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PRIOR KNOWLEDGE AND TASK COMPLEXITY IN RECOMMENDATION-BASED DECISION MAKING FOR SELECTING A MEDICAL PROFESSIONAL

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Scott David Johnson

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#### PRIOR KNOWLEDGE AND TASK COMPLEXITY IN RECOMMENDATION-BASED DECISION MAKING FOR SELECTING A MEDICAL PROFESSIONAL

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By

Scott David Johnson

A Dissertation

**...** 

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Marketing and Transportation Administration

#### ABSTRACT

#### PRIOR KNOWLEDGE AND TASK COMPLEXITY IN RECOMMENDATION-BASED DECISION MAKING FOR SELECTING A MEDICAL PROFESSIONAL

By

Scott David Johnson

The objective of this research was to examine the role of two independent variables (prior knowledge and task complexity) as to their impact on four dependent measures (number of sources, type of source, use of instrumental cues, and use of affective cues) in the recommendation-based selection of a doctor by a woman.

The measure of objective knowledge was obtained by means of a 11 item self-administered multiple choice quiz about obstetrics and gynecology. Task complexity (either high or low) was successfully manipulated by means of one of two different written scenarios assigned randomly to each subject.

The subjects for the investigation consisted of 235 Mid-Michigan women of childbearing years (mean = 31.5 years) randomly selected by means of a multi-stage cluster sample. The survey instrument was given to each subject after household screening for gender and age. Questionnaires were self-administered and were personally delivered to and picked up from the subjects. It was found that for women, the level of objective knowledge about pregnancy and obstetrics varied directly with the number of personal sources utilized in the physician selection process; and, expert (i.e. nurse) sources were more likely to be used compared to non-expert sources (e.g. friends or relatives) when knowledge increased. Level of objective knowledge did not have a significant impact on the importance of which cues were used. However, subjective knowledge was directly related to the perceived importance of instrumental (i.e. cues related to technical skills) cues.

It was found that perceived task complexity had a significant inverse relationship with source expertise but had no significant impact on the number of sources sought. Finally, it was found that as perceived task complexity increased in the selection process, affective cues (e.g. warmth and friendliness) increased in importance.

To Mary

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## CHAPTER ONE

## INTRODUCTION

This chapter describes the general problem area of the dissertation and the objectives of the research.

#### The General Problem Area

Service sector spending now accounts for over half of total personal consumption expenditures (\$1,891/\$3,508 Billion) in the United States. The level of expenditures for medical care alone, which is approaching half a trillion dollars and consistently outpaces the Consumer Price Index, will exceed expenditures for <u>all</u> durable goods in our economy within the next few years (Survey of Current Business, 1989).

Consequently, it is understandable that academic researchers in marketing are increasingly applying themselves to the problem of advancing theory in this emerging area of services marketing. In 1981, the American Marketing Association (AMA) sponsored the first conference devoted entirely to services marketing. Since that time, numerous refereed journals, textbooks, and specialized annual conferences have emerged dealing exclusively with

services marketing.

Berry (1980) conceptualized a service as "a deed, a performance, or an effort." Kotler (1986) defined a service as "any activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything." Zeithaml, Parasuraman, and Berry (1985) provided an extensive review of articles citing the following characteristics of services which make them unique: intangibility, heterogeneity, inseparability of production and consumption, and perishability.

Professional services marketing is an important specialized topic within this emerging area. In the U.S. alone, there are over 527,000 lawyers, 514,000 physicians, 160,000 dentists, and numerous other professionals (U.S. Bureau of Labor Statistics 1987). As a result of the increasing impact of professional services in our economy and perhaps the awareness of previous scholarly neglect in this area, we have witnessed a significant growth in research focusing specifically on professional services (Quelch 1981; Bloom 1984; Kotler 1984; Brown and Swartz 1989).

One implication of this abundance of service providers is that consumers now have a wider choice regarding specifically which provider will be selected. This greater choice also carries with it the unfortunate reality of the

possible selection of an unsuitable provider. A recent study conducted by Harvard Medical School of over 31,000 hospital records concluded that 7,000 people died in hospitals in New York state in 1984 as a result of negligent care. In response to this fact, the New York state commissioner of health stated that "one cannot help but conclude that the current system is failing" (Winslow 1990). Nationally, estimates now approach 90,000 deaths per year, yet astonishingly, only 2% of these cases resulted in a suit claiming damages. It is ironic that for far less important products such as toasters or blenders, significantly more than 2% of consumers with faulty products would be expected to return these items to the store.

In the case of CPA's, a popular survey conducted annually by the editors of Money magazine, found recently that only 2 out of 50 tax preparers, most of whom were CPA's, could correctly calculate a hypothetical tax return for a family of four developed by the magazine. The correct tax was \$12,038. However, taxes due as calculated by the various preparers ranged from less than \$10,000 to over \$21,000. In addition, there appeared to be no connection between the accuracy of the return and the fees charged. They conclude that selecting the improper accountant may be "hazardous to your wealth" (Topolnicki 1990). What is interesting given this perspective is that most consumers would never know a mistake had been made. What is it then

that makes health care and other professional services so elusive?

Shostack (1987) notes that professional services such as those provided by a physician are highly complex and highly divergent. Complexity can be defined as the number and intricacy of the steps required to perform the task, while divergence refers to the level of standardization. Consequently, each professional service encounter typically involves a considerable amount of judgment, discretion, assimilation of new data, and the making of situational adaptations by the provider. In most cases, consumer usage of the service is infrequent which adds to the difficulty of making an accurate assessment of quality. In addition, professional services often lack clear price signals which many consumers use in other markets to convey quality.

Furthermore, from the providers perspective, a professional service is typically more "people-based" than "equipment-based" (Thomas 1978). As a result, there is a restricted opportunity to "industrialize" the service as Levitt (1976) has proposed as a means to reduce heterogeneity of service encounters. The quality of each service encounter is potentially different from any other given this lack of standardization. Finally, due to the extensive training and subsequent specialized knowledge base required of the professional, the consumer is often not able to effectively evaluate the service either before or even

<u>after</u> it has been provided (Darby and Karni 1973; Levitt 1981; Zeithaml 1981). These characteristics make professional services marketing a unique and intriguing area of inquiry for marketing scholars (Kotler and Bloom 1984).

Given this setting, an interesting question surfaces: how do consumers select a professional service provider? Talcott Parsons (1951) noted almost 40 years ago that people seem to choose physicians blindly on the basis of recommendations of friends or neighbors without any further inquiry. A number of subsequent studies have supported his observation and found that indeed the most common choice strategy used to select a professional service provider is to ask a friend or neighbor for a recommendation (Feldman and Spencer 1965; King and Haefner 1988; Crane and Lynch 1988). However, despite the recognition that recommendation-based decision making is predominant within this realm of professional services, there exists a significant gap in our understanding of this phenomenon.

A few studies have found that personal recommendations vary in terms of the number of sources used and the type of sources used in this recommendation process (Feldman and Spencer 1965; Glassman and Glassman 1981; Swartz and Stephens 1983; King and Haefner 1988). However, there is a need for research to go beyond these basic descriptive observations. We have a rudimentary understanding, for example, of how the typical consumer selects a physician,

but efforts to explain this phenomenon and consequently contribute to theory development in this area are lacking.

Recommendation-based decision making has alternately been called "non-choice behavior" (Olshavsky and Granbois 1979), "non-decision making behavior" (Formisano, Olshavsky and Tapp 1982), and "subcontracted decision behavior" (Rosen and Olshavsky 1987). Consequently, the decision regarding the selection of a physician, for example, is in essence, recommendation-based or "subcontracted" to another individual (Olshavsky and Granbois 1979). This heuristic is thought to occur when consumers feel the need to reduce cognitive strain (Bruner, Goodnow, and Austin 1956; Newell and Simon 1972; Payne 1982; Hogarth 1987). In addition, Bettman (1979) notes that accessibility of information may influence the amount and type of search. The basic premise of the present research accepts subcontracting as the dominant decision strategy for professional services. The research then goes beyond this premise by examining the number and types of recommendation sources used given differential levels of objective prior knowledge and task complexity.

Previous research on decision making, choice strategies, and to a more limited extent, service marketing points out two factors that are likely to affect the nature and outcome of a decision situation: prior knowledge and task complexity. Prior knowledge reflects the extent of the

experience and familiarity one has with the characteristics of the service and its provider. It is believed to be directly related to the extent and type of search one is involved in while selecting and evaluating a professional service provider. Regarding recommendation-based subcontracting behavior, it is hypothesized that high prior knowledge consumers will follow the "enrichment hypothesis" where existing knowledge facilitates learning of new information (Johnson and Russo 1984; Brucks 1985). High prior knowledge consumers are also expected to search more effectively, thereby choosing expert recommendation sources over non-expert recommendation sources (Brucks 1985). Finally, cues which high prior knowledge consumers consider most important for making an evaluative judgment are expected to center more on instrumental behavior cues (e.g. technical competence and skills) compared to affective behavior cues (e.g caring and warmth) of the physician (Ben-Sira 1976; Lovdal and Pearson 1989).

Perceived task complexity, on the other hand, refers to the difficulty of making a decision. Brucks and Schurr (1990), for example, found that subjects felt "overwhelmed" in a complex task in terms of the amount and type of information which was available. Task complexity has been manipulated in a variety of ways, but the different conditions typically result in a more difficult or overwhelming decision situation. From the service

provider's perspective, Shostack (1987) has defined task complexity as the number and intricacy of steps required to perform the service. Generally, as complexity increases, combined with the given inaccessibility of information regarding the health care community (Reade and Ratzan 1989), less external search is expected since search becomes more difficult. Similarly, as task complexity increases, consumers are expected to obtain recommendations from more readily accessible, and consequently, less knowledgeable In addition, in the case of high task complexity, sources. cues which are more readily observed and understood (i.e. affective behavior cues) are expected to be chosen to evaluate the service provider. For example, a kidney transplant would be viewed as a more complex task to evaluate than drawing blood. In this case, since the kidney transplant is such a complex task to evaluate, the consumer/patient is expected to use more accessible and easy to understand cues such as personality dimensions to evaluate the nephrologist (e.g. "he was kind and understanding"). On the other hand, since drawing blood is a relatively less complex phenomenon, the consumer/patient may be in a position to evaluate instrumental behavior cues (e.g. "the person drawing blood kept missing my vein").

#### Objectives of the Research

Considering the importance and far reaching effects of

the selection and evaluation of a professional service provider, it is surprising that very little research exists on decision making in this context. The objective of the present study is to shed light on some of these issues and to go beyond the existing descriptive studies by contributing to theory development in this area. Given the basic premise here that subcontracting is the dominant decision strategy for professional service selection and evaluation, two broad research avenues are identified.

- What is the relationship, if any, between prior knowledge and task complexity with the number and type of sources from whom recommendations for a professional service provider are sought? and,
- 2) How do differential levels of prior knowledge and task complexity affect which cues will be sought for evaluation of the service provider?

In addition, an exploratory study is conducted to verify and further develop a taxonomy of cues which are specific to the evaluation of the professional service provider. These cues, are in turn, used to develop the research hypotheses. Each of the six hypotheses are introduced as the relevant literature has been reviewed. In addition, a summary list of hypotheses is placed at the end of the literature review.

Chapter Two provides a review of the literature relevant to this research, introduces the hypotheses, discusses the exploratory research, and concludes with a summary list of the hypotheses to be empirically tested. Chapter Three discusses the proposed methodology to test the hypotheses. Next, Chapter Four describes the empirical findings. Finally, Chapter Five discusses findings, limitations, and recommendations for future research.

#### CHAPTER TWO

#### LITERATURE REVIEW

This chapter reviews subcontracted decision making behavior, prior knowledge, task complexity, and cue choice in evaluative judgments. Research hypotheses are placed separately within the body of the literature review and the summary set of hypotheses are listed together as the last section of the chapter.

## Subcontracted Decision Making Behavior

A widely held belief in cognitive processing research is that people will, as a general rule, attempt to reduce cognitive strain (Bruner, Goodnow, and Austin 1956; Bruner 1957; Hogarth 1987). This is evidenced by the use of heuristics in decision making (Tversky and Kahneman 1974). Heuristic processes are often referred to as rules, tricks, or procedures people use in order to reduce mental effort (Hogarth 1987). Payne (1976a) defines heuristics as procedures used by individuals which sacrifice the certainty of a correct judgment for increased efficiency in the process. Tversky and Kahneman (1974) point out that while heuristics may be quite useful, they may sometimes lead to severe and systematic errors.

Rather than make tradeoffs between <u>all</u> product alternatives and attributes, consumers apply decision rules which result in decisions being made without a complete search for all the relevant information of a decision task (Tversky 1972). Additionally, the more complex a decision task is, the smaller the percentage of investigated aspects (Svenson 1979). Such decision rules are well documented in the information processing literature (Bettman 1979; Svenson 1979). In addition to the desire to economize on information processing effort, consumers may also use heuristics as a result of inherent cognitive limitations (Bettman 1979; Newell and Simon 1972).

Heuristics research has understandably led to the emerging perspective by some consumer behavior researchers that even for high involvement or important products, consumers often do not engage in an extended or extensive decision making process (Newman 1977; Kassarjian 1978; Olshavsky and Granbois 1979; Formisano, Olshavsky and Tapp 1982; Rosen and Olshavsky 1987). Howard and Sheth (1969) and Howard (1977) theorized that consumers with no prior knowledge would engage in extensive problem solving prior to the purchase if the level of risk associated with the purchase was high. Nevertheless, in the case of parents selecting a physician for their children, Stewart et. al. (1985) found "little systematic search activity among consumers for this high involvement task" (p. 252). Another

explanation for the general lack of "active reasoning and problem solving" in some cases may be due to the perceived lack of differentiation among products or service providers (Engel, Blackwell, Miniard 1990).

A number of studies specific to professional services (reviewed later), reveal that the consumer may simply let someone else such as a friend or co-worker make the decision for them, particularly if the decision to be made requires extensive cognitive effort such as comparing complex alternatives for which little information is available. This perspective has alternately been called "non-choice behavior" (Olshavsky and Granbois 1979), "non-decision making behavior" (Formisano, Olshavsky and Tapp 1982), or "subcontracted decision behavior" (Rosen and Olshavsky 1987). Consequently, information search, alternative evaluation, and choice, are believed to be significantly abbreviated in instances where subcontracting takes place.

## Hybrid Subcontracting Models

A hybrid model of decision making suggests that a decision is likely to be partially own-based (i.e. traditional internal brand or attribute processing without outside personal recommendations) and partially subcontracted (Olshavsky and Granbois 1979). Rosen and Olshavsky (1987) found support for two such hybrid models: "recommendation forms evoked set" (RFES) and "recommendation

forms standard" (RFS). In the case of RFES, the consumer subcontracts part of the decision by receiving a reduced set (i.e. the evoked set) of alternatives which the decision maker then uses in an "own-based" decision process. In the case of RFS, the consumer subcontracts part of the decision and receives a recommendation as to certain desirable standards (e.g. certified) on which to base a decision. At this stage, the consumer then enters into an own-based decision process and ultimately makes a choice.

The hybrid models have the appeal of creating a broader theoretical framework of contingent processing by directly incorporating subcontracting behavior as the first step in a decision process. Consumers are seen as adapting to the decision requirements (Bettman 1988). After the initial recommendation, the researcher can examine additional processing via various process tracing methodologies such as information boards, and more recently, computer terminals which are helpful in evaluating search behavior (Brucks 1985; Rosen and Olshavsky 1987).

Hybrid models do offer an additional explanation of how subcontracted decision making can be combined with own-based decision making. However, it would appear, as Olshavsky and Granbois (1979) initially suggested, that the type of decision process followed is dependent on the type of product.

It is proposed in the present research, and empirically

supported elsewhere, that subcontracted decision making dominates decisions regarding professional services (Feldman and Spencer 1965; Orsini 1982; Crane and Lynch 1988; King and Haefner 1988). Therefore, since the own-based component of hybrid models is less applicable for professional services, hybrid and contingency models of information processing are beyond the scope of this research.

## Informal Marketing Communication

Subcontracted decision making approaches recommendation-based behavior from a decision making perspective. A similar yet conceptually different perspective is to investigate recommendation-based behavior from a communication perspective. The central theme of this latter approach is word-of-mouth (WOM) communication. WOM is often referred to as informal marketing communication as opposed to formal marketing communication such as advertising and personal selling (Reingen and Kernan 1986). Studies which fall under the rubric of WOM are briefly reviewed here as they relate to the present research.

In an early study, Whyte (1954) concluded that the diffusion of air conditioners could be explained by a network of neighbors exchanging information. Katz and Lazarsfeld (1955) found that informal communication was the most important source of influence for food and household products. Engel, Blackwell, and Kegerreis (1969) found that

42.9% of those adopting an automotive diagnostic center used friends, relatives, or neighbors as the most influential communication source. Finally, Arndt (1967) found that for a new food product, in a married students' apartment complex, exposure to favorable WOM communication increased the probability of purchase while unfavorable comments decreased the probability of purchase.

These early studies focused on the role of WOM in the diffusion of new products or services. Richins (1983), however, found negative WOM to be a consequence of dissatisfaction. In the most recent WOM research, there is an attempt to capture the social structural context within which interpersonal communication takes place. As such, there is a greater emphasis on using a network analysis approach to understand information flows (Reingen and Kernan 1986; Brown and Reingen 1987; Bristol 1989). This type of analysis, which traces the flow of communication from whom and to whom within a group, is understandably wrought with difficult data collection problems.

Reingen and Kernan (1986) confirmed two hypotheses using this approach. First, when a consumer has access to multiple potential sources for a referral, the stronger the tie (i.e. the closer the relationship) with the personal sources, the more likely they are to be activated. Secondly, when a consumer belongs to a subgroup (i.e. smaller groups with similar statuses) such that any tie

among its members is on a potential path for referral flow, the stronger the tie with a group member, the more likely that tie is to be activated for the referral flow.

Brown and Reingen (1987) investigated the effects of the tie-strength and degree of homophily in WOM referral behavior. Tie-strength is defined as strong if the sender is a "relative, friend, or neighbor." Tie-strength is defined as weak, however, if the sender is merely an acquaintance or a neighbor who is primarily an acquaintance. Homophilous ties are those where standard demographic variables of the sender and receiver match such as occupation, education, age, and sex. Brown and Reingen (1987) found that while strong ties and more homophilous ties are likely to be activated for referral flow, active information seeking (i.e. initiating the conversation to obtain information) is more likely to occur from weak-tie sources of referrals. This last finding was in direct contrast to their hypothesized expectations. One conclusion the authors make is that weak ties are more conducive to the flow of <u>information</u>, whereas strong ties are more conducive to influence. Thus, the consumer intent on soliciting the most useful information would be expected to seek out weak tie sources.

In related research, Reingen and Kernan (1986) found that most (76%) of the referrals for piano instructors were solicited while the remaining referrals were serendipitous

(e.g. came up in conversation). In the case of physician and dentist referral, Crane and Lynch (1988) confirm this finding in a health care setting where patients typically make referrals only if asked to do so. As such it is expected that within the health care setting, most referrals are actually solicited rather than casually coming up in conversation.

It is expected here that prior knowledge about the characteristics of the service plays a role in affecting the amount and type of sources solicited. That is, the highly knowledgable consumer will recognize the benefits of going beyond strong ties (friends, relatives, and neighbors) to seek more knowledgeable sources likely to be found in a weak-tie (e.g. an acquaintance with medical training). Thus, WOM research gives theoretical support to explaining subcontracting behavior. However, it should be noted that for a physician or other health care professional, it is likely that a strong-tie source would consist of fellow health care professionals thus perhaps mitigating the need to seek out more knowledgeable weak ties.

In the context of car buying, Bell (1967) introduced the concept of "purchase pals." Most consumers (76%) were found to be high or moderate users of purchase pals. Purchase pals offer advice regarding negotiation techniques with the salesperson. Purchase pals were divided into four groups: spouse, close relative, close friend, and

acquaintance or friend. Bell found that those high in "general self-confidence" but low in "specific self confidence" (i.e. within the product category), tended to use an acquaintance or friend for a purchase pal while those low in general self confidence and low in specific self confidence tended to use a close friend. Thus, as general self-confidence increases, the consumer is more likely to obtain recommendations from a larger and more diverse source set.

In this context, Brucks (1985) found that subjective knowledge (reviewed later) level can be a surrogate indicator of self-confidence. The person seeking a recommendation from a set of sources which are more likely to contain knowledgeable persons (i.e. "acquaintances or friends" as opposed to "close friends") may really be demonstrating more actual (i.e. objective) knowledge of the product category since such a perspective requires specific domain knowledge for the consumer to be aware of the fact that they are in their own minds not very knowledgeable (Miyake and Norman 1979). This suggests that more knowledgeable consumers will seek out other highly knowledgeable persons from whom to solicit a recommendation.

#### Subcontracting in Professional Services

The professional service is one of the most difficult types of services to evaluate due to the specialized

training and knowledge base required in the performance of the service. In addition, information for such services is most limited (Reade and Ratzen 1989). In this context, Shostack (1987) describes professional services as being highly complex (i.e. a high number and level of intricacy of the steps required to perform the task) and highly divergent (i.e. a low level of standardization).

The professional service being provided is often primarily a mental activity (e.g. making a medical diagnosis, planning a legal defense strategy, or offering psychological guidance). This adds to the inherent complexity and subsequent problems consumers encounter in evaluation of such services.

Professional services have also been described as having "credence" qualities (Darby and Karni 1973; Zeithaml 1981). Credence qualities are those characteristics of the product or service which make it difficult or impossible for the consumer to assess utility even after experiencing the product (i.e. after purchase and consumption). The concept of credence qualities was introduced by economists Darby and Karni (1973) as a supplement to Nelson's (1970) dichotomous product classification scheme consisting of products having "search" qualities and those having "experience" qualities. Search qualities enable the consumer to determine the utility of the product before purchase such as inspecting an article of clothing to check for the desired color, fabric, and so on. Experience products, however, force the consumer to first experience the product before utility can be assessed such as with a haircut. While this credenceexperiential-search conceptualization is often cited, little empirical evidence exists to verify these claims. An exception, however, is a study which found that for credence quality services (e.g. professional services), consumers attached more importance to WOM communication than for experience quality services (Orsini 1988).

While there is still limited empirical research investigating consumer decision making in the context of professional services, the extant studies agree on the dominance of a subcontracted decision process (please see Table 1). In one of the earliest contributions in this area, Feldman and Spencer (1965), found that 77% of new members to a community selected a physician based solely on a recommendation. More recent studies confirm this high percentage, yet all the studies generally suffer from a lack of explanatory power which considers the antecedent variables affecting such behavior. As explained in detail later, the present study attempts to offer explanations to these rather consistent findings in the literature by investigating the role of prior knowledge and task complexity on subcontracting behaviors.

Kuehl and Ford (1977) used an experiment to assess the impact of information source, practitioner attributes, and

fee level on behavioral intentions and attitudes toward medical and legal professionals. They found that their results were generally consistent with the findings of Spencer and Feldman (1965) that traditional usage and influence of personal information sources dominate consumer decision-making processes for (in this case) physicians and lawyers.

Glassman and Glassman (1981) found that 60% of women chose an obstetrician based on a recommendation. This percentage would actually be much higher however since 9.5% also mentioned that they chose this obstetrician because they had used him or her with the previous baby. Thus, the true (i.e. greater) extent of subcontracting is masked by such responses. Swartz and Stephens (1983) conducted a convenience sample of 120 newcomer residents (i.e less than 2 years in residence to ensure likelihood of recent physician search and selection), aged 55 and older (to increase the likelihood that a physician had been sought after). They found that 59% had selected a physician after arrival. However, it is noted that individuals with referrals to a specific physician prior to moving to the city were not included in this group. Consequently, the true subcontracting percentage would likely be higher than reported. Nevertheless, of those who selected physicians within the first two years after arrival, 75% used "personal sources."
Author(s)	Service Type	Percent Subcon- tracting	Number of Sources	Type of Source
Feldman & Spencer (1965)	P	77%	NA	19.5%-PPS 80.5%-PNPS
Kuehl & Ford (1977)	P, L	"personal sources dominate"	NA	PPS/PNPS*
Glassman & Glassman (198)	0 L)	60%	NA	23%-PPS 77%-PNPS
Swartz & Stephens (1983)	Р	75%	60%-1 source 34%-2 source 6%-3 source	s na S
Stewart, et. al. (1985)	₽E, GP & P	"most"	82%-1 source 18%-2 or 3 source	na S
King and Haefner (1988)	P )	93 <b>%</b>	63%-1 source 24%-2 source 8%-3 source 5%-4 or mor	e NA S S e
<b>Crane &amp;</b> Lynch (1988)	P, D	94% mentionin	NA g	NA
Key: * = Source ( D = Dentists FP = Family D GP = General L = Lawyers NA = not ava: O = Obstetr: P = Physicia PE = Pediatr: PPS = "Persona the resp qualific PNPS= "Persona	effect si Practitio Practiti ilable ician ans icians al Profes pondent p cations o al Non-Pr	gnificantly a ners oners sional Source erceived as p r background, ofessional So	t .05 (s)": those p ossessing som e.g., doctor urce(s)": per	ersons whom e medical s or nurses. sons
without neighboi	medical rs, and c	training or b o-workers.	ackground, e.	g. friends,

Table 1Summary of Studies on Subcontracting<br/>for Professional Services

Stewart, et. al. (1985) conclude that the prominent selection heuristic appears to be advice of friends, relatives, or other health care providers. Swartz and Stephens (1983) found that 75% of consumers chose a physician based on a recommendation. King and Haefner (1988) found that 93% of those selecting a physician relied on a personal recommendation. Finally, Crane and Lynch (1988) found that personal referral is the most important factor for selecting physicians (96% mentioning) and dentists (94% mentioning). Two issues, which are now reviewed, are the number and type of sources used in subcontracted decision making.

#### Number of Sources

Swartz and Stephens (1983) found that of those who selected physicians within the first two years after arrival, 75% used "personal sources." Of this percentage, 60% used one source, 34% used two sources, and 6% used 3 sources.

Stewart et. al. (1985) investigated parental selection of physicians for their children. In the exploratory phase of the research, they found eight source options cited by patients during open-ended interviews. However, in a later mail survey of 229 panel families with children, it was found that 82% used only one source of information with 18% using either 2 or 3 sources. They conclude that there is

little systematic search activity among consumers for this high involvement task. However, the authors do suggest that since the study was not limited to newcomers in the community, the passage of time for some respondents may have reflected recall of only salient sources.

In a study investigating consumer selection of physicians, King and Haefner (1988) found that of the 93% who based the selection of a physician on a recommendation, 62.6% used only one personal information source, 24.1% used two sources, 8.3% used three sources, and 5% used four or more sources. The authors suggest that perhaps consumers feel they get adequate information from the source(s) consulted, or perhaps they were dissatisfied with or unable to use the information received from earlier sources. We now turn to the issue related to the type of source used in this context.

# Type of Source

Feldman and Spencer (1965) found two basic types of information sources for the selection of a physician in a sample of 182 newcomers to a midwestern community: nonpersonal and personal. About 23% of the sample relied on nonpersonal sources such as self-awareness of an office location (e.g. drove by on the way to work) or telephone directory information. The remaining 77% relied on personal sources. This percentage is consistent with the overall

high percentage of subcontracting decision behavior for professional services. However, Feldman and Spencer (1965) further divided these personal sources into two groups: professional sources and nonprofessional sources. Professional sources were "those persons whom the respondent perceived as possessing some unusual medical qualifications or accrediting ability" (e.g. doctor, nurse, or medical society member). In contrast, nonprofessional sources consisted of "persons without medical training or background" (p. 448) and tended to be friends, neighbors, and co-workers.

Feldman and Spencer (1965) found that 19.5% of the newcomers using personal sources used professional sources (i.e. 15% / 77% = 19.5%) while 80.5% (i.e. 62% / 77% =80.5%) used nonprofessional sources. In addition, this group using the professional sources of information were also significantly different (alpha = .05) from those who used <u>nonprofessional sources</u>) in the following characteristics: they tended to be older (over 35), were positioned in the higher end of the socioeconomic spectrum, and had a greater than average number of children. In contrast, the people using a nonprofessional source showed the following significant differences (alpha = .05): they tended to be younger and were positioned in the middle of the socioeconomic spectrum.

Feldman and Spencer's (1965) description of those

choosing personal professional sources are consistent with what, on the face of it, would appear to be a more knowledgeable health care consumer (i.e. older, more children, and high socio-economic status).

Kuehl and Ford (1977) investigated the information source effect in a direct mail campaign for a physician (and a lawyer). The three different levels manipulated include: 1) a nonpersonal direct mail promotional message, 2) a nonpersonal direct mail promotional message supplemented with a recommendation from a friend, and 3) a nonpersonal direct mail promotional message supplemented with a recommendation from a friend and a referral from another professional. Thus, Kuehl and Ford (1977) acknowledge the Feldman and Spencer (1965) source distinction between nonprofessional sources (e.g. friends and neighbors) and professional sources (e.g. another physician or nurse). They found that alternative sources of information significantly affect the behavioral intentions of consumers. For both lawyers and physicians, a significant monotonic relationship was found where letter, letter and personal/nonprofessional, and finally, letter and personal/nonprofessional and personal/professional sources were available successively resulted in an increased intention to use that professional.

Glassman and Glassman (1981) investigated the selection of an obstetrician by women who had recently given birth.

They found that of the 60% (209/346) who specifically mentioned a personal recommendation, 77% (161/209) were recommended by a friend or relative while 23% (48/209) were recommended by a nurse. However, Glassman and Glassman (1981) noted that the question "how did you happen to select Dr. \_\_\_\_?", generated 344 responses from the sample of 286 women. For example, "he was my gynecologist before I got pregant" (9.5%=33/346) and "he delivered my other child" (4.9\$=17/346) do not enable us to measure how the initial selection took place. However, it is a reasonable assumption (as noted earlier) that the number of selections based on a recommendation would be higher than the 60% cited if additional probes regarding initial selection had been made. While the overall rate of subcontracting reported by Glassman & Glassman (1981) would increase in this case, it could be assumed that the expert/nonexpert source ratio may hold relatively stable. Thus, the expert versus nonexpert recommendation sources are quite consistent between Feldman and Spencer (1965) at 19.5% expert sources versus 80.5% nonexpert sources and Glassman and Glassman (1981) at 23% expert sources and 77% nonexpert sources. Despite this recognition that the decision to select a particular professional service provider is predominately subcontracted, there is a significant gap in the literature as to the antecedents of such subcontracted decision making.

The preceeding sections point to quite consistent findings regarding the overall extent of subcontracting behavior, and more specifically, the number and types of personal sources used. However, we do not know why some consumers use the number of sources they do or why consumers use the type of source they do. As discussed more fully later, this dissertation investigates two antecedent variables believed to influence the number of sources used and the type of source used, namely: prior knowledge and task complexity. Given the importance of prior knowledge as an influencer of the number and type of information sources used for selecting professional service providers, we now turn to the literature in this area.

### Prior Knowledge

The concept of prior knowledge has received increased attention by consumer researchers (Brucks 1985; Sujan 1985; Alba and Hutchinson 1987; Rao and Monroe 1988; Herr 1989). In this section, prior knowledge is reviewed and aspects relevant to subcontracted decision making and service provider selection and evaluation are emphasized.

Prior knowledge has been defined in at least three conceptually different ways: experiential based knowledge, subjective knowledge, and objective knowledge. Each of these approaches is discussed along with appropriate merits and limitations.

### Experience Based Prior Knowledge

Experience based knowledge measures require that consumers list experiences with the product category (Bettman and Park 1980; Punj and Staelin 1983). Alba and Hutchinson (1987) describe the term "familiarity" in this experiential sense referring to the number of product related experiences accumulated by the consumer.

In 1981, Park and Lessig noted that there is no commonly accepted (or even proposed) conceptual definition of product familiarity. To overcome this obstacle, they used the following three prior behavioral considerations to

measure a subject's level of familiarity with microwave ovens: search experience, usage experience, and ownership. Consequently, the low familiar group met none of these criteria while high familiar subjects met all the criteria. Those determined to have moderate familiarity had search experience and/or usage experience but did not own a microwave oven. In the context of professional services, it is apparent that no ownership can occur. In addition, as previously discussed, search experience is primarily limited to receiving recommendations by other consumers. Nonpersonal sources of information such as brochures, advertising, and official ratings are less frequently utilized. Thus, usage experience is the only subjective knowledge measure which could reasonably be applied to the professional services realm.

A limitation with the experiential approach to conceptualizing prior knowledge is that product use is not necessarily directly related to knowledge of the product category or domain (Spreng and Olshavsky 1989, Rosen and Olshavsky 1987).

# Subjective Prior Knowledge

Subjective knowledge has been measured by asking subjects to make a global judgment of their product domain knowledge compared to some population (Johnson and Russo 1984; Brucks 1985). Spreng and Olshavsky (1989) point out

two fundamental problems with subjective measures of knowledge. First, how one perceives the anchor or point of comparison (e.g. "the rest of the population") will have an impact on the response. Second, determining the relevant domain of the product may be problematic. For example, does "knowledge of automobiles" in the case of Johnson and Russo (1984) mean technical engine knowledge or driving knowledge? Additionally, Brucks (1985) suggests that subjective knowledge differs from objective knowledge when people are over- or under-confident about their actual knowledge level.

# Objective Prior Knowledge

Objective knowledge is becoming the preferred measure of prior knowledge according to a number of consumer researchers (Sujan 1985; Brucks 1985; Rao and Monroe 1988; Spreng and Olshavsky 1989). In this approach, a short (typically 10-15 item) objective test is given to the consumer which measures the content and organization of knowledge held in memory.

Despite the trend toward objective measures of consumer prior knowledge, determining the composition of objective knowledge continues to be a source of research interest. Bloom et. al (1956) developed a taxonomy of knowledge in the context of educational objectives. They outlined three basic components, 1) knowledge of specifics (e.g. terminology and specific facts), 2) knowledge of the ways

and means of dealing with specifics (e.g. conventional usages, trends, classifications, criteria, and problem solving approaches, and 3) knowledge of universals and abstractions in a field (e.g. principles and theories). Brucks (1986) adopted a marketing specific typology of knowledge content based on the Bloom et. al. (1956) taxonomy, including: 1) terminology, 2) product attributes, 3) general attribute evaluation, 4) specific attribute evaluation, 5) general product usage, 6) personal product usage, 7) brand facts, and 8) purchasing/decision making procedures.

In a comprehensive review of consumer expertise (i.e. objective knowledge), Alba and Hutchinson (1987) isolated five qualitative aspects related to increases in familiarity: 1) repetition improves task performance by reducing cognitive effort, 2) cognitive structures become more refined and complete, 3) the ability to analyze information and isolate that which is most important and task relevant increases, 4) the ability to elaborate from given information to generating accurate knowledge not given increases, and 5) the ability to remember product information improves.

Consequently, differential levels of consumer knowledge have been shown to affect consumer decision processes in a variety of ways. Hayes-Roth (1977) and Marks and Olson (1981) contend that increased knowledge results in a more

developed knowledge structure or "schema." Greater knowledge also results in richer evaluative criteria and rules utilized in consumer judgment. In this context, the Engel, Kollat, and Miniard (1990) model of consumer behavior recognizes perceived product differentiation as a determinant of extended problem solving. Accordingly, as products are increasingly viewed as different from each other, more search is likely to take place. In this context, high prior knowledge is expected to influence perceived product differentiation. It should be noted, however, that a high level of prior knowledge does not imply that the person has a better memory. Chase and Simon (1973) found, in a now classic article, that chess masters could remember no more than novices about piece location when chess pieces were placed on the board in a random fashion rather than in a game format.

Thus, in a professional services context, higher knowledge consumers are expected to generally believe that physicians are not homogeneous in the services they provide (e.g. "not all doctors are the same"). On the other hand, less knowledgeable consumers are expected to generally believe that physicians are quite homogenous in terms of the services they provide implying low differentiation (e.g. "well, they all went to medical school"). Further, such

beliefs are expected to influence the extent and type of search as well as evaluative judgments related to this search.

# Prior Knowledge and External Search

The term "prior knowledge" is commonly used to refer to information accessible from memory. It is believed that such internal information is accessed before external search occurs. A great deal of recent research has investigated the extent to which external search is affected by differential levels of prior knowledge. However, the findings have been mixed.

Johnson and Russo (1984) and Brucks (1985) found prior knowledge to be positively related to 1) the ability to process new information and 2) the efficiency with which information is processed. This "facilitating" or "enrichment hypothesis" (Johnson and Russo 1984) holds that more complete cognitive schemas will facilitate search rather than limit search. This dissertation research adopts this theoretical perspective of the enrichment hypothesis.

Brucks and Schurr (1990) hypothesized that increased product attribute range knowledge for consumers confronted with the task of getting the best deal on a computer would result in 1) more attributes considered, and 2) more dealers consulted. Interactive computer terminals were used in the experiment to simulate consumer search patterns. However,

these hypotheses, which were consistent with the facilitating effect of prior knowledge on search (Brucks 1985; Johnson and Russo 1984), were not supported. By way of explanation, Brucks and Schurr (1990) conclude that "the positive effect of product class knowledge on the number of attributes searched appears to require a purchase environment that lacks a list of attributes and/or aspects of class knowledge other than attribute value ranges" (p. 415). In terms of the selection of a physician, since there is typically no set list of attributes or attribute ranges, it is expected that a facilitating effect (i.e. enrichment hypothesis) is consequently to be expected for higher knowledge consumers.

A negative relationship has also been found by a number of researchers where increased levels of knowledge theoretically would discourage external search since the required knowledge is already in the long term memory store and any cost of search would exceed the benefit (Moore and Lehmann, 1980; Bettman and Park, 1980). This perspective is perhaps most appropriate where a consumer may try different brands over many years for a consumer packaged good. Thus, it is expected that the consumer would follow the classic extended/limited/routine problem solving pattern where search would progressively decrease as the problem solving task would recur and become consequently more routine. Assuming brand quality does not change significantly over

time, the consumer can then be confident that once the initial search is done, she would no longer need to engage in extensive external searching of brands within a particular product class. However, when the consumer moves to a new community, for example, a favorite "brand" of physician is not simply on the shelf in the local grocery store as would be the case for many packaged goods. Similarly, if the physician would retire or unexpectedly die, the consumer would be forced to select another physician. Such rather common scenarios (e.g. the consumer moving or a physician retiring) within the context of professional services demonstrate the need for the consumer to search once more. In addition, the need to solve such a problem is less frequent than for many other consumption problems, implying that physician selection would likely never become a "routine" task. Consequently, while the negative relationship between prior knowledge and search may apply to some product categories, it seems less applicable to the area of professional services.

The "inverted U hypothesis" is perhaps the most controversial finding (Bettman and Park 1980; Johnson and Russo 1984; Brucks 1985). This hypothesis states that external search will be low at low <u>and</u> high levels of prior knowledge. However, external search will be high at moderate levels of prior knowledge. Consumers with low prior knowledge find processing of new information too

difficult. A moderate level of prior knowledge, however, facilitates the processing of new information. Finally, highly knowledgeable consumers will be less motivated to search. Thus, the inverted U hypothesis is positive at first and then becomes negative regarding the link between knowledge and search.

An important distinction found by Johnson and Russo (1984) which partially explains these conflicting findings is based on the judgment task versus choice task distinction. Judgment tasks were linked with the use of the enrichment hypothesis while choice tasks were linked with the inverted U hypothesis. It is maintained in the context of the present research that the enrichment hypothesis is the most likely explanation, since, given the dominance of subcontracted decision behavior where the selection decision is basically given over to someone else, what remains is the judgment about the professional service provider.

The enrichment hypothesis is expected for additional essentially intuitive explanations. In the case of an existing relationship with a professional service provider, it is expected that the more knowledgeable consumer would be more likely to seek (i.e. search) out a "second opinion." Obtaining a second opinion for the high knowledge consumer would perhaps be rather routine. However, low knowledge consumers may either be unaware of this option or perhaps such an action may seem impertinent behavior in view of the

general high esteem most health care professionals are held in our society. Thus, the high knowledge consumer would realize that there are likely to be conflicting views about appropriate measures to be taken in any given problem situation. Also, the high knowledge consumer is likely to appreciate the idea that even recognized experts in a professional field may recommend conflicting yet equally "correct" solution strategies. Thus, this positive relationship of seeking out more information as knowledge increases is consistent with the enrichment hypothesis.

Based on this evidence, the following two hypotheses are established concerning the role of prior knowledge in the subcontracting process. As previously noted, the number of sources utilized and the type of sources utilized are two aspects of subcontracting which have been empirically demonstrated. Consequently, it is hypothesized that prior knowledge will affect the number and type of sources utilized in the subcontracting process related to the selection of a professional service provider.

H1: Objective prior knowledge is directly related to the number of personal recommendation sources from whom information is solicited in the service provider selection process.



H2: Objective prior knowledge is directly related to the level of expertise of personal recommendation sources from whom information is solicited in the service provider selection process.



Given the importance of task complexity on the selection and evaluation process of the professional service provider, we now turn to the literature in this area.

### Task Complexity

### Dimensions of Task Complexity

In their theory of human problem solving, Newell and Simon (1972) proposed that the task environment "determines to a large extent the behavior of the problem solver, independently of the detailed internal structure of his information processing system" (p. 788). As the complexity of a decision situation increases, it is expected that the decision maker will adopt cognitive strategies which reduce strain (Lussier and Olshavsky 1974; Payne 1976; Olshavsky 1979). For example, as task complexity increases, the percentage of information utilized to make the decision decreases (Svenson 1979).

Information processing research has typically approached the manipulation of task complexity in two basic ways: 1) increasing the number of product alternatives, and/or 2) increasing the number of product attributes (Payne 1976, 1982; Kim and Khoury 1987; Paquette and Kida 1988). This approach to task complexity corresponds with the information load perspective which is concerned with the sheer amount of information. In this context, Jacoby, Speller, and Kohn (1974) found that while subjects felt better with more packaging information, they generally made poorer purchase decisions. Other findings are quite consistent that as alternatives and/or attributes increase, the consumer will 1) attend to a smaller percentage of the available information (Svensonn 1979), and 2) will engage in contingent processing (Payne 1982). For example, Payne found that as task complexity increased, consumers utilized the elimination by aspects processing model over a more taxing compensatory model in an attempt to reduce the amount of information processing involved.

Wright (1974) suggested, however, that complexity could be varied by changing time availability. Howard (1977) noted that several factors affect processability including: simplicity of the language used, abstractness, and redundancy. Olshavsky and Smith (1980) noted that a difficult task environment could be where the product or service is inherently complex. In addition, Olshavsky (1979) suggested that taking attribute complexity into account, rather than simply increasing the number of attributes, is worthy of further study, yet this perspective has generally been ignored in studies utilizing the task complexity construct.

Recently, Brucks and Schurr (1990) found that if attributes were bargainable rather than fixed, the task was perceived as more complex. Subjects were asked to rate how overwhelmed they felt by the amount of information and the type of information in the bargaining task. Subjects felt more overwhelmed by the amount and type of information in

the bargaining condition than in the non-bargaining condition. More specifically, the following hypotheses were confirmed for the more complex task: 1) fewer initial offer inquiries were made, 2) less time was devoted to information search, 3) fewer dealers were consulted, and 4) fewer attributes were considered. Finally, an interesting finding by Brucks and Schurr was a significant interaction (p < .10)between being overwhelmed by type of information and the low knowledge condition suggesting that knowledge may decrease perceived task complexity. As noted earlier, Shostack (1987) points out that professional services such as those provided by a physician, architect, or consultant are highly complex and highly divergent. Each service encounter involves a considerable amount of judgment, discretion, assimilation of new data, and making situational adaptations. In this context, complexity is defined as the number and intricacy of the steps required to perform the task while divergence refers to the lack of standardization. Thus, tasks with differential levels of complexity could be ranked by consumers or health care professionals. For example, most would agree that a routine physical exam would be less complex than a kidney transplant.

Ratchford and Andreason (1973) investigated the "breadth of information" sought by consumers for seven different decision categories (bank, furniture, appliances, repairs, hairdresser, general practitioner, and a

pediatrician). In an effort to control for the effects of past experience, respondents were given the scenario that they had just moved to a new community where they had never lived before and needed to make these decisions. Ratchford and Andreason (1973) found these decisions to vary significantly on four factors: importance, complexity, subjectivity, and information availability. In particular, the general practitioner and the pediatrician decisions were found to be perceived as the most important and complex, but as having relatively little available information. While decisions for a general practitioner and pediatrician were both found to be complex compared to the other five decisions (noted above), the decision regarding the pediatrician (i.e. a specialist) was regarded as slightly more complex than for the general practitioner. This suggests that a one component for the manipulation of complexity may be centered around a patient needing to select a specialized professional as opposed to the general practitioner. Consequently, it would be expected that given the scenario where a specialist is required (and perhaps additionally described in more technical language and with a selection time constraint), a more complex task condition would be perceived.

Brucks (1985) manipulated the complexity of a usage situation in an experiment by randomly giving subjects one of two descriptions (i.e. scenarios) of a person and her

sewing needs and were told to choose the best model of sewing machine for that person. This can be construed as a "role taking" form of the scenario method where the subject is asked to imagine what another would do in a given situation (Eroglu 1987). Half of the subjects were given the description of the frequent and expert sewer while the other half were given the description of the infrequent sewer with simple needs. Brucks (1985) found that in a complex usage situation, objective knowledge was inversely related to the degree of inappropriate search (p < .05).

# Related Research

In social psychology, Bodenhausen and Lichtenstein (1987) found that when subjects had the complex processing objective of determining the guilt of a defendant, they were likely to adopt a heuristic strategy of social stereotyping as a way of simplifying the judgment to accomplish their goal.

Archer (1962) investigated the ability of subjects to identify concepts given differential levels of obviousness for relevant and irrelevant cues. He found that the optimum conditions which facilitate concept identification are when the obviousness of relevant information is maximized and the obviousness of irrelevant information is minimized. The implication of Archer's research suggests that when both relevant and irrelevant cues are available, judgments are more difficult. Consequently, the heuristics used may result in poor judgments when irrelevant cues are used as evaluative criteria in the judgment process. However. Paquette and Kida (1988) found that complex financial decisions could be made in less time with no loss of accuracy when trained financial analysts used fewer cues for analysis of the financial health of a company. The cues utilized in their experiment, however, were admittedly all high in predictive validity. Thus, the simplifying heuristic of utilizing fewer cues was predictably more efficient than utilizing more cues. In industrial buying, researchers have used two approaches to study the construct of complexity: complexity of the purchase situation and complexity of the product (McQuiston 1989).

Miyake and Norman (1979) found that knowledge increases the number of questions asked in a complex context (affirming the enrichment hypothesis) while the number of questions decreases in a simple context. The complex context also requires specific domain knowledge to be understood.

Consistent with the focus of this research on subcontracting behavior in the context of professaional services, it is hypothesized that task complexity will affect the subcontracting process. Consequently, this will affect the number and type of recommendation sources sought by the consumer.

To summarize, task complexity is a multifaceted construct which can be operationalized in a variety of ways. Generally, as task complexity increases, it is expected that the consumer will attempt to reduce the cognitive strain typified by complex tasks. Thus, search will be more limited when the task is more complex. Finally, from a WOM perspective, as task complexity increases, overall selfconfidence in making a good judgment decreases which is likely to result in strong-tie recommendation solicitation which in turn is more likely to be a non-expert source.

Based on this evidence the following two hypotheses are established concerning the impact of task complexity on the number and type of sources utilized in the subcontracting process related to the selection of a professional service provider.

H3: Task complexity is inversely related to the number of personal recommendation sources from whom information is solicited in the service provider selection process.



H4: Task Complexity is inversely related to the level of expertise of personal recommendation sources from whom information is solicited in the service provider selection process.



#### Cue Choice in Evaluative Judgments

A judgment involves making an evaluation of an alternative. Choice, by contrast, involves selecting one alternative from a set (Johnson and Russo 1984). One focus of the current research is on the evaluation of the professional service provider within the context of the subcontracted decision. In this context, it is expected that consumers solicit two types of information from a recommendation source: the name of a provider and some type of evaluation about the provider. At issue is which cues will be solicited and subsequently used to evaluate the professional service provider about whom the recommendation source is providing information. Crane and Lynch (1988), for example, found that courtesy and competency of a physican were the two most important factors for consumers. When asked what they most relied on to assess these and other important factors, the person(s) making the recommendation was ranked as the most important cue.

#### Definition of Cue

The term "cue" in psychology generally refers to a perceptual stimulus. An early note in the American Journal of Psychology provides an in depth review of the term dating to the nineteenth century (Harper and Boring 1948). Goodnow, Bruner, and Austin (1956) refer to cues as "defining attributes" which may vary discretely or continuously and may be an intrinsic part of the product such as weight or may exist in the perceiver's mind such as the beauty of an object. Slovic and MacPhillamy (1974) use attribute, dimension, and cue interchangeably to refer to stimuli.

Cox (1962) introduced the notion of an "array of cues" which are presented to the consumer such as price, color, scent, and taste. This conceptualization is well accepted in the marketing literature (Olson 1977; Olson and Jacoby 1972; Szybillo and Jacoby 1974). Schellinck (1980) defined a cue as "a characteristic, event, quality or object, external to a person, that is encoded and used to categorize a stimulus object." Thus, cues are stimuli which enable consumers to make evaluations about the service. It should be noted that Howard and Sheth's (1969) "choice criteria"

and Engel, Kollat, and Blackwell's (1968) "evaluative criteria" are often used interchangably with cues.

#### Cue Taxonomies

Cox (1962) introduced the idea of assigning predictive and confidence values to cues. The predictive value of a cue is "the probability with which a cue seems associated with (i.e., predicts) a specific product attribute" (p. 416). The confidence value is the degree of confidence the consumer has in evaluating the validity of a cue. For example, if the consumer is certain that a specific cue is a valid indicator of quality, then that consumer would have a high confidence value for that cue. Thus, the predictive value is ostensibly an objective measure, while the confidence value is a subjective perception of the cue. Thus, confidence value is similar conceptually to subjective prior knowledge.

Cues valued more highly by the consumer will have a higher probability of being chosen by the consumer. Cox (1962) states that "unless a consumer feels sufficiently confident about evaluating a cue, she is not likely to use it - no matter how high its predictive value" (p. 419). Overall, Cox concluded that 1) the predictive and confidence values can vary independently, 2) predictive value is the basic force in determining information value, and 3) internal cues may be better predictors of product quality

than external cues.

Olson (1972) built on Cox's belief that internal cues may be better predictors of product quality than external cues by classifying cues as intrinsic (i.e. Cox's "internal" cue) or extrinsic (i.e. Cox's "external" cue). An intrinsic cue is very strictly defined as "a product attribute which cannot be changed or experimentally manipulated without also changing the <u>physical characteristics</u> of the product itself: (e.g. type of fiber in a rug, color of bread, or taste of coffee). In contrast, extrinsic cues are "product-related attributes which are not part of the physical product" (e.g. price and brand name). Olson (1972; 1977) empirically demonstrated, as Cox had theorized, that consumers believe intrinsic cues have higher predictive value than extrinsic cues.

This early work by Olson resulted in many researchers using the intrinsic/extrinsic cue taxonomy in a variety of studies to examine overall perceptions of product quality. Monroe and Krishnan (1985) review a number of studies which examine the role of price (an extrinsic cue) in quality judgments. Other extrinsic cues studied include: country of origin (Wang and Lamb 1980), packaging (McDaniel and Baker 1977), store image (Szybillo and Jacoby 1974) and warranty (Shimp and Bearden 1982). However, since a service is a performance often characterized as being intangible, an intrinsic cue, with its emphasis on the physical product, is

at odds conceptually with how services are typically defined.

Park and Lessig (1981) utilized a slightly different cue taxonomy which is less restrictive in terms of defining intrinsic cues. In their research involving microwave ovens, price and brand name were identified as nonfunctional cues, consistent with Olson's extrinsic cues. Functional cues (corresponding roughly with Olson's intrinsic cues) were described as aspects of technical product performance measures such as microwave leakage, oven capacity, and safety start.

Park and Lessig (1981) confirmed the following three hypotheses which supported an inverted U relationship in conjunction with knowledge level and cue type: 1) a decision maker at a low level of familiarity feels more confident in relying on the nonfunctional dimensions of price and brand name than in relying on functional dimensions, 2) a decision maker at a moderate level of familiarity feels less confident in relying on the nonfunctional dimensions of price and brand name than in relying on functional dimensions, and 3) a decision maker at a high level of familiarity feels as confident in relying on the nonfunctional dimensions of price and brand name as in relying on functional dimensions. Rao and Monroe (1988) found results similar to those of Park and Lessig (1981) although their focus was on the relationship of price to

perceived quality.

In the present research, it is hypothesized in the context of professional services, that the degree of prior knowledge will influence cue selection in evaluation of the service provider. Specifically, low knowledge consumers are likely to use easily verifiable cues for evaluation since they have little technical information in memory and consequently a less developed cognitive schema (Marks and Olson 1981). As consumers acquire higher levels of knowledge, their knowledge structure allows them to use the more technical cues.

### Related Research

Slovic (1972) suggests that there exists a "concreteness principle" where a decision maker tends to use information which is explicitly displayed in the stimulus object. Information not explicitly displayed or which needs to be transformed is discounted or ignored. In this context, a patient would likely use the explicitly displayed cues such as physician courtesy to a greater extent to evaluate the physician than less obvious cues such as training or credentials. Glassman and Glassman (1981) supported this principle in their research which investigated what consumers liked and did not like about the doctor they selected. It was found that both consumer likes and dislikes toward the physician centered primarily around

"easily verifiable criteria" (p. 29) such as bedside manner and kindness.

In a slight variation of the concreteness principle, Tversky and Kahneman (1974) describe a number of cognitive biases which result from judgmental heuristics. One such cognitive bias is the "availability principle" where familiar instances are easier to retrieve from memory compared to those which are unfamiliar. Thus, consumers low in prior knowledge will use the most obvious cues while experts may utilize a wider variety of cues ranging from the most obvious to the more subtle variations.

These theoretical approaches to decision heuristics are also empirically supported in the context of prior knowledge research (Park and Lessig 1981; Rao and Monroe 1988). That is, low knowledge decision makers find it easier to extrapolate product quality based on familiar and explicitly displayed cues such as price or brand name.

## Cues in Professional Services

The cue taxonomies developed and utilized by Cox (1962), Olson (1972; 1976), and Park and Lessig (1981) are useful taxonomies but are limited primarily in scope to the evaluation of goods rather than services. As previously discussed, the pervasive criteria running through these approaches emphasizes the dichotomy on properties within the physical object (i.e. internal cues, intrinsic cues and

functional cues such as color or type of fiber) as opposed to characteristics outside of the object (i.e. external cues, extrinsic cues, and nonfunctional cues such as price and brand). Perhaps these taxonomies could be stretched to fit within the framework of professional services, yet since more appropriate cue taxonomies already exist which have been empirically verified for professional services, it is reasonable to utilize them. We now turn to this discussion (also please see Table 2 for a summary of this discussion).

Ware and Snyder (1975) measured patient attitudes toward physicians on "curing" (i.e. quality) and "caring" (i.e. humaness). They concluded that these two kinds of doctor behaviors may reflect the same dimension in the mind of the consumer, namely attitudes toward the way doctors conduct themselves with patients. Neslin (1983) later corroborates this finding that curing and caring are highly related in the publics' mind.

Ben-Sira (1976) found that 1) a layman's satisfaction with the medical service and treatment offered by a general practitioner (GP) was correlated with the GP's affective behavior toward the patient, and, 2) the response by a patient to his dissatisfaction with the GP will be expressed more strongly in a solution which focuses on the affective component of dissatisfaction than on the solution which focuses on the instrumental component (e.g. physician skills

# Table 2

Summary of Cue Taxonomies for Evaluation of of a Professional Service Provider

Authors	Cue Taxonomy	Representative Items
Ware & Snyder	-curing (quality)	"modernness, thoroughness"
(1975)	-caring (humaness)	"courtesy, respect"
Ben-Sira (1976;	-instrumental behavior	"skills, treatment"
1980)	-affective behavior	"time, interest, devotion"
Glassman &	-competency	"modern"
Glassman (1981)	-kind and nice	"concerned, patient"
Swartz &	-ability	"specialist"
Stephens (1983)	-personality	"friendly, pleasant"
Neslin	-quality	"skill, experience"
(1983)	-personalness	"warmth, friendliness"
Stewart et. al.	-professional competence	"technical quality"
(1985)	-personality	"concern, interested"
Gochman, Stukenborg	-technical medical & skills	"competent, thorough"
<b>Feler</b> (1986)	-psychosocial/ interpersonal characteristics	"caring, friendly"
Crane &	-competency	NA
(1988)	CONT CEBY	
Lovdal & Pearson	-instrumental behavior	"competence, knowledge, skills"
(1303)	behavior	compassion"

and treatment offered) of dissatisfaction. Ben-Sira (1976) defined affective behavior as the "type of behavior directed by the physician toward the patient as a person rather than as a 'case'" (p. 7). More specifically, the affective behavior construct was operationalized via three measures: 1) sufficient time allocation to patient, 2) showing an interest in the patient's personal problems throughout the interaction, and 3) demonstrating devotion to the management of the problems presented.

In a later study using these same constructs of affective behavior and instrumental behavior, Ben-Sira (1980) found support for the following two hypotheses: 1) the strength of the correlation between patient's satisfaction with the medical treatment offered by a GP and their satisfaction with the GP's affective behavior will vary directly with the level of patients' concern about their health, and 2) the strength of the correlation between patients' satisfaction with the medical treatment offered by a GP and their satisfaction with the physician's affective behavior toward them will decrease as their level of education increases.

Glassman and Glassman (1981) examined the decision process a woman uses to select an obstetrician and the overall satisfaction with that decision. Within a cognitive consistency framework, they note that one would expect the decision process to culminate in the selection of "the best"

obstetrician (note: this point is confirmed in the discussion of the exploratory research). Consequently, as would be expected, different consumers utilized different criteria to come up with "the best" obstetrician. As noted earlier, most women selected their obstetrician via a recommendation.

In response to the question "what things did you like about having Dr. as your doctor?," Glassman and Glassman (1981) found the most frequent response (21%) was that he was "kind and nice." If the respondent answered "a good doctor" (15.3%), this was followed by probing questions. These probes as well as other responses found, in rank order: "anwered my questions" (11.6%), "patient" (10.3%), "concerned" (8.6%), "understanding" (7.3%), and "makes me feel at ease" (6.2%). Consequently, the authors found that competence factors were essentially unimportant both in terms of what patients like and dislike about their obstetrician. However, 2.6% did mention the fact that they like their doctor because "he uses modern methods" which could be construed as a competency based evaluation. Consistent with the "concreteness principle" discussed earlier (Slovic 1972), Glassman found that likes and dislikes women had regarding their obstetricians "centered around easily verifiable criteria" (p. 29), often lumped under the general heading of bedside manner.

Swartz and Stephens (1983) found that in their sample
of 120 newcomers to a community aged 55 and over, most respondents chose "ability" (n=34) as a special factor in their selection of a physician. "Personality" was also a factor (n=15) yet not as strong as ability. Swartz and Stephens (1983) conclude, therefore, that ability and personality are two major factors in consumer selection of physicians and dentists.

Neslin (1983) used five objectively defined features (hours of operation, central location, choice of physician, nurse practitioner, and services offered) from which consumers ranked quality, personalness, and convenience of a suburban ambulatory care clinic. Quality was defined as the completeness and effectiveness of the care received. Personalness referred to a warm, friendly approach from doctors, nurses, and other health care workers. Neslin found that consumers evaluated health care services more on personalness than quality despite quality being perceived as more important overall.

Stewart et. al (1985) asked respondents to indicate on a 5-point scale ("most important" to "not important") the impact of 15 factors which might affect their selection of their child's health care provider. The following four factors were considered to be more important than average: 1) recommendation of a friend 2) personality of the provider 3) whether provider explains properly, and 4) can get appointments quickly. Further, causes of dissatisfaction

were found to differ between those consumers using a specialist compared to those using a generalist. While both groups thought that the affective behavior of the provider was most important, consumers using a specialist (pediatrician) also attached importance to professional competence. In contrast, consumers using a generalist (family practitioner or general practitioner) were more concerned with the cost and convenience rather than competency.

Gochman, Studenborg, and Feler (1986) investigated characteristics consumers thought most descriptive of their ideal physician. It was found that respondents clearly valued psychosocial and interpersonal characteristics such as communicating and caring much more than technical medical skills. Respondents overwhelmingly indicated that the primary care physicians who are closeset to their ideal are (in rank order): 1) communicative, 2) caring, 3) unhurried, 4) competent, and 5) attentive listeners. The least ideal physician characteristics also focused on the psychosocial/interpersonal characteristics over the technical medical skills. Rank order of the top characteristics of the least ideal physican was: 1) hurried 2) doesn't care 3) arrogant 4) inattentive, and 5) kept waiting).

Crane and Lynch (1988) investigated consumer selection of physicians and dentists. In both cases, competency and

courtesy were the two most important factors. For physicians, courtesy (36%) and competence (35%) combined to form a 71% top of mind criteria (i.e. percent mentioning first). Similarly, for dentists, courtesy (38%) and competence (34%) combined to form a 72% top of mind criteria. Other top of mind criteria included reputation (12% for physicians; 8% for dentists), interpersonal skills (11% for physicians: 8% for dentists), and finally, access/availability (6% for physicians; 4% for dentists). In addition, price was mentioned for dentists (8%) but not for physicians, due likely to the fact that the study was conducted in Canada which has Universal Medical Insurance.

Finally, Lovdal and Pearson (1989) found that more consumers mentioned affective behavior (76%) than instrumental behavior (24%) as a basis for recommending a doctor to a friend. In addition, it was found that respondents had more unfavorable opinions about doctors' affective behavior than about instrumental behavior. Thus, Lovdal and Pearson (1989) adopted the instrumental behavior / affective behavior taxonomy of Ben-Sira (1976; 1983). The authors reach the interesting conclusion that since competency is generally taken for granted, caring and friendly behavior becomes the more salient dimension to evaluate the physician. As noted earlier, however, the perspective that all physicians are the same is expected to be more common for less knowledgeable consumers.

The findings reviewed here suggest that the dichotomy of cues, which generally center partly on the personality and partly on technical skills, is a well accepted empirically based phenomenon. A distinctive gap, however, in these findings is the specific attempt to determine the antecedents, or causal agents, which may help explain why some consumers may rely more heavily on one set of cues than another.

The final two hypotheses, which are set up in two parts, are established concerning the impact of prior knowledge and task complexity on the use of cues in evaluation of the professional service provider within the context of subcontracted decision behavior. The discussion then turns to the exploratory research as it relates to the establishment of the hypotheses. A conceptual model (please see Figure 1) summarizes the relationships and directionality of the variables presented.

H5a: Objective prior knowledge is directly related to the perceived importance of instrumental behavior cues sought from personal sources in the professional service provider selection process.



H5b: Objective prior knowledge is inversely related to the perceived importance of affective behavior cues sought from personal sources in the professional service provider selection process.



H6a: Task complexity is inversely related to the perceived importance of instrumental behavior cues sought from personal sources in the professional service provider selection process.



H6b: Task complexity is directly related to the perceived importance of affective behavior cues sought from personal sources in the professional service provider selection process.



# Exploratory Research

In an attempt to broaden our base of understanding and enrich the prospects of theory development relating to subcontracting decision behavior, the first stage of empirical data collection consisted of a series of four focused group interviews conducted in August and September 1989. The groups ranged in size from 7-10 and consisted primarily of full-time female office staff associated with a variety of departments and offices of a major midwestern university. The typical group member was between 25-50 years old, although ages ranged from early 20's to near retirement. Group members were personally recruited in buildings near the focused group sites for easy access during the lunch period. Each participant was identified by a first name only name card placed on the table in front of them. A pizza lunch was provided and each participant received \$10 in cash at the conclusion of the session. The discussions lasted approximately 60-70 minutes each and were audio tape recorded.

The focused groups provided an extremely valuable opportunity to gain insight into the selection and evaluation process for physicians and dentists. This exploratory research was conducted to 1) add to the conceptual understanding of subcontracting behavior, 2) identify and confirm specific cues used by consumers to

evaluate health care professionals, and finally, 3) to clarify relationships found in the literature in order to set up testable hypotheses. Given the nature of qualitative research, the findings are not generalizable, yet the main points which seemed to stand out based on the current research questions are summarized below.

- 1) It was commonly mentioned that since choosing a doctor was an important task, the best approach was to ask someone personally for a recommendation.
- 2) Using a personal recommendation from a friend or co-worker was the most common method of selecting a physician or dentist. "Friends at work" or "neighbors" was the most common source of recommendation, yet some specified seeking out the recommendation of nurses or doctors. It was common, in fact, for a number of the members of one group (who worked in the same building) to have the same physician or dentist as the result of prior recommendations.
- 3) What appeared to be more knowledgeable consumers were generally more skeptical of physicians and dentists, and consequently, these individuals thought there were often great discrepancies in the level of care a patient could receive.
- 4) Selection criteria was centered primarily on personality related cues. The following characteristics were repeatedly mentioned as important determinants of a "good" physician: sincere, caring, sense of humor, talks to you, explains things to you, cares if your're in pain, sensible, friendly, puts you at ease, and personality jives with yours.
- 5) While "competent" was an important evaluative criteria for a physician or dentist, most consumers defined competence in terms of the personality related cues. For example, in judging competency, it was common for participants to say their doctor was competent because he understood them and did not treat them as number.

- 6) Consumers rarely switch doctors or dentists. Typically, only if the current doctor died or retired, or if the consumer moved to a new city, would a new health care provider be selected.
- 7) Most felt their doctor or dentist was the best or one of the best and felt lucky to have them. However, a minority of consumers did relate harrowing experiences that either themselves or a friend or relative had with a certain doctor. In such cases a different doctor was selected, but only after typically a prolonged experience with the former doctor.
- 8) While cues such as training, redentials, experience, and the status of pending malpractice suits were all believed to be important, it was common for individuals to reluctantly admit that it would be nice to know these things, but often felt generally helpless in assessing these aspects of the physician.

A summary of the hypotheses is now presented before turning to Chapter Three. In addition, Figure 1 offers a graphic version of the hypothesized relationships and directionality for each of the variables previously reviewed.

# FIGURE 1

Conceptual Model of Hypothesized Relationships and Directionality

Independent Variables

Dependent Variables



# Summary of Hypotheses

The hypotheses presented throughout this chapter are presented here in a summary format before turning to methodological issues in the next chapter.

H1: Objective prior knowledge is directly related to the number of personal recommendation sources from whom information is solicited in the service provider selection process.



H2: Objective prior knowledge is directly related to the level of expertise of personal recommendation sources from whom information is solicited in the service provider selection process.



H3: Task complexity is inversely related to the number of personal recommendation sources from whom information is solicited in the service provider selection process.



H4: Task complexity is inversely related to the level of expertise of personal recommendation sources from whom information is solicited in the service provider selection process.



H5a: Objective prior knowledge is directly related to the perceived importance of instrumental behavior cues sought from personal sources in the professional service provider selection process.



H5b: Objective prior knowledge is inversely related to the perceived importance of affective behavior cues sought from personal sources in the professional service provider selection process.



H6a: Task complexity is inversely related to the perceived importance of instrumental behavior cues sought from personal sources in the professional service provider selection process.



H6b: Task complexity is directly related to the perceived importance of affective behavior cues sought from personal sources in the professional service provider selection process.



# CHAPTER THREE

# METHODOLOGY

This chapter describes the pretest, the measurement of the independent and dependent variables, and finally the research methodology for testing the established hypotheses.

The manipulation of the independent variables and the measures for the dependent variables is first discussed separately.

## Independent Variables

# Prior Knowledge

The focused group research found that high prior knowledge consumers tended to strongly believe that "not all physicians are the same" while consumers with lower levels of knowledge thought physicians were relatively homogeneous since "they all had to go to medical school." As Feldman and Spencer (1965) verified, the knowledge grouping in the focused groups generally followed a consistent age pattern. Younger consumers tended to be less knowledgeable while the older consumers tended to be more knowledgeable and also more skeptical about practicing physicians and dentists. This supports the perspective that high prior knowledge consumers would be inclined to seek out a greater number of recommendation sources as well as seeking out highly knowledgeable recommendation sources.

Sujan (1985) found that experts were found to provide more product related thoughts and attribute oriented thoughts. Sujan (1985) used a 15-question multiple choice scale to measure objective knowledge about cameras (110 and 35 mm SLR). Known experts (photography students) and novices (students knowing little about cameras) were given the 15 item objective test to determine the appropriate cutoffs for scoring. In the pretest (n=15), "experts" scored an average of 11.33 correct answers (standard deviation = 2.5) while "novices" (n=15) scored an average of 5.86 correct answers (standard deviation = 2.3). Based on these results, a score of nine and above was used as the criterion measure for expertise. The score of nine represented approximately one standard deviation down from the expert average and about one standard deviation up from the novice average. Further, this technique would classify 83% of the expert group correctly and 91% of the novice group correctly, assuming normal distributions for the two groups.

Rao and Monroe (1988), in their study of cue utilization in product evaluations, used 14 items to measure

prior knowledge regarding women's blazers. One 5 point scale item was used to measure "self-assessed familiarity," (i.e. subjective knowledge). The item used reads as follows: "Regarding women's blazers, would you consider yourself (please check one)." The 5 response options range from "completely unfamiliar" to "extremely familiar." The other 13 items were designed to tap some of the main dimensions of objective prior knowledge suggested by Brucks (1986). Consequently, to measure various dimensions of objective prior knowledge, Rao and Monroe (1988) assessed subject's knowledge of brand names, store names, technical terms, and appropriate usage situations for the selected product of women's blazers.

Existing differential levels of prior knowledge has typically been measured as an individual difference variable rather than manipulated as an experimental treatment (Brucks 1984; Rao and Monroe 1988). Consequently, in such cases, an expert and non-expert group is determined a priori. Thus, prior knowledge is not technically manipulated in terms of random cell assignments.

Prior knowledge about obstetrics and gynecology was measured by means of an 11 item multiple choice quiz (see part H of Appendix 1). The quiz was designed to follow the major knowledge dimensions discussed by Brucks (1985) as noted in Chapter Two. A health care professional helped devise the quiz. A pretest was then conducted to determine

face and content validity of the knowledge measure. An undergraduate retailing class (n=38 females) and a nursing board review course (n=18 females) were selected to test this knowledge measure. As anticipated, the nursing class scored an average of 8.72 (standard deviation = 1.27) correct while the retailing class scored an average of 5.21 (standard deviation = 1.28) correct responses. A t-test was performed (t= 9.62, d.f.= 54 p= < .001) which indicated a significant difference between the two knowledge scores for these a priori high knowledge and low knowledge groups. The knowledge measure therefore appeared to have content validity.

An item analysis and inspection of comments led to some changes in the instrument itself. In general, the test was made less difficult by replacing the more technical words with lay-terms. In addition, the multiple choice format was changed to give the subject three responses options rather than four or five as in the pretest.

## Task Complexity

Information processing research has typically approached the manipulation of task complexity two basic ways: 1) increasing the number of product alternatives, and/or 2) increasing the number of product attributes (Payne 1976, 1982). This approach to task complexity corresponds with the information load perspective which is concerned with the sheer amount of information. Wright (1974) suggested, however, that complexity could be varied by changing time availability. Howard (1977) noted that several factors affect processability including: simplicity of the language used, abstractness, and redundancy. In addition, Olshavsky (1979) suggested that taking attribute complexity into account, rather than simply increasing the number of attributes, is worthy of further study, yet this perspective has generally been ignored in studies utilizing the task complexity construct.

Recently, Brucks and Schurr (1990) found that if attributes were bargainable rather than fixed, the task was perceived as more complex. Subjects were asked to rate how "overwhelmed" they felt by the amount of information and the type of information in the bargaining task. Subjects felt more overwhelmed by the amount and type of information in the bargaining condition than in the non-bargaining condition. Also, as previously discussed, Shostack (1987) defined complexity as the number and intricacy of the steps required to perform the task. Ratchford and Andreason (1973) found that the decision regarding a pediatrician (i.e. a specialist) was regarded as slightly more complex than for the general practitioner.

Brucks (1985) manipulated the complexity of a usage situation in an experiment by randomly giving subjects one of two descriptions (i.e. scenarios) of a person and her

sewing needs and were told to choose the best model of sewing machine for that person. This can be construed as a "role taking" form of the scenario method where the subject is asked to imagine what another would do in a given situation (Eroglu 1987). Half of the subjects were given the description of the frequent and expert sewer while the other half were given the description of the infrequent sewer with simple needs.

The present research manipulated task complexity by means of a scenario using a combination of the reviewed techniques. For example, the more complex task was longer, used more technical and abstract language, described the subject needing a specialist, and described a situation where the consumer has a greater number of doctors to choose from. The task complexity scenarios were then pretested to ensure that a proper manipulation was taking place.

The pretest manipulation check revealed that the difference between the two scenarios was not significant (t=1.25, d.f.= 54, p-value = .215). Those receiving the low task complexity scenario had a mean score on the difficulty manipulation check item of 2.45 (1=extremely difficult, 5=extremely easy) while the high task complexity group scored 2.19. Consequently, the scenarios were changed to reflect a more simplified task and a more difficult task respectively. Additional "complicating" information regarding insurance options was incorporated into the

complex scenario. The absolute number of doctors from which to choose from also increased. The revised scenarios are found as Figures 2 and 3.

# Scenario Method

In their study investigating the selection of physicians, Ratchford and Andreasen (1973) asked respondents to "imagine that they had just moved to a new community where they had never lived before." The stated intention of this approach was to control for the effects of past experience.

Kuehl and Ford (1977) also used a scenario approach. They note that "all respondents were given a brief, descriptive scenario in which their families, as a result of a job promotion, had recently moved to a new city." Futhermore, the scenario was added that one of their first concerns was to establish relationships with a new family doctor (and personal lawyer). In order to manipulate the independent variables, Kuehl and Ford (1977) included different statements in the scenario depending on cell assignments.

The scenario approach does have the advantage of avoiding certain situational effects associated with the selection of a professional service provider (e.g. conditions of emergency or current provider dissatisfaction). However, the approach does contain the

traditional disadvantages of external validity problems associated with experiments.

# Figure 2

#### Low Task Complexity Scenario

As the result of a new job opportunity, you recently moved to a large city where you've never lived before. It's quite a drive from Lansing, but you have relatives in your new city and you're beginning to settle into your job which you like. Your neighbors have been helpful and you're starting to make new friends. Surprise! Just last week you found out you were pregnant. This news is exciting to both you and your husband. Luckily, you have health insurance provided through work. Your employer supplied you with a list of 3 doctors for you to choose from.

# Figure 3

High Task Complexity Scenario

As the result of a new job opportunity, you recently moved to a large city where you've never lived before. It's quite a drive from Lansing, but you have relatives in your new city and you're beginning to settle into your job which you like. Your neighbors have been helpful and you're starting to make new friends. Surprise! Just last week you performed a test with a home pregnancy test kit; the results were positive. This news is exciting to both you and your husband. Luckily you have health insurance provided through work. Although you have not yet done so, you feel you must now select a physician for prenatal assessment and to begin prenatal care. You consider yourself quite healthy, but you have had health problems in the past. Therefore, it is necessary that you select a specialist in obstetrics/gynecology as quickly as possible.

Your employer supplied you with a 10 page "provider directory" booklet to help in your selection of a doctor. The "provider directory" is essentially a phone book which provides the name, address, and phone number of the doctors participating in this HMO. The booklet lists over 50 doctors to choose from in the Obstetric/Gynecology category. You know that choosing a physician is an important decision and you obviously want to make the right choice. However, this list of names isn't much help in making a choice since you are not familiar with any of the doctors in the list.

Finally, another complication is sorting out the insurance options. There is "open enrollment" for an insurance program which you did not initially select. However, for the next 5 days, you may switch from "Metro Health Plan" which you now have to "Continental Group Plan." The provider directory for Continental Group Plan is similar to Metro Health Plan since there are about 50 doctors listed in each. If you do switch, the co-pay for prescriptions and office visits are higher, but less is taken out of your pay to participate in the program. The same doctor may participate in both HMO programs while others may participate in only one of the programs. Finally, some doctors may not be on either HMO list available to you.

#### Dependent Variables

# Number of Sources

Swartz and Stephens (1983) conducted personal interviews of (convenience sample, n=120) of newcomer residents (i.e less than 2 years in residence to ensure likelihood of recent physician search and selection), aged 55 and older (to increase the likelihood that a physician had been sought after). Of those who selected physicians within the first two years after arrival, 75% used "personal sources." Of this percentage, 60% used one source, 34% used two sources, and 6% used 3 sources. Swartz and Stephens (1983) used an open ended format with some aided recall for sources. For example, they listed such nonpersonal sources such as "yellow pages" and "print ads" which the respondent could select from as a potential source.

Stewart et. al. (1985) investigated parental selection of physicians for their children via a mail survey of 229 panel families with children in Arkansas. In the exploratory phase of the research, they found eight source options cited by patients during open ended interviews. These eight sources were subsequently listed in the mail survey for respondents to choose from. Specifically, these sources were: 1) friends and neighbors, 2) other family

members, 3) other physicians, 4) previous encounters with the doctor as a patient, 5) encounters with the physician other than as a patient 6) phone directory, 7) government agencies, or 8) local medical societies. It was found that 82% used just one of these sources with the remaining 18 listing either two or three of these sources. The most commonly cited sources were personal such as "friends and neighbors," "other family members," or "other physicians." The authors do suggest that since the study was not limited to newcomers in the community, the passage of time for some respondents may have reflected recall of only salient sources.

It should be pointed out that "number of sources" according to Stewart et. al. indicates the number of different types of sources as opposed to the absolute value of those individuals within a source category. For example, if someone consulted two friends, this would only show up as one source, namely, "friends and neighbors." In an attempt to avoid such potentially confusing issues, the present research investigated two different dimensions: each different source type and the absolute number within each source type.

In a study investigating consumer selection of physicians, King and Haefner (1988) conducted 365 personal interviews in physician waiting rooms. They found that of the 93% who based the selection of a physician on a

recommendation, 62.6% used only one personal information source, 24.1% used two sources, 8.3% used three sources, and 5% used four or more sources. They made an extensive list of 23 different source types from which subjects could select. These different source types were based on previous exploratory research conducted prior to the personal interviews. Despite the large number of different source types available to choose from, the following six formed the vast majority: 1) another doctor, 48.8%, 2) friends, 33.4%, 3) relatives, 26.8% 4) nurse, 12.6%, 5) other health care professional, 6.8%, and 6) yellow pages, 6.6%. Some categories listed were not selected as a source by anyone such as billboard advertising and magazine advertising.

## Types of Sources

Feldman and Spencer (1965) used a "random sampling survey" (presumably mail) to contact 182 newcomers to a community. They found that professional (e.g. nurses or physicians) sources were used by 19.5% of the sample while the remaining 80.5% used nonprofessional sources (i.e. friends or neighbors with no particular medical training). It is unclear whether the questions were open-ended or closed-ended.

Glassman and Glassman (1981) contacted 286 women by telephone to determine satisfaction with their pediatrician. They used open ended questions with probes to determine the

type of source. Consequently, the question "how did you happen to select Dr. \_\_\_\_?", generated 344 responses from the sample of 286 women.

The present research incorporated the exploratory findings with previous empirical studies to arrive at six different source types most likely to be used in recommendation-based decison making for selecting a medical professional: friends, neighbors, relatives, co-workers, doctors, and nurses. Expert sources from this list would be considered doctors and nurses. Non-expert sources would be considered friends, neighbors, relatives, and co-workers.

#### Importance of Affective Cues

Lovdal and Pearson (1989) utilized scales developed by Suchman and Suchman to assess affective and instrumental behavior. Affective behavior was defined by Ben-Sira (1976) as the "type of behavior directed by the physician toward the patient as a person rather than as a 'case'" (p. 7). Lovdal and Pearson (1989) used scales to measure affective behavior which are based on an index developed by Suchman (1964) to measure unfavorable medical opinions. Suchman (1964) used these indexes to measure two types of opinions about physicians, namely: opinions about quality of medical care and competence, and opinions about how interested the physician is in his or her patient. The Likert scales used by Lovdal and Pearson sum to form an index from a high of 10

(SA=5 on both questions) to a low of 2 (SD=1 on both questions). Note that for "1" below the valence would be reversed for scoring. The two specific items used were: "most doctors charge too much money" and "most doctors are more interested in the welfare of their patients than in anything else."

The present research utilized these existing scales in addition to developing a new scale for measuring affective cues based on the exploratory research and previous empirical studies reviewed earlier.

Based on the focused group findings and previous studies using affective scale items, the following items were chosen as a first step in scale development: sincere, caring, sense of humor, talks to you, explains things to you, cares if your're in pain, sensible, friendly, puts you at ease, personality jives with yours, warm, respectful, takes time, devoted, pleasant, interested, compassionate, communicative, and unhurried. Each item was measured on a five point itemized scale ranging from "very important" to "not at all important."

These items were then analyzed based on the pretest subjects and a revised set of 10 (down from the 19 listed above) was selected. Items were deleted based on low (< .5) corrected item-total correlations. After the lowest item was deleted, the process was repeated. It should be noted, however, that based on pretest feedback, additional

verbalization was added to each item in an effort to make each item more clear and specific. For example, "compassion" became "the doctor shows compassion" in the revised questionnaire.

## Importance of Instrumental Cues

Instrumental behavior cues were measured by Ben-Sira (1976; 1980) by asking how subjects felt about skills, treatment, and reassurance. As noted above, Lovdal and Pearson (1989) used scales to measure affective and instrumental behavior based on an index developed by Suchman (1964). To measure instrumental behavior, Lovdal and Pearson used three Likert scales which sum to form an index from a high of 15 (SA=5 on each question) to a low of 3 (SD=1 on each question). Note that the valence would be reversed for scoring. The specific three items used were: "people should try out different doctors to find out which one will give them the best medical care"; when ill, people should demand to know the details of what is being done to them"; and finally, "people should have their doubts about some things doctors say they can do for them."

Based on the focused group findings and previous studies using instrumental scale items, the following items were chosen as a first step in scale development: training, school attended, advanced specialization, credentials, diplomas, certifications, licenses, professional association member, experience, knowledgeable of new trends, uses new equipment, up to date, current, modern, thorough, skilled, specialist, and technically competent.

A process identical to that described earlier for purifying the affective cue items was also used for the instrumental cue items listed above. The list of 18 was narrowed down to 10 items for the revised research tool.

### Classification Variables

Since the emphasis for professional service provider selection is personal sources, additional information would be of interest for additional post hoc probes into the characteristics of the consumer and the information source(s). The following list is based on the studies reviewed earlier (Feldman and Spencer 1965; Bettman 1979; Glassman and Glassman 1981): age, gender, marital status, level of education, income, occupation, medical training, health status, times hospitalized, number of children, and age of children.

Table 3

					<b>_</b>				
Hypo Rela	thesized tionship	Level of Measurement			Analytical Technique	Stat. Hyp.		Test Stat.	
н1:	+ PK>#S	int.	>	int.	Regression	Но:	B1 =	0	t
H2:	+ PK>SE	int.	>	int.	Regression	Ho:	B1 =	0	t
Н3:	- TC>#S	nom.	>	int.	ANOVA	Ho:	µ1 =	μ2	F
H4:	- TC>SE	nom.	>	int.	ANOVA	Ho:	µ1 =	μ2	F
H5a:	+ PK>IC	int.	>	int.	Regression	Ho:	B1 =	0	t
H5b:	- PK>AC	int.	>	int.	Regression	Ho:	B1 =	0	t
H6a:	- TC>IC	nom.	>	int.	ANOVA	Ho:	µ1 =	μ2	F
H6b:	+ TC>AC	nom.	>	• int.	ANOVA	Ho:	μ1 <b>=</b>	μ2	F
KEY: PK = #S = SE = TC = IC = AC = int. nom.	prior kno number of source ex task comp instrumen affective = interva = nominal	wledge source pertise lexity tal cue cues l data data	S						

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Analysis Summary

#### Sampling and Data Collection

A multi-stage cluster sampling technique was used in selecting subjects in the study. A large midwestern city (Lansing, Michigan) was first divided into 14 pre-existing census tracts. A census tract is a relatively homogeneous group of households but may vary in terms of population and geographic size. A simple random sample of six census tracts were selected. Each chosen tract was then further broken down by using a simple random sample to select five census blocks within each census tract. A census of each selected block was then taken. A census block corresponds largely with a typical city block but may vary depending on population density. The number and geographic size of each census block varies somewhat but is analogous to a city block. Generally, there are approximately 20-40 census blocks per census tract. Finally, after the blocks were selected, the sequence in which the blocks would be approached by the field researchers was determined randomly.

Field researchers approached a total of 800 addresses. Out of this total, 402 resulted in either not-at-homes or no one in the household fitting the profile of female and 18-49 years of age. Consequently, from this total of 398 (800-402=398), 50 refused to participated who in fact were home and did fit the profile. This figure of 348 then represents those who were home, fit the profile, and were willing to participate. However, 103 from this latter group ultimately

did not turn in the questionnaire. Typically, this meant that it was accepted by the person but was unable to be picked up at a later time due to the respondent not being home or not answering the door, etc. Thus, 245 questionnaires were picked up for analysis (348-103=245). Of this total, 10 questionnaires were deleted either because they were not completed or the respondent was over age 50. It should be noted that the field researchers would "eyeball" age in the face-to-face screening. Of those questionnaires returned and completed, a validation check was conducted by using the "City Directory" to obtain telephone numbers of a random sample of respondents. This check revealed no inconsistencies.

# Field Researchers

College students from a large midwestern university (Michigan State University) were recruited to drop-off and pick-up the questionnaires to the preassigned census blocks. An advertisement was placed in the student newspaper for this task which resulted in approximately 25 inquiries. These individuals were screened and seven (five females and two males) participated. Each field researcher was met face-to-face for a short training session and was given the questionnaires (in envelops with pencils in each), a clipboard, and data collection log sheets. Compensation for

this task was \$.50 for each address attempted (regardless of outcome) and \$1.00 for each completed questionnaire. The added incentive was thought desirable since more than one try is often needed to pick-up a dropped-off questionnaire.

## Contacting Research Subjects

Individual field researchers were assigned to collect data from the predetermined census blocks within the predetermined census tracts. The field researchers were given explicit instructions (both verbal and written) about how this process should be carried out (see Appendix D).

A drop-off/pick-up technique was used to delever and collect the questionnaires (Lovelock 1979). This technique has a number of advantages, including: subject screening and a higher commitment level by the respondent.

The field researcher was directed to start at "block 1" and try to make initial contact with every address on the block. In the case of a multiple unit structure such as an apartment building, each separate residence was taken to be a new address. Each attempt resulted in four basic outcomes: 1) no one home, 2) home, but no one fits profile, 3) home, someone fits profile but refuses to participate, 4) home, someone fits profile, agrees to participate and is given the questionnaire to complete, and 5) other, such as person answering door is deaf or cannot speak English, etc.

If no one was home, the field researcher was then

instructed to try again up to three times. In the case of the field researcher successfully screening for the respondent and then dropping off the questionnaire, arrangements were then made with the respondent for the pick-up of the questionnaire. Field researchers were encouraged to pick-up questionnaires the same day (e.g. "I'll come back in two hours") if possible. However, in some cases, the respondent agreed, for example, to leave the completed questionnaire in the mail box or inside the screen door if they would not be home later in the day. Since the questionnaire was self-administered, the field researcher was not required to be present while the respondents completed the questionnaire.

#### CHAPTER FOUR

#### RESULTS

This chapter discusses the results of the hypothesis tests and related findings from the data.

# Manipulation Check

# Task Complexity

A manipulation check was used to determine if the scenarios in fact manipulated task complexity. The following question was asked after the subject had read the scenario presented: "how difficult do you feel this situation is in terms of your task of selecting a doctor?" Response options were 1=very difficult, 2=difficult, 3=not difficult or easy, 4=easy, and 5=very easy. A t-test revealed that the manipulation was successful as described in Table 4.

# Table 4

	low task complexity	high task complexity
number of subjects	116 (49.4%)	119 (50.6%)
nean	2.6121	2.2269
standard deviation	.9019	.8071

## Task Complexity Manipulation Check
#### Scenario Face Validity Check

A face validity check for the scenario was used to ensure the subjects thought the scenarios presented to them were in fact believable. After the subject had the opportunity to read a scenario describing the situation where they needed to select a physician, the following question was asked: "how believable is this situation for you?" Table 5 lists response frequencies for this scenario believability check. In general, over 80% of the subjects found the scenarios to be either "very believable" (34.8%) or "believable" (47.6%) which suggests that the scenarios were realistic situations for most subjects.

Table !
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Scenario Believability	Absolute Frequency	Relative Frequency	Cumulative Frequency
Very Believable	81	34.8%	34.8%
Believable	111	47.6%	82.4%
Not Believable or Unbelievable	19	8.2%	90.6%
Unbelievable	14	6.0%	96.6%
Very Unbelievable	8	3.48	100.0%

#### Scenario Face Validity Check

#### Likelihood of Subcontracting the Decision

The literature reviewed in Chapter Two suggested that the recommendation-based subcontracted decision is the predominant way in which consumers would make a decision for a professional service provider. This theoretical assumption was tested with the following question answered by each subject after reading the scenario provided: "based on this situation, what is the likelihood you would choose a doctor whom someone personally recommended to you?" Table 6 points out that this assumption of subcontracting is in fact substantiated since a great majority (89.3%) of subjects were either very likely or likely to choose a doctor someone recommended to them.

Likelihood of Subcontracting the Decision						
solute Rel equency Fre	ative Cumu quency Freq	lative nuency				
L09 <b>4</b>	6.6% 40	5.68				
LOO 4	2.78 89	).3%				
19	8.18 97	1.48				
3	1.3% 98	3.78				
3	1.3% 100	).0%				
	ontracting the solute Rel equency Fre 109 4 100 4 19 3 3	ontracting the Decision         solute       Relative       Cumulative         equency       Frequency       Frequency         L09       46.6%       46         L00       42.7%       89         19       8.1%       97         3       1.3%       98         3       1.3%       100				

Table 6Likelihood of Subcontracting the Decision

A further comparison was analyzed which looked at marketer dominated sources and personal (non-marketer) sources. Table 7 lists the mean and standard deviation for personal sources which is found in Part C of the questionnaire (see Appendix A). Each of the five different sources had five response options ranging from "very likely" (scored as 1) to "very unlikely" (scored as 5). Table 8 lists the mean and standard deviation for selected marketer dominated sources. Visual inspection reveals that personal sources are considerably more likely to be used than marketer dominated sources or other nonpersonal sources such as "reference material at the library" or information from a "goverment agency."

Likelihood of Asking Selected Personal Sources for Advice in the Selection Process

Type of Personal Source	mean	standard deviation
Advice from Friends	1.591	.803
Advice from Nurses	2.264	1.069
Advice from Relatives	1.783	.983
Advice from Co-workers	2.260	.994
Advice from Neighbors	2.824	1.120
Advice from Doctors	2.140	1.174
Grand Mean =	2.144	
1=very likely, 2=likely, 3=not 1 4=unlikely, and 5=very unlikely	ikely or	unlikely,

Ta	bl	8	8
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Type of Personal Source	mean	<b>sta</b> ndard <b>deviati</b> or
Use Yellow Pages	3.263	1.294
Use Radio or TV ads	4.241	.913
Use Reference Materials at Library	3.737	1.042
Use Newspaper or Magazine Ads	4.164	.892
Use Government Agency	3.539	1.202
Grand Mean =	3.789	

Likelihood of Using Marketer Dominated or Other Non-personal Sources in the Selection Process

#### Objective Knowledge Results

The 11-item objective knowledge test resulted in a mean score of 6.415 (mode = 7) with a standard deviation of 1.918. Table 6 lists the absolute, relative , and cumulative frequencies for the knowledge test. The distribution appeared to closely resemble a normal distribution.

Objective Knowledge Test Results						
Number Correct	Absolute Frequency	Relative Frequency	Cumulative Frequency			
1	1	.48	.48			
2	3	1.3%	1.7%			
3	10	4.3%	6.0%			
4	29	12.4%	18.4%			
5	33	14.1%	32.5%			
6	39	16.7%	49.1%			
7	47	20.1%	69.2%			
8	42	17.9%	87.2%			
9	17	7.38	94.4%			
10	12	5.1%	99.6%			
11	1	.4%	100.0%			
Total	234	100.0%				
Kurtosis=4	55, Skewness	=122				

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#### Test of Hypotheses

This section describes the results of the test for each hypothesis listed in Chapter Three.

#### Hypothesis 1

Hypothesis 1 stated that objective prior knowledge was directly related to the number of personal recommendation sources solicited.

The correlation matrix using Pearson's correlation coefficient for objective knowlede and each of the six different personal recommendation sources revealed that prior knowledge was positively correlated with all types of sources except doctors which interestingly showed a significant inverse relationship. Table 10 lists the correlations and p-values for the number of source variables. Since number of doctors is inversely correlated with objective knowledge, two new aggregate variables were created to investigate the correlation of number of sources with objective knowledge. The first aggregate variable was created by combining all number variables (friends, nurses, relatives, co-workers, neighbors, and doctors). In this case, r=.1047 and the p=.057. The second new variable was also aggregate and similarly combines all the number variables except number of doctors. In this latter instance r=.1795 and the p=.003. As noted in Table 10, when the

Type of Personal Source	Correlation (r)	Significance (p-value)
Number of Friends	.0931	.081
Number of Nurses	.1457	.014*
Number of Relatives	.0152	.410
Number of Co-workers	.1350	.021*
Number of Neighbors	.1509	.011*
Number of Doctors	2009	.001*
Aggregate Number Variable Aggregate Number Variable	.1047	.057
(excluding doctors)	.1795	.003*

Table 10

Objective Knowledge to Number of Source Correlations

number of doctors variable was removed, the correlation between objective knowledge and the aggregate number of sources solicited became significant at p < .01. Hypothesis 1 is therefore supported since the number of sources sought increases as knowledge increases.

## Hypothesis 2

Hypothesis 2 stated that objective prior knowledge was directly related to the level of expertise of personal recommendation sources from whom information is solicited.

The correlation matrix found in Table 12 suggests that three of the six source options were significant at p < .05, namely, advice from friends, nurses, and co-workers. It must be pointed out that the likelihood of asking a type of source for advice is based on a different set of questions than the "number of sources" used for analysis in Hypothesis 1. As noted in Chapter 3, the distinction is thus made between type of source and the absolute number of individuals sought within each source type. For example, in the case of friends, the likelihood of advice question was: "How likely is it that you would ask a friend for advice." In the case of investigating the number of sources as in Hypothesis 1, the counterpart for determining quantity of friends asked was: "How many friends, if any, would you likely ask?" Another point of clarification is that likelihood of advice was scored on a scale of 1=very likely, to 5=very unlikely. Thus, the strong negative correlation between objective knowledge and the likelihood of asking advice from a nurse (-.1605, p=.007) implies that as objective knowledge measure increases, the likelihood of advice measure decreases signifying a greater likelihood of asking advice from that source.

Table	2 11
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Correlations of Objective Knowledge to Likelihood of Advice from Source Type

Type of Personal Source	Correlation (r)	Significance (p-value)
Advice from Friends	1161	.038*
Advice from Nurses	1605	.007*
Advice from Relatives	0426	.259
Advice from Co-workers	1311	.023*
Advice from Neighbors	0835	.102
Advice from Doctors	.0654	.160
n=233, 1-tail, *=signifi	cant at $< .05$	

Principal-components analysis was performed on the six source types to investigate the dimensionality of the hypothesized groups according to expertise. A correlation matrix of these six source types is found in Table 12. A factor matrix of the six source types using a varimax rotation is found in Table 13. The factor loadings for the two factor solution confirms the expected expert (i.e. nurse and doctor) and non-expert (i.e. friend, relative, coworker, and neighbor) groupings.

Correlation Matrix of Personal Source Types

	Friend	Nurse	Relative	Co-worker	Neighbor	Doctor
Friend	1.0				-	
Nurse	.0792	1.0				
Relative	.4938	.1702	1.0			
Co-worker	.5514	.0370	.3782	1.0		
Neighbor	.4420	.1732	.3340	.5172	1.0	
Doctor	0093	.4648	.0609	0686	.0003	1.0

Ta	<b>h</b> 1	0	1	3
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Factor Matrix of Personal Source Types

	F	actor 1	Factor	2	
Friend	•	81821	00633		
Nurse	•	13746	.84583		
Relative	•	69181	.16140		
Co-worker	•	81172	10086		
Neighbor	•	74253	.07583		
Doctor		05952	.85555		
		<u> </u>			
	Communality	Factor	Eigenvalue	<b>%</b> Var.	Cum 🖁

	Communality	Factor	Eigenvalue	<pre>% Var.</pre>	Cum &	
Friend	.66951	1	2.40412	40.1	40.1	
Nurse	.73432	2	1.46601	24.4	64.5	
Relative	.50465					
Co-worker	.66906					
Neighbor	.55710					
Doctor	.73550					
المستعملات والمتعاد الشرائي المتعاد	<del>سمین است. از این قاربی و سر با دستان از ایران از این از</del>					_

Further analysis was conducted to explain the significant co-worker finding for Hypothesis 2. Objective knowledge was found to be significantly correlated with income level (n=213, 1-tail, r=.2651, p=.000) and with education level (n=213, 1-tail, r=.2208, p=.001). Such a finding was not unexpected given the internal consistency of most multiple-item social status scales. This finding suggests that since income and education levels often are closely linked with occupation, it may be that the more knowledgeable consumers see co-workers as expert sources since they are themselves likely to be in occupations with highly knowledgeable colleagues such as white collar or managerial/professional occupations. Similarly, a low status occupation, often associated with low income and low education levels may result in individuals not viewing their work colleagues as experts.

In summary, Hypothesis 2 was supported since expert (nurses) sources are more likely to be utilized as knowledge increases. Though also perceived as experts, doctors were not likely to be utilized. This finding, though seemingly contradictory, was expected. Glassman and Glassman (1981) also found the nurse as the expert source in the OB/GYN area for female subjects. Additionally, it was found that coworkers and friends are likely to be utilized as sources when knowledge increases.

#### Hypothesis 3

Hypothesis 3 stated that task complexity was inversely related to the number of personal recommendation sources from whom information is solicited.

One-way ANOVA was used to test whether the mean number of sources utilized by subjects in the low and high task complexity scenarios were equal. Table 14 shows that only for the number of nurses did task complexity have a significant F value where the mean for low task complexity was 2.01 while the mean for the high task complexity scenario was 2.31. Thus, the directionality in this case is contrary to what was hypothesized.

While the manipulation check for task complexity revealed that the two scenarios were significantly different in terms of the difficulty of selecting a physician, it is perhaps the case that subjects were unable to maintain the appropriate task complexity level in mind when answering questions appearing further into the questionnaire. Precautions were taken to remind subjects to keep the scenario in mind and refer back to the scenario as needed to

One-way ANOVA: Number of Sources by Task Complexity (Low and High)

Personal Source	d.f.	SS	MS	F	p-value
Number of Friends					
Between groups	1	.759	.759	1.301	.255
Within groups	230	134.099	.583		
Total	231	134.858			
Number of Nurses					
Between groups	1	5.134	5.134	6.163	.014
Within groups	228	189.914	.833		
Total	229	195.048			
Number of Relatives					
Between groups	1	.405	.405	.461	.498
Within groups	230	202.009	.878		
Total	231	202.414			
Number of Co-workers					
Between groups	1	.589	.589	.590	.443
Within groups	229	228.485	.998		
Total	230	229.074			
Number of Neighbors					
Between groups	1	.258	.258	.307	.580
Within groups	230	193.862	.843		
Total	231	194.121			
Number of Doctors					
Between groups	1	.027	.027	.031	.860
Within groups	230	197.869	.861s		_
Total	231	197.996			
Total	231	197.996			

Tal	ble	15
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Type of Personal Source	Correlation (r)	Significance (p-value)
Number of Friends	128	.026*
Number of Nurses	081	.110
Number of Relatives	050	.225
Number of Co-workers	191	.002*
Number of Neighbors	090	.087
Number of Doctors	.160	•008*
Aggregate Number Variable	117	.038*

Perceived Task Complexity to Number of Source Correlations

refresh their memory, yet the stimulus may have faded for some subjects during the course of completing the questionnaire.

Further analysis was conducted by utilizing the singleitem task complexity manipulation check as an interval scale on which to obtain correlations with the number of source variables both separately and as an aggregate single variable. Table 15 lists these correlations and corresponding levels of significance. The directionality for each variable (except number of doctors) suggests that as perceived task complexity increases, more sources are sought. In the case of higher perceived task complexity, number of friends (p=.026) and co-workers (p=.002) are significant and would therefore be sought out in larger numbers than other sources.

The "aggregate number variable" formed by combining the six number of source variables supports the perspective that as perceived task complexity increases, a greater number of sources, in general, are sought.

In summary, Hypothesis 3 is not supported. As perceived task complexity increased, subjects were likely to seek out a greater number of personal recommendation sources.

### Hypothesis 4

Hypothesis 4 stated that task complexity was inversely related to the level of expertise of personal recommendation sources from whom information is solicited.

One-way ANOVA was used to test whether the mean likelihood of using sources differing in expertise in the low and high task complexity scenarios was equal. Table 16 shows that only for nurse sources did task complexity have a significant F value where the mean for low task complexity was 2.42 while the mean for the high task complexity scenario was 2.11. Thus, it was found to be significantly more likely for subjects to seek advice from a nurse in the high complexity task scenario. This finding is opposite the hypothesized relationship.

One-way ANOVA: Source Expertise by Task Complexity (Low and High)

1 33 34	.328	. 328		
1 33 34	.328	. 328		
- 33 34			.507	.477
34	150.455	.646		
	150.783			
1	5.761	5.761	5.127	.025*
33	261.882	1.124		
34	267.643			
1	.001	.001	.001	.982
33	225.931	.970		
34	225.932			
1	3.284	3.284	3.358	.068
33	227.882	.978		
34	231.166			
1	2.810	2.810	2.251	.135
32	289.652	1.249		
33	292.462			
1	1.170	1.170	.849	.358
33	321.196	1.379		
34	322.366			
	1 33 34 1 33 34 1 33 34 1 32 33 1 33 34 5 ic	1 5.761 33 261.882 34 267.643 1 .001 33 225.931 34 225.932 1 3.284 33 227.882 34 231.166 1 2.810 32 289.652 33 292.462 1 1.170 33 321.196 34 322.366 	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

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Further analysis was conducted by utilizing the singleitem task complexity manipulation check as an interval scale on which to obtain correlations with the type of source variables. Table 17 lists these correlations and corresponding levels of significance. Two significant correlations exist (advice of friends and advice of coworkers) between perceived task complexity and the likelihood of utilizing a particular source. Thus, as perceived task complexity increases, friends and co-workers, who may generally be viewed as non-experts are more likely to be used.

As an aggregate variable, the likelihood of obtaining advice from non-experts (i.e. friends relatives, co-workers, and neighbors) is significantly correlated with perceptions of increasing task complexity. In addition, Table 18 confirms this borderline significant (p = .0512) relationship using linear regression with perceived task complexity as the independent variable. Thus, it appears that non-expert sources are more likely to be utilized as perceived task complexity increases. However, a significant relationship does not exist between perceived task complexity and the likelihood of using expert sources.

Thus, while the ANOVA indicated a greater likelihood to seek advice from an expert in the manipulated high task complexity scenario, the correlation and regression analysis

indicated that higher perceived task complexity is significantly linked with the likelihood of using nonexpert sources. This seemingly contradictory finding can perhaps best be explained in the apparent finding that objectively defined task complexity, while generally discernable in degree may not translate into consistent subjectively perceived differences in task complexity.

Type of Personal Source	Correlation (r)	Significance (p-value)
Advice of Friend	s .143	.014*
Advice of Nurses	.038	.283
Advice of Relativ	ves .070	.144
Advice of Co-wor	kers .114	.042*
Advice of Neighbo	or <b>s .</b> 076	.124
Advice of Doctor	s –.105	.055
Aggregate Non-exp	pert .1276	.026*

Perceived Task Complexity to Source Expertise Correlations

Source Type	Standard -ized Beta	R-Square	e t	F	p-value
Non-expert	.1276	.016	1.96	3.84	.0512*
Expert	0524	.003	80	.64	.4241

Linear Regression Analysis	: Perceived Task
Complexity as Independent	: Variable with
Source Expertise as Depe	endent Variable

### Hypothesis 5a

Hypothesis 5a stated that objective prior knowledge was directly related to the perceived importance of instrumental behavior cues sought from personal sources in the professional service provider selection process.

An analysis was performed to investigate the items developed specifically for this research to measure the importance of instrumental cues. A correlation matrix of these items is found in Table 19. In an effort to further purify the measure, five reliability iterations were performed and in each case the lowest corrected item to total correlation value was removed (Parasuraman, Zeithaml, and Berry 1988). The final instrumental scale items are listed on Table 20. Corrected item-total correlations range from .5554 to .6175.

Table 21 lists the factor matrix for the purified instrumental cue items. Factor loadings on the single factor solution using Principal-components analysis ranged from .72021 to .77753. The eigenvalue for the factor is 2.80541 which explains 56.1% of the total variance.

Correlation Matrix for Instrumental Cues

	11	12	13	14	15	16	17	18	19	<b>I10</b>	
<u></u>	1.0										
12	.426	1.0									
<b>I</b> 3	.037	.270	1.0								
<b>I4</b>	.165	.427	.517	1.0							
<b>I5</b>	.252	.390	.253	.450	1.0						
16	.423	.481	.191	.363	.289	1.0					
<b>I7</b>	.255	.418	.298	.448	.208	.506	1.0				
<b>I8</b>	.274	.319	.302	.459	.280	.374	.447	1.0			
<b>I9</b>	.460	.408	.097	.225	.230	.521	.367	.416	1.0		
110	.259	.403	.326	.536	.315	.456	.509	.437	.411	1.0	
	<u></u>							C	orrec	ted	Alpha
								I	tem-T	otal	If
								Co	rrela	tion	Deleted
11.	The pi	docto	or <b>gra</b> gious	<b>duat</b> medic	<b>d</b> fro cal so	om a chool	•		.44	1	.842
12.	The i	docto n a sp	or has becial	s <b>adv</b> a Lized	anced field	trai: 1.	ning		.61	1	.826
I3.	The	docto	or is	thore	ough.				.37	4	.845
14.	The la	docto atest	or is techn	up-to niques	o-date s.	on	the		.60	8	.828
15.	The	docto	or is	board	1 cert	tifie	d.		.44	2	.841
16.	The as	docto s an e	or is expert	recog	ynised	d by j	peers		.63	2	.824
17.	The co	docto mplex	or rou <b>c pro</b> c	utine) S <b>edur</b> a	ly per <b>ss.</b>	rform	S		. 59	5	.827
18.	The re	docto ecent	or <b>rea</b> medio	ads ex cal jo	ktens: ournal	ively ls.	from		.56	1	.831
19.	The	docto	or was ned ex	s <b>tra</b>	ined )	by a			.55	1	.832
<b>I10</b>	. The	e doct	or us	ses th	he la	test	equip	ment.	.62	7	.824
Me St	an in andan	nter-i rdizec	item o 1 iter	corre: n alph	lation na =	n = . .8452	3532				

## 116

## Table 20

	(	Corrected Item-Total Correlation	Alpha If Deleted
12. 9	The doctor has <b>advanced training</b> in a specialized field.	.5554	.7739
14. 9	The doctor is up-to-date on the latest techniques.	.5711	.7714
<b>I6.</b> !	The doctor is recognized by peers as an expert.	.5801	.7654
17. 9	The doctor routinely performs complex procedures.	.6175	.7532
110.	The doctor uses the latest equipment	<b>t6</b> 151	.7540

## Purified Instrumental Cue Items

Standardized item alpha = .8041

Table 21

	Factor 1
 TO	70001
12	.72021 73545
14 T6	.73668
17	.77368
<b>I10</b>	.77753

Communality	Factor	Eigenvalue	<pre>% Var.</pre>	Cum 🖁	
.51870	1	2.80541	56.1	56.1	
.54088					
.54270					
.59858					
.60456					
	Communality .51870 .54088 .54270 .59858 .60456	Communality Factor .51870 1 .54088 .54270 .59858 .60456	Communality Factor Eigenvalue .51870 1 2.80541 .54088 .54270 .59858 .60456	Communality Factor Eigenvalue % Var. .51870 1 2.80541 56.1 .54088 .54270 .59858 .60456	Communality         Factor         Eigenvalue         % Var.         Cum %           .51870         1         2.80541         56.1         56.1           .54088         .54270         .59858         .60456

A separate linear regression analysis was performed with objective knowledge as the independent variable with both the Suchman scales and the "new" measure for the importance of instrumental cues as the dependent variable. In both cases the relationships were not significant. To further investigate this unexpected finding, subjective knowledge was used as the independent variable instead of objective knowledge. In the latter case, a significant linear relationship was discovered where p=.0094. This suggests that while high knowledge consumers do not necessarily perceive instrumental cues as important, those who think they are high in knowledge do value them.

Linear Regression Analysis: Objective/Subjective Knowledge as Independent Variable with Importance of Instrumental Cues as Dependent Variable

		Standard -ized Beta	R-Squa	re t	F	p-value
Such	aman scale	.073	.005	1.15	1.22	.270
New	scale	<b>187 E</b> 3	.000	109	.012	.913
New (su	scale bjective kno	171 owledge)	.029	-2.618	6.852	.009*
F F F	<pre>statistic is statistic is statistic is knowledge) = significar</pre>	F 1/231 for Su F 1/230 for Ne F 1/229 for Ne at at < .01	ichman s w scale w scale	cale (subjec	tive	

#### Hypothesis 5b

Hypothesis 5b stated that objective prior knowledge was inversely related to the perceived importance of affective behavior cues sought from personal sources in the professional service provider selection process.

An analysis was performed to investigate the items developed specifically for this research to measure the importance of affective cues. A correlation matrix (all of which are statisically significant at p < .01) of these items is found in Table 23. In an effort to further purify the measure, five reliability iterations were performed and in each case the lowest corrected item to total correlation value was removed (Parasuraman, Zeithaml, and Berry 1988). The final affective scale items are listed on Table 26. Corrected item-total correlations range from .6123 to .7436.

Table 25 lists the factor matrix for the purified instrumental cue items. Factor loadings on the single factor solution using Principal-components analysis ranged from .74057 to .84992. The eigenvalue for the factor is 3.25335 which explains 65.1% of the total variance.

Ta	<b>b1</b>	e	2	3
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Correlation Matrix for Affective Cues

	<b>A1</b>	A2	A3	<b>A4</b>	A5	<b>A6</b>	<b>A</b> 7	<b>A8</b>	<b>A9</b>	A10	
 A1	1.0										
A2	.506	1.0									
A3	.494	.779	1.0								
<b>A4</b>	.469	.397	.394	1.0							
<b>A</b> 5	.473	.359	.379	.384	1.0						
<b>A6</b>	.264	.378	.397	.237	.424	1.0					
A7	.407	.381	.400	.576	.471	.287	1.0				
<b>A8</b>	.350	.521	.494	.390	.394	.322	.449	1.0			
<b>A9</b>	.478	.471	.455	.441	.427	.368	.485	.490	1.0		
<b>A1</b>	0.500	.617	.607	.297	.450	.442	.458	.561	.614	1.0	
								Coi	rect	ed	Alpha
								Ite	em-To	tal	IÍ
								Cori	relat	ion	Deleted
<b>A1</b>	. The	docto	or is	cari	ng.				. 609		.873
<b>A2</b>	. The	docto ersona	or has ality.	s a pl	leasa	nt			695		.866
A3	. The	doct	or is	frie	ndly '	toward	i vou.		. 696		.866
<b>A4</b>	. The	docto	or tal	kes t	ime to	o list	ten.		542		.878
<b>A</b> 5	. The	docto s a pe	or is erson.	inte	reste	đ in y	you		585		.875
<b>A6</b>	. The	doct	or is	devot	ted to	o vou	•		488		.885
A7	. The	docto	or rea	ally t	talks	to ve	ou.		.599		.873
<b>A</b> 8	. The	docto	or put	s voi	ı at (	ease.			.621		.871
A9	. The	docto	or sho		mpas	sion.			.663		.868
21	0. The	e doct	tor is	s a Wi	ITH D	erson	•		.729		.863

Purified	Affective	Cue Items
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=

Co It Cor	rrected em-Total relation	Alpha If Deleted
A2. The doctor has a pleasant .	7363	.8229
A3. The doctor is friendly toward you.	7188	.8280
A8. The doctor puts you at ease.	6223	.8507
A9. The doctor shows compassion.	6123	.8535
A10. The doctor is a warm person.	7436	.8211

Table 25

	F	actor Matrix	of Puri	fied Affectiv	ve Cue I <sup>.</sup>	tems
		F	actor 1			
	A2	•	84992			
	<b>A</b> 3	•	83646			
	<b>A</b> 8	•	75202			
	A9	•	74057			
	<b>A</b> 10	•	84696			
*		Communality	Factor	Eigenvalue	% Var.	Cum %
A2		.72236	1	3.25335	65.1	65.1
A4		.69967				
A6		.56554				
A7		.54845				
A10		.71734				

A separate linear regression analysis was performed with objective knowledge as the independent variable with both the Suchman scales and the "new" measure for the importance of affective cues as the dependent variable. In both cases the relationships were not significant. Pvalue for Suchman scales was .158 and .838 for the "new" scales. To further investigate this finding, subjective knowledge was used as the independent variable instead of objective knowledge. However, no significant relationship (p=.738) was discovered for subjective prior knowledge and source type.

Table 26

Linear Regression Analysis: Objective/Subjective Knowledge as Independent Variable with Importance of Affective Cues as Dependent Variable

	Standard -ized Beta	R-Square	t	F p-v	value
Suchman scale	.093	.009	1.42	2.00	.158
New scale	.014	.0002	.205	.042	.838
New scale	022	.0005	335	.112	.738
(subjective knowle	edge)				
F statistic is F F statistic is F F statistic is F knowledge)	1/232 for Su 1/230 for Ne 1/229 for Ne	ichman scal w scale w scale (s	le subject:	ive	

### Hypothesis 6a

Hypothesis 6a stated that task complexity was inversely related to the perceived importance of instrumental behavior cues sought from personal sources in the professional service provider selection process.

One-way ANOVA was used to test whether the mean importance measure for the Suchman instrumental cues utilized by subjects in the low and high task complexity scenarios were equal. Table 27 shows that there is not a significant difference in the mean importance of instrumental cues in terms of low and high task complexity (p=.257). Table 29 shows as similar analysis using the new instrumental cue scale. Again the result is not significant (p=.5381).

Tab	le	27
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One-way ANOVA: Suchman Scale Importance of Instrumental Cues by Task Complexity (Low and High)								
Importance of Instrumental Cues	d.f.	SS	MS	F	p-value			
Between groups Within groups Total	1 232 233	3.856 692.127 695.983	3.856 2.983	1.293	.257			

One-way ANOVA: New Scale Importance of Instrumental Cues by Task Complexity (Low and High)							
Importance of Instrumental Cues	d.f.	SS	MS	F	p-value		
Between groups Within groups Total	1 231 232	4.965 3016.589 3021.554	<b>4.968</b> 13.059	.380	.538		

Further analysis was conducted using the single item manipulation check for task complexity with the new instrumental cue scale. A correlation analysis revealed that perceived task complexity and the perceived importance of instrumental cues are not significantly correlated (r=.0037, n=233, p=.478). A regression analysis using perceived task complexity as the independent variable and perceived importance of instrumental cues as the dependent variable is found in Table 29. The regression analysis reveals a linear relationship which is not significant (p=.9550).

Linear	Regression	n Analysis:	Perceiv	ved Task	
Complexity	as Indeper	ndent Varia	ble with	Importance	of
Ins	trumental	Cues as De	pendent V	ariable	

Standard -ized Beta	a R-Square	t	F	p-value
 3.716	E-3 .0000	.056	.0032	.9550

#### Hypothesis 6b

Hypothesis 6b stated that task complexity is directly related to the perceived importance of affective behavior cues sought from personal sources in the professional service provider selection process.

One-way ANOVA was used to test whether the mean importance measure for the Suchman affective cues utilized by subjects in the low and high task complexity scenarios were equal. Table 28 shows that there is not a significant difference between the two task complexity groups in terms of the mean importance of affective cues (p=.853). Table 29 shows as similar analysis using the new affective cue scale. Again the result is not significant (p=.6059).

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One-way ANOVA: Suchman Scale Importance of Affective Cues by Task Complexity (Low and High)					
Importance of Affective Cues	d.f.	SS	MS	F	p-value
Between groups Within groups Total	1 233 234	.059 401.115 401.175	.059 1.723	.034	.853

### Table 31

One-way ANOVA: Importance of New Affective Cues by Task Complexity (Low and High)

Importance of Affective Cues	d.f.	SS	MS	F	<b>p-va</b> lue
Between groups Within groups	1	3.610	3.670	.270	.606
Total	233	3193.316	13.745		

Further analysis was conducted using the single item manipulation check for task complexity along the new affective cue scale. A correlation analysis revealed that perceived task complexity and the perceived importance of affective cues was significantly correlated (r=.1227, n=233, p=.031). A regression analysis using perceived task complexity as the independent variable and perceived importance of affective cues as the dependent variable is found in Table 32. The regression analysis reveals a linear relationship which is significant at p=.0558.

## Linear Regression Analysis: Perceived Task Complexity as Independent Variable with Importance of Affective Cues as Dependent Variable

Standard -ized Beta	R-Square	t	F	p-value	
.1252	.016	1.922	3.694	.0558	

Tab]	. <b>e</b> 33
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nypochesized rindings summary	Hypothesized	Findings	Summary
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Hypothesized	Relationship	Outcome
+ H1: PK>#S		Supported
+ H2: PK>SE		Supported
- H3: TC>#S		Not Supported
- H4: TC>SE		Partially Supported
+ H5a: PK>IC	1	Supported*
- H5b: PK>AC		Not Supported
- H6a: TC>IC		Not Supported
+ H6b: TC>AC		Supported
<pre>KEY: PK = prior kn #S = number o SE = source e TC = task com IC = instrume AC = affectiv int. = interv nom. = nomina * = subjecti</pre>	owledge f sources xpertise plexity ntal cues e cues al data l data ve knowledge me	asure used

#### CHAPTER FIVE

#### CONCLUSIONS

This chapter begins with a discussion of the results and then turns to the contributions of the research and the managerial implications. Next, limitations of the study are discussed followed by future research directions.

## Discussion of Results

The objective of this research was primarily to shed light on how consumers make decisions which are typified by obtaining recommendations from personal (non-marketer dominated) sources. As such, choosing a doctor was selected as a representative type of decision where the consumer typically asks someone else to make a recommendation to them generally without other forms of information search. More specifically, women (age 18-50) were chosen as research subjects in the experimental context of the women needing to select a physician as the result of discovering they were pregnant.

The specific areas of interest within this larger context of recommendation-based decision making were: 1) which types of personal sources were they most likely to use, 2) how many persons of each different type of source were they likely to seek out, 3) to what extent were

instrumental cues (e.g. doctor has advanced training in a specialized field and is viewed as an expert by peers etc.) important in the selection process, and finally 4) to what extent were affective cues (e.g. the doctor is warm, pleasant, and compassionate) important in the selection process.

Each one of these four issues was viewed as a dependent variable. The independent variables in the study which were hypothesized to affect the dependent variables were prior knowledge and task complexity. Varying levels of knowledge have been shown to influence decision heuristics and the extent to which certain cues are important to the decision maker. Knowledge was measured on a 11 item scale which addressed major dimensions of knowledge associated with pregnancy and obstetrics. Additionally, task complexity has been shown to influence a decision in terms of the type and extent of information search. Task complexity was manipulated by having subjects read and place themselves in a scenario which was assigned randomly and was either a more difficult task or an easier task. A manipulation check revealed that task complexity was successfully manipulated.

Since the the study used scenarios, a face-validity check revealed that most (82.4%) of the subjects believed the scenarios to be either very believable or believable. In addition, since much of the theory behind this research assumed that consumers would in fact use recommendation
sources for their decision-making in the context of selecting a physician, a check was made as to the extent that they would choose a doctor which someone personally recommended to them. Again, most (89.3%) said they would be either very likely or likely to choose a doctor which someone personally recommended to them. Finally, a check was made as to the extent of consumers using personal versus non-personal (marketer dominated sources) to select a doctor in the experimental scenario. The responses indicated that in general, consumers were very likely to use personal sources (mean = 2.14) and very unlikely to use non-personal sources (mean = 3.79) based on a Likert format where 1=very likely and 5=very unlikely.

Hypothesis 1 stated that objective prior knowledge was directly related to the number of personal recommendation sources solicited. This hypothesis was supported. By combining the six source types (friends, nurses, relatives, co-workers, neighbors, and doctors), the aggregate number of sources did increase as knowledge increased. However, while five of the types showed a positive relationship with knowledge, the number of doctors was opposite on directionality. This means that as consumers knowledge increase about pregnancy and obstetrics, they will seek out more sources in general, but they will also seek out fewer numbers of doctors as knowledge increases.

There are at least two possible explanations for this

finding. First since a high knowledge person may know a doctor who in their opinion is a good source of information, there would be no need to go further and ask more. Secondly, the nature of the study and of the subjects meant that women subjects would be getting information from doctors, a profession which has traditionally been dominated by males, although this is certainly changing. It could be inferred that women would like to talk to other women in such a case thereby explaining the indirect relationship with the number of doctors which would be sought.

Hypothesis 2 stated that objective knowledge was directly related to the level of expertise of personal recommendation sources from whom information would be sought. The findings revealed that the doctors and nurses do seem to form a single dimension of sources based on factor analysis. The "experts" (nurses and doctors) and "non-experts" (friends, relatives, neighbors, and coworkers) dimensions were as expected. A finding similar to that for Hypothesis 1 was revealed, namely, as knowledge increases the experts are sought out more, thus confirming the hypothesis. However, the same inverse relationship existed for doctors in this case. This finding was not unexpected. Consumers do see doctors as experts just as they perceive nurses as experts. Yet as mentioned earlier, in this specific field experiment which used women subjects exclusively, subjects perhaps viewed their evoked set of

experts in the case of pregnancy and obstetrics as other women. Since nursing is a profession historically dominated by women, and since presumably nurses would be more accessible to the general population (simply because there are more nurses than physicians), it seems natural that "experts" in this case be nurses rather than doctors.

Co-workers and friends also proved to be source types in which the likelihood to using them increased as knowledge increased. This is another interesting finding in which further analysis was conducted to clarify this phenomenon. Knowledge was very highly positively correlated with income level (r=.2651) and education level (r=.2208). The obvious connection these variables often have is as an indicator of relative social standing. Consequently, co-workers/friends will often tend to be more knowledgeable in general when they are also more highly educated and/or have a higher income. Assuming this is the case, the consumer with high knowledge initially is likely, in general, to also be working with, or be fiends with, high knowledge consumers.

Hypothesis 3 stated that task complexity was inversely related to the number of personal recommendation sources from whom information is solicited. Some research reviewed in Chapter Two showed that while consumers generally search more when they face a challenging task in which they lack information, other research suggested that when the task is overwhelmingly difficult, consumers in fact will avoid

cognitive processing and thereby search less. It was believed that this latter perspective would be the case in selecting a physician. It was found however, that consumers were likely to seek out a higher absolute number of sources as perceived task complexity increased. ANOVA revealed that the high and low task scenarios did not result in significantly different mean scores for numbers of sources sought with the exception of nurses. Nurses were sought out more highly as complexity increased.

Despite the manipulation check for task complexity being significant, it was believed that the scenarios lost much of their impact as time passed while the subjects completed the questionnaires. Thus, a different angle was used to further investigate task complexity, namely, the perceived task complexity measure used as the manipulation check for the high and low task complexity scenarios. A correlation analysis using this measure and prior knowledge revealed a significant overall increase in the number of sources sought as perceived task complexity increased.

Hypothesis 4 stated that task complexity was inversely related to the level of expertise of personal recommendation sources. The rationale for this perspective is that if something is overwhelmingly complex and beyond hope in terms of the consumer making an informed choice alone, the consumer then may seek out the most easily accessible, i.e. Strong tie sources. These strong tie sources are typically

non-experts such as friends or neighbors rather than nurses or doctors. The consumer may know nurses and doctors, but it would be an extra effort on their part which would not fit with the theory suggesting that consumers are trying to reduce cognitive strain, by not thinking about the problem of selecting a doctor and would prefer to get this task over as quickly and easily as possible.

As was the case with Hypothesis 3, perceived task complexity was used in the analysis in addition to the ANOVA using the manipulated task complexity scenarios. The ANOVA revealed a significant result in consumers seeking advice in the single case of the source being an nurse. The other sources were not significant. Further analysis revealed that perceived task complexity was directly related to the increased likelihood to using non-expert sources. This was confirmed with linear regression (p=.0512). It was therefore concluded that Hypothesis 4 is partially supported.

Hypothesis 5a stated that objective prior knowledge was directly related to the perceived importance of instrumental behavior cues sought from personal sources. A scale of instrumental cues was developed and refined for this purpose. These cues focus on the technical skills side of the medical profession. The literature is repleat with such dichotomies as curing versus caring aspects of medical intervention. Thus the duel hypotheses, 5a and 5b, 6a and

6b focus on such a dichotomy.

Using the technical qualities scale (i.e. instrumental cues), it was found that increased objective knowledge did not result in the increased importance of such scales as was hypothesized. In an effort to further understand why this was the case, it was revealed that subjective knowledge, however, (i.e. how much you think you know) was very strongly related to the perceived importance of instrumental cues. To phrase this differently, high knowledge subjects did not perceive such cues to be significantly important, while subjects who subjectively believed themselves to be high in knowledge considered instrumental cues to be very important. This finding suggests that consumers who are high in knowledge may be capable of using cues which generally have low predictive validity since they read more into them than low knowledge consumers. Rao and Monroe (1989), for example, found that consumers high in objective knowledge could use both low and high predictive validity cues whereas the less (moderate) consumer could use only the cues high in predictive validity to make successful assessments of quality.

Therefore, this hypothesis is supported with the caveat that subjective knowledge is the independent variable rather than objective knowledge. The objective knowledge measure resulted in the rejection of the hypothesis.

Hypothesis 5b stated that objective prior knowledge was

inversely related to the perceived importance of affective behavior cues sought. As mentioned, the affective cues consisted of the "caring" and "warmth" type of items on which physician selection may center. A scale was developed for these types of cues which consumers may use in the physician selection process. Five items selected for this measure revealed very high item to total correlations and strong factor loadings on a single factor. Nevertheless, the analysis revealed that objective knowledge was not positively or negatively linked with the perceived importance of such cues.

When viewing these interesting findings together from Hypothesis 5a and 5b, the following can be concluded. Hiah objective (i.e. actual) knowledge consumers use both instrumental and affective cues as do low knowledge consumers. Both types of cues are important to both groups. However, it is perhaps safe to say that the high knowledge consumers have a richer understanding of what these cues mean and may therefore have the ability to infer wide ranges of meaning from a single cue. However, consumers who rate themselves as being knowledgeable on a subjective measure (i.e. how much you think you know versus how much you really know when faced with an objective test developed by experts) are shown to be significantly more likely to feel that instrumental cues are important. To use a different example to help clarify this dizzying logic: a true food gourmet

would perhaps not be as concerned with where the chef had gone to chef school compared to the charlatan gourmet since tasting is likely the best way to test food rather than using other surrogate measures.

Finally, Hypothesis 6a stated that task complexity was inversely related to the perceived importance of instrumental behavior cues sought. The data did not support such an hypothesis. A further analysis of perceived task complexity using linear regression similarly did not support this hypothesis. This finding suggests that perhaps regardless of whether the task of selecting a physician is viewed as harder or easier, instrumental cues are equally important. This may be viewed as a reasonable statement in terms of cognitive consistency theory which suggests that consumers must feel that they chose the "best" doctor they could since selecting a physician is generally viewed as an important decision. Throughout the various phases of this research, it was clear that virtually all consumers thought their doctor was probably one of the best doctors around.

Lastly, Hypothesis 6b stated that task complexity was directly related to the perceived importance of affective behavior cues sought from personal sources. ANOVA revealed that no significant difference in mean importance for affective cues existed for the low and high task complexity scenarios. However, a further analysis using perceived task complexity showed a significant negative correlation

(r=.1227, p=.031) between task complexity and the importance of affective cues. It should be noted that perceived task complexity was scored as 1= very difficult, to 5 = very easy. The affective cues were scored as 1=extremely important, to 5=unimportant. Consequently, the positive correlation indicates that as perceived difficulty increases, affective cues are more important. This supports the hypothesized relationship. As consumers face decisions which are more and more difficult and which have correspondingly less and less available information to guide the decision, the more easily accessible and interpretable cues will be utilized.

## Contributions of the Research

Contributions of the research are divided into theoretical implications and managerial implications.

## Theoretical Implications

The research supports the theoretical perspective that consumers primarily rely on personal non-marketer dominated sources of information when choosing a service professional. While the research was limited to the study of women confronted with the task of selecting a physician for their pregnancy, the importance of personal sources is very likely generalizeable across gender and to other professional service settings.

The research findings specifically contribute to our understanding of recommendation-based decision making by isolating the effects of two independent variables: prior knowledge and task complexity. Prior knowledge was found to be directly related (i.e. a "facilitating effect") to the extent of search among personal sources and the use of expert sources utilized in this search. The research strongly supports an early conceptualization (Feldman and Spencer 1965) that consumers perceive personal sources to be categorized into two types: "expert" and "nonexpert."

The findings support the perspective that more external

search will take place when perceived task complexity increases. However, this extra search will center primarily on the more easily accessible non-expert sources. Consequently, if one assumes that consultation with expert compared to non-expert sources would result in a better decision, more search does not necessarily result in a better decision.

Scales which reflect the importance of affective (e.g. the doctor is pleasant and friendly) and instrumental (e.g. the doctor has advanced training and is up-to-date on the latest techniques) cues used in the selection and evaluation of physicians should be very helpful to future researchers. The findings suggest that subjective knowledge was directly related only to the perceived importance of instrumental cues. Thus, the research supports the idea that objective knowledge and subjective knowledge are distinct constructs. In addition, perceived task complexity was directly related only to the perceived of affective cues. Thus, as task complexity increases, more easily accessible cues which focus on personality related variables increase in importance.

## Managerial Implications

In the hyper-competitive health care industry, any empirical research findings which shed light on consumer behavior are likely to be useful to a number of competing organizations. This research suggests a number of managerial implications which can aid in managerial decisions. However, it should be kept in mind that these implications are based on an interpretation of the findings just as managerial decisions are based on interpretations of direct and indirect experiences.

Marketing communication programs for health care organizations should recognize and consequently stress the importance of personal sources of information in the physician selection process. Marketer dominated sources such as radio or TV advertisements are less likely to be used by consumers in selecting a physician than are nonmarketer dominated sources such as friends or relatives. In this light, it is recommended that increasing satisfaction among current and future health care consumers should be a fundamental strategy for increasing future positive referral behavior.

The suggested emphasis on personal sources is not to suggest that mass media is ineffective as a promotional tool. It does perhaps suggest that planning a media campaign with the goal of increasing positive referrals and encouraging communication between former and prospective consumers is to be recommended.

One current emphasis for hospital advertising is to promote a call-in service for consumers to ask questions of nurses. Such programs appear to be a step in the direction

of recognizing the importance of personal communication in the physician selection process. However, the goal of such programs seem to be the referral of the consumer to a physician associated with the hospital rather than offering medical advice over the phone. Based on the present research, the majority of consumers will choose a physician (and therefore a hospital) based on discussions with a friend or relative. Generally, only the higher knowledge consumers will seek advice from nurses. Consequently, while it is unclear exactly who will use such services, it is perhaps safe to suggest that perhaps only a small segment of consumers will actually use such a referral service.

Less knowledgeable patients are less likely to seek out information and are more willing to speak with non-experts in their physician selection process. Thus, in general, the larger the health care organization, the greater the likelihood that it or one of its doctors will be referred when information is solicited during the selection process. Consequently, "bigger is better" and the bigger provider will likely get bigger assuming the information solicited is not negative.

In the case of consumers being confronted with very complex medical decisions, it is recommended that health care organizations stress the human factor associated with these decisions rather than the technical competency or "high-tech" nature of the cure. Specifically, the following

factors should be emphasized: the doctor/doctors practicing here have a pleasant personality, are friendly, put you at ease, show compassion, and are warm.

A different set of factors should be stressed for those consumers who are confident that they are quite knowledgeable about medical procedures but in fact are not. Specifically, it is recommended that in such cases, the following factors be stressed: the doctor/doctors have advanced training in a specialized field, are up-to-date on the latest techniques, are recognized by peers as experts, routinely perform complex procedures, and uses the latest equipment. It is believed that high knowledge consumers use both the human side and the technical side to evaluate the doctors. Therefore, it is not appropriate to simply stress the technical components to knowledgeable consumers.

### Limitations of the Study

An obvious limitation with the study is the focus on women and specifically on how they go about selecting a doctor. It is unclear how men may differ in their decision process for selecting a physician. It must be pointed out, however, that women were chosen over men since women generally have been shown to be a primary decision maker for medical care professionals for the family.

The nature of field research itself has some limitations. The research attempted to manipulate a

variable and make inferences about relationships with dependent measures based on that manipulation. It is always possible that other extraneous variables may be present which confound the results.

The prior knowledge measure is limited in an experimental setting since it is not technically a construct which can be manipulated. Thus, it is more difficult perhaps to attempt causal explanations as compared to variables which can be manipulated. This can naturally be construed as a challenge however, rather than meaning that prior knowledge is a construct to be avoided.

## Future Research Directions

The present research likely raises more questions than it answers, but this is to be expected. A very fruitful stream of research which is sorely underdeveloped is the general topic of recommendation-based decision making. Most marketing texts note that marketer dominated sources of information are often not as important as personal sources. Consequently, other antecedent variables which may have an impact on the different aspects of the recommendation source (e.g. type, number, age gender, location, and accessibility) would be reasonable research efforts. However, it is the contention here that personal sources, if better understood, can be managed by taking a proactive and systematic approach. Therefore the intuitive argument does not stand up that if it is by definition non-marketer dominated, marketers should not pay as much attention to it.

More specific to the present research under this broad heading of personal sources of information is the impact on many situational variables on the selection of sources. To what extent are marketer dominated sources useful once a decision has been made to select a specific doctor or health care organization. To what extent does the level of prior knowledge carry over into the actual treatment process and affect satisfaction with the service provider. How do parents selecting a doctor for themselves differ from selecting one for their children? Is there greater search or less search for the parent choosing for the child versus parents choosing for themselves? APPENDICES

Appendix A

Questionnaire

June 23, 1990

Dear Lansing Area Resident,

You are one of 500 individuals living in the greater Lansing area selected to participate in a research project conducted throught the Department of Marketing and Transportation Administration at Michigan State University.

The research is looking into how women select doctors. Your participation is very important and very much appreciated. The survey should take about 10 minutes to complete. After you have completed the questionnaire, please <u>keep the</u> <u>enclosed pencil</u> as a small token of our appreciation and put the survey into the envelope provided. The survey will be personally picked up at the pre-arranged time.

The information in the survey will remain completely confidential and anonymous. If you have any questions regarding this survey, you may call me at home, 887-6718. Thank-you!

Sincerely,

Scott D. Johnson Department of Marketing and Transportation Administration College of Business Administration

#### GENERAL INSTRUCTIONS

In the first portion of this questionnaire you are asked to play a role. First, you will be given a situation in which you are asked to assume that you are in exactly the same situation described in the scenario. Follow the instructions and answer the questions as if you are actually living the situation now. Remember, we would like you to put yourself in the situation, with your own preferences and feelings.

Below are different types of questions you will see in this questionnaire and instructions on how to answer them. Please read them carefully.

If you are very certain that it will not rain EXAMPLE: tomorrow, you should answer the following question as shown:

How likely is the possibility of rain tomorrow?

very likely	likely	not likely nor	unlikely	very unlikely
-		unlikely		-

EXAMPLE: If you believe that wearing a hat in the summer is not really all that important but is not unimportant either, you should answer the following question as shown:

> Wearing a hat in the summer to protect oneself from the sun is.

- \_\_\_\_ extremely important
  \_\_\_\_ very important
- \_\_\_\_ important
- not unimportant and not important
- unimportant

NOW GO TO THE NEXT PAGE AND READ THE SCENARIO WE WOULD LIKE YOU TO IMAGINE

PART A

Please read the following situation and, as best you can, put yourself into the role described. Imagine that you are in this situation.

Scenario (either high or low complexity) goes here. Please see Appendix B and C.

Please go on to Part B

## <u>Please keep in mind the situation you read when answering</u> the following questions. If you need to refer back to the situation to refresh your memory, please do so.

- 1. How difficult do you feel this situation is in terms of your task of selecting a doctor?
  - \_\_\_\_ very difficult
  - \_\_\_\_\_ difficult
  - \_\_\_\_ not difficult or easy
  - \_\_\_\_ easy
  - \_\_\_\_ very easy
- 2. How believable is this situation for you?
  - \_\_\_\_ very believable
  - \_\_\_\_ believable
  - \_\_\_\_ not believable or unbelievable
  - \_\_\_\_\_ unbelievable
  - <u>very</u> unbelievable
- 3. Based on this situation, what is the likelihood you would choose a doctor whom someone personally recommended to you?
  - \_\_\_\_ very likely
  - \_\_\_\_ likely
  - \_\_\_\_ not likely or unlikely
  - \_\_\_\_ unlikely
  - \_\_\_\_ very unlikely

<u>Please go on to Part C</u>

PART C

<u>Please keep in mind the situation you read when answering</u> the following questions. If you need to refer back to the situation to refresh your memory, please do so.

A common way most people go about selecting a doctor is to ask someone else for their advice. Given the scenario you just read, please respond to the following items regarding how likely it is that you would use different personal sources.

1. How likely is it that you would ask a friend for advice?

very	likely	not	unlikely	very
likely		likely nor unlikely		unlikely

2. How likely is it that you would ask a nurse for advice?

very	likely	not	unlikely	very
likely		likely nor unlikely		unlikely

3. How likely is it that you would ask a relative for advice?

very	likely	not	unlikely	very
likely		likely nor unlikely		unlikely

4. How likely is it that you would ask a **co-worker** for advice?

very	likely	not	unlikely	very
likely		likely nor unlikely		unlikely

5. How likely is it that you would ask a **neighbor** for advice?

very	likely	not not	unlikely	y very

likely	likely nor	unlikely
	unlikely	

6. How likely is it that you would ask a doctor for advice?

very	likely	not	unlikely	very
likely	Please	likely no To on to P	r art D	unlikely

PART D

## Keep in mind the situation you read when answering the following questions. If you need to refer back to the situation to refresh your memory, please do so.

If you would ask someone for a recommendation in your selection of a doctor, please check how many individuals from each source you would likely seek out. Note: if two types of sources overlap such as "friend" and "neighbor," choose what you feel is the best description.

1. How many friends, if any, would you likely ask?

none	one	two	three or
	friend	friends	more friends

2. How many nurses, if any, would you likely ask?

none	one	two	three or more
	nurse	nurses	nurses

3. How many relatives, if any, would you likely ask?

none one two three or more relative relatives relatives

4. How many co-workers, if any, would you likely ask?

none one two three or more co-worker co-workers co-workers

5. How many neighbors, if any, would you likely ask?

none	one	two	three or	more
	neighbor	neighbors	neighbors	

6. How many doctors, if any, would you likely ask?

none one two three or more doctor doctors doctors <u>Please go on to Part E</u> PART E

## <u>Please keep in mind the situation you read when answering</u> the following questions. If you need to refer back to the situation to refresh your memory, please do so.

Another way people may use to select a doctor is to check outside, non-personal sources of information. Please respond to the following items regarding how likely it is that you would use any of these non-personal sources.

1. How likely is it that you would use the Yellow Pages?

very	likely	not	unlikely	very
likely		likely or unlikely		unlikely

2. How likely is it that you would use radio or TV ads? very likely not unlikely very likely likely or unlikely

3. How likely is it that you would use reference materials at the library?

very likely	likely	not likely or	unlikely	very unlikely
-		unlikelv		-

4. How likely is it that you would use newspaper or magazine ads?

very	likely	not	unlikely	very
likely		likely or		unlikely
		unlikely		

5. How likely is it that you would call or write for information from a federal, state, or local government agency?

very	likely	not	unlikely	very
likely		likely or unlikely		unlikely

### Please go on to Part F

PART F

<u>Please keep in mind the situation you read when answering</u> the following questions. If you need to refer back to the situation to refresh you memory, please do so.

Please respond to the following statements as accurately as you can.

1. Most doctors charge too much money.

strongly agree neutral disagree strongly disagree

2. People should try out different doctors to find out which one will give them the best medical care.

strongly	agree	neutral	disagree	strongly
agree				disagree

3. People should have their doubts about some things doctors say they can do for them.

strongly agree neutral disagree strongly agree disagree

4. Most doctors are more interested in the welfare of their patients than in anything else.

strongly	agree	neutral	disagree	strongly
agree				disagree

5. When ill, people should demand to know the details of what is being done to them.

strongly agree neutral disagree strongly agree disagree

Please go on to Part G

PART G

Please keep in mind the situation you read when answering the following questions. If you need to refer back to the situation to refresh your memory, please do so.

Please rate how important of each item would be in your selection of a doctor.

The doctor is caring.

- \_\_\_\_ extremely important
- \_\_\_\_ very important
- \_\_\_\_ important
- \_\_\_\_ not unimportant and not important
- unimportant

# The doctor graduated from a prestigious medical school. \_\_\_\_ extremely important

- \_\_\_\_ very important
- <u>important</u>
- \_\_\_\_ not unimportant and not important
- \_\_\_\_ unimportant
- The doctor has a pleasant personality
  - \_\_\_\_ extremely important
  - \_\_\_\_\_ very important \_\_\_\_\_ important

  - \_\_\_\_ not unimportant and not important \_\_\_\_\_ unimportant

The doctor is friendly toward you.

- \_\_\_\_ extremely important
- \_\_\_\_ very important
- \_\_\_\_ important
- <u>not</u> unimportant and not important
- unimportant
- The doctor has advanced training in a specialized field.
  - \_\_\_\_ extremely important
  - \_\_\_\_ very important
  - \_\_\_\_ important
  - \_\_\_\_ not unimportant and not important
  - unimportant

The doctor takes time to listen.

- \_\_\_\_ extremely important
- \_\_\_\_ very important
- <u> important</u>
- \_\_\_\_ not unimportant and not important
- \_\_\_\_ unimportant

The doctor is thorough. \_\_\_\_ extremely important very important \_\_\_\_ not unimportant and not important unimportant The doctor is interested in you as a person. \_\_\_\_ extremely important \_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important unimportant The doctor is devoted to you. \_\_\_\_ extremely important \_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important unimportant The doctor is up-to-date on the latest techniques. \_\_\_\_ extremely important very important
important <u>not</u> unimportant and not important unimportant The doctor is board certified. \_\_\_\_ extremely important \_\_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important \_\_\_\_ unimportant The doctor really talks to you. \_\_\_\_ extremely important \_\_\_\_\_ very important \_\_\_\_\_ important \_\_\_\_ not unimportant and not important unimportant The doctor puts you at ease. \_\_\_\_ extremely important \_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important \_\_\_\_ unimportant

- \_\_\_\_ extremely important \_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important unimportant The doctor routinely performs complex procedures. \_\_\_\_ extremely important \_\_\_\_\_ very important \_\_\_\_\_ important \_\_\_\_ not unimportant and not important unimportant The doctor reads extensively from recent medical journals. \_\_\_\_ extremely important \_\_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important \_\_\_\_ unimportant The doctor shows compassion. \_\_\_\_ extremely important \_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important unimportant The doctor was trained by a reknowned expert. \_\_\_\_ extremely important \_\_\_\_\_ very important \_\_\_\_\_ important <u>\_\_\_\_</u> not unimportant and not important unimportant The doctor is a warm person. \_\_\_\_ extremely important \_\_\_\_ very important \_\_\_\_ important \_\_\_\_ not unimportant and not important unimportant The doctor uses the latest equipment.
  - \_\_\_\_ extremely important
  - \_\_\_\_\_ very important \_\_\_\_\_ important

  - \_\_\_\_\_ not unimportant and not important
  - unimportant

THIS IS THE END OF THE ROLE PLAYING. YOU MAY FORGET THE "SITUATION" AND ANSWER THE REMAINING OUESTIONS AS YOU NORMALLY WOULD. Please go on to Part H

#### PART H

Please answer the following questions as best you can. It is important that only you answer these questions. Please do not consult any persons or books. Remember, your responses are completely private.

- 1. Gestational diabetes is defined as: \_\_\_\_ diabetes in a newborn
  - <u>diabetes</u> diagnosed during pregnancy \*
    - altered glucose tolerance during pregnancy
- 2. What are two common breech positions?
  - \* \_\_\_\_ frank and footling
    - \_\_\_\_\_ shoulder and flank
    - partial and complete
- 3. How many weeks is considered to be a full term pregnancy? \_\_\_\_ 36 weeks

  - \* \_\_\_\_\_ 38 weeks \* \_\_\_\_\_ 40 weeks
- 4. What are the two most common problems facing preterm (premature) infants?
  - \* \_\_\_\_ respiratory distress and ineffective body temperature regulation
    - \_\_\_\_\_ jaundice and ineffective digestion
    - inability to suck and infection
- 5. What is the recommended frequency of prenatal visits for most women?
  - \_\_\_\_ monthy
  - weekly
    \* \_\_\_\_ monthly, but more frequent in last 2 months
- 6. Please list the average length of stay in the hospital for a C-section delivery.
  - \_\_\_\_ 7 days

  - \* \_\_\_\_ 10 days \* \_\_\_\_ 4 days
- 7. What are two common factors which make a pregnant woman high risk?
  - \_\_\_\_\_ history of infertility and smoking
  - \_\_\_\_ lack of prenatal care and multiple pregnancy \*
    - substance abuse and older than 30

- 8. What would be the appropriate limits for fetal heart rate during labor?
  - \* \_\_\_\_ 120-160 beats/minute
    - \_\_\_\_ 80-100 beats/minute
    - 175-200 beats/minute
- 9. What is a common purpose of ultrasound?
  - \_\_\_\_ determine due date
  - visualize the location of the placenta
  - determine number of fetuses
    \* \_\_\_\_ all of the above
- 10. During pregnancy, how is high blood pressure treated? \_ iron supplement
  - \* \_\_\_\_\_ rest
    - \_\_\_ low fat diet
- 11. What is the normal expected weight gain for a woman during pregnancy?
  - \* \_\_\_\_ 20-25 lbs.
    - \_\_\_\_\_ 30-35 lbs.
    - 35-40 lbs.
- 12. Regarding obstetrics and pregnancy, would you consider yourself (please circle one):
  - \_\_\_\_ completely unfamiliar
  - \_\_\_\_\_ unfamiliar
  - \_\_\_\_ neither familiar nor unfamiliar
  - \_\_\_\_ familiar
  - extremely familiar

Please go on to Part I

PART I

This is the final part of the survey. This information is used to better understand your answers to the previous questions. This personal information is completely anonymous. Your name will in no way be associated with your responses.

- 1. Occupation: Yourself Spouse/Cohabitant (if applicable)
- 2. Formal medical training: \_\_\_\_\_ yes (please explain)
  - no

3. Overall health status: \_\_\_\_\_ excellent \_\_\_\_\_ good

- \_\_\_\_\_ fair poor

4. Number of times hospitalized in past 10 years? \_\_\_\_\_

5. Number of children you've given birth to

- 6. Your Age:
- 7. Marital status: \_\_\_\_\_ Single Married Widowed Divorced Separated

8. Level of education:

- Less than High School
- High School Graduate
- \_\_\_\_\_ Technical Training after High School \_\_\_\_\_ Some College
- \_\_\_\_\_ College Graduate
- Graduate/Professional School Graduate

- 9. Annual Household Income:
  - \_\_\_\_\_ less than \$10,000 \$10,001-\$20,000 \$20,001-\$30,000 \_\_\_\_\_\$30,001-\$40,000 \_\_\_\_\_\$40,001-\$50,000 \_\_\_\_\_\$50,001-\$60,000 \$60,001-\$70,000 \$70,001-\$80,000 \$80,001-\$90,000 over \$90,000
- 10. How many times have you moved to a new city in the past 10 years?
  - \_\_\_\_\_ 0-1 \_\_\_\_\_ 2-3
  - \_\_\_\_4 or more
- 11. In general, how likely are you to participate in surveys of this type after you have been approached to participate?
  - \_\_\_\_ very likely
  - \_\_\_\_ likely
  - \_\_\_\_ not likely or unlikely

  - \_\_\_\_\_ unlikely \_\_\_\_\_ \_\_\_\_ very unlikely

- 12. In order to properly weight your responses, please indicate if you were home at the following times during the past week.
  - a. Saturday, June 16, 1990, <u>10:00 A.M. 8:00 P.M.</u> yes, the entire time yes, most of the time \_\_\_\_ yes, but only a **small** part of the time no, not at all b. Monday, June 18, 1990, <u>4:30 P.M. - 8:30 P.M.</u> \_\_\_\_ yes, the entire time \_\_\_\_ yes, most of the time \_\_\_\_ yes, but only a small part of the time no, not at all c. Tuesday, June 19, 1990, <u>4:30 P.M. - 8:30 P.M.</u> \_\_\_\_ yes, the entire time \_\_\_\_ yes, **most** of the time yes, but only a small part of the time no, not at all d. Wednesday, June 20, 1990, 4:30 P.M. - 8:30 P.M. \_\_\_\_ yes, the entire time yes, most of the time \_\_\_\_ yes, but only a **small** part of the time no, not at all e. Thursday, June 21, 1990, 4:30 P.M. - 8:30 P.M. \_\_\_\_ yes, the entire time \_\_\_\_ yes, most of the time yes, but only a small part of the time no, not at all f. Friday, June 22, 1990, 4:30 P.M. - 8:30 P.M. \_\_\_\_ yes, the entire time \_\_\_\_ yes, most of the time \_\_\_\_ yes, but only a **small** part of the time
    - \_\_\_\_ no, not at all

Thank-you very much for your help!

Please put the questionnaire into the evelope provided and seal it. The envelope will be picked up at the prearranged time.
Appendix B

Low Task Complexity Scenario

Low Task Complexity Scenario

As the result of a new job opportunity, you recently moved to a large city where you've never lived before. It's quite a drive from Lansing, but you have relatives in your new city and you're beginning to settle into your job which you like. Your neighbors have been helpful and you're starting to make new friends. Surprise! Just last week you found out you were pregnant. This news is exciting to both you and your husband. Luckily, you have health insurance provided through work. Your employer supplied you with a list of 3 doctors for you to choose from. Appendix C

High Task Complexity Scenario

High Task Complexity Scenario

As the result of a new job opportunity, you recently moved to a large city where you've never lived before. It's quite a drive from Lansing, but you have relatives in your new city and you're beginning to settle into your job which you like. Your neighbors have been helpful and you're starting to make new friends. Just last week you performed a test with a Surprise! home pregnancy test kit; the results were positive. This news is exciting to both you and your husband. Luckily you have health insurance provided through work. Although you have not yet done so, you feel you must now select a physician for prenatal assessment and to begin prenatal care. You consider yourself quite healthy, but you have had health problems in the past. Therefore, it is necessary that you select a specialist in obstetrics/gynecology as quickly as possible.

Your employer supplied you with a 10 page "provider directory" booklet to help in your selection of a doctor. The "provider directory" is essentially a phone book which provides the name, address, and phone number of the doctors participating in this HMO. The booklet lists over 50 doctors to choose from in the Obstetric/Gynecology category. You know that choosing a physician is an important decision and you obviously want to make the right choice. However, this list of names isn't much help in making a choice since you are not familiar with any of the doctors in the list.

Finally, another complication is sorting out the insurance options. There is "open enrollment" for an insurance program which you did not initially select. However, for the next 5 days, you may switch from "Metro Health Plan" which you now have to "Continental Group Plan." The provider directory for Continental Group Plan is similar to Metro Health Plan since there are about 50 doctors listed in each. If you do switch, the co-pay for prescriptions and office visits are higher, but less is taken out of your pay to participate in the program. The same doctor may participate in both HMO programs while others may participate in only one of the programs. Finally, some doctors may not be on either HMO list available to you.

Appendix D

Field Researcher Instructions

### DATA COLLECTION GUIDELINES - DOCTOR SELECTION SURVEY

Field researchers, <u>please read this document carefully</u> before you begin collecting data.

As with any type of research, details are extremely important. This research project is no exception. Therefore, a critical factor in your agreement to participate in this research is to follow the guidelines set down in terms of the mechanics of distributing and collecting the individual survey forms. The following guidelines will answer most of your questions. If you have other questions or problems as you proceed, don't hesitate to call Scott at 887-6718.

## 1. BACKGROUND

The survey is looking into how women (i.e. consumers of medical care) select doctors. I am working on this research (along with several professors) in conjunction with my Ph.D. in marketing. Some people may press you for more facts about the study and who is conducting it. The primary concern is that this is a legitimate academic research project. You may answer questions which may arise as best you can. If the person would like to ask specific questions about the research which you are unable to answer, they may call be at home, 887-6718. The first page of the questionnaire also mentions this fact along with the phone number.

## 2. SURVEY DROP-OFF

Blocks have been selected in a random manner but are clustered together in concentrated geographic "chunks." Therefore, when you reach your area, the route should essentially be up and down a few streets or around specific blocks. This should cut down on the travel time between addresses.

Do not deviate from the blocks given to you. Circle the block keeping on just one side of the street. If no one is at home at a particular address, go on to the next home/apartment. Do not substitute other street addresses not on the block. Some blocks may not have many addresses on them while others will have many.

Blocks have been selected randomly. Begin with the first block. After finishing the first block, go on to the next block given to you. Keep going with the selected blocks until you have or expect to have (perhaps not picked up yet) about 60 completed questionnaires. I will then assign you to a new census tract which will have a new series of blocks within it.

# 3. INTERACTION WITH PERSONS IN THE HOUSEHOLD

It is critical that you conduct yourself in a professional manner. Professional, in this context, means that you speak clearly, speak loudly enough, come to the point quickly, and be courteous to the needs/questions of the respondents.

You need to screen the household to get at the person of interest, namely, a woman who is in childbearing years (roughly 18-45). There is considerable judgment on your part which you will need to judiciously exercise. An elderly man who lives alone may answer the door. You can see he is elderly and after your introductory screening remarks you may determine that he lives alone. That is an easy situation. Thank him for his time and move on. (But, as always, record his address and the outcome of your contact in your DATA COLLECTION LOG.) If there are two women that fit the profile, give them each a survey. I If a child answers the door, ask for his/her Mom. If a man answers, explain briefly who you are and ask to speak with the woman of the house. These are just some of the many situations you may encounter. Use your own best judgment in cases where you are uncertain. See the "INTERACTION SCRIPT" below.

#### 4. NOT-AT-HOMES/CALLBACKS

For "not-at-homes," up to 3 callbacks are to be made for each address in attempting to contact the appropriate person. Make these callbacks before going on to the next block assigned. Calling back on the same day is fine if the time is significantly different (e.g. 2:00 P.M. on Saturday resulting in a not-at-home followed up by 6:00 P.M. on Saturday). Or, you may choose to make callbacks the next day as you are sweeping back to pick up some questionnaires (e.g. you may agree to pick up questionnaires the next day at some locations and therefore it would be convenient for you to "hit" some of the not-at-homes again).

## 5. SURVEY PICKUP

The completed surveys can be picked up anytime in the morning, afternoon, or evening. Ideally, you want to leave the person with the impression that you will pick it up as soon as they are done, either that same day or the next day. Some people will suggest that you could pick it back up in an hour while others may be more vague as in "a day or two." It is important that you make a specific arrangement as to the date and time in which you will pick up the completed questionnaire. If they will not be home later, suggest that they leave it just inside the screen door or in the mailbox. They do not need to hand it to you personally.

In order to properly weight the data for those people who are harder to contact (e.g. those who you contacted on the 2nd or 3rd attempts), please record the address of each respondent on the back of the envelope after you pick it up. This does not compromise the confidentiality promise since it is simply being used to match the survey data with your DATA COLLECTION LOG information. However, this process may make a respondent uncomfortable, so please do write down the address on the survey envelope a minute or two after you leave the address.

## 6. **KEEPING RECORDS**

You will receive a DATA COLLECTION LOG in which you keep records of your interaction with each address. It is vitally important that you take a moment to accurately record the interaction and pick-up plans for each address you attempt to contact, regardless of whether someone is home or not. For example, if no one is home at 303 Elm Street, make sure you record the date and time of this event so that you can plan a callback at an appropriate date and time. Or, if you contact the woman at 303 Elm Street (either with the first try or a later attempt), record when you made this contact and when you have arranged to pick the questionnaire. It is very easy to forget these up details if they are not written down after each encounter.

## 7. VALIDATION CHECK

A common technique in field research to ensure quality data is to validate completed questionnaires by calling the household in which the survey was ostensibly taken to check if someone in the household filled out the survey. The City

Directory published by Polk lists all street addresses with corresponding telephone numbers which facilitates this process. This validation check will be conducted after surveys are turned in. If it is determined that the surveys were fraudulently completely, no payment will be made to that field researcher and this incident will be reported to the student placement office.

## 8. DRESS

Finally, please dress in a nice/casual way (e.g. slacks and shirt or blouse) with a neutral "statement" (i.e. no slogans on shirts, etc.). If you think a solid middleclass working family would think you look fine, then you probably look fine.

#### INTERACTION SCRIPT

The following is a guide to use in introducing yourself and asking for participation in the survey of the appropriate person. You will encounter different situations, so be flexible. There is not a canned formula I want you to use. However, try to follow the hypothetical greeting listed below.

"Hello. My name is \_\_\_\_\_\_. I am a student at Michigan State and I am distributing a survey about how women select doctors. The research is being conducted through the Department of Marketing and Transportation at Michigan State University. In particular, the research is looking at women of childbearing years (about 18-45). Is there someone in the household who you think fits this description?"

[If no, thank them for their time. If yes, is that person available. If she is then ask to speak directly to her. If she is not available, ask when it would be best to come back when she is home. If the appropriate person is available, continue]

"Good. As I mentioned, this research is being conducted through Michigan State University. It is completely confidential and your name is in no way connected with the survey. Your address was included in a random sample of streets in the Lansing area. The survey takes about 10 minutes to complete. There is a pencil provided. When you're done you could put the survey back into the envelope, and seal it. I will then pick up the survey. Would you be willing to fill out the survey?"

[At this point there may simply be a refusal or some questions about who you are, who is doing the research, etc. Answer these questions as best you can and remain calm and self-confident. The person may be hesitating and unsure whether they should do this. Try to overcome their objections where appropriate (e.g. we are not selling anything and yes this is completely confidential, etc.) but don't make it a hard sell. If they do not want to participate, that is their right and you should respect that. If they choose to participate, then explain that you can pick up the survey at their convenience, either in person, or having them leave it in the door or mailbox etc.] BIBLIOGRAPHY

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