Hypothesis 10b was supported.

Hypothesis 10c proposed a significant difference in satisfaction between the positive evaluative impression/positive interaction style and neutral evaluative impression/positive interaction style conditions. The analysis of variance results supported the hypothesis ($F[1,64] = 4.85, p < .031$). There were significant differences in satisfaction levels of positive evaluative impression/positive interaction style subjects and neutral evaluative impression/positive interaction style subjects (Means 4.31 versus 3.97, sd .56 and .67 respectively). Thus, Hypothesis 10c was supported. It may be pointed out that the same hypothesis with perceived performance as dependent variable was only marginally supported. The results suggested that though subjects perceived the performance of the physician to be
only marginally different between the positive evaluative impression/positive interaction style condition and the neutral evaluative impression/positive interaction style condition, they were nevertheless more satisfied in the former condition than in the later condition. The interaction between evaluative impression and interaction style may be one reason for the different pattern of results obtained between perceived performance and satisfaction.

The positive evaluative impression/negative interaction style condition was also hypothesized to generate significantly higher levels of satisfaction compared to:

(a) negative evaluative impression/negative interaction style (Hypothesis 11a)

(b) negative evaluative impression/positive interaction style (Hypothesis 11b)

(c) neutral evaluative impression/negative interaction style condition (Hypothesis 11c).

No significant differences were found between the positive evaluative impression/negative interaction style condition and the negative evaluative impression/negative interaction style condition ($F_{1,63} = 2.79, p < .100$). The means of the satisfaction judgements showed that the subjects in the positive evaluative impression/negative interaction style condition were slightly less satisfied with the physician than the subjects in the negative evaluative impression/negative interaction style condition (Means 1.35 versus 1.57, sd .42 and .56 respectively). Thus, Hypothesis 11a was not supported.

Significant differences were found between the positive evaluative impression/negative interaction style condition and the negative evaluative impression/positive interaction style condition in satisfaction judgements ($F_{1,63} = 210.85, p < .001$) with an effect size of .76. However, examination of the means suggested that the effect was in opposite direction to that proposed. Contrary to Hypothesis 11b, negative evaluative impression/positive interaction style subjects generated more satisfaction compared to their counterparts in the positive
evaluative impression/negative interaction style condition (Means 1.35 versus 3.73, sd .42 and .75 respectively). It may be recalled that the same result was obtained with perceived performance as dependent variable also. Hypothesis 11b was not supported.

Hypothesis 11c proposed significant differences in satisfaction between the positive evaluative impression/negative interaction style condition and the neutral evaluative impression/negative interaction style condition. The difference was not supported (F[1,63] = .04, p < .840). The means of the satisfaction scale suggested that the subjects in the positive evaluative impression/negative interaction style condition were slightly less satisfied with the physician compared to those in neutral evaluative impression/negative interaction style condition (Means 1.35 versus 1.32, sd .42 and .31 respectively). Thus, Hypothesis 11c was not supported.

Hypothesis 12a proposed significant differences in satisfaction between subjects in neutral evaluative impression/positive interaction style and negative evaluative impression/positive interaction style condition. Analysis of variance results failed to support the proposed hypothesis (F[1,64] = 1.76, p < .190). Subjects in the neutral evaluative impression/positive interaction style condition were not significantly more satisfied with the physician than subjects in the negative evaluative impression/positive interaction style condition (Means 3.97 versus 3.73, sd .67 and .75 respectively). Thus, Hypothesis 12a was not supported.

Hypothesis 12b proposed that subjects in the neutral evaluative impression/negative interaction style condition would be more satisfied with the physician than their counterparts in the negative evaluative impression/negative interaction style condition. The analysis of variance results suggested significant differences among the groups (F[1,64] = 4.08, p < .047) with an effect size of .04. However, a closer examination of the means revealed that the difference was in the opposite direction to that proposed. Subjects in the neutral evaluative impression/negative interaction style condition were less satisfied with the physician
Main Effects: Satisfaction

Hypothesis 7a proposed that higher levels of satisfaction would be generated for positive evaluative impression subjects compared to negative evaluative impression subjects. The analysis of variance results with satisfaction as the dependent variable, showed no significant differences between the positive evaluative impression condition and the negative evaluative impression condition ($F[1,64] = .64, p < .426$). The positive evaluative impression condition generated slightly more satisfaction (Mean = 2.85, $sd = .56$) compared to negative evaluative impression (Mean = 2.65, $sd = .75$). Thus, Hypothesis 7a was not supported.

Hypothesis 7b proposed that higher levels of satisfaction would be generated by subjects in the positive evaluative impression condition compared to subjects in the neutral evaluative impression condition. The analysis of variance results failed to achieve significance ($F[1,64] = .59, p < .443$). The means were not significantly different across the two conditions (2.85 versus 2.65, $sd .56$ and .67 respectively), suggesting that subjects in the positive evaluative impression condition did not differ significantly from their counterparts in the neutral evaluative impression condition in their judgement of satisfaction with the physician. Hypothesis 7b thus was not supported.

Hypothesis 8 proposed that higher levels of satisfaction would be generated in the neutral evaluative impression condition compared to the negative evaluative impression condition. A test of this hypothesis failed to achieve significance ($F[1,64] = .00, p < .99$). Subjects in the neutral evaluative impression condition did not differ significantly in their perceptions of satisfaction with the physician, from the subjects in the negative evaluative
impression condition (Means 2.65 versus 2.65, sd .67 and .75 respectively). Thus, Hypothesis 8 was not supported.

Hypothesis 9 proposed a significant main effect of interaction style on satisfaction. It was hypothesized that positive interaction style would generate higher levels of satisfaction compared to negative interaction style. The analysis of variance results supported a significant main effect between the two groups (F[1,195] = 852.84, p <.001) with an effect size of .81. Subjects in the positive interaction style condition were more satisfied with the physician compared to subjects in the negative interaction style condition (Means 4.00 versus 1.41, sd .68 and .45). Thus, Hypothesis 9 was supported. Table 4.12 summarizes the results for satisfaction.

As mentioned earlier, the second and third research questions, the relative importance of affective and cognitive variables in explaining service encounter satisfaction, and the adequacy of the disconfirmation framework to explain service encounter satisfaction, were examined by structural equation analysis. LISREL VII (Joreskog and Sorbom 1989) was used to examine the proposed hypotheses and will be described in detail in the next section.

**LISREL Analysis**

It may be recalled that additional data was collected in two of the cells, positive evaluative impression/positive interaction style (the Affect Group) and neutral evaluative impression/positive interaction style (the Cognitive Group). The objective was to examine the second and third research questions, the relative importance of cognitive versus affective variables in explaining service encounter satisfaction and the adequacy of the disconfirmation model in explaining satisfaction with professional services. The interaction style of the physician was held constant across the two conditions and the samples were similar in all respects except for their focus on different levels of evaluative impression (Positive versus
### Table 4.12
Summary Of Results For Satisfaction

<table>
<thead>
<tr>
<th>Proposed Cells</th>
<th>Hypotheses</th>
<th>Means</th>
<th>F Value (P &lt; )</th>
<th>$\omega^2$</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H7a. $1 + 2 &gt; 3 + 4$</td>
<td>2.85 &gt; 2.65</td>
<td>.64 (.426)</td>
<td>-</td>
<td>Not Supported</td>
</tr>
<tr>
<td></td>
<td>H7b. $1 + 2 &gt; 5 + 6$</td>
<td>2.85 &gt; 2.65</td>
<td>.59 (.443)</td>
<td>-</td>
<td>Not Supported</td>
</tr>
<tr>
<td></td>
<td>H8. $5 + 6 &gt; 3 + 4$</td>
<td>2.65 &gt; 2.65</td>
<td>.00 (.990)</td>
<td>-</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

**The Impact of Evaluative Impression on Satisfaction**

- H9. $1 + 3 + 5 > 2 + 4 + 6$ 4.00 > 1.41 852.84 (.001) .81 Supported

**The Impact of Interaction Style on Satisfaction**

- H10a. $1 > 4$ 4.31 > 1.57 385.75 (.001) .85 Supported
- H10b. $1 > 3$ 4.31 > 3.73 12.15 (.001) .14 Supported
- H10c. $1 > 5$ 4.31 > 3.97 4.85 (.031) .05 Supported

**The Impact of Evaluative Impression and Interaction Style on Satisfaction**

- H11a. $2 > 4$ 1.35 < 1.57 2.79 (.100) - Not Supported
- H11b. $2 > 3$ 1.35 < 3.73 210.85 (.001) .76 Not Supported (Wrong Direction)
- H11c. $2 > 6$ 1.35 > 1.32 .04 (.840) - Not Supported
- H12a. $5 > 3$ 3.97 > 3.73 1.76 (.190) - Not Supported
- H12b. $6 > 4$ 1.32 < 1.57 4.08 (.047) .04 Not Supported (Wrong Direction)
Neutral. It may also be recalled that interaction style was hypothesized to be one dimension of performance and a high correlation was found between these two measures. To overcome the problem of biased estimates due to high collinearity and also because a separate measure of interaction style would not add to the explanatory ability of the model in any way since it was held constant, it was deemed appropriate to pool the interaction style measure with the performance measure and treat performance as a bidimensional construct with personal and professional qualities of the physician as the two dimensions of interest.

LISREL VII (Joreskog and Sorbom 1989) was used to estimate the Full Model in both the groups. The 24 items retained by the confirmatory factor analysis as reported earlier were used in analyzing data in the LISREL analysis. First, a competing models approach was used to evaluate the overall fit of the competing models (affect-based versus disconfirmation), along with the Full Model in both the samples. In the second stage, a stacked approach was utilized to compare specific structural relationships across groups. To investigate the structural relationships in the proposed model, both the structural and measurement models were estimated simultaneously. In each of the scales, the loading for the most reliable item was fixed at 1 and the measurement errors were left to be free. The tests of the competing models will be detailed next, followed by the tests of proposed hypotheses.

Competing Models Analysis

An argument was made throughout the dissertation that because health care services are high on credence qualities, an affect-based model is more appropriate to explain service encounter satisfaction than the cognitively driven model of disconfirmation of expectations. To test the explanatory ability of the affect-based model as compared to the disconfirmation model and also test the third research question of the adequacy of the disconfirmation approach to model service encounter satisfaction, a competing models approach was used in both the groups. In the Affect Group, the full model of service encounter satisfaction as
shown in Figure 4.5 was analyzed first. Next, the affect-based model (Figure 4.6) was estimated. This was followed by estimating the disconfirmation model (Figure 4.7). The same procedure was followed in the Cognitive Group also. The full model and the two competing models are presented in Figure 4.5, 4.6 and 4.7 respectively. The results of the competing models analysis will be detailed next, first for the Affect Group and then for the Cognitive Group.

The Affect Group

The Affect group pertained to the positive evaluative impression manipulation. It may be recalled that the only difference between the Affect group and the Cognitive group was the emphasis on evaluative impression. In the Affect group, evaluative impression was experimentally manipulated to be positive whereas in the Cognitive group evaluative impression was manipulated to be neutral. The experimental conditions were similar in all other aspects.

The full model of service encounter satisfaction as shown in Figure 4.5 was estimated for the Affect Group with all the parameters set free. The overall fit indices for the full model suggested that the fit of the model could be improved. The Chi-Square of 458.86 with 242 degrees of freedom was significant \( (p < .001) \). The Normed Chi-Square (Carmines and McIver, 1981) of 1.89, the GFI of .848, the AGFI of .812 and NFI of .880 were reasonably close to the prespecified criteria. As the intention of performing a competing models analysis was intermodel comparisons, the Parsimonious Fit Index (PFI) was also calculated using the formula detailed in Chapter Three (p.131). The PFI for the Full Model was .77. The RMSR value of .05 and the total coefficient of determination for the structural equations of .474 were satisfactory. A summary of the overall fit statistics can be found in Table 4.13.

Next, the affect-based model as shown in Figure 4.6 was estimated. The affect-based model was composed of a single exogenous variable of evaluative impression and two endogenous variables of perceived performance and satisfaction. The Chi-Square of 156.83
Figure 4.5. Hypothesized Relationships among Model Components: The Full Model
Figure 4.6. Hypothesized Relationships among Model Components: 
The Affect-Based Model
Figure 4.7. Hypothesized Relationships among Model Components:
The Disconfirmation Model
with 74 degrees of freedom was significant (p < .001). The Normed Chi-Square of 2.11, the GFI of .903 and NFI of .96 satisfied the prespecified criteria for a good fit. However, the AGFI of .863 was reasonably close to the prespecified criteria. The PFI of .78 indicated that there was a slight gain in parsimony (i.e. a difference of .01) as we move from the Full Model to the affect-based model. The RMSR value of .04 was satisfactory but the total coefficient of determination for the structural equations of .245 suggested that the model may have been underspecified.

The disconfirmation model was hypothesized to be a function of a single exogenous variable of expectations and three endogenous variables of perceived performance, disconfirmation and satisfaction. The overall fit indices suggested a significant drop in the fit of the model as compared to the affect-based model. The Chi-Square of 283.43 with 146 degrees of freedom was significant at p < .001. The Normed Chi-Square of 1.94, the GFI of .88 and AGFI of .844 were reasonably close to the prespecified criteria. The NFI of .92 satisfied the prespecified criterion. The PFI of .76 indicated that there was no gain in parsimony in the disconfirmation model compared to either the Full Model or the affect-based model. The RMSR value of .05 and the total coefficient of determination for the structural equations of .186 suggested that the fit may be improved. A summary of overall fit indices and difference in Chi-Square values can be found in Table 4.13.

**The Cognitive Group**

The Cognitive Group differed from the Affect Group in its emphasis on evaluative impression. In the Cognitive Group, evaluative impression was manipulated to be neutral and care was taken to ensure that subjects used cognitive processes in judging their satisfaction with the physician. It may be recalled from the discussion in the MANOVA section that the response time manipulation check to assess differences between the affect group and the cognitive group was significant (Table 4.6). Apart from this manipulation of affect, the data
Table 4.13
Overall Fit Indices for the Structural Models

<table>
<thead>
<tr>
<th></th>
<th>THE AFFECT GROUP</th>
<th></th>
<th>THE COGNITIVE GROUP</th>
<th></th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Competing Models</td>
<td></td>
<td>Competing Models</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Full Model</td>
<td>Affect-Based</td>
<td>Disconfirmation</td>
<td>The Full Model</td>
</tr>
<tr>
<td>Chi-Square</td>
<td>458.86*</td>
<td>156.83*</td>
<td>283.43*</td>
<td>747.30*</td>
</tr>
<tr>
<td>DF</td>
<td>242</td>
<td>74</td>
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<td>242</td>
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<tr>
<td>PFI</td>
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<td>.78</td>
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<td>.68</td>
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<tr>
<td>Normed Chi-Square</td>
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<td>1.94</td>
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<tr>
<td>GFI</td>
<td>.848</td>
<td>.903</td>
<td>.880</td>
<td>.723</td>
</tr>
<tr>
<td>AGFI</td>
<td>.812</td>
<td>.863</td>
<td>.844</td>
<td>.657</td>
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<tr>
<td>NFI</td>
<td>.880</td>
<td>.960</td>
<td>.90</td>
<td>.780</td>
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<tr>
<td>RMSR</td>
<td>.050</td>
<td>.040</td>
<td>.049</td>
<td>.086</td>
</tr>
<tr>
<td>TCD$</td>
<td>.474</td>
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<tr>
<td>Disconfirmation#</td>
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<td>-</td>
<td>.578</td>
<td>.476</td>
</tr>
<tr>
<td>Satisfaction#</td>
<td>.766</td>
<td>.757</td>
<td>.764</td>
<td>.495</td>
</tr>
</tbody>
</table>

* Significant at p < .001
$ Total Coefficient of Determination For Structural Equations
# Squared Multiple Correlations for Each Dependent Variable
was similar in both the groups in every other respect. Due to the cognitive processes involved, this group was hypothesized to follow the disconfirmation paradigm more closely.

The overall fit statistics for the Full Model (Figure 4.5) are summarized in Table 4.13. The Full Model in the Cognitive Group had a Chi-Square of 747.30 with 242 degrees of freedom and was significant at p < .001. The Normed Chi-Square of 3.0, the GFI of .723, AGFI of .657 and NFI of .780 failed to meet the preset criteria for a good model fit. The PFI for the Full Model in the Cognitive Group was .68. The RMSR was .086 and the total coefficient of determination for the structural equations was .203, both of which again fell short of preset criteria.

The affect-based model (Figure 4.6) was estimated next. The overall fit indices for the affect-based model suggested an improvement in the fit compared to the full model. The affect-based model had a Chi-Square of 248.47 with 74 degrees of freedom and was significant at p < .001. The Normed Chi-Square of 3.35, the GFI of .829 and the AGFI of .758 fell short of the prespecified criteria. However, the NFI of .92 suggested a good fit. The PFI of .74 (i.e. a difference of .06) suggested a considerable gain in parsimony as we move from the Full Model to the affect-based model. The RMSR of .09 and the total coefficient of determination for structural equations of .065 were far from satisfactory.

The disconfirmation model (Figure 4.7) was estimated next. The overall fit indices suggested a slight improvement in the fit as compared to the full model. The Chi-Square of 510.27 with 146 degrees of freedom was significant at p < .001. The Normed Chi-Square of 3.49, the GFI of .746, the NFI of .83 and the AGFI of .669 fell short of the preset criteria for good model fit. The PFI of .70 (i.e. a difference of .02) indicated a slight gain in parsimony as compared to the Full Model but was less than the PFI for the affect-based model. The RMSR value of .09 and the total coefficient of determination for the structural equations of .122 suggested that the model may have been underspecified.
Although the fit statistics suggest that the affect-based model did better than the full model or the disconfirmation model, all of the indices of fit (Normed Chi-Square, GFI, AGFI, RMSR and the Total Coefficient of Determination) suggested that both the affect-based model and the disconfirmation model performed poorly in the Cognitive Group.

In summary, the overall fit indices suggest that the affect-based model out-performs both the Full Model and the disconfirmation model in the Affect Group and both the affect-based model and the disconfirmation model out-perform the Full Model in the Cognitive Group. For the Cognitive Group, the affect-based model fits the data better than the disconfirmation model. While none of the models fit the data very well, both the alternative models performed better than the Full Model in both the groups. Although the improvement in fit for the affect-based model compared to the full model was predicted in the Affect Group, the lack of good fit for either of the models in the Cognitive Group suggests some underspecification. The overall fit indices point to the possibility that the disconfirmation model may not be adequate to explain service encounter satisfaction and that the affect-based model may provide a more parsimonious explanation of satisfaction with professional services. Table 4.13 (p.189) summarizes the results of the competing models analysis. The tests of proposed hypotheses for the structural equation analysis will be addressed next.

Tests of Hypotheses

It may be recalled that the proposed hypotheses for the second part of the analyses were divided into those pertaining to the Affect Group, those pertaining to the Cognitive Group and those pertaining to a comparison across groups. The two competing models described earlier were used only for the purpose of overall comparison of models across groups. The individual tests of hypotheses were derived out of the Full Model for both the groups. Figure 4.5 (p.185) presents the hypothesized relationships for structural equation analysis for both
the groups. A summary of the proposed hypotheses pertaining to each stage is provided in Table 4.14. Each set of hypotheses is examined separately below.

The Affect Group

Hypothesis 13a proposed a positive relationship between evaluative impression and perceived performance. The standardized parameter estimate for the relationship between evaluative impression and perceived performance was .367 with a t-value of 4.31 (1: Table 4.15). Evaluative impression of the physician had a positive and significant influence on the perceived performance of the physician. The strength of the parameter estimate was also tested by setting the path from evaluative impression to perceived performance to zero. A statistically significant increase in the Chi-Square, compared to the Chi-Square of a full model with the relationship in question estimated free, would indicate that the fit of the model would improve if the relationship was set free rather than fixed. As shown in Table 4.16, there was a statistically significant difference of 18.29 in the Chi-Square, suggesting that the relationship between evaluative impression and perceived performance had a strong influence on the overall fit of the model. Thus, Hypothesis 13a was supported.

Hypothesis 13b proposed a negative relationship between evaluative impression and cognitively-based disconfirmation. The standardized parameter estimate of the relationship between evaluative impression and disconfirmation was -.416 with a t-value of -5.36 (2: Table 4.15). The results indicated that the relationship was significant and negative, supporting Hypothesis 13b.

Hypothesis 13c proposed a positive relationship between evaluative impression and satisfaction. The standardized parameter estimate between evaluative impression and satisfaction was -.072 with a t-value of -.87 (3: Table 4.15). The non-significance of the parameter estimate failed to support Hypothesis 13c.
Table 4.14
Proposed Hypotheses for the LISREL Model

The Relative Importance of Affective versus Cognitive judgments

The Affect Group

H13a. Evaluative impression is positively related to performance.

H13b. Evaluative impression is negatively related to disconfirmation.

H13c. Evaluative impression is positively related to satisfaction.

H14a. Perceived performance is positively related to disconfirmation.

H14b. Perceived performance is positively related to satisfaction.

H15. Disconfirmation is positively related to satisfaction.

H16a. The relationship between evaluative impression and performance is stronger compared to the relationship between expectations and performance.

H16b. The relationship between evaluative impression and satisfaction is stronger compared to the relationship between expectation and satisfaction.

H17. Affect-based evaluative impressions contribute significant explanatory power to service encounter satisfaction model.

The Cognitive Group

Effects of Expectations, Performance and Disconfirmation

H18a. Expectations are positively related to performance.

H18b. Expectations are negatively related to disconfirmation.

H18c. Expectations are positively related to satisfaction.

H19a. Perceived performance is positively related to disconfirmation.

H19b. Perceived performance is positively related to satisfaction.

H20. Disconfirmation is positively related to satisfaction.

H21. The relationship between expectation and performance is stronger compared to the relationship between evaluative impression and performance.
H22. The relationship between expectation and satisfaction is stronger compared to the relationship between evaluative impression and satisfaction.

Comparison Across Groups

H23. The relationship between evaluative impression and perceived performance is stronger in the Affect Group compared to the Cognitive Group.

H24. The relationship between expectations and perceived performance is stronger in the Cognitive Group compared to the Affect Group.

H25. The relationship between performance and disconfirmation is stronger in the Cognitive Group compared to the Affect Group.

H26. The relationship between disconfirmation and satisfaction is stronger in the Cognitive Group compared to the Affect Group.

H27. The relationship between performance and satisfaction is stronger in the Affect Group compared to the Cognitive Group.
Hypothesis 14a proposed a positive relationship between perceived performance and disconfirmation. The standardized parameter estimate for the proposed relationship was .928 with a t-value of 10.47 (8:Table 4.15). The significance of the relationship suggested a strong and positive relationship between perceived performance and disconfirmation. The strength of the relationship was estimated by constraining the path between perceived performance and disconfirmation to zero. There was a significant drop in the overall fit of the model as indicated by a difference of 135.46 in the Chi-Square (Table 4.16). The drop in the fit suggested that the relationship between perceived performance and disconfirmation contributes to the overall fit of the model. Thus, Hypothesis 14a was supported.

Hypothesis 14b proposed a significant relationship between perceived performance and satisfaction for the Affect Group. The standardized parameter estimate of the relationship between perceived performance and satisfaction was .806 with a t-value of 5.90 (4:Table 4.15), indicating a strong influence of perceived performance on satisfaction. The relationship was constrained to zero to evaluate the contribution of the path to the overall fit of the model. The difference in Chi-Square was 33.94 and was significant (Table 4.16) suggesting that perceived performance explains significant amount of variance in satisfaction with services. Thus, Hypothesis 14b was supported.

Hypothesis 15 proposed a positive relationship between disconfirmation and satisfaction. The standardized parameter estimate of .093 with a t-value of .832 failed to achieve statistical significance. Thus, Hypothesis 15 was not supported.

Hypothesis 16a proposed that the relationship between evaluative impression and perceived performance would be stronger compared to the relationship between expectation and perceived performance (1 > 5: Table 4.15). This hypothesis was tested by constraining the relationship between evaluative impression and perceived performance to be equal to the relationship between expectations and perceived performance. A statistically significant increase in the Chi-Square would indicate that the model fit would be improved by allowing the
Table 4.15

Standardized Structural Parameter Estimates, T-Values and Hypotheses Support for the Affective and Cognitive Groups

<table>
<thead>
<tr>
<th>Relationship</th>
<th>The Affect Group</th>
<th>The Cognitive Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter Estimates (T-Values)</td>
<td>Support</td>
<td>Parameter Estimates (T-Values)</td>
</tr>
<tr>
<td>(1) Evaluative Impression to Perceived Performance</td>
<td>.367* (4.31) Yes</td>
<td>.184* (2.08) NH</td>
</tr>
<tr>
<td>(2) Evaluative Impression to Disconfirmation</td>
<td>-.416* (-5.36) Yes</td>
<td>-.158* (-1.89) NH</td>
</tr>
<tr>
<td>(3) Evaluative Impression to Satisfaction</td>
<td>-.072 (-.87) No</td>
<td>.097 (1.28) NH</td>
</tr>
<tr>
<td>(4) Perceived Performance to Satisfaction</td>
<td>.806* (5.90) Yes</td>
<td>.151 (1.34) No</td>
</tr>
<tr>
<td>(5) Expectation to Perceived Performance</td>
<td>.212* (2.51) NH</td>
<td>.293* (3.40) Yes</td>
</tr>
<tr>
<td>(6) Expectation to Disconfirmation</td>
<td>.073 (1.06) NH</td>
<td>.041 (.513) No</td>
</tr>
<tr>
<td>(7) Expectation to Satisfaction</td>
<td>.065 (1.10) NH</td>
<td>.047 (.652) No</td>
</tr>
<tr>
<td>(8) Perceived Performance to Disconfirmation</td>
<td>.928* (10.47) NH</td>
<td>.701* (6.76) Yes</td>
</tr>
<tr>
<td>(9) Disconfirmation to Satisfaction</td>
<td>.093 (.832) NH</td>
<td>.562* (4.61) Yes</td>
</tr>
</tbody>
</table>

* significant at .05, one-tailed test
NH: No Hypotheses Offered
### Table 4.16
Tests of the Strength of Parameter Estimates

<table>
<thead>
<tr>
<th>Relationship Tested</th>
<th>Constraint Imposed</th>
<th>The Affect Group</th>
<th>The Cognitive Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$\chi^2$ (df, p &lt;)</td>
<td>$\Delta \chi^2$ (Δdf)</td>
</tr>
<tr>
<td>Estimated with all parameters free</td>
<td>None</td>
<td>458.86 (242,.001)</td>
<td>—</td>
</tr>
<tr>
<td>Evaluative Impression to Perceived Performance</td>
<td>GA(1,1) = 0</td>
<td>477.15 (243,.001)</td>
<td>18.29* (1)</td>
</tr>
<tr>
<td>Evaluative Impression to Disconfirmation</td>
<td>GA(2,1) = 0</td>
<td>489.08 (243,.001)</td>
<td>30.22* (1)</td>
</tr>
<tr>
<td>Expectation to Perceived Performance</td>
<td>GA(1,2) = 0</td>
<td>465.17 (243,.001)</td>
<td>6.31* (1)</td>
</tr>
<tr>
<td>Perceived Performance to Disconfirmation</td>
<td>BE(2,1) = 0</td>
<td>594.32 (243,.001)</td>
<td>135.46* (1)</td>
</tr>
<tr>
<td>Perceived Performance to Satisfaction</td>
<td>BE(3,1) = 0</td>
<td>492.80 (243,.001)</td>
<td>33.94* (1)</td>
</tr>
<tr>
<td>Disconfirmation to Satisfaction</td>
<td>BE(3,2) = 0</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Evaluative Impression to Performance, Disconfirmation and Satisfaction</td>
<td>GA(1,1)</td>
<td>505.06 (246,.001)</td>
<td>46.20* (4)</td>
</tr>
</tbody>
</table>

* Significant at .05, ** Significant at .10, NS: non-significant
relationships to differ. As indicated by Table 4.17, the increase in Chi-Square when the relationships in question were set to equal each other was only .98, indicating that there was no statistically significant difference between the two estimated paths. Inspection of the standardized parameter estimates of the relationship between evaluative impression and perceived performance and expectations and perceived performance indicated that the relationship between evaluative impression and perceived performance was slightly stronger than the relationship between expectations and perceived performance (standardized estimates .367 versus .212). However, as this difference failed to achieve statistical significance, Hypothesis 16a was not supported.

Hypothesis 16b proposed a stronger relationship between evaluative impression and satisfaction compared to the relationship between expectation and satisfaction (3 > 7: Table 4.15). To test this hypothesis, the same procedure was adopted as that used for Hypothesis 16a. The relationship between evaluative impression and satisfaction was set equal to the relationship between expectations and satisfaction. The increase in Chi-Square as a result of this equality constraint was 1.34 (Table 4.17), which failed to achieve statistical significance. Hence, the relationship between evaluative impression and satisfaction was not statistically different from the relationship between expectations and satisfaction. Hypothesis 16b was not supported.

Hypothesis 17 proposed that the affect-based evaluative impressions would contribute significant explanatory power to service-encounter satisfaction. This hypothesis was examined by setting all the paths leading from evaluative impression to other constructs in the model to zero. Thus, the relationship between evaluative impression to perceived performance, disconfirmation and satisfaction were set to zero. This resulted in eliminating evaluative impression from the empirical model. A statistically significant increase in Chi-Square would indicate the strength of the relationship between evaluative impression and various other model components. The model was reestimated without evaluative impression. The difference
Table 4.17
Tests of the Relative Strength Of Parameter Estimates

<table>
<thead>
<tr>
<th>Comparison of Parameters</th>
<th>Constraint Imposed</th>
<th>The Affect Group</th>
<th>The Cognitive Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$\chi^2$</td>
<td>$\Delta \chi^2$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(df, p &lt;)</td>
<td>(Δdf)</td>
</tr>
<tr>
<td>Evaluative Impression to Performance = Expectation to Performance</td>
<td>GA(1,1) = GA(1,2)</td>
<td>459.84</td>
<td>.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(243,.001)</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>747.59</td>
<td>.29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(243,.001)</td>
<td>(1)</td>
</tr>
<tr>
<td>Evaluative Impression to Satisfaction = Expectation to Satisfaction</td>
<td>GA(3,1) = GA(3,2)</td>
<td>460.20</td>
<td>1.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(243,.001)</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>747.58</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(243,.001)</td>
<td>(1)</td>
</tr>
</tbody>
</table>
between the Chi-Square of the reestimated model and the Chi-Square of the full model which included evaluative impression was 46.20 (Table 4.16). This difference was statistically significant, suggesting that the fit of the model would be improved with all the paths from evaluative impression set free rather than constrained to zero. The results indicated that evaluative impression provided a significant improvement in the overall fit of the model. Thus, Hypothesis 17 was supported. A summary of results obtained for the Affect Group may be found in Table 4.15. Figure 4.8 shows the significant relationships for the Affect Group. To evaluate the indirect effects of evaluative impression and expectations on satisfaction through their influence on perceived performance, an examination of the indirect, direct and total effects of evaluative impression and expectations was performed. The details of the results obtained will be detailed next.

**Indirect Effects**

Although no hypotheses were offered regarding the indirect effects of various constructs in the model, it was deemed necessary to examine the indirect effects since the only influence on satisfaction was that of perceived performance. It is possible that satisfaction was impacted by the two exogenous variables in the model, expectations and evaluative impressions, through their influence on perceived performance. The indirect effects were obtained as an optional output in the LISREL analysis of the Affect Group. The indirect effect of evaluative impression on satisfaction was .272 with a standard error of .089. The statistical significance for this effect was calculated as .272 / .089 which yielded a t value of 3.05, which was significant at p < .05. The direct effect of evaluative impression on satisfaction was -.068, yielding a total effect of .204.

The indirect effect of expectations on satisfaction was .208 with a standard error of .081 which yielded a significant t value of 2.56. The direct effect of expectations on satisfaction was .069 and the total effect was .277. The significance of the indirect effects
Figure 4.8. Trimmed Model

Significant Relationships among Model Components: The Affect Group
points to the possibility that apart from perceived performance, satisfaction was also influenced by evaluative impressions and expectations through their impact on perceived performance. The implications of the indirect effects on satisfaction will be further elaborated in Chapter Five. The test of proposed hypotheses for the Cognitive Group will be detailed next.

**The Cognitive Group**

Although no hypotheses were offered regarding the relationship between evaluative impression and perceived performance as well as between evaluative impression and disconfirmation in the Cognitive Group, it was expected that these relationships would be weak since evaluative impression was experimentally manipulated to be low. However, examination of the relationship between evaluative impression and perceived performance in the Cognitive Group revealed a significant parameter estimate for this relationship. The standardized structural parameter estimate for the relationship between evaluative impression and perceived performance was .184 with a t-value of 2.08 (Table 4.15). The relationship between evaluative impression and disconfirmation was also significant, with a standardized structural parameter estimate of -.158 and a t-value of -1.89 (Table 4.15). The relationship between evaluative impression and satisfaction failed to achieve significance as expected, with a standardized structural parameter estimate of .097 with a t-value of 1.28 (Table 4.15). It may be noted the pattern of results obtained in the Cognitive Group regarding the relationships between evaluative impression and perceived performance, between evaluative impression and disconfirmation and between evaluative impression and satisfaction, are similar to the results obtained in the Affect Group. The test of each individual hypothesis will be discussed next.

Hypothesis 18a proposed that expectations would be positively related to perceived performance. As indicated by Table 4.15, there was a positive and significant relationship between expectations and perceived performance. The standardized parameter estimate between expectation and perceived performance was .293 with a t-value of 3.40 (Table 4.15).
The strength of the relationship was tested by constraining the relationship between expectation to perceived performance to zero. There was a statistically significant difference of 11.98 in the Chi-Square (Table 4.16) suggesting that the relationship was strong and contributed to the fit of the overall model. Thus, Hypothesis 18a was supported.

Hypothesis 18b proposed that expectations would be negatively related to disconfirmation and hypothesis 18c proposed that expectations would be positively related to satisfaction. The standardized parameter estimate for the relationship between expectations and disconfirmation was positive and failed to achieve statistical significance, contrary to the proposed hypothesis. The parameter estimate was .041 with a t-value of .513 (6: Table 4.15), failing to support Hypothesis 18b.

The relationship between expectations and satisfaction had a standardized parameter estimate of .047 with a t-value of .652 (7: Table 4.15). The relationship failed to achieve statistical significance. Thus, Hypothesis 18c was not supported.

Hypothesis 19a and 19b proposed a positive relationship between perceived performance and disconfirmation, and between perceived performance and satisfaction. The standardized parameter estimate between perceived performance and disconfirmation was .701 with a t-value of 6.76 (8: Table 4.15). The relationship was positive and statistically significant providing support to Hypothesis 19a. The strength of the relationship was estimated by constraining the path between perceived performance and disconfirmation to zero. There was a statistically significant drop in the fit of the model as indicated by a difference of 126.42 in the Chi-Square statistic (Table 4.16). Thus, Hypothesis 19a was supported.

The standardized parameter estimate for the relationship between perceived performance and satisfaction was .151 with a t-value of 1.34 (4: Table 4.15). The relationship though positive, failed to achieve statistical significance. Hypothesis 19b was not supported.

Hypothesis 20 proposed a positive relationship between disconfirmation and satisfaction. The standardized parameter estimate for the relationship between disconfirmation
and satisfaction was .562 with a t-value of 4.61 (9: Table 4.15). The relationship was positive and statistically significant and the strength of the relationship was estimated by constraining the path to zero. There was a statistically significant difference of 89.36 in Chi-Square (Table 4.16), thus providing support for Hypothesis 20.

Hypothesis 21 proposed that the relationship between expectation and perceived performance would be stronger compared to the relationship between evaluative impression and perceived performance (5 > 1: Table 4.15). This hypothesis was examined by constraining the relationship between expectations and perceived performance to be equal to the relationship between evaluative impression and perceived performance. A statistically significant increase in the Chi-Square would indicate that the relationships differ in their strength. The difference in Chi-Square was only .29, indicating that the two relationships were not statistically different (Table 4.17). Thus, Hypothesis 21 was not supported.

Hypothesis 22 proposed that the relationship between expectation and satisfaction would be stronger compared to the relationship between evaluative impression and satisfaction (7 > 3: Table 4.15). The same procedure was adopted to test this hypothesis as the one used for the test of hypothesis 21. The relationship between expectation and satisfaction was constrained to be equal to the relationship between evaluative impression and satisfaction. The difference in Chi-Square was .28, indicating that no statistical difference existed between the two relationships (Table 4.17). Thus, Hypothesis 22 was rejected. Figure 4.9 shows the significant relationships for the Cognitive Group. The test of the indirect effects of evaluative impression and expectations on satisfaction will be detailed next.

**Indirect Effects**

The indirect effect of expectations on satisfaction was .232 with a standard error of .082 and a t value of 2.82. The direct effect of expectations on satisfaction was .059 yielding a total effect of .291. The indirect effect of evaluative impressions on satisfaction failed to
Figure 4.9. Trimmed Model

Significant Relationships among Model Components: The Cognitive Group
achieve statistical significance. The indirect effect of expectations on disconfirmation was .198 with a standard error of .064 and a t value of 3.09. The direct effect for the same relationship was .040 and the total effect was .238. As predicted, the total effect of expectations on satisfaction was higher than the total effect of evaluative impression on satisfaction in the Cognitive Group. The significance of the indirect effects of expectations on both disconfirmation (through perceived performance) and satisfaction (through disconfirmation) points to the importance of this variable in the explanation of satisfaction.

Comparison Across Two Groups

A stacked approach was utilized to test hypotheses pertaining to the comparison of relationships between the two groups. First, the full model (Figure 4.5, p.177) was estimated with all the parameters set free across both the Affect Group and the Cognitive Group. Next, certain paths of interest were constrained to be either equal or zero and the full model was estimated again in both the groups. The overall fit of the constrained model was compared against the full model in both the groups. The statistical significance of the drop in the fit was taken as evidence of the strength of the relationships constrained.

Hypothesis 23 proposed that there were significant differences across two groups in the relationship between evaluative impression and perceived performance. To test this hypothesis, the matrix Gamma was constrained to be invariant across the two groups. This constraint would suggest that the pattern of relationships between evaluative impression and perceived performance, disconfirmation and satisfaction and the pattern of relationships between expectations and perceived performance, disconfirmation and satisfaction were equal across the two groups. As the Cognitive Group was expected to follow the relationships postulated by the disconfirmation model more closely, the relationships across the two groups were not expected to be invariant. However, the results failed to achieve statistical significance, with a difference in Chi-Square of only 5.85, indicating that the pattern of
relationships were similar across the two groups (Table 4.18). Next, the relationship between evaluative impression and perceived performance was set to equal across the two groups. The difference in Chi-Square was only .50 (1: Table 4.18), suggesting that the relationship was not statistically different across the two groups. Thus, Hypothesis 23 was not supported.

Hypothesis 24 proposed that the relationship between expectation and perceived performance would be stronger in the Cognitive Group compared to the Affect Group. As a test of this hypothesis, the relationship between expectations and perceived performance was set to equal across the two groups. The difference in Chi-Square (.69) failed to achieve statistical significance, indicating that there were no statistically significant differences in the two groups with regard to the relationship between expectations and perceived performance (3: Table 4.18). Thus, Hypothesis 24 was not supported.

Hypothesis 25 proposed that the relationship between perceived performance and disconfirmation would be stronger in the Cognitive Group compared to the Affect Group. To test this hypothesis, first the matrix Beta was set to be invariant across the two groups to investigate if there were any significant differences across two groups in the relationships between perceived performance and (a) disconfirmation and (b) satisfaction and between disconfirmation and satisfaction. There was a statistically significant difference of 13.05 in the Chi-Square suggesting that there were significant differences in the relationships postulated across the two groups.

The analysis was extended to identify the exact source of difference, by constraining each individual relationship to be invariant across groups. The relationship between perceived performance and disconfirmation was set to be equal across the two groups. The difference in Chi-Square (5.01) was statistically significant, suggesting that the relationship was different across the two groups (4: Table 4.18). Inspection of the standardized parameter estimates, however, indicated that the relationship was stronger in the Affect Group compared to the
Table 4.18
Stacked Model
Overall Model Fit for Constrained Relationships

<table>
<thead>
<tr>
<th>Relationship Tested</th>
<th>Constraint Imposed</th>
<th>Parameters Compared*</th>
<th>( \chi^2 ) (df, p &lt;)</th>
<th>( \Delta \chi^2 ) (( \Delta )df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated with all parameters free</td>
<td>None</td>
<td>--</td>
<td>1206.17 (484,.001)</td>
<td>---</td>
</tr>
<tr>
<td>Evaluative Impression and Expectation's Influence are Same Across Groups</td>
<td>GA = IN</td>
<td>_</td>
<td>1212.02 (490,.001) (6)</td>
<td>5.85</td>
</tr>
<tr>
<td>(1) Evaluative Impression to Perceived Performance</td>
<td>EQ GA(1,1,1) GA(1,1)</td>
<td>.367 : .184</td>
<td>1206.67 (485,.001) (1)</td>
<td>.50</td>
</tr>
<tr>
<td>(2) Evaluative Impression to Disconfirmation</td>
<td>EQ GA(1,2,1) GA(2,1)</td>
<td>-.416 : -.158</td>
<td>1208.732 (485,.001) (1)</td>
<td>.56</td>
</tr>
<tr>
<td>(3) Expectation to Performance</td>
<td>EQ GA(1,1,2) GA(1,2)</td>
<td>.212 : .293</td>
<td>1206.86 (485,.001) (1)</td>
<td>.69</td>
</tr>
<tr>
<td>Performance and Disconfirmation's Influence are Same Across Groups</td>
<td>BE = IN</td>
<td>_</td>
<td>1219.22 (487,.001) (3)</td>
<td>13.05**</td>
</tr>
<tr>
<td>(4) Performance to Disconfirmation</td>
<td>EQ BE(1,2,1) BE(2,1)</td>
<td>.928 : .701</td>
<td>1211.18 (485,.001) (1)</td>
<td>5.01**</td>
</tr>
<tr>
<td>(5) Disconfirmation Satisfaction</td>
<td>EQ BE(1,3,2) BE(3,2)</td>
<td>.093 : .562</td>
<td>1216.47 (485,.001) (1)</td>
<td>10.30**</td>
</tr>
<tr>
<td>(6) Performance to Satisfaction</td>
<td>EQ BE(1,3,1) BE(3,1)</td>
<td>.806 : .151</td>
<td>1218.81 (485,.001) (1)</td>
<td>12.64**</td>
</tr>
</tbody>
</table>

* Affect versus Cognitive Groups
** significant at .05
Cognitive Group (.928 versus .701), contrary to the proposed hypothesis. Thus, Hypothesis 25 was not supported.

Hypothesis 26 proposed that the relationship between disconfirmation and satisfaction would be stronger in the Cognitive Group compared to the Affect Group. This hypothesis was investigated by constraining the relationship between disconfirmation and satisfaction to be equal across the two groups. The difference in Chi-Square was 10.30 (5: Table 4.18). The difference was statistically significant indicating that the relationship between disconfirmation and satisfaction were different across the two groups. Inspection of the standardized parameter estimates suggested that the relationship was stronger in the Cognitive Group compared to the Affect Group as hypothesized (.562 versus .093). Thus, Hypothesis 26 was supported.

Hypothesis 27 proposed that the relationship between perceived performance and satisfaction would be stronger in the Affect Group compared to the Cognitive Group. There was a statistically significant difference of 12.64 in the Chi-Square (6: Table 4.18), suggesting that the strength of the relationship differed across the two groups. Inspection of the standardized parameter estimates indicated that the relationship was stronger in the Affect Group compared to the Cognitive Group (.806 versus .151). Thus, Hypothesis 27 was supported. A summary of results for the stacked model can be found in Table 4.18.

Summary of Results

Reliability and Validity of Measures

All the measures were first analyzed through a confirmatory factor analysis to check for their reliability and validity. Although the global measures of fit indicate that the measurement model could be improved, the individual item reliabilities, composite reliabilities and average variance extracted for all the constructs were within acceptable levels.
The significance of the Chi-Square statistic for the Full Model in both Affect Group and Cognitive Group suggested that the fit could be improved. However, the Normed Chi-Square was below 2 for the Affect Group and around 3 for the Cognitive Group. The RMSR was also low (.05) for the Affect Group and .08 for the Cognitive Group. The GFI and AGFI were close to the prespecified criteria for the Affect Group, but failed to meet the criteria for the Cognitive Group. The NFI was very close to .90 in the Affect Group, but again fell short in the Cognitive Group. The retained items displayed reasonably good reliability in both groups.

All the individual item reliabilities were above the prespecified criteria of .5 in the Affect Group. However, in the Cognitive Group there were eight items which had individual item reliabilities lower than .5. The composite reliabilities ranged from a low of .87 for the disconfirmation construct to a high of .92 for evaluative impression, expectations and satisfaction constructs in the Affect Group. In the Cognitive Group, the composite reliabilities ranged from a low of .77 for the disconfirmation construct to a high of .93 for the satisfaction construct. The average variance extracted for the Affect Group ranged from a low of .64 for the disconfirmation construct to a high of .68 for the evaluative impression construct. For the Cognitive Group, the average variance extracted fell short of prespecified criteria for two of the constructs. These were evaluative impression (.43) and disconfirmation (.46). In summary, with a few exceptions in the Cognitive Group, all the measures seemed to have achieved good reliability.

An examination of the phi matrix revealed a lack of discriminant validity between perceived performance and disconfirmation, between perceived performance and satisfaction and between disconfirmation and satisfaction for the Affect Group. For the Cognitive Group, there was lack of discriminant validity between perceived performance and disconfirmation and between disconfirmation and satisfaction. One reason for lack of discriminant validity may be method variance. Although an attempt was made to reduce method variance by separating
the measurement of these constructs in the questionnaire, it appears that respondents perceived these measures to be similar.

An attempt was made to empirically estimate the discriminant validity of the measures by following a testing procedure developed by Fornell and Larcker (1981). The average variance extracted by any two constructs was examined to see if it exceeded the square of correlation between those two constructs. Except for perceived performance and satisfaction, all the measures exhibited good discriminant validity, as tested by the above procedure. As an additional check on the discriminant validity of the measures, confidence intervals were developed around the phi correlations, and each interval was examined to see if it included a value of 1. None of the confidence intervals included a value of 1, suggesting good discriminant validity. The reliability of interaction style, a manipulation check used only in the MANOVA analysis was checked by way of internal consistency analysis. The reliability of the interaction style measure was found to be .96, which exceeded the preset criteria. In summary, except for the measures of perceived performance and satisfaction, all the other measures exhibited good construct validity. Theoretical and methodological implications of lack of discriminant validity among these constructs within the context of overall findings of the study will be discussed in Chapter Five. The results of the MANOVA analysis will be summarized next.

**MANOVA Analysis**

The administered manipulations were first checked for the presence of any confounding effects (Perdue and Summers 1986). The results indicated that although some degree of confounding was present, it was not serious enough to impair the interpretation of results.

The MANOVA analysis provided mixed support for the hypotheses pertaining to the effect of evaluative impression. A main effect due to evaluative impression failed to achieve significance, but a main effect due to interaction style (Hypotheses 3 and 9) was supported.
An ordinal interaction between evaluative impression and interaction style was also found to be significant as predicted.

In the positive interaction style condition, positive evaluative impression produced significantly higher levels of both perceived performance and satisfaction compared to the negative evaluative impression condition (Hypotheses 4b and 10b). However, the differences between positive versus neutral evaluative impression were only marginally significant for perceived performance (Hypothesis 4c) but were significant for satisfaction (Hypotheses 10c). The differences between neutral and negative evaluative impression condition for both performance and satisfaction were not significant (Hypotheses 6a and 12a).

In the negative interaction style condition, no significant differences were found between positive evaluative impression and negative evaluative impression, for both perceived performance and satisfaction (Hypotheses 5a and 11a). Positive evaluative impression, however, failed to produce significantly higher perceptions of performance and satisfaction compared to neutral evaluative impression (Hypothesis 5c and 11c). Contrary to the proposed hypotheses, negative evaluative impression produced significantly higher perceptions of performance and satisfaction than neutral evaluative impression (Hypotheses 6b and 12b).

In summary, the MANOVA results indicated that a positive evaluative impression of the physician had a beneficial effect on perceived performance and satisfaction only when the interaction style was positive. When the interaction style was negative, subjects discounted the valence (+,−) of the evaluative impression and depended solely on interaction style to generate their satisfaction judgements. Some plausible explanations as well as the implications of the results will be discussed in detail in Chapter Five. A summary of the hypotheses supported versus those that were rejected, for both MANOVA and LISREL analyses is provided in Table 4.19.
### Table 4.19

**Summary Of Tests of Hypotheses**

<table>
<thead>
<tr>
<th>Proposed Hypotheses</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a:7a. Positive El &gt; Negative El*</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H1b:7b. Positive El &gt; Neutral El</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H2:8. Neutral El &gt; Negative El</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3:9. Positive IS &gt; Negative IS</td>
<td>Supported</td>
</tr>
<tr>
<td>H4a:10a. Positive El/Positive IS &gt; Negative El/Negative IS</td>
<td>Supported</td>
</tr>
<tr>
<td>H4b:10b. Positive El/Positive IS &gt; Negative El/Positive IS</td>
<td>Supported</td>
</tr>
<tr>
<td>H4c:10c. Positive El/Positive IS &gt; Neutral El/Positive IS</td>
<td>Marginally Supported: Supported</td>
</tr>
<tr>
<td>H5a:11a. Positive El/Negative IS &gt; Negative El/Negative IS</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H5b:11b. Positive El/Negative IS &gt; Negative El/Positive IS</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H5c:11c. Positive El/Negative IS &gt; Neutral El/Negative IS</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H6a:12a. Neutral El/Positive IS &gt; Negative El/Positive IS</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H6b:12b. Neutral El/Negative IS &gt; Negative El/Negative IS</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H13a. El to Performance</td>
<td>Supported</td>
</tr>
<tr>
<td>H13b. El to Disconfirmation</td>
<td>Supported</td>
</tr>
<tr>
<td>H13c. El to Satisfaction</td>
<td>Supported</td>
</tr>
<tr>
<td>H14a. Performance to Disconfirmation</td>
<td>Supported</td>
</tr>
<tr>
<td>H14b. Performance to Satisfaction</td>
<td>Supported</td>
</tr>
</tbody>
</table>

* Hypotheses For Perceived Performance: For Satisfaction; El: Evaluative Impression; IS: Interaction Style
<table>
<thead>
<tr>
<th>Proposed Hypotheses</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>H15. Disconfirmation to Satisfaction</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H16a. El to Performance &gt; Expectation to Performance</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H16b. El to Satisfaction &gt; Expectation to Satisfaction</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H17. El’s contribution</td>
<td>Supported</td>
</tr>
<tr>
<td>H18a. Expectations to Performance</td>
<td>Supported</td>
</tr>
<tr>
<td>H18b. Expectations to Disconfirmation</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H18c. Expectations to Satisfaction</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H19a. Performance to Disconfirmation</td>
<td>Supported</td>
</tr>
<tr>
<td>H19b. Performance to Satisfaction</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H20. Disconfirmation to Satisfaction</td>
<td>Supported</td>
</tr>
<tr>
<td>H21. Expectations to Performance &gt; El to Performance</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H22. Expectations to Satisfaction &gt; El to Satisfaction</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H23. El to Performance in The Affect Group &gt; The Cognitive Group</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H24. Expectations to Performance in The Cognitive Group &gt; The Affect Group</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H25. Performance to Disconfirmation in The Cognitive Group &gt; The Affect Group</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H26. Disconfirmation to Satisfaction in The Cognitive Group &gt; The Affect Group</td>
<td>Supported</td>
</tr>
<tr>
<td>H27. Performance to Satisfaction in The Affect Group &gt; The Cognitive Group</td>
<td>Supported</td>
</tr>
</tbody>
</table>

* Hypotheses For Perceived Performance: For Satisfaction; EI: Evaluative Impression; IS: Interaction Style
The LISREL Analysis

A competing models approach was undertaken to test the two competing models (affect-based and disconfirmation) in both the groups. The analysis supported an affect-based model in the Affect Group, based on the overall fit indices and the PFI used for intermodel comparisons. In the Cognitive Group both models performed poorly. The overall fit indices for the Full Model in both the groups indicated that the hypothesized model fits the data comparatively better in the Affect Group compared to the Cognitive Group. The GFI, AGFI and NFI were close to prespecified criteria for the Affect Group compared to the Cognitive Group. The total coefficient of determination for the structural equations was higher for the Affect Group compared to the Cognitive Group. However, the significance of the Chi-Square statistic indicated that the fit of the model could be improved in both the groups.

There was mixed support for the proposed hypotheses in the Affect Group. Out of the nine hypotheses proposed, five were supported. The relationship between evaluative impression and perceived performance was positive and significant (H13a), evaluative impression influenced disconfirmation negatively (H13b), perceived performance was significantly related to disconfirmation (H14a) and satisfaction (H14b) and finally, affect-based evaluative impressions contributed significant explanatory power to the overall service encounter model (H17) as proposed.

However, contrary to the proposed hypothesis, the relationship between evaluative impression and satisfaction (H13c) as well as the relationship between disconfirmation and satisfaction (H15) failed to achieve significance. Hypotheses 16a and 16b predicted that the relationship between evaluative impression and perceived performance would be stronger than the relationship between expectations and perceived performance, and the relationship between evaluative impression and satisfaction would be stronger than the relationship between expectations and satisfaction, in the Affect Group. The intention was to compare the strength of affective versus cognitive routes to satisfaction within each group. However,
contrary to the proposed hypotheses, no significant differences were found among the relationship between evaluative impression and perceived performance and between expectations and perceived performance (H16a). Inspection of the standardized parameters revealed that the parameter estimate for the relationship between evaluative impression and perceived performance was greater than the parameter estimate for the relationship between expectations and perceived performance. There were also no significant differences among the relationship between evaluative impression and satisfaction and between expectation and satisfaction (H16b). Apart from the direct effects, the indirect effect of evaluative impression on satisfaction (through perceived performance) and the indirect effect of expectations on satisfaction (through perceived performance) also achieved statistical significance in the Affect Group.

The proposed relationships in the Cognitive Group also achieved mixed support. Perceived performance was positively influenced by expectations (H18a), perceived performance significantly influenced disconfirmation (H19a) and satisfaction was significantly influenced by disconfirmation (H20).

However, hypotheses proposed to test the relative strength of affective versus cognitive variables in explaining satisfaction failed to achieve statistical significance. The strength of the relationship between expectations and perceived performance and between evaluative impression and perceived performance (H21) as well as the strength of the relationship between expectations and satisfaction and between evaluative impression and satisfaction (H22) was not statistically different. Although no hypotheses were offered, the indirect effects of expectations on satisfaction as well as on disconfirmation achieved statistical significance.

Two of the five hypotheses proposed to test the differences across models were supported. It was found that the relationship between disconfirmation and satisfaction was stronger in the Cognitive Group compared to the Affect Group (it was not even significant in
the Affect Group (H26) and the relationship between perceived performance and satisfaction was significantly stronger in the Affect Group compared to the Cognitive Group as proposed (H27). However, no significant differences were found among the two groups in the strength of the relationship between evaluative impression and perceived performance (H23) and between expectations and perceived performance (H24). Though there was a significant difference in the strength of the relationship between performance and disconfirmation across the two groups, the relationship was found to be in the Affect Group and not in the Cognitive Group as proposed (H25).

In summary, the MANOVA analysis provided support for the interaction between evaluative impression and interaction style on perceived performance and satisfaction. The results of the LISREL analysis demonstrated that the Affect Group as hypothesized followed the affective route more closely whereas some support was found for the disconfirmation paradigm in the Cognitive Group. Chapter Five will elaborate on the pattern of results obtained and details the theoretical and managerial implications as well as the future research directions for modeling service encounter satisfaction.
CHAPTER FIVE

CONCLUSIONS

Chapter Five is organized around the conclusions drawn from the dissertation study. First, the findings of the study will be discussed with relation to the research questions proposed to be addressed by the study. Second, conceptual and managerial implications of the findings for the service encounter satisfaction theory will be detailed. Finally, limitations of the study along with directions for future research will be presented.

The Research Questions

As detailed in chapter one, this dissertation attempted to address three research issues. These are:

(1) What is the influence of affective reactions towards service providers on perceived performance and satisfaction with professional services?

(2) What is the relative importance of affective responses compared to more cognitively driven judgements in explaining service encounter satisfaction?

(3) Is the disconfirmation model of satisfaction an adequate framework to model satisfaction with professional services?
Each of these questions will be discussed in detail now within the context of the findings of the present study.

The Influence of Affective Reactions towards Service Providers on Perceived Performance and Satisfaction with Professional Services

An argument was made throughout the dissertation that due to the peculiar characteristics of services (intangibility, inseparability, heterogeneity and perishability) affective responses of consumers towards the service providers may have more explanatory ability in modeling satisfaction with services than the cognitively driven variables of expectations and disconfirmation. Most research in the product satisfaction area has concentrated on the disconfirmation model of satisfaction, arguing that expectations, perceived performance and disconfirmation together explain a major portion of variance in satisfaction judgements (Churchill and Surprenant 1982; Oliver and DeSarbo 1988; Tse and Wilton 1988). An exception to this general framework is the research stream developed by Westbrook (1980, 1987) who argued for an equal if not greater status for affect in satisfaction judgements. Findings from his studies on the role of affect in product satisfaction demonstrated a large amount of incremental variance explained due to the inclusion of affective responses towards the products. Based on the findings of Westbrook (1980, 1987) and taking into consideration the human interaction involved in most service encounters, this dissertation argued that an affect-based model of service encounter satisfaction may be more appropriate in the context of satisfaction with professional services.

The results of the present study provided mixed support for the importance of affective responses towards service providers in the satisfaction formation process. The role of affect (termed evaluative impression in this study) in satisfaction with health care services was investigated with the help of an experimental design, where the level of affect towards the physician was experimentally manipulated. The MANOVA results found a significant
interaction between evaluative impression and interaction style of the physician. However, a main effect due to evaluative impression failed to achieve statistical significance though a main effect due to interaction style was found to be highly significant.

The important question to be addressed now is why evaluative impression failed to influence perceived performance and satisfaction as predicted?. One explanation for the absence of significance may be a design artifact. Along with evaluative impression, interaction style (one dimension of perceived performance) of the physician was also manipulated. The large effect sizes obtained for the interaction style manipulation attest to the possibility that interaction style may have dominated all other determinants of satisfaction including evaluative impression. The same problem was encountered by Churchill and Surprenant (1982) in their videodisc experiment, as well as Tse and Wilton (1988) in their experiment with tape recorders. While acknowledging that perceived performance is central to the formation of satisfaction, Tse and Wilton (1988) caution that the strength of the manipulations in any study of satisfaction should be balanced. Although every effort was made in this study to balance the strength of the manipulations both across treatment factors and across conditions, the very nature of the treatment factors introduced a slight imbalance. In the categorization approach which was used as a theoretical basis for this study, affect has been traditionally elicited as a function of providing a limited amount of information. As detailed in Chapter Two, some of the informational conditions necessary to elicit affect are:

1. the available attributes cue an appropriate category in memory
2. the available attributes fit a category label that is also available
3. the label is the only information available.

The basic premise of the categorization approach is that as soon as available information fits a preconceived category in memory, subjects discount any further information and depend on the category-based perceptions to make their judgements. The evaluative information manipulation was designed keeping in view the above informational conditions. As such, only
that information which was pretested to be consistent with a previously established category of a physician was provided in the positive evaluative impression condition, and information which was pretested to be a mismatch to the category of physician was provided in the negative evaluative impression manipulation. The neutral evaluative impression was elicited by providing attributes which were low in informational quality.

The interaction style manipulation on the other hand, had to be designed in a way that subjects would perceive the positive interaction as positive and negative interaction as negative. This manipulation was administered by showing a videotape of the hypothetical doctor, whose picture the subjects have seen to make the evaluative impression judgement, treating a patient. The scenario as acted out in both positive and negative interaction style conditions might have provided more information to the subjects by means of non verbal cues, compared to the information subjects received in the evaluative impression manipulation, where the subjects were provided a brief description of the doctor followed by the presentation of a still photograph of the doctor. The information provided through a live scenario and dialogue might have been richer sources of information to the subjects than a static description, albeit provided through a spokesperson on the videotape and a photograph. Coupled with the tendency of subjects to treat interaction style as central to the satisfaction judgement, the interaction style manipulation may have achieved more dominance than any other manipulation in the experiment.

The order of the manipulations also seemed to have played a role in explaining the pattern of effects found. In order to investigate the effect of evaluative impression, it was necessary to administrate the evaluative impression manipulation ahead of interaction style manipulation. Otherwise, the information available in the interaction style manipulation would create a confound for the evaluative impression manipulation. At the same time, the latency of the interaction style manipulation compelled subjects to depend on the information available in the interaction style manipulation on which to base their judgements, since the information
provided for the evaluative impression manipulation had faded by that time. Hence, the order of the manipulations may have created conditions which facilitated the dominance of interaction style in satisfaction formation process.

The interaction between evaluative impression and interaction style was found to be significant, suggesting that positive, negative and neutral evaluative impression exert differential effects on perceived performance and satisfaction depending on the direction of the interaction style of the physician. The influence of affective reactions towards service providers on perceived performance and satisfaction will be discussed next with relation to positive (negative) interaction style and positive (neutral/negative) evaluative impression.

Positive Interaction Style

When the interaction style of the physician was manipulated to be positive, positive evaluative impression elevated perceptions of perceived performance and satisfaction. The effect size for this relationship was found to be .04. Although the size of the effect seems small, as Cohen (1977) has argued, effects as small as .01 assume theoretical importance in social sciences. Even if the 4% of explained variance in this instance, translates into 1% increase in sales managerially, the effect may be worthwhile to warrant further investigation. Thus, the impact of positive evaluative impression/positive interaction style on perceived performance and satisfaction may have significant managerial implications which will be elaborated in a later section.

Under conditions of positive interaction style, neutral evaluative impression produced satisfaction judgements higher than negative evaluative impression but lower than positive evaluative impression. Though these differences failed to achieve statistical significance, the means were in the expected direction. This points to the possibility that it is better to let consumers have neutral information than negative information. This result supports earlier
suggestions about the detrimental effects of negative word of mouth, especially in the context of professional services (Zeithaml, 1981).

Even when the interaction style of the physician was positive, negative evaluative impression produced the lowest level of satisfaction. Again, though these differences failed to achieve statistical significance, the difference in means raises some interesting implications about treating performance as central to satisfaction judgements. The depressing effect of negative evaluative impression on performance and satisfaction point to the importance of an affect management strategy to service institutions.

Negative Interaction Style

In the negative interaction style condition, positive evaluative impression produced lower perceptions of performance and satisfaction compared to negative evaluative impression, contrary to the predictions made. One explanation for the counter intuitive results may be that consumers do not like their affect expectation to be negated. In the positive evaluative impression/negative interaction style condition, subjects were given a description of a doctor which matched their "good doctor" category, following which the doctor proceeded to behave in a manner which was counter to the anticipations derived out of the subject’s affect. Subjects may have been more frustrated in the above situation than in a situation where they anticipated the doctor to be bad based on their affect and the doctor behaved in a manner which was consistent to their anticipations (negative evaluative impression/negative interaction style condition).

This finding points to the possibility that more damage is done by promising subjective, intangible benefits (like friendly service and empathy) and not delivering them compared to promising objective benefits (like good parking and good equipment) and not keeping those promises. It may be possible that consumers could make external attributions for the failure to deliver objective benefits whereas the attribution for failure to deliver subjective benefits is
always internal. Consequently, consumers may be more dissatisfied with bad service than with bad parking facilities.

Under conditions of negative interaction style, neutral evaluative impression produced mixed results regarding perceptions of performance and satisfaction. Neutral evaluative impression produced lower perceptions of performance compared to positive evaluative impression as hypothesized but contrary to proposed hypothesis, produced lower perceptions of performance and satisfaction than negative evaluative impression. Neutral evaluative impression also produced the same level of satisfaction as positive evaluative impression, again contrary to the proposed hypothesis. The same explanation may be valid for the results obtained with neutral evaluative impression as the explanation offered for the results for positive evaluative impression. Subjects were more frustrated with the behavior of the doctor which ran contrary to their anticipations than when the behavior was consistent with their anticipations derived out of their affect.

In the negative interaction style condition, the behavior of negative evaluative impression ran contrary to the predictions made. Negative evaluative impression produced higher perceptions of performance and satisfaction than both positive and neutral evaluative impression conditions. This result seems to imply that it is better to design promotional policies as close to reality as possible since consumers would be more satisfied when their negative affect is confirmed than when their positive affect is negated.

In summary, the positive interaction style condition produced results consistent with the proposed hypotheses but in the negative interaction style condition, the pattern of results obtained for positive, neutral and negative evaluative impression ran contrary to the predictions made. As suggested before, interaction style is so central to satisfaction judgements that any kind of manipulation of interaction style of the service provider should produce a strong reaction from the consumers. Consequently, consumers may tend to discount all other determinants of satisfaction and depend solely on the negative interaction style to demonstrate
their dissatisfaction. However, when the interaction style is positive consumers generate enough motivation to look for other cues in the environment and process more information in order to determine their level of satisfaction. A strong caution therefore is in order for future researchers of satisfaction, to consider the adverse effects of negative interaction style on other determinants of satisfaction. It may be advisable at least from a theoretical point of view, to treat performance (of which interaction style is one dimension) as the central determinant of satisfaction and investigate the antecedents to perceived performance. The pattern of results obtained in this study support such an approach, since evaluative impression could explain significant variance in both perceived performance and satisfaction only in combination with interaction style.

The MANOVA results discussed so far support the proposition that evaluative impression achieves importance in explaining satisfaction only when the interaction style is positive. As long as the performance of the service provider conforms to a certain threshold level of performance predetermined by the consumers, evaluative impression achieves significance. Once this threshold level of performance drops, the lower performance becomes the sole determinant of satisfaction. Evaluative impression thus may be a sufficient but not a necessary condition for the determination of service encounter satisfaction. Further evidence regarding the role of affect in satisfaction with services will be provided next, from the LISREL analysis performed on the additional data collected in two of the cells. As the reader may recall, to avoid aggregation of data across cells, two separate LISREL analyses were performed on two of the experimental cells, positive interaction style/positive evaluative impression (The Affect Group) and positive interaction style/neutral evaluative impression (The Cognitive Group) conditions. Interaction style was maintained constant across all subjects and the two cells differed only in their focus on evaluative impression (positive versus neutral). The positive interaction style/positive evaluative impression cell was proposed to follow the affect route
more closely, whereas the positive interaction style/neutral evaluative impression cell was proposed to follow the predictions made by the disconfirmation model more closely.

The structural relationships between evaluative impression and various other model components was examined using structural equation analysis. In the Affect Group, the relationship between evaluative impression and perceived performance was found to be positive and significant as proposed. As discussed before, once the interaction style was held constant, subjects in the positive evaluative impression condition utilized other cues to judge the performance level of the doctor. The positive and significant linkage between evaluative impression and perceived performance provides further evidence to the reasoning put forward earlier, that it is imperative to hold performance constant in order to motivate the subjects to use other cues in the environment. Although the relationship between evaluative impression and satisfaction failed to achieve significance, the proportion of explained variance in satisfaction was found to be greater in the Affect Group compared to the Cognitive Group (77% versus 50%). This points to the possibility that the explanation of the incremental variance in the satisfaction construct may have been caused by the indirect effect of evaluative impression on satisfaction (through its effect on perceived performance), which was found to be significant. Although the indirect effect of expectations on satisfaction also achieved statistical significance, the effect was slightly more pronounced for evaluative impression compared to expectations (.272 versus .208).

The results also suggested that the strength of the relationship between evaluative impression and perceived performance was greater compared to the strength of the relationship between expectations and perceived performance, though this difference failed to achieve statistical significance. Examination of the various structural relationships in the Affect Group clearly attests to the importance of evaluative impression as a major determinant of perceived performance and perceived performance in turn explaining a majority of variance in satisfaction with the physician.
The explanatory power of the evaluative impression construct was examined by dropping the construct from the Full Model in the Affect Group and reestimating the model without evaluative impression. There was a significant drop in the fit of the model attesting to the important role played by evaluative impression within the overall model of service encounter satisfaction.

The Full Model in the Cognitive Group, designed to minimize affect and encourage cognitive processes by inducing heightened attention to attribute specifics, nevertheless attested to the importance of evaluative impression in subject's perceptions of performance. The relationship between evaluative impression and perceived performance achieved statistical significance in this group also, pointing out the possibility that the influence of affect on perceived performance was not thoroughly examined in the past literature. Evaluative impression clearly is a major determinant of perceived performance and the only explanation for the failure of its impact on satisfaction is the latency of interaction style information in the subjects' minds. Satisfaction measures were taken at the end of the experiment after the subjects saw the interaction style of the doctor. Consequently, there is a possibility that the information pertaining to the evaluative impression of the doctor had faded from subjects' minds.

In summary, evidence provided thus far from the MANOVA analysis as well as from the LISREL analysis attests to the importance of evaluative impression in determining the perceived performance of the service provider and indirectly influencing the level of satisfaction with the professional services, as indicated by the statistical significance of the indirect effect of evaluative impression on satisfaction. Evaluative impression has been shown to be a major determinant of perceived performance and warrants further attention both from managers and researchers in the area of professional service encounter satisfaction. The second research question regarding the relative importance of cognitive and affective variables in determining service encounter satisfaction will be addressed next.
The Relative Importance of Affective Responses Compared to Cognitive Judgements in Explaining Service Encounter Satisfaction

As suggested earlier in Chapter One, the proposition that affect explains a significant proportion of variance in service encounter satisfaction does not preclude the importance of cognitively driven variables of expectations and disconfirmation. It was argued that consumers generate enough motivation to indulge in cognitive processes only under conditions of neutral affect. As most service encounters are characterized by lack of information and a high level of uncertainty, it is reasonable to propose that affect dominates the mental processes in most situations. To examine this proposition more thoroughly two groups of students were chosen to give their evaluations of a simulated service encounter. By experimentally manipulating the amount of information available and the level of uncertainty faced by the students, it was hoped that one group would use primarily affective processes, whereas the other group would use cognitive processes. It was expected that the Affect Group would depend heavily on evaluative impression and perceived performance of the physician to determine their satisfaction level, whereas the Cognitive Group was expected to conform to the predictions made by the disconfirmation framework by discounting affect and using expectations and disconfirmation to determine their level of satisfaction. LISREL analysis was performed on the two groups to investigate the relative importance of cognitive and affective processes in determining the level of satisfaction with the service provided. A separate discussion of the proposed model in both the groups will be provided next.

The Affect Group

In the Affect Group, perceived performance was found to be the major determinant of satisfaction and perceived performance in turn was determined largely by evaluative impression as expected. Expectations had a significant relationship with perceived performance and evaluative impression was found to be negatively but significantly related to disconfirmation,
contrary to the proposed hypothesis. Perceived performance was significantly related to disconfirmation. Disconfirmation failed to impact satisfaction and the entire variance in the satisfaction construct was explained by perceived performance alone. Estimating the model without evaluative impression resulted in a significant drop in the fit of the model, confirming the hypothesis that evaluative impression is a significant component of the overall model of service encounter satisfaction.

Although evaluative impression exerted a major influence on perceived performance and satisfaction, the significant parameter estimates between expectations and performance, between evaluative impression and disconfirmation and between performance and disconfirmation point to the importance of cognitively driven processes in explaining satisfaction, although to a lesser degree. The pattern of results obtained seemed to suggest that both affective and cognitive processes parallel each other in determining satisfaction with the service encounter. The pattern of results obtained in this study is consistent with the results obtained by Westbrook (1987):

In this research positive affective responses show substantial covariation with disconfirmation beliefs, though the later presumably reflect "pure" semantic judgments ostensibly free of affect. This finding indicates either shared method variance or a common causal antecedent, such as the cognitive appraisal process postulated to account for differential affect elicitation. In either instance, perhaps greater credence should be given to the affective reports; their greater validity is suggested by their more "primitive" and naive nature (Zajonc 1980) whereas disconfirmation beliefs appear to involve higher levels of cognitive processing (Westbrook 1987, pp 267).

The significance of both affective and semantic variables in this study also could be attributed to a common causal antecedent variable. For instance, subjects' attributions regarding their choice of the physician may influence their expectations, evaluative impression and satisfaction (Bitner 1990).
Another reason for the significance of the cognitive processes may be the service category chosen. Though health care services are characterized by lack of information and high level of uncertainty, they are also the type of services where consumers are motivated to use mental processes at least to a certain degree since the risk of being treated by an incompetent doctor is perceived to be rather high. Because the costs of making a mistake by either one of the parties in the service encounter are high, consumers generate enough involvement with the encounter to try and use cognitive processes along with the affect in evaluating the type of care provided by the doctor. After all, if a mistake did occur, they have to justify their choice later on.

The moderately high parameter estimate of .928 between perceived performance and disconfirmation points to a possible bias due to high correlation between these two variables. As the reader may recall, the inter construct correlation between these two variables was .71. However, the relatively low standard error (.04) for this estimate indicates that collinearity might not pose problems of model misspecification.

Method variance is suspected as a possible reason for the high correlation found between these two variables. Although an attempt was made to reduce method variance by separating the measurement of performance and disconfirmation in the final study, it seems that subjects perceived these two constructs to be similar. The problem of high correlation between performance, disconfirmation and satisfaction is not new to the satisfaction research. As post-purchase responses, all these variables have to be measured after the consumer had a chance to actually experience the product or service and a number of researchers have pointed out the accompanying difficulties in measuring these constructs distinct from each other (Churchill and Surprenant 1982; Tse and Wilton 1988).

Another problem is that these constructs have to be measured with relation to each other since disconfirmation is defined as a subjective feeling regarding subject's perception of how well the level of performance matched the initial expectations and satisfaction depends
heavily on perceived performance. These interrelations introduce two more caveats into the measurement of these constructs, that of method variance and respondent fatigue. There is potential for method variance and respondent fatigue in this study since perceived performance, disconfirmation and satisfaction were measured with relation to each other. As Churchill and Surprenant (1982) suggest, another possibility may be that at least from the consumers' point of view perceptions of performance, disconfirmation and satisfaction overlap. As long as researchers fail to demonstrate significant discriminant validity between these constructs, conceptual distinction between performance, disconfirmation and satisfaction remains problematic.

The close association between performance and disconfirmation raises another interesting conceptual issue. In distinguishing between subtractive and subjective approaches to disconfirmation, Tse and Wilton (1988) point to a possible overspecification of the satisfaction model if the subtractive approach is adopted. According to the subtractive approach, disconfirmation is defined as the difference between perceptions of performance and expectations. If disconfirmation is measured this way as a distinct construct and if expectations and performance are also included as independent variables, the whole model may be overspecified since expectations and perceived performance are factored twice into the model.

Tse and Wilton (1988) suggest that subjective approach to measuring disconfirmation may avoid such confounding. But even in the subjective approach, the subjects are instructed to think back to their expectations and the quality of performance that they have experienced and then compare them to derive a feeling of how well their expectations were confirmed or disconfirmed by the performance of the focal brand. Even in this approach, measuring disconfirmation as a distinct construct induces overspecification, since by definition, disconfirmation represents a comparison of perceptions of expectations and performance which
were already measured. This overspecification may be another reason for the relatively high parameter estimate obtained for the relationship between performance and disconfirmation.

In summary, it could be concluded that the evaluative impression of the physician influences perceived performance directly and satisfaction indirectly through performance. The proposition that affect dominates most service encounters characterized by high uncertainty and lack of information was supported by the absence of any association between the cognitively based disconfirmation and satisfaction. The implications of the results found in the Cognitive Group will be discussed next.

The Cognitive Group

The Cognitive Group was hypothesized to follow the predictions made by the traditional disconfirmation framework. Expectations were hypothesized to impact perceived performance which in turn was predicted to exert an influence on disconfirmation. Disconfirmation was hypothesized to determine satisfaction with the service encounter. Again, with minor modifications the disconfirmation paradigm was upheld in the Cognitive group. Expectations significantly influenced perceived performance and the relationship between perceived performance and disconfirmation was positive and significant. Satisfaction was determined by disconfirmation beliefs. No direct relationship was found between performance and satisfaction. Apart from this predicted pattern, two other relationships also achieved statistical significance in this group. These are the relationship between evaluative impression and perceived performance and the relationship between evaluative impression and disconfirmation.

The most obvious reason for these unexpected results is that affective and semantic variables both contribute to the explanation of satisfaction with service encounter. Another explanation is the role-playing needed in the experiment. Each subject was instructed to imagine that he/she had a fever and it was he/she who was being treated by the doctor. The cognitive responses approach was used to induce attention to specific attributes of the
physician and ensure neutral affect. Although the subjects were instructed to pay close attention to the scenario being introduced, it is possible that they discounted part of the information given out by the spokesperson and relied at least partly on the affective evaluation of the doctor in determining their satisfaction. Thus, the nature of the experiment may be one reason for the pattern of results found.

In summary, it may be concluded that both affective and cognitive variables are important in determining the level of satisfaction with the physician. It may also be tentatively concluded that in situations characterized by lack of information and uncertainty similar to most health care encounters that consumers face, affective responses assume importance. Under conditions of neutral affect however, cognitive processes predominate. Further research is clearly needed to examine the situational contingencies that evoke affective versus cognitive processes in consumers.

The Adequacy of the Disconfirmation Framework to Model Satisfaction with Services

It was proposed throughout this dissertation that the disconfirmation framework may be inadequate to model satisfaction with professional services. The rationale behind this proposition was that due to the lack of information, perceived risk and uncertainty faced by consumers in most service encounters, it is unlikely that consumers generate pre-purchase expectations. Without the formation of expectations, the disconfirmation approach becomes untenable to model satisfaction with services. An affect-based model was proposed as more appropriate in the context of service encounter satisfaction.

The adequacy of the disconfirmation approach to service encounter satisfaction was examined by a competing models analysis. The Full Model was first estimated for both the groups. The fit of this model was compared in both the groups, to an affect-based model and the disconfirmation model. A comparison of the PFI for the Full model and the two competing models indicated that the affect-based model out-performed both the Full Model and the
disconfirmation model in both the Affect Group and the Cognitive Group. Even in the Cognitive Group, it was found that the affect-based model had more explanatory ability than the disconfirmation model, based on the various indices of fit. The results clearly point to the possibility that the disconfirmation model may not be adequate to explain satisfaction with services. More research is needed with different service settings to explore this issue further.

The explanatory ability of the disconfirmation approach was also examined by constraining the relationship between evaluative impression and perceived performance, evaluative impression and disconfirmation and evaluative impression and satisfaction to zero and reestimating the model without evaluative impression in both the groups. A significant drop in the overall fit of the model was observed with the exclusion of evaluative impression in both the groups, attesting to the importance of the construct to the overall service encounter satisfaction model. Additionally, disconfirmation beliefs failed to impact satisfaction in the Affect Group, as predicted by the disconfirmation approach. The entire variance in the satisfaction construct was explained by perceived performance which in turn was largely determined by evaluative impression of the physician. The above evidence points to the potential inadequacy of the disconfirmation approach to model satisfaction with health care services.

The disconfirmation model, however was found to be robust in predicting satisfaction with professional services in the Cognitive Group. In the Cognitive Group, performance failed to impact satisfaction, and disconfirmation was found to be the only determinant of satisfaction. In the Cognitive Group, evaluative impression of the physician was manipulated to be low and it was hypothesized that under conditions of neutral evaluative impression subjects generate enough motivation to form pre-purchase expectations and thus follow the disconfirmation approach more closely to determine their level of satisfaction with the physician. This proposition was upheld. In summary, the results support the view that in affect-laden situations, consumers mostly use their affective responses toward service
providers to form their satisfaction judgments, whereas under conditions of neutral evaluative impressions consumers generate enough motivation due to the costs involved to indulge in semantic processes.

The results obtained in this study are in direct contradiction to the results obtained by Churchill and Surprenant (1982) in their study of satisfaction with a plant and a video disc player. In Churchill and Surprenant’s study, satisfaction with the less involving product (plant) was determined by disconfirmation beliefs whereas satisfaction with the more involving video disc player was determined by performance alone. One reason for the opposite results may be that evaluation processes for products and services differ. Another explanation is the one provided by Churchill and Surprenant themselves. They point out that the strength of the performance manipulation may have contributed to the differential results. In the plant experiment subjects were given objective standards to judge performance levels whereas in the video disc experiment more subjective criteria were given to subjects to judge performance. Unlike Churchill and Surprenant’s study, perceived performance was not manipulated in the LISREL part of this study. When interaction style, one dimension of perceived performance was manipulated in the first part of the study, it was found that interaction style of the physician was the major determinant of satisfaction explaining about 80% of variance in the satisfaction and all other determinants of satisfaction dropped out of the model. As discussed before, negative performance would shift subjects’ attention entirely to the negativity of the performance and would induce a tendency to discount any other determinants of satisfaction. In other words, subjects’ evaluations of the other cues provided in the environment is facilitated only when the performance is positive. This reinforces the argument put forward by Tse and Wilton (1988) that performance is so central to satisfaction that if it is manipulated the strength of the manipulation affects all other determinants of satisfaction. Thus, the results obtained by Churchill and Surprenant’s video disc experiment are consistent with the results obtained in this study when interaction style was manipulated. However, this
explanation does not hold for the plant study since in spite of the performance manipulation, disconfirmation was the sole determinant of satisfaction with the plant. The reason for this widely different results may be a measurement artifact. As Bagozzi and Yi (1989) point out, pooling of experimental data across experimental conditions would violate the equal covariances assumption crucial to the structural equation analysis. The conclusions drawn from the Churchill and Surprenant’s study are suspect, since the data was pooled across all cells.

Implications, Future Research Directions and Limitations

Theoretical Implications and Recommendations for Future Research

The findings of the dissertation raise some important theoretical issues which need to be addressed by satisfaction researchers. These are:

1. The role of affect in determining service encounter satisfaction
2. The relative importance of the affective and cognitive processes in explaining service encounter satisfaction
3. The centrality of perceived performance to the satisfaction model

The Role of Affect in determining Service Encounter Satisfaction

The main objective of this study was to conceptualize and test the impact of affect on service encounter satisfaction. The results supported the conclusion of a direct effect of evaluative impression on perceived performance and an indirect effect through performance on satisfaction. The strong influence of evaluative impression on perceived performance raises the possibility that the antecedents of perceived performance have been understudied in the past literature. Affect has been studied in the context of product satisfaction by Westbrook
and his colleagues. His research has shown that affective reactions alone explain a major portion of variance in satisfaction with products. His conceptualization of affect as a bidimensional construct comprising of positive and negative affects was not supported in this study. Affect towards physicians was shown to be unidimensional and positive. Future research is needed to both confirm the unidimensionality of the affect construct in this study and also to investigate whether the dimensionality of affect differs across professional service providers like lawyers, auditors and architects.

The positioning of expectations within the causal chain supported by this research, affect ——> performance ——> satisfaction need to be further explicated. As the reader may recall, expectations had a significant positive relationship with perceived performance but failed to impact any other component of the model. A significant correlation was also observed between expectations and evaluative impressions, attesting to the possibility that subjects might have used their affective reaction to the doctor as a basis for generating expectations about the performance of the doctor.

Research on the role of schematic expectations on person evaluations (reviewed in Chapter Two, p. 23) supports the view that expectations are germane to categories since schemas are formed by repeated exposure to certain phenomena and this prior knowledge allows certain predictions to be made about typical instances of the category. This raises the possibility that categories may support two parallel but simultaneous processes, an affective component and a cognitive component. The affective component may form the basis for evaluative impressions whereas the cognitive component may produce expectations. A systematic research paradigm is needed to test the above speculations with regard to the nature of categories and the affective and cognitive processes that they generate.

In this study evaluative impression was manipulated at three levels. Positive evaluative impression was conceptualized as a product of a match between stimulus characteristics and a positive category and negative evaluative impression as a mismatch to the category. Neutral
evaluative impression was proposed to be identical to piece-meal processing which in the categorization research was shown to occur when subjects elaborate attribute information. Fiske and her colleagues have demonstrated that these two types of processing (affective and cognitive) fall on a single continuum (Fiske and Pavelchak 1987; Fiske and Neuberg 1990). Within the marketing literature several researchers have adopted the continuum model to examine product evaluations as a function of match or mismatch to a pre-established category (Sujan 1985; Sujan, Bettman and Sujan 1986; Myers-Levy and Tybout 1989). The neutral evaluative impression manipulation was necessitated by the second research question which proposed to investigate the relative importance of affective and cognitive processes in determining subjects’ satisfaction with the service encounter. The neutral evaluative impression was proposed as a means to evoke cognitive processes by subjects. Additional research is needed to clearly specify the domains of affective and cognitive processes and to gain further insights into the representation of these two processes on a single dimension. Although the manipulation checks demonstrated that the manipulations were successful, the author is cognizant of the fact that there is really no strong test to separate the two processes. A categorization approach was used as a means to overcome the measurement problems inherent in investigating affective processes. Within the service encounter satisfaction context, additional research is clearly needed to devise more creative ways to separate affective and cognitive evaluations of service providers.

The affective reactions guiding overall evaluations of the service provider will be translated to a strong preference to that particular service provider and encourage loyalty only if the affect generated is not transient and dissipates over time. The operationalization of affect in the present study did not allow the researcher to test the delayed effects of affective reactions. Future research needs to address the stability of affective reactions over time.

The results of the present study supported a direct relationship between evaluative impression and perceived performance. However, additional research is needed within the
service encounter context, to explore the relationship between evaluative impression and information processing strategies (Petty, Cacioppo and Goldman 1981), between evaluative impression and memory processes (Moore and Hutchinson 1983) and finally between evaluative impression and alternative service choice strategies (Gorn 1982).

The Relative Importance of Affective and Cognitive Processes in Explaining Service Encounter Satisfaction

The results of the present study supported an affect-based model in both positive evaluative impression situations and neutral evaluative impression situations. Within the Affect Group, the expectations and perceived performance linkage and the perceived performance to disconfirmation linkage achieved significance whereas in the Cognitive Group, the linkage between evaluative impression and perceived performance and the linkage between evaluative impression and disconfirmation achieved significance. The results thus demonstrated that both affective evaluations and cognitive processes explain satisfaction with services. Although the results obtained in this study are consistent with Petty and Cacioppo’s peripheral model in low involvement situations and central model in high involvement situations, additional research is needed to determine the situational contingencies which force consumers to adopt one route versus the other.

Although we know that both affective evaluations and cognitive processes influence satisfaction judgements, we have yet to establish the exact interplay between these two processes to influence not only satisfaction but also repeat purchase behavior. Due to the poor model fit obtained in both the groups and high collinearity observed among some of the measures, causality cannot be established between affect, cognition and satisfaction. Future research should address the issue of causal sequence more thoroughly by paying attention to the limitations noted in this study.
The Centrality of Perceived Performance to the Satisfaction Model

The results found in the Affect Group were consistent with two other recent studies which found the dominant influence of performance on satisfaction (Churchill and Surprenant 1982; Tse and Wilton 1988). As discussed previously, there seems to be some overspecification in the present models of satisfaction, since direct effects are included from expectations, performance and disconfirmation and disconfirmation is defined as the difference between performance and expectations. If performance is treated as central to satisfaction formation process, a much more parsimonious model may be obtained by proposing an affect ——> perceived performance ——> satisfaction sequence for service encounter satisfaction. Indeed, the nested models analysis does seem to support such an approach. Clearly, much more research is needed to specify the role of performance within the service encounter satisfaction model, since most businesses are unable to withstand competition because of low performance standards.

Alternative methods of measuring performance should be developed, especially in the light of high collinearity observed between perceived performance measures and satisfaction measures in this study. One strategy is to separate the timing of measuring both constructs. Another may be to rely on verbal protocols. Additional research to establish discriminant validity between performance, disconfirmation and satisfaction is clearly needed.

Managerial Implications

The American Medical Association recently issued a statement warning doctors about a image problem that they have and prescribed an image campaign for them (Marketing News, Sept 16, 1991, p.2). The findings of this study confirmed some of the concerns of American Medical Association. Evaluative impression of the doctor was shown to exert a dominant influence on perceived performance. However, doctors do not seem to be aware of the managerial implications of the affective responses they generate in their patients. More and
more hospitals are promising friendly service and good bedside manners to combat competition but the marketers should be aware that the drop in satisfaction generated out of failure to deliver affective benefits is worse than not promising any benefits at all. This was clearly demonstrated by the experimental data where the perceived performance and satisfaction ratings were lower for the positive evaluative impression/negative interaction style condition than the ratings for negative evaluative impression/negative interaction style and were almost equal to neutral evaluative impression/negative interaction style condition. Marketers should take this finding into consideration before promising benefits high on affective cues from the hospitals.

The results also indicate that consumers’ affective reactions may be used as a basis for planning strategies by hospitals. Hospital marketers can train the hospital employees to recognize the advantages and disadvantages of generating affective reactions in patients and utilize those reactions to promote repeat patronage and loyalty to the institution.

One disadvantage of promoting affective behaviors among doctors may be that the marketers would be incidentally promoting loyalty towards particular physicians among patients. This may place a limit on the number of patients served by each doctor and thus may hamper expansion of service facilities. Service marketers should carefully weigh the advantages and disadvantages of an affect-based strategy before adopting it.

The findings also suggest avenues to improve relationship-marketing (Berry 1980) through pursuit of an affect management strategy. By training employees in understanding the benefits of affective reactions, long term relationships with their consumer base could be achieved. As advocated by many marketers it is more difficult to retain the existing consumer base than attracting new ones and affect may be one strategy to hold consumers. If all the employees are trained in affective qualities, marketers may also be able to check the exodus of customers with departing service personnel.
**Limitations**

One of the chief limitations of the study is its lack of generalizability due to the simulation method used to investigate service encounter satisfaction. The simulation method has a long standing history in consumer behavior, more specifically in satisfaction research. A number of authors have utilized this approach to study post-purchase evaluations (Churchill and Surprenant 1982; Surprenant and Solomon 1987; Tse and Wilton 1988; Bitner 1990). The role-playing methodology, though useful in providing additional control over the administered manipulations and thus ensuring internal validity (Cook and Campbell 1975), also limits the external validity of the findings. In an effort to improve the generalizability of the results to other settings, a realistic scenario was used which most health care consumers have experienced, the doctor-patient interaction was demonstrated on a video tape instead of the usual verbal description and computer aided data collection technique was used. The conclusions drawn from the study should however, be tempered by considerations of the role-playing methodology used and the single service category chosen to test the domain of the proposed service encounter satisfaction model.

The second limitation of the study lies in its reliance on a convenience sample of university students to test the model. The nature of the experiment and the use of computer technology for the purpose of data collection necessitated the use of student sample instead of a cross sectional sample of real respondents. As the objective of this dissertation was to extend the extant theoretical domain of service encounter satisfaction and not effects application, use of a maximally homogenous sample is deemed adequate for purposes of theory falsification (Calder, Phillips and Tybout 1981).

Another limitation of the study is the focus on the dyadic interaction between a professional and his patient. The study could not incorporate other affective cues in the service environment such as interaction with the support staff and the physical facilities of the
service organization. It was felt that an understanding of the core service encounter is necessary before research is extended to study the effects of other environmental cues.

The high collinearity observed between perceived performance and disconfirmation and perceived performance and satisfaction is symptomatic of satisfaction research in general. As discussed before, as long as these three variables are measured with relation to each other, the problem of multicollinearity cannot be avoided. A possible solution to this problem was suggested by Oliver (1980) who advocates a three stage measurement technique. According to this approach, expectations are measured at time \( t \), perceived performance after product or service experience at time \( t_2 \) and disconfirmation and satisfaction after a certain time lag at time \( t_3 \). However, this approach may not be very realistic to many marketing researchers who may not be able to command the resources required to carry out such a longitudinal study.

The results of the dissertation study may also be specific to the particular manipulations employed in the study. As the reader may recall two factors were manipulated in the study, evaluative impression of the physician (positive, negative and neutral) and the interaction style of the physician. The results of the MANOVA analysis demonstrated that the strength of the interaction style manipulation dominated all other determinants of satisfaction with an effect size of .81. As mentioned earlier, performance is so central to satisfaction judgements that any manipulation of it results in strong reactions from consumers. A weaker manipulation of the interaction style or maybe not manipulating interaction style at all, may have produced different results with some different implications. Additional research is needed in this direction to see if manipulation of performance produces different results compared to similar situations where performance was not manipulated in investigating satisfaction processes.

A final limitation of the study involves the inherent disadvantages of the structural equation analysis utilized in this study. Apart from the problems associated with the Chi-Square test statistic (sensitivity to sample size and the negative relationship between goodness of fit and strength of estimates), specification problems may have biased the results obtained.
For instance, the strength of the affective responses hypothesized to influence service encounter satisfaction may be a function of individual differences such as the education level of the consumers and prior familiarity with the service category. The study as operationalized, did not offer an opportunity to test the effect of some of these antecedent variables. Future research in the service encounter satisfaction area should examine the role of these antecedent variables as well as some situational variables (time constraints, seriousness of the illness) on service encounter satisfaction.

Summary

In summary, the contribution of this dissertation lies in extending the services marketing literature by focusing on four main research issues. This dissertation (1) studied the role of affect in service encounter satisfaction; (2) proposed a categorization approach to study interpersonal influences in service encounters; (3) systematically investigated the relative importance of affective responses compared to cognitive measures of satisfaction, and (4) examined the adequacy of the disconfirmation approach to study service encounter satisfaction.

Theoretical and managerial implications derived out of the findings of the study were discussed along with many potential avenues for future research. Although several limitations restrict the scope of the present study, it is hoped that the research reported here would act as a catalyst to programmatic research on consumer satisfaction processes that promotes a thorough understanding of the concept.


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APPENDIX 1

Description of Items Used in Pretest One (Doctors)

Survey of Consumer Services

This survey is designed to study your feelings towards doctors. We are not concerned about any one particular doctor or your present family physician. All we want to know is what your feelings are about doctors in general. Please read the statements below carefully and tell us whether you agree or disagree with them. Please circle the number that best represents your feeling. The scale is 1 = SA (strongly agree) 2 = A (agree) 3 = SLA (slightly agree) 4 = NA (neither agree nor disagree) 5 = SLD (slightly disagree) 6 = D (disagree) 7 = SD (strongly disagree).

SA   A   SLA  NA  SLD  D   SD
Doctors make me feel happy    1   2   3   4   5   6   7
I generally like doctors      1   2   3   4   5   6   7
Doctors make me feel angry    1   2   3   4   5   6   7
I trust doctors               1   2   3   4   5   6   7
Doctors make me feel irritated 1   2   3   4   5   6   7
Doctors distress me           1   2   3   4   5   6   7
Doctors interest me           1   2   3   4   5   6   7
Doctors excite me             1   2   3   4   5   6   7
Doctors bore me               1   2   3   4   5   6   7
Doctors make me feel pleased  1   2   3   4   5   6   7
Doctors annoy me              1   2   3   4   5   6   7
Doctors make me feel good     1   2   3   4   5   6   7
Doctors disgust me            1   2   3   4   5   6   7
Doctors comfort me            1   2   3   4   5   6   7
I love doctors                1   2   3   4   5   6   7

Free Elicitation Format

Survey of Consumer Services

This survey is intended to study the typical attributes people associate with the category of doctors in general. We are not interested in any one particular doctor or your family physician. We want you to tell us what you think of doctors in general. Do not worry or puzzle over what to express or to make your expressions consistent with one another. It is your immediate feelings, your general impressions about doctors, that are important. Please list all the attributes you think are typical of doctors in general in the space provided below. All your responses would be treated as strictly confidential.

Thank you for your cooperation

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Survey of Consumer Services (Lawyers)

This survey is designed to study your feelings towards lawyers. We are not concerned about any one particular lawyer. All we want to know is what your feelings are about lawyers in general. Please read the statements below carefully and tell us whether you agree or disagree with them. Please circle the number that best represents your feeling. The scale is 1 = SA (strongly agree) 2 = A (agree) 3 = SLA (slightly agree) 4 = NA (neither agree nor disagree) 5 = SLD (slightly disagree) 6 = D (disagree) 7 = SD (strongly disagree).

SA  A  SLA  NA  SLD  D  SD

I trust lawyers          1  2  3  4  5  6  7
Lawyers distress me     1  2  3  4  5  6  7
Lawyers make me feel uneasy 1  2  3  4  5  6  7
Lawyers make me feel good     1  2  3  4  5  6  7
I like lawyers          1  2  3  4  5  6  7
Lawyers disappoint me   1  2  3  4  5  6  7
Lawyers make me feel angry 1  2  3  4  5  6  7
Lawyers irritate me     1  2  3  4  5  6  7
Lawyers make me feel happy 1  2  3  4  5  6  7
Lawyers depress me      1  2  3  4  5  6  7
Lawyers make me feel pleased 1  2  3  4  5  6  7
Lawyers make me feel bad   1  2  3  4  5  6  7
I resent lawyers        1  2  3  4  5  6  7
Lawyers interest me     1  2  3  4  5  6  7
I dislike lawyers       1  2  3  4  5  6  7
APPENDIX 2

Description of Items Used in Pretest Two

Survey of Consumer Services

Thank you for taking part in this study today. We are interested in knowing your attitudes towards various professional service providers. Below we have listed some of the important characteristics generally attributed to professional service providers. Please read them carefully.

Some Important Attributes of Professional Service Providers

Knowledgeable  Good listener
Caring  Sympathetic
Understanding  Gentle

Now, we would like you to tell us which of the professionals are most likely to have these combination of attributes. Are the above attributes most common to: (please check one)

Accountants  
Architects  
Doctors  
Lawyers  

Now, we would like to ask about your feelings towards doctors in general. Now, think back to your past experiences with doctors. We would like to know how you feel towards them in general.

Overall, I think Doctors are:

Good  Bad
Likable  Dislikable
Pleasant  Unpleasant
Nice  Awful
APPENDIX 3
Description of Items Used in Pretest Three
Survey of Consumer Services

This survey is intended to assess your feelings towards doctors in general. In order to answer the questions below, please imagine the following situation.

You got a job offer from a major oil company and they require a physical before you can join them.

In this situation, we would like to know what you generally think about doctors. Please take a moment to think about your experiences with various doctors. Now, we would like you to tell us briefly, the typical performance you expect from a doctor. In other words, how do you think a doctor should treat you when you visit him/her.

Next, Please tell us briefly what you think as the most atypical performance of a doctor. In other words, we would like you to tell us the type of doctor you would most definitely avoid seeing.

There are a set of nine attributes listed below. Please tell us, in your own words, the attributes you think are typical of a day-to-day, typical doctor you encounter in your life. Please circle the attributes you think are most common to a normal doctor.

Nice
Ordinary
Methodical
Normal
Usual
Typical
Average
Common
Regular
Let us say that in the situation described above, you were forced to go to a doctor who was ordinary, common, typical and methodical. Please tell us how you feel about this doctor? Please be sure to respond to all the statements.

|------|------------------|

Now, tell us about your level of knowledge and familiarity with physician services. Please rate your knowledge of physician services, compared to the average person. Please check the position that best represents your opinion.

| One of the LEAST Knowledgeable | One of the MOST Knowledgeable |

Please circle one of the numbers below to describe your familiarity with physician services:

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<tr>
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<th>4</th>
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<th>6</th>
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<tr>
<td>Not at all</td>
<td>Extremely Familiar</td>
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</tbody>
</table>

How often do you visit a physician? (please check one)

- about once in a month
- about once in two months
- about twice a year

Thank You for your Cooperation
APPENDIX 4

Survey of Physician Services

Thank you for taking part in this survey today. We are interested in understanding your responses to physician services. We will show you a videotape of Dr. Harrison, who happens to be a general practitioner. In order to respond to the questionnaire, we would like you to imagine yourself in the following situation.

You have cold, cough and fever and decide to visit Dr. Harrison.

Dr. Harrison is new at the hospital and personally, you do not know much about him. One of your friends mentioned that:

Dr. Harrison is a member of the American Medical Association and has received various honors and awards for his distinguished service in many hospitals. He has developed various innovative diagnostic procedures and is highly regarded by his colleagues. He enjoys a good reputation among his patients and is known to be caring, nice and friendly.

Now, please imagine that you went to the hospital to see Dr. Harrison. We now show Dr. Harrison on the TV screen in front of you. Although you know very little about Dr. Harrison, please try and form an impression of him.

PLEASE OBSERVE DR. HARRISON ON THE TV SCREEN IN FRONT OF YOU

Now, based on your impression of Dr. Harrison, please respond to the items below.

Does Dr. Harrison matches your perception of an ideal doctor:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not Match</td>
<td>Exactly Matches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you categorize Dr. Harrison as a typical doctor?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not At All</td>
<td>Very Typical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How representative do you think Dr. Harrison is to most of the doctors practicing today?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not At All Representative</td>
<td>Highly Representative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Do you think Dr. Harrison is the type of doctor most people expect?

<table>
<thead>
<tr>
<th>Not the Type Most People Expect</th>
<th>Exactly the Type Most People Expect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How similar do you think Dr. Harrison is to a typical doctor?

<table>
<thead>
<tr>
<th>Not At All</th>
<th>Exactly Similar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you think Dr. Harrison is a competitive doctor?

<table>
<thead>
<tr>
<th>Not at All</th>
<th>Highly Competitive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now, based on your impression of Dr. Harrison, please tell us how you feel about him.

Do you think Dr. Harrison is:

<table>
<thead>
<tr>
<th>Good</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dislikable</th>
<th>Unpleasant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Awful</th>
<th>Incompetent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Untrustworthy</th>
<th>Anxious</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deceptive</th>
<th>Uninteresting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dishonest</th>
<th>Unfriendly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stupid</th>
<th>Disreputable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deceitful</th>
<th>Insincere</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annoying</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dr. Harrison is an internist at the hospital. He is arrogant, loud and pushy. His patients describe him as indifferent, impersonal, close-minded, and very opinionated. He is overweight and is a heavy smoker. He likes to be in-charge of the situation all the time and strongly believes that he is the only one who can make decisions about what is wrong with the patients. In the process he usually talks "down" to his patients. He also likes to underprescribe and ask patients to come back after a couple of days. He was an average student in medical school and is not very interested in any of the new diagnostic procedures.

Based on your impression of Dr. Harrison, please respond to the items below.

Do you categorize Dr. Harrison as a typical doctor:

Not At All:  ______: ______: ______: ______: ______: ______: ______: ______:  Very
Typical:    ______: ______: ______: ______: ______: ______: ______: ______:  Typical

Does Dr. Harrison matches your perception of an ideal doctor:

Does not Match:  ______: ______: ______: ______: ______: ______:  Exactly
At All:          ______: ______: ______: ______: ______: ______:  Matches

How representative do you think Dr. Harrison is to most of the doctors practicing today?

Not At All:  ______: ______: ______: ______: ______: ______:  Highly
Representative: ______: ______: ______: ______: ______: ______:  Representative

Do you think Dr. Harrison is the type of doctor most people expect?

Not the Type Most:  ______: ______: ______: ______: ______: ______:  Exactly the Type Most
People Expect: ______: ______: ______: ______: ______: ______:  People Expect
How similar do you think Dr. Harrison is to a typical doctor?

<table>
<thead>
<tr>
<th>Not At All</th>
<th>Exactly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar</td>
<td>Similar</td>
</tr>
</tbody>
</table>

Do you think Dr. Harrison is a competitive doctor?

<table>
<thead>
<tr>
<th>Not at All</th>
<th>Highly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive</td>
<td>Competitive</td>
</tr>
</tbody>
</table>

Now, based on your impression of Dr. Harrison, please tell us how you feel about him.

Do you think Dr. Harrison is:

<table>
<thead>
<tr>
<th>Good</th>
<th>Likable</th>
<th>Pleasant</th>
<th>Nice</th>
<th>Competent</th>
<th>Trustworthy</th>
<th>Confident</th>
<th>Truthful</th>
<th>Interesting</th>
<th>Honest</th>
<th>Friendly</th>
<th>Intelligent</th>
<th>Reputable</th>
<th>Candid</th>
<th>Sincere</th>
<th>Calm</th>
<th>Bad</th>
<th>Dislikable</th>
<th>Unpleasant</th>
<th>Awful</th>
<th>Incompetent</th>
<th>Untrustworthy</th>
<th>Anxious</th>
<th>Uninteresting</th>
<th>Dishonest</th>
<th>Unfriendly</th>
<th>Stupid</th>
<th>Disreputable</th>
<th>Deceitful</th>
<th>Insincere</th>
<th>Annoying</th>
</tr>
</thead>
</table>
Survey of Physician Services

Thank you for taking part in this survey today. We are interested in understanding your responses to physician services. We will show you a videotape of Dr.Harrison, who happens to be a general practitioner. In order to respond to the questionnaire, we would like you to imagine yourself in the following situation.

You have cold, cough and fever and decide to visit Dr.Harrison.

Dr.Harrison is new at the hospital and personally, you do not know much about him. One of your friends mentioned that:

Dr.Harrison is an internist at the hospital. He lacks confidence and is very indecisive. He is always tired and likes to get his work done as quickly as possible. He is not a "people" person and would prefer to be left alone most of the time. He likes to underprescribe, mostly expensive medicines, and ask patients to come back after a couple of days. He believes that most patients exaggerate their problems just to get attention. He likes to keep his patients waiting, and strongly believes that once a patient visits him, he is his property and cannot switch to any other doctor.

Now, please imagine that you went to the hospital to see Dr.Harrison. We now show Dr.Harrison on the TV screen in front of you. Although you know very little about Dr.Harrison, please try and form an impression of him.

PLEASE OBSERVE DR.HARRISON ON THE TV SCREEN IN FRONT OF YOU

Now, based on your impression of Dr.Harrison, please respond to the items below.

Do you categorize Dr.Harrison as a typical doctor:

____: ______: _____: _____: _____: _____: _____: _____
Not At All Typical                          Very Typical

Does Dr.Harrison matches your perception of an ideal doctor:

____: ______: _____: _____: _____: _____: _____: _____
Does not Match                           Exactly
At All                                    Matches
How representative do you think Dr. Harrison is to most of the doctors practicing today?

Not At All: Highly Representative
Representative

Do you think Dr. Harrison is the type of doctor most people expect?

Not the Type Most People Expect: Exactly the Type Most People Expect

How similar do you think Dr. Harrison is to a typical doctor?

Not At All: Exactly Similar
Similar

Do you think Dr. Harrison is a competitive doctor?

Not at All: Highly Competitive
Competitive

Now, based on your impression of Dr. Harrison, please tell us how you feel about him.

Do you think Dr. Harrison is:

- Good
- Likable
- Pleasant
- Nice
- Competent
- Trustworthy
- Confident
- Truthful
- Interesting
- Honest
- Friendly
- Intelligent
- Reputable
- Candid
- Sincere
- Calm

- Bad
- Dislikable
- Unpleasant
- Awful
- Incompetent
- Untrustworthy
- Anxious
- Deceptive
- Uninteresting
- Dishonest
- Unfriendly
- Stupid
- Disreputable
- Deceitful
- Insincere
- Annoying
Survey of Physician Services

Dr. Harrison has been working at the hospital for over eight years now. He is knowledgeable, caring and takes time to listen to his patient’s problems. His patients describe him as warm, friendly, open-minded and sympathetic. He likes to keep up with all the new diagnostic procedures and always explains the medical terminology to his patients. He likes to spend enough time with his patients so as to give each patient individual attention. He is highly regarded by his colleagues and enjoys a good reputation among his patients.

Based on your impression of Dr. Harrison, please respond to the items below.

Do you categorize Dr. Harrison as a typical doctor:

Not At All: Typical: Very

Does Dr. Harrison matches your perception of an ideal doctor:

Does not Match: At All: Matches

How representative do you think Dr. Harrison is to most of the doctors practicing today?

Not At All: Highly: Representative

Do you think Dr. Harrison is the type of doctor most people expect?

Not the Type Most: Exactly the Type Most

People Expect: People Expect

How similar do you think Dr. Harrison is to a typical doctor?

Not At All: Exactly

Similar: Similar
Do you think Dr. Harrison is a competitive doctor?

<table>
<thead>
<tr>
<th>Not at All</th>
<th>Competitive</th>
</tr>
</thead>
</table>

Now, based on your impression of Dr. Harrison, please tell us how you feel about him.

**Do you think Dr. Harrison is:**

<table>
<thead>
<tr>
<th>Good</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likable</td>
<td>Dislikable</td>
</tr>
<tr>
<td>Pleasant</td>
<td>Unpleasant</td>
</tr>
<tr>
<td>Nice</td>
<td>Awful</td>
</tr>
<tr>
<td>Competent</td>
<td>Incompetent</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>Untrustworthy</td>
</tr>
<tr>
<td>Confident</td>
<td>Anxious</td>
</tr>
<tr>
<td>Truthful</td>
<td>Deceptive</td>
</tr>
<tr>
<td>Interesting</td>
<td>Uninteresting</td>
</tr>
<tr>
<td>Honest</td>
<td>Dishonest</td>
</tr>
<tr>
<td>Friendly</td>
<td>Unfriendly</td>
</tr>
<tr>
<td>Intelligent</td>
<td>Stupid</td>
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<tr>
<td>Reputable</td>
<td>Disreputable</td>
</tr>
<tr>
<td>Candid</td>
<td>Deceitful</td>
</tr>
<tr>
<td>Sincere</td>
<td>Insincere</td>
</tr>
<tr>
<td>Calm</td>
<td>Annoying</td>
</tr>
</tbody>
</table>
Survey of Physician Services

Thank you for taking part in this survey today. We are interested in understanding your responses to physician services. We will show you a videotape of Dr. Harrison, who happens to be a general practitioner. In order to respond to the questionnaire, we would like you to imagine yourself in the following situation.

You have cold, cough and fever and decide to visit Dr. Harrison.

Dr. Harrison is new at the hospital and personally, you do not know much about him. One of your friends mentioned that:

**Dr. Harrison is an ordinary kind of a doctor. He is methodical, normal and usual. He is married, has two children and likes to play golf on the week ends. He is also a member of AMA.**

Now, please imagine that you went to the hospital to see Dr. Harrison. We now show Dr. Harrison on the TV screen in front of you. Although you know very little about Dr. Harrison, please try and form an impression of him.

**PLEASE OBSERVE DR. HARRISON ON THE TV SCREEN IN FRONT OF YOU**

Now, based on your impression of Dr. Harrison, please respond to the items below.

Do you categorize Dr. Harrison as a **typical** doctor:

---: ---: ---: ---: ---: ---: ---: ---

Not At All Typical                                      Very Typical

Does Dr. Harrison matches your perception of an **ideal** doctor:

---: ---: ---: ---: ---: ---: ---: ---

Does not Match                                      Exactly

At All                                              Matches

How representative do you think Dr. Harrison is to most of the doctors practicing today?

---: ---: ---: ---: ---: ---: ---: ---

Not At All                                      Highly

Representative                              Representative
Do you think Dr. Harrison is the type of doctor most people expect?

Not the Type Most People Expect

Exactly the Type Most People Expect

How similar do you think Dr. Harrison is to a typical doctor?

Not At All

Similar

Exactly Similar

Do you think Dr. Harrison is a competitive doctor?

Not at All

Competitive

Highly Competitive

Now, based on your impression of Dr. Harrison, please tell us how you feel about him.

Do you think Dr. Harrison is:

Good

Likable

Pleasant

Nice

Competent

Trustworthy

Confident

Truthful

Interesting

Honest

Friendly

Intelligent

Reputable

Candid

Sincere

Calm

Bad

Dislikable

Unpleasant

Awful

Incompetent

Untrustworthy

Anxious

Deceptive

Uninteresting

Dishonest

Unfriendly

Stupid

Disreputable

Deceitful

Insincere

Annoying
Thank you for taking part in this survey today. We are interested in understanding your responses to physician services. We will show you a videotape of Dr. Harrison, who happens to be a general practitioner. In order to respond to the questionnaire, we would like you to imagine yourself in the following situation.

You have cold, cough and fever and decide to visit Dr. Harrison.

Now, please imagine that you have decided to visit Dr. Harrison for treatment. Think about what might have happened when you visited Dr. Harrison with a cold, cough and fever. We will now show you, on another videotape, what actually happened when Dr. Harrison started treating you. Please observe all the details of Dr. Harrison’s examination, while imagining that it is you who is actually receiving the care from Dr. Harrison. That is, the patient Dr. Harrison is talking to is you.

PLEASE LOOK AT THE WAY DR. HARRISON IS TREATING YOU ON THE TV SCREEN IN FRONT OF YOU.

Now, we would like you to indicate your perceptions regarding Dr. Harrison’s performance. While imagining that it is you, who has received the treatment from Dr. Harrison, please tell us on the scale below, what you think of Dr. Harrison’s performance. Once again, there are five possible responses to each statement. If you strongly agree with the statement, please circle 5, if you agree with the statement please circle 4. If you neither disagree nor agree with the statement please circle 3. If you disagree with the statement circle 2, and finally if you strongly disagree with the statement circle 1.
I Think Dr. Harrison:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listened to my problems...............................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Spent enough time with me..............................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was completely trustworthy.............................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Explained the reason for tests........................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was competent..........................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was knowledgeable......................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was experienced........................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was professional........................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Talked clearly, using words that I understand........</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was open and honest about my problems..................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Warned me about possible side effects of medicines he prescribed for me.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was friendly............................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was caring..............................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>was sympathetic..........................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Understood my needs....................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was rude................................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 6

Description of the Measurement Instrument along with the Experimental Procedure

Thank you for taking part in this study today. This survey asks about your satisfaction with the services of physicians. It has several sections with instructions at the beginning of each section. Please be sure to respond to each of the statements. All responses would be treated as strictly confidential.

Section I

Please tell us how you feel towards doctors in general. In other words, what do you think of doctors? Please respond to the statements below by checking the appropriate position:

Overall, I think Doctors are:

<table>
<thead>
<tr>
<th>Good</th>
<th>------</th>
<th>----</th>
<th>Nice</th>
<th>-------</th>
<th>Bad</th>
<th>Dislikable</th>
<th>Likable</th>
<th>Pleasant</th>
<th>Unpleasant</th>
<th>Awful</th>
</tr>
</thead>
</table>

Think about your past experiences with doctors. We have a list of adjectives below. We would like you to tell us if you ever felt the way described by each adjective about doctors before. In other words, did you ever have occasion to feel the emotions described below? The scale has five points, from strongly disagree to strongly agree. Please circle the number that best represents your position. Please be sure to rate each statement.

<table>
<thead>
<tr>
<th>Afraid</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Hopeful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Pleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Unhappy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Dislike</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Annoyed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Good</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Frustrated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sympathetic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Nice</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Irritated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Interested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Nervous</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Now, we would like you to tell us how involved you are with your health care. Please circle the position that indicates how you feel.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I always read the health section in newspapers and magazines...</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>It is dangerous to have a bad doctor.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>I watch most of the health related shows on TV ................</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>I never miss my regular physical....</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>It is important to me that I know where to reach a doctor in case of emergency............</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Overall, I am highly concerned about my health..................</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>It is important to have a good family doctor....................</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>I am interested in health related issues.......................</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Section II

We now would like to ask you about your perceptions of individual doctors. In order to do that, we are going to show you two videotapes of Dr.Harrison, who happens to be a general practitioner. First, the researcher will introduce Dr.Harrison to you by showing a picture of him on the TV screen in front of you. After viewing the picture, please tell us what you think of Dr.Harrison. The second videotape will be shown to you later on by the researcher.

In order to evaluate Dr.Harrison, we would like you to imagine yourself in the following situation:

You have cold, cough and fever and decide to visit Dr.Harrison.

Dr.Harrison is new at the hospital and personally, you do not know much about him. One of your friends mentioned that:

Dr.Harrison has been working at the hospital for over eight years now. He is knowledgeable, caring and takes time to listen to his patient’s problems. His patients describe him as warm, friendly, open-minded and sympathetic. He likes to keep up with all the new diagnostic procedures and always explains the medical terminology to his patients. He likes to spend enough time with his patients so as to give each patient individual attention. He is highly regarded by his colleagues and enjoys a good reputation among his patients.
Now, please imagine that you went to the hospital to see Dr. Harrison. As typically is the case when you go to a hospital, the nurse took your temperature, blood pressure and also did a blood exam. She then asked you to wait for Dr. Harrison who arrived shortly. We now would like to know what your immediate reaction is towards Dr. Harrison. In other words, what do you think of him?

We now show Dr. Harrison on the TV screen in front of you. Please try and form an impression of him in order to tell us what you think of him.

PLEASE OBSERVE DR. HARRISON ON THE TV SCREEN IN FRONT OF YOU

Now, based on your impression of Dr. Harrison, please respond to the statements below. How similar/different do you think Dr. Harrison is to a typical doctor:

Not At All  Exactley  Similar

Now, based on your impression of Dr. Harrison, please tell us how you feel about him. Do you think Dr. Harrison is:

Good  • Dislikable  • Unpleasant  • Awful
Likable  • Incompetent  • Untrustworthy
Pleasant  • Anxious
Nice  • Deceptive
Competent  • Uninteresting
Trustworthy  • Dishonest
Confident  • Stupid
Confident  • Disreputable
Interesting  • Deceitful
Honest  • Annoying
Friendly  • Calt
Intelligent  • Calm
Reputable  • Competent
Candid  • Trustworthy
Calm  • Similar

How confident are you that the evaluations you just made are correct?

Not At All  Highly  Confident

We now would like to know what type of care you expect from Dr. Harrison. Please circle the number that best represents your opinion. There are five possible responses to every statement. If you strongly disagree with the statement circle 1. If you disagree with the statement circle 2. If you neither disagree nor agree with the statement circle 3. If you agree with the statement circle 4. If you strongly agree with the statement circle 5.
I would expect Dr. Harrison to:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be knowledgeable</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be a good listener</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Spend enough time with me</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be incompetent</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be trustworthy</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Speak clearly, using words that I understand</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be Unprofessional</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be caring</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be inefficient</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Understand my needs</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be sympathetic</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be unfriendly</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Be capable of handling my problems</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Warn me about possible side effects of prescribed medicines</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

Now, tell us about your level of knowledge and familiarity with physician services. We would like you to rate your knowledge of physician services, compared to the average person. Please check the position that best represents your opinion.

---------------------
One of the LEAST Knowledgeable
---------------------
One of the MOST Knowledgeable

Please circle one of the numbers below to describe your familiarity with physician services:

1 2 3 4 5 6 7

Not at all Familiar
Extremely Familiar
Section III

Think about what might have happened when you visited Dr.Harrison with a cold, cough and fever. We will now show you, on another videotape, what actually happened when Dr.Harrison started treating you. Please observe all the details of Dr.Harrison's examination, while imagining that it is you who is actually receiving the care from Dr.Harrison. That is, the patient Dr.Harrison is talking to is you.

PLEASE LOOK AT THE WAY DR.HARRISON IS TREATING YOU ON THE TV SCREEN IN FRONT OF YOU.

Now, we would like you to indicate your perceptions regarding Dr.Harrison's performance. While imagining that it is you, who has received the treatment from Dr.Harrison, please tell us on the scale below, what you think of Dr.Harrison's performance. Once again, there are five possible responses to each statement. If you strongly agree with the statement, please circle 5, if you agree with the statement please circle 4. If you neither disagree nor agree with the statement please circle 3. If you disagree with the statement circle 2, and finally if you strongly disagree with the statement circle 1.

I Think Dr.Harrison:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was professional...........................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Did not listen to my problems...............................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Spent enough time with me.................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was completely trustworthy.................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Talked clearly, using words that I understand...............</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was incompetent.............................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was knowledgeable..........................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was efficient................................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Warned me about possible side effects of medicines he prescribed for me.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was unfriendly................................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was caring..................................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was sympathetic...............................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Understood my needs.........................................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Was capable of handling my problems........................</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Overall, I feel Dr.Harrison was a good doctor...............</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

How often do you visit a physician? (please check one)

- about once in a month
- about once in two months
- about twice a year

When did you last visit a doctor?

What was the nature of your illness at that time?
Section IV

In this section we would like to know whether you actually received the type of care you expected from Dr. Harrison. Think back to the type of care you expect from doctors to begin with. Now, compare that to the type of care you received from Dr. Harrison. Please tell us whether the type of care you received was Worse than Expected or Better than Expected. Please indicate your position on the scale by circling the appropriate number.

During My visit Dr. Harrison's:

<table>
<thead>
<tr>
<th></th>
<th>Worse than I Expected</th>
<th>Better than I Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening skill was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Amount of time spent with me was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Trustworthiness was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Competence was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Knowledgeability was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Level of professionalism was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Understandability was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Concern regarding any possible side effects of prescribed medicines was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Friendliness was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Efficiency was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Sympathy towards me was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Concern for my well being was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Ability to understand my needs was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Ability to handle my problems was</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

Are you Male ___ or Female ___

Do you always go to the same doctor? ___ Yes ___ No

Do you think Dr. Harrison's performance was in any way different from the performance of the doctor you usually go to?

Yes ___ No ___

If yes, please tell us why?
Section V

This section is concerned with your satisfaction with Dr. Harrison. Below are several statements regarding various aspects of your visit to Dr. Harrison. We would like to know how satisfied or dissatisfied you are with each individual aspect. Again, please indicate your position on the scale by circling the appropriate number.

Are You Dissatisfied or Satisfied With Dr. Harrison's:

| completely  | 1 2 3 4 5 |
| completely  | Dissatisfied | Satisfied |
| Listening skill | 1 2 3 4 5 |
| Amount of time spent with you | 1 2 3 4 5 |
| Trustworthiness | 1 2 3 4 5 |
| Competence | 1 2 3 4 5 |
| Knowledgeability | 1 2 3 4 5 |
| Efficiency | 1 2 3 4 5 |
| Level of professionalism | 1 2 3 4 5 |
| Understandability | 1 2 3 4 5 |
| Concern regarding any possible side effects of prescribed medicines | 1 2 3 4 5 |
| Friendliness | 1 2 3 4 5 |
| Caring nature | 1 2 3 4 5 |
| Sympathetic nature | 1 2 3 4 5 |
| Ability to understand your needs | 1 2 3 4 5 |
| Ability to handle your problems | 1 2 3 4 5 |

Now, Please tell us in your own words, how you feel about the care provided by Dr. Harrison:

Dr. Harrison made me feel:

Delighted: : : : : Terrible

Overall, I feel completely satisfied with Dr. Harrison:

Strongly Disagree: : : : : Strongly Agree

What did you think the purpose of this study was?

Did you have any difficulty at all in responding to the questions asked at any point in time?

If yes, can you tell us what exactly was the problem?

What do you think may be the solution to the problem?

THANK YOU FOR YOUR COOPERATION
VITA

Rama Jayanti was born in Hyderabad, India. She received a Bachelor of Science (Major Field: Chemistry) from Osmania University, Hyderabad and soon after started working as a school teacher. In 1976, she decided to attend graduate school and received a Master of Arts (Major Field: English Literature) with Honors from Osmania University, Hyderabad in 1979. Following her graduate studies, Rama worked for a major bank in India as Supervisory Officer for several years.

In 1986, Rama came to the United States to join her husband, Subbarao, who was admitted to the doctoral program in Finance at Louisiana State University. Backed by her knowledge of the banking industry, she decided to join the Masters Program in Marketing at the same university and graduated in 1988. A keen interest in Marketing prompted Rama to continue her studies and pursue a doctoral degree in Marketing. She received her Ph.D in Business Administration in August of 1992 (Major Field: Marketing; Minor Field: Social Psychology; Supporting Field: Management).
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Rama K. Jayanti
Major Field: Business Administration (Marketing)
Title of Dissertation: The Role of Affect in Service Encounter Satisfaction: An Experimental Study

Approved:

[Signatures]

Major Professor and Chairman
Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination: 1st of April 1992