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## Consumer expectation formation in health care services: a psycho-social model

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**CONSUMER EXPECTATION FORMATION IN HEALTH CARE SERVICES:  
A PSYCHO-SOCIAL MODEL**

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 Program in Business Administration  
(Marketing)

by  
Kenneth Randall Russ  
B.S., Louisiana State University, 1979  
December 2006

## **DEDICATION**

I wish to dedicate this dissertation to the honor and memory of my dad, Kenneth Leo Russ. A native of depression-era Mississippi and a combat veteran of World War II, he never completed college, but nonetheless had a successful managerial career in international business. He brought me to the church at an early age and it was through the church that I recognized my God-given gifts and graces that made this dissertation possible. My dad also taught me the value of hard work, encouraging me in elementary school to wash dishes in the school cafeteria to earn spending money. I have worked hard ever since! Finally, my dad taught me the value of perseverance. I am grateful for the opportunity to complete my doctoral studies and this dissertation after having had my own career in business and industry. Even though he faced much adversity in his life, my dad never gave up and this lesson gave me the hope and confidence to finish this race. And so it is to his honor and memory that I dedicate this dissertation with all my love, from a very grateful son.

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## ABSTRACT

A psycho-social model of consumer expectation formation in a health care services context was developed and tested. A field study involving obstetrical patients (n=171) at a large women's specialty hospital in the southeast was conducted. Initial support for the structural model which posits that consumer expectations in health care services are multidimensional involving role, process, outcome, and service quality was found. Furthermore, the research identified that the uncertainty of a health service encounter may cause certain consumer segments to choose coping strategies and expectation processes based on their locus of control orientation from along a continuum ranging from "approach-active" to "avoidance-passive." High internal locus of control was associated with greater amounts of internal search, the formation of more accurate process expectations, and higher service quality expectations. External locus of control was associated with greater amounts of external information search with medical professionals (powerful others) and the formation of higher service quality expectations. The linkage of external locus of control to social support was not supported. However, social support was associated with higher levels of bolstering – an affect based coping strategy in which consumers minimize the risks of a chosen alternative and maximize the risks of non-chose health service alternative. Seventy percent of the variance in the model was explained by the structural model. The model provides a useful basis for segmentation in health care services to improve consumer satisfaction based on designing integrated marketing communications and service offerings which meet unique psycho-social needs and consumer expectations.

## **CHAPTER 1: INTRODUCTION**

### **INTRODUCTION TO CONSUMER EXPECTATION FORMATION**

Satisfying customers is vital to organizational health and well-being. Successful organizations focus on the customer to create sustainable competitive advantage. By adopting a customer orientation, the organization seeks to understand consumer needs and expectations then develop offerings which meet them. This creates a corporate culture in which continuous improvements in quality, customer service, cost, and ultimately customer perceived-value become the norm.

The benefits to the organization of satisfied customers in both product and service industries are numerous and well-documented in the literature. They include: (1) increased repeat patronage, including fulfilling more needs from the firm's portfolio; (2) positive word-of-mouth communications; (3) increased brand loyalty; (4) greater new offer acceptance; (5) ability to engage in premium pricing; and (6) increased customer-life time value, (Anderson 1996; Anderson 1998; Bearden and Teel 1983; Bolton, Kannan, and Bramlett 2000; Boulding, Kalra, Staelin, and Zeithaml 1993; Churchill and Surprenant 1982; Cronin and Taylor 1992, Reinartz and Kumar 2003). Customer satisfaction has also been shown to significantly impact shareholder value (Anderson, Fornell, & Mazvancheryl 2004). However, increasing consumer sophistication combined with extreme competitive pressures in most industries make customer satisfaction more difficult than ever to achieve.

The managerial importance of customer satisfaction has resulted in considerable scholarly interest over the past several decades. The satisfaction literature is dominated by a cognitive-approach: the disconfirmation of expectations or "comparison standards" paradigm (Oliver

1989). This view of satisfaction assumes that individual consumers use a process to form satisfaction judgments which includes: (1) developing pre-consumption performance expectations; (2) experiencing the performance of the offering; (3) comparing performance with expectations; (4) formulating confirmation or disconfirmation perceptions; and (5) integrating these perceptions with expectations to form an overall satisfaction judgment.

The disconfirmation paradigm is highly relevant in contexts where consumers primarily engage in cognitive evaluation of attributes. However, Fournier and Mick (1999) suggest that in many contexts satisfaction-related phenomena are much more complex. Their empirical research revealed significant issues in the explanatory power of the disconfirmation paradigm and clarified the need to develop a broader understanding of satisfaction processes. These authors concluded that consumer satisfaction: (1) is an active, dynamic process; (2) has a strong social dimension; (3) includes components of meaning and affect; (4) is context-dependent and contingent, encompassing multiple paradigms, models, and modes; and (5) is intertwined with life satisfaction (Fournier and Mick 1999, p. 15).

Adopting a more holistic view of customer expectation formation and satisfaction processes is especially relevant in the services context. Services are characterized by properties of intangibility, variability from offering to offering, inseparability of production and consumption, and perishability. Because of these characteristics, the services marketing literature suggests that consumers experience a greater degree of difficulty forming expectations, leading to greater uncertainty and pre-service encounter perceived risk when compared to products (Davis, Guitinan, and Jones 1979; Eiglier and Langeard 1977; Guseman 1981; Murray and Schlacter 1990; Zeithaml 1981). In addition, consumers may participate in co-production of the service

offering which introduces unique psycho-social expectations into the service encounter (Bendapudi and Leone 2003). As a result of these issues, there is an increased probability that consumers will experience greater stress when forming expectations in the services context. Likewise, consumers may form inaccurate or unrealistic expectations about the service offering which result in negative “surprise” during the service encounter. Thus, the possibility of consumer dissatisfaction with the service provider is heightened.

These dynamics are especially relevant in the context of health care services. Recent hospital satisfaction studies (Romano 2005) have shown that most patients are either “delighted” (33%) or “pleased” (41%). On the surface this result appears positive until it is viewed through the lens of recent satisfaction research. Several studies have found that just satisfying or “pleasing” the customer does not result in brand loyalty (Oliver, Rust, and Varki 1997; Ganesh, Arnold, and Reynolds 2000). Furthermore, this research suggests that many “satisfied” customers are prone to “switching” behavior. Therefore, in the hospital context almost 70% of the patients are “at risk.”

The purpose of this dissertation research is to develop and test a psycho-social model of consumer expectation formation in a health care setting. Specifically, the nature of consumer coping during the expectation formation process is explored by examining the influence of important affective and cognitive antecedents (perceived risk and locus of control) on coping strategies (social support, information search, and avoidance) and the resulting impact of these strategies on multi-dimensional health care expectations (role, process, quality, and alternative/outcome expectations). This chapter reviews the literature, discusses antecedent, mediating, and expectation constructs, and presents expected contributions.

## **Consumer Expectation Formation**

Despite decades of consumer satisfaction research (Anderson 1973), important pre-consumption phenomena such as the expectation formation process have received limited attention in the literature (Oliver and Burke 1999; Oliver and Winer 1987; Zeithaml, Berry, and Parasuraman 1993). Furthermore, in a meta-analysis of satisfaction research Szymanski and Henard (2001) have identified a need to further understand the antecedents of expectation formation and their structural relationships.

Product-based research reveals that consumers attempt to cope with uncertainty and perceived risk by increased information search (Cox 1967). Such behavior is thought to reduce pre-purchase uncertainty by assisting the consumer in forming more accurate expectations. However, the characteristics of health care services make them especially difficult for consumers to evaluate prior to the service encounter (Fisk 1981; Zeithaml 1981).

As a consequence, researchers posit that consumer information search behaviors for services differ from products (Murray 1991) and that the formation of accurate expectations about the service encounter may be quite difficult for many consumers (Fisk 1981; Zeithaml 1981). Past research in the areas of locus of control (Steele, Blackwell, Gutman, and Jackson 1987) and information overload (Jacoby, Chestnut, and Fisher 1978) suggest that consumers will differ in their need and ability to process information. In addition, a growing body of literature suggests that when faced with the uncertainty of a stressful life event, such as the need for health care services, consumers may rely on supportive relationships (i.e., social support) to strengthen coping efforts and buffer the effects of stress (Cobb 1976; Duhachek 2005; Sarason, Pierce, Shearin, Sarason, Waltz, and Poppe 1991).

The nature of expectation formation in health care can be informed by an emerging stream of consumer research on coping. Duhachek (2005) developed a multi-dimensional model of consumer coping in a post-purchase (dissatisfaction) services context. This model includes emotional (e.g., threat) and cognitive (e.g., situational efficacy and situational control) antecedents; alternative coping mechanisms (active/cognitive, social support, and avoidance/denial); and coping outcomes (affective, cognitive perceptions, and stress reduction). Duhachek suggests that further research is needed to explore the situations in which affective and cognitive antecedents will lead to active coping, social support, or avoidance strategies. While this model was developed in a post-purchase context it has clear implications for theory development in expectation formation in the health care services context where consumers may pursue “approach” and/or “avoidance” strategies to expectation formation.

Based on an extensive review of the economics, psychology, and marketing literatures, Oliver and Winer (1987) proposed a descriptive model of consumer expectations which posits that consumers engage in psychological and behavioral responses to uncertainty. They also suggest that psychological constructs such as perceived risk, past experience, and information search influence expectation formation. In addition, other research suggests that perceived social support is an important construct which mediates individual response to uncertainty and stressful life events in health care settings (Burns 1992; Cobb 1976; Sarason et al. 1991). To date, the Oliver and Winer (1987) framework has not been explicitly modeled or empirically investigated in the services context.

In the services marketing literature, Parasuraman, Zeithaml, and Berry (1985) include expectations as a major determinant of perceived service quality. More recently, these authors

(Zeithaml et al. 1993) proposed a conceptual model of the nature and determinants of customer expectations of service which is consistent with the Oliver and Winer (1987) framework. Based on exploratory research, these and other authors (Boulding et al. 1993) note that empirical research is needed to identify the antecedent constructs that have significant effects on different types of expectations.

### **Multidimensional Nature of Service Expectations**

The services literature suggests that consumer expectations about the service encounter<sup>1</sup> are multi-dimensional. Because of the unique characteristics of services (Regan 1963; Parasuraman et al. 1985), researchers have identified four distinct expectation dimensions: (1) *attribute expectations* (e.g., service quality dimensions); (2) consumer-provider *role expectations*; (3) service delivery *process expectations*; and (4) service *alternative/outcome expectations* (Ross, Wheaton, and Duff 1987; Smith and Houston 1983, 1986; Solomon, Surprenant, Czepiel, and Gutman 1985; Surprenant and Solomon 1987). In addition, Smith and Houston (1985) suggest that the dynamic and temporal aspects of *process* expectations are represented in consumer memory by cognitive scripts.

### **A Model of Consumer Expectation Formation in Health Care**

This research proposes that perceived risk, locus of control orientation, and past experience influence role, process, outcome and service quality expectations via the mediating constructs of information search and perceived social support. The dimension of *role expectations* is defined by perceived self-efficacy. *Process expectations* are thought to be manifested by the existence of cognitive scripts. *Alternative/outcome expectations* can be defined

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<sup>1</sup> The term service encounter has been defined as "a period of time during which a consumer directly interacts with a service" (Shostack 1985; p. 243). This includes consumer interaction with service personnel, policies/procedures, physical facilities, etc.

using the concept of bolstering. *Service quality expectations* involve the attributes of reliability, responsiveness, assurance, empathy, and tangibles.

Based on the literature cited above, a framework for consumer expectation formation in health care services is given in Table 1.

**Table 1**  
**Consumer Expectation Formation in Health Care Services: A Framework**

<b>Antecedent Constructs</b>	<b>Mediating Constructs</b>	<b>Expectation Dimensions</b>	<b>Outcomes</b>
Perceived Risk	Information Search	Role: (Self-Efficacy)	
Locus of Control	Perceived Social Support	Process: (Scripts)	Satisfaction
Past Experience		Service Alternatives/ Outcome: (Bolstering)	
		Service Quality Attributes (SERVQUAL)	Perceived Service Quality

The health care literature (Steele et al. 1987; Wallston and Wallston 1981; Wallston 2005) suggests that the personality trait known as locus of control (an antecedent construct) will influence the amount of information search and the types of information sources consulted. Locus of control theory posits that when faced with the uncertainty and perceived risk of an anticipated service encounter, consumers with a strong internal locus of control orientation (i.e., a belief in self as in control of personal health) will engage in greater internal (past experience) and external information search when compared to consumers with a higher external

locus of control orientation (i.e., a belief in “powerful others” as in control of personal health).

Those consumers with a more external locus of control orientation will be associated with reliance on social support and powerful others as primary coping and expectation formations strategies.

In addition, locus of control orientation is thought to impact the content of role expectations (self-efficacy) and the accuracy of process expectations (cognitive scripts) via information search. Because of greater levels of internal and external information search, process expectations for consumers with higher internal locus orientation should be more accurate. These consumers should also exhibit higher perceived self-efficacy.

External locus orientation is thought to be associated with less information search and self-efficacy role behaviors in coping with uncertainty. This orientation is thought to involve different strategies for coping with uncertainty and perceived risk known as bolstering -- a psychological rationalization process associated with service process alternatives and outcomes (Janis and Mann 1977; McClain 1983). In the bolstering process, outcome expectancies of the perceived risks associated with the non-chosen service alternatives are magnified and risks of the chosen alternative are minimized. As such, the external locus of control orientation validates and provides psychological support for the chosen service alternative. Thus, the external locus orientation will be associated with a greater need to engage in bolstering than the internal locus of control orientation.

Given the same ultimate health outcome (e.g., birth of a healthy baby), both internal and external locus of control orientated consumers may experience similar levels of satisfaction, but for different reasons. The internals will develop favorable satisfaction judgments when their needs for information and control were satisfied. As well as when their role and process expectations

are closely matched to the "reality" of the service encounter. Whereas the externals will develop positive satisfaction judgments based on the successful outcome. Such judgments are reinforced by their social support network and powerful others in the service encounter. This phenomenon is posited to be the result of the bolstering process which simplifies the pre-service encounter expectation formation process for externals and allow them to rely on health care professionals to manage the service encounter to a satisfactory outcome.

### **PROPOSED METHODOLOGY**

A field study was conducted to test a model of the expectation formation process in health care services. This model is shown in Figure 1 and will be discussed in greater detail in Chapter 2. A survey questionnaire (see APPENDIX) was developed which measures each of the constructs as input to data analysis. In cooperation with a major woman's specialty hospital in the southeast United States, women in the third trimester of pregnancy were surveyed by mail. Structural equation modeling was used to analyze the measurement scale properties (confirmatory factor analysis) and to explore the structural relationships between the constructs.

### **EXPECTED RESEARCH CONTRIBUTIONS**

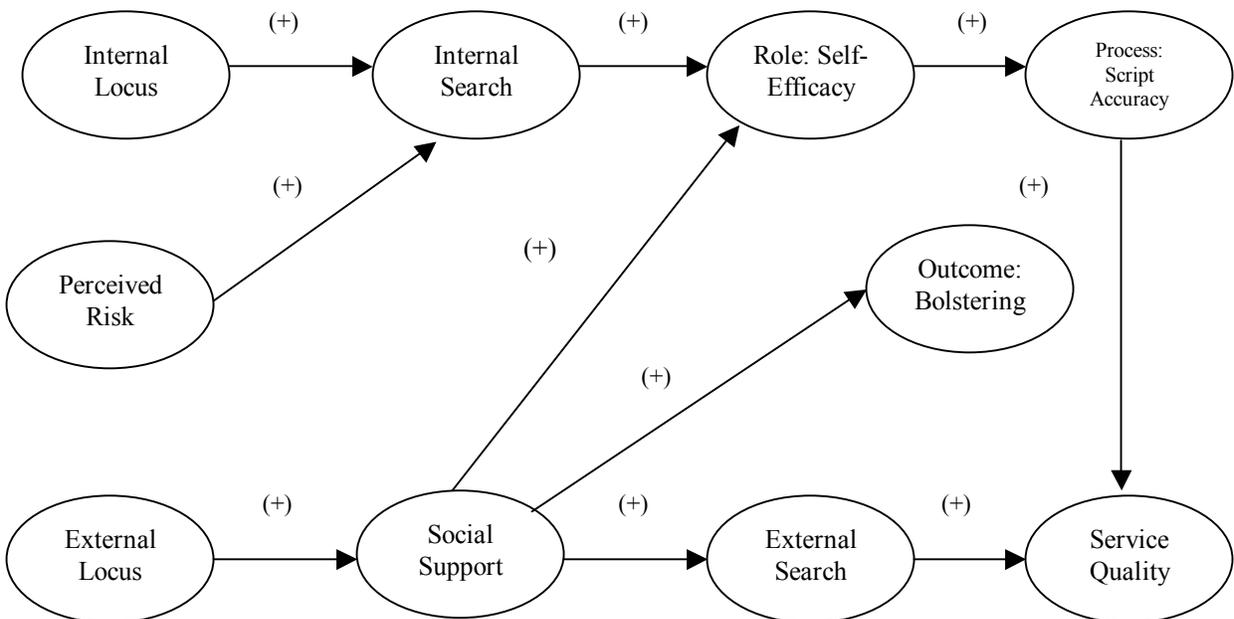
The proposed research has significant implications for both academic and managerial audiences. Although recent articles appearing in the literature indicate current interest in the topic, the extant body of literature in the area of expectation formation is fragmented. This research will contribute to the process of consolidating and extending the theoretical understanding of consumer expectation formation in the health care services context. It will also provide health care practitioners with a useful tool to segment patients by psycho-social needs.

Most studies in consumer satisfaction are conducted with artificial scenarios and student subjects. Because this study surveys consumers who are actually coping with forming expectations for a health service encounter, “real” perceptions of risk, coping strategies, and expectations are being shared by the respondents. This should provide a stronger and more relevant test of theory in the health care services context.

**Approach-Active Path**

*Moderator- Past Experience*

**Expectations**



**Avoidance-Passive Path**

**Figure 1**  
**Consumer Expectation Formation in Health Care Services:**  
**A Psycho-Social Model**

The development of a model of expectation formation provides a basis for addressing the limitations of cognitive-based approaches to consumer satisfaction models. The integration of consumer traits (locus of control orientation), situational variables (perceived risk), and mediating

constructs (information search and social support) into a multi-dimensional model of expectation formation should provide both academicians and practitioners with a more holistic method to measure, predict, and improve satisfaction judgments in the health care services context.

### **PLAN OF THE DISSERTATION**

The intent of Chapter 1 is to familiarize the reader with the domain of the research topic. As such detailed definitions of constructs, modeled relationships, or measurement issues are not addressed. Likewise, citations in support of the text are limited and intended to aid in continuity of thought and understanding.

Chapter 2 provides a review of supporting literature including the importance of consumer expectations in strategic marketing management. In addition, the theoretical foundation for the determinants and dimensions of consumer expectation formation are developed. Chapter 2 also includes a review of modeled constructs based on various literatures, including consumer research, economics, health care, psychology, and services marketing.

In Chapter 3 the theoretical model of expectation formation is presented. Discussion of the model draws on Chapter 2 to support proposed relationships. Specific inter-construct hypotheses are presented. The research design and methodology are detailed, including the rationale for measurement approaches to individual constructs.

Chapter 4 details the results of the field study. Chapter 5 presents an interpretation and discussion of the model. Managerial implications are also explored here. Finally, limitations of the study and suggestions for future research are discussed. The Appendix contains the references and the questionnaire used in the study.

## **CHAPTER 2: REVIEW OF LITERATURE**

The purpose of this dissertation research is to develop and test a theoretical model of consumer expectation formation in a health care services context. Chapter 2 contains a review of literature which is relevant to the topic and identifies major constructs and issues useful in specifying the proposed model. The plan for Chapter 2 includes:

1. The importance of consumer expectations to strategic marketing management is addressed.
2. The literature concerning expectation formation is explored. Expectations are defined conceptually, and the four dimensions of expectations (i.e., role, process, outcome, and service quality attributes) are explored.
3. The antecedent and mediating constructs of expectation formation are reviewed based on literature from economics, psychology, and marketing.
4. Literature concerning each of the modeled constructs is reviewed with discussion and implications given for the present study.

### **CONSUMER EXPECTATIONS AND MARKETING STRATEGY**

The creation of a new customer is often the result of promotional efforts and word-of-mouth communications which are responsible for initial expectation formation and service trial. The ability to "keep" a customer depends on consumer satisfaction. Organizations attempt to develop consumer loyalty and repeat patronage by insuring that customers are satisfied with the service experience. In general terms, consumer satisfaction is posited to result if the consumer experiences consistent delivery of expected levels of service quality and has their psycho-social needs met in the service encounter. Many successful services marketers tend to "under promise and over deliver," thereby creating lowered consumer expectations which can be easily exceeded by the service provider (Davidow and Uttal 1989; Zeithaml, Bitner, and Grimmer 2006).

However, as the "under promised - over delivered" axiom implies, less successful service firms may "over promise and under deliver." This condition suggests that some firms may not comprehend the importance of "managing" consumer expectations.

Consumers now expect firms to deliver unprecedented levels of quality (Leonard and Sasser 1982; Olson and Johnson 2003; Takeuchi and Quelch 1983). Many manufacturing firms have lost market share to higher quality imported products and there now exists a perceived threat from abroad to the dominance of U.S. firms in the service sector (Quinn and Gagnon 1986). Consequently, the quest for quality is one of the dominant issues facing most industries. Managers have become obsessed with the challenge of further understanding how to enhance the organization's ability to produce high-quality goods and services.

The strategic benefits accruing to organizations that achieve consistent levels of quality are based on attaining profitable differentiation in the marketplace (Garvin 1987; Porter 1980). Unlike other elements of marketing strategy (i.e., product, price, promotion, and place) which can be more readily imitated, quality is much more difficult to achieve and maintain (Crosby 1979). Therefore, competing on the basis of quality not only creates a differential position for the firm in the marketplace, but may also pose a significant barrier to competitive entry.

Several studies based on PIMS (Profit Impact of Marketing Strategy) data support the strategic role of quality in creating and maintaining competitive advantage (Jacobson and Aaker 1987; Phillips, Chang, and Buzzell 1983). These research findings suggest that the specific benefits an organization may expect from the pursuit of a quality-focused market strategy include: (1) positive effects on market share and return-on-investment (Anderson and Zeithaml 1984; Jacobson and Aaker 1987; Phillips et al. 1983); (2) reduced production costs and the ability to

charge a higher price (Jacobson and Aaker 1987; Phillips et al. 1983); and (3) improved productivity (Garvin 1983). The opportunity for achieving such strategic benefits has resulted in increased attention to and investment in quality improvement efforts by both product and service producing organizations.

On an individual consumer level, the result of a strategic quality emphasis is customer satisfaction. Indeed, satisfying consumer needs is the cornerstone of the marketing concept (Kotler and Keller 2006). Most practitioners and academicians generally agree that satisfaction is an important concept because it is thought to be a major determinant of: (1) product/service acceptance; (2) repeat sales; (3) word-of-mouth communications; and (4) consumer loyalty (Bearden and Teel 1983; Boulding et al. 1993; Churchill and Surprenant 1982; Zeithaml et al. 1993). These four factors are critical to the long-term survival of both product and service-based organizations. Thus, issues related to quality and consumer satisfaction are of primary importance to marketing practitioners.

Nowhere is the need for quality-focused strategy more apparent than in the service sector. One reason is that many service firms have great difficulty producing consistent levels of service quality (Quinn and Gagnon 1986; Schlesinger and Heskett 1991). A related issue concerns the fact that despite tremendous growth among most service industries in recent years, service providers are facing major environmental challenges. Overcapacity in service industries (e.g., airline, legal, and financial), changes in professional standards (e.g., medical and legal advertising), competition from non-traditional service providers (e.g., chiropractors, retailers in financial services, and industrial firms in insurance/credit markets), deregulation, and rapid innovation in service delivery technology are making strategic and tactical decision-making more difficult.

Managers are seeking sustainable strategies that are difficult to duplicate in order to survive in a chaotic marketplace (Heskett 1986; Roach 1991). The historical performance of many U.S. manufacturing firms serves as testimony to the fact that an organization's inability to meet consumer expectations could foreshadow major losses of market share and profitability.

The health care industry, the specific context for the present study, now represents almost 20 percent of domestic GNP and is one of the single largest segments of the economy. Recently, payors (i.e., corporation, insurance companies, and government) have attempted to control rampant price inflation by becoming more diligent in regulating and reducing reimbursement for health care services. This has led to intense competition among health care providers for market share. Indeed, because of these factors and other concerns, healthcare has emerged as an issue of national import. The most widely discussed model guiding health care reform efforts at the federal level (i.e., managed competition) promises even more competition between providers as well as increased emphasis on cost-effective services and continuous improvement in outcomes.

The strategic importance of service quality and patient satisfaction in health care has been receiving increasing attention in the literature. Research suggests that consumer perceptions of service quality are an important determinant in attitudes toward health care providers (Crane and Lynch 1988; Lane and Linquist 1988; Leebov and Afriat 1988; Lim and Zallocco 1988; MacStravic 1987; Rahtz and Moore 1988; Woodside and Shinn 1988). Despite consensus that patient satisfaction and service quality are critical to competitive advantage in health care markets, the literature suggests that health care services are perceived by consumers as the most dissatisfying of all professional services (Quelch and Ash 1981) and malpractice litigation against health care providers is becoming more widespread (Brown and Swartz 1989). These

observations suggest that the health care industry is doing a poor job in understanding and meeting consumer expectations.

Several scholars have noted the importance of expectations in consumer evaluation of health care. In a hospital based empirical study of in-patient, out-patient, and emergency room services, Reidenbach and Sandifer-Smallwood (1990) found that "patient confidence" was the single most important factor in explaining variability in ratings of service quality, patient satisfaction, and willingness to recommend. The patient confidence construct included traditional measures of attribute expectations. Similarly, in a study of primary care clinics, Brown and Swartz (1989) found that inconsistent perceptions of expectations and experiences between patients and providers negatively impact consumer perceptions of service quality.

Hospital satisfaction studies (Romano 2005) have shown that most patients are either "delighted" (33%) or "pleased" (41%). On the surface this result appears positive until it is viewed through the lens of recent satisfaction research. Several studies have found that just satisfying or "pleasing" the customer does not result in brand loyalty (Oliver et al.1997; Ganesh et al. 2000). This research suggests that many "satisfied" customers are prone to "switching" behavior. Therefore, in the hospital context almost 70% of the patients are "at risk."

Furthermore, a variety of metrics have become important in assessing health care quality. Various stakeholders have become keenly interested in hospital performance. For example, the federal government now requires quality measures to be published. Insurance companies have begun to use this and other data to "pay for performance." Hospitals with better quality and outcomes now receive higher reimbursement. Consumers also are using a variety of public and private information sources to assess health care quality. However, quite often published sources

available to consumers fail to include patient satisfaction data or physician credentials (Corwin 2006).

This situation will change by the end of 2007 when the Hospital Assessment of Health Care Providers and Systems (H-CAHPS) will be available for public use. Developed by the Federal Agency for Healthcare Research and Quality, H-CAHPS is based on a standard patient satisfaction survey (27 questions) which will facilitate comparison between hospitals on a variety of indicators. It is unclear how much influence this information will have on health care decision-making, but it may further heighten competitive pressure on hospitals to improve and maintain high levels of service quality and patient satisfaction (Conn 2005).

Changes in the availability of standardized hospital quality and patient satisfaction information reinforce the importance of the developing greater insight into the expectation formation process in the health care context. As such, researchers in the services marketing and health care literature have called for further theoretical and methodological investigation of psycho-social influences on expectation formation processes (Bandura 2005; Brown and Swartz 1989; Ross et al. 1987).

### **EXPECTATION FORMATION**

"Great service providers inform customers about what to expect and then exceed the promise." - Davidow and Uttal (1989)

Despite widespread support for the importance of expectations in service quality and consumer satisfaction processes, few models of expectation formation have appeared in the literature (Oliver and Winer 1987; Zeithaml et al. 1993). Indeed, Zeithaml and her colleagues (1993, p.2) remark that "one relatively unexplored area of research involves the sources of

consumer expectations." In discussing the nature of the consumer expectation formation process, Davidow and Uttal (1989) note:

"Expectations are formed by many uncontrollable factors, from the experience of customers with other companies and their advertising to a customer's psychological state at the time of service delivery. Strictly speaking, what customers expect is as diverse as their education, values, and experiences." (p.85)

Oliver and Winer (1987) proposed a theoretical framework for consumer expectation formation which includes the myriad of consumer-related factors Davidow and Uttal (1989) allude to above. While this framework has not been empirically investigated, these researchers suggest that scholarly effort in the areas of economics, psychology/sociology, and marketing all contribute to the theoretical development of the expectation construct. Table 2 gives an overview of the Oliver and Winer framework. Included are (1) the dimensions of service expectations - role, process, outcome, and service quality; and (2) psychosocial and behavioral antecedents and mediators of expectation formation - locus of control, perceived risk, past experience, perceived social support and information search.

### **Conceptual Definition of Expectations**

A number of definitions have been suggested in the various literatures for the expectation construct. One of the earliest is the economist Shackle's (1952) notion that the formation of an expectation involves the creation of mental images of a situation (i.e., scripts or schemas), associating the images with a future time, and developing scaled measures as to the degree of belief that the situation will indeed occur. Another economist, Georgescu-Roegen (1958, p.12), defines expectations as "... the state of mind of a given individual with respect to an assertion, a coming event, or any other matter on which absolute knowledge does not necessarily exist."

Vroom (1964, p.15), building upon Skinner's (1953) stimulus-response learning model, suggests that expectations are "... a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome." Psychologists Fishbein and Ajzen (1975, pp.23-24) note that an expectation is:

"...a belief about an object (e.g., medical treatment) and an attribute of that object (e.g., reduces pain). Beliefs are cognitive, constituting the information about objects from which attitudes are developed. In general, individuals have a small number of beliefs about an object but can add beliefs by receiving new information or by using past experience in combination with new information to create new, inferential beliefs."

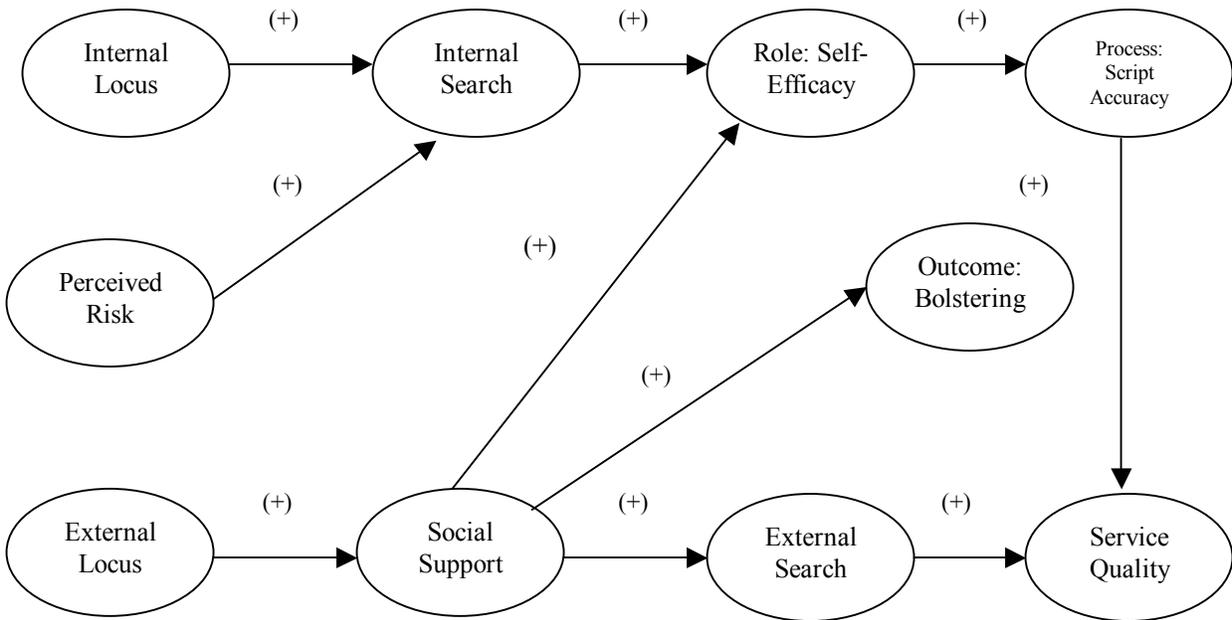
Oliver and Winer (1987, p.487) define expectations of a product attribute as:

"A consumer's subjective evaluation of the value of that attribute at a particular point in time. Value, in turn, is a function of one's evaluation of the subjective level of the attribute, and further evaluations of the attribute's uncertainty, ambiguity, and knowability."

Several implications arise from the various definitions presented above. Of primary concern is the fact that these definitions were generally developed in the context of understanding cognition and behavior from an object or product perspective. As a consequence, these definitions focus on expectations about "product attributes." Because many service offerings are intangible, inseparable, and heterogeneous, defining expectations in terms of "attributes" in the product sense may be an oversimplification. Various authors (Boulding et al. 1993; Ross et al. 1987; Smith and Houston 1983, 1986; Solomon et al. 1985; Surprenant and Solomon 1987; Zeithaml et al. 1993) point out that service expectations are multi-dimensional in nature and include expectations about: (1) consumer and provider roles in the service encounter; (2) the process of service delivery; (3) alternatives/outcomes associated with the service encounter; and (4) service quality attributes.

The model developed for the present study is shown in Figure 2.

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**Approach-Active Path***Moderator- Past Experience***Expectations****Avoidance-Passive Path**

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**Figure 2**  
**Consumer Expectation Formation in Health Care Services:**  
**A Psycho-Social Model**

Some common themes are apparent from these perspectives. First, expectations are cognitive beliefs about future events involving not only service attributes (i.e., service quality dimensions), but also individual action (roles), processes, and service delivery alternatives/outcomes. Second, expectations involve a degree of uncertainty and as a result are subject to modification over time. Finally, expectations are influenced by information and experience. For purposes of this research, expectations in the health care services context can be defined as:

"Cognitive beliefs about future roles, processes, alternatives/outcomes, and service quality related to the health care service encounter. Such beliefs involve fundamental uncertainty and are dependent upon psychosocial and behavioral antecedents and responses."

**Table 2**  
**Dimensions and Determinants of Expectation Formation**

<b>Construct</b>	<b>Relevant Literature</b>
<b>Dimensions of Expectations</b>	
Outcome (Bolstering)	Bateson (1985); Janis and Mann (1977); McClain (1983); Ross et al. (1987)
Process (Scripts)	Ross, Wheaton, and Duff (1981); Solomon et al. (1985); Smith and Houston (1983, 1985, 1986); Steele et al. (1987) Surprenant and Solomon (1987)
Role (Self-Efficacy)	Bandura (1977, 2005); Manning and Wright (1983); Ross al. et al. (1987); Smith and Houston (1983, 1986); Solomon et al. (1985); Surprenant and Solomon (1987); Steele et al. (1987)
Service Quality	Zeithaml et al. (1993, 2006)
<b>Determinants</b>	
<b>Psychological Domain</b>	
	Hicks (1939); Katona (1951, 1960)
Social Support	Burns (1991); Murray et al. (1996); Sarason et al. (1991)
Locus of Control	Lumpkin and Cabellero (1985); Murray et al. (1996); Steele et al. (1987); Surprenant and Solomon (1987); Wallston and Wallston (1981); Wallston (2005)
Perceived Risk	Bell (1982, 1985); Loomes and Sugden (1982); Murray (1991); Murray and Schlacter (1990); Sneath et al. (2002); Sugden (1985)
<b>Determinants</b>	
<b>Behavioral Domain</b>	
Information Search (External Information)	Bettman (1979); Einhorn and Hogarth (1985); Katona (1951, 1960); Oliver and Winer (1987); Parasuraman et al. (1985); Zeithaml et al.(1993).
Experience	Fishbein and Ajzen (1975); Hicks (1939); Kahneman and Miller; (1986); Kahneman and Tversky (1982); Katona (1951, 1960); Keynes (1964); Oliver and Bearden (1983); Oliver and DeSarbo (1988); Oliver and Winer (1987); Parasuraman et al. (1985)

## **DIMENSIONS OF HEALTH CARE SERVICE EXPECTATIONS**

Traditional treatment of consumer expectations in the marketing literature has centered on product attribute expectations, such as features, colors, durability, and performance. Various models have been used in empirical studies of expectations in consumer satisfaction and service quality including: overall and attribute specific expectations (Churchill and Surprenant 1982) and will/should expectations of service quality attributes (Boulding et al. 1993). While these approaches have been useful in understanding product and service attribute expectations (e.g., SERVQUAL dimensions), the nature of the service encounter involves exchange relationships characterized by activities and processes (e.g., health care) rather than objects (e.g., automobiles). Thus, researchers interested in consumer expectations in the services suggest that in addition to exploring attribute-type expectations such as reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman, Zeithaml, and Berry 1988), the dimensions of service expectations should be expanded to include: role, process, and service delivery alternative/outcome expectations (Ross et al. 1987; Smith and Houston 1983, 1986; Solomon et al. 1985; and Solomon and Surprenant 1987). Indeed, Ross and her colleagues (1987) note that although defining expectations in the health care context in terms of role, process, and outcome seems appropriate, empirical examination of these dimensions has not been forthcoming. The four dimensions of service expectations, including service quality, are addressed in turn.

### **Service Delivery Alternative/Outcome Expectations**

Outcome expectations involve a consumer's belief that choosing a particular alternative will lead to a particular outcome (Bandura 1977; 2005). Ross et al. (1987) suggest that outcome expectations in the health care context refer to the beliefs held by the consumer about the result or

consequences (e.g., having a healthy baby) associated with alternative medical treatment or service encounter options (e.g., choosing a caesarian section versus a natural childbirth). As has been stated previously, beliefs about future events are characterized by uncertainty. In the health care context the nature of the service exacerbates pre-service encounter uncertainty and perceptions of risk (Murray and Schlacter 1990; Sneath, Kennett, and Megehee 2002). Therefore, Steele et al. (1987) suggest that consumers may adopt various responses when experiencing anxiety in anticipation of a health care service encounter: (1) information seeking in an effort to reduce uncertainty (e.g., attending childbirth education classes); (2) skill acquisition for achieving control (e.g., developing self-efficacy behaviors prior to the service encounter); or (3) situation avoidance.

The nature of expectation formation in health care can be informed by an emerging stream of consumer research on coping. Duhachek (2005) developed a multi-dimensional model of consumer coping in a post-purchase (dissatisfaction) services context. This model includes emotional (e.g., threat) and cognitive (e.g., situational efficacy and situational control) antecedents; alternative coping mechanisms (active/cognitive, social support, and avoidance/denial); and coping outcomes (affective, cognitive perceptions, and stress reduction). Duhachek suggests that further research is needed to explore the situations in which affective and cognitive antecedents will lead to active coping, social support, or avoidance strategies. While this model was developed in a post-purchase context it has clear implications for theory development in expectation formation in the health care services context where consumers may pursue “approach” and/or “avoidance” strategies to expectation formation.

Several authors note that uncertainty (McClain 1983; Murray et al. 1996) is a pervasive phenomenon associated with the childbirth experience and its outcome. Literature on role and process expectations cited below suggests that some consumers (e.g., "approach-oriented patients") will attempt to cope with uncertainty by engaging in information search and/or attempting to exercise control over service processes via self-efficacy behaviors. However, previous research cited by Steele et al. (1987) suggests that significant variability may exist among consumers in their response to uncertainty with some using more "avoidance" strategies by becoming very passive and dependent on the service provider for information and direction. Because these consumers are "avoidance-oriented" they may not engage in extensive information seeking or coping skill acquisition as strategies to address uncertainty. Such individuals may rely on avoidance coping strategies which involve psychological processes, such as bolstering and social support rather than more active behaviors like information search and coping skill development.

**Bolstering** In an empirical study of obstetric patients, McClain (1983) found that certain individuals tended to engage in a form of avoidance (i.e., an attempt to evade actively or deny a threat) by minimizing the risks associated with their chosen childbirth service alternative and magnifying the risks associated with other service alternatives which were not chosen. This research suggests that in addition to "subjectifying" the outcome risk of alternatives, another related coping tactic involves the individual's choice of selective exposure to additional information regarding the range of process and outcome alternatives.

This psychological response to uncertainty is known as bolstering. Janis and Mann (1977, p.91) have defined bolstering as:

"A number of different psychological tactics that contribute to creating and maintaining the decision maker's image of a successful outcome with high gains and tolerable losses."

Bolstering theory suggests that by inflating the advantages of a selected service alternative, individuals will minimize internal conflict and post-service encounter regret. Bolstering also involves down playing the benefits of rejected service alternatives and magnifying their risks. Janis and Mann (1977) suggest that bolstering may occur during alternative evaluation and information search stages of decision making, as well as after a commitment has been made to a particular service alternative.

Bateson (1985) suggests that service providers may facilitate the bolstering process by reinforcing the individual's sense of cognitive control. Cognitive control refers to providing information about the certainty of an outcome (e.g., predictability of delivering a healthy baby if a caesarian birth is chosen). From the provider's perspective this approach reduces the need to actually customize the process or modify the outcome to enhance consumer satisfaction (e.g., modification to standardized labor and delivery protocol). Thus, the provider benefits from the efficiencies due to "standardizing" the service encounter, while still managing consumer expectations. Indeed, for consumers of health care services (e.g., maternity patients) outcome predictability or certainty (e.g., having a healthy baby) may be more important to consumer satisfaction than process or outcome personalization. Thus, for certain groups of consumers, providers may be able to exert significant control over process and outcome expectations by selective disclosure of information about the risks associated with various service alternatives.

**Discussion and Implications** When faced with the uncertainty of a health care service encounter consumers develop coping strategies which focus on outcome expectations. Outcome

expectations center on beliefs that a particular service alternative will be associated with a particular outcome. In the context of this study, technical service quality and therefore service alternative outcomes are difficult to evaluate. As a consequence not all consumers will engage in the required effort to pursue active coping strategies based on information search and coping skill acquisition. In addition to the effort (costs) required, exposure to new information may actually increase uncertainty and confusion for some consumers.

Bolstering theory provides a basis for explaining avoidance behavior among certain consumer segments in the health care market. By minimizing the risks associated with their chosen childbirth service alternative and magnifying the risks associated with other service alternatives, consumers cope with uncertainty by convincing themselves that they have made the proper choice. For example, individuals with a higher external locus of control orientation are posited to use bolstering as a method for coping with perceived risk in the health care encounter. Externals are thought to engage in less information search and rely on powerful others (i.e., health care professionals) for most information. As such, externals are thought to engage in greater levels of bolstering when forming outcome expectancies than internals. In addition, higher external locus orientation will be associated with less accurate process scripts and lower self-efficacy beliefs relevant to the service encounter when compared to consumers with higher internal locus of control orientation. However, despite differences in the levels of expectation dimensions both groups may be equally satisfied with the service encounter due to a positive outcome (i.e., a healthy baby). Service providers may actually facilitate this process by selectively exposing consumers to information which confirms their choice.

The setting for this study, hospital-based obstetrical services, provides a limited number of outcome alternatives to the consumer. Expectant mothers may only choose from three childbirth alternatives: (1) vaginal delivery without medication, (2) vaginal delivery with epidural medication, or (3) caesarian section. With the exception of emergency caesarian sections, expectant mothers typically select one alternative several months in advance of the service encounter. This situation sets up quasi-natural experimental conditions in terms of subjects being "assigned" to an outcome group. Unfortunately, the known population statistics suggest that the percentage of consumers choosing each alternative are not equal (i.e., vaginal without medication - <15%, vaginal with epidural - 60%, and caesarian section - 25%). Thus, the development of a true field experimental design is difficult to achieve in this context.

### **Process Expectations**

Because the service encounter involves exchange relationships which are based on activities and processes in addition to tangible aspects of the service setting, researchers suggest that consumers form expectations about the process of service delivery (Solomon et al. 1985). Process expectations refer to consumer beliefs about activities, procedures, or events which occur during the service encounter (Ross et al. 1981; Solomon et al. 1985; Steele et al. 1987). Smith and Houston (1983) note that activities associated with the service encounter occur in a temporal sequence. Therefore, script theory may be useful in conceptualizing consumer process expectation formation.

**Scripts** Script theory was developed in the social cognition literature by Abelson (1976, p.33) who defines a script as:

"A script is a coherent sequence of events expected by an individual, involving him either as a participant or as an observer."

Schank and Abelson (1977, p.41) extended this definition to include:

"A script is a structure that describes appropriate sequences of events in a particular context."

More recently, Abelson (1981, p.715) added:

"A script is a hypothesized cognitive structure that when activated, organizes comprehension of event-based situations."

Abbott and Black (1980, p.5) suggest that:

"A script for a commonplace event consists of the standard actions, characters and objects involved in the event."

In the services context, Solomon et al. (1985, p.105) define the service script as:

"This script would contain information about the role set - one's own expected behavior - plus the expected complimentary behavior of others, and would reflect the individual's learned (or imagined) conception of the prototypical service experience."

Based on the preceding definitions, a service script can be thought of as a cognition on the part of the consumer which serves to organize information about the service process (i.e., activities, procedures, or events) in temporal order and the anticipated role behaviors for both consumer and provider (i.e. actors).

Script theory suggests that as the consumer experiences actual or vicarious occurrences of events (e.g., childbirth or childbirth education classes) a hierarchical structure is developed in memory (Martin, Harrod, and Siehl 1980; Nelson 1981). When activated by an anticipated service encounter, service scripts are used to facilitate information processing (e.g., encoding and representation), as well as to guide behavior (Leigh and Rethans 1984). For example, upon feeling labor pains, a childbirth script would be activated and begin to guide the expectant mother's actions. The script would contain expectations about consumer and provider roles (e.g.,

self-efficacy behaviors such as using breathing techniques to self-manage pain from contractions) and service processes (e.g., medical procedures performed by providers such as administration of pain medication). Leigh and Rethans (1984, p.23) note that scripts will also contain information about:

"Standard objects, ordinary conditions for entering the activity, a standard sequence of scenes or actions wherein one action enables the next, and normal results from performing each activity successfully."

Information contained in the script enables the consumer (e.g., expectant mother) to understand what is observed and to plan and engage in activities appropriate for the situation.

**Script Accuracy** For many professional service encounters, including maternity services, social norms involving service scripts for both consumer and provider are well-defined (Murray, Wilcox, and Kobayashi 1996; Surprenant and Solomon 1987; Wideman and Singer 1984; Yali and Lobel 2002). However, the accuracy with which the normative script has been learned by the consumer can be highly variable (Smith and Houston 1983; Solomon et al. 1985). While consumers have common expectations about appropriate role behaviors, these expectations differ from encounter to encounter (due to heterogeneity) and are moderated by provider/consumer characteristics, situational cues, and the nature of the service delivery system (Czepiel et al. 1982; Lutz and Kakkar 1976).

Consumers having significant past experience with a particular service encounter (e.g., a woman who is not experiencing childbirth for the first time), will likely possess a more accurate script involving the execution of learned behaviors that possess a high degree of social consensus as to appropriate and expected actions. Consumers possessing such well defined scripts are referred to as "schematics" (Smith and Houston 1985).

Novice consumers (e.g., women who are pregnant for the first time) may not have developed an accurate script for the anticipated service encounter. Such individuals are known as “aschematics” (Smith and Houston 1985). In this case, the consumer may attempt to utilize an existing similar script (e.g., one developed during a previous hospital stay) or an "idealized" script that has been internalized via vicarious socialization. For maternity consumers, these "idealized" scripts are developed with information from health care professionals, friends and family, published and media sources, as well as childbirth education classes. In any case, "idealized" scripts are thought to be less accurate than those based on past experience.

**Script Content** Surprenant and Solomon (1987) suggest that service script content (i.e., process expectations) exist on a continuum from highly-standardized to highly-personalized. In addition, these authors believe that the extent to which consumers expect process personalization varies from individual to individual. For example, in service encounters which are highly standardized, such as fast food or routine banking transactions, the consumer has learned a set of routinized and appropriate role behaviors (i.e., standard service scripts) which facilitate the efficiency and effectiveness of the service delivery process. Although some consumers may wish to engage in minimal customization (e.g., ordering a hamburger without onions), in general minimal process personalization or customization is expected. Consequently, attempts by the provider to increase process personalization will cause the consumer to engage in cognitive activity (possibly undesired) in order to modify their process script. In addition, the efficiency and effectiveness of the service encounter may be disrupted for both provider and consumer if customization is encouraged (e.g., consumers may have to wait longer in line while "custom" fast food orders are prepared resulting in the marketer losing business due to "walks").

In the health care context, most consumers expect at least some degree of process personalization or customization. Indeed, the information exchange between provider and consumer in health care service encounters is critical to developing a treatment plan which matches the patient's needs and leads to a positive outcome. Several studies have shown that customization via participation in the decision-making process concerning health care choices has been positively related to patient satisfaction (Drew, Salmon, and Webb 1989; Morcos, Snart, and Harley 1989; Seguin, Therrien, Champagne, and Larouche 1989).

Bateson (1985) notes that problems and conflicts in the service encounter often revolve around control issues between provider and consumer. Both provider and consumer have a need for control over service processes and procedures. Role expectations for a particular service encounter will dictate the amount of control each participant may claim. For example, an individual with higher internal locus of control orientation would be expected to have higher perceived self-efficacy beliefs which in turn would influence the content of the pre-service encounter process script.

In an ideal health care service encounter the needs of both provider and consumer should be balanced (Bendapudi and Leone 2003). Bateson (1985) suggests that offering the consumer service process alternatives increases decisional control. In general, the result of increased decisional control over service processes should lead to greater consumer satisfaction, if the provision of more alternatives increases the desirability of the service. However, allowing the consumer to customize or choose from a menu of service alternatives results in increased complexity in the service delivery process and reduced predictability of service outcomes. This approach may not be preferred by consumers with higher external locus of control. As a result,

increasing service process options to foster consumer satisfaction may conflict both consumer needs and operating efficiency.

The conflict between provider efficiency and process customization is quite apparent in the obstetrical service encounter. As the birthing process moved from being home-based in the early part of the 20th century to being hospital-based by the 1950's, the Parsonian model of patient-hood predictably led to physician dominant and patient passive roles. At its peak, provider control over the process led to the standard administration of general anesthesia prior to delivery. Thus, women were totally unable to participate in decisions about process options or in self-efficacy behaviors which supported the non-pharmacological management of labor pain.

This era resulted in standard procedural norms which applied to all expectant mothers. Typical procedures included: shave and prep of the perineal area, administration of an enema, episiotomy, and forceps delivery. With the advent of the "natural" childbirth movement in the 1960's and 70's and the widespread availability of childbirth education, as well as the introduction of safer pharmacological methods for pain management (e.g., the epidural), women began to evaluate process/procedural alternatives and could choose to engage in self-efficacy behaviors during childbirth. As a result, many individuals began to develop pre-service encounter expectations about the amount of medical intervention they desired during childbirth. As these expectations were communicated to physicians and hospitals, greater customization of service processes and procedures resulted. In fact, some consumers go so far as to prepare a "birthing plan" which details the process expectations of the expectant mother.

The childbirth education literature (Nichols and Humenick 1988) and interviews with health care professionals suggests that there exists a standard medical protocol of processes and

procedures which are applicable during the obstetrical service encounter. Table 3 shows the most common medical procedures used during childbirth. Although these processes and procedures are a standard part of medical education, some (i.e., episiotomy) are controversial because of conflicting evidence related to clinical efficacy (McClain 1983). Critics suggest that many of these processes and procedures were developed to improve the efficiency and productivity of the physician, not to enhance the childbirth experience for the consumer. In any case, because of intense competition for obstetrics patients, women experiencing normal pregnancy now have a greater opportunity to customize desired processes and procedures prior to the obstetrical service encounter.

**Discussion and Implications** Most professional services involve the performance of certain activities, procedures, or events during the service encounter. Since these activities occur in some temporal order researchers have suggested that consumers organize information pertaining to the service encounter into service scripts. The service script also contains information about the anticipated role behaviors for both the consumer and service provider. Social norms and professional protocols have resulted in the existence of well-defined service scripts for many professional services. The extent to which the consumer's service script matches the normative script is known as script accuracy. For any given service offering, individuals may range from schematic (i.e., possessing a highly accurate service script) to aschematic (i.e., having a very inaccurate service script).

Script accuracy is dependent upon the consumer's past experience, as well as information search. More experienced consumers and/or those who engage in extensive information search are thought to possess more accurate service scripts. An important way in which novice

consumers develop service scripts is through vicarious learning. However, these scripts may be less accurate because of the heterogeneity between service providers. In any case, the consumer satisfaction and service quality literature suggests that more accurate expectations (including process expectations) will be associated with more positive satisfaction judgments.

**Table 3**  
**Typical Obstetrical Processes and Procedures**

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* Preparation of perineal area	* Administration of pain medication
* Administration of an enema	* Administration of pitocin to speed the labor process
* Attachment of a fetal monitor	* Episiotomy
* Insertion of IV	* Catheterization of bladder

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Source: Interviews with labor and delivery nurses and childbirth educators at Woman's Hospital, Baton Rouge, Louisiana, and Francine H. Nichols and Sharron S. Humenick (1988), *Childbirth Education: Practice, Research, and Theory*, Philadelphia: W.B. Saunders Company.

The obstetrical setting for this study gives an opportunity to objectively evaluate the accuracy of process expectations in memory via service scripts because generally accepted social and clinical norms exist which detail the service script for the three service alternatives. Also, the population under study contains experienced and inexperienced subjects, so the differential impact of experience and vicarious learning through information search on script accuracy can be evaluated.

**Role Expectations**

Role expectations have been defined by Sarbin and Allen (1968, p.498) as:

"Collections of cognitions -- beliefs, subjective probabilities, and elements of knowledge - which specify in relation to the complementary roles, the rights and duties, the appropriate conduct, for persons occupying a particular position."

Solomon et al. (1985) note that professional service encounters consist of exchange relationships that are typically dyadic, human interactions which are goal oriented and involve role performances by both provider and consumer (i.e., inseparability). Role performances consist of learned and often ritualized sets or patterns of behavior which are thought to reside in consumer memory as "scripts" (Smith and Houston 1985).

**Patient Role Behavior** Development of the notion of patient role behavior has evolved over the past 250 years. Early concepts of patient role behavior date to John Wesley's popular tract *Primitive Physick*, first published in 1747. Wesley stressed the importance of personal autonomy, self-direction and personal responsibility for one's health. After the medical profession became highly organized in the early part of the 20th century, Parsons (1951) proposed a model of physician/patient role behavior which has had great influence on medical education and practice. This model prescribes a passive patient role and a dominant role for the health care provider. Patients are exempt from personal responsibility for health with the exception of placing trust in the physician and being compliant to the medical regimen.

Not content with the view of patient roles in the Parsonian model, Szaz and Hollender (1956) suggested that physician/patient role behaviors should be determined by the severity of the medical condition, as well as the patient's need for control. These authors suggest that physician/patient role behaviors exist on a continuum. A relationship characterized by activity on the part of the physician and passivity by the patient is posited to be appropriate in cases of grave illness or emergency care. In the guidance/cooperation relationship, appropriate for acute illness such as infections, role behavior by the patient involves cooperating with the medical regimen

prescribed by the physician. Finally, in the mutual participation role, appropriate for chronic conditions like normal pregnancy, the patient is considered an equal participant in the service encounter. The provider's role in this model is to assist the patient in efficacy behaviors.

**Health Belief Model** Kasl and Cobb (1966) and Rosenstock (1966) pioneered the development of a framework to understand preventative health care behavior, sick role norms, and patient non-compliance. Their work has been extended and integrated into what is now known as the Health Beliefs Model (HBM). Burns (1991), in a review of the HBM literature, notes that the Kasl and Cobb (1966) framework posits that the likelihood of an individual performing preventive health care behavior is dependent upon: (1) the amount of perceived threat from the focal disease or condition and (2) the perceived value of the action prescribed to reduce the threat. The perceived threat is thought to be a function of: (1) importance placed on health issues by the individual; (2) the individual's perceived susceptibility to the focal disease or condition; and (3) the perceived negative consequences of the disease or condition. The value of action is posited to be a function of: (1) the perceived probability of the action leading to the desired preventive health state, and (2) the cost of engaging in the preventive health behavior. Other determinants included in the Kasl and Cobb (1966) model are factual information received about the disease, past utilization of medical services, and demographic variables.

Rosenstock (1966) developed a similar model of beliefs, but extended the notion of "costs" by including the individual's consideration of the perceived benefits of the preventive health behavior versus the costs of engaging in the behavior (i.e., a cost-benefit tradeoff). He also included "cues to action" in this model. These are signals to individuals that they may be at risk for a particular disease or condition.

Becker and his colleagues have been instrumental in formalizing and testing the HBM (Janz and Becker 1984; Strecher, McEnvoy and Becker 1986; and Rosenstock, Strecher and Becker 1988). These authors have strengthened the theoretical support for the HBM by relating it to well known psychological theories -- rational belief theory (Holmans 1974) and expectancy theory (Lewin, Dembo, Festinger, and Sears 1944). The Janz and Becker (1984) HBM includes the major elements of the Kasl and Cobb (1966) and Rosenstock (1966) models mentioned above and adds psychosocial factors (e.g., social pressure). In short, the HBM posits that the likelihood that an individual will engage in preventive health behavior is dependent upon the extent to which the outcome of preventive health (i.e., improved health) is perceived to be desirable, which in turn is based on cost-benefit analysis as well as psychosocial and demographic influences.

Janz and Becker (1984) reviewed numerous published studies of the HBM in several contexts: (1) preventive health behaviors; (2) sick role behaviors; and (3) clinic utilization. Overall, the HBM appears to be most powerful in explaining one-time inoculations and least successful in explaining long-term preventive health behavior. Becker and his colleagues have suggested practical implications of the HBM for health care professionals. Becker (1985) suggests that enhancing individual compliance with preventive health behaviors requires that practitioners develop approaches for increasing patient knowledge about an illness and its treatment, as well as encouraging social support in reinforcing health beliefs. Furthermore, Rosenstock et al. (1988) recommend that prior to determining the educational needs for a patient population (i.e., market segment) and developing appropriate strategies, health care professionals must assess health concern and belief that a health threat can be reduced at an acceptable cost.

Similar to the issues in the HBM literature, discussions of patient role expectations have focused on the prescriptive norm of the "activated" patient (Steele et al. 1987). In general, the "ideal" activated patient rejects the Parsonian notion of passive sick role behaviors as being appropriate for all health service encounters. Instead the "activated" patient assumes responsibility for his/her own health (i.e., internal locus). This psychological phenomenon is followed by behavioral responses which include increased question asking, explanation seeking, expression of preferences and opinions, and information search. As a consequence, "activated" patients exhibit more self-efficacy role behaviors and are more knowledgeable about, participative in, and satisfied with the health service encounter (Steele et al. 1987).

**Self-Efficacy** Self-efficacy is the operational construct for role expectations in the proposed model of consumer expectation formation and refers to a type of role expectation related to personal mastery and behavioral change. Self-efficacy expectations represent an individual's assessment of his or her potential for having the ability to perform a certain behavior (Bandura 1977; 2005). In the health care services context, self-efficacy refers to the consumer's ability or skill and willingness to participate in or contribute to service delivery (Manning and Wright 1983). Self-efficacy has been included as an important construct in the Health Belief Model and Extended Health Belief Model (Burns 1992). In the context of this study, self-efficacy is a useful concept because women may choose to adopt specific role behaviors which are considered self-efficacious (e.g., use of breathing and relaxation techniques to cope with pain during labor).

Bandura (1977) hypothesized that self-efficacy expectancies are based upon several sources of information: past experience, vicarious learning (i.e., education and training), verbal

persuasion, and physiological responding. Empirical studies suggest that past experience and vicarious learning are the two primary sources of self-efficacy information which most impact personal mastery behavior (Bandura 1977, 1980; and Kazdin 1979).

Recent research suggests interaction effects between self-efficacy and perceived risk (Rimal 2001). In a longitudinal study of cardio-vascular disease (CVD) patients this author found that knowledge acquisition, use of health information, and motivation to think about CVD issues were significantly effected by the interaction of self-efficacy and perceived risk. Based on these interactions the study identified four consumer segments: (1) responsive - high perceived risk and high self-efficacy; (2) proactive - low perceived risk, high efficacy; (3) avoidance - high perceived risk, low efficacy; and (4) indifference - low perceived risk, low efficacy.

In the context of the current study, Manning and Wright (1983) investigated the self-efficacy construct in obstetrical patients. Along with many others, this study suggests that women engage in self-efficacy role behaviors in childbirth. Despite the availability of clinically safe anesthetics, such as the epidural, many women attempt the non-pharmacological management of pain during childbirth by utilizing a variety of relaxation and pain control techniques. These personal mastery skills are taught in most childbirth education classes by way of experiential training (i.e., vicarious learning) and are reinforced in multi-parous (i.e., women who have already experienced childbirth) mothers through actual birthing experiences. In addition, childbirth education classes typically present information about the physiological and psychological effects of pregnancy and childbirth, as well as alternative role, process, and outcome options available during the service encounter.

Numerous studies support the notion that women who receive childbirth education require less medication during childbirth (Enkin, Smith, Dermer, and Emmett 1972; Hughey, McElin & Young 1978; Scott and Rose 1976; Zax, Sameroff, and Farnum 1975). Similarly, findings of Manning and Wright (1983) were consistent with previous studies. They found that self-efficacy expectations were negatively correlated with the use of medication and positively correlated with childbirth education. Based on the childbirth education literature (Nichols and Humenick 1988) and interviews with childbirth educators and health care professionals, typical self-efficacy role behaviors which may be engaged in during childbirth are shown in Table 4.

**Response Efficacy** An individual's self-efficacy beliefs are thought to be influenced by response efficacy beliefs. Also an important component of the Health Belief Model, response efficacy refers to the degree to which an individual believes that an action will actually reduce a health threat (Burns 1992). Several researchers have posited that the failure of a patient to believe in the efficacy of a recommended action can explain non-compliance with medical advice (Beck and Frankel 1981, Kasl and Cobb 1966).

**Table 4**  
**Typical Self-Efficacy Role Behaviors in the Obstetrics Service Encounter**

- 
- \* Attending childbirth education classes to develop self-efficacy skills
  - \* Using "coping" strategies during labor to self-manage pain
    - Breathing techniques
    - Relaxation techniques
    - Changing positions
    - Distraction methods
  - \* Relying on social support from a birth partner during the childbirth experience
- 

Source: Francine H. Nichols and Sharon S. Humenick (1988), *Childbirth Education: Practice, Research, and Theory*, Philadelphia: W.B. Saunders Company.

Response efficacy and self efficacy beliefs are thought to be a function of social influence, vicarious learning, personality variables, and prior experience (Jacobs, Prentice-Dunn, and Rogers 1984). Rippetoe and Rogers (1987) conducted a study to explore individual response strategies in coping with a health threat. In an experiment involving a hypothetical breast cancer scenario and breast self exam as a preventive response, these researchers explored the effects of information about the threat and self- efficacy and response-efficacy beliefs on two adaptive coping strategies (i.e., rational problem solving and behavioral intentions to conduct breast self exam) and five maladaptive coping strategies (i.e., avoidance, wishful thinking, fatalism, hopelessness, and religious faith). The results demonstrated that a high threat (i.e., perceived risk) energized all forms of coping, but that coping information was the most significant factor in determining which specific strategies were used. A path analysis of the model for the high response efficacy and high self efficacy group revealed stronger Linkages to adaptive coping strategies and weaker Linkages to maladaptive coping strategies. When the low response efficacy and low self efficacy group was modeled, Linkages to the maladaptive coping strategies of fatalism, religious faith, and hopelessness were strengthened. The most significant maladaptive strategy was avoidance, which simultaneously reduced fear of the threat and weakened intentions to adopt adaptive response (i.e., the behavioral intention to perform breast self exam).

Other studies involving coping strategies in dealing with potential health threats which investigated response and self efficacy have produced very similar results and include: risk of cardiovascular disease and exercise (Fruin, Pratt, and Owen 1991), intention to seek treatment for venereal disease, smoking cessation, and adoption of safe driving practices (Rogers and Mewborn

1976). In explaining the relationship between response efficacy and self-efficacy, Burns (1992) notes that an alcoholic may realize that abstinence will reduce the threat of liver disease but may lack the mental resolve necessary to abstain from drinking (self-efficacy). In a study of the antecedents of preventive health behaviors, Jayanti and Burns (1998) found that the value placed on preventive health actions was strongly influenced by response efficacy. While a person's adherence to a prescribed preventive health care behavior was strongly influenced by self-efficacy. In addition, response efficacy was highly related to preventive health care behavior.

**Discussion and Implications** The literature cited above suggests that role expectations consist of learned sets of behavior that reside in consumer memory. Furthermore the patient role behavior and Health Belief literature posit that the social norm for the obstetrical setting is characterized by mutual participation in which the expectant mother can be an equal participant in the service encounter if she so chooses. The service provider's role in this case is to facilitate the development of self-efficacy behaviors.

In the context of the present study consumers may learn about self-efficacious role behaviors from past experience, childbirth education classes, or from social network members. In addition, there exists a significant popular literature on childbirth coping strategies. Therefore, even though the obstetrical setting is high in credence properties, the consumer has several vehicles with which to develop coping strategies based on self-efficacy behaviors.

When confronted with the uncertainty and health threat (i.e., experiencing pain during labor) of the obstetrical service encounter consumers on the active end of the spectrum (i.e., higher internal locus of control orientation) will usually have a strong need for control in the service encounter. Therefore, "actives" will engage in adaptive coping strategies which enhance

control. These include increased information search and the development of response efficacy beliefs, which in turn facilitate the development of self-efficacy beliefs. These consumers will seek to customize the process by modifying or eliminating certain medical processes or procedures from the service encounter. In addition, actives are likely to form more accurate process expectations as compared to "passives."

"Passives" (i.e., higher external locus of control orientation) would be expected to engage in less information seeking and not develop strong response efficacy and self-efficacy beliefs. Thus, when facing the uncertainty and health threat of the clinical service encounter, "passives" are thought to engage in maladaptive coping strategies related to outcome expectations such as avoidance (i.e., bolstering). Passive role orientations are thought to be correlated with the standardized end of the process expectation continuum. In addition, because of limited information seeking behaviors, this group may form less accurate process expectations.

### **Service Quality Expectations**

Customer perception of service quality has been defined as a form of attitude that results from a comparison of consumer expectations with perceptions of service provider performance (Bolton and Drew 1991; Cronin and Taylor 1992). Consumers are thought to form expectations about five dimensions of service quality: reliability, assurance, responsiveness, empathy, and tangibles (Parasuraman et al. 1988). Recent discussions in the literature have attempted to clarify the relationship between service quality and customer satisfaction, because both have been conceptualized using the disconfirmation paradigm (Boulding et al. 1993; Cronin and Taylor 1992; Zeithaml et al. 1993). These two concepts are thought to be fundamentally different in their underlying causes and outcomes (Parasuraman, Zeithaml, and Berry 1994). Satisfaction is

considered to be a more global construct, while service quality is related to specific dimensions of the service. Current consensus in the literature suggests that perceived service quality is a component of consumer satisfaction (Zeithaml et al. 2006). In addition to service quality, satisfaction can be influenced by product quality, price, situational factors, and consumer factors (Cronin, Brady, and Hult 2000).

Research in both areas supports the notion that multiple standards for expectations exist (Churchill and Surprenant 1982; Boulding et al. 1993; Tse and Wilton 1988; Zeithaml et al. 1993). One standard which is typically found in the satisfaction literature defines expectations as a prediction of future events (Prakash 1984; Swan and Trawick 1981). These authors termed these standard, “predictive” expectations, defined as estimates of anticipated or predicted performance level. A second standard involves “normative” expectations of future events (Prakash 1984; Swan and Trawick 1981). Two types of normative expectations have been defined in the literature as “ideal” and “desired” (Swan and Trawick 1980). Ideal expectations are defined as the wished for level of performance, whereas desired expectations refer to the level at which the customer wants the product or service to perform. Prakash (1984) suggests that normative expectations are the consumer’s perceptions of how a brand should perform in order to be completely satisfied.

In the service quality literature, expectations are viewed as normative in nature. The GAPS model treats expectations as what the consumer believes service quality “should” be, rather than what the consumer thinks the service provider “would” offer (Zeithaml et al.1993; Parasuraman et al.1988). Building upon past conceptualizations of expectations these authors conducted exploratory research in an attempt to define the nature of service quality expectations.

Based on focus group interviews in several industries (insurance, office equipment repair, truck leasing, auto repair, and hotels), these authors developed a conceptual model of service expectations. Results of the focus group interviews supported the existence of normative expectations, which were termed “desired service.” Desired service is defined as “the level of service the customer hopes to receive” (Zeithaml et al. 1993, p. 6). The authors note that desired service is a blend of what customers believe “can be” and “should be.” Furthermore, the results of this research suggest that customers realize that the fulfillment of desired service expectations is not always possible. Therefore, Zeithaml and her colleagues (1993) propose that customers have a lower-level expectation associated with an “acceptable” level of service referred to as adequate service. Adequate service is defined as the level of service a customer will accept. The researchers note that the focus groups consistently showed that the view of what “should be” existed on two levels: “desired” and “adequate.” In addition, desired service expectations are thought to be more stable than adequate service expectations.

Because services are heterogeneous, Zeithaml et al. (1993) suggest that service quality expectations are characterized by a range of levels, whose boundaries are “desired” and “adequate” service expectations. The difference between desired and adequate service is called the zone of tolerance. A customer’s zone of tolerance is thought to expand or contract depending on a variety of factors such as price, service promises, and situational influences. Similarly, results of the focus groups suggest that the zone of tolerance may vary for different service quality attributes or dimensions. For example, in a health care setting, a customer’s zone of tolerance may be narrower for empathy, as compared to tangibles.

Zeithaml and her colleagues (1993) further hypothesize that expectations of adequate service are influenced by predictive expectations. Predicted service is defined as the level of service customers believe is likely to occur. This definition is consistent with the conceptualization of expectations in the satisfaction literature. These researchers propose that the higher the level of predicted service, the higher the level of adequate service expectations and thus the narrower the zone of tolerance.

In a refinement of Zeithaml and her colleagues work, Boulding and his colleagues (1993) proposed that service customers form expectations about what “will” happen and what “should” happen in the service encounter. “Will” expectations are a form of predictive expectations as described in the satisfaction literature. Boulding et al. (1993) hypothesize that “will” expectations are dependent on information obtained from the most recent service contact, as well as expectations held just prior to the service encounter. This conceptualization suggests that different consumers may hold different expectations about service quality attributes even when they experience the exact same service encounter. In addition, Boulding et al. (1993) propose that consumer perceptions (evaluation) of a particular service encounter are used to update “will” expectations.

Boulding et al. (1993, p.9) define “should” expectations as “the service customers feel they appropriately deserve”. “Should” expectations are normative expectations similar to Tse and Wilton’s (1988) “what ought to happen” expectations. These expectations are thought to be determined by service provider communications about what to expect in the service encounter, as well as what is viewed as reasonable and possible. In addition, “should” expectations are

influenced and updated via word-of-mouth communications about competing service offerings or experience with the firm's service or competitive service offerings.

Boulding et al. (1993) suggest that expectations and service perceptions change over time. These researchers proposed and tested a behavioral process model of perceived service quality based on a Bayesian framework to describe this updating process. The model posits that perceptions of the five dimensions of service quality (i.e., reliability, assurance, responsiveness, empathy, and tangibles) are a function of a consumer's prior "will" and "should" expectations, as well as the consumer's most recent contact with the service delivery system. Perceptions of quality dimensions form the basis for overall quality perceptions which in turn predicts behavioral intentions (e.g., positive word-of-mouth, repurchase intentions, etc.).

Relying on empirical data from two different studies, a longitudinal laboratory experiment and a field study, Boulding et al. (1993) found support for the "will/should" conceptualization of expectations. Findings from this research also conflict with the GAPS model of service quality, which views expectations as one-dimensional and defines perceived service quality as the gap between expectations and perceptions. Boulding et al. (1993) found that perceived service quality is directly influenced by perceptions of performance on the dimensions of service quality. Furthermore, this research suggests that service quality expectations are multidimensional in nature. These authors report that increasing "will" expectations actually leads to higher consumer perceptions of service quality after the service encounter. Conversely, higher levels of "should" expectations tend to decrease post-service encounter perceptions of service quality. Consequently, Boulding et al. (1993) suggest that in order to increase overall service quality perceptions, managers should seek to influence predictive (will) expectations upward rather than

downward, as suggested by the “under promise - over deliver” axiom. Similarly, the authors recommend that managers seek to influence normative (should) expectations downward in order to improve overall service quality perceptions.

**Discussion and Implications** Researchers have reached consensus on several key issues related to service quality. First, perceived service quality is focused on the dimensions (attributes) of service quality and is an antecedent to the more global construct, consumer satisfaction. Secondly, service quality expectations are multidimensional with at least two components or standards: predictive and normative. Whether they are termed “will/should” or “adequate/desired” expectations, evidence suggests that these two types of expectations have opposite effects on post-service encounter perceptions of overall service quality. Higher levels of predictive expectations are associated with higher overall perceived service quality, while higher levels of normative expectations seem to have a downward influence on overall perceived service quality.

Boulding et al. (1993) recommend that future research explore the degree to which prior experience, knowledge, service provider communications, or the actual service encounter influences the process by which consumers form judgments of service quality. The health care context of the present research will facilitate the exploratory investigation of the relative influences of prior experience, knowledge, and information search on service quality expectations.

In summary, the development of role, process, service delivery/outcome, and service quality expectations is influenced by the antecedent psycho-social constructs such as locus-of-control, perceived risk, and social support, as well as behavioral variables like past experience and

information search. A review of the literature concerning the antecedents of expectation formation follows.

### **ANTECEDENTS OF EXPECTATION FORMATION**

Much of what is known about expectation formation is derived from research in the areas of economics, cognitive psychology, consumer behavior/services marketing, and health care literature. Each discipline approaches the topic of expectations from a different perspective. Economists view expectations from a micro-economic view, psychologists from a decision theory perspective, and marketers from holistic approaches to the explanation of consumer behavior. Each of these research streams are reviewed below.

#### **Economics Literature**

While most economists tend to be exclusively concerned with price expectancies and view expectations as quantifiable variables in a micro-economic model, Hicks (1939) was one of the first economists to suggest psychological bases for the formation of price expectations. Hicks wrote that an important input to decision-making includes the variability surrounding the expected value of a future event. Additionally, he hypothesized several important antecedents to the expectation formation process: (1) historical and current price experience; (2) non-price economic factors, such as availability; and (3) non-economic factors (e.g., psychological factors).

Counter to traditional micro-economic theory, which posits that the consumer places restrictions on consumption exclusively via the budget constraint, Katona (1951; 1960) suggested that while the ability to pay is important, of equal importance is the consumer's "willingness" to pay. Katona hypothesized that one's "willingness" to pay is a function of the "feelings" (expectations) of the consumer concerning the future economic climate. Katona empirically

correlated consumer "feelings" about the future with spending patterns. In addition, Katona posited three determinants to the expectation formation process: (1) past experience; (2) external information; and (3) problem-solving behavior. The latter becomes operational when a change in the purchase or consumption situation prompts a reassessment of the expectation.

Lachmann (1956) developed the theory that expectations have a practical range and a possible range. While similar to Shackle's (1952) views, Lachmann suggested that variance within the practical range were "normal" and due to randomness and that they do not effect a change in expectations. However, if an expected value moves outside this normal range a significant modification of the expectation is possible. A similar treatment of the expectation formation process and its determinants was offered by Keynes (1964). Keynes divides expectations into short-term and long-term. He suggested a formation process for short-term expectations which includes past actual values and expectations, and an unspecified updating process.

In summary, the economics literature suggests that expectation formation is a function of past experience (Hicks 1939; Katona 1951, 1960; Keynes 1964). Hicks and Katona also suggest that expectations are influenced by unspecified psychological factors (feelings). Lachmann (1952) theorized that expectations are based on norms and that an expected value outside the normal range will prompt "updating." The notion of updating is consistent with Keynes' (1964) formulation. Finally, Katona (1951, 1960) suggested that the updating process is characterized by problem solving utilizing external information.

Several important implications arise from the economics literature. The three proposed antecedents of expectation formation -- past experience, psychological factors (problem solving), and external information -- are consistent with models of consumer behavior (Bettman 1979;

Engel, Kollat, and Blackwell 1968; Howard and Sheth 1969; Parasuraman et al. 1985). In addition, expectations have situational and temporal dimensions. Changes in anticipated consumption or purchase situations may prompt a re-evaluation of past expectations which are based on mental norms (e.g., service scripts). Finally, expectations may be transient (short-term) or permanent (long-term) (Keynes 1964).

### **Psychology Literature**

Psychologists have traditionally approached the study of expectations from a behavioral decision-making perspective. Within this body of literature, several streams of research are evident: (1) taxonomies; (2) expectations as heuristics or norms; and (3) ambiguity in decision making. Each of these areas will be addressed in turn.

**Taxonomies** Kahneman and Tversky (1982) have developed taxonomy of expectations based on the levels of cognitive activity associated with the expectation formation process. For any given decision making event, they suggest that expectations may exist on a continuum from active to passive. First, active expectations are conscious and utilize information processing capacity. Active expectation formation is thought to be triggered by anxiety resulting from uncertainty about the decision-making event. An example of active expectation formation would be question-asking by a health care consumer when anticipating a new service encounter or provider.

Two types of expectations have been termed "passive" in the sense that they involve a minimum of active information processing (Kahneman and Tversky 1982). One type of passive expectation is "permanent" and is thought to be associated with repeated past experience.

Permanent passive expectations have been also been referred to in the literature as mental norms

or service scripts. Another type of passive expectation remains in memory for a short duration. Temporary expectations may be due to situational factors which become apparent to the consumer based on environmental cues. For example, if an incoming patient observes that admissions office of the hospital is full of people, he or she may develop an temporary expectation that waiting time will be extended. Such expectations would require minimal cognitive processing and would not likely become a part of permanent passive expectations or the service script unless they were repeatedly reinforced via similar experiences in the future.

**Heuristics** Three types of expectation formation heuristics have been proposed by Tversky and Kahneman (1974). The process through which consumers forecast an event from a category of events depending on how similar the event is to the category is referred to as representativeness. For example, a consumer may forecast the anticipated processes, roles, and outcomes of a medical office visit based on experiences during past visits to other professional service providers (e.g., CPAs, attorneys, dentists, etc). A second heuristic, availability, suggests that the expectation formation process is dependent on forecasts derived from similar past experiences within the same service category (e.g., medical office visits) which can be retrieved and processed in light of the current situation (e.g., an anticipated visit to the doctor). Lastly, individuals develop reference points based on past experience which "anchor" expectations. Referred to as "norms," these frames of reference serve to limit and define the range of expectations (e.g., normal waiting time in a medical office is 30 minutes).

**Uncertainty and Ambiguity in Decision Making** The concept of perceived risk implies that most individuals face some level of uncertainty and ambiguity when making decisions (Murray 1991). Einhorn and Hogarth (1985) distinguish the concept of uncertainty from that of

ambiguity. They suggest that uncertainty exists when the probability of an outcome is known with certainty and is conditional on some model of the process (i.e., a stochastic model). For example, a woman who attended childbirth education classes would learn that the probability of having a cesarean section in the United States ranges from around 2 to 25 percent and that her individual probability is dependent on a number of factors including: physician practice patterns, position of the baby, and possible complications. Einhorn and Hogarth (1985) define ambiguity as resulting from having limited knowledge of the process that generates outcomes. In the absence of such information, the individual is forced to make inferences during the expectation formation process. For example, a woman who is expecting her first child and who does not attend childbirth classes may believe that childbirth without pharmacological pain management is impossible.

Empirical work by these authors suggests that because inference involves going beyond the information at hand, individuals dealing with ambiguity tend to cognitively construct scenarios of "what might be." Einhorn and Hogarth (1985, p.459) point out that:

"On the one hand, there are costs of investing in imagination (mental processes), increased mental effort and the discomfort that result from greater uncertainty. On the other hand, the benefits of considering the world as it isn't, protects one from overconfidence and its non-adaptive consequences. Thus finding the appropriate compromise between what is and what might be is central to inferences under ambiguity and uncertainty."

Einhorn and Hogarth's (1985) work lends credence to the common saying: "the more you think you know; the less you know you know!" This statement suggests that by seeking to reduce ambiguity via cognitive activity individuals may be forced to consider previously unknown outcomes, some of which may be perceived negatively. In addition, finding out "what might be"

may challenge existing beliefs (expectations) of "what is" creating discomfort with ones current expectations.

Research by Bell (1982, 1985) and Loomes and Sugden (1982; Sugden 1985) suggests that the level of individual perceived risk associated with a decision will influence expectation formation. Bell (1985) extended previous research concerning uncertainty and ambiguity by suggesting that individuals may consider potential disappointment or regret in expectation formation. Bell (1985) posits that expectations reflect both anticipated positive reinforcement (probability of a desired outcome) and anticipated negative reinforcement (loss minimization).

Overall, the psychology literature suggests that the major determinants of expectation formation include involvement (Kahneman and Tversky 1982), information search (Einhorn and Hogarth 1985), past experience (Kahneman and Miller 1986; Kahneman and Tversky 1982; Tversky and Kahneman 1974), and perceived risk (Bell 1982; Bell 1985; Loomes and Sugden 1982; Sugden 1985). Two of the determinants of expectation formation detailed in the psychology literature (information search and past experience) are consistent with research in economics, as well as previously cited models of consumer behavior (e.g., Bettman 1979). This research stream also suggests additional determinants of perceived risk and involvement.

The psychology literature contains an important implication regarding expectation formation. The work of Kahneman and Tversky (1982) suggests that some consumers may be active or passive in the formulation of expectations. In the active state consumers will engage in extensive problem solving behavior, including information search. Einhorn and Hogarth (1985) point out that there is a tradeoff between reducing uncertainty via information search/cognitive activity (problem solving) and the discomfort of discovering undesirable outcomes by processing

new information. When the consumer is in a passive state, an existing script based on past experience or a representative script adopted from others may be recalled as a basis for service encounter expectations. Under this condition, consumers will engage in minimal cognitive and behavioral problem solving. Thus, the state of consumer arousal (active or passive) is a function of perceived risk, locus of control needs, and past experience with roles, processes, and outcomes.

### **Marketing Literature**

Past research efforts in the marketing literature have emphasized integrating expectations into theoretical frameworks in three areas: (1) attitude formation; (2) consumer choice; (3) and post-purchase evaluation. These research streams have focused primarily on product attribute expectations and are reviewed next.

**Attitude Formation** Most attitude models found in the marketing literature have their theoretical basis in Tolman's (1932) expectancy-value theory. Tolman posited that learning involved changes in beliefs or expectations. This process was modeled as a maximization of the function  $E_i V_i$ , where  $E_i$  is the expectation that an action will lead to an outcome  $i$  and  $V_i$  is the value of that outcome. Tolman (1932) suggested that the determinants of expectations included: (1) memories of actual experiences; (2) perceptions of current stimuli; and (3) inferences derived from related experiences (e.g., trial of similar objects). Oliver and Winer (1987) suggest that these three sources of information are directly related to consumer behavior: (1) prior consumption experiences; (2) external sources of information (marketing, social and environmental stimuli); and (3) consumption experiences with similar brands.

Fishbein and Ajzen's (1975) seminal work in the area of multi-attribute attitude models is based on expectancy-value theory. Their model ( $A_o = \sum E_i B_i$ ) is consistent with Tolman's (1932) model. These authors posit that an attitude toward an object ( $A_o$ ) or behavior ( $A_{act}$ ) is a function of the sum of the product of the evaluations of the object or behavioral outcome ( $E_i$ ) and the individual beliefs that the object or behavior will result in these outcomes ( $B_i$ ).

Fishbein and Ajzen (1975) view beliefs as expectations about the consequences of an act and suggest that beliefs are determined by three sources: (1) direct observation and experience (descriptive beliefs); (2) previously learned relationships or formal rules of logic developed to form beliefs about unobserved events (inferential beliefs); and (3) information from the environment (informational beliefs).

**Consumer Choice** In attempting to understand consumer choice and problem solving, Bettman's (1979) information processing perspective is relevant to theory development in the area of expectation formation. Bettman (1979) suggests that consumers evaluate and store information based on both current and past events and subsequently form expectations concerning future events. Expectations are thought to be continually updated as information is processed. In situations where prior expectations about purchase decisions exist in the consumer's memory, the processing of new information is thought to be more efficient. As a result, this model emphasizes experience as a major determinant in the expectation formation process.

Meyer (1981) suggests that consumers attempt to maximize utility in brand choice and that preference for a particular brand is a weighted function of the beliefs (expectations) about brand attributes. He suggests that expectation formation about brand attributes involve a combination of beliefs about current product attributes and a weighted average of attribute beliefs

for similar competing brands. This view of expectations is similar to that of "representative expectations" (Tversky and Kahneman 1974) discussed above.

Similar to Meyer (1981), Hagerty and Aaker (1984) developed an information search approach to modeling consumer choice based on maximization of the expected value of sample information. This model is based on a multi-attribute, linear compensatory structure. While expected levels of product attributes were not discussed, the level of current attributes is thought to be determined by the dispersion of attributes across brands and product category familiarity.

Winer (1985) theorized that expectations of future prices are determined by: (1) current expectations; (2) price signals given by firms; and (3) current and future expectations of macroeconomic variables. The current expected price (reference or perceived price) is a function of prior expectations and retail prices. From this perspective, uncertainty about the future price is formed by expected changes in current and future consumer price expectations, prior uncertainty, and uncertainty about future economic conditions.

**Post-Purchase Evaluation** Research in the area of consumer post-purchase evaluation includes the satisfaction literature and more recent work on service quality. In consumer satisfaction, the disconfirmation paradigm is widely accepted as the dominant theoretical basis for the process by which consumers develop feelings of satisfaction or dissatisfaction (Cadotte, Woodruff, and Jenkins 1987). Having its basis in social psychology (Weaver and Brickman 1974) and organizational behavior (Ilgen 1971), expectancy disconfirmation consists of two processes -- formation of expectations and the disconfirmation of expectations via performance comparisons (Oliver and DeSarbo 1988). Oliver (1980) posited that consumers form expectations of product performance prior to purchase. Subsequent experience with the product results in a comparison

of performance to expectations utilizing a better than/worse than heuristic. The judgment resulting from this comparison is termed negative disconfirmation if performance is worse than expected, positive disconfirmation if better than expected, and simple confirmation if performance meets expectations.

Expectation and disconfirmation are thought to have separate effects similar to adaptation level predictions (Helson 1964; Oliver 1980). Expectations provide a baseline around which disconfirmation evaluations are made, while the origins of the disconfirmation effects are related to emotional reaction or “surprise.” The “delight” of positive disconfirmation enhances the satisfaction judgments. Conversely, the disappointment of negative disconfirmation decreases satisfaction. Confirmation merely maintains the adaptation level (Oliver and DeSarbo 1988). Much empirical support has been developed for this paradigm with non-durables or products having high search properties (Anderson 1973; Bearden and Teel 1983; Churchill and Surprenant 1982; LaBarbera and Mazursky 1983; Oliver 1980; Swan and Trawick 1981).

Brown and Swartz (1989) applied the disconfirmation model to the evaluation of the service encounter. These authors suggest that consumers will compare the service encounter with a set of expectations. Such expectations may be partially or totally dependent on prior relevant experiences -- both actual and vicarious. For example, an expectant mother may form expectations about childbirth based upon past experience or by being informed vicariously about roles, processes, and outcomes in a childbirth education session. In addition, word-of-mouth communications based on the experiences of others may be included in the expectation formation process. Based on this logic, Brown and Swartz (1989) developed and tested an analytical model where the evaluation of the service encounter outcome is the result of expectations for the service

encounter compared to the actual service encounter experience. Expectations are a function of all experiences prior to the service encounter. Depending on the results of the comparison, the experience is judged to be equal to, better than, or worse than expectations. In a study of primary care clinics, Brown and Swartz (1989) found that inconsistent perceptions of expectations and experiences between patients and providers negatively influenced consumer perceptions of service quality.

Empirical studies using products high in search properties have demonstrated substantial support for the disconfirmation paradigm. However, with the exception of Brown and Swartz's (1989) work, studies utilizing products or services with experience or credence properties have resulted in equivocal support for the disconfirmation paradigm. In empirical work involving both products and services, several researchers have found a direct relationship between performance and satisfaction, with expectations and disconfirmation Linkages being either weaker or non-significant (Churchill and Surprenant 1982; Oliver and Bearden 1983; Oliver and DeSarbo 1988; Tse and Wilton 1988). Oliver and DeSarbo (1988) point out those attempts to explain results are difficult because antecedents of satisfaction processes are not well understood. In any case, speculation concerning these results include: (1) model specification issues - Tse and Wilton (1988) suggest that expectations and performance should be modeled separately; (2) antecedent individual difference constructs - Oliver and Bearden (1983) and Oliver and DeSarbo (1988) propose that constructs such as involvement may influence expectation formation; and (3) product characteristics - Churchill and Surprenant (1982) suggest that products high in experience properties impact model performance.

**The GAPS Model** Research in the area of service expectation formation and post-purchase evaluation has resulted in the revision and extension of the GAPS model of service quality (Parasuraman et al.1985). The initial formulation of the GAPS model proposed that service expectations are determined by: (1) word-of-mouth communications; (2) personal needs; (3) past experience; and (4) external communications. Zeithaml et al. (1993) conducted focus group interviews with customers in several industries (none in the health care industry) to explore the determinants of expectation formation. As has already been discussed, these researchers suggest that there are two forms of normative expectations -- “desired service” and “adequate service,” which form a zone of tolerance in the customer’s mind. In addition, predictive expectations are designated in this model as “predicted service.”

Zeithaml and her colleagues (1993) propose that desired service expectations are determined by enduring service intensifiers and personal needs. Enduring service intensifiers are individual, stable factors that lead a customer to a heightened sensitivity to service. A form of enduring service intensifier is the customer’s personal service philosophy. That is the customer’s attitude about what “excellent” service means and proper service provider behaviors during the service encounter. For example, professionals such as doctors, attorneys, and certified public accountants may have very clear and high level personal service philosophies because of prior training and expectations their customers have of them. Zeithaml et al. (1993) suggest that to the extent that customers have personal philosophies about service provision, their expectations of most service providers will likely be intensified. They propose that enduring service intensifiers elevate the level of desired service (normative expectations).

Personal needs refer to conditions essential to the physical or psychological well-being of the customer (Zeithaml et al. 1993). For example, a patient with high social support needs or external locus of control orientation may have relatively high normative expectations concerning assurance and empathy provided by the hospital staff. Zeithaml and her colleagues propose that a positive relationship exists between the level of personal needs and the level of desired service (normative expectations).

The customer's expectations concerning adequate service (normative expectations) are thought to be influenced by five factors: (1) transitory service intensifiers; (2) perceived service alternatives; (3) customer self-perceived service role; (4) situational factors; and (5) predicted service (Zeithaml et al. 1993). Transitory service intensifiers are short-term, temporary, individual factors which influence the customer to a heightened sensitivity to service. For example, in an emergency situation or when he/she is in pain, a patient may have higher expectations concerning the responsiveness of hospital staff. The authors propose that in the presence of transitory service intensifiers, the level of adequate service will increase and the zone of tolerance will narrow.

Perceived service alternatives are the customer's perceptions of the degree to which better service can be obtained from other providers (Zeithaml et al. 1993). If customers can choose from alternative service providers or perform the service themselves, their adequate service alternatives are more severely restricted. These authors propose that the customer's perception that the service alternatives exist raises the level of adequate service and narrows the zone of tolerance.

A third factor influencing adequate service expectations is the customer's self-perceived service role. Zeithaml et al. (1993) define this construct as the customer's perceptions of the

degree to which they themselves influence the level of service they receive. These researchers note that customers' normative expectations are partially influenced by how well they believe they are performing their own roles. An example of this in the present study is perceived self-efficacy. Focus groups conducted by the author with pregnant women suggest that when women feel they are "out of control" during the childbirth experience, they expect less empathy and assurance from the hospital staff. Zeithaml and her colleagues propose that the customer's zone of tolerance will expand when they believe they are not fulfilling their roles. In other words, the higher the level of self-perceived service role, the higher the level of adequate service.

This proposition has been supported in research on consumer participation in co-production (Bendapudi and Leone 2003). These authors found that consumers have a "self-serving" bias that influences satisfaction with the organization depending on whether the consumer is involved in co-production of the service or not. When consumers are involved in co-production and outcomes of the service encounter are worse than expected, consumers attribute this result to the firm. This leads to negative influence on satisfaction judgments. However, if given a choice to participate in co-production, the self-serving bias was reduced when the outcome was worse than expected.

Another influence on adequate service expectations suggested by Zeithaml, Berry, and Parasuraman's (1993) research is situational factors. These are defined as service-performance contingencies that are perceived to be beyond the control of the service provider. The authors propose that situational factors temporarily lower the level of adequate service expectations, thus widening the zone of tolerance. An example of situational factors in the present research would be overcrowding of the labor and delivery unit during traditional high demand periods during the

summer months. At such times, expectant mothers may have lower levels of expected service in the areas of responsiveness and reliability.

Lastly, these authors suggest that predicted service expectations influence the level of adequate service expectations. Predicted service refers to the level of service customers believe they “will” receive during the service encounter. The authors note that satisfaction results from a comparison of predicted service to perceived service.

In summary, Zeithaml and her colleagues’ (1993) research supports the notion that both desired and predicted service expectations are influenced by external and internal search. They identify three types of external factors: (1) explicit service promises; (2) implicit service promises; and (3) word-of-mouth communications. Past experience is identified as the one internal information search factor which influences both desired and predicted service.

Explicit service promises are communications about the service made to the customer by the organization (Zeithaml et al. 1993). These statements may arise from personal selling, advertising, consent forms or contracts, and communication with support service departments (e.g., in the hospital setting: the pre-admit department, laboratory, etc.). These authors note the impact of explicit service promises on service expectations may vary depending on the intangibility of the service. Past research suggests that the more ambiguous the available information concerning service quality, the greater the influence of marketer-dominated communication (Ha and Hoch 1989). As such, Zeithaml et al. (1993) propose that the higher the level of explicit service promises, the higher the levels of desired service and predicted service.

A second factor which is thought to influence both desired and predicted service is implicit service promises. These are service-related cues other than explicit promises that result in the

customer developing inferences about what the service should and will be like (Zeithaml et al.1993). Price and tangibles are examples of implicit service promises. For example, a woman whose obstetrician has a professionally decorated medical office may have higher expectations of service quality based on the office environment. Implicit service promises are thought to elevate the levels of desired service and predicted service.

The services marketing literature has long held that word-of-mouth communications is a powerful influence in service expectations (Davis et al.1979). Word-of-mouth communications refers to personal and non-personal statements made by parties other than the service provider which suggest to the consumer what the service encounter will be (Zeithaml et al.1993). Word-of-mouth communications are thought to be particularly influential because it is perceived by consumers as an unbiased source of information about service quality. Zeithaml, Berry, and Parasuraman (1993) propose that positive word-of-mouth communications increases the levels of desired and predicted service.

Finally, Zeithaml and her colleagues (1993) propose that a positive relationship exists between levels of past experience and predicted service. Past experience refers to a customer's previous exposure to service encounters which are relevant to the focal service. For example, a stay at a hotel could be relevant to the service expectation formation of an obstetrics patient because hospitals promote "hotel-like accommodations" and serve "steak and champagne dinners" to the proud new parents before leaving the hospital.

**Discussion and Implications** While the Zeithaml, Berry, and Parasuraman (1993) model offers a more comprehensive framework for the antecedents of consumer expectations, it has several limitations. First, it was developed within a business-to-business service context.

Therefore, some of the antecedents may not be applicable in the health care setting. Secondly, the model applies to service attribute expectations and does not address role, process, or outcome expectations. Furthermore, while word-of-mouth communications, past experience, and external communications are well defined in the literature, the operationalization of the psychological constructs such as locus-of-control and perceived risk could be classified as “personal needs.” Likewise, self-efficacy taps into perceptions which may be related to “self-perceived service role” in the model.

Antecedents of expectations found in the marketing literature can be grouped into two major areas: (1) past experience, and (2) external sources of information, including: word-of-mouth communications and marketer-dominated communications such as implicit/explicit service promises (Tolman 1932; Bettman 1979; Brown and Swartz 1989; Fishbein and Ajzen 1975; Hagerty and Aaker 1984; Zeithaml et al. 1993). In addition, other research cited above (Oliver and Bearden 1983; Oliver and DeSarbo 1988; Zeithaml et al. 1993) suggests that psychological constructs influence expectations (e.g., involvement; locus of control; perceived risk; transitory and enduring service intensifiers; and the need for social support).

The research cited above reveals many commonalities between the economics, psychology, and marketing literatures in terms of identifying the antecedents of expectation formation. The literature suggests that these include both psychological and behavioral constructs. While the economists Hicks (1939) and Katona (1951, 1960) were the first to note the importance of psychological factors in consumer expectation formation, researchers in health care, psychology, and marketing have provided theoretical and empirical evidence concerning specific, common antecedent constructs which influence expectations. These include locus of

control (Lumpkin and Cabellero 1985; Steele et al. 1987; Solomon and Surprenant 1987; Wallston and Wallston 1981), perceived risk (Bell 1982, 1985; Loomes and Sugden 1982; Murray 1991; Murray and Schlacter 1990; and Sugden 1985), and involvement (Kahneman and Tversky 1982; Oliver and Bearden 1983; Oliver and DeSarbo 1988; and Solomon et al. 1985). In the behavioral domain, again Hicks (1939) and Katona (1951, 1960) identify past experience as an important construct in consumer expectation formation. Their initial propositions have been theoretically and empirically supported by scholars in marketing and psychology (Fishbein and Ajzen 1975; Kahneman and Miller 1986; Kahneman and Tversky 1982; Oliver and Bearden 1983; Oliver and DeSarbo 1988; Oliver and Winer 1987; and Parasuraman et al. 1985). Following is a review and discussion of the literature concerning each of the individual antecedent constructs, with the exception of past experience whose influence permeates the proposed model. As such, coverage of the literature concerning past experience will be woven into the review and discussion of social support, locus of control, perceived risk, and information search. Involvement will not be addressed because the present health care context is a “high involvement” situation. These constructs will now be addressed in turn.

### **Perceived Risk**

The concept of perceived risk has long been associated with theory development in the marketing literature (Bauer 1960). When compared to products, services have been shown in empirical studies to result in higher levels of pre-purchase perceived risk (Guseman 1981; Murray and Schlacter 1990). Marketing scholars attribute this phenomenon to the unique characteristics of services (Zeithaml 1981). Because services are intangible and the outcome of the service encounter is often unpredictable, consumers of professional services are faced with heightened

pre-purchase uncertainty (Murray 1991). In the context of the present study, McClain (1983, p. 1858) notes: "Uncertainty is pervasive in anticipation of childbirth and its outcome."

Implicit in the concept of risk is the notion that consumers form expectations under some degree of uncertainty about alternative choices (Murray 1991). Risk has been defined as a probability of known magnitude of an occurrence of loss (McClain 1983) and as the likelihood of negative consequences (Cox 1967). McClain (1983) suggests that risk may be conceptualized in terms of concrete events (e.g., the probability of undergoing a cesarean section) or less tangible events (e.g., anticipated loss of control during childbirth). Kahneman and Tversky (1973) note that individuals have difficulty estimating probabilities associated with alternatives. Perceived risk represents the consumer's "subjective" evaluation (due to uncertainty) of the anticipated losses or gains (i.e., consequences or outcomes) associated with alternative service offerings (Murray 1991).

The literature suggests that perceived risk is a multi-dimensional construct. Theoretical and empirical research in the marketing literature suggests six dimensions. These include: (1) financial risk; (2) performance risk; (3) social risk; (4) psychological risk; (5) safety risk; and (6) time/convenience loss (Brooker 1984; Cox 1967; Cunningham 1967; Jacoby and Kaplan 1972; Roselius 1971). The health care literature identifies two particular dimensions of risk: (1) psycho-social (e.g., loss of control during labor); and (2) iatrogenic risks (e.g., physical damage inflicted by providers). Murray (1991) notes that overall perceived risk can be represented by aggregating the various dimensions.

Theory surrounding the perceived risk construct suggests that the level of perceived risk will define consumer information needs and that consumers will search for appropriate sources,

types, and amounts of information to reduce uncertainty (Cox 1967). General conclusions found in empirical studies support the notion that as perceived risk increases: (1) consumers prefer direct observation and experience (internal source of information); (2) in the absence of experience or trial, personal sources (i.e., word-of-mouth) are the most preferred external source of information; and (3) consumers consult more sources of information (Hisrich, Dornoff, and Kernan 1972; Locander and Hermann 1979; Lutz and Reilly 1974). Granzin and Schjelderup (1982) and Bettman (1973) suggest that as product knowledge increases perceived risk decreases.

Studies by Murray (1991) and Murray and Schlacter (1990) suggest that in general as perceived risk increases, past experience is the most preferred source of information to reduce uncertainty and that personal, independent (i.e., non-service provider dominated) sources of information are preferred over other types of information. However, empirical studies concerning perceived risk in the health care context by Boze - dental services (1985) and McClain - obstetrical services (1983) suggest that for some consumers increased experience with providers and more information may heighten uncertainty. Boze (1985, p.67) notes:

"As the consumer gains experience selecting service providers, his awareness of the individual differences in the quality of care is heightened."

Thus, due to the variability in perceived service quality between providers, for some consumers increased experience and information may reduce the certainty of positive outcomes.

**Discussion and Implications** The literature cited above suggests that perceived risk is an important antecedent construct in theory development concerning the expectation formation process. Based on previous empirical studies in both product and services settings, individual consumers have been shown to respond to uncertainty with varying degrees of perceived risk. As

such, the perceived risk construct should provide data that has empirical application in model testing. In addition, consensus appears to exist between the marketing and health care literatures as to the multidimensional nature of perceived risk and the six dimensions have been empirically verified in several studies (Brooker 1984; Cox 1967; Cunningham 1967; Jacoby and Kaplan 1972; Roselius 1971).

The perceived risk literature suggests several significant implications. Perceived risk is thought to influence expectation formation through the mediating effect of information search. The literature suggests that as perceived risk increases consumers will engage in coping strategies by consulting internal information sources based on past experience and increased external search from personal sources. Because of increased search efforts the accuracy of role and process scripts should be improved.

The extant literature does not directly address the influence of perceived risk on participation or co-production issues. In the health care context, when risk perception is high (i.e., the chances for complications during childbirth are great) consumers will seek less control and engage in fewer self-efficacy behaviors. Indeed, in this situation the consumer may rely exclusively on the professional opinion of the provider and accept necessary medical intervention (i.e., cesarean section) to increase the likelihood of positive outcomes from the service encounter (i.e., a healthy baby and mother).

The studies by Boze (1985) and McClain (1983) suggest that for some consumers more experience and information may lead to increased uncertainty. In addition, the locus of control literature implies there may be an association between locus orientation and response to uncertainty. Although locus of control was not a modeled variable in either the Boze or McClain

studies one may speculate that their findings may have been influenced by consumers with higher external locus of control orientation who may desire less information and who are not prone to active coping strategies. For this group of individuals the dominant coping strategy is thought to be psychological bolstering rather than increased information search.

### **Locus of Control**

The locus of control construct has been the subject for research efforts in both marketing and health care settings. Locus of control orientation is the degree to which an individual perceives personal events and outcomes as dependent on their own behavior or as a consequence of fate or powerful others beyond ones control and understanding (Strickland 1978). Researchers suggest that such beliefs have an impact on affective and behavioral responses to the service encounter (Bateson and Hui 1987) such as: (1) pre-service encounter information search (Lumpkin and Caballero 1985; Wallston and Wallston 1978; Wallston 2005); (2) the need to customize or personalize the service process; and (3) the need to actively participate in the service encounter (self-efficacy).

The origins of the locus of control construct are found in social learning theory. Rotter (1966) suggests that social reinforcement of learning is influenced by the extent to which the individual believes they control the processes and outcomes of events which affect their lives.

Rotter (1966, p.608) notes:

"When reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces that surround him. When the event is interpreted in this way by the individual, we have labeled this a belief in external control. If a person believes the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control."

Consumers with higher external locus of control orientation believe that their lives are controlled by fate or powerful others (e.g., health care professionals) over which they have little or no control. Conversely, consumers with high internal locus of control perceive that they have the power to influence and even control events in their own lives.

Research evidence suggests that locus of control influences consumer information search. In a study of pre-purchase (apparel) information search, Lumpkin and Caballero (1985) found that the usage of certain information sources was related to locus of control orientation. Internals were more likely to rely on personal experience and formal, objective sources of information, such as published materials. Externals were more likely to consult informal sources of information such as family and friends (social support). In addition, externals were more likely to rely on marketer dominated cues (e.g., powerful others--health care professionals). Lumpkin and Caballero (1985) in discussing these findings suggest that internals value control and are prone to react negatively to attempts to influence. Internals also are thought to evaluate the motivations of others in attempts to influence and take pride in their own "objectivity." Externals, to the contrary, are thought to be much less independent, more persuadable, and influenced by cues such as source credibility (Biondo and McDonald 1971; Ritchie and Phares 1969). Externals are also more uncomfortable with uncertainty and complexity (Kuypers 1972). As a result, externals find it difficult to "trust" themselves to objectively evaluate complex information and rely on fairly simple information and cues.

In the health care context locus of control theory suggests that internals will assume a greater responsibility for their own health outcomes and will prefer a more active role in the service encounter (Steele et al. 1987). In a review of the literature, Strickland (1978) cites

empirical evidence that internals are more likely to engage in proactive health promotion behaviors (e.g. self-efficacy role behaviors) and to seek more health related information than externals. A key finding from Strickland's research is that "congruence of expectations and situations appears to enhance behavior change" (1978, p.1205). Externals have more positive treatment outcomes and satisfaction judgment when roles, processes, and alternative choice are specified by service providers. In contrast, internals experience greater clinical success and satisfaction when given an opportunity to assume some control over roles, processes, and outcomes (Murray et al. 1996). Steele et al. (1987) note that these findings suggest that health care providers need to customize the approach to the service encounter to better meet the individual's needs and expectations.

Although there is substantial empirical evidence supporting the relationship between internal locus and greater information search, some studies have failed to show a correlation (Wallston and Wallston 1981). Wallston and Wallston (1981) in discussing possible reasons for lack of expected results in these studies point out several considerations. First, the dependent measures used were not actual information seeking behaviors rather behavioral intentions to read more pamphlets about a particular medical condition. Secondly, undergraduate college students were used in most of the studies. It is believed that this cohort may be of an age as to not take seriously health related issues. Finally, the situations used as a basis for the studies (e.g. hypertension, heart disease, and herpes) may not have been personally relevant to the subjects. These observations suggest that in order for the locus of control construct to be a relevant antecedent construct in expectation formation several conditions must be present: (1) the context under empirical study must be personally relevant to the subjects and (2) actual information search

behaviors must be measured. This recommendation is supported by the research of Rimal (2001) discussed above in the self-efficacy section.

In the context of the present study, obstetrical services, Willmuth, Weaver, and Borenstein (1978) found that among women who took prepared childbirth classes, those with a high internal locus of control orientation were more satisfied with the childbirth experience than were those with a high external locus of control orientation. In addition, internals experienced less pain than they had anticipated than did externals. In another study, Felton and Segelman (1978) found that individual locus of control scores for both women and their husbands were influenced by childbirth education classes, as well as the actual childbirth experience. This research suggests that attending childbirth classes and experiencing childbirth may cause women to adopt a more internal locus of control orientation.

**Discussion and Implications** Several important implications arise from the consideration of the literature cited above. First, locus of control is posited to have an impact on expectations via the mediating variable of information search. The literature suggests that internals will prefer using personal experience and formal objective sources of information (e.g., objective published materials/media and childbirth education classes) in the expectation formation process. Externals are thought to rely more on information from powerful others (e.g., health care professionals) and informal sources (e.g. family and friends). Since externals do not cope with complexity well and exhibit low self confidence, they can be expected to discount their own experience as it relates to expectation formation. By utilizing objective sources of information during the expectation formation process to address uncertainty issues, internals are likely to develop more accurate role and process expectations than are externals. On the other hand, externals will engage in more

psychological bolstering concerning outcome expectations in an attempt to cope with the uncertainty associated with the service encounter.

Secondly, because internals value control they will desire more active participation in the service encounter than do externals. As a consequence, internals are posited to have higher self-efficacy which when mediated by information search will result in more accurate process expectations (i.e., service script accuracy).

### **Social Support**

Interest in the concept of social support and its relationship to health behavior was heightened by Cobb's (1976) presidential address to the American Public Health Association. More recently, social support has appeared in the marketing literature (Duhachek 2005). Cobb (1976) defines social support as information leading to the belief that an individual is cared for, loved, esteemed, valued, and part of a network of communication and mutual obligation. Vaux and Harrison (1985) posit that social support should be viewed as a meta-construct involving several theoretically distinct dimensions which include support network resources (i.e., network size), support interactions (i.e., network relationship frequency, nature, closeness, complexity, balance, and density) and perceived social support (i.e., the extent to which one is loved, respected, and esteemed by, and involved with family, friends, and others and satisfaction with social support).

Various typologies concerning specific types of social support behavior have been suggested in the literature. Vaux and Harrison (1985) developed a typology which includes: (1) emotional; (2) socializing; (3) practical assistance; (4) financial assistance; and (5) advice/guidance support. House (1981) identified four types of social support including: (1) emotional (i.e.,

communication of empathy, caring, love, and trust); (2) instrumental (i.e., assistance with child-care, work, or finances); (3) informational support (i.e., sharing information that individuals can use in coping with problems); and (4) appraisal support (i.e., sharing information to help individuals evaluate themselves).

A number of empirical works in the literature suggest that the level of perceived social support influences the pregnancy and childbirth experience. For example, the results of several studies suggest that women who reported higher levels of perceived social support experience lower rates of complications during pregnancy and perceived less pain during childbirth when compared to women who report lower levels of support (Berkowitz and Kasl 1983, Brown 1983, Erickson 1983, Norbeck and Tilden 1983, Nuckolls, Cassel, and Kaplan 1972, and Weisz (1981). These studies also suggest that women who have positive perceptions of social support experience better physical and emotional health, greater satisfaction with pregnancy, shorter labor, and fewer premature births. However, none of the studies reported in the obstetrics literature modeled the process by which social support influences coping and expectation formation.

Studies by Major, Cozzarelli, Sciacchitano, Cooper, Testa, and Mueller (1990) and Cutrona and Troutman (1986) involving pregnant women suggest that perceived social support enhances psychological adjustment among women coping with health threats (i.e., abortion and childbirth respectively) indirectly by increasing self-efficacy beliefs. Major et al. (1990) observed no direct links between perceived social support and psychological adjustment when self-efficacy was introduced into the analysis. Cutrona and Troutman (1986) found that the level of prepartum social support was significantly correlated with postpartum parenting self-efficacy. In addition, postpartum depression was predicted by postpartum parenting self-efficacy.

Four sources of self-efficacy beliefs have been suggested by Bandura (1977; 2005): (1) vicarious learning; (2) verbal persuasion; (3) past experience; (4) and physiological responding. Major et al. (1990) suggest that social support networks may influence efficacy beliefs via each of these channels. For example, members of the support network may relate stories of their own or others' successful coping strategy in a similar situation (e.g., vicarious learning about others' past childbirth experiences). Likewise, network members may reassure the individual that they are making the best choice and will successfully cope with the situation (e.g., verbal persuasion that natural childbirth is best and expressions of confidence in the individual's ability to cope with pain). An individual's ultimate success in coping with a health threat may be directly influenced by members of the support network who lend tangible support or suggest effective coping strategies thereby enhancing perceived self-efficacy (e.g., instructions from a birthing partner to use breathing techniques to control pain during labor).

**Discussion and Implications** Perceived social support is an important antecedent construct in the model of consumer expectation formation. It has been defined as an individual's sense that he/she is loved, respected, and involved with others. Pregnancy brings about both psychological and physiological changes, as well as perceptions of health threats (i.e., pain or complications). Therefore, perceived social support, particularly from the individual's spouse, mother, and friends is very important in assisting the individual in coping with these changes and health threats. Numerous studies have linked perceived social support with positive psychological and clinical outcomes in the obstetrics setting (Bramadat and Driedger 1993, Spiby Slade, Escott, Henderson, and Fraser 2003; Yali and Lobel 2002).

Perceived social support is posited to have a mediating effect on expectation formation. Consumers with higher external locus of control orientation are posited to seek higher levels of social support. In turn, a higher level of social support should result in the consumer seeking external information from “powerful others.” This could result in increased expectations of service quality and bolstering, but should not influence script accuracy due to limited information search by externals.

An alternative proposition is that perceived social support influences self-efficacy. If the health care consumer feels cared for, loved, and supported he/she will have stronger beliefs in personal mastery and coping ability than will those individuals who perceive themselves as having weak social support. As such, higher levels of perceived social support will be associated with higher levels of perceived self-efficacy.

### **Sources of Information and Consumer Search**

Professional service encounters are high in credence properties (Zeithaml 1981), which increases the uncertainty consumers face when considering service roles, processes, and outcomes. As a consequence, consumers, in general, have increased difficulty in forming accurate expectations prior to the service encounter and perceive professional services as being more risky than products or other service offerings (Guseman 1981; Murray 1991; Murray and Schlacter 1990; Zeithaml 1981). Researchers in many disciplines have long held that when confronted with uncertainty, consumers seek information from a variety of sources to form expectations in an attempt to manage/reduce perceptions of risk (e.g., Murray 1991; Oliver and Winer 1987). In the broadest sense, information sources can be classified as internal or external (Murray 1991).

**Internal Information Search** The consumer's internal search for information is posited to result from memory scan (Bettman 1979). Information processing theory suggests that when faced with the uncertainty of a service encounter, consumers first examine extant information contained in memory related to past experiences with the provider or similar providers and other related learnings about the situation/environment (Bettman 1979; Leigh and Rethans 1984; Lynch and Srull 1982; Smith and Houston 1983; 1985, Solomon et al. 1985). Furthermore, information stored in memory may be developed based on vicarious learning when actual experience is not available (Peter and Olson 1987). Examples of vicarious learning include gathering information via word-of-mouth about the experiences of others with service providers.

Traditional research in the product context supports the notion that as uncertainty and risk perceptions increase consumers will seek out more information (Cox 1967). However, in the case of high credence property professional services, information may not be readily available nor understandable (Gronroos 1983; Zeithaml 1981). The services literature suggests that because less information is available for services (Booms and Bitner 1981; Lovelock 1981; Zeithaml 1981), the costs of seeking more information will be quite high. As a consequence, less external information search may be attempted by the consumer (Jacoby, Speller, and Berning 1974). This condition may be especially relevant when internal search is facilitated by past experience and/or vicarious learning (Murray 1991). Research in the services literature suggests that consumers with prior experience with a particular service encounter-provider have a greater preference for internal sources of information over external sources in pre-purchase expectation formation (Murray 1991).

When considering internal information search, the distinctive characteristics of professional services (i.e., intangibility, non-standardization, and inseparability) suggest that information search is more difficult (Zeithaml 1981) and that consumer evaluation of information is more complex (Bateson 1977; Booms and Nyquist 1981; Davis et al. 1979). Because the "attributes" of the service encounter are multi-dimensional, consisting of roles, processes, and outcomes, Smith and Houston (1983, 1985) and Solomon et al. (1985) proposed that cognitive scripts may be a useful paradigm to understand internal search for information in the services context.

Solomon et al. (1985) speculate that consumers may possess service scripts for a wide range of service encounters. Solomon et al. (1985, p.106) point out that:

"Although a high degree of consensus can be expected across people regarding script components (i.e., expectations about the temporal order of process activities in the service encounter), a process-oriented approach must acknowledge the fluid nature of such a construct. A variety of variables will mediate the idiographic content of scripts."

Thus, in addition to consumer experience, individual difference constructs (i.e., social support, locus of control, and perceived risk) are thought to influence script development. Furthermore, consumer expectations may change over time as a script is updated with new information or experience. The development of the revised service script is facilitated by integration with the existing script (Solomon et al. 1985).

Despite a relative paucity of empirical studies focusing on script theory, extant research has been promising in supporting both the presence of scripts for consumer events and their influence on information processing. For example, Smith and Houston (1985) found that undergraduate students possessed scripts related to roles and processes used in patronizing

university job placement services. Bower, Black, and Turner (1979) and John and Whitney (1982) have reported the existence of culturally uniform scripts for restaurant dining patrons. Additional support for the presence of stable and reliable scripts in consumer memory has been reported in various consumer contexts (Bozinoff 1982; Bozinoff and Roth 1983; Leigh and Rethans 1983, 1984; Rethans and Taylor 1982). However, to date empirical evidence supporting the existence of service scripts in the health care context has not been forthcoming.

**External Search and Sources of Information** There is much empirical evidence in the literature to support the notion that when facing uncertainty consumers are motivated to engage in information seeking from the environment (Berning and Jacoby 1974; Furse, Punj, and Stewart 1984; Moore and Lehmann 1980; and Murray 1991). Such behavior is known as external search. Various typologies exist for classifying external sources of information including: (1) service provider-dominated (advocate) versus independent/ objective sources (Murray 1991); (2) personal versus impersonal sources (Engel, Blackwell, and Miniard 1986); and (3) from the health services literature: professional versus non-professional source (Nelson 1982).

When considering the various external information sources available, service marketing theory suggests that in the case of services possessing credence properties consumers tend to rely on personal sources of information (Murray 1991; Nelson 1974; Zeithaml 1981). Typically, with professional services little information may be available from the environment in the form of impersonal advocate or independent sources (e.g., advertising or consumer information). Similarly, time constraints on providers and lack of knowledge on the part of consumers may limit the opportunity for information search from professional personal sources (Steele et al. 1987). Consequently, consumers wishing to reduce uncertainty and form more accurate pre-service

encounter expectations may be forced to seek information from other individuals who have either direct or indirect experience with the service and/or service provider (Murray 1991). Thus, uncertainty is reduced via vicarious learning.

Empirical results reported by Murray (1991) support this notion in that respondents considering services high in credence/experience properties (e.g., medical and design services) versus products or services with experience properties (e.g., upholstery, furniture rental, fine restaurant services) chose more personal over impersonal sources of information when confronted with a hypothetical pre-service encounter task involving information search preferences.

An issue related to source preference involves the perceived effectiveness of particular information sources. Because of the difficulty consumers may encounter attempting to conduct pre-service encounter information search, Murray (1991) suggests consumers may simply consult fewer information sources. Hence, the absolute number of information sources utilized by the consumer may not be the most accurate measure of information acquisition. Murray (1991) suggests that source effectiveness (Engel and Blackwell 1982; May 1965), which captures the relative influence of a source and its importance in relation to exposure, may be more relevant to understanding the efficacy of various information sources.

Implicit in the concept of source effectiveness is the notion that some types of sources are more influential than others in providing useful information with which to form pre-service encounter expectations (Davis et al. 1979). Empirical research reported by Engel et al. (1986) suggests that service consumers prefer information received from other individuals similar to themselves when engaging in pre-service information search. Furthermore, Murray (1991) found

that personal independent sources of information were considered more effective than other sources for services high in credence/experience properties.

The health care literature supports the contention that the acquisition of pre-service encounter preparatory information reduces anxiety and leads to more positive outcomes (Steele et al. 1987). Three types of information have been investigated in the literature: (1) procedural information (e.g., providing the patient with a description of the steps in the service process); (2) sensory information (e.g., providing the patient with an explanation of the sensations to be experienced such as discomfort, location and severity of pain, etc.); and (3) information about coping strategies (e.g., self-efficacy role behaviors such as relaxation and breathing techniques).

Studies focusing on procedural information, including aspects such as the onset, duration, and general description of procedures and the physical and social properties of the medical service encounter generally failed to demonstrate efficacy in reduction of anxiety and/or pain (Andrew 1970; Johnson 1973; Johnson, Morrisey, and Leventhal 1973; Melamed and Siegel 1975). Two studies suggest that when procedural information is combined with knowledge concerning coping strategies, significant reductions in anxiety and pain can be achieved (Andrew 1970; Egbert et al. 1964). Studies (Johnson 1973, 1975; Johnson, Morrisey, and Leventhal 1973; Johnson and Leventhal 1974) involving patients undergoing noxious procedures (e.g., endoscopic and gynecological exams, etc.) indicate that groups of patients who were provided either sensory or procedural information or a combination of the two all fared better in terms of discomfort and requests for medication when compared to the control group which received no information. Of the three groups, the one receiving both sensory and procedural information best dealt with the service encounter, followed by the group receiving only sensory information. The group receiving

only procedural information fared least well. This study also found that the provision of behavioral coping strategies in combination with sensory-procedural information resulted in a greater decrease in reported pain, emotional loss of control, and greater cooperation among endoscopy patients.

Studies focusing on information types and personality variables further clarify the effects of external information on health services consumers. Auerbach, Kendall, Cuttler, and Levitt (1983) studied the relationship between coping behavior, information giving, and locus of control in oral surgery patients. Subjects were assigned to one of two groups: one group received detailed procedural information while the other received only administrative information of minimal use. Findings suggest that internal locus subjects coped better when given specific procedural information. Whereas, external locus subjects were better off when provided general, marginally relevant information. In another study, Auerbach, Martinelli, and Mercuri (1976) found that internal locus subjects coped much better with dental surgery when given specific procedural/sensory information. On the other hand, external locus subjects coped better when given general information.

The context of the present study, obstetrical services, provides a substantial literature concerning external information search. Unlike other health service encounters such as surgery, Doering, Entwisle, and Quinlan (1980) note that procedural, sensory, and coping information is widely available through a variety of sources including childbirth education classes. Additionally, these researchers note that the possibilities of "active control" and positive results from self-efficacy behaviors are far greater for childbirth than other health service encounters.

**Discussion and Implications** Two major implications emerge from the information search literature. First, the antecedent constructs of locus of control, perceived risk, and past experience will influence the types, sources, and amounts of information sought by consumers. As has been previously mentioned, as internal locus of control orientation increases, individuals will desire more information, will prefer internal sources if available, and will seek objective external objective sources of information (e.g., childbirth education classes and books). Conversely, externals will desire relatively less information and will prefer external personal sources of information and that from powerful others (e.g., medical providers and friends/family). Even if the external has past experience, this information may tend to be discounted by the individual. As the level of perceived risk increases individuals will engage in coping strategies based on more information search from internal and external personal sources. However, this general tendency may be moderated by the consumer's locus of control orientation (e.g., externals may respond differently to perceived risk by bolstering).

Secondly, the types, sources, and amounts of information will influence the content of role expectations (i.e., self-efficacy beliefs) and accuracy of process expectations (i.e., scripts) and the extent to which the consumer engages in bolstering concerning outcome alternatives. Individuals who rely on information from objective sources which contains procedural, sensory, and coping information (i.e., from childbirth education and or past experience) are likely to develop more accurate process expectations. Also, these consumers will tend to engage in less bolstering, because they have more confidence in their expectations.

Unlike many professional service offerings, the obstetrical context provides the researcher with a subject population who can choose to be exposed to a variety of amounts, types, and

sources of information. An individual's information base may range from no experience and being totally uninformed to multiple experiences and extensive training/knowledge concerning the roles, processes, and outcomes of childbirth. This empirical phenomenon should provide for rich data with which to test the proposed model of expectation formation. Additionally, script-based measures of process expectations provide a more accurate method for measuring the influence of information search on expectation formation.

### **SUMMARY AND CONCLUSION**

Drawing on an eclectic mixture of research from the psychology, health care, economics, and marketing disciplines, new insights have been developed concerning the antecedents and structure of the pre-service encounter expectation formation process. The Oliver and Winer (1987) framework and the more recent contributions of Zeithaml, Berry, and Parasuraman (1993) support the existence of two post-purchase evaluation criteria: customer satisfaction and service quality. In addition, four dimensions of pre-service encounter expectation formation have been identified in the literature: role, process, outcome, and service quality attribute expectations. Furthermore, past research suggests that information search and social support act as intervening constructs which influence the expectation formation process. Finally, several antecedents to the expectation formation process have been identified. These include: perceived risk (Guseman 1981; Murray 1991; and Zeithaml 1981), locus-of-control (Surprenant and Solomon 1987; Wallston and Wallston 1981; Wallston 2005), and past experience (Boulding et al. 1993; Zeithaml et al. 1993).

### **CHAPTER 3: THE MODEL AND RESEARCH METHODOLOGY**

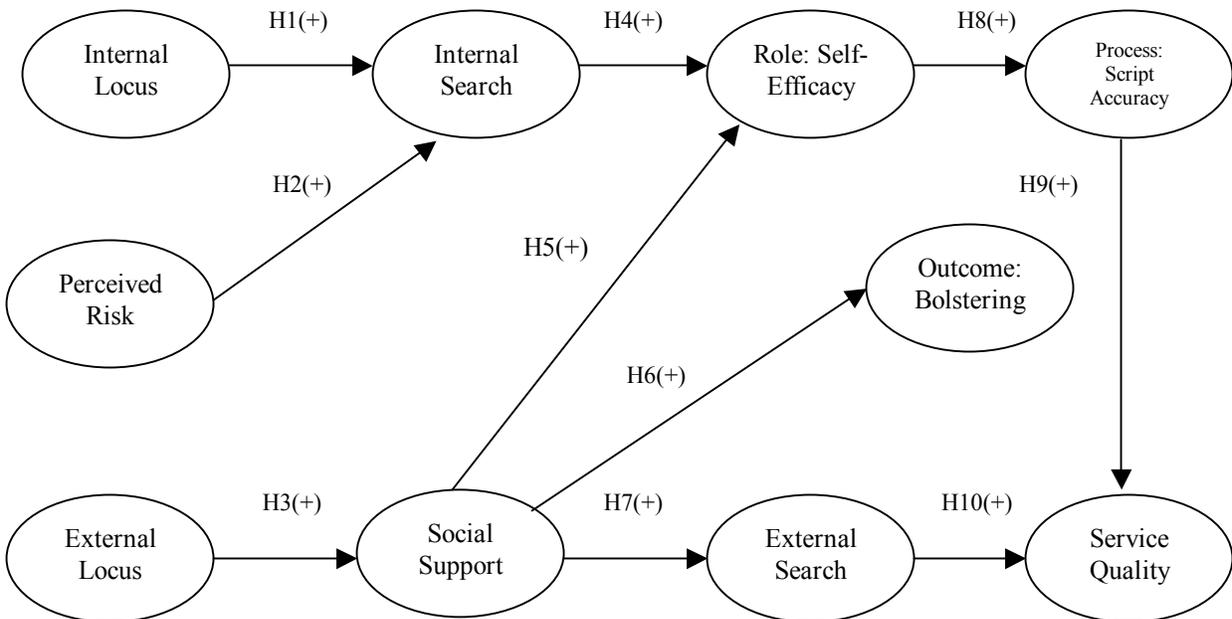
Chapter 3 is divided into four parts and focuses on discussion of the theoretical model of the expectation formation process and the research methodology. The first section presents the model and related hypotheses. The second section describes the research design, including the study setting, sample design, and data collection procedures. The third section discusses issues related to the operationalization of constructs, as well as the development of measures used in this research. Finally, methods of analysis are given in section four.

#### **CONSUMER EXPECTATION FORMATION: A PSYCHO-SOCIAL MODEL**

The Oliver and Winer (1987) expectations framework and the Duhachek (2005) consumer coping model inform the nature and determinants of the consumer expectation formation process. The proposed model in this research seeks to explain and predict the four expectation dimensions - role, process, alternative/outcome, and service quality expectations. Three antecedent constructs are hypothesized to influence the expectation formation process: past experience, perceived risk, and locus of control orientation. Perceived risk and locus of control are exogenous variables in the model, while past experience is treated as a moderating variable. The effects of these antecedent constructs on expectation formation are mediated by internal and external information search, as well as perceived social support. The model is shown below in Figure 3.

Based on the literature review in Chapter 2 the model of consumer expectation is hypothesized as having two major paths. The “approach-active” path represents the expectation formation process for consumers more likely to engage in active coping strategies when faced with the uncertainty of a health service encounter. Approach-active consumers are thought to be

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**Approach-Active Path***Moderator- Past Experience***Expectations****Avoidance-Passive Path**

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**Figure 3**  
**Consumer Expectation Formation in Health Care Services:**  
**A Psycho-Social Model**

motivated by a higher internal locus of control orientation. Conversely, the “avoidance-passive” path represents the expectation formation process for health care consumers who are more likely to engage in passive coping strategies. In extreme cases of high-perceived risk and great uncertainty these consumers are posited to resort to avoidance as a key strategy. Avoidance-passive consumers are believed to be motivated by higher external locus of control.

In the reality of the health care marketplace, these two different coping orientations may serve as anchors of a continuum of coping strategy and expectation formation processes. As

such, health care consumers with extremely high internal locus of control orientation may rely almost exclusively on a more active, cognitive-based coping strategy. On the other hand, those with extremely high external locus of control orientation may engage in avoidance (via passive, affect-based coping strategies) which is reinforced by social support of significant and powerful others. In between these two extremes, many consumers may use a combination of these strategies to cope with uncertainty and formulate expectations for the health care service encounter. The individual relationships (paths) in the model will now be discussed.

The antecedent constructs of locus of control, perceived risk, and past experience will influence the types, sources, and amounts of information sought by consumers. As has been previously mentioned, as internal locus of control orientation increases, individuals will desire more information, will prefer internal sources if available, and will seek objective external objective sources of information (e.g., childbirth education classes and published sources). Conversely, externals will desire relatively less information and will prefer external personal sources of information and that from powerful others (e.g., medical providers and friends/family). Even if the external has past experience, this information may tend to be discounted by the individual. As the level of perceived risk increases individuals will engage in coping strategies based on more information search from internal and external personal sources. However, this general tendency is influenced by the consumer's locus of control orientation (e.g., externals may respond differently to perceived risk by seeking social support, engaging in bolstering, or using an avoidance strategy).

Secondly, the types, sources, and amounts of information will influence the content of role expectations (i.e., self-efficacy beliefs) and accuracy of process expectations (i.e., scripts) and the

extent to which the consumer engages in bolstering concerning outcome alternatives. Consumers who rely on information from objective sources which contains procedural, sensory, and coping information (i.e., from childbirth education, published sources, and/or past experience) are likely to have higher self-efficacy beliefs, develop more accurate process expectations, and have higher service quality expectations. Also, these consumers will tend to engage in less bolstering, because they have more confidence in their role and process expectations.

Perceived social support is posited to have a mediating effect on expectation formation. Consumers with higher external locus of control orientation are posited to seek higher levels of social support. In turn, a higher level of perceived social support should result in the consumer seeking external information from “powerful others.” This could result in increased expectations of service quality and bolstering, but should not influence role (self-efficacy beliefs) or process expectations (script accuracy) due to limited information search by externals.

An additional hypothesis is that perceived social support influences self-efficacy. If the health care consumer feels cared for, loved, and supported she will have stronger beliefs in personal mastery and coping ability than will those individuals who perceive themselves as having weak social support. As such, higher levels of perceived social support will be associated with higher levels of perceived self-efficacy.

Finally, past experience serves as a moderating influence in the model. Consumers with past health care service encounter experience can engage in a richer internal search as part of their coping strategy and expectation formation process. This should result in experienced consumers having higher role expectations (self-efficacy beliefs) and more accurate process expectations (script accuracy). Those with no experience are forced to rely on vicarious sources of

information with which to develop expectations. Therefore, this group is posited to develop lower levels of role expectations and less accurate process expectations. The moderating role of experience will not be explicitly tested in this research.

Based on the literature review in Chapter 2 and the discussions above, the following hypotheses are proposed:

**H1:** Internal information search will increase as internal locus of control orientation increases.

**H2:** Internal information search will increase as perceived risk increases.

**H3:** Perceived social support will increase as external locus of control orientation increases.

**H4:** Role expectations (self-efficacy beliefs) will increase as internal search increases.

**H5:** Role expectations will increase as perceived social support increases.

**H6:** Outcome expectations (bolstering) will increase as perceived social support increases.

**H7:** External search will increase with perceived social support increases.

**H8:** Service quality expectations will increase as process expectations increase.

**H9:** Process expectations (script accuracy) will increase as role expectations (self-efficacy) increases.

**H10:** Service quality expectations will increase as external search increases.

## **DESIGN OF THE STUDY**

### **Setting**

In choosing the health care context (obstetrical services) for this research, several factors were considered. First, consumer spending on health care accounts for almost 20 percent of GDP in the United States. It is obvious that this sector is a major factor in the national economy. Despite its size however, the literature suggests that the health care industry needs to improve its understanding of consumer behavior (Bandura 2005; Brown and Swartz 1989; Moorman 2002). Likewise, there has been a recent call within the consumer research community to provide increased attention to so-called “transformational” research which can assist consumers in improving quality of life in areas such as health care consumption and health outcomes (Mick 2005). Thus, exploring expectation formation in the health care context is of great interest to academicians, practitioners, and consumers.

The author also wished to select a context in which constructs were well developed and operationalized. For example, operationalization and measurement of perceived social support, health locus of control orientation, perceived risk, and information search have been well documented in the literature. In addition, methodologies for script-based measures have been developed and tested in both the psychology and marketing literatures. As such, the use of existing, well developed and documented measures allows for maximum attention to be devoted to theory development and model testing. In addition, results of the model test can be attributed to the strengths or weakness of the theory rather than measurement issues.

The particular context of the study, obstetrical services, has many characteristics which allow some "control" of variables as in a field experiment. For example, unlike other professional

service encounters like medical office visits, past experience with obstetrical services can be precisely measured based on patient self-report. Similarly, outcome alternatives are limited to three basic choices: vaginal delivery with no medication, vaginal delivery with medication, and caesarian section. In addition, information regarding social and medical norms regarding service processes and protocol in the obstetrical context is readily available from health care professionals and the childbirth literature. This allows script measures to be developed with a high degree of content validity. Similarly, self-efficacy behaviors for coping with pain during labor are well documented and are taught in childbirth education classes using lecture, experiential, and verbal persuasion methods. This affords consumers who are so inclined to develop coping skills and allows the researcher to develop a set of self-efficacy scale items which are commonly taught in childbirth education classes. Finally, unlike some other credence property services, information about the technical and functional aspects of childbirth is readily available to consumers from a variety of sources (i.e., childbirth education classes, internet, books, etc.), so that individuals may engage in extensive information search as a coping strategy for dealing with uncertainty and health threat.

### **Population, Sample Size, and Sample Design**

For the purposes of this research the entire population of obstetrical patients aged 18 or older in their third trimester from the pre-registration listing of obstetrical patients at a large woman's specialty hospital in the southeast will be surveyed. For insurance coverage purposes, virtually all obstetrics patients must pre-register well in advance of the service encounter for insurance purposes. The hospital delivers the overwhelming percentage of the average 500 births in the area each month. The goal for usable questionnaires for inclusion in the data set is 200.

In exchange for the hospital's participation in this study, the researcher developed a comprehensive patient satisfaction survey methodology including customized questionnaires for inpatient, outpatient, and obstetrical services and conducted an initial patient satisfaction study. In addition, the author agreed to provide a summary of the dissertation results to the hospital and to make a presentation of findings and recommendations to selected members of the physician and hospital staff.

### **Data Collection**

Data will be collected by respondent self-report using a paper and pencil questionnaire delivered via direct mail. A cover letter informing the patient of the purpose of the study, the questionnaire, and return envelope will be mailed to all obstetrical patients who are pre-registered at the hospital at the time the mailing is prepared.

Due to the confidentiality of the hospital's patient database, assessment of non-response bias and follow-up is not possible. Response to the maternity satisfaction questionnaire developed by the researcher for the hospital and mentioned previously was 31 percent. That questionnaire was similar in length to the one used in the present study.

### **OPERATIONALIZATION OF CONSTRUCTS**

The operationalization of constructs in the model includes measures of the four expectation dimensions, intervening variables, and antecedents. Table 5 details the operationalization and measurement for each of these constructs. Issues related to construct operationalization, as well as a review of the literature concerning the development and validation of measures used in this research are now discussed.

## **Expectation Dimensions**

**Outcome Expectations - Bolstering** Literature cited in Chapter 2 suggests that bolstering is a coping strategy and expectation dimension used by health care consumers who are more “avoidance-passive” oriented. As has been previously mentioned, bolstering refers to the psychological process of minimizing the perceived risks of the chosen alternative and maximizing the risks of rejected alternatives. Thus, bolstering may be operationalized utilizing traditional notions of perceived risk (McClain 1983).

Research reported in marketing literature (Brooker 1984; Guseman 1981; Jacoby and Kaplan 1972; Murray and Schlacter 1990; Roselius 1971) suggests that perceived risk has six components: financial, performance, social, psychological, safety, and time/convenience loss. Furthermore, the health care literature identifies two particular components of risk: psycho-social (i.e., loss of control during labor) and iatrogenic (i.e., physical damage inflicted by service providers). Overall perceived risk represents the aggregate impact of these various factors (Murray 1991).

In the present study, consumers of obstetrical services have three basic service outcome alternatives: (1) un-medicated, vaginal delivery; (2) medicated, vaginal delivery; and (3) caesarian section. Question 2b asks the respondent which alternative they have chosen for the childbirth service encounter. Then in Question 13, consumers are asked to allocate 100 points among the three methods of childbirth, according to their perception of the risk for complications during childbirth, with the total equaling 100 points. Thus, bolstering is operationalized as the extent to which the individual minimizes the overall perceived risk associated with the chosen alternative and maximizes the overall perceived risk associated with the two alternatives which

**Table 5**  
**Operationalization of Constructs**

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**Expectation Dimensions**

<b>Outcome: Bolstering</b> (McClain 1983; Murray 1991)	100-point constant sum scale, points allocated to each of three alternative choices based on perceived risk (Q13)
<b>Process: Scripts</b> (Smith and Houston 1983, 1985)	32-item script-based rank order exercise: 15 medical procedures, 11 physiological birth processes, three labor stages, and three irrelevant items (Q11)
<b>Role: Self-Efficacy</b> (Bandura and Adam 1977; Major et al. 1990; Nichols and Humenick 1988)	11-item scale measuring level of consumer belief in performing selected coping strategies (Q10: 5-point scale)
<b>Service Quality</b> (Parasuraman et al. 1988 and 1991)	20-item scale measuring five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy (Q12: 5-point scale)

**Intervening Constructs**

<b>Information Search</b>	14-item scale measuring source importance (Murray 1991) and frequency of contact, including external sources and internal search (Q9: 5-point scale)
<b>Perceived Social Support</b> (Cobb 1976; Lederman 1984 Vaux and Harrison 1985)	14-item scale measuring level of perceived social support from husband, family, and friends (Q5: 5-point scale)

**Antecedents**

<b>Locus of Control</b> (Wallston and Wallston 1978, 1981)	18-item scale measuring three dimensions: internal, external, and chance (Q6: 5-point scale)
<b>Perceived Risk</b> (Brooker 1984; McClain 1983; Murray 1991; Roselius 1971)	5-item scale measuring global perceived risk of chosen childbirth alternative (Q7: 5-point scale)
<b>Past Experience</b>	Dichotomous response (yes/no) previous childbirth Experience (Q3)

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were not selected. The condition of “no bolstering” would be indicated by the respondent allocating equal “risk” points to each alternative (i.e., 33 points to natural, 33 points to vaginal

with epidural, and 34 points to caesarian section. Maximum levels of bolstering would be indicated when the respondent allocated zero points to their chosen alternative and 100 points in some allocation to the non-chosen alternative.

The level of bolstering will be calculated by creating an index. First, the point allocations for the two alternatives which were not chosen will be added together and divided by the point allocation for the chosen alternative. This results in a range of 2 (low-bolstering) to 100 (high-bolstering). Then the result will be divided by a constant (2) to scale the data from 0-5. This will be done to remove any scaling issues during subsequent SEM analysis. This result will then be divided by the point allocation for the chosen alternative.

**Process Expectations - Service Scripts** Smith and Houston (1985) suggest that script-based approaches are necessary to capture the dynamic and temporal aspects of process expectations. These authors suggest that rank-order measures are appropriate for assessing the presence of cognitive scripts of the service encounter in consumer memory. Rank-order script measures require respondents to perform a recognition task of process events in which they must distinguish between actions relevant and irrelevant to the focal service encounter (i.e., childbirth) and arrange relevant actions in the correct temporal sequence. In an experimental study involving a university placement service, Smith and Houston (1985) reported that rank-order measures were very stable across two administrations, indicating good test-retest reliability. In addition, the instrument successfully distinguished between known groups of schematics and aschematics, suggesting construct validity. Thus, the accuracy of process expectations can be operationalized as the extent to which the respondent correctly identifies irrelevant items and then orders remaining script items in proper temporal sequence.

For the present study, rank-order script measures were developed for process expectations. To do so, it was necessary to identify the set of medical processes associated with childbirth, as well as behaviors or processes which are irrelevant to the service encounter (Smith and Houston 1985). Because the processes and medical protocols for childbirth are well known by professionals and documented in the literature, script items were developed based on depth interviews with three obstetrical nurses and two childbirth educators at a large specialty women's hospital, as well as consulting the definitive text on childbirth education: *Childbirth Education: Practice, Research, and Theory* (Nichols and Humenick 1988). Based on this research, a 32 item exercise with 15 medical procedural interventions, 11 physiological birth processes, 3 labor stages, and 3 irrelevant items was developed by the author (Q11). Furthermore, the 5 childbirth expert informants were asked to independently rank-order the list of items in correct temporal order. This resulted in over 95 percent agreement using Holsti's procedure for assessing inter-judge agreement.

In completing the process rank-order script exercises, respondents are asked to first eliminate those items which they feel will not happen during childbirth. The remaining items are then ranked in the temporal order that the item will occur during childbirth. The accuracy of the respondent's script response is calculated by computing a rank-order correlation (Kendall's tau) between the temporal order in the "expert" script and the temporal order in the respondent's script response. The resulting correlations will be multiplied by a constant (5) to remove possible scale effects in the analysis. Thus, the range is from 0 (low) to 5 (high) accuracy.

**Role Expectations - Perceived Self-Efficacy** Perceived self-efficacy will be measured using context specific coping strategies associated with the obstetrical service encounter. The 11-

item scale (Q10), which is adapted from the self-efficacy scale developed by Major et al. (1990), includes self-efficacy behaviors for coping with pain that are taught in childbirth education classes and was specifically developed based on a typology found in Nichols and Humenick (1988). Each item is to be rated on 5-point scale of "could not do at all" to "completely sure I could do it" (Bandura and Adams 1977). Major et al. (1990) reported internal consistency estimates of reliability (i.e., Cronbach's alpha) of .84 for their perceived self-efficacy scale. Bandura and Adams (1977) and Major et al. (1990) computed a perceived self-efficacy score by summing across the individual items and dividing by the total number of items. This method is not used in this research because confirmatory factor analysis (CFA) is used to assess scale and individual item psychometric properties. Therefore, a reduced set of perceived self-efficacy indicators is used in the structural model test.

### **Intervening Constructs**

**Information Search** The review of literature in the areas of perceived risk and information search suggests that when anticipating a service encounter consumers are confronted with uncertainty and may attempt to reduce this uncertainty by searching for information from the environment. Information search involves the consumer seeking out different sources, types, and amounts of information to satisfy their particular needs (Murray 1991).

Various typologies have been suggested to operationalize information types and sources. For example, Engel, Blackwell, and Miniard (1986) suggest that external information can be classified as to whether the source is marketer-dominated or whether the information is derived from personal or impersonal sources. Marketing scholars (Murray 1991) advocate operationalizing the information search construct using the Andreasen and Durkson (1968)

typology including seven types of consumer information: impersonal advocate, impersonal independent, personal independent, personal advocate, direct observation, personal experience, and outright purchase. Within each information type there are several sources, for example personal independent sources which include friends and family. Impersonal independent sources in the health care context include sources such as books, videos, and web-sites.

Murray (1991) notes, that this approach does not encourage respondents to consider internal sources of information in their coping and risk reduction strategy. This author proposed a typology that gives respondents alternatives that would also tap internal search tendencies and consumer preferences not to engage in external information search behaviors. In the context of the present study, direct observation and outright purchase are not relevant alternatives and therefore were eliminated from the information search measures in the present study.

Consumer theory posits that as perceived risk increases the amount of search (i.e., number of sources consulted) increases (Murray and Schlacter 1990). However, Murray (1991) notes that the absolute number of information sources consulted by an individual may not be the most useful measure of information search. Thus, other measures of information search may provide more valid operationalization of this construct.

Source effectiveness is thought to be more relevant in understanding information search and in particular information source usage (Engel and Blackwell 1982; May 1965; Murray 1991). Source effectiveness reflects the decisive influence of a particular source and its importance in relation to exposure. Murray (1991, p.13) notes: "Decisiveness implies that some types of sources are more instrumental than others in providing meaningful information to an individual."

Information search is operationalized in the present study based on a typology of two information source types: personal and impersonal. Each source type has two sub-categories: professional and non-professional. The amount of information search for each source type is operationalized as the frequency of exposure to individual sources representing each type. Source effectiveness is a function of the importance of an information type in relation to the frequency of exposure for that type of information (Murray 1991).

For the present study, a 14-item rating scale (Q9) measuring four information source types was developed based on an adaptation of scales reported in Murray (1991) and Nelson (1982). The same 14-items are used to collect responses on both frequency of source exposure and source importance. Source importance is measured on a 5-point importance scale ranging from "very important" to "not at all important." Similarly, source exposure is measured using a 5-point frequency of exposure scale ranging from "all of the time" to "none of the time."

To compute level of information search for each source, the frequency rating is multiplied by the importance rating. The range of the result is from 0 (no information search for that source) to 25 (high level of information search for that source). These scores are divided by a constant (5) in order to remove any scale effects which may influence the structural model analysis.

**Perceived Social Support** The perceived social support measure was adapted for the obstetrics context based on a scale developed by Vaux (1985). The 14-item scale (Q5) consists of positively and negatively worded statements assessing the extent to which the respondent feels loved, respected, esteemed by, and involved with her spouse, mother, family, and friends (i.e., sources of social support). Respondents are asked to indicate the extent to which they agree with statements on a 5-point agree - disagree scale. Coefficient alpha values reported by Vaux (1985)

were .91 for the overall scale and above .80 for the sub-scales. Confirmatory factor analysis is conducted on this scale to determine its psychometric properties and a reduced form is used in the structural model analysis.

### **Antecedent Constructs**

**Locus of Control** The locus of control construct is measured using the Multidimensional Health Locus of Control (MHLC) Scales (Wallston and Wallston 1981). The MHLC scales measure three distinct dimensions: Internality (IHLC); Chance Externality (CHLC); and Powerful Others Externality (PHLC). Each of these three dimensions is measured via of a six item sub-scale using a 5-point Likert-type format ranging from "strongly disagree" to "strongly agree" (Q6). The internality and powerful others externality scales are used in this research.

Extensive scale development and reliability/validity assessment for the MHLC have been reported in the literature (Wallston and Wallston 1978; Wallston and Wallston 1981). Two forms of the MHLC have been developed (A & B) for use in test-retest studies. Reported results suggest excellent test-retest reliability. Because of its past use in obstetrical settings, Form A is used in the present study. Reported measures of internal consistency (Cronbach's alpha) for the three Form A scales are: IHLC .710, PHLC .715, and CHLC .691. These figures are within Nunnally's prescription for acceptable reliability and the median internal consistency found in published marketing studies of .72 (Peter 1979).

The three MHLC dimensions appear to be independent dimensions of the overall construct. These authors report that the IHLC and PHLC have a marginally positive correlation of +.06. Likewise, the IHLC and CHLC scales are negatively correlated and share less than ten percent common variance (-.08). Only the CHLC and PHLC scales are modestly correlated at

+20. Nonetheless, the psychometric properties of the locus of control scales are evaluated using confirmatory factor analysis.

Concurrent and discriminant validity assessment reported in Wallston and Wallston (1981) was achieved by correlating the MHLC with Levenson's (1973) general multidimensional locus of control scale including internal (I), powerful others (P), and chance dimensions (C). Each of the three MHLC scales was most highly correlated with its equivalent in Levenson's three scales.

Published norms for the MHLC have been reported in the literature (Wallston and Wallston 1981). Nicholson (1980) in a study of 30 multiparous (experienced) mothers reported mean and standard deviations for each of the three dimensions as follows respectively: IHLC - 27.84 and 4.33; CHLC - 14.27 and 4.87; PHLC - 13.61 and 4.43. The Internality and Powerful Others Externality sub-scales will be used in this research.

**Perceived Risk** Based on the work of Murray (1991) and Lederman (1984) a context specific set of statements were developed which focus on perceptions of risk for complications and pain during childbirth. The 5-item scale contains positively and negatively worded items adapted from Lederman's (1984) pre-natal questionnaire (Q7). Respondents are asked to indicate the extent to which they agree with each statement on a 5-point "strongly agree" to strongly agree" scale. The psychometric properties of the scale will be evaluated using confirmatory factor analysis with a sub-set of indicators to be used in the model test.

**Experience** The setting for the present study makes past experience the easiest construct to operationalize. As has already been stated, the childbirth event is among the most significant occurrences in a woman's life and therefore can be easily recalled. Thus, past experience is operationalized as the self-reported number of childbirth experiences the woman has had (Q3).

Included in the question concerning past experience are the dates for all previous childbirth experiences, the method of delivery, hospital, and whether or not the respondent attended childbirth education classes prior to the childbirth experience. This was collected for possible additional analysis and will not be used in the dissertation research.

## **DATA ANALYSIS**

### **Scale Reliability and Validity Assessment**

A pre-test of the questionnaire was conducted with a sample of 30 subjects who were in the third-trimester of pregnancy. The minimum scale and sub-scale reliability was .69 for the perceived risk scale. All others were above the generally accepted minimum threshold of .70 (Cronbach's alpha). Further scale reliability and validity assessment is performed on the measurement model using confirmatory factor analysis (Netemeyer et al. 2003). These results are reported in Chapter 4.

### **Structural Model Assessment and Hypothesis Testing**

The overall theory test and individual hypotheses are tested with structural equation modeling (SEM), using LISREL 8.72 software. Preliminary model fit criteria include examination of error variances, and significance of loadings (Kline 2005). Overall model fit is assessed using goodness-of-fit indicators and residual indices (Kline 2005).

The hypothesis testing (fit of the internal structure of the model) is evaluated by examining individual item and composite reliability, average variance extracted, and finding significant path parameter estimates confirming hypotheses (Kline 2005). The test of whether experience moderates the hypothesized relationships is performed using invariance testing – a special form of SEM. These results are reported in Chapter 4.

## **CHAPTER 4: RESEARCH RESULTS**

### **SAMPLE AND EXPLORATORY FACTOR ANALYSIS**

A total of 500 questionnaires were mailed by the specialty woman's hospital sponsoring this research. A total of 171 usable questionnaires were returned to the author for a response rate of 34%. As mentioned earlier, due to patient confidentiality follow up with patients who did not respond was not possible. Therefore, assessment of non-response bias could not be performed. However, the response rate achieved was similar to the response rate on the hospital's patient satisfaction survey as reported earlier (31%).

The questionnaire responses were entered into a SPSS-14 database for initial data screening and analysis. Assessment of missing and out-of-range data elements was performed. There were no out-of-range data elements detected. This suggests that data entry was accurate. No item had more than 5% missing data with most having only 1-4 missing values (<2.5%). Therefore, because of the relatively small sample size mean substitution was used to ensure that all cases would be included in the analysis (Hair et al. 1998).

Tests were performed to assess univariate normality, outliers, and Linearity. Because most items in the questionnaire used 5-point rating scales, many of the items were skewed. Several different transformations were performed on a sample of these items and did not materially improve this condition. Therefore, the original values were used in all further analyses. No items were removed because of concerns about being an outlier. Finally, evaluation of the bivariate scatterplots suggested few issues with Linearity. Therefore, it was concluded that the data reasonably met necessary assumptions for further analysis

Next, exploratory factor analysis and reliability analysis were performed on all scales using SPSS-14. Items that were inconsistent (i.e., low loadings, multiple loadings, etc.) with the hypothesized factor structure or that attenuated reliability were considered for removal from the scale prior to assessing the measurement model with CFA. After trimming items, overall scale reliability met minimum acceptable standards of about .70 or greater. Because script accuracy, bolstering, internal information search, and service quality were to be measured as single-item indicators, they were not included in this analysis. These results are shown in Table 6 below.

**Table 6**  
**Preliminary Scale Factor Analysis and Reliability**

<b>Variable</b>	<b>Hypothesized Factor Structure Found</b>	<b>Reliability <math>\alpha</math></b>	<b>Scale Items Remaining</b>
<b>Perceived Risk</b>	Yes – single factor	.74	4/5
<b>Internal Locus</b>	Yes – 1 of 3 factors	.70	5/6
<b>External Locus</b>	Yes – 1 of 3 factors	.69	4/6
<b>Social Support</b>	Yes – 3 factors	.71	9/11
<b>Information Search</b>	Yes – 4 factors	.72	9/14
<b>Self Efficacy</b>	None expected	.77	7/11

### **CONFIRMATORY FACTOR ANALYSIS (CFA)**

Confirmatory factor analysis was performed to assess the dimensionality, reliability and discriminant validity (Netemeyer et al. 2003). A covariance matrix was created for the 38 scale items representing the 6 multiple-indicator antecedent and mediating constructs shown in Table 6 above using the Prelis feature of LISREL 8.72. Since the primary objective of CFA is to assess

the measurement properties of indicators prior to inclusion in the structural model analysis, a two-stage approach was used to eliminate problematic items and finalize the measurement model (Anderson and Gerbing 1988). This procedure reduces the possibility of interpretational confounding because a measurement model with sound psychometric properties is used to evaluate the structural model and tests hypotheses.

The initial CFA of the measurement model yielded unsatisfactory fit indices. Therefore, standardized residuals and modification indices for each indicator were examined. Indicators with modification indices greater than 3.84 and with standardized residuals greater than 2.58 were considered for removal from the scale. A step-wise procedure was used to remove single indicators and then reassess the measurement model fit (Netemeyer et al. 2003). This process resulted in a final measurement model with 18 indicators for the 6 factor model or 3 for each construct. The result of the confirmatory factor analysis is shown in Table 7.

### **Measurement Model Fit**

Confirmatory factor analysis was performed on the final 6 factor, 18 item measurement model to assess dimensionality, scale reliability, and discriminant validity (Netemeyer, et al. 2003). The resulting statistics support adequate model fit. The non-normed fit index (NNFI) was .97, while the goodness of fit (GFI) and adjusted goodness of fit indices were .92 and .89 respectively. The comparative fit index (CFI), robust to sampling characteristics, was .98 (Kline 2005). An assessment of the model fit per degree of freedom, the root mean square error of approximation (RMSEA) was .024. Individually, each statistic meets recommended evaluation criteria for model fit and viewed together provide support for adequate measurement model fit (Kline 2005; Netemeyer et al. 2003).

**Table 7**  
**Confirmatory Factor Analysis Results: Measurement Model**

<b>Model</b>	<b>X<sup>2</sup></b>	<b>df</b>	<b>NNFI</b>	<b>Fit Statistics</b>			
				<b>CFI</b>	<b>GFI</b>	<b>AGFI</b>	<b>RMSEA</b>
Six-factor, 38 items	1438.12	649	.64	.67	.71	.67	.078
Six-factor, 18 items	135.15 (p=0.16)	120	.97	.98	.92	.89	.024

<b>Factor</b>	<b>Reliability</b>	<b>Discriminant Validity</b>	
	<b>Composite <math>\alpha</math></b>	<b>AVE</b>	<b><math>\Phi^2 &lt; AVE</math></b>
Perceived Risk (PR)	.74	.49	Yes
Self-Efficacy (SE)	.70	.44	Yes
Social Support (SS)	.81	.60	Yes
External Search (ES)	.75	.51	Yes
Internal Locus (ILOC)	.70	.43	Yes
External Locus (ELOC)	.67	.40	Yes

<b>Factor</b>	<b>Phi (<math>\Phi</math>) Correlation Matrix</b>					
	<b>PR</b>	<b>SE</b>	<b>SS</b>	<b>ES</b>	<b>ILOC</b>	<b>ELOC</b>
<b>PR</b>	1.00					
<b>SE</b>	-.02	1.00				
<b>SS</b>	-.15	-.01	1.00			
<b>ES</b>	-.02	.13	-.06	1.00		
<b>ILOC</b>	-.23	.31	.04	.17	1.00	
<b>ELOC</b>	.07	.10	.11	.20	.11	1.00

Note: df = degrees of freedom; NNFI=Non-Normed Fit Index; CFI=Comparative Fit Index; GFI=Goodness of Fit Index; AGFI=Adjusted Goodness of Fit Index; RMSEA=Root Mean Square Error of Approximation; AVE=Average Variance Extracted

### Scale Reliability

The internal consistency or reliability of each scale was assessed by computing a composite coefficient alpha ( $\alpha$ ), examining factor loadings, and calculating AVE. The composite reliabilities ranged from .67 to .81. All except ELOC (.67) were above generally accepted criteria for internal consistency of .70 (Netemeyer et al. 2003). The range of completely standardized

factor loadings for each construct were PR .59 to .77; SE .61 to .69; SS .64 to .94; ES .61 to .87; ILOC .62 to .70; and ELOC .58 to .67. Each item-to-factor loading was also significant ( $p < .01$ ). Four of the constructs had average variance extracted (AVE) statistics below the recommended criteria of greater than .50. These were PR at .49; SE at .44; ILOC at .43; and ELOC at .40. The AVE measures the amount of variance captured by a construct's indicators relative to measurement error. Taken together the composite reliability, factor loadings, and AVE provide adequate support for using these indicators in the structural model. However, it should be noted that lower than expected reliability may influence results in the structural model analysis (Netemeyer et al. 2003).

### **Discriminant Validity**

Discriminant validity is the extent to which measures of a particular construct diverge from measures of other constructs from which it is conceptually distinct (Netemeyer et al. 2003). Discriminant validity is indicated when the AVE statistic for each pair of constructs is greater than the phi-squared ( $\Phi^2$ ) – the correlation between the two constructs. This criterion is considered to be the most stringent assessment of discriminant validity (Netemeyer et al. 2003). The phi correlation matrix is given in Table 7. This data shows that the criterion was met for all construct pairs, therefore the six constructs appear to exhibit adequate discriminant validity.

## **STRUCTURAL MODEL RESULTS**

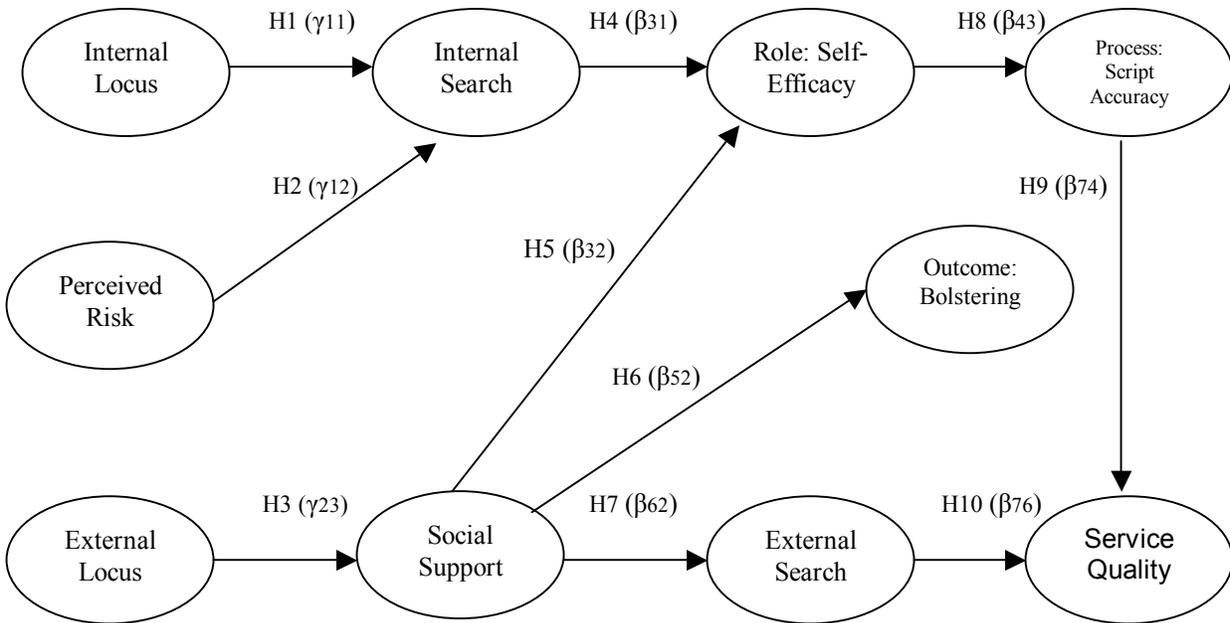
The covariance matrix for the 10 factor, 22 indicator model, now including constructs with single item indicators: IS, SA, SQ, and BO, was entered into a structural equation model analysis of the hypothesized relationships. Fit indices, path coefficients, and the amount of variance explained by the endogenous constructs were evaluated. The initial structural model is

shown in Figure 4 below. The path coefficients shown in parentheses are used to test the hypotheses shown to the left of the coefficient in the model. The results of the initial structural model analysis are given in Table 8 and will be discussed next.

**Approach-Active Path**

*Moderator- Past Experience*

**Expectations**



**Avoidance-Passive Path**

**Figure 4**  
**Consumer Expectation Formation in Health Care Services:**  
**Initial Structural Model**

The results of the initial structural model test shown in Table 8 show acceptable fit indices, however eight out of ten hypothesized relationships were not supported. Six of the paths had non-significant path coefficients and two of the paths had negative coefficients when a positive relationship was expected. Since the model hypotheses were generally not supported, no attempt

was made to assess the amount of variance explained by the endogenous variables. Based on this result the literature was again consulted in an attempt to explain these findings.

**Table 8**  
**Initial Structural Model Results**

<b>Model</b>	<b>X<sup>2</sup></b>	<b>df</b>	<b>Fit Statistics</b>				
			<b>NNFI</b>	<b>CFI</b>	<b>GFI</b>	<b>AGFI</b>	<b>RMSEA</b>
Ten factor, 22 items	252.85 (p=0.01)	200	.93	.94	.88	.85	.038

<b>Hypothesis (Path)</b>	<b>Path Coefficient</b>	<b>t-value</b>
H1 ( $\gamma_{11}$ ) ILOC>IS	-.44	-1.15n.s.
H2 ( $\gamma_{12}$ ) PR>IS	-.44	-1.48n.s.
H3 ( $\gamma_{23}$ ) ELOC>SS	.14	1.10n.s.
H4 ( $\beta_{31}$ ) IS>SE	-.02	-1.00n.s.
H5 ( $\beta_{32}$ ) SS>SE	.00	.05n.s.
H6 ( $\beta_{52}$ ) SS>BO	.12	2.02
H7 ( $\beta_{62}$ ) SS>ES	-.04	-0.69n.s.
H8 ( $\beta_{43}$ ) SE>SA	-.59	-2.54
H9 ( $\beta_{74}$ ) SA>SQ	-1.24	-2.40
H10 ( $\beta_{76}$ ) ES>SQ	.13	3.05

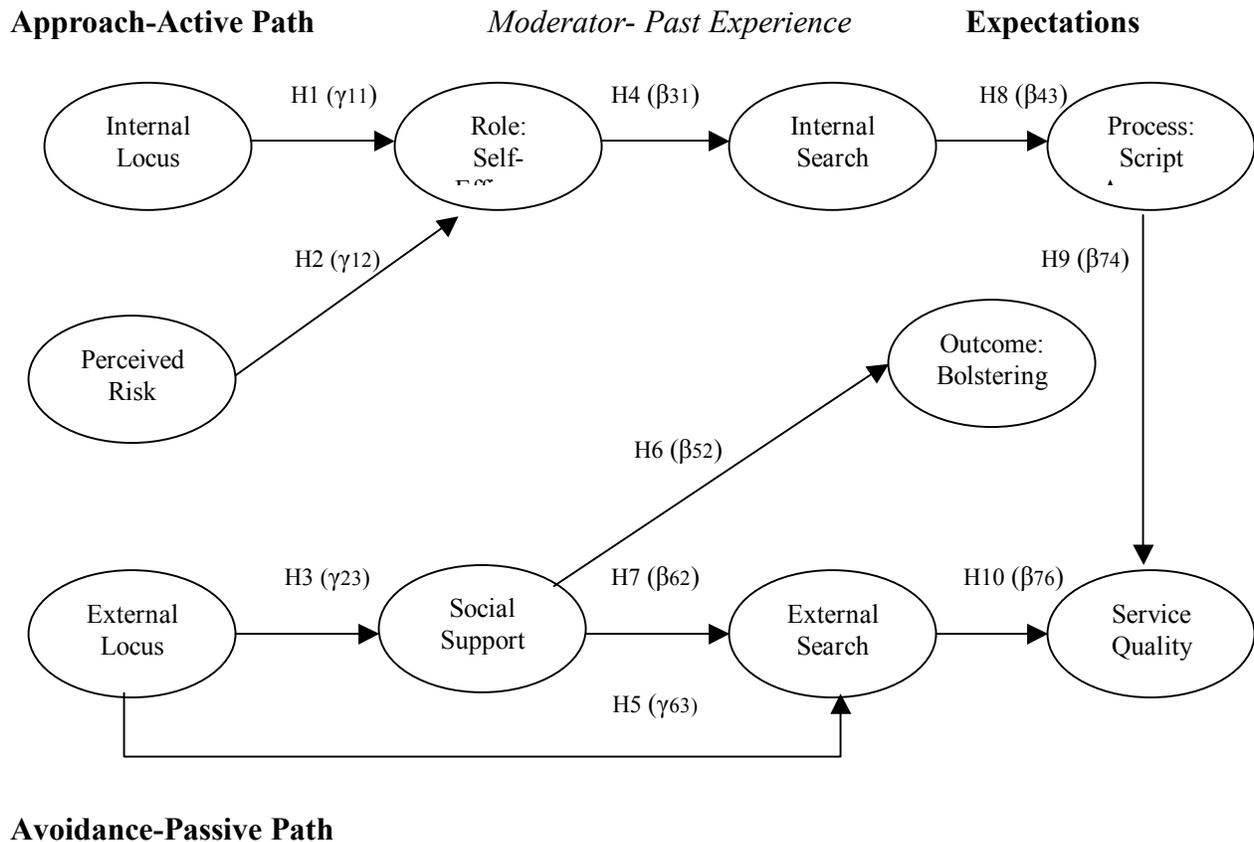
Note: df = degrees of freedom; NNFI=Non-Normed Fit Index; CFI=Comparative Fit Index; GFI=Goodness of Fit Index; AGFI=Adjusted Goodness of Fit Index; RMSEA=Root Mean Square Error of Approximation. Except where noted by n.s., t-values of 1.65 or greater are significant at the .05 level, and t-values of 1.96 or greater are significant at the .01 level.

### Revised Structural Model

The extensive self-efficacy literature in the health care context (Bandura 2005) posits that perceived self-efficacy is enhanced by information search. However, this literature can also be interpreted as supporting the notion that consumers with higher self-efficacy are more prone to search internally for information. Duhachek's (2005) model of consumer coping has also conceptualized self-efficacy as an antecedent of active coping. Therefore, to further develop expectation formation theory this suggests that the internal search (IS) to self-efficacy (SE) path in the initial model could be revised so that the path is self-efficacy (SE) to internal search (IS). This still preserves the measure of role expectations (SE) in the model. In addition, since the path

from social support (SS) to self-efficacy (SE) was non-significant and self-efficacy is being moved in the model, this path (SS to SE) will be eliminated in the revised model.

The extensive literature on health locus of control (Wallston 2005) has found that external locus of control (powerful others) is associated with increased seeking of social support. However, this literature also shows that the consumers with higher external locus of control (powerful others) cede control to “powerful others.” Therefore, a direct path between external locus and external search (medical professional sources) may be hypothesized. The revised structural model is shown in Figure 5 and results from the revised model are shown in Table 9.



**Figure 5**  
**Revised Structural Model**

**Table 9**  
**Revised Structural Model Results**

<b>Model</b>	<b>X<sup>2</sup></b>	<b>df</b>	<b>Fit Statistics</b>				
			<b>NNFI</b>	<b>CFI</b>	<b>GFI</b>	<b>AGFI</b>	<b>RMSEA</b>
Ten factor, 22 items	223.92 (p=0.11)	199	.97	.97	.90	.87	.022

<b>Hypothesis (Path)</b>	<b>Path Coefficient</b>	<b>t-value</b>
H1 ( $\gamma_{11}$ ) ILOC>SE	.32	2.46
H2 ( $\gamma_{12}$ ) PR>SE	-.08	-.84n.s.
H3 ( $\gamma_{23}$ ) ELOC>SS	.14	1.09n.s.
H4 ( $\beta_{31}$ ) SE>IS	-.26	-.74n.s.
H5 ( $\gamma_{63}$ ) ELOC>ES	.21	1.93
H6 ( $\beta_{52}$ ) SS>BO	.12	2.02
H7 ( $\beta_{62}$ ) SS>ES	-.06	-0.90n.s.
H8 ( $\beta_{43}$ ) IS>SA	.20	4.04
H9 ( $\beta_{74}$ ) SA>SQ	.07	3.07
H10 ( $\beta_{76}$ ) ES>SQ	.13	3.05

Note: df = degrees of freedom; NNFI=Non-Normed Fit Index; CFI=Comparative Fit Index; GFI=Goodness of Fit Index; AGFI=Adjusted Goodness of Fit Index; RMSEA=Root Mean Square Error of Approximation. Except where noted by n.s., t-values of 1.65 or greater are significant at the .05 level, and t-values of 1.96 or greater are significant at the .01 level.

The revised structural model analysis resulted in improvement in both fit statistics and the number of significant path coefficients. All of the fit indices improved from the initial to the revised model. Six out of ten paths were significant in the revised model, compared to only two of ten in the initial model. Five of the paths were significant at the .01 level, while one path was significant at the .05 level. The amount of variance explained ( $r^2$ ) by the endogenous constructs was .71 (sum of the squared multiple correlations for the structural equations).

On the “approach-active” path of the model, the relationship between internal locus of control orientation and perceived self-efficacy was supported; however the path between perceived self-efficacy and internal search was not significant. Support was found for the relationship between internal search and script accuracy. Likewise, the relationship between script accuracy and service quality expectations was positive and statistically significant. The

influence of perceived risk in the model was not significant. This is an interesting finding and will be discussed in Chapter 5. With the exception of the perceived self-efficacy to internal search path, these results provide initial limited support for the “approach-active” path and how internal locus of control influences role expectations (self-efficacy), internal search, process expectations (script accuracy) and service quality expectations.

The results of the revised structural model also provide preliminary support for the “avoidance-passive” path. External locus of control orientation (powerful others) was positively and significantly related to external search (medical professionals). The relationship between external search and service quality expectations was also positive and significant. The role of social support in the avoidance-passive path was partially supported via the positive and significant path between social support and bolstering. Otherwise paths involving social support were not significant. These findings give limited, initial support concerning how external locus of control, social support and external search drive the “avoidance-passive” coping strategy.

## CHAPTER 5: DISCUSSION

This research has developed and tested a psycho-social model of consumer expectation formation in a health care context. A field study explored how health care consumers form role, process, outcome and service quality expectations. Furthermore, the influence of antecedent constructs (i.e., locus of control orientation and perceived risk) and intervening constructs (i.e., internal and external information search and social support) were tested in the research. In addition, the moderating role of past experience was explored. The research uses the Oliver and Winer (1987) framework for consumer expectations and the Duhachek (2005) model of consumer coping as its primary theoretical basis. Coping theory suggests that when faced with uncertainty or perceived risk consumers may utilize a variety of strategies ranging from active to passive approaches. The model in this dissertation asserts that the development of expectations and consumer coping strategies exists on a continuum ranging from “approach-active” to “avoidance-passive.” The strategy adopted depends in part on consumer locus of control orientation and perceptions of risk. These antecedents influence expectations via the mediating effects of internal and external information search, as well as social support. The model shows that “approach-active” oriented consumers will use different strategies and resources during expectation formation compared to “avoidance-passive” oriented consumers. In addition, the model supports the notion that these two ends of the continuum will exert differential influence on the dimensions of consumer expectations.<sup>2</sup>

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<sup>2</sup> Support for the model was found despite a small sample size. To obtain adequate statistical power for detecting significant relationships between constructs a ratio of 5:1 between the sample size and estimated parameters is recommended (Kline 2005). In this study there were over 80 parameter estimates suggesting an ideal sample size of over 400 respondents. That significant paths were detected with a sample size less than half this amount provides strong initial support for the model. Constructs (perceived risk) and paths (external locus of control to social support; and social support to external search on the “avoidance-passive” path; and the self-efficacy to internal search on the approach-active” path) which were found to be non-significant would more be effectively evaluated with a sample size exceeding 400-500 respondents.

The performance of the model in the health care context is consistent with Fournier and Mick's (1999) assertion that in many contexts satisfaction-related phenomena are more complex. The present research extends the satisfaction literature by finding evidence that expectation formation: (1) is an active, dynamic process; (2) has a strong social dimension; (3) includes components of meaning and affect; and (4) is context-dependent and contingent, encompassing multiple paradigms, models, and modes (Fournier and Mick 1999).

### **IMPLICATIONS OF THE FINDINGS**

The conceptualization and preliminary support for a continuum of coping strategy and expectation formation is a new contribution to the satisfaction literature. The finding that consumers with different locus of control orientations will adopt different levels of internal and external search supports the notion that expectation formation is an active process. The active and dynamic nature of the expectation formation process implies that health care marketers may segment the market based on consumer traits such as locus of control orientation (i.e., a proxy for identifying groups on the continuum) and then design integrated marketing communications and service offerings which influence that process and ultimately consumer satisfaction.

A strong social dimension was found in the model. The relationship between perceived social support and bolstering suggests that health care consumer segments closer to the "avoidance-passive" end of the continuum will seek to rationalize the chosen service alternative by magnifying risks of non-chosen alternatives and minimizing the risks of the chosen alternative. This rationalization process is likely reinforced by the social support network. The implication of this for the health care marketer is to design communication strategies which provide global assurance and reinforcement concerning choice to both members of this "segment" - the consumer

and their social support network. These consumers are not likely to be interested in forming accurate process or role expectations or role expectations (self-efficacy beliefs). Therefore, attempting to influence this segment by providing extensive information may be of more limited benefit in managing consumer satisfaction.

Although affect was not explicitly modeled in this study, clearly perceived social support has an affective dimension. It can be argued that bolstering is a form of affective response to uncertainty in the health service encounter. By engaging in bolstering the consumer is focused on “making themselves feel better” about their choice and developing positive affect about the service encounter. Concerning the expectation formation continuum, to the extent that the health care provider addresses the unique needs of these consumer segments before the service encounter (e.g., giving appropriate decision making control during office visits to “approach-actives”), they may reduce the probability of negative affect during the expectation formation process. Consequently, pre-service encounter switching behavior to other health care providers and negative word-of-mouth communications may be avoided or minimized.

### **CONTRIBUTIONS OF THE RESEARCH**

The multi-dimensional nature of expectations suggests that consumers form satisfaction judgments about roles, processes, outcome, and service quality in the health service context. To the author’s knowledge this research is the first in the marketing literature to include all four dimensions in a single study. The existence of such multiple modes of comparison challenge health care professionals to understand the impact each dimension plays in overall consumer satisfaction. The different segments along the expectation formation continuum may differentially weight one dimension over another. It is likely that the high “approach-active” segment will be

very concerned about role and process expectations. On the other hand, consumers in the high “avoidance-passive” segment may use service quality cues (i.e., tangibles – nice hospital rooms and empathy – nice nurses) and bolstering when forming their satisfaction judgments. Health care practitioners who understand this and segment consumers by using the expectation formation model, in addition to their medical condition, will enhance their ability to manage consumer satisfaction.

Overall the results of this research have contributed to the consumer satisfaction literature by developing and testing a model consistent with the Oliver and Winer framework (1987) and the Duhachek (2005) consumer coping model. In addition, as advocated by Fournier and Mick (1999), this research provides a more holistic approach to understanding the complex nature of consumer satisfaction by extending the literature on an important component of post-purchase evaluation – consumer expectation formation. As illustrated in the discussion above, this dissertation also contributes useful insights to health care practitioners which can assist them in improving consumer satisfaction. This has been accomplished by giving them a basis for segmenting patient groups – the expectation and coping continuum and by suggesting some consumer traits that may be useful in this effort.

### **LIMITATIONS AND FUTURE RESEARCH**

The results presented in this research should be qualified by the limitations which are inherent to many projects of this nature. The most obvious issue is that of the limited sample size. While this is clearly a limitation, the fact that support was found for most of the hypothesized relationships in the revised model without adequate statistical power is very encouraging. Future research should include an adequate sample size to ensure a more thorough test of the model.

A second limitation is the reliability and validity of the measurement model. The composite reliability of many of the constructs were close to the minimum threshold for adequacy ( $> .70$ ), this combined with limited discriminant validity on several constructs ( $AVE < .50$ ) likely influenced the findings of non-significance on some paths in the model. Future research in this area should use measurement instruments with excellent psychometric properties (e.g., Duhachek 2005 – consumer coping scales).

This study did not attempt to explore the relationship between the various dimension of expectations and post-service encounter satisfaction judgments. Therefore, it is unclear how each one may influence satisfaction and brand loyalty. As part of additional model testing, a longitudinal study including post-service encounter satisfaction measures would make a significant contribution to the literature by extending understanding of multi-dimensional influences on satisfaction.

Finally, the obstetrical setting for the study creates a significant limitation. Because respondents were women, it is unclear whether the model is applicable to describing and predicting how male consumers cope with uncertainty and form expectations in the health care context. Therefore, in order to extend the generalizability of the model future research should involve settings which would invite both female and male participation.

## **CONCLUSION**

In conclusion, this research presents support for a model of consumer coping and expectation formation in a health care context. It provides initial evidence that consumers can be segmented based on a personality trait (locus of control) along a continuum from “approach-active” oriented to “avoidance-passive” oriented. Results support the notion that the consumer’s

position along this continuum will influence the extent to which they engage in coping strategies such as information search and seeking social support. Likewise, this study provides evidence that the coping strategy employed will influence role, process, outcome, and service quality expectations.

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## APPENDIX: CHILDBIRTH EXPECTATIONS SURVEY

The following survey is designed to develop a better understanding of how women form expectations about their childbirth experience. All of your answers will be anonymous, so please be open and honest in your responses. This research will help health care professionals and hospitals to provide service which meets the individual's needs. Thank you for your support and assistance.

1. What is your due date? \_\_\_\_\_

2a. Have you toured Woman's Hospital? \_\_\_\_\_ Yes \_\_\_\_\_ No

b. Which method of childbirth are you planning for with this pregnancy?  
(Check One)

\_\_\_\_\_ "Natural" vaginal delivery with no epidural      \_\_\_\_\_ Vaginal delivery with epidural (pain medication)      \_\_\_\_\_ Scheduled Cesarean section

c. Do you plan to have a partner present during labor and childbirth to provide support and assistance (for example: spouse, friend, or relative)?

\_\_\_\_\_ Yes      \_\_\_\_\_ No      \_\_\_\_\_ Not sure

3. Please give us some information about your previous childbirth experiences.  
(If this is your first childbirth experience, please go to question #5.)

Child	<u>Method of Delivery</u> (Check one)			Was this child born at Woman's Hospital? (circle appropriate answer)		Did you attend childbirth education classes? (circle appropriate answer)	
	natural no medication	vaginal with epidural	cesarean section	yes	no	yes	no
1	_____	_____	_____	yes	no	yes	no
2	_____	_____	_____	yes	no	yes	no
3	_____	_____	_____	yes	no	yes	no
4	_____	_____	_____	yes	no	yes	no
5	_____	_____	_____	yes	no	yes	no
6	_____	_____	_____	yes	no	yes	no
7	_____	_____	_____	yes	no	yes	no
8	_____	_____	_____	yes	no	yes	no

4. If you have had previous childbirth experiences at Woman's Hospital ... on a scale of 0 to 100, where 0 means poor service and 100 means excellent service, how would you rate the overall quality of service provided by Woman's Hospital? \_\_\_\_\_

If you have no childbirth experience with Woman's Hospital, please go to question 5.

**5. The next set of questions deal with the way women feel about the support they receive from family and friends during pregnancy. Please indicate the extent to which you agree with each statement below by circling the appropriate response.**

	<b>Strongly Disagree</b>				<b>Strongly Agree</b>	
a.	My husband has been very understanding and supportive during my pregnancy.	1	2	3	4	5
b.	My mother often criticizes the decisions I've made concerning my pregnancy and childbirth plans.	1	2	3	4	5
c.	I have friends who have provided understanding and support during my pregnancy.	1	2	3	4	5
d.	My husband shows that he loves and cares for me.	1	2	3	4	5
e.	I have friends that I can talk to about my pregnancy.	1	2	3	4	5
f.	My husband doesn't listen very well when I want to talk about my needs and how I am feeling.	1	2	3	4	5
g.	My mother has been very reassuring and comforting to me during my pregnancy.	1	2	3	4	5
h.	I don't have any friends who care about me and my pregnancy.	1	2	3	4	5
i.	I can count on my mother to talk to about my pregnancy and my feelings.	1	2	3	4	5
j.	My relatives (other than your husband and mother) have not been very interested in my pregnancy.	1	2	3	4	5
k.	Since I have been pregnant, I feel especially loved and cared for by my family.	1	2	3	4	5
l.	My in-laws have been very understanding and supportive of me during my pregnancy.	1	2	3	4	5
m.	My relatives (other than your husband and mother) show me that they care about my baby and me by often asking how we are doing.	1	2	3	4	5
n.	My husband helps me feel better when I'm feeling "down" about being pregnant.	1	2	3	4	5

**6. Below are several statements concerning your attitudes about health. Please read each one and tell us how much you agree or disagree with it by circling the appropriate response to the right.**

		<b>Strongly Disagree</b>				<b>Strongly Agree</b>
a.	If I get sick, it is my own behavior which determines how soon I get well again.	1	2	3	4	5
b.	No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5
c.	Having regular contact with my physician is the best way for me to avoid illness.	1	2	3	4	5
d.	Most things that affect my health happen to me by accident.	1	2	3	4	5
e.	Whenever I don't feel well, I should consult a medically-trained professional.	1	2	3	4	5
f.	I am in control of my health	1	2	3	4	5
g.	My family has a lot to do with me becoming sick or staying healthy.	1	2	3	4	5
h.	When I get sick, I am to blame.	1	2	3	4	5
i.	Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5
j.	Health professionals control my health.	1	2	3	4	5
k.	My good health is largely a matter of good fortune.	1	2	3	4	5
l.	The main thing which affects my health is what I, myself, do.	1	2	3	4	5
m.	If I take care of myself, I can avoid illness.	1	2	3	4	5
n.	When I recover from an illness, it's usually because other people (for example: doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5
o.	No matter what I do, I'm likely to get sick.	1	2	3	4	5
p.	If it's meant to be, I will stay healthy.	1	2	3	4	5
q.	If I take the right actions, I can stay healthy.	1	2	3	4	5
r.	Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5

7. Below are several statements concerning how you feel about childbirth. Please indicate how strongly you agree or disagree with the following statements.

		<b>Strongly Disagree</b>				<b>Strongly Agree</b>
a.	I am worried about complications happening during my labor.	1	2	3	4	5
b.	I am sure that I will have a "normal" childbirth.	1	2	3	4	5
c.	I am afraid that I will be injured during delivery.	1	2	3	4	5
d.	I am confident that nothing will go wrong during my childbirth.	1	2	3	4	5
e.	The pain I will experience during labor is of little concern to me.	1	2	3	4	5

8. Please rate the extent to which you believe the following techniques are effective in helping women cope with pain during labor.

		<b>Not At All Effective</b>		<b>Somewhat Effective</b>		<b>Extremely Effective</b>
a.	Tensing your muscles and then relaxing them.	1	2	3	4	5
b.	Maintaining a positive attitude.	1	2	3	4	5
c.	Having your partner give you a massage.	1	2	3	4	5
d.	Using breathing techniques.	1	2	3	4	5
e.	Daydreaming or thinking distracting thoughts.	1	2	3	4	5
f.	Focusing on the electronic fetal monitor or other things in your room like the TV.	1	2	3	4	5
g.	Performing effleurage (gently massaging your abdomen with your fingertips).	1	2	3	4	5
h.	Changing positions frequently to get more comfortable.	1	2	3	4	5
i.	Repeating soothing phrases.	1	2	3	4	5
j.	Listening to music.	1	2	3	4	5
k.	Having your partner with you.	1	2	3	4	5

9. Listed below are several sources of information you may have relied upon to learn about pregnancy and plan for this childbirth experience. Please rate by circling the appropriate response how often you were in contact with each source. In addition, rate how important each source has been in helping you cope with this pregnancy and plan for childbirth. If you did not contact or use a particular source during this pregnancy, please circle “n/a” (not applicable).

	<u>Frequency of Contact</u>					<u>Importance of Source</u>					n/a
	None of the time			All of the time		Not at all Important		Somewhat Important	Very Important		
a. Your doctor (ob/gyn)	1	2	3	4	5	1	2	3	4	5	n/a
b. Nurses in the doctors office	1	2	3	4	5	1	2	3	4	5	n/a
c. Receptionist in the office	1	2	3	4	5	1	2	3	4	5	n/a
d. Other health professionals	1	2	3	4	5	1	2	3	4	5	n/a
e. Books, magazines, or news articles about pregnancy	1	2	3	4	5	1	2	3	4	5	n/a
f. Television, videotapes, or radio programs	1	2	3	4	5	1	2	3	4	5	n/a
g. Your own past childbirth experience(s)	1	2	3	4	5	1	2	3	4	5	n/a
h. Your mother	1	2	3	4	5	1	2	3	4	5	n/a
i. Your mother-in-law	1	2	3	4	5	1	2	3	4	5	n/a
j. Friends or relatives who have had children	1	2	3	4	5	1	2	3	4	5	n/a
k. Childbirth education classes (Lamaze) offered by Woman’s Hospital (BR)	1	2	3	4	5	1	2	3	4	5	n/a
l. Other childbirth education classes offered by other hospitals or organizations	1	2	3	4	5	1	2	3	4	5	n/a
m. Hospital advertising	1	2	3	4	5	1	2	3	4	5	n/a
n. Hospital brochures or other printed information	1	2	3	4	5	1	2	3	4	5	n/a

**10. Please rate the extent to which you believe you could perform the following techniques to help you cope with pain during labor.**

		<b>Could Not Do At All</b>		<b>Somewhat Sure I Could Do It</b>		<b>Completely Sure I Could Do It</b>
a.	Tensing your muscles and then relaxing them.	1	2	3	4	5
b.	Maintaining a positive attitude.	1	2	3	4	5
c.	Having your partner give you a massage.	1	2	3	4	5
d.	Using breathing techniques.	1	2	3	4	5
e.	Daydreaming or thinking distracting thoughts.	1	2	3	4	5
f.	Focusing on the electronic fetal monitor or other things in your room like the TV.	1	2	3	4	5
g.	Performing effleurage (gently massaging your abdomen with your fingertips).	1	2	3	4	5
h.	Changing positions frequently to get more comfortable.	1	2	3	4	5
i.	Repeating soothing phrases.	1	2	3	4	5
j.	Listening to music.	1	2	3	4	5
k.	Having your partner with you.	1	2	3	4	5

11. The following list contains events and procedures that you may experience during your childbirth experience.
- Please eliminate those items that you do not expect to happen during your childbirth by placing an "X" next to this item.
  - For those items remaining, please rank them in the order that you feel they will occur by placing a number in the blank next to the appropriate item. For example, if you feel that the first thing you will do upon arriving at the hospital is to "check in at admissions," place a 1 in front of this item. Continue this process until you have ranked all items from the beginning to the end of your labor and delivery experience.
  - If there are any items for which you are unsure of either their relevance to your childbirth experience or their order, place a "?" next to the item. An example of this exercise is shown below:

Pitocin given to speed up labor	<u>  X  </u>
Check in at admissions	<u>  1  </u>
Perineal massage	<u>  ?  </u>
Eat a meal	<u>  2  </u>

- \_\_\_\_\_ Nurse admits mom to private labor, delivery, recovery room (LDR) of Family Birthing Center
- \_\_\_\_\_ Labor and delivery nurse asks many questions to assess mom's status
- \_\_\_\_\_ Mom calls the doctor
- \_\_\_\_\_ Short, mild contractions
- \_\_\_\_\_ Pre-register by mail, phone, or physician's office prior to admission
- \_\_\_\_\_ Stop at admissions desk for registration
- \_\_\_\_\_ Go to labor and delivery unit in wheelchair
- \_\_\_\_\_ Remove clothing and put on hospital gown
- \_\_\_\_\_ Initial vaginal examination to assess mom's progress
- \_\_\_\_\_ Nurse calls doctor to inform of mom's initial status
- \_\_\_\_\_ Prep of perineal area
- \_\_\_\_\_ "Mini" shave of pubic hair
- \_\_\_\_\_ Administration of enema
- \_\_\_\_\_ Attach fetal monitor
- \_\_\_\_\_ Start IV
- \_\_\_\_\_ Longer, more intense contractions that are closer together
- \_\_\_\_\_ Administration of epidural
- \_\_\_\_\_ Catheterization to empty bladder
- \_\_\_\_\_ Nurse ruptures membranes (break "bag of waters")
- \_\_\_\_\_ Very intense contractions, 30 to 90 seconds apart
- \_\_\_\_\_ Doctor performs episiotomy
- \_\_\_\_\_ Nurse tells mom to push
- \_\_\_\_\_ Doctor delivers baby
- \_\_\_\_\_ Walk to bathroom after administration of epidural
- \_\_\_\_\_ Eat snacks brought from home
- \_\_\_\_\_ Walk to labor and delivery unit
- \_\_\_\_\_ Doctor performs cesarean birth
- \_\_\_\_\_ Doctor stays in room at all times
- \_\_\_\_\_ Nurse stays in room at all times
- \_\_\_\_\_ Nurse helps mom relax during and between contractions
- \_\_\_\_\_ Doctor performs local anesthetic
- \_\_\_\_\_ Doctor preps abdominal area and covers with sterile gauze

**12. What is your opinion on the level of service Woman's Hospital will provide in the following areas during your childbirth experience?**

	Definitely Not	Not Really	No Opinion	Pretty Much So	Definitely Yes
a. The temperature in my room will be comfortable.	1	2	3	4	5
b. My room will be attractively decorated and comfortable.	1	2	3	4	5
c. My room will be clean upon arrival and kept clean throughout my stay.	1	2	3	4	5
d. The staff members who clean my room will be polite and helpful.	1	2	3	4	5
e. My meals will be consistently well prepared.	1	2	3	4	5
f. My meals will be on time.	1	2	3	4	5
g. The staff members who serve my meals will be polite and helpful.	1	2	3	4	5
h. Staff members will be helpful and caring towards my family/ friends.	1	2	3	4	5
i. My family/friends will be kept well informed.	1	2	3	4	5
j. The waiting area for family and friends will be attractive and comfortable.	1	2	3	4	5
k. My privacy will be respected at all times.	1	2	3	4	5
l. Nurses will be timely in meeting my needs.	1	2	3	4	5
m. Nurses will explain things so that I understand.	1	2	3	4	5
n. Nurses will be polite and helpful.	1	2	3	4	5
o. Nurses will have a caring attitude and show sensitivity to my needs.	1	2	3	4	5

	Definitely Not	Not Really	No Opinion	Pretty Much So	Definitely Yes
p. Nurses will be professional and skilled in the treatment they give me.	1	2	3	4	5
q. The anesthesiologist will treat me within a reasonable amount of time.	1	2	3	4	5
r. The anesthesiologist will explain the procedure(s) so that I understand what to expect.	1	2	3	4	5
s. The anesthesiologist will have a caring attitude and show sensitivity to my needs.	1	2	3	4	5
t. The anesthesiologist will seem professional and skilled in the procedure performed.	1	2	3	4	5

Using a rating scale of 0 to 100, where 0 means poor service and 100 means excellent service, please tell us the overall quality of service Woman's Hospital will provide you? \_\_\_\_\_

13. Please divide 100 points among the three methods of childbirth listed below, according to your perception of the risk for complications during childbirth. Make sure that the total number of points adds up to 100.

<u>Childbirth Method</u>	<u>Points</u>
"Natural" vaginal delivery without epidural	_____
Vaginal delivery with epidural	_____
Cesarean section	_____
<b>TOTAL</b>	<b>100</b>

**14. Please tell us about yourself. Remember, all of your responses are strictly confidential.**

a. How long have you lived in the Baton Rouge area? \_\_\_\_\_ years

b. What is your age? \_\_\_\_\_ years

c. What is your occupation? \_\_\_\_\_

d. What is the highest level of education that you completed?

\_\_\_\_\_ Less than high school

\_\_\_\_\_ Some college

\_\_\_\_\_ High school graduate

\_\_\_\_\_ College degree

\_\_\_\_\_ Vocational/technical school

\_\_\_\_\_ Graduate/professional school

e. Please check the category which contains your approximate annual family income before taxes.

\_\_\_\_\_ Under \$15,000

\_\_\_\_\_ \$35,000 to \$49,000

\_\_\_\_\_ \$15,000 to \$24,999

\_\_\_\_\_ \$50,000 to \$74,000

\_\_\_\_\_ \$25,000 to \$34,999

\_\_\_\_\_ \$75,000 and over

**Thank you for your cooperation. Best wishes to you and your family at this most exciting time.**

## VITA

Kenneth Randall Russ was born on November 9, 1957 in Tyler, Texas, and lived in Venezuela during his early boyhood. He moved with his family to Louisiana in 1968 and was educated in the East Baton Rouge Parish Public Schools. He earned his bachelor of science in industrial management in 1979 from Louisiana State University. Randy has worked in business and industry for over 20 years most recently serving as President and CEO of Community Coffee Company, L.L.C. He has co-authored scholarly articles which have appeared in the *Journal of Personal Selling and Sales Management*, *Industrial Marketing Management*, and *Marketing Education Review*. He re-entered the doctoral program in January of 2005 and graduated in December 2006 with a degree of Doctor of Philosophy in business administration (marketing) from Louisiana State University.