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RETAIL CROWDING: AN INVESTIGATION OF ANTECEDENTS AND CONSEQUENCES

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ABSTRACT

RETAIL CROWDING: AN INVESTIGATION OF
ANTECEDENTS AND CONSEQUENCES

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This study addressed consumer-environment relationships by examining the influence of one environmental variable, retail crowding, on certain aspects of shopping behavior. The research consisted of two major parts. One set of hypotheses investigated the antecedent variables that produce or affect perceptions of crowding in a particular retail setting. Another set of hypotheses then examined the consequences of retail crowding in terms of shopping outcomes. The hypotheses of the study were tested in a laboratory experiment which presented subjects with representations of a retailing environment and role-playing scenarios simultaneously to simulate the shopping experience and to manipulate the various treatment conditions.

The main constructs comprising the antecedents of retail crowding were shopping motives, time pressure, and perceived risk associated with purchase. The findings suggested time pressure to be a significant determinant of perceived retail crowding. The hypotheses about the consequences of retail crowding addressed how such conditions affect shopping outcomes in terms of postpatronage satisfaction and repatronage intentions. Two additional hypotheses examined the effect

of shopping motives on shopping outcomes under retail crowding. The findings supported the predicted negative relationship between shopping outcomes and perceived retail crowding at varying degrees.

The contributions and implications of this study are several. From a theoretical perspective, the findings confirmed the predictions made regarding the influence of retail crowding for certain aspects of shopping behavior. The practical implications are tied to managerial decision making in retailing. To the extent that density produces negative shopping outcomes, retail managers should strive to maximize customer density with minimum retail crowding. Consequently, they need to adjust their in-store and out-of-store strategies according to anticipated density levels under various situations. Finally, from a methodological standpoint, this study is a pioneering effort in terms of experimental procedures and data collection. The joint use of slides and scenarios to simulate an actual retail environment permits researchers to study some problems they have not been able to address properly, due to difficulties associated with stimuli manipulations, and the method provides flexibility and speed in data collection.

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CHAPTER ONE

INTRODUCTION

The General Problem Area

Research about the effect of environment on human behavior has become an important area of study in recent years, encompassing various perspectives such as environmental sociology, proxemics, behavioral geography, and environmental psychology. In the field of marketing, researchers have not been totally unaware of this subject, but despite the importance of person-environment interactions that influence shopping and consumption, only limited research has been published (Sarel 1981). While a massive literature exists about retailing decisions regarding location, design, layout, and display in stores and shopping centers, few authors address the theoretical aspects of consumer-environment relations (Markin, Lillis and Narayana 1976; Donovan and Rossiter 1982). This study addresses part of this gap in the marketing literature by exploring one environmental variable, crowding. Specifically, buyers' perceptions of crowding, its causes, and its consequences in retailing environments shall be examined.

The traditional crowding literature has not presented a complete examination of the concept of crowding in commercial domains where marketing activities take place, settings which would allow researchers to examine the causes and effects of crowding. Shopping

activity occurs in a spatially and socially defined commercial environment within a relatively short time. Hence, both the stimuli that give rise to a state of crowding and the consequences of experiencing it can be manipulated and measured by the researcher.

From the marketing discipline perspective, the pertinence of crowding in theory and practice is significant. Many marketing activites take place in dense shopping environments such as malls, hypermarkets, and shopping centers (Harrell, Hutt and Anderson 1980). Furthermore, recent developments such as concentrated shopping hours for working women, population shifts, and the increasing number of experiential (Holbrook and Hirschman 1982) and recreational shoppers (Bellenger, Robertson and Greenberg 1977) have contributed to increasingly crowded environments.

Although some limited research in buyer behavior has demonstrated the effect of crowding on shopping behavior (Harrell and Hutt 1976; Harrell, Hutt and Anderson 1980), insights from these studies can be extended to enhance the theoretical and managerial scope of our knowledge of crowding. Much of the work in retail settings has focused on what crowded environments cause buyers to do. Thus, the research has largely started with a particular environment, crowded or uncrowded, and examined the ways it affects buyer behavior. An important additional aspect that requires research addresses subsequent outcomes of retail crowding in terms of postpatronage satisfaction and repatronage intentions. Furthermore, since crowding is a perceptual phenomenon that varies across individuals and environments (Baum and Epstein 1978), the question of how buyers acquire the subjective

experience of retail crowding in the first place needs to be addressed.

Analyses of crowding should proceed in two steps. First, it will help if the concept is more adequately developed by identifying both the essential stimulus components of crowded environments and the resultant psychological processes that produce the subjective crowding experience. Second, the effects that occur as a consequence of crowding can then be examined more fully. However, since crowding is a perceptual state, for it to be manipulated or measured, another concept which can be defined in objective terms is required. Density is one such concept that is useful in operationalization of crowding (Stokols 1972, 1973; Rapoport 1975).

All spatial and social stimuli comprising the amount of information offered in an environment determine the level of density that prevails there. Crowding is the subjective experience of excessively high densities. Consequently, the magnitude and intensity of perceived crowding differs across individuals (Stokols 1972, 1973; Stokols et al. 1973; Rapoport 1976). This is a major point particularly when researchers attempt to operationalize the concept of crowding.

Most of the extant research on crowding and retail crowding, however, adopt a restricted and limited definition of the concept. Crowding is often operationalized solely in terms of the number of persons in a space without any consideration of other physical stimuli (noise and light levels, signs, shopping carts, and so forth) which are known to affect density perception and interpretation of the physical environment (Rapoport 1978). Furthermore, it is generally

the researcher who defines what constitutes a "crowded" environment without recognizing the subjective nature of perceived crowding (Stokols 1973). More research will improve valid operationalizations of the concept of crowding as well as determine which factors instigate and intensify crowding perceptions.

In the context of retailing, one construct which has been hypothesized to affect retail crowding perceptions is shopping motives (Eroglu and Harrell, in review). Empirical research on motivational constructs involving consumer goals and shopping orientations has been excluded from the existing buyer behavior and crowding literature. Accordingly, no empirical research has investigated shopper motives and perceptions in relation to evaluations of retailing environments. Only two related areas, consumer search behavior and shopping orientations, have indirectly dealt with the issue.

In the vast consumer search literature, a few studies have shown that retail store visits are a very important source of product information (Newman and Lockeman 1975). Most of the research, however, has focused on prepurchase search behavior, with the emphasis on one type of retailing visit, namely those that are purchase-oriented. Nonpurchase or nontask-oriented information search by buyers to satisfy epistemic, curiosity, or other motives has been essentially ignored. For example, a consumer may visit a store to browse and gather information, not to solve a particular purchase problem, but for the intrinsic satisfaction (Bloch and Richins 1982). One exception has been an exploratory study of why people shop, which identifies several nontask-oriented as well as task-oriented motives (Tauber 1972).

The second stream of research related to buyer motives is recent work on shopping orientations. Several authors have tried to profile shoppers and their shopping orientations (Bellenger and Korgaonkar 1980; Bellenger, Robertson and Greenbert 1977; Korgaonkar 1981). They have classified shoppers into two broad classes: "recreation-oriented" and "convenience-economic oriented." The first group enjoys shopping as a leisure time activity, prefers department stores and malls, spends more time shopping, and places higher importance on store atmosphere. They have no predetermined objective to complete a certain purchasing act within a given time. For the purposes of this research, such shopping motives will be referred to as "nontask-oriented" in contrast to "task-oriented," in which the predetermined goal is the acquisition of a product or service. For many people, the underlying motive for a shopping trip may be strictly task-oriented or strictly recreational and nontask-oriented. In other cases, the two may interact in complex ways to produce the overall shopping experience.

Buyer behavior research has largely ignored the centrality of shopping motives in determining buyers' perceptions and subsequent evaluations of the retailing environments. In addition, such research has focused on purchase and task-oriented activities. This focus is hardly justified in view of the fact that consumers regularly interact with marketing institutions and products outside purchase occasions (for example, browsing, consumption, and disposition).

A similar tendency to emphasize task-oriented motives exists in crowding research, which has stressed the effect of high density on purposeful, task-oriented behaviors. However, when shopping is viewed

as a process of positive arousal that has stimulation benefits irrespective of task benefits, the meaning of high density is likely to assume a different nuance.

One objective of the present study is to address crowding by incorporating the effect of both types of motivational constructs into the research on retail crowding perceptions. During the course of this examination, both task- and nontask-oriented implications of crowding are explored with the expectation that the perception and effect of retail crowding will differ depending on the type of motive that dominates one's shopping orientations.

Along with motivations, there are some other variables which seem to affect the ways an individual perceives his/her environment. For example, perceived risk and time pressure associated with certain purchases are found to influence which environmental cues buyers utilize and how they interpret them (Schellinck 1982).

Empirical evidence suggests that buyers operating under either time pressure or distraction tend systematically to place greater weight on negative evidence than do shoppers under less stressful conditions (Wright 1974). Schellinck's results have confirmed these findings by demonstrating that time pressure is a determinant of the amount and type of environmental cues buyers use. Melbin (1976) has emphasized the importance of time in environmental perception and suggests that people deal with time as they do with space, treating it as a scarce resource. One aspect of time must be considered in the present analysis of retail crowding. Feldman and Hornik (1981) report that, due to the finite nature of time, individuals will choose among

activities according to their perceived utility. Hence, the willingness of a buyer to reallocate some time from other activities to shopping will in part reflect the relative attractiveness of a store (Achabal, Krierwall and McIntyre 1981). Unless shopping is viewed as intrinsically valuable, "consumers must trade-off time against other non-temporarily related store attributes and shopping against other more desirable activities" (Achabal et al. 1981, p. 197). Thus, the role of time in determining the perceptions of retail crowding of shoppers with different shopping motives is likely to be important.

Similarly, several have examined the various components of perceived risk and their influence on certain aspects of buyer behavior (Bauer 1960; Popielarz 1967; Schiffman 1972; Roselius 1971). The expectation that perceived risk is a determinant of shoppers' perceptions and evaluations of retail environments is indirectly supported by Schellinck's (1982) research. In an experiment in which he manipulated the price and performance components of risk, Schellinck found a relationship between buyers' choice of informational cues and perceived risk.

A few studies have documented the effect of perceived risk in store choice (Hisrich, Dornoff and Kernan 1972; Dash, Shiffman and Berenson 1976). It was concluded that retail establishments are "susceptible to the same kind of risk handling analysis typically accorded only to products" (Hisrich et al. 1972). In the context of the present study, perceived risk, by definition, is more relevant for task-oriented than for nontask-oriented shoppers. Task-oriented shoppers are expected to perceive the existing density cues to the degree that these conditions prevent them from achieving their goals.

A logical extension of this premise is that, as perceived risk associated with a task increases, the perceived retail density and resulting perceptions of retail crowding felt by task-oriented shoppers are also likely to increase.

As mentioned before, retail crowding is likely to have an impact on the outcomes of shopping in terms of past purchase behavior. Shoppers' perceptions of retail crowding have been found to affect buyer behavior (Harrell et al. 1980), as well as the outcomes in terms of satisfaction with the shopping trip. Post patronage evaluation and subsequent repatronage behavior has gained little attention, but should be addressed for two reasons. First, retailers require knowledge of consumer satisfactions and dissatisfactions not only with the products they offer but also with other aspects of shopping, buying, and interacting with the retail establishment itself (Westbrook 1981). Second, the existing research about salient attributes in retail patronage implies the importance of density cues and crowding as determinants of retail store selection. For example, store roominess, number of shoppers (for example, a "crowded store"), certain display and layout characteristics (such as "cluttered aisles," "confusing layout"), number of sales people, checkout speed, and the other environmental conditions (such as noise and light levels) are among the attributes often reported in patronage studies (Lindquist 1974-75; Arnold, Ma and Tigert 1978; Kirshnan and Mills 1978; Westbrook 1981).

The need for studying retail satisfaction/dissatisfaction is underscored by research (Andreason and Best 1977) which reports the frequency of some consumer problems and the importance of consumer discontent to consumers, retailers, manufacturers, and public policy

makers (Bearden, Crocket and Teal 1980). Satisfaction results in the managerially desirable outcomes of store loyalty and repatronage intentions. Understanding the possible systematic relationship between retail crowding and retail satisfaction is of considerable value in assessing retailer performance and mapping retail strategy.

Accordingly, the second set of hypotheses in this study address some questions important to understanding the consequences of retail crowding in terms of post patronage satisfaction and repatronage intentions. Both the review of the relevant literature and the exploratory focused group interviews support the expectations that certain dimensions of retail density and subsequent perceptions of retail crowding may affect shoppers' retail evaluations and patronage intentions.

The Objectives of the Study

The major objective of this study is to investigate some causes and consequences of shoppers' perceptions of retail crowding in retailing environments. Accordingly, the research consists of two major parts. One set of hypotheses will explore the antecedent variables that produce or affect perceptions of crowding in a particular retail setting. Another set of hypotheses will then explore the consequences of retail crowding in terms of post-patronage satisfaction and repatronage intentions.

More specifically, there are three major research objectives: 1) investigate the effect of two types of shopping motives (task-oriented and nontask-oriented), time pressure and perceived risk on shoppers' perceptions of crowding in the context of a retailing environment, 2) examine how the experience of crowding in a retailing

environment affects post-patronage satisfaction and intentions to repatronize, 3) develop a valid operationalization of perceived retail crowding that is consistent with the theoretical underpinnings of the concept.

Plan of the Dissertation

Chapter Two begins with the description of the concept of crowding, the key construct of the study, and then presents the literature review concerning the antecedents and consequences of crowding in general. Antecedents of retail crowding are discussed in four parts: physical density, individual differences, motives, time pressure and perceived risk as selected determinants of crowding. The last section of the chapter includes the review of the relevant literature on retail satisfaction/dissatisfaction and retail patronage intentions as consequences of retail crowding. Finally, a summary of the issues and hypotheses of the research are presented.

Chapter Three describes the methodology used in the research. The hypotheses developed in the previous chapter were tested by an experimental design. This chapter discusses the surveys and the pilot test which led to the experiment. Then the experiment is presented in detail.

Chapter Four discusses the analysis of the data collected during experiments. The discussion begins with the examination of the dependent variables for internal consistency (reliability) and construct validity. Next the statistically significant and substantially important results of the various analyses are presented. Finally, a general discussion section summarizes the findings of the study.

Chapter Five summarizes the findings of the study, underlines its limitations and presents its contributions given these limitations. Then, the implications of the findings for managers and suggestions for further research are discussed.

CHAPTER TWO

LITERATURE REVIEW

This chapter begins with a description of the unique characteristics of the concept of crowding, the key construction of the research. Next, a literature review concerning the other variables considered in the study is presented. The issues raised in each category will then be restated in the form of substantive hypotheses.

Retail Crowding: Antecedents and Consequences

This review of the crowding literature is organized around its conception as a sequential process involving: 1) antecedents which normally give rise to that state, and 2) consequences which arise as a result of it. The model of crowding as a sequential process emphasizes the role of density as a source of crowding perceptions and the aftereffects of such perceptions.

The Concept of Crowding

Stokols (1972) defines crowding as a subjective state of psychological stress in which one's demand for space exceeds the available supply. This experience is a result of the interaction of physical, social and personal variables which combine to sensitize the individual to the actual or potential constraints of limited space (Stockdale 1978). The spatial and social elements determining the

rate at which information is received from an environment are operationalized in terms of an objective measure, density.

> Density is the perception and estimate of the number of people present in a given area, the space available and its organization while crowding (which we could call affective density) is the evaluation or judgement of that perceived density against certain standards, norms and desired levels of interaction and information (Rapoport 1976, p. 10).

Given this formulation, areas identical in terms of people per unit of area may have very different densities (Rapoport 1969a, 1969b). Similarly, two individuals entering the same environment may have clearly distinct crowding perceptions of it (Sundstrom 1978).

There are three theoretical bases for understanding crowding. The concept of behavioral constraint (or social interference) contends that feelings of crowding will occur when density restricts or interferes with the activities of an individual in that setting. This perspective is derived from Brehm's (1966) theory of psychological reactance, which states that any perceived limitation of freedom to perform a behavior will produce an individual's reaction to a setting. This explanation will be discussed further under the motives component of antecedent factors.

A second conceptual set, overload models, stems from in the sociological theories of urban life. Milgram (1970) defines overload as a situation in which the rate and amount of environmental stimuli exceed the capacity to cope with them, leading to feelings of being crowded. Hypotheses derived from the overload models have been tested in a number of empirical studies (Desor 1972; Seagert 1973; Altman 1975). The evidence from this research seems to support the relationship between amount and rate of environmental cues and subsequent feelings of crowding.

The third perspective stems from Wicker's (1973) application of Barker's (1963) ecological theory to the study of human crowding. Barker's theory of undermanning suggests that to the extent a particular setting is understaffed, systemic pressures will be felt by the available personnel for more intensive participation. As an extension of this theory, Wicker posited a condition of overmanning, in which participants exceed what is necessary. Applying this concept to conditions of crowding, Wicker suggests that low density, overmanned settings may be perceived as more crowded than high density, undermanned ones.

All three of these theoretical perspectives contribute to the objective of developing a valid operationalization of the concept of perceived retail crowding. Since the feeling of crowding is a subjective experiential state, it is expected to vary across individuals. The methological implication of this is that what constitutes a crowded environment should not be determined by the researcher, as is often the case in experimental studies of crowding. The role of researcher should be to exhibit those environmental cues which are posited to engender crowding feelings and, then, to measure crowding as perceived by subjects. In the present study, all of the above mentioned theories contributed to the development of a technique used in operationalizing the concept of perceived crowding.

Antecedents of Retail Crowding

The extant literature on crowding and consumer shopping behavior suggests four classes of antecedents of crowding: physical density, individual characteristics, motives and constraints.

A) Physical Density

Physical density refers to spatial qualities of the perceived environment in terms of objects and people. Objects, people and the relationships among them (such as aisle space, number of shoppers, merchandise displays) are important physical dimensions since they determine the amount of environmental information (Rapoport and Kantor 1967; Rapoport and Hawkes 1970; Rapoport 1971).

One of the most often tested hypotheses in the crowding literature associates high spatial density with a certain psychological reaction such as crowdedness, stress, discomfort, dissatisfaction, or a similar psychological reaction (Epstein and Karlin 1975; Evans 1975; Freedman, Heshka and Levy 1975; McClelland 1974; Poe 1975; Ross, Layton, Erickson and Schopler 1974; Sundstrom 1974). In most of these studies, spatial density was found to result in feelings of crowdedness or another type of negative reaction. Some showed an interaction between spatial density and other factor or factors (Freedman, Levy, Buchanan and Price 1972; Smith and Haythorn 1972; Worchel and Teddlie 1976). Three studies found no effect of spatial density on comfort (Freedman, Levy, Buchanan and Price 1972; Marshall and Heslin 1975; MacDonald and Oden 1973). Only one study found a lesser anxiety under conditions of high spatial density (Freedman and Staff 1975). In summary, the findings suggest that brief exposure to high spatial density tends to produce crowdedness or at least mild stress. The question then becomes: What specific forms of high density cause the stress?

Milgram's (1970) overload model addresses part of this question by focusing on complexity of physical surroundings. The model

predicts that complex and disorderly environments create demands on a person's capacity to receive and process information. Such settings, therefore, produce greater negative psychological reactions than do orderly ones. Wohlwill (1968) confirmed this idea by finding that moderate degrees of complexity are preferred over highly complex settings. McClelland and Auslander (1975) asked student subjects to rate the degree of crowding shown in several photographs. The findings were consistent with the overload hypothesis. Complexity was positively associated with ratings of crowding and negatively correlated with orderliness. Baum and Davis (1976) found a similar positive relation between complexity and crowding for certain activities. Worchel and Teddlie (1976) ran a laboratory experiment and found evidence that the presence of pictures on walls reduced the discomfort of close interpersonal proximity. Similarly, two studies reported evidence that ratings of crowding and the number of "visual escapes" varies inversely (McClelland and Auslander 1975: Schiffenbauer, Brown, Perry, Schulak and Zanzola 1977). The conclusion is that while the visually complex features in a crowded environment can sometimes serve as a diversion from stress, complexity may contribute to feelings of discomfort. The conditions under which diversion or stress occur were not specified.

Another physical condition which seems to intensity feelings of crowding and stress is the amount of light or dark in the environment. Two studies have reported that well-lit or lighter colored rooms are rated as less crowded than darker rooms (Baum and Davis 1976; Schiffenbauer et al. 1977).

Similarly, partitions within a surrounding tend to affect crowding perceptions. Desor (1972) showed that crowding was perceived as lower in a room with partitions. This is consistent with the overload hypothesis, since the partitions may be limiting the amount of social stimulation and thus reducing the demands on the information processing capacities of each individual. Baum and colleagues (Baum and Valins 1973; Baum, Harpin and Valins 1975; Valins and Baum 1973) found that students who live in suites arranged around a common lounge report less crowding than do students who live in dormitory rooms arranged along corridors. Again using the overload explanation, students who live on corridors are likely to meet more people around their rooms than are students who live in suites.

Both noise and heat may produce stress or intensify the stress produced by other stimuli (Sundstrom 1978). This idea presumes that, when aroused, people become more sensitive to their surroundings and attend to larger number of environmental cues. However, research has not shown that heat and noise intensify crowding. Griffitt and Veitch (1971) conducted an experiment in a chamber with students at "normal" and "hot" temperatures. They found that although heat and noise produced stress, one did not increase or intensify the other's effects. Similar results were obtained by Freedman et al. (1972), who worked with people in mock jury deliberations in large and small rooms. None of the dependent measures were affected by introducing noise, the independent variable. Common to both of these studies, however, was the use of predictable, aversive stimuli. Sundstrom (1978) asserts that crowding perceptions might have been more intense had the aversive condition been more uncontrollable and unpredictable.

It still remains to be shown that extreme physical conditions can intensify crowding.

In summary, crowding seems to be perceived in small rooms with high spatial density, but complex settings may provide escapes from aversive surroundings. Architectural features, such as partitions and corridors, affect crowding to the extent that they increase or decrease the amount of social stimulation among individuals. Other physical conditions, such as noise and heat, have not been systemically related to crowding.

With respect to the social antecedents of crowding, they seem to arise from two general sources. First, high number of people may produce undesirable conditions, such as lack of privacy or loss of personal territory. Second, social conditions, independent of spatial concerns, accompany high density, such as a very competitive task (Sundstrom 1978). Perhaps the research method most often used to explore social antecedents of crowding has been to vary density along with varying social conditions that affect crowding. Among such conditions are number of people, interpersonal proximity, interferences, necessity for interaction, and the nature of a group task.

Number of people is one of the most powerful determinants of perceived crowding in several experiments. Griffitt and Veitch (1971), Saegert (1974), and Dooley (1974) found that when they varied social density in a single room for short periods, crowding and other forms of stress were found to be greater in larger groups than in smaller ones. Even the studies that manipulated the size of expected groups reported more crowding with higher social density (Baum and Greenberg 1975; Baum and Koman 1976).

Harrell and colleagues (Harrell and Hutt 1976a; Harrell and Hutt 1976b; Harrell, Hutt and Anderson 1981) examined the effects of high social density on buyer behavior within a retail store environment. The number of shoppers in the store at the time of data collection was used as a measure of social density. Their results furnished evidence that high density in retail environments may have a predictable effect on shopping behavior.

There is some evidence that excessive interpersonal proximity or immediacy (such as directness of body orientation, eye contact, physical proximity) tends to result in crowding (Ross et al. 1973; Sundstrom 1975b; Worchel and Teddlie 1976). Bergman (1971) tested the relationship between immediacy and stress by varying interpersonal distance in groups of three, six, and twelve subjects and gave each group a task to be completed. "Close" groups were found to be more uncomfortable. Worchell and Teddlie (1976) also reported greater crowding at close proximity. Sundstrom (1975a) experimented with groups of six males that included three members who were either intrusive (touching; excessive eye gaze) or nonintrusive. In brief, the evidence suggests that excessive interpersonal proximity may product stress. Personal space invasion tends to increase crowding perceptions.

At least two studies have examined social interference as one of the social antecedents of crowding. Sundstrom (1975) manipulated "goal blocking" by having some subjects interrupt or appear indifferent during an impression formation task. He found that "goal blocking" produced discomfort and stress under both high and low density condition. In sum, some evidence, albeit indirect, indicates

that crowding perception may be increased by greater interference from group members.

The nature of a task to be accomplished is among the social antecedents of crowding. Mini-figurines were used in three experiments which suggest that crowding is reported at lower densities when the task is solitary than when it requires interaction (Cohen, Sladen and Bennett 1975; Desor 1972). McClelland (1974) found that groups whose tasks required more interpersonal interaction reported greater crowding. On the other hand, those subjects who were uncomfortable with social tasks in the small room condition reported similar uncomfortable feelings in the large room condition. This finding is consistent with the concept of optimal social contact (Altman 1975; Sundstrom 1977; Wohlwill 1974). In a large room, the subjects had less than optimal stimulation and perhaps felt "isolated" as opposed to crowded. In addition, the amount of structure of a task appears to affect crowding. Schopler and Walton (1974) varied the amount of structure expected in tasks to be accomplished by a group of male students under high density conditions. Subjects reported greater crowding when they anticipated unstructured tasks. Baum and Koman (1976) obtained similar findings. However, these studies provide only suggestive evidence that, under high density conditions, crowding perceptions are greater for unstructured than structured tasks.

In summary, research on the social antecedents of crowding shows that high social density (either in short or long exposures) and excessive interpersonal proximity lead to certain forms of stress. The remaining hypotheses concerning interference, necessity of

interaction, and nature of group task either were not consistently related to crowding or received support in very few studies.

B) Individual Characteristics

Research investigating a relationship between crowding perceptions and characteristics of individuals is limited. Both Cozby (1973) and Dooley (1974) reported that people with relatively large "personal space zones" are likely to have less tolerance for crowded environments. Another personality trait found to be related to tolerance for crowding is external focus of control (Schopler and Walton 1974), which is consistent with the hypothesis that crowding is loss of privacy and control (Altman 1975). Evans (1974) tried to relate crowding and personality, but results were either insignificant or conflicting.

Of the fourteen studies that investigated the relationship between sex differences and crowding in brief exposures to high density, only five found some suggestive evidence. Baum and Koman (1976), and Freedman et al. (1972), showed that under high density conditions in same-sex groups, males reported greater discomfort than females. Saegert (1973) found the opposite results for anxiety, while Marshall and Heslin (1975) reported an interaction between sex, sex composition, and group size. The remaining nine studies showed no sex differences in crowding as a function of density (Aiello and Capriglione 1975; Aiello, Epstein and Karlin 1975; Baum and Greenberg 1975; Evans 1975; McClelland 1974; Ross et al. 1975; Schopler and Walton 1974; Stokols et al. 1973). When subjects were exposed to long-term high density conditions, Baum and Valins (1974), Baum et al. (1975), and Valins and Baum (1973), found no sex differences. Thus,

the extant research shows that hypothesized relationships between crowding and individual characteristics remain to be demonstrated.

C) Motivational Factors

Human goals and, more specifically, motive structures are central to every theory of human behavior (Lutz 1975). Issues concerning motivation have typically dealt with such questions as the purpose of a certain behavior or why a certain choice was made. As such, motives refer to an individual's general predisposition that direct behavior toward pursuing certain desired objectives (Assael 1984). For the most part, the major emphasis in motivation research has been on explaining the determinants of the direction and intensity of behavior. In understanding consumer behavior, it is important to know the factors influencing preference for one action over another, the direction issue. Consumer behavior also can be described in terms of different levels of vigor in performing such behaviors, the intensity question. Therefore, both the content of motives and their prepotency can be expected to vary in significant ways across shoppers as well as shopping environments (Lutz 1975; Olshavsky 1975).

Despite the vast literature on theory of motivation in various fields of study (see Mitchell 1979 for a comprehensive review), there has been very little empirical research on motivational mechanisms in consumer choice. In the 1950s some attempts were made to examine peoples' desires and needs (for example, Haire 1950; Martineau 1957; Newman 1957; Dichter 1964). This type of research soon disappeared due to its methodological and conceptual shortcomings. Later, issues relevant to consumer motivation were analyzed by other researchers. Haley (1968) examined benefits sought in purchasing, and Wells (1975)

studied psychographics. Others focused on particular motives, such as fear (Ray and Wilkie 1970; Sterndhal and Craig 1974) or consumer values (Henry 1976). None of these studies systematically examined the relationship between motivation and consumer behavior (Bettman 1979).

Past research on shopper motivation as an influence on various aspects of shopping behavior is scant. While virtually no work has investigated the possible relationship between shopper motives and perceptions of retail environments, two related areas, consumer search behavior and shopping orientation, have received relatively extensive attention. In the vast literature pertaining to consumer search, several studies have shown the importance of retail store visits as a source of product information (Newman and Lockeman 1975). Most of this literature, however, has focused on prepurchase search behavior, emphasizing retail visits with an intended purchase in mind. Nonpurchase or nontask-oriented information search done to satisfy epistemic, curiosity, or other motives has been essentially ignored. For example, a consumer may visit a retailer to explore and gather information simply for the intrinsic satisfaction (Bloch and Richins 1982).

Recent work on shopping orientation provides further insights into the relationship between shoppers' motives and their perceptions of the various aspects of retailing environments. In an exploratory study, Tauber (1972) tried to determine why people shop. He hypothesized that their motives are a function of many variables, some unrelated to the actual buying of products (such as sensory stimulation, social experience, and entertainment). He maintained

that an understanding of shopping motives requires consideration of the satisfactions shopping provides as well as the utility obtained from any mechandise purchased. Recent work by Bellenger and his colleagues (Bellenger and Korgaonkar 1980; Bellenger, Robertson and Greenberg 1977; Korgaonkar 1981) support Tauber's contention by profiling people who enjoy shopping as a leisure time activity. Compared to others, these "recreational shoppers" are active information seekers who prefer department stores and shopping malls, like to spend more time shopping, continue to shop after making a purchase, and place higher importance on store decor. "Convenience-economic shoppers," in contrast, dislike shopping or are neutral toward it, and thus approach retail store selection and shopping from a time- or money-saving point of view. In light of the above discussion, two general classes of shopping motives are identified: task-oriented and nontask-oriented.

Task-Oriented Motives

When the objectives involved with purchasing products and services are task-oriented, shoppers are likely to make fewer non-planned purchases, spend less time per shopping trip, are less likely to continue to shop after making a purchase, and place less importance on store decor (Korgaonkar 1981). Perhaps the most typical characteristic of task-oriented shoppers is their interest in and involvement with the immediate task, usually a product or service that must be acquired within a certain period.

Several authors have discussed the relationship between task performance and environmental perception (Stokols 1972; Stokols, Rall, Pinner and Shopler 1973). One widely accepted view is the perspective

of limited freedom (or behavioral constraint), which has been adopted in several theories of crowding. This approach has been modeled after Brehm's (1966) theory of psychological reactance, which states that maintenance of freedom of choice is a basic motivator in human perception and behavior. When people's freedom to perform certain behaviors is threatened, they will react to their settings in a way to restore that freedom. Proshansky, Ittelson and Revlin (1970) have discussed reactance in relation to environmental perception. They observe that crowding is experienced when environmental density leads to frustration of an individual's pursuit of important activities and goals. Esser (1973) noted that crowding is the result of "not having one's way." The resulting frustration may be a consequence of actual physical interference or of the mere presence of others, both of which limit one's behavioral choices. Such a view also emphasizes the role of time as an interacting variable that will influence crowding perceptions. Behavioral constraints or the perception of limited freedom will have little effect if one has unlimited time. The intensity of perceived environmental density will increase with the introduction of time pressure (Stockdale 1978).

Accordingly, task-oriented shoppers are expected to perceive the existing high density cues in the environment to the degree that these conditions prevent them from functioning effectively toward goal achievement. Depending on the perceived intensity of environmental density and lack of choice control arising from it, task-oriented shoppers will experience retail crowding.

Nontask-Oriented Motives

Nontask motives differ from task-oriented ones in the type of interest and time involved in shopping. The typical nontask shopper

has no current interest in acquiring a product or service. Shopping is perceived as a recreational or informational activity, pleasurable in and of itself. A nontask shopper "can satisfy his/her curiosity motives and add to feelings of self-esteem through the acquisition of product-specific or marketplace expertise" (Bloch and Richins 1982, p. 389). However, although the intent to buy is not central to nontask motives, such activities may of course lead to a purchase, either an immediate, impulse purchase or later acquisitions as a result of information generated by browsing (Bellenger, Robertson and Hirschman 1978; Bloch and Richins 1982). The important point is that nontask shoppers do not make retail visits with any specific purchase goals in mind. Without predetermined tasks to perform in a certain period, these shoppers do not need to focus their attention and efforts on certain activities.

For nontask shoppers, the desire to satisfy epistemic, curiosity, and other recreational motives leads them to allocate attention to surprising and stimulating events in the environment. Stimuli such as loud noises, flashes of light, abundant displays, and numerous people will not be evaluated as restraining or blocking goal-directed activities, as would be the case with task-oriented shoppers. Hence, as noted earlier, recreational shoppers enjoy shopping as a leisure activity, spend more time shopping per trip, shop impulsively, and place higher importance on store decor (Bellenger and Korgaonkar 1980).

In brief, those shoppers motivated by a nontask-orientation are expected to have higher tolerance for environmental density, and

consequently, to experience less retail crowding than do task-oriented shoppers.

D) Perceived Risk and Time Pressure as Antecedents of Retail Crowding Perceptions

"The environment is seen as offering cues whereby people judge its nature, the potential for action it offers, and the appropriate behavior" (Stockdale 1978, p. 217). Cues imposing a higher information-processing demand lead to higher perceived density, and evaluation of those cues as interfering or uncontrollable leads to feelings of crowding (Stockdale 1978). Previous research has identified two factors, perceived risk and time pressure, that significantly influence how people select and interpret environmental cues (Olson 1972; Wright 1974; Schellinck 1982). Accordingly, this literature is reviewed to find support for the expectation that perceived risk and time pressure associated with certain purchases affect shoppers' perceptions of retail crowding.

Perceived Risk

Buyers are sometimes uncertain about the outcome of a choice between brands and may be concerned about the consequences of a poor decision. Therefore, uncertainty about the decision and the potential outcomes of the decision are the two components of perceived risk (Assael 1984).

The various kinds of risks involved in purchasing decisions can be classified as financial, social, psychological, and performance risks according to their consequences. The amount of risk perceived by buyers depends on a number of product, individual, and situational

factors. For example, perceived risk is likely to be greater when the product is technologically complex, its price is high, and the buyer has little experience with and confidence in evaluating the brands in the product category. When perceived risk is high, buyers engage in strategies either to reduce the consequences of failure or to increase the certainty of purchase outcome. Seeking additional information is perhaps the most common strategy (Bauer 1960). Such information can be gathered outside or in the store during the time of purchase. Studies on buyer risk reduction strategies report that higher perceived risk often results in greater in-store prepurchase deliberation, such as comparison shopping (Assael 1984).

When the perceived risk associated with a product is high, people are highly motivated to invest the effort necessary for careful analysis and interpretation of information cues. Schellinck (1982) manipulated the price and performance components of perceived risk to see how they affect buyers' choice of environmental cues. Under both high and low risk conditions, the subjects chose cues they felt were better predictors of quality, although they did not feel confident they understood these cues. The amount of variance explained by risk manipulation was not large, but the results shed some light on how perceived risk affects cue choice behavior.

In the context of the present study, perceived risk, by definition, is more relevant for task-oriented than for nontask-oriented shoppers. Task-oriented shoppers are expected to perceive the existing high density cues to the degree that these conditions prevent them from achieving their goals. A logical extension of this premise is that, as perceived risk associated with a task increases, the

perceived density and resulting perceptions of retail crowding felt by task-oriented shoppers are also likely to increase.

Time Pressure

The second constraint examined in this study is time pressure. From a strictly economic point of view, a shopper will minimize the time required to accomplish the needed task (Bellenger and Korgaonkar 1981). Melbin (1976) emphasized the neglect of time and suggested that people deal with it just as they do with space; they treat it as a scarce resource. Several authors stress the importance of time and convenience in buyer behavior. Kelley (1958) noted that a key to understanding shopping behavior is the increased importance consumers attach to convenience. Wright (1974) contended that an increase in information load can result from either increasing the amount of data with which a person must cope or decreasing the time available. He also added: "High information load is perhaps the rule rather than the exception for consumers shopping in noisy, crowded, information-packed retail outlets or managers making decisions under the pressure of deadlines" (p. 555).

Relating time pressure to environmental perceptions, Stockdale (1978) contended that the urgency created by limited time increases the influence of any behavioral interference from the environment. Such a view emphasizes the role of time as an interacting variable affecting environmental perceptions. The previously discussed perspectives of limited freedom, behavioral constraints, and social interference will be of little importance if one has unlimited time. "Time is a resource and space is salient only in the context of time, in that there will be high perceived density only when there is an

inappropriate stimulus input at a given time" (Stockdale 1978, p. 217).

The differences between task-oriented and nontask-oriented motives can also be understood through the concept of time pressure. Compared to nontask shoppers, task-oriented individuals perceive the costs of shopping as exceeding the benefits gained in terms of pleasure or information and thus try to minimize the time and effort in shopping (Bellenger and Korgaonkar 1981). Schellinck (1982) demonstrated that time pressure helps determine the amount and type of environmental cues buyers use. His results indicated the usage of high confidence value cues as a time-saving strategy in evaluating product quality. Additional empirical evidence suggests that buyers operating under time pressure or distraction tend systematically to place greater weight on negative evidence than do those under less strain (Wright 1974).

Faced with a goal to be achieved under high time pressure, task-oriented shoppes are likely to perceive their environments differently than do nontask shoppers. Task-oriented shoppers are involved with a task to be completed. Under the pressure of a deadline, they are likely to feel the effect of any environmental interference more intensely than do nontask shoppers. In addition, they will tend to "accentuate the negative." Therefore, it is expected that, under time pressure, task-oriented shoppers are more likely to perceive high density cues, and consequently, perceive greater retail crowding than do nontask shoppers.

Consequences of Retail Crowding

The outcomes of exposure to conditions of high density can be analyzed in two different phases: responses during exposure to high

density and subsequent responses, called "aftereffects" (Sundstrom 1978). Since one objective of this research deals with repatronage intentions and postshopping evaluations of buyers exposed to high density retail conditions, the present review will only address the literature on aftereffects or consequences.

The typical experiment to test the consequences of high density conditions is extension of Glass and Singer's (1972) work on human adaptation. In these experiments, people are first exposed to high or low room density and then their responses are observed in a different room either individually or in a group. One common aftereffect of crowding that has been reported in several studies is the observed decrements in task performance in highly dense environments.

Several studies compared the task performance of people who had been under high density and low density conditions. Dooley (1974), Sherrod (1974), and Evans (1975) found poorer performance after exposure to high density. Poe (1975) found that subjects showed poorer performance after exposure to both high and low spatial density. While McClelland (1974) reported no aftereffects of density on the performance of two difference tasks, he did find that groups whose task required interaction did poorer than groups who had less interaction. Saegert et al. (1975) discovered females did better on tasks after low rather than high density when they were asked to perform in a crowded or uncrowded train station; males did better after exposure to high density.

Only two experiments examined the aftereffects of crowding in retailing environments. Saegert (1973) found that consumers shopping for shoes in a department store were less able to recall details about

the merchandise and store layout under high rather than low density conditions. Harrell et al. (1980) furnished evidence that crowding in retail environments may have predictable effects on shopping behavior and subsequent outcomes. They discovered that the level of store density is directly related to buyers' satisfaction in the store and to their feelings about the whole shopping trip. Similar outcomes are hypothesized by Eroglu and Harrell (in review), who extended the original model of buyer behavior under conditions of crowding to other retailing environments, such as malls and shopping centers.

In summary, there is some evidence that decrement in task performance is one after effect of high density conditions. However, there are also some complex results in which aftereffects seem to depend on group size or sex. The studies reviewed here of the after-effects of crowding in retailing environments suggest that high density may influence not only buyers' in-store behavior but also several perceptions of store image. A recent reexamination of the concept of crowding has emphasized the centrality of motivators and constraints in determining perceptions and processing of density cues as well as subsequent responses and outcomes (Eroglu and Harrell, in review). Accordingly, the antecedents and consequences of crowding relate closely to the concepts of motives and constraints, which have direct bearing on this research.

Although retail crowding has been found to affect shopping behavior, the consequences of crowding in terms of postpatronage evaluation and subsequent repatronage intentions have not gained much attention. The only exception is a path analytic study of the sequential relationship among several variables pertinent to retail

crowding (Harrell et al. 1981). The results suggest that perceived crowding systematically affects shopping behavior and consumer's feelings about retail outlets and shopping trips. Insights from this study can be extended to enhance the theoretical and managerial scope of our knowledge of retail crowding, retail satisfaction, and intentions to repatronize.

Retail Satisfaction

Despite the continuing growth of literature on buyer satisfaction and dissatisfaction, comparatively little attention has been given to satisfaction with respect to retail stores (Korshnan and Mills 1981). In one of the earliest empirical studies, Pickel and Rungeling (1973) developed measures to study consumer satisfaction with various firms, including retailers. Miller (1976) investigated consumer satisfaction with grocery stores and reported a positive relationship between store satisfaction and patronage frequency. Similarly, Maddox (1977) attempted to link consumers' perceptions of store characteristics to self-reports of satisfaction. He also developed the notion of the "institutional" conceptualization model of store satisfaction. This view holds that retail outlets provide buyers with satisfactions and dissatisfactions distinct from those of the products they sell. Swan (1977) examined the cognitive process leading to consumer satisfaction with a new department store. He found that both disconfirmation and expectations were significant predictors of satisfaction and that satisfaction predicted intentions.

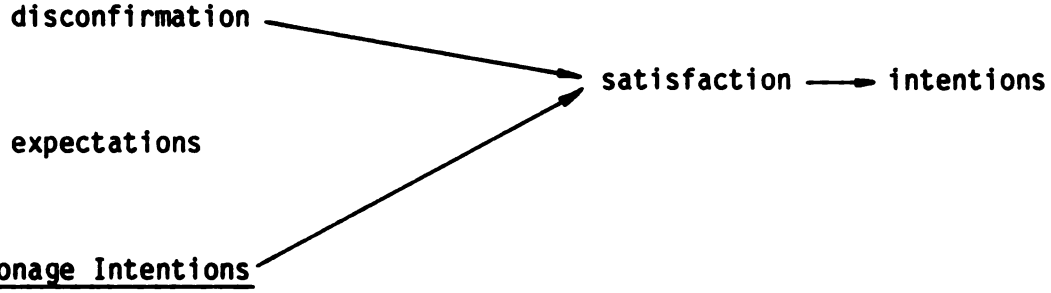
Satisfaction is a psychological construct describing the subjective emotional state that occurs in response to an evaluation of a set of experiences (Westbrook 1981). The buyers' satisfaction with a

retail outlet is that individual's emotional reaction to his/her evaluation of the experiences realized from patronizing that retailer. Westbrook (1981) classified the various buyer patronage experiences into two broad categories: those related to being in the store and feelings within the establishment, and those related to consumer products and services acquired from the retailer. Some examples of the first category are browsing through the merchandise, interacting with the clerks, reacting to store atmosphere and features, and observing other customers in the store. Examples of the second type are the performance of a product and appearance and fashion appeal of a piece of furniture.

The process that determines satisfaction or lack of it starts with the expectations that consumers have when making a choice (Swan and Trawick 1981). When a store is patronized and the buyer's expectations about how well it "performed" are exceeded, satisfaction will be higher. If performance falls short of expectations, dissatisfaction will result (Oliver 1980). This expectation-disconfirmation approach to satisfaction views a consumer's degree of satisfaction as an outcome of a four-step process (Day 1977; Oliver 1980).

The starting point of this model is buyers' prepurchase expectations, their beliefs that a retail outlet will achieve a certain performance level on a set of salient attributes (Swan and Trawick 1981). In the next step the shopping experience occurs, and the buyer forms perceptions of store performance on the salient attributes. These perceived performance levels are compared with prior expectations, which then are either positively disconfirmed (performance higher than expectation), negatively disconfirmed (performance lower

than expectations), or just confirmed (performance equals expectations). The third step occurs when the perception determines a level of satisfaction with the store. Finally, in the fourth step, satisfaction determines whether to repatronize the store. Existing research shows that both expectations and disconfirmation are significant predictors of retail satisfaction and that satisfaction predicts intentions (Swan 1977). The model can be summarized as:



Although the published literature contains a very small fraction of studies which have investigated retail patronage intentions, the construct has been indirectly explored in the vast literature about retail store choice and attitude.

Intentions continue to be an important concept in marketing, and the literature is quite large (for example, Smith 1965; Silk and Urban 1978; Bass, Pessemier and Lehman 1972; Harrell and Bennett 1974; Morrison 1979; Ryan and Bonfield 1980). Most authors conclude that intentions alone may be a useful predictor for behavior, although the commonly reported correlations between these two constructs vary from .80 to .40 (Morrison 1979). Ryan and Bonfield (1980) tested the external validity of the Fishbein intentions model and concluded: "Intentions have been shown to be a managerially useful substitute for behavior in model applications" (p. 92).

Intentions to purchase have been the major focus of many duties, and patronage intentions have received only indirect attention. The literature on retail store image and patronage has, perhaps, dealt most with patronage intentions.

Pessemier (1980) defines retail patronage analysis as the measurement of "the relative appeal of a store or department [which] seeks to explain why potential customers do not visit or buy in a particular store or department." Such a broad description includes several and often overlapping research streams addressing issues of store choice, location, and image (Achabal et al. 1981).

Store choice/location/image research as a component of retail patronage has received considerable attention, especially after the Journal of Retailing dedicated a special issue to the subject in 1974-75. A detailed review by Lindquist (1974-75) was followed by a more recent work on store selection by Hansen and Deutscher (1977-1978). The importance of this study lies in its effort to reconceptualize image to include an attribute-component-dimension hierarchy.

Salient attributes of retail store selection have been reported in various studies (Alpert 1971; Myers and Alpert 1968). Arnold, Ma and Tigert (1978) compared the results of 12 studies on the salient attributes affecting shopping behavior at a supermarket and for women's fashion clothing. Among the attributes reported were location, convenience, and prices.

Interestingly, some of the antecedents of crowding previously discussed here are often mentioned as determinant attributes of retail patronage. Store roominess, number of shoppers ("crowded store"),

number of salespersons available, display and layout characteristics, checkout speed, and some specific architectural features (such as noise and light levels) were among the attributes found (for example, Lindquist 1974-1975; Arnold, Ma and Tigert 1978; Westbrook 1981; Kirshnan and Mills 1978). Achabal et al. (1981) suggest that such density related attributes do, in fact, reflect the importance of the time dimension in studying patronage behavior.

Despite the potential significance of the topic for managers in charge of retail strategy, no study has systematically manipulated the magnitude and number of density cues and subsequent retail crowding perceptions to examine their potential effects on retail patronage intentions. It is theoretically possible to integrate the findings regarding the effects of store attributes on store patronage and the findings on the effects of crowding on human behavior. It can be postulated that the amount of retail crowding perceived by shoppers will affect their patronage intentions. A part of this research will test the validity of this contention.

Summary of Issues and Substantive Hypotheses

The major research issues and hypotheses of this study evolve in three major groups as follows:

I. Issues Related to Antecedents of Retail Crowding

The question of how shoppers acquire the perception of retail crowding needs to be addressed. Three sets of selected antecedent factors are proposed to affect shoppers' perceptions of retail crowding: 1) shopping motives (task- vs. nontask-oriented motives), 2) time pressure, 3) perceived risk and 4) individual characteristics.

More specifically, the following hypotheses are proposed:

HI.1 Retail crowding perceptions of task-oriented shoppers differ significantly under high and low time pressure.

HI.2 Retail crowding perceptions of task-oriented shoppers differ significantly under high and low perceived risk associated with the purchase.

HI.3 Task-oriented shoppers perceive greater retail crowding than nontask-oriented shoppers.

HI.4 There is a relationship between retail crowding perceptions and individual characteristics. More specifically:

A. Less frequent patronizers of a retailing environment perceive greater retail crowding than more frequent patronizers.

B. Female shoppers perceive greater retail crowding than male shoppers.

II. Issues Related to Consequences of Crowding

The question of how conditions of retail crowding affect certain outcomes of shopping experience needs to be addressed. The three sets of shopping outcomes examined in the present study are: 1) satisfaction with the retailing environment, 2) intentions to repatronize, and 3) impact of shopping motives on (1) and (2) under conditions of retail crowding.

More specifically, the following are hypothesized:

HII.1 Higher the perceived crowding in a retailing environment, less the satisfaction with the retailer.

HII.2 Higher the perceived crowding in a retailing environment, less the intentions to repatronize.

HII.3 Under conditions of retail crowding, nontask-oriented shoppers will experience greater postpatronage satisfaction than task-oriented shoppers.

HII.4 Under conditions of retail crowding, nontask-oriented shoppers will have higher repatronage intentions than task-oriented shoppers.

III. The issue of developing a valid operationalization of perceived retail crowding that is consistent with the theoretical underpinnings of the concept.

CHAPTER THREE

METHODOLOGY

Introduction

The previous chapter presented the hypotheses of the study. These hypotheses were tested in a laboratory experiment as described later in this chapter. A laboratory experiment is preferred to other data collection methods such as observation during shopping or protocol method because it enables manipulation of the independent variables and provides control over potential extraneous variables. The objectives of this study require manipulation of shoppers' motives, the perceived risk and time pressure associated with the task and crowding perceptions. Since this is impossible to achieve in a shopping environment, a laboratory experiment is chosen.

Several focused group interviews and a pretest precedes the final experiment. The objectives of these efforts were: 1) to collect information about which density cues are salient in the particular retail environment under study (the mall), 2) to develop the treatment media of the experiment, namely the slides and scenarios, and 3) to specify some parameters in the experimental manipulations such as the "high" versus "low" levels of density, time pressure and perceived risk.

In the following section an overview of the method is presented first. Next, details of the method in terms of design, pre-experimental surveys and pretests are discussed. Finally, the experiment

itself is described by providing detailed information about the subjects and the experimental procedures.

Overview

The method used in this study presented subjects with representations (color slides) of a retail environment. This technique is adapted from McClelland and Auslander (1978) who developed it in environmental psychology. In the present study, the subjects were presented a role-playing scenario in which they were to imagine themselves in a given treatment condition. Role-playing, active or passive, can be used for situations which cannot be easily replicated in an experiment (Hansen 1972), such as assessing retail crowding perceptions.

The hypotheses were tested in an experiment using five color slides of a mall and five role-playing scenarios to manipulate the independent variables while simulating a shopping experience. Prior to the onset of the study, a series of exploratory focused group interviews were held to explore the determinants and consequences of retail crowding. These findings, along with the information from the literature review, were used to prepare the slides and scenarios which served as the experimental treatments of the research.

During the experiment, each subject was exposed to a scenario which determined the simultaneous manipulation of the three independent variables (motives, perceived risk and time pressure). Next, subjects were shown the five slides which randomly displayed varying levels of retail crowding in a mall. Immediately following each slide presentation, multiple measures were obtained of retail crowding

perceptions, satisfaction with and intentions to repatronize the particular retailing environment.

Design

The hypotheses of the study were tested in a laboratory experiment. The design required the employment of five groups of subjects (p_1, p_2, p_3, p_4, p_5). The between-block treatments were m (motive), r (perceived risk) and t (time-pressure) and the within-block treatment was s (slides). The design described here is shown on Figure 1. Since the r and t treatments were not relevant for the m_2 group of subjects, the actual experiment reduces down to two between-block treatments (r and t) and one within-block treatment. As shown in Exhibit 3.1, subjects in sets p_1-p_4 received one level from each of the two, bi-level treatments (r_1, r_2, t_1, t_2) but all of the five levels of the s treatment.

Exhibit 3.1
A Diagram of the Experimental Design

		s_1	s_2	s_3	s_4	s_5
m_1	r_1t_1	p_1	p_1	p_1	p_1	p_1
	r_2t_1	p_2	p_2	p_2	p_2	p_2
	r_1t_2	p_3	p_3	p_3	p_3	p_3
	r_2t_2	p_4	p_4	p_4	p_4	p_4
m_2		p_5	p_5	p_5	p_5	p_5

Of the two sets of hypotheses, the first deals with antecedents of retail crowding while the latter is concerned with its consequences. Accordingly, different independent and dependent variables were used for the two sets.

In the second set of hypotheses where consequences of retail crowding were examined, the independent variable was retail crowding perceptions. The dependent variables were postpatronage satisfaction and repatronage intentions.

The first set of hypotheses were tested by manipulating three independent variables: two levels of motives (task- and non-task oriented), two levels of time pressure (high and low) and two levels of perceived risk (high and low). The dependent variable was retail crowding perceptions. The time pressure and perceived risk variables were, by definition, only relevant for the task-oriented shoppers culminating in a total of five possible treatment combinations with equal cell sizes of 22. Exhibit 3.2 shows these cells with corresponding number of subjects assigned to each.

Exhibit 3.2
A Diagram of Treatment Combinations and Cell Sizes

MOTIVES	TIME PRESSURE		PERCEIVED RISK	
	High	Low	High	Low
Task-Oriented	22	22	22	22
Nontask-Oriented	22			

Subjects were randomly assigned to one of these five treatment combinations of motives, perceived risk and time pressure. Next, subjects were shown all of the five slides presented in random order. Measures of the dependent variables were taken immediately after each slide.

Pre-Experimental Surveys and Pretest

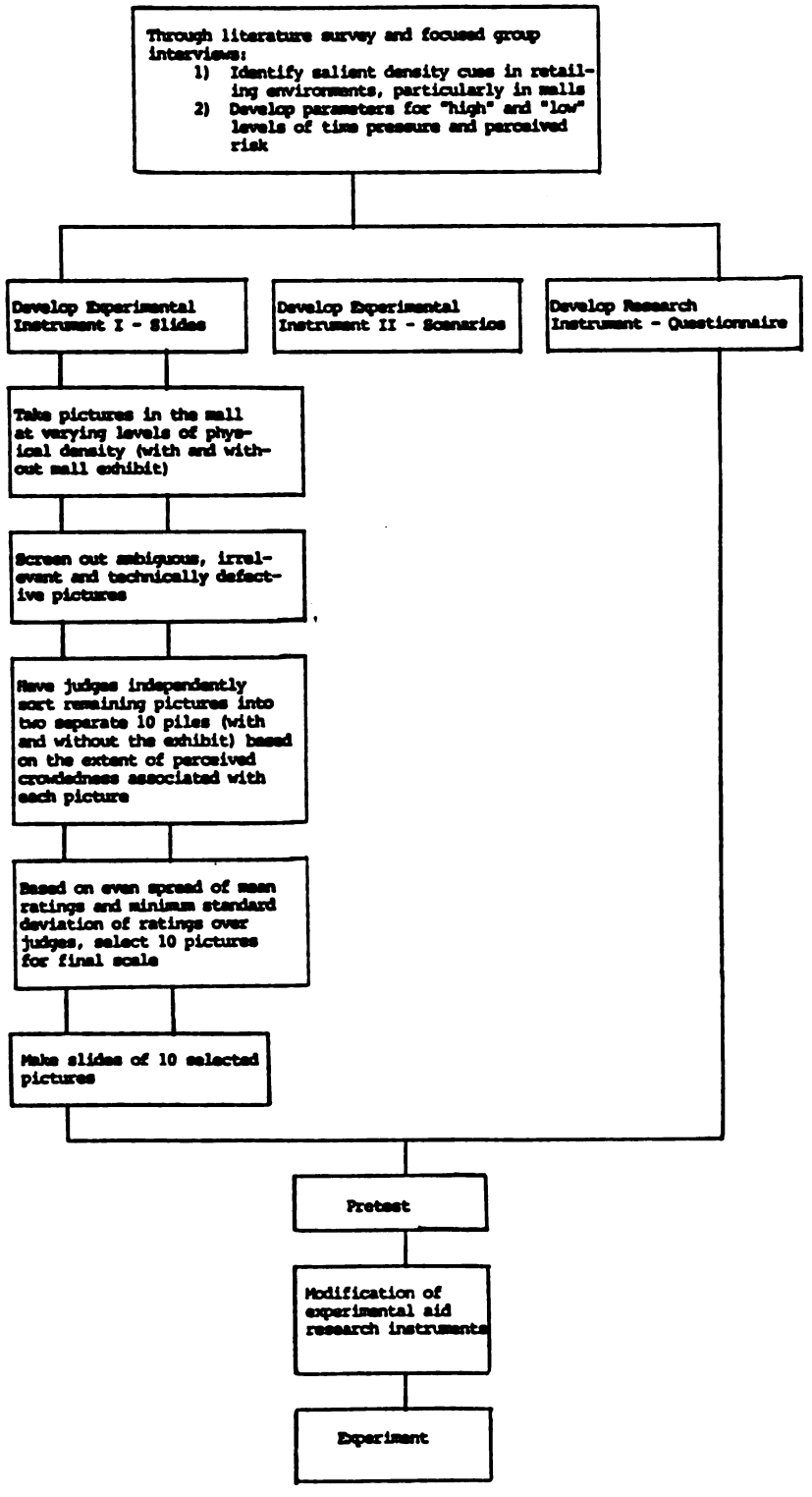
Several surveys and pilot tests were conducted prior to the onset of the final experiment. Exhibit 3.3 presents these research efforts in a schematic form each of which is now described in further detail.

Exploratory Focused Group Interviews: The initial step in the pre-experimental research was to conduct a series of exploratory focused group interviews since very little is known about the types of density cues and subsequent crowding perceptions in retail environments. Additionally, further insight was gained about the role of shopping motives in influencing shoppers' perceptions of retail environments. An exploratory methodology allowed formulation of alternative explanation for the effects of this phenomenon.

Four focused group interviews were conducted in July 1983 with 10-12 participants in each. Each of the one-and-a-half hour sessions involved shoppers from a relatively homogeneous segment of the population. The groups varied across segments to include individuals from several socioeconomic categories. One group involved husbands and wives in order to consider the possible impact of joint decision making. The other three groups involved women who were considered to be major shoppers in their respective families.

The groups were moderated using nondirective techniques to provide an atmosphere so respondents could discuss their thoughts

Exhibit 3.3: A Schematic Presentation of the Pre-Experimental Surveys and Procedures



regarding shopping behavior in crowded retailing environments. The moderators facilitated respondents to help them explore impressions of a broad range of shopping circumstances. Each interview was tape recorded and content analyzed. As with other qualitative techniques, focused groups did not allow quantification; however, they did aid specification of the salient retail density cues and interpretation of the reasons behind particular perceptions and behaviors.

Development of the Experimental Instrument I: Slides: The experimental method used in this study presented subjects with representations of a retail environment (color slides) rather than being placed in it. The subjects were exposed to a series of five randomly ordered slides with varying levels of social and spatial density in a mall. Following each slide, the subjects answered questions measuring their perceived retail crowding and other dependent variables under study. Given the crucial importance of slides in this research, their development is now discussed in further detail.

In adapting the techniques introduced by McClelland and Auslander (1978) to the present research, several criteria were established to generate the final set of slides: 1) the slides should be as exhaustive as possible to reflect a continuum of crowding from one end of the rating ("least cluttered/most spacious") to the other ("most cluttered/lease spacious"); 2) the determination of this range and the slides should be unbiased and free from the input of the researcher; 3) the slides should "simulate" a realistic shopping environment as much as possible; 4) they should be technically clear and unambiguous;

and, 5) their quantity should be limtied to a reasonable number to prevent subject fatigue and demand artifacts (Sawyer 1975).

The equal appearing interval technique developed by Thurstone (1929) provided the basis for the preparation and selection of the slides and to meet these criteria. The Thurstone method, a widely used method of attitude scaling, employs judges to establish the scale points for items (Nunnally 1978). The general procedure is to first generate a large number of statements which are then sorted independently by a sample of judges. The judgements are made in an 11-step interval ranging from "strong positive attitude" to "strong negative attitude." The mean rating by judges constitutes the scale point for each item. The final scale is formed by the items: 1) with small standard deviation of ratings across judges, and 2) whose mean ratings spread evenly from one end of the rating continuum to the other. The present study adapted the Thurstone method to provide a basis for "scaling" the various levels of crowdedness depicted in the pictures.

Two modifications were necessary during this adaptation. First, a 10-step continuum (instead of 11-step) was used for the scaling process to eliminate the midpoint. As much as a neutral midpoint makes sense in the context of the original Thurstone method, it becomes meaningless and difficult in the present case where some pictures would have to be classified as "neither crowded nor uncrowded." Accordingly, a 10-step continuum was established. Second, the number of judges was not nearly as large as that in the Thurstone method. This modification was necessary due to the nature of the task demanded from the judges in the present study. In the Thurstone method the judges are given short statements and asked to

sort them on the basis of their favorableness. In this case, however, the judges had to deal with a large number of color pictures and they had to rate them on a scale from "least cluttered/most spacious" to "most cluttered/least spacious." A preliminary informal pretest showed this to be a fairly demanding and difficult task. Hence, the decision was made in favor of using fewer but committed and dependable judges.

Having decided on the method of slide preparation and selection, the next step was to choose a particular retail environment to take pictures at. A mall, rather than an individual store or a department store, was preferred for several reasons. First, the likely impact of various merchandise types on shoppers' crowding perceptions was eliminated by using a mall environment. Given shoppers' varying experience with and predisposition to different product categories, it is possible that their perceptions of retail crowding may vary accordingly. Using a mall as the shopping site eliminated the difficult task of controlling for this factor. Second, malls offer more opportunity than individual stores do to capture an exhaustive and realistic continuum of crowdedness. They also serve as an outlet for nontask shoppers to pursue their recreational motives (Chain Store Age Executive 1978). This is not only due to their vast size but also due to the variety of activities and outlets they house. Finally, from a technical perspective, a mall was found more suitable than an individual store for taking shots at various crowding levels. Given the limited size and space in a store, one would likely have to use a wide-angle lense which could have resulted in unfocused and perhaps unrealistic shots.

Once the mall was chosen as the retailing setting, the next step was to identify those density cues which were salient in that environment. This was accomplished through an interdisciplinary literature search and the exploratory focused group interviews previously discussed. Two density cues were found to be most salient in malls: people and objects displayed. Consequently, the pictures which were to reflect various levels of crowding were taken by focusing on these two sets of cues.

The next step required generating an exhaustive set of pictures only a small subset of which were to be used as slides in the final experiment. These pictures were taken in Lansing Mall, Lansing, Michigan. Three major criteria were used to select this particular mall. These criteria were developed after soliciting the managers of four different malls (two in Kalamazoo, Michigan and two in Lansing, Michigan) and taking some experimental shots in each.

The first criterion was size. As previously mentioned, large size provided the opportunity to capture an exhaustive and realistic continuum of crowdedness. In addition, big malls offer certain technical advantages such as ability to take the same shot from many different angles. The second consideration in selecting a particular mall was the type and timing of exhibitions scheduled to be displayed there. As mentioned above, one of the two salient density cues in a mall environment was objects displayed. Both the literature search and focused groups had implied the importance of in-mall shows in intensifying shoppers' crowding perceptions. Consequently, a decision was made to take pictures both with and without the objects displayed in the mall. It was, therefore, necessary that the selected mall be

scheduled for some kind of a show or exhibition. The last criterion in mall selection was the cooperation of mall management. This was essential to get the permission to enter the mall and to take pictures not only during business hours but also when the mall was closed. Lansing Mall, which satisfied all three of the above criteria, was chosen as the site for taking pictures.

A 35mm single-lense reflex camera with a 35-70mm macro zoom lens was used to take a total of 540 pictures. Approximately half of the pictures were taken during the first two weeks of March 1984 when the mall housed a boat show. The other half was taken in the last two weeks of April on the same days and during the same hours only without the show. Appendix 3.1 presents these dates and times which were determined for the purpose of capturing a continuum of crowdedness both with and without the show (from here on referred to as "with and without objects"). The result was two sets of pictures with 300 in one and 240 in the other, respectively.

The next step was to eliminate the technically defective, irrelevant and unclear pictures. This reduced the total number of pictures to 490 (220 with, 270 without objects). Then, an initial panel of four judges further decreased the total number of pictures to 200 (100 in each group) by eliminating the "similar" ones. Pictures were "similar" if they depicted the same people at the same setting but only from different angles. This step was necessary: 1) to comply with the rules of the Thurstone method which requires the items (pictures) to be exhaustive but non-redundant, and 2) to reduce the total number of items (pictures) to 200, the "ideal" number (Churchill 1978). This process resulted in two piles with 100 pictures in each.

A total of 15 individuals (ten graduate students from various departments at Michigan State University and five non-student adults) were then recruited as judges. Judges worked independently and were instructed to make comparative ratings by sorting the pictures in each group into two separate ten piles ranging from "least cluttered/most spacious" to "most cluttered/least spacious." The term "crowded" was deliberately avoided in all the instructions to prevent the judges from assuming the daily connotation of the term which is generally limited to the number of people. A set of cards from 1-10 were first arranged in front of the judges. Only the two end points were anchored with word descriptions. The instructions provided information and examples about the nature of the task, the coding of pictures and recording the results. Appendix 3.2 shows a sample instruction sheet for judges. No time limit was imposed on the judges. The average time spent on sorting the two piles was approximately one-and-a-half hours.

Next, a scale value and measures of dispersion were obtained for each of the pictures from the judgments of the total group of judges. These scale values and dispersion measures were then employed to select the subset of pictures to serve as the final instrument. In effect these measures were "filters" for reducing the larger list of 200 pictures (Churchill 1978). Ten pictures were selected for the final scale such that: 1) each picture had a small standard deviation of ratings over judges, and 2) the mean ratings were evenly spread from one end of the rating continuum to the other (Nunnally 1978). The means and standards deviations of the ten selected pictures are presented in Appendix 3.3. Surprisingly, all ten of the pictures were

found to belong to the "without objects" group indicating perhaps that objects are not as powerful as people in instigating and intensifying perceptions of retail crowding. The theoretical and practical implications of this finding are further discussed in Chapter Five.

These ten pictures were made into slides to be used in the pretest. Based on the pretest results, this number was reduced to five for the final experiment. Pretest is discussed in detail later in this chapter.

Development of the Experimental Instruments II: Scenarios: Scenarios were used along with slides: 1) to simulate the shopping experience, and 2) to manipulate the three independent variables of the first set of hypotheses, namely, motives, time pressure and perceived risk. During the experiment, subjects were instructed to read the assigned scenario and were asked to put themselves in the particular situation described by the scenario.

A total of five scenarios were used, one for each treatment combination of motives (task-oriented and nontask-oriented), time pressure (high and low) and perceived risk (high and low). Appendix 3.4 presents each of these scenarios. As mentioned previously, levels of perceived risk and time pressure were not manipulated in the nontask case since, by definition, these variables were irrelevant when the pursued motive was not directed towards a particular goal. This resulted in a total of five cells, and consequently, five scenarios (see Exhibit 3.2). All five scenarios were variations of one "generic" vignette or "situation" as it was referred to during the experiment. In other words, the same scenario was altered to manipu-

late various levels of the independent variables. These are now discussed in further detail.

One of the independent variables manipulated by the scenarios was motives. As described in Chapter Two, the literature survey and focused group interviews identified two major classes of shopping motives: task-oriented and nontask-oriented. The nontask scenario described a situation where the reader assumed that he/she supposedly decided "to walk around, brose and kill time" at a nearby shopping mall without any specific objective or task in mind. A simple, flowing editorial style was used to help subjects identify with the relaxed atmosphere described in the scenario (Appendix 3.4A).

The task-oriented motives, on the other hand, was manipulated by altering the scenario so that the reader would feel the necessity to perform a specific mission. Unlike the nontask-oriented group, the task-oriented subjects were given a situation where they had to shop for a particular product. Exactly what type of product this was entirely depended on the manipulated levels of another independent variable, the perceived risk.

Perceived risk, which varied at two levels (high and low) was operationalized via the type of product to be purchased. To determine the high and low risk products, several steps were performed. The first step was to develop a list of products which previous research had classified along the perceived risk dimension (Bettman 1973, Robertson 1969, Popielarz 1967, Shimp and Bearden 1982, Roselius 1971, Sheth and Venkatesan 1968). Next, this list was reduced by eliminating those products which were not typically sold in malls. Some other product categories were excluded from the list because: 1) they

would not fit the "generic" situation described by the scenarios, 2) too many brands and package sizes existed within the category, or 3) the product category appealed to a unique market segment. Given these criteria, products such as furniture, cars, chewing gum, hosiery and health and beauty aids were eliminated from the list along with many others.

Finally, the decision was made to adopt "a 35mm single-lens reflex camera and a matching flash unit" and "a pair of everyday shoes" for high and low risk products, respectively. A camera purchase requires a sizeable financial investment. It is also a fairly complex and socially visible product which implies a substantial amount of performance, social and psychological risk (Assael 1984). The reverse is true for a pair of everyday, casual shoes. They are not likely to score high on the above mentioned dimensions of perceived risk. Although shoes as a product category are highly visible (and as such may be somehow socially risky), this is perhaps more so for dressy rather than casual shoes. In the final analysis, a 35mm single lens reflex camera and a pair of everyday shoes were selected as the products to manipulate the high and low levels of perceived risk, respectively.

Time pressure was varied at two levels (high and low). High time pressure was simulated in the scenarios imposing time limits on the subjects (such as "you have only 30 minutes to...") and by using terms to connote such a pressure (for example, "no time," "last minute"). See Appendices 3.3D and 3.3E for these manipulations. In the low time pressure condition, the subjects were induced with feelings of leisure and relaxation. They were told, for instance, that "you have all the

day to yourself and no urgencies to take care of!" or that they could "walk around [the mall], browse and kill time." Appendices 3.4B-3.4E present the four different treatment combinations of time pressure and perceived risk variables.

Manipulation checks for all three independent variables (task, perceived risk and time pressure) were included in the questionnaire booklet (see Items 4-6, Appendix 3.5B) to assess how successfully they were operationalized.

Development of the Research Instrument: Questionnaire: All measures used in the present study were presented to subjects in a questionnaire booklet (see Appendix 3.5). Two different versions of the questionnaire were used for nontask (Appendix 3.5A) and task (Appendix 3.5B) treatments. Following the first page of instructions, the subjects were presented with one of the five possible scenarios. Next, they were shown all five slides, one at a time. Immediately following each slide, measures of retail crowding perceptions, satisfaction and repatronage intentions were taken.

Questionnaire items were grouped in the booklet according to the constructs being tapped. A modified version of the perceived retail crowding scale previously developed by Harrell et al. (1980) was used to measure these constructs (Items 1a-c,e,g,h). Two of these items composed the "confined, closed feeling" scale (α = .63) and four composed the "crowded, restricted movement" (α = .69) scale.

Four measures of satisfaction with the mall were used. These measures consisted of questions concerning subjects' description of feelings about the mall during the pretended visits (Item 1d; Items 2a-c).

Repatronage intentions were assessed by four items adapted from the Harrell et al. (1980) scale to measure outcomes of shopping under crowded conditions. The items were designed to ask subjects to express the extent of their agreement with a series of statements pertaining to intentions to shop again in the same mall (Items 3a,c,d).

Manipulation checks for motives and time pressure were included in the question booklet (Questions 4 and 5).

Some factors, suggested by previous research to be potential influences of crowding perceptions, were also measured (Items 6-g Appendix 3.5A). These included questions pertaining to tolerance for crowding, involvement in and frequency of mall patronage.

Last, the booklet requested information about subjects' demographic characteristics and the number of people living in their households (Items 10a-e Appendix 3.5A).

Pretest: As mentioned earlier, the experimental and research instruments were subjected to pretesting. The final version of the experiment, which evolved as a result of an informal pretesting, underwent one formal pretest. The informal pretest was conducted on a combined population of college professors, secretaries and graduate students. These pretest were useful to identify major inadequacies in question wording, content and clarity of scenarios and slides.

The formal pretest was conducted in June 1984 on a sample of 15 graduate students from various colleges at Michigan State University. The purpose of the pretest was: a) to detect any possible flaws in the experimental procedure, b) to identify those concepts in the scenarios

or items in the questionnaire that were either difficult to understand or were ambiguous, c) to determine the optimal length of time each slide was to be shown on the screen, and d) to get feedback on the length of the experiment. This last point was particularly important since the subjects were to answer the same set of questions after each slide and this could possibly lead to subject fatigue and demand artifacts (Sawyer 1975).

The pretest provided an opportunity to test the entire data collection "machinery" that had been assembled for the study. It helped to identify some problems with wording, layout and sequencing in the questionnaire. Further, the content and length of the scenarios were revised based on the pretest feedback to ensure a successful manipulation of the independent variables. The pretest and further inputs from the pretest subjects were most useful in reducing to five the number of slides to be presented during the experiment. Finally, several validity checks were performed to examine the internal consistency of the data by studying the responses generated by the questionnaire. As mentioned earlier, the research instrument often solicited the same information in a variety of ways. The multiple responses were then checked for consistency.

The Experiment

Subjects and Setting: The subjects were 47 males and 66 females at or over 18 years of age. Their selection was not made on the basis of their representativeness of a certain population of interest. Given the exploratory nature of this study, demonstrating the existence of the hypothesized relationships rather than the generalizability of the results was the major concern. However, it was crucial that the

subjects were "real" people rather than a sample of students considering the unique characteristics of student populations and their possible insensitivity to crowded environments.

The sample used in this study was not a random sample, but a convenience sample. However, in order to eliminate any dependencies between successive observations (i.e. subjects), assignments of the observations to the cells of the experimental design were randomized. Although randomizations may have eliminated any such potential dependencies, generalizability of the findings should be considered with the convenience nature of the sample in mind.

At the time they agreed to participate in the present study, subjects knew nothing of its purpose or details.

All of the five experimental conditions (Exhibit 3.2) were conducted separately in a randomly determined order. The testing room had: a) a slide projector and a screen, b) 20-25 desks, and c) means to provide the dimness required while showing the slides.

Experimental Procedure: As subjects arrived at the experiment room, they were greeted by the female experimenter who instructed them to take one of the seats inside. On each desk was a questionnaire booklet and a pencil. When all the subjects in each group were present, the experimenter entered the room and said:

> Hello. We are ready to begin. My name is Sevo Eroglu. I am assisting in this study of retailing. This is Dogan Eroglu who will help operate the slide projector. Now, please turn to the first page of the booklet and follow me as I read the GENERAL INFORMATION.

After the experimenter finished reading the first page, subjects were shown all of the five slides (seven seconds viewing time for each slide) to get acquainted with them. Then they went on to the next

page to read the scenario that was assigned for their group. (The term "situation" was used in lieu of "scenario" in case some subjects did not know the meaning of the latter term). Then the subjects were told to proceed to the next page to read the directions on how to answer questions on a 7-point scale. Finally, the experimenter asked subjects to go back and reread the scenario once more while she read it out loud.

From this point on, the slides began to appear on the screen one by one. The order of the slides were determined randomly. Subjects viewed slides one at a time and answered the same set of questions after each. All the questions relating to one slide were printed on a single page and the term "setting" was used to designate the particular environment represented by that slide. Hence, when the first slide was presented, subjects observed it carefully and answered the questions in view of their scenarios and the particular setting (in this case, Setting 1). When the next slide was shown, they moved on to the next page to answer the same questions again in the context of their scenarios but this time in relation to the second slide or Setting 1. The procedure was continued until the questions pertaining to all of the five slides (or settings) were answered. The subjects were then instructed to proceed with the remaining questions that were not related to any of the slides. The entire procedure took about 25 minutes. After everyone finished, the experimenter collected the booklets and began the debriefing.

During the debriefing, the experimenter attempted to learn several things from the subjects such as how they felt about the experiment, whether any of the procedures or instruments seemed

unnatural or unbelievable. Subjects were also asked for their perceptions about the overall purpose of the study. Finally, the experimenter asked the subjects if they had any questions about the study. The most frequently asked question concerned the name of the mall shown in the slides. The last part of the briefing was devoted to describing the study's basic purposes. Subjects were then dismissed.

Summary

This chapter presented the methodology. First, the reasons for preferring laboratory experiment over other data collection methods were explained. Then the pre-experimental surveys and the pretest were discussed as summarized in Exhibit 3.3. Finally, the experimental procedure was detailed along with a discussion of the subjects and the experimental setting. The next chapter presents the analysis of the data and discussed the findings of the study.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

Introduction

The preceeding chapter discussed the pre-experimental surveys, the pretest and the final experiment. This chapter presents the analysis of the data. The discussion begins with an examination of the indicators of the dependent variables for reliability and construct validity. Following the assessment of the data, the statistically significant and substantially important results of the analytical techniques are presented. Finally, a general discussion section is devoted to summarizing the findings of the study.

The Dependent Variables

As discussed in the preceeding chapter, there were three dependent variables in the two sets of hypotheses. Multiple indicators were obtained for each of these variables. The basic question with regard to the multiple indicators is how reliably and validly they represent the unobserved construct of interest (Churchill 1979).

Reliability of the Dependent Variables

In a general sense, reliability refers to the internal consistency of the variables and the similarity of results provided by

independent but comparable measures of the same construct. Mathematically, it is defined as the ratio of variance in X due to nonrandom sources to the total variance of X (Bohrnstedt 1979). A measure cannot be valid without also being reliable (Nunnally 1967).

Item analysis was used to purify the adapted Harrell et al. (1980) Perceived Retail Crowding Scale (PRC) and the Satisfaction with Retailer (S) and Intentions to Repatronize (I) scales. Table 4.1 presents the interitem and item-to-total correlations for the indictors of these scales.

The interitem correlations range between .6193-.8908; .7023-.9509 and .3671-.4942 for PRC, S and I scales, respectively. Based on these results, none of the items needed to be discarded from the scales.

Item-to-total correlations were also calculated. The first column on the left presents the correlation between each item and the total score obtained by summing the raw score for all items but the item itself. This procedure "corrects" the artificially inflated correlations since the total raw score already includes the item with which it is correlated. These correlations were also favorable and vary between .7234-.9211; .7218-.9394 and .4512-.6675 for PRC, S and I scales, respectively.

The last column in Table 4.1 displays, for each item, Cronbach's alpha computed from the other items in the scale. These are between .9361-.9529; .9102-.9751 and .6722-.7774 for PRC, S and I, respectively.

Finally, alpha coefficients were calculated for each of the three scales (Table 4.2). As these coefficients range between .7732 and .9516, the variables were considered to be appropriate for further analysis.

Table 4.1

Interitem and Item-to-Total Correlations of the Indicators of the Three Dependent Variables

I. Perceived Retail Crowding

CORRELATION MATRIX

Item	C1	C2	C3	C4	C5	C6	C7
C1	1.0000						
C2	.7558	1.0000					
C3	.8483	.8128	1.0000				
C4	.8137	.8451	.8908	1.0000			
C5	.6561	.6212	.7105	.7097	1.0000		
C6	.6810	.6193	.7130	.6937	.5400	1.0000	
C7	.7561	.7574	.8423	.8466	.7164	.6589	1.0000

ITEM-TO-TOTAL CORRELATIONS

Item	Item-to-Total (Corrected)	Alpha If Item Deleted
C1	.8532	.9423
C2	.8318	.9441
C3	.9211	.9361
C4	.9165	.9364
C5	.7341	.9519
C6	.7234	.9529
C7	.8686	.9407

C1: Confined - spacious (7-point Scale)
C2: Too many shoppers - Too few shoppers "
C3: Restricts movement - Allows free movement "
C4: Crowded - Uncrowded "
C5: Unsuitable for accomplishing my purpose today - Suitable for accomplishing my purpose today "
C6: Gives an open feeling - Gives a closed feeling "
C7: Must move at a pace set by other shoppers - Can move at my own pace "

Table 4.1

Interitem and Item-to-Total Correlations of
The Indicators of the Three Dependent Variables
(continued)

II. Satisfaction with Retailing Environment

CORRELATION MATRIX

Item	S1	S2	S3	S4
S1	1.0000			
S2	.9509	1.0000		
S3	.9015	.9348	1.0000	
S4	.7023	.7038	.7076	1.0000

ITEM-TO-TOTAL CORRELATIONS

Item	Item-to-Total (Corrected)	Alpha If Item Deleted
S1	.9220	.9155
S2	.9394	.9102
S3	.9169	.9174
S4	.7218	.9751

S1: I liked it very much - I didn't like it at all (7-Point Scale)
S2: Pleased - Displeased "
S3: Satisfied - Unsatisfied "
S4: Pleasant - Unpleasant "

Table 4.1

Interitem and Item-to-Total Correlations of
The Indicators of the Three Dependent Variables
(continued)

III. Intention to Repatronize

CORRELATION MATRIX

Item	I1	I2	I3	I4
I1	1.0000			
I2	.4942	1.0000		
I3	.5396	.5821	1.0000	
I4	.5278	.2499	.3671	1.0000

ITEM-TO-TOTAL CORRELATIONS

Item	Item-to-Total (Corrected)	Alpha If Item Deleted
I1	.6675	.6722
I2	.5569	.7303
I3	.6396	.6828
I4	.4512	.7774

I1: "If I had a choice I would shop at a different mall next time"
(Strongly Agree to Strongly Disagree, 7-point scale)

I2: "If I had a choice I would shop at this mall at a different time"
(Strongly Agree to Strongly Disagree, 7-point scale)

I3: "I think many people would dislike shopping in this situation"
(Strongly Agree to Strongly Disagree, 7-point scale)

I4: "I would definitely come back to shop at this mall again"
(Strongly Agree to Strongly Disagree, 7-point scale)

Table 4.2
Reliability Coefficients of the Scales

Scale	Cronbach's α
Perceived Retail Crowding	.9513 (standardized α = .9516)
Satisfaction with Retail Environment	.9474 (standardized α = .9469)
Intentions to Repatronize	.7731 (standardized α = .7732)

In summary, an examination of the interitem and item-to-total correlations and reliability estimated were found to be fairly impressive and none of the items were discarded from the scales.

Construct Validity

When multiple indicators of a construct are used, unidimensionality of these operationalizations needs to be established as well as their reliability. Principal factor analysis with varimax rotation was used for this purpose.

Table 4.3 summarizes the findings of the factor analysis. The upper portion of the table shows that with an eigenvalue of unity as a cutoff point, two factors emerge as underlying all of the 14 variables. The first two factors account for 61% and 10.9% of the variance, respectively. These two factors alone accounted for 72% of the total variance.

Table 4.3
Factor Analysis of the Dependent Variables

Factor	Eigenvalue	Percentage of Variance	Cumulative Percentage
1	9.1663	61.1	61.1
2	1.6370	10.9	72.0
3	.79681	5.3	77.3
4	.71099	4.7	82.1
5	.4438	3.0	85.0
6	.4228	2.8	87.9
7	.4926	2.6	90.5
8	.3496	2.3	92.8
9	.2879	1.9	94.7
10	.2255	1.5	96.2
11	.1999	1.3	97.6
12	.1289	.9	98.4
13	.1075	.7	99.1
14	.0890	.6	99.7
15	.0407	.3	100.0

Factor Matrix

Variable	Factor 1	Factor 2	Communalities
1	.8189	.3531	.7953
2	.9023	.1435	.8349
3	.8783	.3544	.8971
4	.8976	.3071	.9001
5	.6301	.5307	.6787
6	.6848	.3877	.6193
7	.8294	.3664	.8222
8	.3620	.8478	.8499
9	.3765	.8575	.8772
10	.3735	.8489	.8601
11	.2663	.7484	.6311
12	.2716	.6869	.5456
13	.4499	.5538	.5092
14	.2963	.6772	.5464
15	.1098	.6508	.4356

For a description of the variables, see Table 4.1.

The entries in the first column of the lower portion of the table indicates the correlations between the variables and the factors. All of the seven perceived retail crowding variables load heavily on Factor 1, ranging between .63014 and .90239. Similarly all of the satisfaction and intention variables load heavily on Factor 2. Their correlations range between .65084 and .85758. The communalities in the second column indicate the variances of the variables "extracted" by the factor. They are between .43566 and .90017.

In view of the above considerations, it was decided that all the crowding variables tap the same underlying construct. A similar conclusion was drawn for satisfaction and intention variables. However, due to the highly "correlated" nature of these two variables, their underlying construct was expected to be the same. This expectation was confirmed; all the satisfaction and intention items were found to be unidimensional with respect to Factor 2.

Manipulation Checks

The manipulations of motive, perceived risk and time pressure appear to have been successful.

As a manipulation check for the motive variable, subjects were asked to indicate the purpose of their pretended visit to the mall (see Item 4). Over 85% of the subjects who received the task orientation as a motive correctly identified the purpose of their visits. Ninety percent of the subjects who were assigned to the nontask situation so indicated.

Assignment to high and low perceived risk conditions were checked by taking four measures which indicated task group subjects' feelings about the extent of risk associated with the product they were

supposed to shop for. Subjects in the high risk condition reported higher perceived product risk ($\bar{x}$ = 5.5) than did subjects in the low risk condition ($\bar{x}$ = 2.6, t = 14.42, p = 0).

Data regarding perceived time pressure felt during the pretended shopping visit indicated that the manipulation of this variable was effective. On a scale of 1 to 7 (1 = extreme time pressure), subjects who were assigned to the high pressure condition rated the situation significantly higher ($\bar{x}$ = 2.3) than those in the low time pressure condition ($\bar{x}$ = 5.3, t = -8.84, p = 0).

Tests of the Hypotheses of the Study

Based on the discussions advanced in Chapters One and Two of this study, the hypotheses were presented in two major groups. This section is devoted to the tests of these hypotheses.

Hypotheses HI.1-HI.4:

The first set of hypotheses examined the antecedents of retail crowding perceptions in terms of shopping motive, time pressure and perceived risk. Hypotheses HI.1 and HI.2 were tested by using ANOVA. T-tests for difference between the means were used for HI.3 and HI.4.

Prior to the actual testings of these hypotheses, the distributional properties of the dependent variable were examined with respect to general assumptions of ANOVA (Appendix 4.1). No significant departures from the assumptions were detected. ANOVA was used to test hypotheses HI.1 and HI.2. The results of these analyses are now discussed. The high (low) values of the dependent variable correspond to perceptions of low (high) retail crowding.

The effects of time pressure and perceived risk on perceived retail crowding were determined by using fixed effects analysis of variance. Appendix 4.2 presents all means categorized by the independent variables. The results of ANOVA are shown on Table 4.4.

Table 4.4
ANOVA Table

Source	SS	d.f.	MS	F
Time pressure	265.24	1	265.24	3.68[a]
Perceived risk	19.41	1	19.41	0.27
Time X Risk	83.09	1	83.09	1.15
Error	6265.93	87	72.01	

[a] $p = .05$

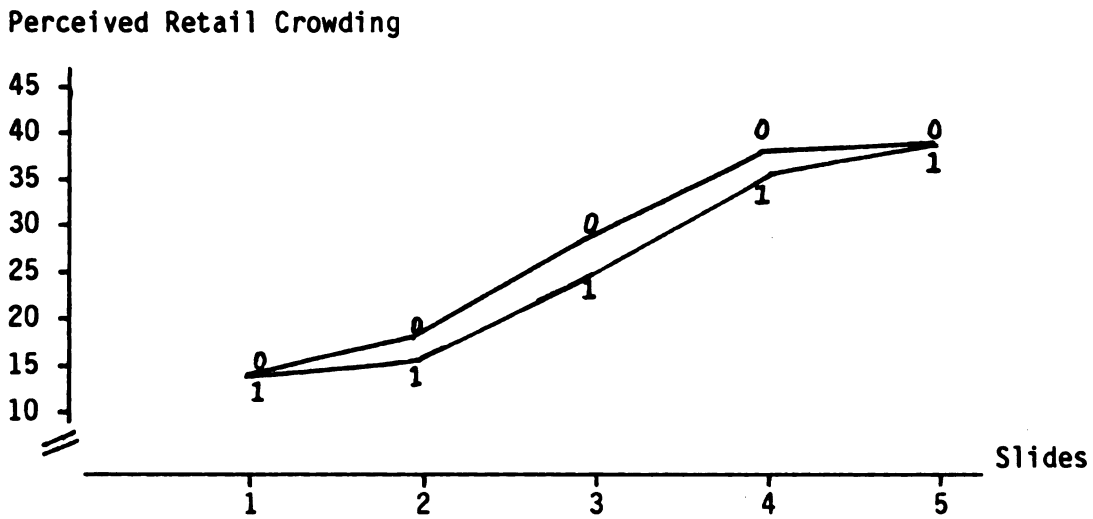
Results of 2x2 analysis of variance on two levels each time pressure and perceived risk shows a statistically significant result on only one of the hypothesized main effects. There was no interaction effect present. Hypothesis HI.1 was supported. Time pressure effect was significant ($p = .058$) and in the expected direction. That is:

> Retail crowding perceptions of task-oriented shoppers differ significantly under high (26.3) and low (27.9) time pressure.

The perception about the extent of crowding in a retail environment is affected by the amount of time pressure associated with the particular shopping trip. Exhibit 4.1 gives further insight into this contention. Cell means under high and low time pressure conditions are plotted against the five slides. (Slides were ordered from

highest to lowest with respect to their respective mean crowding scores as reported by the subjects.)

Exhibit 4.1
Mean Perceived Retail Crowding Scores
Under High and Low* Time Pressure
Plotted Against Slides



*0 = Low time pressure
1 = High time pressure

Examination of the figure shows that for Slide 1 and Slide 5 (i.e. the most and least "dense" settings, respectively), the extent of time pressure does not affect retail crowding perceptions differentially. However, for those slides which depict intermediary levels of density, this is not true. In such cases, high time pressure tends to exacerbate the impact of density resulting in more intense retail crowding perception than is felt under low time pressure condition.

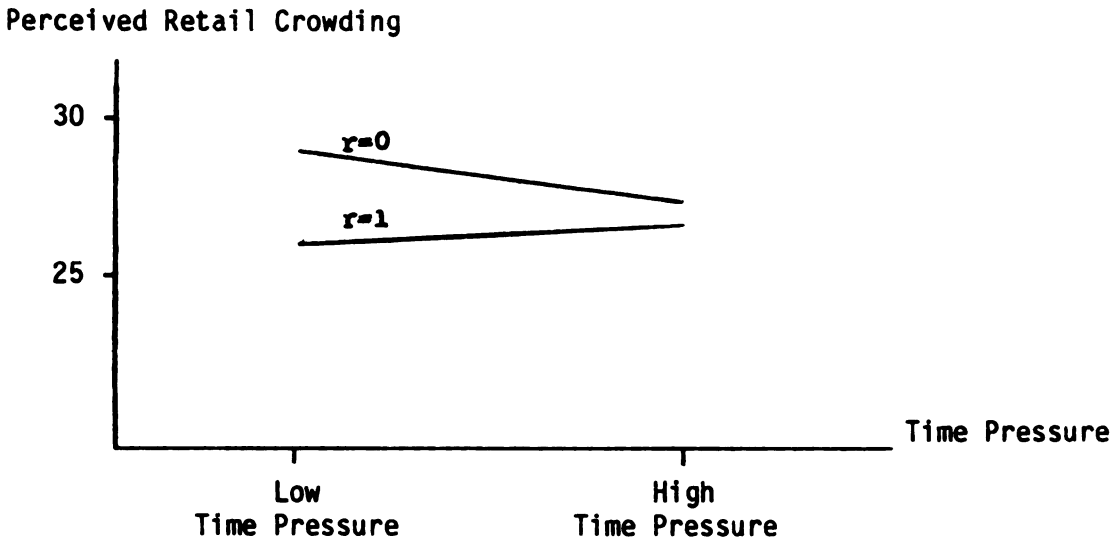
Hypotheses HI.2 was not supported since the perceived risk main effect was not statistically significant at p = .05. The null hypothesis which was not rejected can be restated as:

Retail crowding perception of task-oriented shoppers do not differ significantly under high (27.3) and low (26.8) perceived risk associated with the purchase.

An examination of the cell means (Appendix 4.2), however, revealed that the difference in means was in the expected direction. In general, cell means were lower (indicating higher perceived retail crowding) for: 1) high risk as opposed to low risk condition (except for Slide 5), and 2) highly "dense" slides than less "dense" slides.

The perceived risk by time pressure interaction was statistically insignificant ($p = .28$). The cell means for this interaction are plotted, however, as they demonstrate a curious relationship between the two variables. As observed in Exhibit 4.2, cell means are higher (indicating less perceived crowding) for the low time pressure, low perceived risk condition than for any of the other treatment combinations. This relationship is in the expected direction. However, under the high time pressure condition, retail crowding perceptions remain somewhat constant regardless of the associated perceived risk level. This relationship further accentuates the existence of a significant time pressure effect and lack of a perceived risk effect.

Exhibit 4.2
Cell Means For
(Time Pressure X Perceived Risk) Interaction*



*0 = Low perceived risk
1 = High perceived risk

One possible explanation for the lack of the hypothesized perceived risk effect can be found in the discussion advanced in Chapter Two. Studies on buyer risk reduction strategies report that higher perceived risk often results in greater in-store prepurchase deliberation, such as comparison shopping (Assael 1984). Hence the impact of high perceived product risk on retail crowding perceptions would not only depend on the amount of such deliberations but also where it is done. Since prepurchase deliberations are generally done in the stores, it is conceivable that the subjects in this experiment have not been able to associate product risk with perceived retail

crowding in a mall. In other words, the hypothesized relationship between perceived risk and perceived retail crowding perhaps could have been substantiated if the retail environment depicted in the slides was a store rather than a mall. The store setting might have produced a more likely functional relationship between the two variables.

A simple test of the difference between the means was used to test Hypothesis HI.3. The null hypothesis which stated that:

> Task-oriented shoppers do not perceive greater retail crowding than nontask-oriented shoppers.

was only "conditionally" rejected. When perceived retail crowding scores were averaged across all five slides, the difference between the means of task ($\bar{s}$ = 27.15) and nontask ($\bar{x}$ = 27.59, t_{109} = -0.49, p = .624) groups was not significant although it was in the expected direction. However, if the retail crowding perceptions are compared for each slide, the results are different. Table 4.5 shows the group means and associated probability for each slide. The only significant difference between the means (16.39>13.43, p = .05) is observed for Slide 1 which, curiously, is the most "dense" among all five slides. One possible explanation for this result is that when the retail environment was perceived as being noncrowded or moderately crowded, it might not have been viewed as interferring with one's particular shopping motive. But when highly dense conditions prevailed in the retailing environment, these might have been perceived as a potential obstacle to goal achievement, consequently intensifying task-oriented shoppers' perceptions of retail crowding.

Table 4.5
Perceived Retail Crowding
Means for Task and Nontask Groups

Slides	Group Means Task	Nontask
1	13.48*	16.39*
2	27.35	27.63
3	37.28	37.60
4	17.78	18.34
5	39.22	38.52

*p = .05

Hypotheses under HI.4 dealt with relationships between retail crowding perceptions and selected individual characteristics relevant to the study. The results were significant only for the hypothesized relationship in HI.4B, which stated that:

> Female shoppers (26.45) perceive greater retail crowding than male shoppers (28.28).

The level of significance was .006. These findings are consistent with the previous research (e.g. Marshall and Heslin 1975; Evans 1974) which showed either conflicting or insignificant results when individual characteristics were studies in relation to crowding perceptions. The support for the hypothesized relationship that female shoppers experience greater retail crowding than male shoppers corroborates with some of the previous studies constructed in non-retail environments. Saegert (1974), for example, found that under highly dense conditions, females reported greater anxiety than males.

Hypotheses HII.1-HII.4:

The second set of hypotheses examined the consequences of perceived retail crowding in terms of satisfaction with and intentions to repatronize the particular retailing environment. Simple regression analysis was undertaken to examine these relationships.

Hypotheses HII.1 and HII.2 were tested by using least squares simple regression analysis of the form:

$$\gamma_i = \beta_0 + \beta_1 C_i + \varepsilon_i$$

$$\beta_1 > 0$$

where γ_i is the ith subject's satisfaction with or intention to repatronize a particular retailing environment; C_i is the ith subject's perceptions of retail crowding associated with that environment; and ε_i is the error term associated with the ith observation. (Lower C scores indicate higher levels perceived crowding; lower γ scores indicate lower levels of γ.) The appropriateness of the regression model was analyzed by examining the distribution of the residual errors. Scatterplots (Appendix 4.3A) and histograms (Appendix 4.3B) of the predicted values versus residuals indicated no clear model inadequacies. The error terms of the two regression analyses were found to be normally and independently distributed.

Simple regression analysis was undertaken to examine the relationships hypothesized in the second group of hypotheses. Hypothesis HII.1 states that:

> Higher the retail crowding perceived, less the shopper satisfaction with that environment.

The criterion variable was the satisfaction with the particular retailing environment and perceived retail crowding was the predictor variable. The items operationalizing the perceived retail crowding were utilized to generate the values of the predictor variable. Each subject's overall perceptual score was calculated by averaging his/her retail crowding across all five slides. Same was done for the criterion variable with the scores corresponding to four satisfaction items being averaged across all the slides.

Table 4.6 indicates that the predictor variable explained 15% of the variance of the criterion variable. The sign of the regression coefficient was in the expected direction, namely, perceived retail crowding was negatively related to satisfaction.

Table 4.6
Simple Regression Estimates for
Perceived Retail Crowding and Satisfaction

Predictor Variable	Standardized Beta	t	Significance of t
Perceived Retail Crowding	.387	4.26	.000
$R = .38$ $R^2 = .15$	$F_{1/103} = 18.21$	$p = 0$	

Hypothesis HII.2 predicted a relationship between perceived crowding and intentions to repatronize that particular environment. More specifically:

> Higher the retail crowding perceived, less the shopper intentions to repatronize.

The criterion variable was intentions to repatronize while the predictor variable was again perceived retail crowding associated with that environment. The intention score was calculated in the same way as satisfaction and retail crowding perceptions. The scores corresponding to four indicators of the intention variable were averaged across the five slides.

The results of this analysis are shown on Table 4.7. Only 4.6 percent of the variance of the intention variable was explained by the predictor variable. The sign of the regression coefficient was in the expected direction, indicating an inverse relationship between perceived retail crowding and intentions to repatronize.

Table 4.7
Simple Regression Model estimates for Perceived Retail Crowding and Intentions to Repatronize

Predictor Variable	Standardized Beta	t	Significance of t
Perceived Retail Crowding	.215	2.26	.025
$R = .21$ $R^2 = .04$	$F_{1/105} = 5.12$	$p = .025$	

Hypotheses HII.3 and HII.4 dealt with the consequences (i.e. satisfaction and intention) of retail crowding in relation to shopping motives. For HII.3, the null hypothesis which was not rejected could be restated as:

> Under conditions of retail crowding, nontask-oriented shoppers will <u>not</u> experience greater satisfaction than task-oriented shoppers.

The difference between the means of nontask ($\bar{x}$ = 12.05) and task ($\bar{x}$ = 12.59, t_{111} = -0.91, p = .362) groups is not significant. (Higher scores indicate higher satisfaction.)

Similarly, the hypothesized relationship between shopping motives and repatronage intentions was not substantiated. The null hypothesis which was not rejected is:

> Under conditions of retail crowding, nontask-oriented shoppers will <u>not</u> have higher repatronage intentions than task-oriented shoppers.

Contrary to the hypothesized relationship, task-oriented shoppers had significantly higher repatronage intentions ($\bar{x}$ = 9.06) than nontask-oriented shoppers ($\bar{x}$ = 8.23, t_{111} = 2.34, p = .021). This finding was consistent with the results of the previous hypothesis.

One possible explanation for the lack of evidence between shopping motives and satisfaction and repatronage intentions is found in the way task/nontask-oriented motives were defined in this study. The subjects in the nontask group were to imagine that they had no current interest in acquiring a product or service in that particular shopping situation. In other words, task/nontask differentiation was based solely on the purchase/nonpurchase dimensions. It is, however, conceivable that nontask subjects might have assumed other nonpurchase but goal-directed "tasks" such as gathering information about further purchases. Likewise, it is possible that some of the nontask subjects who are accustomed to patronizing malls for only purchase-directed motives were unable to truly internalize the role described in the nontask-oriented scenario. In both cases high levels of density might have been evaluated as restraining or blocking such activities thus

resulting in higher crowding perceptions than expected among the nontask subjects.

To sum, both of the hypothesized relationships between satisfaction, intention and perceived retail crowding were significant, albeit in varying degrees. The inverse relationship between retail crowding perceptions and satisfaction with the retail outlet was strong in magnitude as well as with respect to the significance level. The same cannot be said about the relationship between intentions and perceived retail crowding. Although the results were significant, the predictor variable did not explain as much as in the case of satisfaction. Last, the hypothesized relationships between satisfaction, repatronage intentions and shopping motives were rejected, consistent with some of the hypotheses tested in the first group earlier in this study.

Summary

The two groups of hypotheses, namely, those that pertain to antecedents and consequences of retail crowding, were tested. For the first group, the general ANOVA results indicated that only the main effect of time pressure was statistically significant. Overall, perceived retail crowding perceptions differed for high versus low time pressure groups. The examination of this relationship showed that for Slides 1 and 5 (slides with highest and lowest reported crowding scores, respectively), the level of time pressure did not affect retail crowding perceptions. It was only for the "moderately crowded" slides that the impact of differential time pressure levels was observed. The next hypothesis in this group examined the relationship between shopping motives and retail crowding perceptions.

In general, no significant difference was found between retail crowding perceptions of task- versus nontask-oriented shoppers, although the difference was in the expected direction. Among the hypothesized relationships between retail crowding perceptions and individual characteristics, only one was statistically significant. Specifically, female shoppers were found to experience higher retail crowding than male shoppers.

The second group of hypotheses concerned the consequences of retail crowding. These were tested by simple regression analysis and difference between the means tests. A strong inverse relationship was found between perceived retail crowding and satisfaction with the retailing environment, with a high statistical significance. In general, higher retail crowding perceptions resulted in lower retail satisfaction levels. A similar relationship emerged for the second hypothesis: shoppers were less likely to repatronize a retailing environment if they associated high levels of retail crowding with it. Last, the two hypothesized relationships between shopping motives and consequences of retail crowding were not substantiated. Nontask-oriented groups did not experience significantly higher satisfaction or repatronage intentions than task-oriented shoppers.

CHAPTER FIVE

SUMMARY AND DISCUSSION

In this chapter a summary of the research is given followed by a discussion of its limitations. The contributions of the study and its implications are then examined. Finally, future research directions are suggested.

Summary

The general objective of this study was to investigate some antecedents and consequences of shoppers' crowding perceptions in retailing environments. Accordingly, the research was conceptualized in two major parts. One set of hypotheses explored the antecedent variables that produce or affect perceptions of crowding in a particular retail setting. Another set of hypotheses then examined the consequences of retail crowding in terms of postpatronage satisfaction and repatronage intentions.

More specifically, there were three major objectives: 1) Investigate the effects of shopping motives (task-oriented and nontask-oriented) time pressure, and perceived risk on shoppers' perceptions of crowding in the context of a retailing environment, 2) Examine how the experience of crowding in a retailing environment affects postpatronage satisfaction and repatronage intentions, 3) Develop a

valid operationalization of perceived retail crowding that is consistent with the theoretical underpinnings of the concept.

With respect to the first objective, four major hypotheses were developed to examine the effects of shopping motives, time pressure, and perceived risk on shoppers' retail crowding perceptions. These hypotheses were based on the focused group interviews and the literature in environmental psychology and environmental sociology. Within this general theoretical framework, shoppers' retail crowding perceptions were expected to differ significantly: 1) under high and low time pressure, 2) under high and low perceived risk associated with the purchase, and 3) for task- versus nontask-oriented shopping motives. Two additional hypotheses were formulated to investigate a possible relationship between selected individual characteristics and perceptions of retail crowding.

The second major objective was to examine the consequences of retail crowding perceptions in terms of satisfaction with and intentions to repatronize the particular retail environment. Specifically, it was hypothesized that the higher is the perceived retail crowding in a retailing environment, the less the shopper's postpatronage satisfaction and the less the shopper's repatronage intentions. Two additional hypotheses were developed to investigate the effect of shopping motives on postpatronage satisfaction and repatronage intentions. Under conditions of retail crowding, nontask-oriented shoppers have: 1) greater satisfaction with the retailing environment and 2) higher repatronage intentions than do task-oriented shoppers.

The third major objective concerned development of a valid operationalization of perceived retail crowding consistent with the

theoretical underpinnings of the concept. To this end, a technique developed in environmental psychology was adapted whereby the subjects were presented with representations (color slides) of a retail environment rather than being placed in it. The final set of five slides, which depicted a continuum of social and physical density in a mall setting, were the main instruments for inducing varying levels of perceived retail crowding. The Thurstone equal appearing interval technique provided the basis for the preparation and selection of the slides.

Five different scenarios were used to manipulate the independent variables of the first set of hypotheses. During the experiment, each subject was exposed to a role-playing scenario which determined the simultaneous manipulation of the three independent variables (shopping motives, time pressure, and perceived risk). Next, the subjects were shown the five slides which randomly displayed varying crowding levels in a mall. Immediately following each slide presentation, multiple measures were obtained of retail crowding perceptions, postpatronage satisfaction, and repatronage intentions. Several pre-experimental surveys and a pretest were conducted prior to the experiment.

The experimental design required five groups of subjects. The between-block treatments were motive (task/nontask-orientation), perceived risk (high/low), and time pressure (high/low). The within-block treatment was five slides. Since risk and time treatments were not relevant for the nontask group, the experiment was actually reduced to one within-block and two between-block treatments. A total of 110 subjects were used, 22 in each cell.

The data collected were later submitted to analysis of variance, least squares, simple regression, and difference between the means. Before proceeding with the analysis, however, the items comprising the dependent variables were examined for reliability and construct validity.

The next analysis phase examined the distributional properties of the dependent variable to determine whether the key assumptions of ANOVA and regression were violated by the data. The results did not reveal any significant departures from these assumptions.

ANOVA results indicated that the time pressure main effect was statistically significant. Hence, the retail crowding perceptions of task-oriented shoppers differed significantly under high and low time pressure. Although the perceived risk main effect was not significant, the difference between the means was in the hypothesized direction; that is, greater perceived retail crowding was experienced under high as opposed to low risk conditions. Although the time by risk interaction effect was insignificant, an examination of the means indicated a relationship in the expected direction.

The predicted relationship between shopping motives and perceptions of retail crowding was not significant when crowding scores were averaged across all five slides. However, analysis of this relationship for each slide individually showed different results. For the most "dense" slide (Slide 1), the task-oriented shoppers indeed perceived greater retail crowding than did nontask-oriented shoppers. This relationship did not hold for slides which depicted less dense or uncrowded conditions.

A possible explanation is found in the arousal theories of crowding. It is conceivable that only at high levels of density will task-oriented shoppers experience feelings of restriction or interference with their goal-directed behaviors, since low levels of density may in fact function as an arousing mechanism. Previous research has shown that individuals seek and desire certain levels of arousal in their environments (Berlyne 1960; Maddi 1961; Wohlwill 1974). Within the present context, the subjective desired level of arousal may influence the evaluation and judgement which result in labelling the environment as functionally and dysfunctionally crowded. In other words, only under conditions of overarousal due to intolerable levels of perceived retail crowding will task-oriented shoppers experience goal interference and higher retail crowding than do nontask-oriented shoppers.

The last hypothesis in the antecedents group concerned the relationship between perceived retail crowding and selected individual factors. The effect of sex was statistically significant; female shoppers perceived greater retail crowding than did male shoppers.

The second set of hypotheses pertained to consequences of retail crowding. Two of these hypotheses were tested by using least squares simple regression analysis. Prior to the analysis, the critical assumptions underlying the regression model were tested for each of the dependent variables. No significant violations of these assumptions were detected.

The hypothesized inverse relationship between perceived retail crowding (predictor variable) and postpatronage satisfaction (criterion variable) was highly significant. The predictor variable

explained 15 percent of the variance in satisfaction, and the sign of the coefficient was in the expected (negative) direction.

Similarly, the hypothesized relationship between perceived retail crowding (predictor) and repatronage intentions (criterion) was statistically significant although the percentage of variation explained was smaller (4.6 percent) than that of satisfaction. Again, the sign of the regression coefficient was in the expected direction.

Finally, the last two hypotheses, investigated the relationship between one antecedent variable (shopping motives) and the two consequential variables (satisfaction and intentions). The results were not statistically significant. That is, under conditions of retail crowding, nontask-oriented shoppers did not have greater postpatronage satisfaction or higher repatronage intentions than did task-oriented shoppers. A possible explanation is found in the way task- and nontask-oriented motives were defined in this study. The subjects in the nontask group were to imagine that they had no current interest in acquisition of a product or service in the particular situation described in their scenario. In other words, the task/nontask dichotomy was based solely on the purchase/nonpurchase dimensions. It is, however, conceivable that nontask subjects might have assumed other goal-directed "tasks," such as information search for future purchases. Likewise, it is possible that some of the nontask subjects who are accustomed to patronizing malls for only purchase-directed motives were unable truly to internalize the role described in the nontask-oriented scenario. In both cases, high levels of density are likely to have been evaluated as restraining or

blocking such purposeful activities, thus resulting in higher crowding perceptions than expected among the nontask subjects.

Limitations

The major limitations of the study were related to some key assumptions made during the data collection stage and to some issues concerning external validity of the findings.

Among the important assumptions made during data collection, one related to the use of slides in a laboratory experiment to represent the actual retailing environment, realism of which is debatable. Although the slides depicted an actual retail setting, some real world characteristics were missing. Observation is not the same as participation, and certain dimensions known to affect crowding perceptions are eliminated altogether (such as noise level, temperature, and smell); others may be distorted. McClelland and Auslander (1978) argue, however, that "seeing a slide of an actual place is more 'real' than entering a 2 x 3 m room constructed of panels in the psychology lab" (p. 551).

A second limitation related to the choice of setting depicted in the slides. For reasons discussed in Chapter Three, a mall was preferred over a store as the retailing environment. Although this choice helped increase internal validity, the generalizability of the findings is affected. Therefore, some caution is advisable before directly applying the findings of this study to other types of retail outlets.

Another limitation regarding the choice of a mall setting is the fact that a mall is only a housing facility for stores. It is generally in stores, themselves, not malls, that shopping and

purchasing are done. It is possible, therefore, especially for subjects in task-oriented groups, that the association between the setting depicted in the slides and the assigned task-motive may not have been very strong. In fact, this weak association may partially account for the lack of a significant motive effect on retail crowding perceptions.

The issue concerning the external validity of the findings is also a limitation. Although the study sampled the primary shoppers who would normally experience the assigned hypothetical situations, the nature of the sampling method was convenience rather than random. The findings from this particular midwestern sample should not be generalized to the consumer population at large before replications of the findings with random samples.

Contributions of the Study and the Implications of the Findings

The contributions of the study are both theoretical and methodological. Since this research is concerned with person-environment interactions that influence shopping behavior, it addresses a gap in the marketing literature. The findings confirmed the predictions made regarding the influence of one such environmental variable, crowding, for certain aspects of shopping behavior. These findings can be interpreted within the research stream of an increasing number of studies demonstrating the importance of retailing decisions on shopping and purchase behavior.

The practical implications of this research are tied to managerial decision making in retailing. To the extent that density produces negative shopping outcomes, retail managers should strive to

maximize customer density with minimum retail crowding. Consequently, they need to adjust their in-store and out-of-store strategies according to anticipated density levels under various situations. One finding of this study concerned the greater relative importance of customers as opposed to objects (merchandise) in instigating and intensifying retail crowding perceptions. In strategic terms, this may imply the necessity to recognize and manipulate in-store features which create or suppress feelings of perceptual and social separation and therefore affect perceived retail crowding. Partitions and screens, color, visual complexity, and distractions such as aesthetic objects are some examples.

The findings have several implications unique to malls and shopping centers. While the overall layout and architecture of these retail settings affect shoppers' retail crowding perceptions, the type and variety of stores as well as the type of activities performed in the malls and shopping centers often provide shoppers with mechanisms to cope with high retail crowding. For example, the focused group interviews conducted for this study showed that under conditions of high retail density shoppers often resort to "distractions" from the shopping activity, such as attending in-mall fashion shows or patronizing eateries or movie theatres in the mall. This contention is partially supported by a study which showed that particularly large regional shopping centers draw a substantial number of customers who are involved in a variety of purchase and nonpurchase related activities, with eating being one important component (Chain Store Age Executive, 1978).

According to the findings, high time pressure associated with the shopping trip is likely to intensify shoppers' retail crowding perceptions. It follows that shopper tolerance for retail crowding may differ across seasons (for example, Christmas) and times (such as weekends and lunch hours) depending on the extent of temporal constraints experienced under such conditions. Retailers may need to adjust their in-store and out-of-store strategies according to anticipated density levels under various situations. Some suggested means of reducing retail density are decreasing the number of obstructive displays and signs, expanding space between racks, increasing sales help, and moderating the level of music.

The methodological contributions of the study are significant. In terms of experimental procedures and data collection, this study is a pioneering effort. The joint use of slides and scenarios to simulate an actual retail environment enables researchers to study some problems they have not been able to address properly, decrease the practical difficulties associated with stimuli manipulations and randomization during the experiments, and increase accuracy and speed in data collection. The range of situations and settings can be much larger, varying on many dimensions. Also, the sample can easily be transported over time and space and can be altered to include or delete types of situations and settings (McClelland and Auslander 1978).

The use of the Thurstone equal appearing intervals technique to determine the final set of slides proved highly successful. Clearly, the application of the technique is not limited to scale development

in attitude research, and it can be employed effectively for other methodological purposes in marketing.

Future Research Directions

This exploratory study of antecedents and consequences of crowding in retail environments only examined the surface. More theoretical development and methodological rigor is needed in these areas.

The progress of retail crowding research depends on an adequate conceptualization of retail density and a systematic examination of its relationship to retail crowding perceptions. In this vein, properties of the retailing environment that produce crowding stress should be identified. For example, the types of architectural features and in-store environments that create or suppress feelings of retail crowding may be worth examining. Empirical studies conducted in primary environments suggest that a number of architectural features create feelings of perceptual separation, and this affects crowding perceptions (Baum, Reis and O'Hara 1974; Desor 1972). To date, little has been done to replicate these studies in secondary environments such as retailing settings. It is important for both theoretical and practical purposes to know what types of environmental features in retailing settings and what types of retail establishments (such as discount versus department stores) induce perceptions of retail crowding in shoppers.

The concept of retail crowding can contribute to an understanding of certain aspects of consumer behavior. The influence of retail crowding expectations and perceptions on consumer decision and

postdecision process, responses to in-store promotions, and information processing mechanisms are more potential areas of investigation. According to Milgram (1970), decreasing involvement with others is one adaptive mechanism induced by change in density. Retail researchers can apply this notion to investigation of the extent to which retail crowding effects involvement with the store and its merchandise. Another potential area of research concerns the application of information processing theory to retail crowding research. For example, to what extent do the amount and rate of environmental information and information overload contribute to feelings of retail crowding? Another issue of interest is the cognitive as well as behavioral outcomes of experiencing high retail density and how this affects the amount and type of information searched. If these relationships are strong enough to affect the store and brand choice of some consumers, then not only retailers but also consumer educators should be interested in the findings.

The individual and joint effects of various social, cultural, and personal variables on retail crowding perceptions and outcomes are yet to be determined. Such studies will have strategic segmentation implications for retailers. As such, tolerance for retail crowding can be used as a segmentation criterion. For example, some retailers prefer spacious store layouts in an effort to convey a distinctive image. An interesting research topic is the effect of high versus low retail density on the formation of store or mall image. Perhaps densely populated (both physically and socially) stores are best positioned toward those segments with high crowding tolerance and high price sensitivity. If so, it may be worthwhile to investigate the

possible relationship between retail crowding tolerance and certain social class variables.

From a cross-cultural marketing perspective, the effect of culture on retail crowding perceptions is important particularly for the increasing number of retailers with overseas operations. In an Asian bazaar, for example, there is an acceptance of and search for high levels of physical and social interaction (Rapoport 1976). It would be interesting to investigate the existence of a relationship between emic (culture-specific) traits and various aspects of retail crowding phenomena.

The methodology of this study can be improved and extended to study other relevant issues on retailing. For example, it is possible that certain product classes and display and layout modes more readily produce or suppress retail crowding perceptions than to others. This can be effectively investigated by focusing the slides specifically on such in-store environmental features.

The use of role-playing scenarios is a relatively new technique which recently has been gaining acceptance in marketing (Morwen, Keith and Burdick 1985; Puto, Patton, King 1985; Jackson, Keith and Burdick 1984). The method involves asking participants to engage in some kind of "as if" behavior (Giller 1978). Role-playing is useful for many marketing situations which cannot be replicated easily in the laboratory (Hansen 1972). During the course of the present study several issues emerged concerning successful use and manipulation of the method in marketing research. Since one of the major problems associated with role-playing is the ability of the subjects to provide responses (Carlsmith, Ellsworth and Aronson 1976), the factors

affecting this outcome need investigation. For example, the effect of certain structural characteristics of scenarios (such as the length, narrative style and presentation mode) on response quality and response distortion may be examined. Another research issue concerns the extent to which the amount and type of subjects' involvement with the particular role-playing scenario affect the usefulness of the technique. The examination of these and other related issues may further improve the success with which this method is used in marketing.

It is clear that the rapidly developing body of environmental psychology and crowding research can provide an increasingly firm basis for understanding the determinants and outcomes of retail shopping behavior. The exploratory framework introduced in this study only highlights the importance and relevance of the topic. The ultimate test of the crowding concept will be the extent to which it contributes to future theoretical and empirical research in retailing.

APPENDICES

APPENDIX 3.1

APPENDIX 3.1

DATES AND TIMES FOR PICTURE TAKING SESSIONS

DATE/TIME			SHOW/NO SHOW		OPEN/CLOSED TO PUBLIC	
Friday	March 9	9-12 pm	X	X		X
Saturday	March 10	1-6 pm	X		X	
Sunday	March 11	12-2 pm	X		X	
Wednesday	March 21	12-2 pm		X	X	
Thursday	March 22	10-12 am		X	X	
Thursday	March 22	4-8 pm		X	X	
Saturday	March 24	1-6 pm		X	X	
Sunday	March 25	12-2 pm		X	X	

APPENDIX 3.2

APPENDIX 3.2

TASK INSTRUCTIONS AND CODING FORM FOR THE JUDGES

TASK INSTRUCTIONS FOR THE JUDGES

You are asked to make comparative ratings by sorting the photographs into 10 piles ranging from least cluttered [most spacious] to most cluttered [least spacious]. We are interested in finding the degree to which each picture stimulates a feeling of being unspacious/cluttered/crowded relative to the other pictures. Your task as an expert judge is to assess how unspacious etc. a person would feel for each of the photographs, comparatively. For example, by placing picture #3-21 under pile 7, you are simply suggesting that "when a person looks at picture #3-21, s/he will feel less spacious etc. than with pictures under Piles 6,5,4... and more spacious than with pictures under Piles 8,9 and 10.

The process will be repeated for two separate sets of photographs.

HINT: An easy way is to go through the pictures quickly and pick a few obvious extremes [those which belong under Piles 1 and 10] and then compare the rest to these anchor points, going up [2,3,..] and down [9,8,..] the scale. After you place all pictures in piles, go back and rearrange those which look out of place due to misplacement, inconsistency, etc.

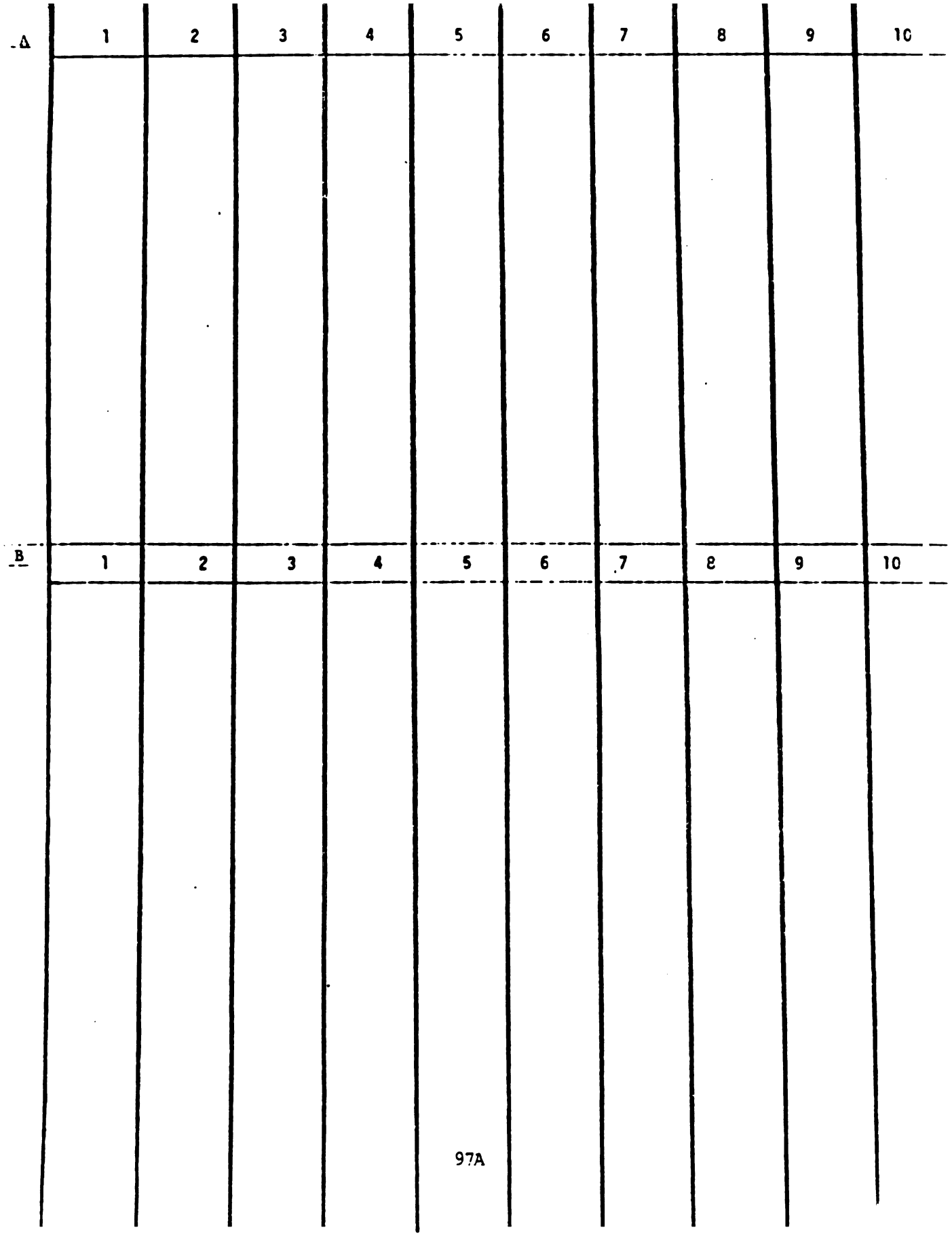
Bookkeeping: At the end of the process, flip the backs of the photographs [without loosing their place in the scale] and record the numbers at the upper left corner, under the proper column. The set identification [A or B] appears at the upper right corner on the back of the photographs. Use the back of this page for recording.

Please do not mix photographs within sets.

Thank you very much for your cooperation !!

NAME: _____

DATE: _____


A
1
2
3
4
5
6
7
8
9
10
B
1
2
3
4
5
6
7
8
9
10

APPENDIX 3.3

APPENDIX 3.3

MEANS AND STANDARD DEVIATIONS FOR THE SELECTED PICTURES

SLIDE	MEAN	ST. DEVIATION
1	1.2*	0.41
2	2.3	0.96
3	3.6*	1.18
4	4.4	1.12
5	5.6*	1.24
6	6.6	1.16
7	7.3	1.10
8	7.9*	0.70
9	8.9	0.70
10	9.9*	0.25

*Final five slides

APPENDIX 3.4

SCENARIOS USED FOR TREATMENT CONDITIONS

APPENDIX 3.4A

APPENDIX 3.4A

SCENARIO USED FOR NONTASK TREATMENT CONDITION

SITUATION

It is a nice spring Saturday outside, and a little windy, too. At last, this weekend you have none of those time-consuming chores to do: no raking, no mowing the lawn, no spring cleaning, nothing! Believe it or not, you have all the day to yourself and no urgencies to take care of. You decide to get out of the house and wander around, but the wind makes it rather uncomfortable to take a walk on the streets. Without much difficulty, though, you find the perfect solution. You decide to go to the nearby shopping mall and walk around, browse, and kill time. The pleasant and cool indoors of the mall sounds so welcoming! You are already convinced that it will be a nice and relaxing afternoon.

It is so good to have a Saturday all to yourself and be lazy for a change!

STOP! WAIT FOR FURTHER INSTRUCTIONS.

APPENDIX 3.4B

APPENDIX 3.4B

SCENARIO USED FOR LOW TIME PRESSURE/ LOW PERCEIVED RISK TASK TREATMENT CONDITION

SHOPPING SITUATION

It is a nice spring Saturday outside, and a little windy, too. At last, this weekend you have none of those time-consuming chores to do: no raking, no mowing the lawn, no spring cleaning, nothing! Believe it or not, you have all the day to yourself and no urgencies to take care of. You decide to get out of the house and wander around, but the wind makes it rather uncomfortable to take a walk on the streets. Without much difficulty, though, you find the perfect solution. You decide to go to the nearby mall and shop around leisurely for a pair of everyday shoes you know you will be needing soon. Actually, you hate to rush when you have to buy something, and today you have all the time you need.

It has been so long since you have not had to rush your shopping. It is such a nice feeling to know you have plenty of time to shop, even though it is only for a pair of simple everyday shoes.

STOP! WAIT FOR FURTHER INSTRUCTIONS.

APPENDIX 3.4C

APPENDIX 3.4C

SCENARIO USED FOR LOW TIME PRESSURE/ HIGH PERCEIVED RISK TASK TREATMENT CONDITION

SHOPPING SITUATION

It is a nice spring Saturday outside, and a little windy, too. At last, this weekend you have none of those time-consuming chores to do: no mowing the lawn, no raking, no spring cleaning, nothing! Believe it or not, you have all the day to yourself and no urgencies to take care of. You decide to get out of the house and wander around, but the wind makes it rather uncomfortable to take a walk on the streets. Without much difficulty, though, you find the perfect solution. You decide to go to the nearby mall and shop around leisurely for the 35 mm single lens reflex camera and a matching flash unit that you have wanted for so long. Actually, you hate to rush when you have to buy something, and today you have all the time you need.

It has been so long since you have not had to rush your shopping. You are glad you have plenty of time to shop today, especially when you are shopping for such an important item.

STOP! WAIT FOR FURTHER INSTRUCTIONS.

APPENDIX 3.4D

APPENDIX 3.4D

SCENARIO USED FOR HIGH TIME PRESSURE/ LOW PERCEIVED RISK TASK TREATMENT CONDITION

SHOPPING SITUATION

It is a wonderful spring day outside, but alas, no time to enjoy it! Unfortunately, it is one of those days when you can hardly find the time to tie your shoes. There is an important meeting at 1 o'clock and you really have to hurry to get ready for it. You just have not been in such a rush for a long time. You are wondering why all the deadlines have to come together!

All of a sudden you remember another important thing you have to squeeze into your tight schedule. Yes, to top it all, you have to buy a pair of everyday shoes that you need badly for tonight. There is no choice but to buy a new pair and to buy them during your lunch break. You decide to go to the nearby mall and shop there. You figure, if you exclude the time you need to get there and back, and grab a bite to eat, you will have about 30 minutes to shop for your shoes. What an inconvenience to rush so much for only a pair of simple everyday shoes!

Why do such things have to come up on the days when you have no time, anyway?!

STOP! WAIT FOR FURTHER INSTRUCTIONS.

APPENDIX 3.4E

APPENDIX 3.4E

SCENARIO USED FOR HIGH TIME PRESSURE/ HIGH PERCEIVED RISK TASK TREATMENT CONDITION

SHOPPING SITUATION

It is a wonderful spring day outside, but alas, no time to enjoy it. Unfortunately, it is one of those days when you can hardly find the time to tie your shoes. There is an important meeting at 1 o'clock and you really have to hurry to get prepared for it. You just have not been in such a rush for a long time. You are wondering why all the deadlines have to come together.

All of a sudden you remember another important thing you have to squeeze into your tight schedule. Tonight, you have to attend a ceremony where your best friend will be awarded an honorary degree. You had very conveniently promised her that you would be taking many pictures of her and the ceremony on this important night. At that time, little did you know that you would be so late in buying the camera that you so much wanted. You have left it to the last minute. You decide to go to the nearby mall where they have three camera stores. You figure you will have about 30 minutes to shop. It is hard to accomplish, but you definitely have to buy a good, 35 mm single lens reflex camera and a matching flash unit in such a short time.

Why do such things come up on the days when you have no time, anyway?!

STOP! WAIT FOR FURTHER INSTRUCTIONS.

APPENDIX 3.5

QUESTIONNAIRE FORMS USED FOR TASK AND NONTASK TREATMENT CONDITIONS

APPENDIX 3.5A

APPENDIX 3.5A

QUESTIONNAIRE FORM FOR NONTASK TREATMENT CONDITION

MICHIGAN STATE UNIVERSITY
SHOPPER SURVEY

Form:_____

Group:_____

GENERAL INFORMATION: First we will show you 5 slides taken at a shopping mall at different times throughout the year. Then we will describe a specific SITUATION and you are asked to assume or pretend that you are under those conditions. It is very important that you put yourself in this particular situation. Although these conditions may not be totally realistic for you, we are asking you to forget your reality for now and try to pretend as if you are actually experiencing this situation. In other words, we are asking you to play a role.

After presenting the shopping situation and all the slides, we will start showing one slide at a time and ask you to answer some questions after each one. The same questions will be used for each slide.

The last step is to answer a few other questions that are not related to the slides.

There are no right or wrong answers to any of the questions in this booklet. Everyone feels differently under different conditions. It is your individual opinion which is important to us.

Please complete the questionnaire following my verbal instructions on each page and do not rush through or spend too much time on a question. The entire procedure should take about 30 minutes.

We will now begin the procedure by showing all of the 5 slides to get you acquainted with them.

[SLIDES]

Now I will describe the specific shopping situation. Remember: it is very important that you observe the slides and answer the questions as though you were shopping under the conditions described by this situation.

STOP! WAIT FOR FURTHER INSTRUCTIONS.

SITUATION

It is a nice spring Saturday outside, and a little windy, too. At last, this weekend you have none of those time-consuming chores to do: no raking, no mowing the lawn, no spring cleaning, nothing! Believe it or not, you have all the day to yourself and no urgencies to take care of. You decide to get out of the house and wander around, but the wind makes it rather uncomfortable to take a walk on the streets. Without much difficulty, though, you find the perfect solution. You decide to go to the nearby shopping mall and walk around, browse, and kill time. The pleasant and cool indoors of the mall sounds so welcoming! You are already convinced that it will be a nice and relaxing afternoon.

It is so good to have a Saturday all to yourself and be lazy for a change!

STOP! WAIT FOR FURTHER INSTRUCTIONS.

DIRECTIONS: In answering the questions, place an [X] on the scale from 1 to 7 best reflecting your feelings. Consider the following example:

By placing an [X] in the middle it would mean that you feel the physical characteristics are neither unattractive nor attractive.

PHYSICAL CHARACTERISTICS

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

However, if you feel they are extremely attractive, you would mark the scale this way:

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Or, if you feel that they are slightly attractive:

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Or, quite attractive:

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Please ask if you have any questions.

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 1

1. Using the following items, how would you describe this mall?

a. Confined [1] [2] [3] [4] [5] [6] Spacious [7]

b. Too many shoppers [1] [2] [3] [4] [5] [6] Too few shoppers [7]

c. Allows restricted movement [1] [2] [3] [4] [5] [6] Allows free movement [7]

d. Pleasant [1] [2] [3] [4] [5] [6] Unpleasant [7]

e. Crowded [1] [2] [3] [4] [5] [6] Uncrowded [7]

f. Unsuitable for accomplishing my purpose today [1] [2] [3] [4] [5] [6] Suitable for accomplishing my purpose today [7]

g. Gives an open feeling [1] [2] [3] [4] [5] [6] Gives a closed feeling [7]

h. Must move at a pace set by other shoppers [1] [2] [3] [4] [5] [6] Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

a. I liked it very much [1] [2] [3] [4] [5] [6] I didn't like it at all [7]

b. Pleased [1] [2] [3] [4] [5] [6] Displeased [7]

c. Satisfied [1] [2] [3] [4] [5] [6] Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

a. If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

b. If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

c. I think many people would dislike shopping in this situation.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

d. I would definitely come back to shop at this mall again.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 2

1. Using the following items, how would you describe this mall?

Confined	[1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement	[1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant	[1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded	[1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today	[1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling	[1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much	[1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased	[1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied	[1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 3

1. Using the following items, how would you describe this mall?

Confined [1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers [1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement [1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant [1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded [1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today [1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling [1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers [1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much [1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased [1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied [1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 4

1. Using the following items, how would you describe this mall?

Confined [1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers [1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement [1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant [1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded [1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today [1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling [1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers [1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much [1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased [1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied [1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree [1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 5

1. Using the following items, how would you describe this mall?

Confined	[1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement	[1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant	[1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded	[1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today	[1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling	[1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much	[1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased	[1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied	[1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Put an ☒ in the appropriate box.

4. Which of the following best describes the purpose of these pretended visits to the mall today?

- ☐ a to shop for a specific product
- ☐ b to walk around and pass time
- ☐ c to browse
- ☐ d both b and c
- ☐ e other

---

5. In these pretended visits to the mall, how much time pressure did you feel?

Extreme ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 Not At All

---

6. The malls that I visit are generally _____.

Not Crowded ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 Extremely Crowded

---

7. I would prefer to visit a mall which is _____.

Not Crowded ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 Extremely Crowded

Put an ☒ in the appropriate box.

8. Approximately how many times do you visit a mall in one month?

- ☐ a less than once a month
- ☐ b once a month
- ☐ c two or three times a month
- ☐ d more than three times a month

9. Please indicate if each of the following are definitely not acceptable, neutral or definitely acceptable to you:

	Not Acceptable			Neutral			Acceptable
Shopping in malls	☐	☐	☐	☐	☐	☐	☐
Shopping in malls with lots of people in them.	☐	☐	☐	☐	☐	☐	☐
Shopping in stores outside of malls.	☐	☐	☐	☐	☐	☐	☐
Shopping in stores with lots of people in them.	☐	☐	☐	☐	☐	☐	☐

---

10. Finally, please give us the following information about yourself:

a. Number of people living at your household: _____.

b. Your age:
- ☐ 19 or less
- ☐ 20 to 29
- ☐ 30 to 39
- ☐ 40 to 49
- ☐ 50 to 64
- ☐ 65 and over

c. Sex:
- ☐ Male
- ☐ Female

d. Marital Status:
- ☐ Married
- ☐ Single

e. Level of Education:
- ☐ Less than high school
- ☐ High school graduate
- ☐ College student
- ☐ Junior college graduate
- ☐ College graduate and higher

THANK YOU VERY MUCH FOR YOUR COOPERATION.

APPENDIX 3.5B

APPENDIX 3.5B

QUESTIONNAIRE FORM FOR TASK TREATMENT CONDITION

MICHIGAN STATE UNIVERSITY
SHOPPER SURVEY

Form:_____

Group:_____

GENERAL INFORMATION: First we will show you 5 slides taken at a shopping mall at different times throughout the year. Then we will describe a specific SHOPPING SITUATION and you are asked to assume or pretend that you are shopping under those conditions. It is very important that you put yourself in this particular situation. Although these conditions may not be totally realistic for you, we are asking you to forget your reality for now and try to pretend as if you are actually experiencing this situation. In other words, we are asking you to play a role.

After presenting the shopping situation and all the slides, we will start showing one slide at a time and ask you to answer some questions after each one. The same questions will be used for each slide.

The last step is to answer a few other questions that are not related to the slides.

There are no right or wrong answers to any of the questions in this booklet. Everyone feels differently under different conditions. It is your individual opinion which is important to us.

Please complete the questionnaire following my verbal instructions on each page and do not rush through or spend too much time on a question. The entire procedure should take about 30 minutes.

We will now begin the procedure by showing all of the 5 slides to get you acquainted with them.

[SLIDES]

Now I will describe the specific shopping situation. Remember: it is very important that you observe the slides and answer the questions as though you were shopping under the conditions described by this situation.

STOP! WAIT FOR FURTHER INSTRUCTIONS.

SHOPPING SITUATION

It is a wonderful spring day outside, but alas, no time to enjoy it! Unfortunately, it is one of those days when you can hardly find the time to tie your shoes. There is an important meeting at 1 o'clock and you really have to hurry to get ready for it. You just have not been in such a rush for a long time. You are wondering why all the deadlines have to come together!

All of a sudden you remember another important thing you have to squeeze into your tight schedule. Yes, to top it all, you have to buy a pair of everyday shoes that you need badly for tonight. There is no choice but to buy a new pair and to buy them during your lunch break. You decide to go to the nearby mall and shop there. You figure, if you exclude the time you need to get there and back, and grab a bite to eat, you will have about 30 minutes to shop for your shoes. What an inconvenience to rush so much for only a pair of simple everyday shoes!

Why do such things have to come up on the days when you have no time, anyway?!

STOP! WAIT FOR FURTHER INSTRUCTIONS.

DIRECTIONS: In answering the questions, place an [X] on the scale from 1 to 7 best reflecting your feelings. Consider the following example:

By placing an [X] in the middle it would mean that you feel the physical characteristics are neither unattractive nor attractive.

PHYSICAL CHARACTERISTICS

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

However, if you feel they are extremely attractive, you would mark the scale this way:

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Or, if you feel that they are slightly attractive:

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Or, quite attractive:

Unattractive						Attractive
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Please ask if you have any questions.

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 1

1. Using the following items, how would you describe this mall?

a. Confined [1] [2] [3] [4] [5] [6] Spacious [7]

b. Too many shoppers [1] [2] [3] [4] [5] [6] Too few shoppers [7]

c. Allows restricted movement [1] [2] [3] [4] [5] [6] Allows free movement [7]

d. Pleasant [1] [2] [3] [4] [5] [6] Unpleasant [7]

e. Crowded [1] [2] [3] [4] [5] [6] Uncrowded [7]

f. Unsuitable for accomplishing my purpose today [1] [2] [3] [4] [5] [6] Suitable for accomplishing my purpose today [7]

g. Gives an open feeling [1] [2] [3] [4] [5] [6] Gives a closed feeling [7]

h. Must move at a pace set by other shoppers [1] [2] [3] [4] [5] [6] Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

a. I liked it very much [1] [2] [3] [4] [5] [6] I didn't like it at all [7]

b. Pleased [1] [2] [3] [4] [5] [6] Displeased [7]

c. Satisfied [1] [2] [3] [4] [5] [6] Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

a. If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

b. If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

c. I think many people would dislike shopping in this situation.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

d. I would definitely come back to shop at this mall again.

Strongly Agree [1] [2] [3] [4] [5] [6] Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 2

1. Using the following items, how would you describe this mall?

Confined	[1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement	[1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant	[1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded	[1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today	[1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling	[1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much	[1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased	[1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied	[1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 3

1. Using the following items, how would you describe this mall?

Confined	[1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement	[1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant	[1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded	[1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today	[1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling	[1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much	[1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased	[1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied	[1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 4

1. Using the following items, how would you describe this mall?

Confined	[1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement	[1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant	[1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded	[1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today	[1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling	[1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much	[1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased	[1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied	[1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Observe the SETTING depicted in the slide and remember your role in the SHOPPING SITUATION as you answer these questions.

Put an [X] on the scale from 1 to 7 best reflecting your feelings.

SETTING 5

1. Using the following items, how would you describe this mall?

Confined	[1]	[2]	[3]	[4]	[5]	[6]	Spacious [7]
Too many shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Too few shoppers [7]
Allows restricted movement	[1]	[2]	[3]	[4]	[5]	[6]	Allows free movement [7]
Pleasant	[1]	[2]	[3]	[4]	[5]	[6]	Unpleasant [7]
Crowded	[1]	[2]	[3]	[4]	[5]	[6]	Uncrowded [7]
Unsuitable for accomplishing my purpose today	[1]	[2]	[3]	[4]	[5]	[6]	Suitable for accomplishing my purpose today [7]
Gives an open feeling	[1]	[2]	[3]	[4]	[5]	[6]	Gives a closed feeling [7]
Must move at a pace set by other shoppers	[1]	[2]	[3]	[4]	[5]	[6]	Can move at my own pace [7]

2. How would you describe your feelings about today's shopping trip to the mall?

I liked it very much	[1]	[2]	[3]	[4]	[5]	[6]	I didn't like it at all [7]
Pleased	[1]	[2]	[3]	[4]	[5]	[6]	Displeased [7]
Satisfied	[1]	[2]	[3]	[4]	[5]	[6]	Unsatisfied [7]

3. Please observe the SETTING depicted in the slide again and indicate the degree to which you agree or disagree with the following statements:

If I had a choice, I would shop at a <u>different mall</u> next time.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

If I had a choice, I would shop at this mall at a <u>different time</u>.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I think many people would dislike shopping in this situation.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

I would definitely come back to shop at this mall again.

Strongly Agree	[1]	[2]	[3]	[4]	[5]	[6]	Strongly Disagree [7]

STOP! WAIT FOR FURTHER INSTRUCTIONS.

Put an [X] in the appropriate bracket.

4. Which of the following best describes the purpose of these pretended visits to the mall today?

[a] to shop for a specific product
[b] to walk around and pass time
[c] to browse
[d] both b and c
[e] other

5. For each of the factors, please put an [X] in the bracket that best reflects your feelings about the product you were shopping for:

The product I was shopping for is an expensive product.

Strongly Agree						Strongly Disagree
[1]	[2]	[3]	[4]	[5]	[6]	[7]

I don't have much experience in purchasing this product.

Strongly Agree						Strongly Disagree
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Decision to purchase this product involves high risk.

Strongly Agree						Strongly Disagree
[1]	[2]	[3]	[4]	[5]	[6]	[7]

This is a technologically complex product.

Strongly Agree						Strongly Disagree
[1]	[2]	[3]	[4]	[5]	[6]	[7]

6. In these pretended visits to the mall, how much time pressure did you feel?

Extreme						Not At All
[1]	[2]	[3]	[4]	[5]	[6]	[7]

7. The malls that I visit are generally _____ at the times that I shop.

Not Crowded						Extremely Crowded
[1]	[2]	[3]	[4]	[5]	[6]	[7]

8. I would prefer to shop at a mall which is _____.

Not Crowded						Extremely Crowded
[1]	[2]	[3]	[4]	[5]	[6]	[7]

Put an [X] in the appropriate bracket.

9. Approximately how many times do you visit a mall in one month?

[a] less than once a month
[b] once a month
[c] two or three times a month
[d] more than three times a month

10. Please indicate if each of the following are definitely not acceptable, neutral or definitely acceptable to you:

	Not Acceptable			Neutral			Acceptable
Shopping in malls	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Shopping in malls with lots of people in them.	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Shopping in stores outside of malls.	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Shopping in stores with lots of people in them.	[1]	[2]	[3]	[4]	[5]	[6]	[7]

11. Finally, please give us the following information about yourself:

a. Number of people living at your household: ____.

b. Your age:
[ ] 19 or less
[ ] 20 to 29
[ ] 30 to 39
[ ] 40 to 49
[ ] 50 to 64
[ ] 65 and over

c. Sex:
[ ] Male
[ ] Female

d. Marital Status:
[ ] Married
[ ] Single

e. Level of Education:
[ ] Less than high school
[ ] High school graduate
[ ] College student
[ ] Junior college graduate
[ ] College graduate and higher

THANK YOU VERY MUCH FOR YOUR COOPERATION.

APPENDIX 4.1

APPENDIX 4.1

EXAMINATION OF THE DEPENDENT VARIABLE WITH RESPECT TO ASSUMPTIONS OF ANOVA

I. Normality

A. Kurtosis: Ku = 1.2
B. Skewness: Sk = 0

II. Equality of Variance

A. Hartley's Statistic: F_{max} = 1.45
B. Cochran's Statistics: C_{max} = 0.59
C. Bartlett's Statistic: F = 1.45, p - .228

APPENDIX 4.2

APPENDIX 4.2

CELL MEANS FOR MAIN EFFECTS

Main Effects:

Time 0:	27.88	Risk 0:	27.32	Slide: 1	13.6
Time 1:	26.32	Risk 1:	26.89	2	27.41
				3	37.35
				4	17.83
				5	39.09

---

[a]Higher values correspond to lower perceived retail crowding.

APPENDIX 4.3

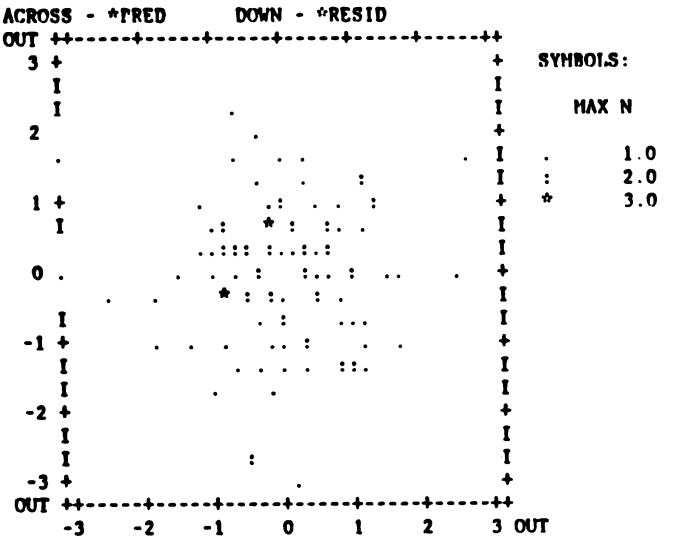
EXAMINATION OF RESIDUALS

APPENDIX 4.3A

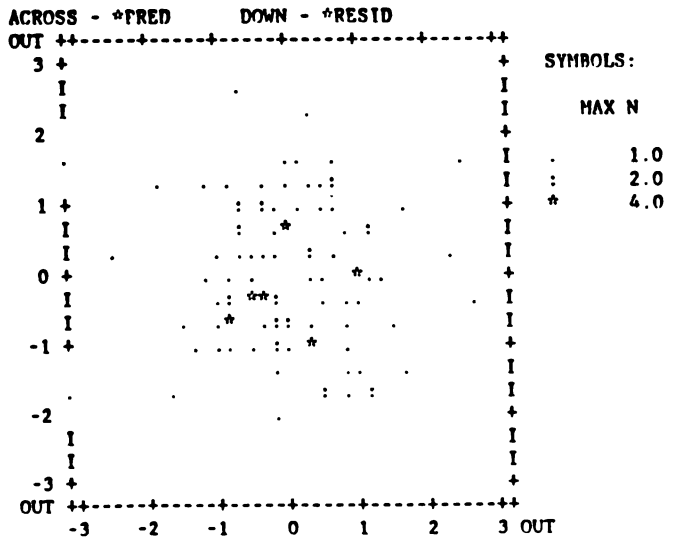
APPENDIX 4.3A

DISTRIBUTION OF RESIDUALS

STANDARDIZED SCATTERPLOT WITH SATISFACTION AS THE CRITERION



STANDARDIZED SCATTERPLOT WITH INTENTION AS THE CRITERION



APPENDIX 4.3B

APPENDIX 4.3B

HISTOGRAM OF STANDARDIZED RESIDUALS

```
HISTOGRAM  WITH SATISFACTION AS THE CRITERION
STANDARDIZED RESIDUAL
 N EXP N      (* = 1 CASES,     . : = NORMAL CURVE)
 0   .08   OUT
 0   .16  3.00
 0   .41  2.67
 1   .94  2.33 :
 1  1.92  2.00 *.
 5  3.51  1.67 ***:*
 4  5.76  1.33 **** .
 8  8.47  1.00 ********:
12 11.15   .67 ***********:*
17 13.15   .33 *************:****
15 13.90   .00 ***************:*
13 13.15  -.33 *************:
 6 11.15  -.67 ******     .
 9  8.47 -1.00 ********:*
 9  5.76 -1.33 ******:***
 2  3.51 -1.67 ** .
 0  1.92 -2.00  .
 0   .94 -2.33 .
 2   .41 -2.67 **
 1   .16 -3.00 *
 0   .08   OUT

 HISTOGRAM WITH INTENTION AS THE CRITERION
 STANDARDIZED RESIDUAL
  N EXP N      (* = 1 CASES,     . : = NORMAL CURVE)
  0   .08   OUT
  0   .16  3.00
  1   .42  2.67 *
  1   .95  2.33 :
  0  1.95  2.00  .
  5  3.58  1.67 ***:*
  9  5.87  1.33 ******:***
  9  8.63  1.00 *********:
  9 11.36   .67 ********** .
 10 13.40   .33 ************  .
 11 14.16   .00 *************  .
 15 13.40  -.33 ***************:**
 13 11.36  -.67 ************:**
 12  8.63 -1.00 *********:***
  4  5.87 -1.33 ***** .
  7  3.58 -1.67 ***:***
  1  1.95 -2.00 *.
  0   .95 -2.33 .
  0   .42 -2.67
  0   .16 -3.00
  0   .08   OUT
```

BIBLIOGRAPHY

Achabal, D.D., M.A. Kierwall and S.H. McIntyre (1981), "The Effect of Time Related Factors on Patronage Behavior." In R.F. Lusch and W.R. Darden (eds.), Retail Patronage Theory, 1981 Workshop Proceedings, N.Y., 197-201.

Aiello, J.R. and L. Capriglione (1975), Effects of Crowding on the Elderly. Unpublished manuscript, Rutgers University.

Aiello, J.R., Y.M. Epstein and R.A. Karlin (1975), Field Experimental Research on Human Crowding. Paper presented at the meeting of Eastern Psychological Association Convention, New York City, April 1975.

Altman, I. (1975), The Environment and Social Behavior: Privacy, Personal Space, Territory and Crowding, Monterey: Ca.: Brooks/Cole.

Andreasen, A.R. and A. Best (1977), "Consumers Complain - Does Business Respond?" Harvard Business Review, 55 (July-August), 93-101.

Arnold, S.J., S. Ma and I. Tigert (1978), "A Comparative Analysis of Determinant Attributes in Retail Store Selection." In Advances in Consumer Research, 5, Ann Arbor: Association for Consumer Research, 663-667.

Assael, H. (1984), Consumer Behavior and Marketing Action, Kent Publishing Co., Bellmont: Ca., Second Edition.

Barker, R. (1963), "Ecology and Motivation," Nebraska Symposium on Motivation, 8, 1-50.

Bass, F.M., E.M. Pessemier and D.R. Lehmann (1972), "An Experimental Study of Relationship Between Attitudes, Brand Preference and Choice," Behavioral Science, 17 (November), 532-41.

Bauer, R. (1960), "Consumer Behavior as Risk Taking." In R.S. Hancock (ed.) Dynamic Marketing for a Changing World. Proceedings of the 43d Conference of the AMA, 389-398.

Baum, A. and G.E. Davis (1976), "Spatial and Social Aspects of Crowding Perception," Environment and Behavior, 8, 4, 527-544.

Baum, A. and Y. Epstein (1978), Human Response to Crowding. Hillsdale, New Jersey: L. Erlbaum Associates.

Baum, A., R.E. Harpin and S. Valins (1975), "The Role of Group Phenomena in the Experience of Crowding," Environment and Behavior, 7, 2, 185-198.

Baum, A. and S. Koman (1976), "Differential Response to Anticipated Crowding: Psychological Effects of Social and Spatial Density," Journal of Personality and Social Psychology, 34, 3, 526-536.

Baum, A., M. Riess and J. O'Hara (1974), "Architectural Variants of Reactions to Spatial Invasion," Environment and Behavior, 6, 91-100.

Baum, A. and S. Valins (1973), "Residential Environments, Group Size and Crowding," Proceedings of the 81st Annual Convention of the American Psychological Association, 8, 211-212.

Bearden, W.O., M. Crockett and J.E. Teel (1981), "Discomfirmation of Purchase Expectations and Subsequent Consumer Attitudes and Patronage Intentions." In R.F. Lusch and W.R. Darden (eds.), Retail Patronage Theory, 1981 Workshop Proceedings, New York, 54-58.

Bellenger, D. and P. Korgaonkar (1980), "Profiling the Recreational Shopper," Journal of Retailing, 53, 29-38.

Bellenger, D., D.H. Robertson, and B.A. Greenberg (1977), "Shopping Center Patronage Motives," Journal of Retailing, 53, 2, 29-38.

Bellenger, D., D.H. Robertson and E. Hirschman (1978), "Impulse Buying Varies by Product," Journal of Advertising Research, V. 18 (December), 15-18.

Berlyne, D.E. (1960), Conflict, Arousal and Curiosity, New York: McGraw-Hill Book Co.

Bettman, J.R. (1973), "Perceived Risk and Its Components: A Model and Empirical Test," Journal of Marketing Research, 10 (May), 184-190.

Bettman, J.R. (1979), An Information Processing Theory of Consumer Choice, Reading, Mass.: Addison-Wesley Publishing Co.

Bergman, B.A. (1971), "The Effects of Group Size, Personal Space and Success-Failure on Physiological Arousal, Test Performance."

Bloch, P. and M. Richins (1982), "Shopping Without Purchase: An Investigation of Consumer Browsing Behavior." In Advances in Consumer Research, X, Ann Arbor: Association for Consumer Research, 389-393.

Bohnstedt, G.W. (1983), "Measurement." In P. Rossi, J. Wright and A. Anderson (eds.), Handbook of Survey Research, New York: Academic Press.

Brehm, J. (1966), A Theory of Psychological Reactance, New York: Academic Press.

Carlsmith, J.M., P.C. Ellsworth and E. Aronson (1976), Methods of Research in Social Psychology, Reading, Mass.: Addison-Wesley.

Chain Store Age Executive (1978), 47 (February), 25.

Churchill, G.A. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," Journal of Marketing Research, XVI (February), 64-73.

Cohn, J.L., B. Sladen and B. Bennett (1975), "The Effects of Situational Variables on Judgements of Crowding," Sociometry, 38, 2, 273-281.

Cozby, P.C. (1973), "Effects of Density, Activity and Personality on Environmental Preferences," Journal of Research in Personality, 7, 45-60.

Dash, F.J., L.G. Schiffman and C. Berenson (1976), "Risk and Personality Related Dimensions of Store Choice," Journal of Marketing, 40 (January), 32-39.

Day, R.L. (1977), "Extending the Concept of Consumer Satisfaction." In Advances in Consumer Research, V. XI, W.D. Perreault (ed.), Altanta, Ga.: Association for Consumer, 149-154.

Desor, J.A. (1972), "Toward a Psychological Theory of Crowding," Journal of Personality and Social Psychology, 21, 79-83.

Dichter, E. (1964), Handbook of Consumer Motivation, New York: McGraw-Hill.

Donovan, R.J. and J.R. Rossiter (1982), "Store Atmosphere: An Environmental Psychology Approach," Journal of Retailing, V. 58, 1, 35-57.

Dooley, B.B. (1974), Crowding Stress: The Effects of Social Density on Men with 'Close' or 'Far' Personal Space. Unpublished doctoral dissertation, University of California.

Esser, A.H. (1973), "Experience of Crowding," Representative Research in Social Psychology, 4, 207-218.

Epstein, Y. and R.A. Karlin (1975), "Effects of Acute Experimental Crowding," Journal of Applied Social Psychology, 5, 1, 34-53.

Eroglu, S. and Harrell, G.D. (1985), in review.

Evans, G.W. (1975), Behavioral and Psychological Consequences in Humans. Unpublished doctoral dissertation, University of Massachusetts.

Freedman, J.L., S. Heshka and A. Levy (1975), "Crowding as an Intensifier of the Effect of Success and Failure." (Abstract, J.L. Freedman, Crowding and Behavior. San Francisco: Freeman, 151-152).

Freedman, J.L., A.S. Levy, R.W. Buchanan and J. Price (1972), "Crowding and Human Aggressiveness," Journal of Experimental and Social Psychology, 8, 528-548.

Freedman, J.L. and I. Staff (1975), "Crowding, Aggressiveness and External or Internal Crowding as an Intensifier of Internal vs. External Pleasantness." (Abstract, J.L. Freedman, Crowding and Behavior. San Francisco: Freeman, 152-153).

Geller, D.M. (1978), "Involvement in Role-Playing Simulations: A Demonstration with Studies on Obedience," Journal of Personality and Social Psychology, 36 (March), 219-235.

Glass, D.C. and J.E. Singer (1972), Urban Stress. New York: Academic Press.

Griffitt, W. and R. Veitch (1971), "Influences of Population Density in Interpersonal Affective Behavior," Journal of Personality and Social Psychology, 17, 92-98.

Haire, M. (1950), "Projective Technique in Marketing Research," Journal of Marketing, 14, 649-656.

Hansen, F. (1972), Consumer Choice Behavior: A Cognitive Theory. New York: Free Press.

Hansen, R.A. and T. Deutscher (1977-78), "An Empirical Investigation of Attribute Importance in Retail Site Selection," Journal of Retailing, 53 (Winter), 59-72.

Haley, R. (1968), "Benefit Segmentation: A Decision Oriented Research Tool," Journal of Marketing, 32 (July), 30-35.

Harrell, G.D. and P.D. Bennett (1974), "An Evaluation of the Expectancy Value Model of Attitude Measurement for Physician Prescribing Behavior," Journal of Marketing Research, 11 (June), 269-278.

Harrell, G.D. and M.D. Hutt (1976a), "Buyer Behavior Under Conditions of Crowding: An Initial Framework." In Advances in Consumer Research, V. 3, B.B. Anderson (ed.), Cincinnatti, Ohio: Association for Consumer Research.

Harrell, G.D. and M.D. Hutt (1976b), "Crowding in Retail Stores," MSU Business Topics, (Winter), 33-9.

Harrell, G.D., M.D. Hutt and J.C. Anderson (1980), "Path Analysis of Buyer Behavior Under Conditions of Crowding," Journal of Marketing Research, V. 17, 45-51.

Henry, W. (1976), "Cultural Values Do Correlate With Consumer Behavior," Journal of Marketing Research, 13 (May), 121-127.

Hisrich, R.D., R.J. Dornoff and J.B. Kernan (1972), "Perceived Risk in Store Choice," Journal of Marketing Research, 9 (November), 432-439.

Holbrook, M.B. and E.C. Hirschman (1982), "The Experiential Aspects of Consumption: Consumer Fantasies, Feelings and Fun," Journal of Consumer Research, V. 9, 132-139.

Jackson, D.W., J.E. Keith and R.K. Burdick (1984), "Purchasing Agents' Perceptions of Industrial Buying Center Influence: A Situational Approach," Journal of Marketing, 48, 4, 75-83.

Kerlinger, F.N. and E.J. Pedhazur (1973), Multiple Regression in Behavioral Research, New York: Holt, Rinehart and Winston.

Krishman, S. and M.K. Mills (1979), "Dissatisfaction with Retail Stores and Repatronage Behavior." In R. Day and K. Hunt (eds.), New Dimensions of Consumer Satisfaction and Complaining Behavior, Proceedings of the 3rd Annual CS/D and CB Conference, October 5-7, 124-128.

Korgaonkar, P. (1981), "Shopping Orientations of Catalog Showroom Patrons," Journal of Retailing, 52, 78-90.

Lindquist, J.D. (1974-75), "Meaning of Image: A Survey of Empirical and Hypothetical Evidence," Journal of Retailing, 50, 2, 29-38.

Lutz, R. (1975), "Methods for Studying Consumer Information Processing," Proceedings, American Marketing Association, 170-174.

MacDonald, W.S. and C.W. Olson (1973), "Effects on Extreme Crowding on the Performance of Five Married Couples During Twelve Weeks of Intensive Training," Proceedings of the 81st Annual Convention of the American Psychological Association, 8, 209-210.

Maddox, R.N. (1977), "Consumers' Satisfaction with Supermarkets: A Factor Analytic Study." In Consumer Satisfaction/Dissatisfaction and Complaining Behavior, R.L. Day (ed.), Bloomington: Indiana University, School of Business, Division of Research, 163-166.

Markin, R.J., C.M. Lillis and C.L. Narayana (1976), "Social Psychological Significance of Store Space," Journal of Retailing, V. 52, 1, 43-54.

Marshall, J.E. and R. Heslin (1975), "Boys and Girls Together: Sexual Composition and the Effect of Group Size and Density on Cohesiveness," Journal of Personality and Social Psychology, 31, 5, 952-961.

Martineau, P.D. (1957), Motivation in Advertising. New York: Harper and Row.

McClelland, L.A. (1974), Crowding and Social Stress. Unpublished doctoral dissertation, University of Michigan.

McClelland, L. and N. Auslander (1975), Determinants of Perceived Crowding and Pleasantness in Public Settings. Unpublished manuscript, University of Colorado.

Melbin, M. (1976), Time Territoriality. Unpublished manuscript, Boston University.

Milgram, S. (1970), "The Experience of Living in Cities," Science, 167, 1461-1468.

Mitchell, T.R. (1979), "Organizational Behavior," Annual Review of Psychology, 30, 243-281.

Morrison, D.G. (1979), "Purchase Intentions and Purchase Behavior," Journal of Marketing, 43 (Spring), 65-74.

Mowen, J.C., J.E. Keith, S.W. Brown and D.W. Jackson (1985), "Utilizing Effort and Task Difficulty Information in Evaluating Salespeople," Journal of Marketing Research, XXII (May), 185-191.

Newman, J. (1957), Motivation Research and Marketing Management. Cambridge, Mass.: Harvard University Press.

Newman, J. and B. Lockeman (1975), "Measuring Prepurchase Information Seeking," Journal of Consumer Research, 2, 216-222.

Neter, J. and W. Wasserman (1975), Applied Linear Statistical Models, Homewood, Ill." Richard D. Irwin.

Nunnaly, J.D. (1978), Psychometric Theory, 2nd ed., New York: McGraw-Hill.

Oliver, R.L. (1980), "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," Journal of Marketing Research, 17, 460-469.

Olshavsky, R. (1975), "Implications of an Information Processing Theory of Consumer Behavior," Proceedings, American Marketing Association, 151-155.

Olson, J. (1972), Cue Utilization in the Quality Perception Process: A Cognitive Model and An Empirical Test. Unpublished doctoral dissertation, Purdue University.

Pessemier, E.A. (1980), Retail Patronage Behavior, Report No: 80-112, Cambridge, Mass.: MSI.

Pickle, H.B. and B.S. Rugeling (1973), "Empirical Investigation of Enterpreneurial Goods and Customer Satisfaction," Journal of Business, 46, 268-273.

Proshansky, H., W. Ittelson and L. Rivlin (1970), "Freedom of Choice and Behavior in a Physical Setting." In H. Proshansky, W. Ittelson and R. Rivlin (eds.), Environmental Psychology. New York: Holt, Rinehart and Winston.

Poe, D.B. (1975), The Effects of Social and Spatial Density Upon Attraction, Crowding, Task Performance and Mood. Unpublished master's thesis, Virginia Polytechnic Institute and State University.

Popielarz, D.T. (1967), "An Exploration of Perceived Risk and Willingness to Try New Products," Journal of Marketing Research, 4 (November), 368-372.

Puto, C.P., P.E. Patton III and R.H. King (1985), "Risk Handling Strategies in Industrial Vendor Selection Decisions," Journal of Marketing, 49, 1, 89-98.

Rapoport, A. (1969a), "Housing and Housing Density in France," Town Planning Review, 39 (January), 341-354.

Rapoport, A. (1969b), "The Notion of Urban Relationships," Area (Journal of Institute of British Geographers), 3, 17-26.

Rapoport, A. (1971), "Designing for Complexity," A.A. Quarterly, 3, 1, 29-33.

Rapoport, A. (1976), "Toward a Redefinition of Density." In Crowding in Real Environments, S. Saegert (ed.), London: Sage Publications.

Rapoport, A. and R. Hawkes (1970), "The Perception of Urban Complexity," AIP Journal, 36, 2, 106-111.

Repoport, A. and R.E. Kantor (1967), "Complexity and Ambiguity in Environmental Design," AIP Journal, 33, 4, 210-221.

Roselius, T. (1971), "Consumer Rankings of Risk Reduction Methods," Journal of Marketing, 35 (January), 56-61.

Ross, M., B. Layton, B. Erickson and J. Schopler (1973), "Affect, Facial Regard and Reactions to Crowding," Journal of Personality and Social Psychology, 1973, 28, 69-76.

Ryan, M.J. and E.H. Bonfield (1980), "Fishbein's Intentions Model: A Test of External and Pragmatic Validity," Journal of Marketing, 44 (Spring), 82-95.

Saegert, S.C. (1973), "Crowding: Cognitive Overload and Behavioral Constraint." In Environmental Design Research, N. Prieser (ed.), V. II, Stroudsburg, PA: Dresden, Hutchinson & Ross.

Saegert, S.C. (1974), Effects of Spatial and Social Density on Arousal, Mood and Social Orientation. Unpublished doctoral dissertation, University of Michigan.

Sarel, D. (1981), "Advances in Environmental Psychology - A New Perspective on Consumer Behavior." In Advances in Consumer Research, IX, Ann Arbor: Association for Consumer Research, 135-138.

Sawyer, A.G. (1975), "Demand Artifacts in Laboratory Experiments in Consumer Research," Journal of Marketing Research, 18 (August), 275-290.

Schellinck, D.A. (1982), "Cue Choice as a Function of Time Pressure and Perceived Risk." In Advances in Consumer Research, X, Ann Arbor: Association for Consumer Research, 470-475.

Schiffenbauer, A.I., J.E. Brown, P.L. Perry, L.K. Schulak and A.M. Zanzola (1977), "The Relationship Between Density and Crowding," Environment and Behavior, 9, 3-14.

Schiffman, L.G. (1972), "Perceived Risk in New Product Trial by Elderly Consumers," Journal of Marketing Research, 9 (February), 106-108.

Schopler, J. and M. Walton (1974), The Effects of Structure, Expected Enjoyment and Participants' Internality/Externality Upon Feelings of Being Crowded. Unpublished manuscript, University of North Carolina.

Sherrod, D.R. (1974), "Crowding, Perceived Control and Behavioral After-Effects," Journal of Applied Social Psychology, 4, 171-186.

Sheth, J. and M. Venkatesan (1968), "Risk-Reduction Processes in Repetitive Consumer Behavior," Journal of Marketing Research, 5 (August), 307-310.

Smith, G. (1965), "How GM Measures Ad Effectiveness," Printer's Ink, (May 14), 19-29.

Smith, S. and W.W. Haythorn (1972), "Effects of Compatibility, Crowding, Group Size and Leadership Seniority on Stress, Anxiety, Hostility and Annoyance in Isolated Groups," Journal of Personality and Social Psychology, 22, 67-69.

Silk, A.J. and G.L. Urban 91978), "Pre-test Market Evaluation of New Packaged Goods: A Model and Measurement Methodology," Journal of Marketing Research, 15 (May), 171-191.

Sterndhal, B. and C.S. Craig (1974), "Fear Appeals: Revisited and Revised," Journal of Consumer Research, 1 (December), 22-34.

Stokols, D. (1972), "On the Distinction Between Density and Crowding: Some Implications for Future Research," Psychological Review, 79, 275-277.

Stokols, D. (1973), "The Relation Between Micro and Macro Crowding Phenomena: Some Implications for Environmental Research and Design," Man-Environment Systems, (May), 1-11.

Stokols, D., M. Rall, B. Pinner and J. Schopler (1973), "Physical, Social and Personal Determinants of the Perception of Crowding," Environment and Behavior, 5, 87-115.

Stockdale, J.E. (1978), "Crowding: Determinants and Effects," Advances in Experimental and Social Psychology, 11, 197-245.

Sundstrom, E. (1975a), "Interpersonal Behavior and the Physical Environment." In L. Wrightsman, Social Psychology (2nd ed.). Monterey, Ca.: Brooks/Cole, 1977.

Sundstrom, E. (1975b), "Toward an Interpersonal Model of Crowding," Sociological Symposium, 14, 129-144.

Sundstrom, E. (1977), "Interpersonal Behavior and the Physical Environment." In L. Wrightsman, Social Psychology (2nd ed.). Monterey, Ca.: Brooks/Cole.

Sundstrom, E. (1978), "Crowding as a Sequential Process: Review of Research on the Effects of Population Density on Humans." In A. Baum and Y. Epstein (eds.), Human Response to Crowding, 31-116.

Swan, J. (1978), "Consumer Satisfaction with a Retail Store Related to the Fulfillment of Expectations on an Initial Shopping Trip." In Consumer Satisfaction, Dissatisfaction and Complaining Behavior, R. Day (ed.), Bloomington: Indiana University, School of Business, 10-17.

Swan, J. and T.F. Trawick (1982), "Disconfirmation of Expectations and Satisfaction with a Retail Service," Journal of Retailing, 57, 3, 49-65.

Tauber, E.M. (1977), "Why Do People Shop?" Journal of Marketing, 36, 50-52.

Valins, S. and A. Baum (1973), "Residential Group Size, Social Interaction and Crowding," Environment and Behavior, 5, 4, 421-439.

Wells, W.D. (1975), "Psychographics: A Critical Review," Journal of Marketing Research, 12 (May), 196-213.

Westbrook, R.A. (1981), "Sources of Consumer Satisfactions with Retail Outlets," Journal of Retailing, 57, 3, 68-85.

Wicker, A. (1973), "Undermanning Theory and Research: Implications for the Study of Psychological and Behavioral Effects of Excess Population," Representative Research in Social Psychology, 4, 185-206.

Wicker, A.W., S.L. Kirmeyer, L. Hanson and D. Alexander (1976), "Effects of Manning Level on Subjective Experiences, Performance and Verbal Interaction in Groups," Organizational Behavior and Human Performance, 17, 251-274.

Wohlwill, J. (1968), "Amount of Stimulus Exploration and Preference as Differential Functions of Stimulus Complexity," Perception and Psychophysics, 4, 5, 307-312.

Wohlwill, J. (1974), "Human Adaptation to the Levels of Environmental Stimulation," Human Ecology, 2, 2, 127-147.

Worchel, S. and C. Teddlie (1976), "Factors Affecting the Experience of Crowding: A Two-Factor Theory," Journal of Personality and Social Psychology, 34, 1, 30-40.

Wright, P. (1974), "The Harassed Decision Maker: Time Pressures, Distractions and the Use of Evidence," Journal of Applied Psychology, V. 59, 5, 555-561.