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THE IMPACT OF ROLE STRESS AND DOWNSIZING ON PURCHASING: AN EXPLORATORY CASE RESEARCH STUDY

DISSERTATION

Presented In Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of the Ohio State University

By

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ABSTRACT

Corporate trends toward downsizing prompted an exploration of the effect of task uncertainty and organizational formalization on role stress, as well as the effect of role stress on the job satisfaction of purchasing professionals. The literature suggested that task uncertainty and organizational formalization were possible antecedents to role stress, which has an inverse relationship with job satisfaction.

An exploratory case study methodology was used for research. Initial interviews with a purposive sample of purchasing managers were used to test the general form of an interview protocol for executability. Data for the main study were collected from twenty-seven interviews with three individuals in each of nine companies, representing three industries.
The proposed model relating task uncertainty, organizational formalization, role conflict, role ambiguity, and job satisfaction was only partially supported by the data. Statistical support was found for the relationships between job satisfaction and role stress (role conflict and role ambiguity). However, there was only limited statistical support for the relationships between role stress and task uncertainty and none for organizational formalization.

Open-ended questions used as part of the interview protocol yielded insights into the organizational changes confronting purchasing professionals. Anecdotal evidence suggested that the purchasing professionals interviewed were increasingly challenged and satisfied by their new roles and responsibilities. Respondents suggested that recognition of the purchasing function as a valuable organizational activity had a positive influence on job satisfaction.
Dedicated to the memory of my parents,
Harlan V. and Florence P. Lewis
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CHAPTER 1
INTRODUCTION

Background

Environmental changes of the 1980's and 1990's forced managers to develop creative solutions to address the challenges brought on by competition, economic recession and value conscious consumers. Faced with the responsibility of decreasing production cost and increasing shareholder wealth, corporate leaders began to implement a new strategy—downsizing.

Downsizing is the intentional reduction in workforce size as well as the elimination of jobs as a consequence of process redesign. Supporters of downsizing might emphasize its ability to enhance organizational efficiency and improve financial performance, while employees might discuss the anxiety and stress it produces.
It is the stress employees have experienced that is the impetus for this study. The research presented here will investigate the effect that job stress has on job satisfaction within purchasing organizations.

Purchasing was the focal unit of study for several reasons. Over the past two decades the importance placed on it as a business function has increased. As competitive and economic pressures have increased, the purchasing function has come to be seen as a viable source of competitive advantage (Hutt and Speh, 1995). As organizations have changed, so has organizational buying with flatter organizational structures (McCarthy and Millen, 1994, Drucker, 1988) and increased autonomy of buyers (Dickson, 1987). For workers in the modern purchasing organization, changes to the organization and to job importance are legitimate sources of job insecurity and, ultimately, work-related stress.

Downsizing can change the tasks and responsibilities of buying center members because:
1. The buying center will accomplish the same tasks drawing members from a shrinking pool of other employees and, possibly, shrinking itself.

2. The buying center may alter the process used to accomplish assigned responsibilities.

As the nature of the buying center changes, the ambiguity about role expectations and the relationship between performance and reward will tend to increase.

This chapter will serve as a broad overview of the research study. It is divided into eight sections. The first section will explain why the focal unit of study is the individual instead of the buying center. The second section will explain the model tested in this research, while sections three and four discuss the research problem and scope, respectively. The fifth section outlines the research design and methodology and section six presents the research propositions. The last
sections, seven and eight, detail the limitations and contributions of the research study.

The Buying Center Versus the Individual Buyer

Recent research has tended to focus on the organizational buying center (Mattson, 1988; McCabe, 1987), the buyer-seller relationship (Noordewir, John, and Nevin, 1990), or on buying systems (Ronchetto, Hutt, and Reingen, 1989). The focus on the dynamics of group interaction or interpersonal relationships has merit, as the organizational buying decision often involves groups playing different roles in the decision-making process (Johnston, 1981).

However, some decisions are made by individual decision makers (Webster and Wind, 1972). In fact, the increased demands placed on the individual (Dickson, 1987) may be among the most significant outcomes of recent changes.
The Individual Organizational Buyer

In all organizational decisions, some one individual or group of individuals play the role of "Decider" (Webster and Wind, 1972). According to Jagdish Sheth (1973), individuals are more likely to function as individual decision makers when the purchase size is relatively small, the perceived risk of the purchase is relatively low, and/or when time constraints are present.

According to Patton, Puto, and King (1986), individuals in the organization often make decisions individually. The limited evidence provided by Patton, Puto, and King suggested that the majority of vendor selection decisions are made by individuals.

Some researchers have studied the individual decision-maker in the context of organizational decision-making and organizational buying (Michaels, Day, and Joachimsthaler, 1987). Puto (1987) and Qualls and Puto (1989) provide evidence that risk perceptions, organizational climate, and reward orientation can affect the way in which
individual decision-makers frame the decision alternatives and choose from among those alternatives. The current study will extend this research by investigating how stress affects job satisfaction. The specific model that will be investigated is presented below.

Model Of Work Related Stress and Job Satisfaction

This research examines the effects of downsizing on job satisfaction. The supposition is that downsizing leads to additional organizational uncertainty for employees. This increased uncertainty leads to additional role stress for those employees. High levels of role stress then lead to lower job satisfaction and, possibly a search for another job providing greater satisfaction. A brief discussion of the variables of interest are described below.

Work-Related Stress

The demands on the individual decision-maker can be varied and can originate from a number of
personal, professional, and environmental sources. When excessive demands are placed on the individual, stress results. Stress is "a consequence of or a general response to an action or situation that places special physical or psychological demands, or both, on a person. Stress involves the interaction of a person and that person's environment." (Hellriegel, Slocum, and Woodman, 1986).

Individuals can experience stress in both their personal and professional lives. The sources of work-related stress include the job itself, the individual's role in the organization, career development, relations within the organization, organizational membership, and the organization/environment interface (Hellriegel, Slocum, and Woodman, 1986).

When the source of stress originates in the various roles played by organizational members it is known as role stress (Hellriegel, Slocum, and Woodman, 1986).
Role stress has two dimensions, role conflict and role ambiguity. The effect these dimensions have on job satisfaction and job performance may differ. Thus, they are treated as two different constructs (Michaels, Day, and Joachimsthaler, 1987).

Role ambiguity is "the degree to which clear information is lacking about (1) expectations associated with a role, (2) methods for fulfilling known role expectations, and/or (3) the consequences of specific role performance" (Michaels, et al, 1987, p. 31). Singh and Rhoads (1991) suggest that boundary spanners are more likely to experience role ambiguity than others in an organization.

Role conflict is "the degree of incongruity or incompatibility of expectations communicated to a role incumbent by role senders" (Michaels, et al, 1987, p. 30). The boundary spanning character of professional buyers may mean that multiple expectations of the buyers may exist (Michaels, et al, 1987, p. 32). As depicted in the Model of Work
Related Stress and Job Satisfaction each of these types of stress will be tested.

Formalization

Formalization is the extent to which an organization's work activities are defined formally by administrative rules and procedures (i.e., formalized) and has been linked to role perceptions both conceptually (Ford 1981, House and Rizzo 1972, Kahn et al. 1964) and empirically (Moch, Bartunek and Brass 1979, Organ and Greene 1981). Though some researchers have investigated the direct influence of formalization on job outcomes (Rushing 1966, Aiken and Hage 1966), others have suggested that the effect of formalization on job outcomes is mediated through intervening variables such as role stress (Ford 1981, Organ and Greene 1981, Ruekart, Walker and Roering 1985). Most studies have shown significant negative relationships between formalization and both types of role stress (House and Rizzo 1972, Podsakoff et al. 1986).
The presence of explicit rules, policies, and procedures in a highly formalized industrial buying environment should clarify role perceptions and reduce role ambiguity. The results for role conflict have not been so consistent.

Organ and Greene (1981) found a positive relationship between formalization and role conflict for science engineering professionals. Similarly, Nicholson and Goh (1983) found a positive relationship between formalization and role conflict when sampling data processing research and development professionals, but found a negative relationship between the two variables in a production worker sample. One explanation is that higher levels of formalization may be associated with decreased levels of interdepartmental communication (Hage, Aiken and Marett 1971).

Given that purchasing professionals occupy boundary-spanning roles and are also linked to a national code of professionalism the clarifying effect of organizational rules, policies and
guidelines is expected to reduce role ambiguity. However, the same rules, policies and guidelines are expected to be associated with increased role conflict experienced in purchasing, as is found for other types of professionals.

The Research Problem

Given the current popularity of downsizing, the goal of this research is to explore the effect of task uncertainty and organizational formalization on role stress as well as the effect of role stress on the individual decision-maker's job satisfaction.

The Research Questions

The proposed research is intended to explore four questions.

The broader questions addressed by this research include:

1. How has corporate downsizing affected organizational buying behavior?
2. How do changes in the organizational structure of the buying function alter the role of the individual decision maker?

Since the variables of interest are at the individual level, the questions related to these variables are:

3. To what degree do role ambiguity and role conflict, facets of work-related and overall stress, influence the individual organizational buyer?

4. To what degree does role stress affect the individual decision maker's job satisfaction?

Scope of the Research

The focus of the proposed research involves investigating selected factors which affect the individual decision maker in purchasing organizations. While individual factors might be expected to impact individuals involved in making group buying decisions, no effort is made in the
proposed research to identify, monitor, or measure that impact. Neither the nature of group decision making nor the impact of the individual in the group are considered in this research.

The sample for the proposed research consists of purchasing managers identified through the membership lists of the National Association of Purchasing Managers (NAPM). Purchasing managers are expected to have the experience necessary to respond to the research measures regarding their buying behavior. Although people with other job titles may make individual purchasing decisions for their organizations, only purchasing managers are represented in the sample. It is further assumed that the membership lists of the National Association of Purchasing Managers reflects the characteristics of the population of purchasing managers.

All organizations make purchases, including governmental agencies. However, the present research includes only responses from purchasing managers representing commercial organizations. No
effort has been made in this research to distinguish between domestic and international commercial organizations. Some of the organizations represented in the sample may also be involved in foreign trade, but no effort is made to make the sample representative of organizations involved in international purchasing.

**Research Design and Methodology**

The research presented here had three stages, including a developmental stage, a data collection stage, and a data analysis stage.

The research employed an exploratory case study methodology. This methodology was used for several reasons, including that it would provide the researcher more depth and insight into the phenomenon in questions. Specifically, it would allow the research to ask about the sources of dissatisfaction. According to Ellram (1996), the case study methodology is preferable when there is little known of the phenomenon in question and the
goals of the research are to improve his/her understanding of the phenomenon.

The purpose of Stage One is to design the measures and constructs used later in the research. There were two purposes for Stage One: to assess whether the general research topic was of interest to purchasing professionals and others; to test the general form of the protocol for executability. Interviews with a purposive sample of purchasing managers drawn from a regional membership list of the National Association of Purchasing Managers were used to achieve these goals.

In Stage Two, data were collected from interviews with purchasing professionals utilizing a protocol designed in Stage One. A portion of the interview protocol operationalized the independent research variables with 7-point Likert scales.

The population of interest consisted of professional buyers in private or publicly held organizations. Three industries were identified from the membership list of a midwestern chapter of National Association of Purchasing Managers. The
three industries selected were health, high technology (communications), and general manufacturing to represent potentially different purchasing environments. Three companies were then selected from each of the three industries and interviews were conducted with three purchasing professionals in each company. In all, twenty-seven interviews were conducted with people representing a total of nine companies.

During Stage Three, final stage of the research, the data gathered from purchasing professionals were used to measure the dependent and independent variables and test the research propositions.

The Research Propositions

Proposition A1:

Task Uncertainty will not significantly explain the variance associated with role conflict.
Predicted:

Task Uncertainty will significantly explain the variance associated with role conflict.

Proposition A2:

Task Uncertainty will not significantly explain the variance associated with role ambiguity.

Predicted:

Task Uncertainty will significantly explain the variance associated with role ambiguity.

Proposition A3

Organizational formalization will not significantly explain the variance associated with role conflict

Predicted:

Organizational formalization will significantly explain the variance associated with role conflict.
Proposition A4:
Organizational formalization will not significantly explain the variance associated with role ambiguity.

Predicted:
Organizational formalization will significantly explain the variance associated with role ambiguity.

Proposition A5:
Role conflict will not significantly explain the variance associated with job satisfaction.

Predicted:
Role conflict will significantly explain the variance associated with job satisfaction.

Proposition A6:
Role ambiguity will not significantly explain the variance associated with job satisfaction.
Predicted:

Role ambiguity will significantly explain the variance associated with job satisfaction.

Assumptions and Limitations

The research is limited by several factors, including the research method, the measurement instrument, the forms of data analysis used to interpret the data, the bias present in the list used to generate the sample, and the size and geographic concentration of the respondents.

The exploratory case study research method employed in this research is an important means of capturing data. However, there are limitations as well as strengths to this method. The strengths include that the method allows for an in-depth examination of the phenomenon of interest. By its very definition, the exploratory nature of the method precludes the rigorous statistical testing of research hypotheses found in other more positivist approaches.
The measurement instrument utilized scales employed in previous research as well as scales not previously used. The strength of the research is based on the reliability and validity of the measurement instrument. Reliance on measures used previously by others means that this research is dependent on the accurate reporting of the tests for reliability and validity. Fortunately, the measures for role ambiguity and role conflict are well-researched in the literature with documented reliabilities. New measures examined in this research will benefit from additional future testing of reliability and validity.

The sample size employed in this research prohibited certain forms of quantitative analysis and placed limits on the means by which some of the analyses were conducted. The need to maintain cell sizes of adequate size required some variables to be collapsed into variables with fewer levels and, therefore, larger cell sizes. This additional manipulation of the data results in a reduction in
the sensitivity of the measures to capture differences between observations.

Omitted variables also serve as a limitation of the study in that the inclusion of these variables could shed additional light onto the phenomenon of interest. The size of the respondents' purchasing departments was one measure that was not included in either the Stage One and Stage Two interview protocols.

The sample for Stage Two of the research consisted of sets of three purchasing professionals from each of three companies in a total of three industry groups. In all, twenty-seven individuals were interviewed. The use of three informants from each company was an attempt to reduce informant bias and a triangulation of responses (Ellram, 1996). However, additional informants from each company, both in the purchasing and elsewhere in the companies, would have added richness to the data in addition to reducing informant bias.

As the sample of respondents includes only purchasing managers from domestic commercial
businesses who were affiliated with a chapter of a professional organization, the results of the research may not be generalizable for non-members of that professional buyer organization nor for geographic regions not represented in the membership lists used to generate the sample. The three industries represented in the sample represent a range of kinds of business areas which was the purpose in selecting them. As such, the results of the research may not be representative of other domestic industries nor of foreign based firms nor particularly of those industries due to the small sample size.

Contributions
As managerial trends toward flatter organizational structures (Drucker, 1988) and "intrapreneurial buying" (Dickson, 1987) change the modern organization and enhance the role of the individual decision-maker in organizational buying, the research will have implications for both
professional buyers, other marketing practitioners, and marketing theorists.

Contributions to Marketing Theory

This research makes several contributions to marketing theory. First, it expands the body of research that exists related to organizational buying behavior as well as improves the general understanding of the individual decision-maker in buying organizations. Second, it may begin to clarify the interaction between organizational characteristics, organizational decisions, and organizational effectiveness.

Contributions to Practice

Managers operating in an environment of corporate downsizing can benefit from understanding the impact that this strategy has on employee stress and, therefore, job satisfaction. Use of such knowledge can result in improved efficiency and increased job morale. A better understanding of the factors that may inhibit efficient and
effective decision-making can lead to changes in purchasing policy, the clarification of role expectations and performance evaluations, and the improvement of decision-making. In an effort to reduce role ambiguity, a manager might increase the formalization of responsibilities. In other words, despite the changes occurring in the corporation, managers can make sure that duties are clearly defined and understood.

Organization

The research is presented in five chapters. Chapter 1 introduces the research topic and provides an overview of the research effort. Chapter 2 contains a review of the literature relevant to the research. Chapter 3 describes the design and methodology of the research. Chapter 4 includes the results of the data analysis. Chapter 5 summarizes the research, draws conclusions from the research, and recommends future research efforts.
CHAPTER 2
LITERATURE REVIEW

Introduction

Significant changes have occurred in organizations over the past two decades due to downsizing. Changes in organizational structure have altered the ways in which organizations function and the demands organizations place on their members (McCarthy and Millen, 1994, William Bridges and Associates, 1995). Understanding the impact of role stress in the era of corporate downsizing is vital to effectively managing the purchasing center and has therefore generated a great deal of interest in the popular press.

The purpose of this chapter is to discuss research relevant to the constructs of interest. In order to do so, this chapter is divided into three major sections. In the first section, a brief description of literature relevant to
organizational buying behavior and role-related stress is presented. Within this section, the current understanding of organizational purchasing processes, organizational buying behaviors, and role related stress is discussed. In the second section, the variables of interest in this research, role ambiguity, role conflict, and formalization, are defined and discussed. The third section summarizes the interrelationships between the variables of interest and describes the research model. In the fourth section, recent research with specific relevancy to the research presented here is presented.

Organizational Buying and Role-Related Stress

The buying function of organizational customers differs from the buying function of individual consumers in a variety of ways. The intended purpose of the purchased good, the number of people involved in the purchasing decision, and the stages of the buying process are all ways in which consumer and organizational markets have been
seen to differ (Hutt and Speh, 1995). Even within organizations, the buying function can vary from situation to situation. According to Puto (1987), the organizational buying process differs from the individual buying process in at least six ways:

1. The buying department is generally a staff or service function for line departments.

2. The buying department acts in response to the specified needs of an individual or group external to the buying department.

3. The buying department is generally constrained to purchase items within a well-defined set of specifications.

4. Often, the buying decision is made in the context of a buying center.

5. Purchase decisions are often reviewed by higher authorities both within the purchasing function as well as within the control structure of the organization.

6. Responsibility for contract negotiations, supplier selection, and monitoring supplier performance often rests within the purchasing department.

**Organizational Buying Behavior and Decision-Making**

Models of organizational buying behavior have been presented by Sheth (1973) Webster and Wind
(1972), and Webster (1984). In addition, recent reviews of organizational buying behavior can be found by Johnston and Spekman (1987) and Bunn (1990).

Sheth (1973) suggested that product-specific and company-specific factors influenced the structure of the decision-making unit in organizational buying situations. Product-specific factors include perceived risk, type of purchase and time constraints (p. 54). Decisions that are relatively more routine, less risky, or more time constrained are, according to Sheth, more likely to be made by individual decision makers rather than by a group, or buying center. As the decision becomes less routine, riskier, or when time constraints are minimal, group decision-making is more likely to occur. Company specific factors were defined as company size and degree of centralization. Larger companies or companies with highly centralized purchasing functions were found to be more likely than other companies to use group
decision making as the means of making purchase decisions.

More recent research by Wilson, Lillien, and Wilson (1991) has suggested that the interaction of purchase type and perceived risk influences the structure of the decision-making unit. Individuals were found to be more likely to make the purchase decisions in straight or modified rebuy situations characterized by low perceived risk. Conversely, in high perceived risk modified rebuy or new task purchase situations (Robertson, Faris, and Wind 1967), groups were more likely to accept the responsibility for the purchase decision.

Webster and Wind (1972) defined four sets of variables affecting the purchasing decision of organizations, including environmental, organizational, group, and individual. The first set, environmental forces, reflects a range of trends and influences in the external environment which "collectively,... define the boundaries within which industrial buyers and sellers interact" (Hutt and Speh, 1995, p. 97). The second
set, organizational forces, reflects the formal relationships, informal relationships, and interaction patterns that exist within the purchasing organization. The third set, group forces, reflects the "multiple buying influences and group forces" (Hutt and Speh, 1995, p. 104) that can be critical in the organizational buying processes. The first three sets of forces represent those elements from the macroenvironment as well as the microenvironment that serve to define, limit, and influence the organizational buying process.

The fourth and final set, individual forces, reflects the uniqueness that each individual brings to the organizational buying decision. According to Webster (1984), the Webster and Wind model of organizational buying behavior suggests:

...that in the final analysis...all organizational buying behavior is individual behavior in an organizational and interactional setting...As a result there is an important interaction between individual needs and the individual's perception of how his performance and participation in the buying decision process will be evaluated and rewarded. (p. 39).
It is this final set of forces that is of primary interest in this research. In other words, how does role stress affect job satisfaction?

**Role-Related Stress**

When the source of stress originates in the various roles played by organizational members it is known as role stress. Role stress has two dimensions, role conflict and role ambiguity. The effect these dimensions have on job satisfaction and job performance may differ. Thus, they are treated as two different constructs (Michaels, Day, and Joachimsthaler, 1987).

Role conflict is "the degree of incongruity or incompatibility of expectations communicated to a role incumbent [employee] by role senders [supervisor]" (Michaels, et al, 1987, p. 30). The boundary spanning character of professional buyers may mean that multiple expectations of the buyers may exist (Michaels, et al, 1987, p. 32).

Role ambiguity is "the degree to which clear information is lacking about (1) expectations
associated with a role, (2) methods for fulfilling known role expectations, and/or (3) the consequences of specific role performance" (Michaels, et al, 1987, p. 31). Singh and Rhoads (1991) suggest that boundary spanners are more likely to experience role ambiguity than others in an organization.

Variables of Interest

The variables of interest in this research are role ambiguity, role conflict, formalization, and task uncertainty.

Role theory has particular relevance to the industrial buying center within an organization. Understanding the impact of role stress in the era of corporate downsizing is vital to effectively managing the purchasing center and has therefore generated a great deal of interest (Bagozzi 1975, Anderson and Chambers 1985, Schurr and Ozanne 1985).

Prior research studies have tested specific organizational behavior variables that have
potential for furthering the understanding of industrial buying behavior (Robertson and Wind 1980, Anderson and Chambers 1985). As pointed out in other studies (Michaels et al. 1987 and Moriarty 1980), the buying center is too complex to be represented by such a simplistic representation.

As evidenced by several studies, role stress theory has particular relevance to the buying center (Anderson and Chambers 1985, Clopton 1984, Sheth 1973). It provides the major link between individuals and the organizations for research and scientific inquiry; it is a building block of social systems and a summation of mechanisms through which systems confront their members as individuals (Michaels et al. 1987, Graen 1976, Kahn et al, 1964).

Role stress has been of particular interest to researchers over the years (Michaels et al. 1987 and Moriarty 1980, Anderson and Chambers 1985, Clopton 1984, Sheth 1973). However, recent environmental changes, i.e., downsizing, have resulted in fewer employees performing more tasks,
thereby increasing confusion and role stress. These changes provide the impetus for further examination of role stress within buying organizations.

The specific roles played by employees are a prime source of stress in an organization. Role stress is comprised of two different types of stress, role ambiguity and role conflict, which are discussed below.

**Role Ambiguity**

According to classical organization theory, every position in a formal organizational structure should have a specified set of tasks or position responsibilities. Such specification of duties, or formal definition of role requirements, is intended to allow management to hold subordinates accountable for specific performance and to provide guidance and direction for subordinates (Rizzo, House, and Lirtzman, 1970). If an employee does not know what they have the authority to decide, what they are expected to accomplish, and how they
will be judged, they will hesitate to make decisions and will have to rely on a trial and error approach in meeting the expectations of their superior (Rizzo et al, 1970).

According to role stress theory, role ambiguity is the lack of the necessary information available for a given organizational position (Kahn et al, 1964). It is thought to result in coping behavior by the employee (role incumbent), which may attempt to solve the problem to avoid the sources of stress, or to use defense mechanisms which distort the reality of the situation. Thus, according to role theory, ambiguity should increase the probability that a person will be dissatisfied with their role, will experience anxiety, will distort reality, and will thus perform less effectively.

Role Conflict

Role conflict has been defined as the degree of incongruity or incompatibility of expectations communicated to a employee (role incumbent) by the
person who communicates the role expectation (the role sender) (Michaels et al, 1987). This construct is conceptualized in terms of the following five conflict types as identified by House and Rizzo (1972).

**Intrasender.** The extent to which two or more role expectations from a single role sender are mutually incompatible. For example, a directive from the purchasing manager may mandate a decrease in the cost of purchases and also a concurrent increase in the equality of components.

**Intersender.** The extent to which role expectations from one role sender oppose those from one or more role senders. Purchasing may negotiate specific delivery schedules with vendors to affect level material flow. Production management, however, may effect short-cycle delivery to meet each emergency low-stock condition.

**Person-role.** The extent to which expectations are incongruent with the orientation or values of the role incumbent. An organization norm of
practicing reciprocity may be disturbing to a buyer who views the practice as unethical or illegal.

**Interrole.** the extent to which expectations for performance of one role are incompatible with the expectations for performance of a different role. A common example is when, during peak periods of contract negotiations, an industrial buyer has difficulty meeting the corporate expectations of long hours in negotiations and also family expectations of spending evenings and weekends at home.

**Role Overload.** the extent to which the various role expectations communicated to a role incumbent exceed the amount of time and resources available for their accomplishment. During contract negotiation periods it may be very difficult for the industrial buyer to provide normal levels of service to user/client departments within the organization while taking on the added responsibilities of negotiations.

For the purpose of this research role conflict will refer to role overload because in an era of
corporate downsizing it is highly probable that many will experience role overload as they take on added responsibilities.

**Formalization**

Formalization is the extent to which an organization's work activities are defined formally by administrative rules and procedures (i.e., formalized) and are linked to role perceptions both conceptually (Ford 1981, House and Rizzo 1972, Kahn et al. 1964) and empirically (Moch, Bartunek and Brass 1979, Organ and Greene 1981). Though some researchers have investigated the direct influence of formalization on job outcomes (Rushing 1966, Aiken and Hage 1966), others have suggested that the effect of formalization on job outcomes is mediated through intervening variables such as role stress (Ford 1981, Organ and Greene 1981, Ruekart, Walker and Roering 1985). Most studies have shown significant negative relationships between formalization and both types of role stress (House and Rizzo 1972, Podsakoff et al. 1986).
The presence of explicit rules, policies, and procedures in a highly formalized industrial buying environment should clarify role perceptions and reduce role ambiguity, however, the results for role conflict have not been so consistent.

Organ and Greene (1981) found a positive relationship between formalization and role conflict for science and engineering professionals. Similarly, Nicholson and Goh (1983) found a positive relationship between formalization and role conflict when sampling data processing research and development professionals, but found a negative relationship between the two variables in a production worker sample. One explanation is that higher levels of formalization may be associated with decreased levels of interdepartmental communication suggesting that role expectations inadequately communicated to those people occupying multiple work-related roles (Hage, Aiken and Marett 1971).

Given that purchasing professionals occupy boundary-spanning roles and are also linked to a
national code of professionalism the clarifying effect of organizational rules, policies and guidelines is expected to reduce role ambiguity. However, the same rules, policies and guidelines are expected to be associated with increased role conflict experienced in purchasing, as has found for other types of professionals.

Formalization has been shown to be positively related to both role ambiguity and role conflict. As defined by Michaels, Day, and Joachimsthaler (1987), formalization is the "extent to which an organization's work and activities are defined formally by administrative rules and procedures." During a period of uncertainty and great change, formal rules and procedures could also be in a state of change and uncertainty, increasing role ambiguity.

Task Uncertainty

Some have used multiple facets to define the existence of uncertainty related to job tasks (Ramaswami, 1996; Jaworski and MacInnis, 1989;
Ouchi, 1979). Ramaswami (1996) defined a job’s task context along the two dimensions of performance documentation and procedural knowledge. Performance documentation relates to the existence and communication of standards regarding performance completion. Procedural documentation relates to the employee’s understanding of the “cause-effect” relationship between the employee’s activities and their outcomes.

According to Hellriegel, Slocum, and Woodman (1986), task uncertainty is a global single facet construct. Specifically, task uncertainty is:

...the knowledge that an employee possesses about how to perform the tasks in the job. When task uncertainty is low there is relatively complete pre-specified knowledge about how the employee will go about producing the desired outputs. In contrast, with high task uncertainty is high, there are few, if any, pre-specified ways for dealing with some or many of the tasks of the job (p. 369).

According to Hellriegel, Slocum, and Woodman (1986), the existence of task uncertainty means that employees must rely on experience, judgement, intuition, and problem-solving ability in order to
perform their jobs. In other words, the processes of problem definition, solution generation, and alternative evaluation become increasingly important as the pre-specified knowledge about job tasks decrease.

In the research presented here, task uncertainty is viewed as a single facet construct, similar to Ramaswami's definition of procedural knowledge. In a period of great change, one might expect the knowledge of job tasks to be incomplete. With incomplete knowledge of job tasks, role ambiguity would be expected to increase. Without thorough knowledge of the job's required tasks, the likelihood that multiple roles would tend to conflict.

Recent Research on Role Stress

Recent research on organizational practices and role stress processes has direct bearing on the research discussed here. Singh, Verbeke, and Rhoads (1996) conceptualized that the organizational environment, defined as a
configuration of organizational practices, would influence the role stress processes experienced by people in boundary spanning roles.

The researchers hypothesized that a favorable set of organizational practices, or configural archetype, would be associated with lower levels of role conflict and role ambiguity as well as higher levels of job satisfaction for people in boundary spanning roles.

The researchers found that "organizational environments involve complex trade-off between positive and negative consequences." Affective Organizations, organizations that were focused more on human relationships than on job outcomes, were found to have lower role stressors but such organizational archetypes were found to have higher negative effects on job outcomes. In contrast, organizations defined as Achievement Organizations, focused on results rather than people, had high level of role stressors and negative effects on job satisfaction.
The findings of Singh, Verbeke, and Rhoads (1996) offer evidence that organizational variables do have a direct impact on antecedents to role stress and, consequently, job satisfaction.

**Summary**

This research looks at the effects of task uncertainty and organizational formalization on role stress (role ambiguity and role conflict) as well as the effects of role stress on job satisfaction. The supposition is that downsizing leads to additional organizational uncertainty, increased task uncertainty and decreased organizational formalization, for employees. This increased uncertainty leads to additional role stress for those employees. High levels of role stress then lead to lower job satisfaction and, possibly a search for another job providing greater satisfaction (See Figure 2.1, p.48).

The suggestion here is that task uncertainty and organizational formalization will tend to increase in the environment that results from
downsizing. Other antecedents may precede increased task uncertainty and organizational formalization, but it is expected that downsized firms experience higher levels of both variables.

The two dimensions of role stress are role conflict and role ambiguity. While related, the effect of these two dimensions on job performance and job satisfaction may differ requiring them to be treated as different constructs (Michaels, Day, and Joachimsthaler, 1987, 31).

As downsizing leads to more responsibilities and, often, more time committed to work, role conflict levels may be expected to increase. The increased time at work may lead to increased conflict in balancing roles and responsibilities on the job. Additional responsibilities increase the possibility of conflict. Formalization and role conflict have an inverse relationship; increased levels of formalization has been positively related to decreased levels of role conflict (Michaels, et al, 1987, 33 and 38).
In regard to the relationship between role stress and job performance, Michaels, Day, and Joachimsthaler (1987, 31) have stated that "empirical studies often have produced weak and inconsistent results (sometimes positive, sometimes negative, sometimes no relationship) on the relationship of role stress to job performance."

The results of Michaels, et al (1987) research indicate that while the relationship between role ambiguity and job performance is negative, the relationship between role conflict and job performance is positive. In other words, job performance improves as role conflict increases. One explanation of this phenomena is that job performance may improve as role conflict increases only at lower levels of role conflict. At higher levels of overall role conflict, job performance may actually begin to decline (p. 38).

In previous studies, role stress and job satisfaction have been found to have a negative relationship. In fact, both dimensions of role stress, role conflict and role ambiguity, have been
negatively related to job satisfaction for both industrial and retail salespeople (See Michaels et al, 1987, 31).

Several studies have investigated role ambiguity and information gathering behavior. Information gathering behavior has been conceptualized as the buyer's effort at scanning the internal and external business environment to identify and monitor information sources relevant to the focal buying decision (Bunn, 1993, 42). Experienced role ambiguity has been shown to increase buyer's reluctance to communicate, which increases the difficulty in negotiating (Clopton 1984 as referenced in Michaels et al, 1987, 31).
Figure 2.1: Task uncertainty, formalization, role stress, and job satisfaction of purchasing managers
CHAPTER 3
RESEARCH DESIGN AND METHODOLOGY

Introduction

The present research attempted to assess the impact of role stress on the individual job satisfaction of purchasing managers through the use of an exploratory case study. An exploratory case study methodology was used as it was appropriate given the current state of research regarding the individual decision-maker in organizational purchasing decisions and the exploratory nature of the research questions. The value of this approach, incorporating literature searches, experience surveys, and case studies, allows the researcher to "systematically study what other people's and organizations' experiences are with the concepts under study" (Davis and Consenza, 1985, p. 100). According to Ellram (1996), the case study methodology is preferable when there is
little known of the phenomenon in question and the goals of the research are to improve his/her understanding of the phenomenon.

The value of the current research is that it examines the influence of formalization, task uncertainty, role ambiguity, and role conflict on perceived role stress and, ultimately, job satisfaction. The population of interest is that of purchasing professionals.

The purpose of Chapter 3 is to present a detailed overview of the research methodology used in the study. The research methodology was an exploratory case study approach and was conducted in three separate stages. The goal of the first stage was to determine the research variables as well as to design the interview protocol to be used during the data collection. Seventeen individual respondents were interviewed during this stage. During Stage Two, industries were selected, organizations within those industries were identified, and interviews were conducted with multiple purchasing professionals in each of the
identified organizations. In all, twenty-seven individuals were interviewed representing a total of nine companies across three industries. During the final stage of the research, Stage Three, the data gathered from purchasing professionals was used to measure the dependent and independent variables and to test the research propositions.

Chapter 3 is divided into three sections. The first section describes the dependent variables, the independent variables, and the operational definitions of the study. The section presents the research propositions. The third, and final, section of the chapter gives an overview of each of the three research phases.

Research Variables

This research focused on the impact of formalization and task uncertainty on role ambiguity, role conflict, and ultimately, job satisfaction. As discussed in Chapter 2, many variables can be related to work-related stress.
Therefore, only those factors related to role stress were included in the research.

**Independent Variables**

The independent variables of formalization, role conflict, role ambiguity, and task uncertainty were measured in multiple operationalizations. Dichotomous, multiple choice, and Likert scale items were used. Tables 3.1-3.4 present the measures used for each of the variables.

A portion of the interview protocol operationalized the independent research variables with 7-point Likert scales. The independent variable measures were assessed using Cronbach’s alphas (Cronbach, 1951). Those measures that did not add to the internal consistency as measured by the Cronbach alphas were dropped from the analysis. The remaining measures were aggregated to provide single composite score for each respondent.

Downsizing was measured using both dichotomous and multiple choice measures. The measures for downsizing are presented in Table 3.5.
Dependent Variable

Job satisfaction was treated as a continuous variable and measured using an indicator that required respondents to respond with a percentage. Respondents were also requested to provide a percentage level of satisfaction in the past, five years ago. The measures of job satisfaction are presented in Table 3.6.

In addition, respondents indicated whether they were more, the same, or less satisfied with their jobs than when they entered the purchasing field.

Operational Definitions

The present research employed Likert scales for measures of task uncertainty, organizational formalization, role ambiguity, and role conflict. Each of these variables had multiple operationalizations. Using Cronbach’s alpha, multiple operationalizations enabled the
My job duties are always clear to me.

I always understand what is expected of me.

It is sometimes unclear who I report to and/or who reports to me.

I sometimes lack the authority to carry out my job responsibilities.

I do not always understand the part my job plays in meeting overall company objectives.

Are the expectations of your various roles always clear to you?

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>MEASURE TYPE</th>
<th>VARIABLE NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>My job duties are always clear to me.</td>
<td>Likert scale</td>
<td>SRA1</td>
</tr>
<tr>
<td>I always understand what is expected of me.</td>
<td>Likert scale</td>
<td>SRA2</td>
</tr>
<tr>
<td>It is sometimes unclear who I report to and/or who reports to me.</td>
<td>Likert scale</td>
<td>SRA3</td>
</tr>
<tr>
<td>I sometimes lack the authority to carry out my job responsibilities.</td>
<td>Likert scale</td>
<td>SRA4</td>
</tr>
<tr>
<td>I do not always understand the part my job plays in meeting overall company objectives.</td>
<td>Likert scale</td>
<td>SRA5</td>
</tr>
<tr>
<td>Are the expectations of your various roles always clear to you?</td>
<td>Dichotomous</td>
<td>AMB</td>
</tr>
</tbody>
</table>

Table 3.1: Measures of role ambiguity
<table>
<thead>
<tr>
<th>MEASURE</th>
<th>MEASURE TYPE</th>
<th>VARIABLE NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>I receive conflicting requests from two or more people.</td>
<td>Likert scale</td>
<td>SRC1</td>
</tr>
<tr>
<td>The formal chain of command is not always adhered to in my company.</td>
<td>Likert scale</td>
<td>SRC2</td>
</tr>
<tr>
<td>I sometimes work on unnecessary projects.</td>
<td>Likert scale</td>
<td>SRC3</td>
</tr>
<tr>
<td>I often get caught in the middle when doing my job.</td>
<td>Likert scale</td>
<td>SRC4</td>
</tr>
<tr>
<td>Do any of the expectations of your roles conflict with one another during the purchasing process?</td>
<td>Dichotomous</td>
<td>CON</td>
</tr>
</tbody>
</table>

Table 3.2: Measures of role conflict
The requirements of my job have become less over time.  
The specifications for making good decisions are less clear now than they were three years ago.  
My organization is less structured now than it was 3 years ago.

Table 3.3: Measures of task uncertainty

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>MEASURE TYPE</th>
<th>VARIABLE NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whatever the situation in this job, there is a written procedure or policy to deal with it.</td>
<td>Likert scale</td>
<td>SFO1</td>
</tr>
<tr>
<td>There is no specific policy or rules manual related to my job.</td>
<td>Likert scale</td>
<td>SFO2</td>
</tr>
<tr>
<td>There is a clear job description for my job.</td>
<td>Likert scale</td>
<td>SFO3</td>
</tr>
</tbody>
</table>

Table 3.4: Measures of organizational formalization
MEASURE MEASURE VARIABLE
TYPE NAME

Has the purchasing department experienced downsizing in recent years? Dichot -omous DN

[If YES,] Would you describe the downsizing as:
Radical Downsizing? Moderate Downsizing? Insignificant Downsizing?

Multiple choice DNTYPE

Table 3.5: Measures of downsizing

reliability of the measures to be assessed (Mueller 1986).

Questions with dichotomous responses were also asked regarding the independent and dependent variables. These questions were provided as secondary measures of the variables and were used to further investigate the propositions.
<table>
<thead>
<tr>
<th>MEASURE</th>
<th>MEASURE TYPE</th>
<th>VAR. NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you were to rate your level of job satisfaction two years ago on a scale from 0 to 100%, where 0% represents no satisfaction and 100% represents complete satisfaction, how satisfied were you with your job five years ago?</td>
<td>Continuous</td>
<td>JSPAST</td>
</tr>
<tr>
<td>If you were to rate your current level of job satisfaction on a scale from 0 to 100%, where 0% represents no satisfaction and 100% represents complete satisfaction, how would you rate your current level of job satisfaction?</td>
<td>Continuous</td>
<td>JSNOW</td>
</tr>
<tr>
<td>Does your job provide you with the same, more, or less satisfaction than it did when you entered the field?</td>
<td>Multiple Choice</td>
<td>JSAT</td>
</tr>
<tr>
<td>Would you choose a career in purchasing if you were given the chance to start your career over?</td>
<td>Dichotomous</td>
<td>PCAR</td>
</tr>
</tbody>
</table>

Table 3.6: Measures of job satisfaction
The propositions were tested using linear regression. With the permission of the National Association of Purchasing Managers (NAPM), a sample was drawn from regional membership lists of NAPM to represent the target population of purchasing professionals and purchasing managers. Next, the propositions specific to task uncertainty, organizational formalization, role ambiguity, and role conflict are defined.

**Presentation of Research Propositions**

The research propositions are presented in the null and predicted state as the basis for discussion. It should be noted that the small sample size will permit only directional or exploratory conclusions regarding the propositions.

**Task Uncertainty**

**Proposition A1:**

Task Uncertainty will not significantly explain the variance associated with role conflict.
Predicted:

Task Uncertainty will significantly explain the variance associated with role conflict.

Rationale:

As the means to complete job tasks become less clear or, using Ramaswami’s (1996) taxonomy, as procedural knowledge is reduced the purpose of the job becomes less clear. Should this occur for an employee playing multiple roles, one would expect that roles could more easily come into conflict.

Proposition A2:

Task Uncertainty will not significantly explain the variance associated with role ambiguity.

Predicted:

Task Uncertainty will significantly explain the variance associated with role ambiguity.
Rationale:

Again, as the means to complete job tasks become less clear or, using Ramaswami’s (1996) taxonomy, as procedural knowledge is reduced the purpose of the job becomes less clear. As the purpose of the job becomes less clear and the “cause-effect knowledge for the employee’s activities becomes unavailable” (Ramaswami, 1996, p.108), the clarity of the employee’s role will be reduced.

Organizational Formalization

Proposition A3

Organizational formalization will not significantly explain the variance associated with role conflict

Predicted:

Organizational formalization will significantly explain the variance associated with role conflict.
Rationale:

The nature of the relationship between role conflict and the level to which an organization's work activities are defined formally by administrative rules and procedures (formalization) has been difficult to determine as found in the works of Organ and Greene (1981) and Nicholson and Goh (1983). However, these earlier studies have shown a relationship between role conflict and formalization for research and development professionals as well as production workers (Nicholson and Goh, 1983).

Proposition A4:

Organizational formalization will not significantly explain the variance associated with role ambiguity.

Predicted:

Organizational formalization will significantly explain the variance associated with role ambiguity.
Rationale:
Although a positive relationship has been found to exist between formalization and role ambiguity (Michaels, Day, and Joachimsthaler, 1987), the exact nature of that relationship might be difficult to determine in a period of change, uncertainty, and downsizing.

Role Conflict
Proposition A5:
Role conflict will not significantly explain the variance associated with job satisfaction.

Predicted:
Role conflict will significantly explain the variance associated with job satisfaction.

Rationale:
In their meta-analysis of salesperson job satisfaction studies, Brown and Peterson (1993) provided evidence that role conflict is a direct antecedent of the job satisfaction of salespeople.
Singh and Rhoads (1991) also suggested that people in boundary spanning roles, like salespeople and purchasing agents, are more susceptible to role stress than others in an organization. Thus, one could conclude that role conflict would be directly linked to the job satisfaction of purchasing professionals.

**Role Ambiguity**

**Proposition A6:**

Role ambiguity will not significantly explain the variance associated with job satisfaction.

**Predicted:**

Role ambiguity will significantly explain the variance associated with job satisfaction.

**Rationale:**

As with role conflict, Brown and Peterson (1993) found in their meta-analysis of 59 studies involving the job satisfaction of sales people that role ambiguity was a direct antecedent to job
satisfaction. Thus, role ambiguity might be expected to influence the job satisfaction of organizational positions that have similar boundary spanning characteristics (Singh and Rhoads, 1991).

**Overview of Research Stages**

The research presented here has three stages, including a developmental stage, a data collection stage, and a data analysis stage. The research employed an exploratory case study methodology. This methodology was used for several reasons. It would provide the researcher more depth and insight into the phenomenon of interest. Specifically, it would allow the researcher to ask about the sources of dissatisfaction. According to Ellram (1996), the case study methodology is preferable when there is little known of the phenomenon in question and the goals of the research are to improve his/her understanding of the phenomenon.
Stage One: Development

The purpose of Stage One was to design the measures and composite measures used later in the research. There were two purposes for Stage One: to assess whether the general research topic was of interest to purchasing professionals and others, and to test the general form of the protocol for executability. Interviews with a purposive sample of purchasing managers drawn from a regional membership list of the National Association of Purchasing Managers were used to achieve these goals. The interview protocol is attached as Appendix A.

Sample Selection

The intent of the interviews with purchasing professionals was to obtain detailed information about the purchasing process in today's business environment. Therefore, it was important to identify people who were actually involved in the purchasing process and identified by their employers as the "buyers" of the organization.
Those people interviewed had a variety of titles. For the pretest, a total of seventeen people were interviewed. Of that total, nine were identified as buyers with the titles of Buyer, Purchasing Agent, Purchasing Assistant, and Inside Sales Rep. Four interviewees had the title of Director for operational areas including Procurement, Purchasing, and Materials Management. The four remaining interviewees identified themselves as Managers of Purchasing or Materials.

A summary of the titles of those people interviewed as a part of the pretest is presented in Table 3.7.

For Stage Two of the research, 27 people were interviewed from nine different companies with ten different job titles. Of those identified as Buyers, two identified themselves as Procurement Specialists, three identified themselves as Senior Buyers, and four identified themselves as Purchasing Representatives or Purchasing Agents.
<table>
<thead>
<tr>
<th>POSITION</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyer</td>
<td>9</td>
</tr>
<tr>
<td>Buyer (5)</td>
<td></td>
</tr>
<tr>
<td>Inside Sales (1)</td>
<td></td>
</tr>
<tr>
<td>Purchasing Agent (2)</td>
<td></td>
</tr>
<tr>
<td>Purchasing Assistant (1)</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>4</td>
</tr>
</tbody>
</table>
| Director/Coordinators of either Commodities, Financial Services, or Purchasing. Of the seven interviewees who were identified as Managers, five were managers of Procurement, one was a manager of Purchasing, and one was a manager of Sourcing and Materials. A summary of this information is presented in Table 3.8.
Table 3.8: Personnel interviewed in stage two

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyer,</td>
<td>17</td>
</tr>
<tr>
<td>Buyer (8)</td>
<td></td>
</tr>
<tr>
<td>Senior Buyer (3)</td>
<td></td>
</tr>
<tr>
<td>Purchasing Representative/Agent (4)</td>
<td></td>
</tr>
<tr>
<td>Procurement Specialist (2)</td>
<td></td>
</tr>
<tr>
<td>Director/Coordinator,</td>
<td>3</td>
</tr>
<tr>
<td>Commodity (1)</td>
<td></td>
</tr>
<tr>
<td>Financial Services (1)</td>
<td></td>
</tr>
<tr>
<td>Purchasing (1)</td>
<td></td>
</tr>
<tr>
<td>Manager,</td>
<td>7</td>
</tr>
<tr>
<td>Procurement (5)</td>
<td></td>
</tr>
<tr>
<td>Purchasing (1)</td>
<td></td>
</tr>
<tr>
<td>Sourcing and Materials (1)</td>
<td></td>
</tr>
</tbody>
</table>

Stage Two: Data Collection

In Stage Two, data were collected from interviews with purchasing professionals utilizing a protocol designed during Stage One. A portion of the interview protocol operationalized the independent research variables with 7-point Likert scales.

The population of interest consisted of professional buyers in private or publicly held organizations. Three industries were identified
from the membership list of a midwestern chapter of the National Association of Purchasing Managers. The three industries selected were healthcare, high technology (communications), and general manufacturing to represent potentially different purchasing environments. The healthcare industry consisted of companies and institutions providing healthcare services. The high technology industry consisted primarily of firms providing communications hardware, software, and services to both consumer and business-to-business markets. The general manufacturing industry consisted of companies producing durable consumer goods.

Three companies were then selected from each of the three industries and interviews were conducted with three purchasing professionals in each company. In all, twenty-seven interviews were conducted with people representing a total of nine companies. It was determined to target three individuals per company as a means of overcoming informant bias and achieving triangulation of responses desirable in strengthening the composite
measures validity of case study research (Ellram, 1996).

**Scale Development**

This section discusses the operationalizations of research variables and development of interview protocol items. The scale items for the role stress composite measures of role ambiguity and role conflict were drawn from Rizzo, House, and Lirtzman (1970) and the Stress Diagnostic Survey (Ivanovich and Matteson 1980). These scale items are contained in Tables 3.1 and 3.2. All variables are presented as seven-point Likert scales except for two dichotomous measures, one each for role ambiguity and role conflict.

In addition, scale items were added that addressed organizational formalization and task uncertainty (Tables 3.3 and 3.4). Organizational formalization was operationalized as the effect of downsizing on the individual’s position and responsibilities within the firm. The multiple measures of role conflict, role ambiguity, task
uncertainty, and organizational formalization were desirable as a means of assessing internal consistency of the measures. Having each organization represented in the sample with three individuals allowed triangulation to be used as a means of reducing informant bias and providing possible support for the validity of the variables of interest (Ellram, 1996; Nueman, 1991).

Participants were asked whether their departments had been downsized and, if so, the level of perceived severity of the downsizing. Respondents were also asked by how many people the department had changed size in the past five years, either increasing or decreasing. These items are contained in Table 3.5.

The underlying interest in measuring job satisfaction was to assess the change and direction of change in the job satisfaction of participants. Essentially, the need was for a measure of the difference, or change, in satisfaction that had occurred over recent years. Thus, a global measure of job satisfaction was used. Brown and Peterson
(1993) have shown that a composite measure of job satisfaction consisting of multiple measures of single facets of job satisfaction was more strongly correlated with findings of role stress than global measures of job satisfaction. They suggested that the multiple measures of single facets used to make the composite measure of job satisfaction were more sensitive than global measures of job satisfaction. However, Brown and Peterson did find in their meta-analysis of role stress studies that global measures of job satisfaction did correlate with findings of role stress, but that the correlation was weaker than with other kinds of measures. As the preference in this research was to construct a "difference" measure between the job satisfaction of the past and the job satisfaction of the present, two global measures of job satisfaction were used rather than ask the same scale twice for present and past satisfaction.

Table 3.6 contains the measures of job satisfaction. The first two measures are continuous, asking for level of satisfaction five
years ago and today. The difference between these two measures was used as change in job satisfaction.

Interview Protocol Design

The interview protocol was designed to address the research questions and to provide data to test the research propositions as well as to be consistent with the Total Design Method (Dillman, 1978) for designing surveys. To augment the findings from the propositions, other information regarding job stress and job satisfaction was collected using the interview protocol instrument.

The interview protocol employed multiple Likert scales for the variables of task uncertainty, organizational formalization, role ambiguity, and role conflict. Likert scales were selected because they are both easy for subjects to understand and for researchers to administer. Two global measures of job satisfaction were, one measure of past job satisfaction and one measure of present job satisfaction, were also included.

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Researchers reviewed the interview protocol for face validity and completeness. The protocol was modified based on these comments. As per the Total Design Method (TDM), further modifications were made as a result of the pretest.

Likert Scales

The Likert scales used response categories ranging from "strongly agree" to "strongly disagree". The seven categories used are quite standard (i.e., "strongly disagree", "moderately disagree", "slightly disagree", "uncertain", "slightly agree", "moderately agree", and "strongly agree") (Van Tillberg 1989). The items for the scale were primarily generated from prior research.

In scoring the Likert items, "strongly disagree" received one point, "moderately disagree" received two points and so on. For negatively worded items the scoring was reversed ("strongly disagree" received seven points and so on). Thus, responses indicating a positive perception toward
the attitudinal object ("agree" responses to positive items; "disagree" responses to negative items) resulted in low scale score.

Reliability

Reliability of interview protocol items was assessed by the use of the Cronbach's alpha statistical test. Cronbach's measures the internal consistency of scale items. A high Cronbach's alpha coefficient represents highly correlated scale items (Cronbach 1951). A high inter-item correlation indicates that the items are reliable in measuring the variables. A reliable measure has a small error component and, therefore, does not fluctuate randomly. A .60 value was used as the cut-off level due to the exploratory nature of the study.

Validity

Validity measures the ability of scale items to tap into the constructs they were designed to measure. As the scope of this research is
exploratory in nature using case studies, the sample size is not sufficient to warrant factor analysis for convergent and discriminant validity. Most of the measures have been used previously in other research where such tests were conducted. For example, the role ambiguity and role conflict measures have demonstrated the desired characteristics (e.g., Rizzo, House, and Lirtzman, 1970; Ivanovich and Matteson 1980; Singh, Verbeke, and Rhoads 1996).

**Sample Population**

The population of interest consists of professional buyers in private or publicly held organizations as opposed to those professionals who may have other job responsibilities/titles but who function in the role of a buying decision-maker occasionally. In Stage One, a membership list from a regional organization for purchasing professionals was utilized to select the sample. In Stage Two, with the permission of a different chapter of the National Association of Purchasing
Managers (NAPM), a sample was drawn from one of their regional membership lists.

Manipulation and Measures

The pretest interview protocol is contained in Appendix A. Selected frequencies are presented in Appendix B that do not violate the confidentiality promise made to respondents. A brief summary of these results follows.

Purchasing professionals feel that they play many roles in the course of executing their responsibilities. At least seventy percent of the respondents considered themselves to be leaders/coordinators, responsible for source selection, negotiators, cost/value analysts, and purchasing decision makers. The opinions of the respondents were in similar proportions regarding role ambiguity and role conflict. Thirty percent of respondents indicated that the expectations of their various roles were not always clear to them (role ambiguity), whereas the same proportion indicated they experienced role conflict during the
purchase process. Almost all respondents felt that their roles had changed, as well as the personal consequences of their actions. Slightly more respondents felt that their roles had changed in a positive way rather than a negative way since they had entered the field.

There was unanimous agreement that job demands were increasing, although more than half of the professionals were more satisfied with their jobs now than previously. Respondents were generally satisfied with other aspects of their jobs also. More than three-fourths of the professionals would enter purchasing again as a career.

The pretest served to indicate that the roles of purchasing professionals are changing and that those changes are, in some cases, associated with role conflict and role ambiguity. This sets the stage for Stage Three investigation of role conflict, role ambiguity, and organizational formalization and task uncertainty.
Stage Three: Data Analysis

A case study methodology was used to investigate the potential influence of organizational formalization and task uncertainty on role stress. A stratified, purposive sample was selected to represent a range of industries, yet obtain multiple responses within each industry. The sample consists of three industries, three companies within each industry, and three responses per firm.

Analysis Method

As the case study methodology usually has fewer observations than a traditional mail survey, the sample size does not permit many kinds of analyses, although a set of analyses were used here. Cronbach's alpha calculations for the multiple measure scales of task uncertainty, organizational formalization, role conflict, and role ambiguity to assess reliability. The frequencies of the descriptive measures were
examined. Crosstabs were used to examine the categorical variables, while one-way anovas were used to examine the continuous variables by industry group which had equal cell sizes. Regression was used to test specific parts of the model. A computer statistical package, SPSS PC for Windows: Version 6.1, was used for the statistical analysis. An alpha value of .05 was used to control for Type I errors across the number of tests made. This value was also due to the exploratory nature of the study which allows more leeway in order to identify some sense of the direction of the results.

The emphasis of the overall analysis, however, is on the general findings based on discussions with case study firms and purchasing professionals. Comments and responses to open-ended questions were administered to consider the trends, changes, and challenges that might be confronting purchasing professionals in the targeted firms.

Finally, some descriptive data was collected regarding respondents length of service to the
firm, length of service in current position, and official job title.

Summary
This chapter has outlined the methodology and data analyses used in this study. The three phases, while different, are related to the overall purpose of the research. During the first stage, qualitative data were collected that facilitated the design of an interview protocol. During the second stage of the research, collection and analysis of data occurred that permitted the testing of the research propositions during the third and final stage of the research.

The results of Stages Two and Three of the research are found in Chapter 4. A summary of the research and the implications of this research for the future are presented in Chapter 5.
CHAPTER 4
DATA ANALYSIS AND FINDINGS

Introduction

Presented in this chapter are the results which contribute to answering the questions underlying this research and achieving the previously-stated research objectives. These results are based on the Stage Two interviews conducted with the twenty-seven purchasing professionals representing nine organizations and the Stage Three analyses. The chapter is divided into three main sections. The first section presents the qualitative findings gleaned from reviewing the open-ended questions and additional comments made by the purchasing managers interviewed.

The second section contains the findings that are related to the research propositions. Each research proposition is reviewed and the findings
relative to that proposition are then presented. The propositions are presented in groups based on the independent variables of task uncertainty, organizational formalization, role conflict, and role ambiguity.

In the third section, quantitative findings not directly related to the stated propositions are presented. These results are related to the measure of downsizing and/or discussed by industry groups.

**Qualitative Findings**

Respondents in Stage Two were asked a series of dichotomous and multiple choice questions about the changing roles of purchasing professionals and the factors influencing their changing levels of job satisfaction.

Regarding the roles of purchasing professionals, respondents were asked if the roles of purchasing professionals had changed over the previous five years and if their roles had changed since assuming their positions. Those respondents
who answered positively to either of the two questions were then asked to identify the changes that have occurred to the roles of purchasing professionals generally and/or to the respondents' roles specifically as purchasing professionals.

Regarding job satisfaction, respondents were asked to identify the factors that negatively influence their personal job satisfaction and to identify the factors that had influenced the direction of the change in their personal job satisfaction over the past five years.

A summary and review of those responses is provided below. The responses regarding the changing roles of purchasing professionals and the factors that influence negative change in job satisfaction are grouped by the three industry classes of healthcare, high technology (communications), and general manufacturing. The responses regarding the directional changes in the respondents' personal job satisfaction are discussed for the group of twenty-seven respondents overall.
Healthcare. When asked changes in their specific roles in purchasing (Table 4.1), respondents from the three healthcare firms appeared to focus on the realignment of the responsibilities of the purchasing function and on changes in the ways some purchases are made. Regarding job duties, four respondents identified their changing job descriptions as well as specific new duties for which they had assumed responsibility, including vendor relationship management, purchasing of commodities, and subcontracting.

Two respondents identified changing purchasing procedures, specifically the use of procurement credit cards, which allow end-users to establish direct relationships with vendors, bypassing the company’s purchasing function. The procurement card system eliminates purchase orders and invoices. The result is that purchasing managers in these firms were essentially excluded from the buying process for some segment of purchases made.
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC/1</td>
<td>&quot;Going away from paper to procurement cards/ MasterCards&quot;</td>
</tr>
<tr>
<td>HC/2</td>
<td>&quot;Added responsibilities for managing vendor relationship/accounts. Added commodities [for which to be responsible].&quot;</td>
</tr>
<tr>
<td>HC/2</td>
<td>&quot;Doing subcontracting, more documentation required, less support (more support work done by me)&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Corporate P-card/ MasterCard--Corporate credit card brought in so staff can order without going through purchasing. No invoices. Internet--'Best Value Supplier/Partner' online. ...[One can order online] with these partners&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Realigned duties--Changed job description.&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Change in direction--departmental/internal changes, 'broken out' responsibilities, realignment of field operations&quot;</td>
</tr>
</tbody>
</table>

Table 4.1: Changes to the respondents' current roles--Healthcare Group (HC)
by the firm. This result could be viewed positively or negatively by the purchasing respondent. The creation of such a system allows the purchasing function to focus on other more pressing activities or strategic issues or exist with less staff. However, one respondent felt that the additional activities were really doing "other people's work" rather than executing his previous responsibilities.

The factors affecting the roles of purchasing professionals generally included the use of new technology, such as electronic data interchange, and the recognition of purchasing as important to overall profitability (Table 4.2).

The factors identified as negatively influencing job satisfaction are presented in Table 4.3. The commonly identified factors focused on organizational culture, including poor communications, organizational changes, and bureaucracy/internal politics.
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC/1</td>
<td>&quot;Negotiating skills better.&quot;</td>
</tr>
<tr>
<td>HC/1</td>
<td>&quot;EDI--Technology/computers. Finance-long term contracts.&quot;</td>
</tr>
<tr>
<td>HC/2</td>
<td>&quot;More clerical in past. Being recognized more as a viable position to company's bottom line.&quot;</td>
</tr>
<tr>
<td>HC/2</td>
<td>&quot;Changing technologies.&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Talents not used. [Company has] opened purchasing to other staff member[s]. More data entry, less purchasing. More contact between end-user and vendor--[end-user]...does not go through purchasing. [In the] future,... [we will] be managing, not buying, suppliers.&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Being...recognized more...[important] to the bottom line of company.&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>[Purchasing] more important [in its] contribution to the bottom line. Position has become more important and more focused on the bottom line.&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Different responsibilities, more structure, expert[s] in each area.&quot;</td>
</tr>
</tbody>
</table>

Table 4.2: The changing role of the purchasing professional--Healthcare Group
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC/1</td>
<td>&quot;When they [the company] hire the wrong person for other positions in department. Changes in philosophy. Changes in direction when [those changes] are not communicated clearly.&quot;</td>
</tr>
<tr>
<td>HC/2</td>
<td>&quot;Overall morale at company not good.&quot;</td>
</tr>
<tr>
<td>HC/2</td>
<td>&quot;Having a department that is too individual instead of whole.&quot;</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Bureaucracy, Corporate stability, corporate focus, mission [and rules and goals] as a department not defined clearly.</td>
</tr>
<tr>
<td>HC/3</td>
<td>&quot;Lack of mobility; bureaucracy; internal politics; compensation; size of organization.&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Computer system [is] a problem [It's either down or working very slowly].&quot;</td>
</tr>
</tbody>
</table>

Table 4.3: Factors that negatively influence job satisfaction--Healthcare Group (HC)
High Technology (Communications). Respondents in this industry group focused on the additional responsibilities they had acquired as part of their jobs when asked about their changed role in purchasing (Table 4.4). Responsibilities mentioned included financial planning, and marketing. One respondent reported that he was expected to adapt the more "customer" focused orientation of the whole organization which meant concentration on meeting the needs of his internal customers. A trend identified in the healthcare group that was again mentioned in the high technology group was the introduction of the procurement credit card to replace the traditional purchase order. Two respondents, from two different firms, identified the recognition by top management of the importance of the purchasing function to overall corporate profitability, or the "bottom line."

In their responses to a question about the changing role of purchasing generally, respondents in the high technology group mentioned technology and the increasing demands on the purchasing
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HT/3</td>
<td>&quot;More responsible for asset management and marketing...&quot;</td>
</tr>
<tr>
<td>HT/3</td>
<td>&quot;More involved in financial planning of organization. Purchasing is key profitability of company.&quot;</td>
</tr>
<tr>
<td>HT/3</td>
<td>&quot;More with customer needs. No longer 'shielded.'&quot;</td>
</tr>
<tr>
<td>HT/2</td>
<td>&quot;Odd position [role]...[Added] Visa Card Program to replace purchase order. Taking on other people's workload.&quot;</td>
</tr>
<tr>
<td>HT/2</td>
<td>&quot;Previously administrative function--To date [now a] 'bottom-line' viewed position.&quot;</td>
</tr>
<tr>
<td>HT/1</td>
<td>&quot;More responsibility&quot;</td>
</tr>
</tbody>
</table>

Table 4.4: Changes to the respondent's current roles--High Technology Group (HT)
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HT/3</td>
<td>&quot;(1) New technology made it easier/faster to purchase stock replenishment, (2) JIT inventories make it more difficult, more demanding, have to respond quickly.&quot;</td>
</tr>
<tr>
<td>HT/3</td>
<td>&quot;Technology&quot;</td>
</tr>
<tr>
<td>HT/3</td>
<td>&quot;More customer&quot;</td>
</tr>
<tr>
<td>HT/2</td>
<td>&quot;More automated/system driven.&quot;</td>
</tr>
<tr>
<td>HT/2</td>
<td>&quot;Technology, automation, electronic ordering&quot;</td>
</tr>
<tr>
<td>HT/1</td>
<td>&quot;More into measuring performance; looking for lowest price.&quot;</td>
</tr>
<tr>
<td>HT/1</td>
<td>&quot;More demanding.&quot;</td>
</tr>
</tbody>
</table>

Table 4.5: The changing role of the purchasing professional—High Technology Group (HT)
function most often (Table 4.5). The incorporation of technology, automated systems, and requirements for quick response on the part of the purchasing function were all identified by the respondents.

Elements of the respondents' organizational culture were typically identified by the respondents as negatively influencing their job satisfaction (Table 4.6). Competing "organizational agendas," weak leadership, poor communication, and internal political conflicts were all identified as reducing job satisfaction.

**General Manufacturing.** Respondents from the general manufacturing group frequently mentioned the increased responsibilities of their positions as the way in which their roles had changed (Table 4.7). These increased responsibilities included increased knowledge of government regulations, increased purchasing activities, and the cross-functional nature of their activities. Three of the respondents specifically mentioned activities
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HT/3</td>
<td>“Trying to juggle priorities bases on different agendas...”</td>
</tr>
<tr>
<td>HT/3</td>
<td>“Not enough time.”</td>
</tr>
<tr>
<td>HT/3</td>
<td>“Lack of direction, leadership, and commitment by the company. [They] see [purchasing] as an administrative function, not a dollar source.”</td>
</tr>
<tr>
<td>HT/2</td>
<td>“Corporate culture.”</td>
</tr>
<tr>
<td>HT/2</td>
<td>“Communication. The lack of communication makes it hard to know direction.”</td>
</tr>
<tr>
<td>HT/1</td>
<td>“Internal political conflicts and bureaucracy.”</td>
</tr>
<tr>
<td>HT/1</td>
<td>“New to location and to purchasing.”</td>
</tr>
</tbody>
</table>

Table 4.6: Factors that negatively influence job satisfaction—High Technology Group (HT)
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA/1</td>
<td>&quot;Orders growing, expanding responsibilities (expedition, placing orders, negotiations)&quot;</td>
</tr>
<tr>
<td>MA/1</td>
<td>&quot;More competitive, audit selection, price negotiation, environmentally hazardous waste, ISO certified/quality requirements of product&quot;</td>
</tr>
<tr>
<td>MA/1</td>
<td>&quot;Went from MRO to capital [budgeting]&quot;</td>
</tr>
<tr>
<td>MA/2</td>
<td>&quot;More responsible, more regulation.&quot;</td>
</tr>
<tr>
<td>MA/2</td>
<td>&quot;Product responsibilities, merging of two groups, changes...[in] responsibilities.&quot;</td>
</tr>
<tr>
<td>MA/2</td>
<td>&quot;More national agreements/accounts, technology, internet&quot;</td>
</tr>
<tr>
<td>MA/3</td>
<td>&quot;More information expected and required for business relationship[s]&quot;</td>
</tr>
<tr>
<td>MA/3</td>
<td>&quot;More cross functional--performing tasks with quality engineering.&quot;</td>
</tr>
</tbody>
</table>

Table 4.7: Changes to the respondent's current roles—Manufacturing Group (MA)
related to financial planning, product development, and quality engineering.

Regarding the roles of purchasing professionals overall, the respondents again identified a number of cross-functional activities as being increasingly required of purchasing (Table 4.8). Those activities included product quality, price negotiation, legal aspects, and strategic planning.

Characteristics of the organizational culture were once again identified as the source of reduced job satisfaction for members of the general manufacturing group (Table 4.9). Poor communication, poor attitudes, and bureaucracy were all identified as the antecedents to reduced job satisfaction.

Changing levels of job satisfaction. A greater level of job responsibilities was most often identified as the reason job satisfaction had increased. In the healthcare group (Table 4.10),
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA/1</td>
<td>&quot;Increasing responsibilities&quot;</td>
</tr>
<tr>
<td>MA/1</td>
<td>&quot;(1) Largest change: legal aspects of purchasing; (2) Adapting to rapid change; [being] part of engineering spec reviews...&quot;</td>
</tr>
</tbody>
</table>
| MA/2             | "More product knowledge [required] because of technology and downsizing elsewhere in company; More clerical."
| MA/2             | "More than buying. Deepened [involvement] in price [negotiation] to include quality and freight."
| MA/2             | "Technology" |
| MA/3             | "Less adversarial relations with suppliers."
| MA/3             | "Has become tremendously strategic; preparing itself better to negotiate."

Table 4.8: The changing role of the purchasing professional—Manufacturing Group (MA)

respondents who were "less satisfied" in their positions identified the reduction of authority, new responsibilities, and the "more boring" nature of the job. In the other two groups (Table 4.11),
### Table 4.9: Factors that negatively influence job satisfaction—Manufacturing Group (MA)

<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA/1</td>
<td>&quot;Lack of communication.&quot;</td>
</tr>
<tr>
<td>MA/1</td>
<td>&quot;The number of people involved in decision-making process (keep TOP MANAGEMENT out).&quot;</td>
</tr>
<tr>
<td>MA/2</td>
<td>&quot;Attitudes and competency of coworkers.&quot;</td>
</tr>
<tr>
<td>MA/3</td>
<td>&quot;Consistency of communication.&quot;</td>
</tr>
<tr>
<td>MA/3</td>
<td>&quot;Bureaucratic and inept supervisor.&quot;</td>
</tr>
</tbody>
</table>

greater satisfaction was derived from the expanded responsibilities of the respondents in the general manufacturing group, while lesser satisfaction was derived from the "greater workload" of the lone respondent in the high technology (communications) group.
<table>
<thead>
<tr>
<th>INDUSTRY CLASS/CO.</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC/1</td>
<td>More Satisfaction: “Started out in accounting...but understand process better now that I work in purchasing...”</td>
</tr>
<tr>
<td></td>
<td>Less Satisfaction: “More boring.”</td>
</tr>
<tr>
<td>HC/2</td>
<td>More Satisfaction: “More experience now...making a contribution to company...[have] learned new skills...doing a good job for the company.”</td>
</tr>
<tr>
<td></td>
<td>Same Satisfaction: “...[but] job has changed a lot--technology.”</td>
</tr>
<tr>
<td></td>
<td>More Satisfaction: “Help people a lot more. I have improved in that respect.”</td>
</tr>
<tr>
<td>HC/3</td>
<td>Less Satisfaction: “Changes in current position...[make the job] ... more... analyst than buyer. More sourcing/negotiating.”</td>
</tr>
<tr>
<td></td>
<td>Less Satisfaction: “...position had [more] authority and decision-making responsibilities than [it] currently has.”</td>
</tr>
<tr>
<td></td>
<td>Same Satisfaction: “Challenging [position].”</td>
</tr>
</tbody>
</table>

Table 4.10: Reasons for changes in personal job satisfaction in the Healthcare Group (HC) (“More” Satisfaction, “Less” Satisfaction, “The Same” Satisfaction)
<table>
<thead>
<tr>
<th>IND. CLASS/ COMP.</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA/1</td>
<td>More Satisfaction: &quot;Less mass purchasing, more thought involved in capital versus MRO.&quot;</td>
</tr>
<tr>
<td>MA/2</td>
<td>More Satisfaction: &quot;More responsibility.&quot;</td>
</tr>
<tr>
<td>MA/3</td>
<td>More Satisfaction: &quot;Expanded role [in purchasing process].&quot;</td>
</tr>
<tr>
<td>MA/3</td>
<td>More Satisfaction: &quot;We have become more strategic in planning as opposed to reactionary.&quot;</td>
</tr>
<tr>
<td>HT/2</td>
<td>Less Satisfaction: &quot;Greater workload.&quot;</td>
</tr>
</tbody>
</table>

Table 4.11: Reasons for changes in personal job satisfaction in Manufacturing and High Technology Groups ("More" Satisfaction, "Less" Satisfaction, "The Same" Satisfaction)
Findings Relative to Propositions

The propositions presented in this section relate to the independent variables, task uncertainty, organizational formalization, role conflict, and role ambiguity. First, the relevant variables and composite measures were identified using Cronbach’s alpha. Second, the regression models used to test the propositions are presented. Third, the findings relative to the null propositions are discussed.

Cronbach’s Alpha

Cronbach’s alpha was used to test internal consistency of the responses to the Likert scale items on the interview protocol. These items were related to the variables of task uncertainty, organizational formalization, role ambiguity, and role conflict. As the measures were scored on a scale ranging from one to seven, the Cronbach’s alpha was an appropriate test for inter-item consistency (Mueller, 1986). The results of the
Cronbach’s alpha calculations are presented in Table 4.12.

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>INITIAL CRONBACH’S ALPHA</th>
<th>FINAL CRONBACH’S ALPHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Uncertainty</td>
<td>.4303</td>
<td>.4303</td>
</tr>
<tr>
<td>Organizational Formalization</td>
<td>.6179</td>
<td>.8206</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>.6314</td>
<td>.6314</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>.7086</td>
<td>.7086</td>
</tr>
</tbody>
</table>

Table 4.12: Cronbach’s Alpha Calculations

The initial Cronbach’s alpha for task uncertainty (STU) was .4303. The calculation of Cronbach’s alpha could not be increased by removing any of the measures of task uncertainty from the calculation. Therefore, as the Cronbach’s alpha was below .60, the three measures of task uncertainty were treated as separate and individual measures of task uncertainty in the linear regressions performed later in the analysis (Table
4.13). The reader should note that some items were reverse-coded for the analyses in this chapter. The tables listing the variables do not indicate the reverse coding.

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>VARIABLE NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>The requirements of my job have become less over time.</td>
<td>STU1</td>
</tr>
<tr>
<td>The specifications for making good decisions are less clear now than they were three years ago.</td>
<td>STU2</td>
</tr>
<tr>
<td>My organization is less structured now than it was 3 years ago.</td>
<td>STU3</td>
</tr>
</tbody>
</table>

Table 4.13: Independent measures of task uncertainty

The initial Cronbach's alpha for organizational formalization (SFO) was .6179. As dropping one measure (SFO2) from the calculation did increase the Cronbach's alpha calculation to .8206, the two remaining measures of organizational
formalization were summed and used to represent organizational formalization (ORGFORM) in the linear regressions performed later in the analysis (Table 4.14).

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>VARIABLE NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whatever the situation in this job, there is a written procedure or policy to deal with it.</td>
<td>SFO1</td>
</tr>
<tr>
<td>There is no specific policy or rules manual related to my job.</td>
<td>SFO2</td>
</tr>
</tbody>
</table>

Table 4.14: Measures used to calculate composite measure of organizational formalization (Orgform)

The initial Cronbach’s alpha for role ambiguity was .6314. As the Cronbach’s alpha could not be improved by removing individual measures of role ambiguity, all of the indicators were retained (Table 4.15), agreeing with previous research results.
Table 4.15: Measures used to calculate composite measure of role ambiguity (Roleamb)

The initial Cronbach’s alpha for the measures of role conflict (SRC) was .7086. All of the indicators for role conflict were used for the composite measure of role conflict, ROLECON (Table 4.16), again agreeing with previous research outcomes.
I receive conflicting requests from two or more people. 
The formal chain of command is not always adhered to in my company.
I sometimes work on unnecessary projects.
I often get caught in the middle when doing my job.

Table 4.16: Measures used to calculate composite measure of role conflict (Rolecon)

**Task Uncertainty**

**Proposition A1:**

Task Uncertainty will not significantly explain the variance associated with role conflict.

**Predicted:**

Task Uncertainty will significantly explain the variance associated with role conflict.
Regression Model:
\[ Y_i = B_0 + .077X_1 + .695X_2 - .357X_3 \]

\[ P > F = .0003 \quad R\text{-squared} = .5687 \quad n = 26 \]

\( Y_1 \) = The amount of conflict the purchasing professional experiences in their role.

\( B_0 \) = The model intercept

\( X_1 \) = An independent measure of task uncertainty (STU1).

\( X_2 \) = An independent measure of task uncertainty (STU2).

\( X_3 \) = An independent measure of task uncertainty (STU3).

Findings:
Performing a linear regression resulted in the above stated model. The model and two of the individual measures of task uncertainty, STU2 and STU3 (see Table 3.10), were found to be significant at the .05 level but in opposite directions. The R-squared indicates that 56.9 percent of the variance in role conflict was explained by the measures of task uncertainty.
Proposition A2:

Task Uncertainty will not significantly explain the variance associated with role ambiguity.

Predicted:

Task Uncertainty will significantly explain the variance associated with role ambiguity.

Regression Model:

\[ Y_i = B_0 + .283X_i + .508X_2 - .187X_3 \]

\[ P<F = .0097 \quad R\text{-squared} = .3850 \quad n=27 \]

\( Y_1 = \) The amount of role ambiguity a purchasing manager experiences.

\( B_0 = \) The model intercept

\( X_1 = \) An independent measure of task uncertainty (STU1).

\( X_2 = \) An independent measure of task uncertainty (STU2).

\( X_3 = \) An independent measure of task uncertainty (STU3).
Findings:
Performing a linear regression resulted in the above stated model. The model and one measure of task uncertainty, STU2 (see Table 3.10), were each found to be significant at the .05 level. The R-squared indicates that 38.5 percent of the variance in role conflict can be explained by this model.

Organizational Formalization

Proposition A3:
Organizational formalization will not significantly explain the variance associated with role conflict.

Predicted:
Organizational formalization will significantly explain the variance associated with role conflict.

Regression Model:

\[ Y_i = B_0 + .208X_i \]
\[ P > F = .3091 \quad R\text{-squared} = .043 \quad n = 26 \]

\( Y_1 = \) The amount of conflict the purchasing experiences in their role.

\( B_0 = \) The model intercept

\( X_1 = \) A composite measure of formalization (ORGFORM)

Findings:
Performing a linear regression resulted in the above model. The model and each of the individual measures of formalization were not found to be significant at the .05 level.

Proposition A4:

Organizational formalization will not significantly explain the variance associated with role ambiguity.

Predicted:

Organizational formalization will significantly explain the variance associated with role ambiguity.
Regression Model:

\[ Y_i = B_0 + 0.140X_i \]

\[ P>F = .4867 \quad R\text{-squared} = .020 \quad n=27 \]

\( Y_i \): The amount of role ambiguity the purchasing manager experiences.

\( B_0 \): model intercept

\( X_i \): A composite measure of formalization (ORGFORM)

Findings:
Performing a linear regression resulted in the above stated model. Neither the model nor the composite measure of formalization were found to be significant at the .05 level.

Role Conflict
Proposition A5:
Role conflict will not significantly explain the variance associated with job satisfaction.

Predicted:
Role conflict will significantly explain the variance associated with job satisfaction.
Regression Model:

\[ Y_t = B_0 + 0.420X_i \]

\[ P>F = 0.0366 \quad R\text{-squared} = 0.420 \quad n=26 \]

\( Y_t = \) The percentage difference between current and past job satisfaction.

\( B_0 = \) The model intercept

\( X_i = \) The amount of role conflict the purchasing manager experiences.

Findings:
Performing a simple linear regression resulted in the above stated model. The model and the Beta for role conflict were found to be significant at the .05 level. Using a two-tailed test, the Beta for role conflict was found to be significant with a p-value of .037. The R-squared indicates that 42.0 Percent of the variance in job satisfaction was explained by role conflict.

Role Ambiguity
Proposition A6:
Role ambiguity will not significantly explain the variance associated with job satisfaction.
Predicted:

Role ambiguity will significantly explain the variance associated with job satisfaction.

Regression Model:

\[ Y_1 = B_0 + 0.50X_1 \]

\[ P>F = 0.0093 \quad R^2 = 0.500 \quad n = 27 \]

- \( Y_i \): The percentage change in current and past job satisfaction.
- \( B_0 \): Model intercept
- \( X_i \): The amount of role ambiguity a purchasing manager experiences.

Findings:

Performing a simple linear regression resulted in the above stated model. The model was found to be significant at the .05 level. This model explained almost 20 percent of the variance associated with job satisfaction and role ambiguity. The Beta for role ambiguity was also significant at the .05 level.
Other Findings

The discussions with the twenty-seven individuals who represented nine organizations revealed a number of findings not directly related to the stated research propositions but which did contribute to an understanding of downsizing, role stress, and job satisfaction in current purchasing organizations. The presentation of these issues and findings adds to the primary findings.

Crosstabs

Cross tabulations were computed for the categorical measures on the interview protocol and an indicator of downsizing (DNTYPE2). The indicator, DNTYPE2, was computed by categorizing the type of downsizing experienced by the respondents into two dichotomous categories, no or insignificant downsizing versus moderate or radical downsizing.

All cross tabulations were checked for meeting the criteria of: 1) no empty cells, and 2) less than twenty percent of cells with less than five
observations. Categories were collapsed, such as the downsizing variable (DNTYPE), as necessary.

From cross tabulating DNTYPE2 against the other categorical measures on the interview protocol, two relationships emerged (Appendix E). First, respondents who claimed to perform the role of "analyst," were more often from organizations that had experienced moderate to radical downsizing. Second, respondents who replied positively to the question, "Are the personal consequences of your actions as a purchasing professional greater now than earlier in your career?," were more often in organizations that had downsized moderately or radically. These results should be viewed cautiously given the number of tests that were performed and the opportunity for chance significance findings.

One-Way Anovas

Means analysis (one-way anovas) was conducted for continuous variables in the research (JOBSAT,
ROLEAMB, ROLECON, and SUPERNUM) and on a composite variable (ROLESTRE) with regard to the three industry classes (INDCLASS). The composite variable was created by summing the measures of role ambiguity and role conflict into a single measure of role stress. The variables of SUPERNUM, ROLEAMB, and ROLESTRE were all found to vary among industry groups at a .05 level of significance.

Respondents from the communications group supervised (SUPERNUM) significantly more people than respondents from the other two groups (n=27, P=.03). There was an attempt to have similarly-sized organizations in the sample but some of the variance may be accounted for by size of the sample firms.

For the measures of ROLEAMB and ROLESTRE, respondents from the general manufacturing group had significantly higher role ambiguity scores (n=27, P=.04) and combined role stress scores (n=27, P=.03) than respondents in the healthcare group.
Summary

The findings resulting from the data collection were presented in this chapter. The conclusions drawn from these findings as well as the implications of this research for theory, practice and future research endeavors are presented in Chapter 5.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

FOR FUTURE RESEARCH

Introduction

Chapter 5 summarizes the research that was conducted and presents the conclusions to be drawn from the research findings as well as the implications for the future research. The chapter is divided into six sections. The first section provides a review of the research and the research methodology. The second section draws conclusions from the qualitative data gathered during the interview sessions. The third section briefly reviews the propositions and findings of the research in addition to presenting conclusions based on the findings. The fourth section addresses the stated research questions. The fifth section identifies the contributions this stream of research makes to marketing theory and practice.
The sixth, and final, section provides suggestions for future research in the area.

Research Summary

The research had three stages, a developmental stage, a data collection stage, and a data analysis stage.

The purpose of Stage One is to design the measures and composite measures used later in the research. There were two purposes for Stage One: to assess whether the general research topics were of interest to purchasing professionals and others, and to test the general form of the protocol for executability. Interviews with a purposive sample of purchasing managers drawn were used to achieve these goals.

In Stage Two, data were collected from interviews with purchasing professionals utilizing a protocol designed during Stage One. The interview protocol operationalized the independent research variables with 7-point Likert scales.
During Stage Three, the final stage of the research, the data gathered from purchasing professionals were assessed qualitatively or used to measure the dependent and independent variables and to test the research propositions. Qualitative data from the interviews were summarized and reviewed to provide insights into the purchasing processes of the three industries studied. Regressions were used to test the research propositions. Cross tabulations and one-way anovas were conducted on specific categorical and continuous variables, respectively.

Respondents for the first two stages were identified from the membership lists of two midwestern chapters of the National Association of Purchasing Managers (NAPM). In Stage One, seventeen purchasing professionals were interviewed. During Stage Two of the research, a total of twenty-seven purchasing professionals representing nine companies and three industries were interviewed. The three industries selected were health, high technology (communications), and
general manufacturing to represent potentially different purchasing environments.

**Qualitative Conclusions**

Overall, the purchasing professionals interviewed were often confronted by new responsibilities, technologies, and recognition (see Tables 4.1 - 4.11). Respondents in several of the firms included in the sample identified these new responsibilities as challenges that had enhanced their job satisfaction. Roles of negotiator and analyst were frequently mentioned as new to the respondents’ responsibilities. Involvement in cross-functional activities was also frequently mentioned as the nature of the realignment of the respondents’ responsibilities. In addition, participation in financial and strategic planning, quality engineering, product development, and legal aspects of the employer’s operations were cited.

New technologies and purchasing procedures were described in some detail by several
respondents. Traditional purchase orders and invoices have, in some firms been replaced by procurement credit cards. This innovation allows end-users to make direct contact with suppliers and frees purchasing personnel for other activities. Electronic data interchange establishes direct and encourages long-term relationships with suppliers. The trend toward longer-term relationships with suppliers requires purchasing professionals to become relationship managers as well (Cooper 1994). While this was generally viewed as a positive situation by most respondents, mastering these new systems and techniques has also proven to be a source of dissatisfaction for at least some of the respondents.

While nearly half of the respondents in the both Stage One and Stage Two of the research reported moderate or radical downsizing, over seventy-five percent of the respondents reported increased job satisfaction regardless of their employer's downsizing activities. Much of this increased satisfaction may be based on the
increased number of roles played by respondents and the challenges presented by those additional responsibilities and activities. This perception may be further augmented by a reduction in some of the mundane tasks, as indicated by the credit card purchasing phenomenon which shifts basic purchasing activities to the user of the items.

Respondents cited the increased recognition of the purchasing function within the firm as a significant influence on corporate profitability as a cause of greater job responsibilities, role change, and job satisfaction. A number of the purchasing professionals interviewed believed that their work in purchasing had achieved new levels of respect in recent years. The perception that their work was recognized as being important to the bottom line appeared to be an important influence on the respondents' levels of job satisfaction. This is an interesting finding in that it confirms an often repeated statement that purchasing is important to "the bottom line." The belief among respondents' that this statement was acknowledged
by top management appeared to be a source of some pride for many respondents.

The recognition of one's job as important, has been identified as task significance in Hackman and Oldham's job characteristics enrichment model (1980). The model consists of five core job characteristics, skill identity, task identity, task significance, autonomy, and job feedback. The enhancement of one or more of these five job characteristics, according to the authors, can positively affect the psychological state of the job holder, resulting in positive work-related and personal outcomes, including reduced absenteeism, reduced turnover, higher job satisfaction, and high levels of motivation.

Dissatisfaction with a purchasing position seems, at least anecdotally, to be the result of dysfunctional corporate cultures. Inappropriate leadership, poor or inefficient communication, and political behavior within the organization all seem to be sources of decreased job satisfaction for the respondents in this study, regardless of industry.
The consequences of organizational political behavior, the actions of individuals or groups to acquire and use of power in order to achieve some desired outcome, proved to be a frequent reason for a respondent’s change in job satisfaction or potential change in satisfaction. While the negative consequences of political behavior have been known for some time, it is important to be reminded that the organizational context of an individual’s job; the culture, the interpersonal relationships among employees, the informal social and communication networks; can serve to prevent or reduce job satisfaction.

The implications of this for the corporate manager are clear. The responsibilities of management include the management of the organization’s culture. Management is responsible for providing an environment that is supportive of those being managed as well as those tasks being performed. Management must also enhance the culture of the organization through shared rituals, beliefs, and sayings.
The impact of organizational change on the well-being of organizational members is also highlighted by this study. Organizational members can either embrace the challenge that change promises, or they can be resistant to the impending alteration in their habits. The perception of organizational change as challenge or threat is the consequence of the members' background and experience as well as the organization’s selected method for introducing change to the organization.

The goal for managers is to improve their organization’s adaptability to change. In other words, in a dynamic environment, organizations cannot be resistant to change simply because such change is threatening to the organization’s members. Rather, it is imperative that managers embrace a systematic approach to the introduction and management of change mechanisms.

Another interesting finding of this research is the confirmation of role stress as an antecedent to self-perceptions of job satisfaction. While, in itself, this is not new knowledge, it is important
to note that members of the respondent sample were experiencing elements of role stress. There are physiological, emotional, and behavioral outcomes to all forms of work-related stress. Many of these outcomes have a negative consequence to the achievement of organizational objectives.

This study attempted to link two possible outcomes of a change mechanism, downsizing, to role stress. By linking task uncertainty and organizational formalization to role stress and role stress to job satisfaction, it was hoped that practitioners and others would see the importance of managing the behavioral impact of change as well as the organizational impacts of change.

Conclusions Regarding Propositions

Figure 5.1 summarized the major findings of the research as they relate to the research propositions. Two of the propositions had strong, significant statistical support, two had less conclusive support, and two were not supported by
Figure 5.1: Results of proposition tests relating task uncertainty, formalization, role stress, and job satisfaction
the data. Findings related to each of the propositions are discussed below in a format of review of the proposition, the regression equation associated with the finding, an interpretation of the quantitative findings, and conclusions to be drawn from these findings. A discussion of the other quantitative findings is presented last.

**Task Uncertainty**

Proposition A1:
Task Uncertainty will not significantly explain the variance associated with role conflict.

Predicted:
Task Uncertainty will significantly explain the variance associated with role conflict.

Regression Model:
\[
y_{i} = B_{0} + 0.077x_{1} + 0.695x_{2} - 0.357x_{3}
\]

\[
P > F = 0.0003 \quad \text{R-squared} = 0.5687 \quad n = 27
\]

\[
y_{1} = \text{The amount of conflict the purchasing professional experiences in their role.}
\]

\[
B_{0} = \text{The model intercept}
\]

\[
x_{1} = \text{An independent measure of task uncertainty (STU1).}
\]

\[
x_{2} = \text{An independent measure of task uncertainty (STU2).}
\]
X3 = An independent measure of task uncertainty (STU3).

Findings:

Performing a linear regression resulted in the above model. The model and two of the individual measures of task uncertainty (STU2 and STU3) were found to be significant at the .05 level. The R-squared indicates that 56.9 percent of the variance in role conflict was explained by the measures of task uncertainty.

Conclusions:

The positive Beta for STU2 suggests that as scores on this measure increase, which is actually a decrease in the task uncertainty assessed by this indicator, job satisfaction is also likely to increase if the other components of the model remain constant. The results also suggest that as the score on the measure STU3 increases, theorized to be a decrease in task uncertainty, job satisfaction would decrease. This suggests that the measure STU3 did not measure task uncertainty as theorized, or respondents interpreted the measure differently than anticipated.

There are two possible reasons for this finding that two of the individual indicators are
statistically significant even though they were found not to be reliable measures of a single-faceted task uncertainty construct. The first explanation would be that the task uncertainty construct might be multidimensional with the measures used in this research representing different dimensions. A second explanation would be that the indicators represent entirely different constructs, each serving to explain some portion of the variance in the role conflict measure. Unfortunately, neither explanation can be disproved by the data analyzed here.

Proposition A2:

Task Uncertainty will not significantly explain the variance associated with role ambiguity.

Predicted:

Task Uncertainty will significantly explain the variance associated with role ambiguity.

Regression Model:

\[ Y_1 = B_0 + .283X_1 + .508X_2 - .187X_3 \]
\[ P<\beta = .0097 \quad R\text{-squared} = .3850 \quad n=27 \]

\[ Y_1 = \text{The amount of role ambiguity a purchasing manager experiences.} \]

\[ B_0 = \text{The model intercept} \]

\[ X_1 = \text{An independent measure of task uncertainty (STU1).} \]

\[ X_2 = \text{An independent measure of task uncertainty (STU2).} \]

\[ X_3 = \text{An independent measure of task uncertainty (STU3).} \]

**Findings:**

Performing a linear regression resulted in the above stated model. The model and one measure of task uncertainty (STU2) were each found to be significant at the .05 level. The R-squared indicates that 38.5 percent of the variance in role conflict can be explained by this model.

**Conclusions:**

If STU2 is an indicator of task uncertainty, then it would suggest that at least one indicator of task uncertainty can be used to explain a portion of the variance in role ambiguity. Specifically, an increase in the task uncertainty measure, actually a reduction of the uncertainty, results in an increase in job satisfaction if the other components of the model remain constant.
However, without multiple and reliable measures of a unidimensional construct defined as task uncertainty, it is difficult to conclude with confidence that the variable was measured as intended. The three indicators proved not to be internally consistent measures of a single-faceted, or unidimensional, construct, though the model with its separate and individual components did explain over 38 percent of the variance in the role ambiguity measure.

**Organizational Formalization**

Proposition A3:

Organizational formalization will not significantly explain the variance associated with role conflict.

Predicted:

Organizational formalization will significantly explain the variance associated with role conflict.

Regression Model:

\[ Y_i = B_0 + 0.208X_i \]

\[ P > F = 0.3091 \quad R^2 = 0.043 \quad n = 27 \]
Y1 = The amount of conflict the purchasing experiences in their role.

BO = The model intercept

X1 = A composite measure of formalization (ORGFORM)

Findings:

Performing a simple linear regression resulted in the above stated model. The model and each of the individual measures of formalization were not found to be significant at the .05 level.

Conclusions:

Neither the regression model nor the composite measure of organizational formalization were significant. The model did not explain a significant amount of variance in the measure of role conflict and the Beta for the measure of organizational formalization was not found to be significant, although the response to the individual indicators were highly consistent, indicated by the Cronbach's alpha of .82.

No relationship between the measures of organizational formalization and role conflict was found in this research. Some researchers have found positive relationships between formalization and role conflict (Organ and Greene, 1981), while
others have found both positive and negative relationships between formalization and role conflict (Nicholson and Goh, 1983). The sample of purchasing professionals employed in the study would have suggested a positive result as in the work of Organ and Greene (1981). However, no relationship was found, positive or negative, between organizational formalization and role conflict.

Proposition A4:

Organizational formalization will not significantly explain the variance associated with role ambiguity.

Predicted:

Organizational formalization will significantly explain the variance associated with role ambiguity.

Regression Model:

\[ Y_i = B_0 + 0.140X_i \]

\[ P>F = .4867 \quad R\text{-squared} = .020 \quad n=27 \]

\[ Y_i = \text{The amount of role ambiguity the purchasing manager experiences.} \]

\[ B_0 = \text{model intercept} \]
Findings:
Performing a simple linear regression resulted in the above stated model. Neither the model nor the composite measure of formalization were found to be significant at the .05 level.

Conclusions:
As in the findings for Proposition A3, no relationship was found between the measure of organizational formalization and role ambiguity. Again, this is might be considered a surprising finding given that other researchers had found strong negative relationships between the presence of explicit rules, policies, and procedures and role ambiguity. However, one can speculate that while formal rules, procedures and policies are a means of communicating role expectations, they can also serve to confuse the role occupant with incomplete or inaccurate information.

Role Conflict
Proposition A5:
Role conflict will not significantly explain the variance associated with job satisfaction.

Predicted:

Role conflict will significantly explain the variance associated with job satisfaction.

Regression Model:

\[ Y_1 = B_0 + .420X_i \]

\[ P>F = .0366 \quad R\text{-squared} = .420 \quad n=27 \]

\( Y_1 \): The percentage difference between current and past job satisfaction.

\( B_0 \): The model intercept

\( X_i \): The amount of role conflict the purchasing manager experiences.

Findings:

Performing a simple linear regression resulted in the above model. The model and the Beta for role conflict were found to be significant at the .05 level. Using a two-tailed test, the Beta for role conflict was found to be significant with a p-value of .037. The R-squared indicates that 42. Percent of the variance in job satisfaction was explained by role conflict.

Conclusions:

The measure of role conflict did explain 42 percent of the variance in the perceptual reports of job satisfaction. As role conflict decreases, becoming
a more positive response on the measures, job satisfaction also appears to increase.

Role Ambiguity

Proposition A6:

Role ambiguity will not significantly explain the variance associated with job satisfaction.

Predicted:

Role ambiguity will significantly explain the variance associated with job satisfaction.

Regression Model:

\[ Y_1 = B_0 + 0.50X_1 \]

\[ P>F = .0093 \quad \text{R-squared} = .500 \quad n=27 \]

\[ Y_i = \text{The percentage change in current and past job satisfaction.} \]

\[ B_0 = \text{Model intercept} \]

\[ X_i = \text{The amount of role ambiguity a purchasing manager experiences.} \]

Findings:

Performing a simple linear regression resulted in the above stated model. The model was found to be significant at the .05 level. This model explained almost 50 percent of the variance associated with job satisfaction and role ambiguity. The Beta for role ambiguity was also significant at the .05 level.
Conclusions:

The measure of role ambiguity did explain 50 percent of the variance associated with the reports of job satisfaction. Thus, higher levels of role ambiguity, lower numerical scores on the indicators of role ambiguity, would tend to result in lower job satisfaction scores.

Other Findings

There are limited conclusions that can be drawn about the results of the crosstabs and the one-way anovas that were conducted. One of the more interesting findings was that moderately or radically downsized firms tended to believe that there were greater personal consequences associated with their job performance now than in the past when compared to respondents in firms had insignificant or no downsizing. While a definitive conclusion might be difficult to make, the finding does suggest that downsizing may have consequences to human behavior and/perception not yet adequately explored.
Among the one-way anovas conducted on the continuous variables of JOBSAT, ROLECON, ROLEAMB, SUPERNUM, and ROLESTRE with regard to the industry classes, two findings are of interest. First, respondents in the High Technology (Communications) group supervised significantly more people than respondents in the other two industry classes. This evidence suggests that purchasing professionals in the high technology group have greater line authority responsibilities than members of the other two groups. Second, respondents in the general manufacturing group had significantly higher role ambiguity and composite role stress scores than respondents in the healthcare group. The underlying cause for this difference is difficult to determine. However, the one might suggest that the communication of role expectations may be more effective among the healthcare companies contacted than among the manufacturing companies contacted.
The Research Questions

A brief discussion regarding the relevant findings of this research is presented below for each of the four research questions.

1. How has corporate downsizing affected organizational buying behavior?

From the data collected as part of this research, there is support for a belief that downsizing influences organization buying behavior. However, a direct relationship between downsizing and organizational buying behavior was not identified. Anecdotal evidence suggests that purchasing professionals are being required to assume more roles and responsibilities as their organizations change. Creative ways to shift purchasing activities to the end-user, through the use of the procurement credit card, for example, is one way to reduce work overload.

2. How do changes in the organizational structure of the buying function alter the role of the individual decision-maker?
From the qualitative findings, it is clear that change has occurred in the roles of purchasing professionals. Changes in technology and purchasing practices have required purchasing professionals to assume more responsibilities and roles. The increased recognition of the importance of the purchasing function to the corporate "bottom line" has changed organizational perceptions of the purchasing function as well as changing the purchasers' perception of themselves.

3. To what degree do role ambiguity and role conflict, facets of work related stress, influence the organizational buyer?

The anecdotal evidence suggests that facets of work-related stress other than role stress are also present in the work environment. Examples of dysfunctional organizational political behavior were frequently cited by respondents as negatively affecting their job satisfaction levels.

4. To what degree does role stress affect the individual decision-maker's job satisfaction?
The data collected as part of this research, it is clear that role stress has a direct and inverse impact on job satisfaction. Both role ambiguity and role conflict were shown to have significant impact on job satisfaction. The extent to which it is exists among purchasing professionals is unclear from the data gathered as part of this study. It is clear, however, that the presence of role stress directly related to a reduction in job satisfaction.

**Contributions to Marketing Theory and Practice**

Changes in the modern organization include changes in the contributions of the individual to the accomplishment of organizational objectives. Some of the changes seem to enhance the role of the individual decision-maker in the organizational buying process, while other changes seem to threaten the satisfaction to be found in the work of the purchasing professional. Job satisfaction has been linked to job performance and found to mediate other job outcomes (Brown and Peterson,
1993; Singh, Verbeke, and Rhoads, 1996). Specifically, job satisfaction has been found to be the antecedent to organizational commitment and turnover intentions (Brown and Peterson, 1993).

The research presented here adds to the growing body of work on behavior within organizations. This specific research was an attempt to expand the existing research relating to organizational buying behavior as well as examining the individual decision-maker/buyer within the organizational purchasing function.

This research was also an attempt to explore the interaction between organizational characteristics, organizational decisions, and individual decision-makers. These are addressed from the perspectives of top management, purchasing management and salespeople.

At a more pragmatic level, research of this type has potential implications and value to managers at all levels of administration, be that professional a salesperson, a purchasing manager, or a vice-president of operations.
In a selling situation, understanding the buyer's decision-making context is important. In other words, if a purchasing agent's work-related stress reduces his/her job satisfaction, effects his/her job performance, and affects his/her decision-making processes, then the successful salesperson will be the one who achieves his sales goals by working within this environmental context. Considering these stressors and finding ways to alleviate them through the product or service being sold (i.e., on-time delivery guarantees, high product quality). This knowledge might simply confirm what good salespeople have already known; selling a product involves identifying the prospective buyer's constraints and helping that prospective buyer overcome those constraints. For the salesperson, the work-related stress experienced by his/her prospective customer can be seen as the obstacle to be overcome.

For the purchasing manager, it is important to understand that subordinates working in changing environments and/or stressful environments may
produce lower than expected outcomes. The benefit of research like that presented here is that it may provide guidance for the manager striving to assist, coach, or lead those supervised.

An improved understanding of the obstacles to efficient and effective decision-making could lead to changes in purchasing policies, clarifications of role expectations for employees, and improvements in performance evaluations, and objectively better decision-making.

For the corporate vice-president, research like that presented here has potentially significant implications regarding the implementation of change in organizations. Certainly if change has consequences on the behavior, well-being, or attitudes of organizational members, then it is important for executive management to anticipate the impact of change and address those undesirable outcomes as part of an implementation plan.

Managers operating in rapidly changing corporate environments can benefit from
understanding the impact that those environments can have on work-related stress and, ultimately, job satisfaction. Use of such knowledge could result in improved job outcomes, increased job satisfaction, and lowered employee turnover.

**Future Research**

The research presented here is intended as the first in a series of research projects aimed at developing a better understanding of both the purchasing function as well as the impact of organizational change on the behavior, effectiveness, and well-being of the organization.

As an immediate follow-up to the research presented here, the following suggestions are made:

1. As the scales for task uncertainty and organizational formalization proved to be either internally inconsistent or unrelated to role stress, one project would be to develop better definitions, conceptualizations, and measures of those
two constructs. Utilizing multi-faceted definitions for both variables, one could, through the use of an appropriate number of pretests and subjects, develop multiple measures of each construct that could demonstrate adequate levels of internal consistency and construct validity.

The creation of measures with acceptable levels of reliability and validity would permit a replication and expansion of the present study avoiding one of this study's most significant limitations, failure to fully support the validity of the measures.

2. A second area for conducting additional research would focus on the contradicting statements made by some of the respondents. For example, a substantial portion of the respondents in this study
claimed higher levels of satisfaction due to their increased responsibilities. Other respondents claimed declining levels of job satisfaction due to increased responsibilities. A natural line of inquiry would be to hypothesize the cause for such divergent reactions to situations so similar. One might speculate that the perception of the organization and its culture influences the reaction to increased workload.

The following suggestions are offered for future research in the area of downsizing, work-related stress, and the professional buyer:

1. The findings of this research suggest that changes are occurring in purchasing organizations. A logical progression of this specific research would be to more fully explore the changes that are occurring within one or more of the
radically downsized firms examined here, in either healthcare, high technology (communications), or general manufacturing. Ideally, in-depth interviews and on-site visits with key informants other than purchasing professionals would be used to supplement the data provided by the purchasing professionals. Interviews with key informants in Human Resource Management, Finance, and Quality Engineering could provide valuable information regarding the extent of the downsizing experienced by the firm, any cost savings to the firm derived from downsizing, and the degree to which cross-functional activity has been established. The goal of such a research plan would be to capture more quantitative measures of the impact of role changes and downsizing in the organization to complement the
information provided by the purchasing personnel.

2. Singh, Verbeke, and Rhoads (1996) suggested that the role stress processes of boundary spanning positions were affected by the organizational environment when that environment is defined as a multidimensional organizational practices construct. An examination of the stressors for boundary spanners, specifically purchasing agents and managers, using the organizational practices construct to classify the employing organizations would provide valuable insight into the impact of the organizational environment on stress.

Using samples of purchasing agents, salespeople, and customer service representatives would also provide the opportunity to compare the differential
impacts on the three groups. This research approach would also provide the opportunity to compare the differences in organizational characteristics within the employing organization. Do organizational practices vary significantly enough for role processes to be different for different groups or different field offices, for example.

3. Downsizing continues to be an important strategy for many commercial enterprises seeking competitive advantage. A longitudinal study, utilizing an in-depth case study methodology, whose goal was the examination of the changes in organizational structure, formalization, and job responsibilities in a specific firm (or firms) as that firm(s) downsized would provide data and information regarding the change process experienced by such organizations. Capturing the
historical process of change implementation would assist other firms striving to implement change effectively.

Beyond studying the variables from this research again, other methods are used to achieve organizational change. Empowerment and team-building are but two such techniques. The consequences of these methods on the functioning of the firm, both negative and positive consequences, is an area of particular relevance and interest. Possible research opportunities include:

3. Utilization of the scenario approach developed by Puto (1987) in the implementation of an experimental design using a mail survey to implement the manipulation and targeting marketing professionals as subjects.

The scenario methodology essentially allows the researcher to create the
parameters of a simulated decision-making environment. Using actual decision-makers as subjects, the researcher can request that the subjects make a decision and report on the process they used to arrive at the decision.

The ability to control the manipulation would permit a much more rigorous study of the research variables and would increase the power of the findings. The data collected from such a study can be both qualitative and quantitative in nature, allowing a vast array of analysis and interpretation. Such a method would lend itself well to the study of role stress processes, empowerment programs, or downsizing impacts.
Summary

This chapter presented a summary of the research conducted. Conclusions based upon the research findings and questions were also provided which included implications for both management and theory. Finally, suggestions for future research were provided.


Brief, Arthur P., Michael J. Burke, Jennifer M. George, Brian S. Robinson, and Jane Webster. "Should Negative Affectivity Remain an


Chonko, Lawrence B., and John J. Burnett. "Measuring the Importance of Ethical Situations as a Source of Role Conflict: A


Cronbach, Lee J. "Coefficient Alpha and the Internal Structure of Tests." *Psychometrika*, 16 (September), 297-334.


164


Shaikh, Muzaffar A., and Behram J. Hansotia. "Historical and New Perspectives on Industrial


APPENDICES
APPENDIX A

PRETEST PROTOCOL
HELLO! My name is ________ and I am conducting a survey of purchasing professionals regarding changes in their jobs, roles, and satisfaction levels. I have only a few questions that will take less than 5 minutes to answer. Can you take the time to answer my questions?

Respondent Name
Job Title
Company
Telephone Number

How long have you worked in purchasing? ______ years

Has the purchasing department experienced downsizing in recent years?

If yes, would you describe the downsizing as
Moderate Downsizing? ___
Radical Downsizing? ___
Insignificant Downsizing? ___

Are there more demands on you as a purchasing professional than in the past?

Yes ___ No ___

What roles do you most often play in the purchasing process?

___ Leader/Coordinator
___ Source Selection
___ Negotiator
___ Cost/Value Analyst
___ Purchasing Decision
___ Other (Specify)

How has your role as a purchasing professional changed since you entered this field?

Yes ___ No ___

If yes, How has it changed?
Interviews with Purchasing Managers

Interview Protocol

Are the expectations of your various roles always clear to you?

Yes ___ No ___

Do any of the expectations of your roles conflict during the purchasing process?

Yes ___ No ___

Are the personal consequences of your actions as a purchasing professional greater now than earlier in your career?

Yes ___ No ___

Does your job provide you with the same, more, or less satisfaction than it did when you entered the field?

The Same ___ More ___ Less ___

Why?

Have the changes in your roles and the personal consequences of your actions affected your levels of job satisfaction?

Yes ___ No ___

If yes, In a positive way? ___

In a negative way? ___

Are there other factors that negatively impact your job satisfaction?

Yes ___ No ___

If yes, what are those factors?

Would you choose a career in purchasing if you were given the chance to start your career over?

Yes ___ No ___

Thank you for your time.
APPENDIX B

SELECTED PRETEST RESULTS
08 Jun 97 SPSS for MS WINDOWS Release 6.1

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</table>

Total: 17 cases

Valid cases: 17

Missing cases: 0

### R5 Decision Maker

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<th>Percent</th>
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<tr>
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<td>17.6</td>
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Total: 17 cases

Valid cases: 17

Missing cases: 0
### R6 Other Roles

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Valid cases 17  Missing cases 0

### RC Role Change

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Valid cases 17  Missing cases 0

### RISK Personal Risk

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Valid cases 17  Missing cases 0

180
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<td>Total</td>
<td>17</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
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</tbody>
</table>

Valid cases 17  Missing cases 0
HELLO! My name is ________ and I am conducting a survey of purchasing professionals for The Ohio State University regarding changes in the jobs, roles, and satisfaction levels of purchasing professionals. The survey will take 5 to 10 minutes to answer. Can you take the time to answer my questions now?

IF NO:
"Can I schedule a time when you would be available to answer these questions?"

Date/Time __________________________

Would you like a copy of the results of this research sent to you?

Yes __ No ___

Respondent Name _______________________
Job Title ______________________________
Company ______________________________
Telephone Number ______________________

How long have you worked in purchasing? _____ years

How long have you been in your current position? _____ months/years

To what position in the organization do you report?
Vice President of Operations ___
Director of Operations ___
Other __________________________

In your current position, do you supervise other purchasing professionals?
If YES, "How many?" ______
This survey is designed for academic purposes only. Neither you nor your firm will ever be associated with the responses that you give to this survey. We are simply trying to better understand the purchasing function in organizations today.

Has the purchasing department experienced downsizing in recent years?  
Yes __  No __

If YES, "Would you describe the downsizing as:

Radical Downsizing? __
Moderate Downsizing? ___
Insignificant Downsizing? ___

By how many people has the purchasing department increased or decreased in the last five years, approximately? ________

Are there more demands placed upon you now, as a purchasing professional, than 5 years ago?
Yes ___  No ___

Has your role as a purchasing professional changed since you assumed your current profession?
Yes ___  No ___

If YES, "How has it changed?"

Generally, do you think the role of the purchasing professional has changed in the past five years?
Yes ___  No ___

If YES, "How has it changed?"

Please consider the roles you play in the purchasing process. From the following list, which roles do you most often perform in your company's purchasing process?

___ Leader/Coordinator
___ Source Selection
___ Negotiator
___ Cost/Value Analyst
___ Purchasing Decision
___ Other (Specify) ______________________

Are the expectations of your various roles always clear to you?
Yes ___  No ___
Do any of the expectations of your roles conflict with one another during the purchasing process?

Yes ___ No ___

If YES, "How?"

Consider your level of job satisfaction five years ago. If you were to rate your level of job satisfaction two years ago on a scale from 0 to 100%, where 0% represents no satisfaction and 100% represents complete satisfaction, how satisfied were you with your job five years ago?

________

If you were to rate your current level of job satisfaction on a scale from 0 to 100%, where 0% represents no satisfaction and 100% represents complete satisfaction, how would you rate your current level of job satisfaction?

________

Are the personal consequences of your actions as a purchasing professional greater now than earlier in your career?

Yes ___ No ___

Have the changes in your roles and the personal consequences of your actions affected your levels of job satisfaction?

Yes ___ No ___

If YES, "In a positive way? ___ or in a negative way? ___

Are there other factors that negatively affect your job satisfaction?

Yes ___ No ___

If yes, "Could you identify some of those factors for me?"

Does your job provide you with the same, more, or less satisfaction than it did when you entered the field?

The Same ___ More ___ Less ___

Why?

Would you choose a career in purchasing if you were given the chance to start your career over?

Yes ___ No ___
THAT'S GREAT. I ONLY HAVE A FEW MORE QUESTIONS.

For the following set of statements, please respond the numbers between "1" and "7." Respond with "1" if you strongly disagree with a statement, a "7" if you strongly agree with a statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My job duties are always clear to me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>I always understand what is expected of me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>It is sometimes unclear who I report to and/or who reports to me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>I sometimes lack the authority to carry out my job responsibilities.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>I do not always understand the part my job plays in meeting overall company objectives.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>I receive conflicting requests from two or more people.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>The formal chain of command is not always adhered to in my company.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>I sometimes work on unnecessary projects.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>I often get caught in the middle when doing my job.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Whatever the situation in this job, there is a written procedure or policy to deal with it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>There is no specific policy or rules manual related to my job.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>There is a clear job description for my job.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>The requirements of my job have become less over time.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>The specifications for making good decisions are less clear now than they were three years ago.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>My organization is less structured now than it was 3 years ago.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
That was the last question. Your responses will remain strictly confidential. If you have any questions about this survey or its uses, I can give you a number to call. Would you like that number?

If yes, 609-772-6032

Thank you for your time.

******************************************************************************
Notes:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

******************************************************************************

Other purchasing professionals in organization who may be willing to answer a similar survey:

Name ____________________________
Title ____________________________
Telephone _________________________

Name ____________________________
Title ____________________________
Telephone _________________________
APPENDIX D

PROPOSITION TEST RESULTS
MULTIPLE REGRESSION

Listwise Deletion of Missing Data

Mean Std Dev Label

ROLECON 16.692 6.038
STU1R 5.962 1.755
STU2R 5.269 1.951
STU3R 4.615 2.192

N of Cases = 26

Correlation, 1-tailed Sig:

<table>
<thead>
<tr>
<th></th>
<th>ROLECON</th>
<th>STU1R</th>
<th>STU2R</th>
<th>STU3R</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROLECON</td>
<td>1.000</td>
<td>.146</td>
<td>.670</td>
<td>-.257</td>
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<td>STU1R</td>
<td>.146</td>
<td>1.000</td>
<td>.214</td>
<td>.225</td>
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<td>.670</td>
<td>.214</td>
<td>1.000</td>
<td>.119</td>
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<td>STU3R</td>
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<td>.225</td>
<td>.119</td>
<td>1.000</td>
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</table>

15 Jun 97 SPSS for MS WINDOWS Release 6.1
** ** MULTIPLE REGRESSION ** **

Equation Number 1  Dependent Variable.. ROLECON

Block Number 1. Method: Enter  STU1R STU2R STU3R

Variable(s) Entered on Step Number
1..  STU3R
2..  STU2R
3..  STU1R

Multiple R .75416
R Square .56876
Adjusted R Square .50995
Standard Error 4.22704

Analysis of Variance

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<td>Residual</td>
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<td>393.09333</td>
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F = 9.67183  Signif F = .0003

------------------- Variables in the Equation -------------------

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<th>Beta</th>
<th>T</th>
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End Block Number 1  All requested variables entered.
**MULTIPLE REGRESSION**

Listwise Deletion of Missing Data

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N of Cases = 27

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**MULTIPLE REGRESSION**

Equation Number 1  Dependent Variable.. ROLEAMB

Block Number 1. Method: Enter STU1R  STU2R  STU3R

Variable(s) Entered on Step Number
1.. STU3R
2.. STU2R
3.. STU1R

Multiple R  .62048
R Square  .38500
Adjusted R Square  .30478
Standard Error  4.91290

Analysis of Variance

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Listwise Deletion of Missing Data

Mean Std Dev Label

ROLEAMB 26.222 5.892
ORGFORM 8.296 4.539

N of Cases = 27

Correlation, 1-tailed Sig:

ROLEAMB ORGFORM
ROLEAMB 1.000 .140
. .243
ORGFORM .140 1.000
. .243
15 Jun 97 SPSS for MS WINDOWS Release 6.1

**** MULTIPLE REGRESSION ****

Equation Number 1  Dependent Variable.. ROLEAMB

Block Number 1. Method: Enter  ORGFORM

Variable(s) Entered on Step Number
1..  ORGFORM

Multiple R  .13982
R Square  .01955
Adjusted R Square  -.01967
Standard Error  5.94986

Analysis of Variance

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<th>Beta</th>
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**MULTIPLE REGRESSION**

Listwise Deletion of Missing Data

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N of Cases = 26

Correlation, 1-tailed Sig:

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<th>ROLECON</th>
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<tr>
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MULTIPLE REGRESSION

Equation Number 1  Dependent Variable.. ROLECON

Block Number 1. Method: Enter  ORGFORM

Variable(s) Entered on Step Number
1.  ORGFORM

Multiple R   .20750
R Square     .04306
Adjusted R Square  .00318
Standard Error  6.02872

Analysis of Variance

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F =  1.07986  Signif F = .3091

------------------- Variables in the Equation -------------------

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<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGFORM</td>
<td>.281736</td>
<td>.271118</td>
<td>.207502</td>
<td>1.039</td>
<td>.3091</td>
</tr>
<tr>
<td>(Constant)</td>
<td>14.286714</td>
<td>2.599387</td>
<td>5.496</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

End Block Number  1  All requested variables entered.
** MULTIPLE REGRESSION **

Listwise Deletion of Missing Data

<table>
<thead>
<tr>
<th>Mean</th>
<th>Std Dev</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOBSAT</td>
<td>8.269</td>
<td>28.096</td>
</tr>
<tr>
<td>ROLEAMB</td>
<td>26.269</td>
<td>6.004</td>
</tr>
</tbody>
</table>

N of Cases = 26

Correlation, 1-tailed Sig:

<table>
<thead>
<tr>
<th>JOBSAT</th>
<th>ROLEAMB</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOBSAT</td>
<td>1.000</td>
</tr>
<tr>
<td>ROLEAMB</td>
<td>.500</td>
</tr>
</tbody>
</table>
15 Jun 97 SPSS for MS WINDOWS Release 6.1

** ** MULTIPLE REGRESSION ** **

Equation Number 1  Dependent Variable.. JOBSAT

Block Number 1. Method: Enter ROLEAMB

Variable(s) Entered on Step Number
1.. ROLEAMB

Multiple R  .50026
R Square  .25026
Adjusted R Square  .21902
Standard Error  24.82922

Analysis of Variance

<table>
<thead>
<tr>
<th></th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1</td>
<td>4938.85372</td>
<td>4938.85372</td>
</tr>
<tr>
<td>Residual</td>
<td>24</td>
<td>14795.76166</td>
<td>616.49007</td>
</tr>
</tbody>
</table>

F = 8.01125  Signif F = .0093

-------------------------- Variables in the Equation --------------------------

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROLEAMB</td>
<td>2.341116</td>
<td>.827128</td>
<td>.500263</td>
<td>2.830</td>
<td>.0093</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-53.230078</td>
<td>22.266973</td>
<td>22.266973</td>
<td>-2.391</td>
<td>.0250</td>
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</table>

End Block Number 1  All requested variables entered.

198
Listwise Deletion of Missing Data

Mean Std Dev Label

JOBSAT 8.600 28.624
ROLECON 16.800 6.137

N of Cases = 25

Correlation, 1-tailed Sig:

JOBSAT ROLECON
JOBSAT 1.000 .420
. .018
ROLECON .420 1.000
. .018
MULTIPLE REGRESSION

Equation Number 1 Dependent Variable.. JOBSAT

Block Number 1. Method: Enter ROLECON

Variable(s) Entered on Step Number
1. ROLECON

Multiple R .41993
R Square .17634
Adjusted R Square .14053
Standard Error 26.53623

Analysis of Variance

<table>
<thead>
<tr>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1</td>
<td>3467.55559</td>
</tr>
<tr>
<td>Residual</td>
<td>23</td>
<td>16195.94441</td>
</tr>
</tbody>
</table>

F = 4.92431 Signif F = .0366

----------- Variables in the Equation -----------

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROLECON</td>
<td>1.958518</td>
<td>.882582</td>
<td>.419934</td>
<td>2.219</td>
<td>.0366</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-24.303097</td>
<td>15.748585</td>
<td>-1.543</td>
<td>.1364</td>
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End Block Number 1 All requested variables entered.
### DNTYPE2 by R4 Analyst

<table>
<thead>
<tr>
<th>Count</th>
<th>R4</th>
<th>Page 1 of 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DNTYPE2</th>
<th>1.00</th>
<th>5.00</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>19</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chi-Square</th>
<th>Value</th>
<th>DF</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson</td>
<td>4.94035</td>
<td>1</td>
<td>.02624</td>
</tr>
<tr>
<td>Continuity Correction</td>
<td>3.67516</td>
<td>1</td>
<td>.05523</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>5.08153</td>
<td>1</td>
<td>.02418</td>
</tr>
<tr>
<td>Mantel-Haenszel test for linear association</td>
<td>4.82807</td>
<td>1</td>
<td>.02800</td>
</tr>
</tbody>
</table>

Minimum Expected Frequency = 8.636

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
<th>ASE</th>
<th>Val/ASE</th>
<th>Approximate Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phi</td>
<td>.33508</td>
<td></td>
<td></td>
<td>.02624 *1</td>
</tr>
<tr>
<td>Cramer's V</td>
<td>.33508</td>
<td></td>
<td></td>
<td>.02624 *1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lambda :</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>symmetric</td>
<td>.23077</td>
<td>.19565</td>
<td>1.09822</td>
</tr>
<tr>
<td></td>
<td>with DNTYPE2 dependent</td>
<td>.21053</td>
<td>.22910</td>
<td>.8275</td>
</tr>
<tr>
<td></td>
<td>with R4 dependent</td>
<td>.25000</td>
<td>.21651</td>
<td>1.01156</td>
</tr>
<tr>
<td>Goodman &amp; Kruskal Tau :</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with DNTYPE2 dependent</td>
<td>.11228</td>
<td>.09362</td>
<td>.02800 *2</td>
</tr>
<tr>
<td></td>
<td>with R4 dependent</td>
<td>.11228</td>
<td>.09356</td>
<td>.02800 *2</td>
</tr>
</tbody>
</table>

*1 Pearson chi-square probability
*2 Based on chi-square approximation

Number of Missing Observations: 0
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DNTYPE2 by RISK Personal Risk

<table>
<thead>
<tr>
<th>RISK</th>
<th>Page 1 of 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column</th>
<th>11</th>
<th>32</th>
<th>43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>25.6</td>
<td>74.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi-Square | Value | DF | Significance |
-----------|-------|----|--------------|
Pearson    | 4.05295 | 1 | .04409 |
Continuity Correction | 2.75990 | 1 | .09665 |
Likelihood Ratio | 4.36054 | 1 | .03678 |
Mantel-Haenszel test for linear association | 3.95869 | 1 | .04663 |
Fisher's Exact Test: One-Tail | .04578 |
Two-Tail | .07721 |

Minimum Expected Frequency - 4.860
Cells with Expected Frequency < 5 - 1 OF 4 (25.04)

Statistic | Value | ASE1 | Approximate Significance |
-----------|-------|------|--------------------------|
Phi | .30701 | | 0.04409 *1 |
Cramer's V | .30701 | | 0.04409 *1 |

Lambda :

<table>
<thead>
<tr>
<th>Symmetric</th>
<th>Value</th>
<th>ASE1</th>
<th>Approximate Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>.06667</td>
<td>.18222</td>
<td>.35407</td>
<td></td>
</tr>
</tbody>
</table>

| with DNTYPE2 dependent | .10526 | .28162 | .35407 |
| with RISK dependent | .00000 | .00000 |

Goodman & Kruskal Tau :

| with DNTYPE2 dependent | .09425 | .07810 | .04663 *2 |
| with RISK dependent | .09425 | .07952 | .04663 *2 |

*1 Pearson chi-square probability
*2 Based on chi-square approximation

Number of Missing Observations: 1

203
Variable ROLEAMB
By Variable INDCLASS Industry Group

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>F</th>
<th>Ratio</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>208.6667</td>
<td>104.3333</td>
<td>3.6081</td>
<td>.0427</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
<td>24</td>
<td>694.0000</td>
<td>28.9167</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>902.6667</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15 Jun 97 SPSS for MS WINDOWS Release 6.1

Multiple Range Tests: Tukey-HSD test with significance level .050

The difference between two means is significant if
\[ \text{MEAN}(J) - \text{MEAN}(I) \geq 3.8024 \times \text{RANGE} \times \sqrt{1/N(I) + 1/N(J)} \]
with the following value(s) for RANGE: 3.52

(*) Indicates significant differences which are shown in the lower triangle

\[
\begin{array}{ccc}
G & G & G \\
G & r & r \\
P & P & P \\
3 & 2 & 1
\end{array}
\]

Homogeneous Subsets (highest and lowest means are not significantly different)

Subset 1
Group Grp 3 Grp 2
Mean 23.7778 24.7778

Subset 2
Group Grp 2 Grp 1
Mean 24.7778 30.1111

204
ONE WAY

Variable ROLEAMB
By Variable INDCLASS Industry Group

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
\[ \text{MEAN}(J) - \text{MEAN}(I) \geq 3.8024 \times \text{RANGE} \times \sqrt{\frac{1}{N(I)} + \frac{1}{N(J)}} \]

with the following value(s) for RANGE: 3.69

- No two groups are significantly different at the .050 level

Homogeneous Subsets (highest and lowest means are not significantly different)

Subset 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Grp 3</th>
<th>Grp 2</th>
<th>Grp 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>23.778</td>
<td>24.778</td>
<td>30.111</td>
</tr>
</tbody>
</table>

---
Variable ROLECON
By Variable INDCLASS Industry Group

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>F Ratio</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>202.6635</td>
<td>101.3317</td>
<td>3.2878</td>
<td>.0555</td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
<td>23</td>
<td>708.8750</td>
<td>30.8207</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>911.5385</td>
<td>30.8207</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Range Tests: Tukey-HSD test with significance level .050

The difference between two means is significant if
\[
\text{MEAN}(J) - \text{MEAN}(I) \geq 3.9256 \times \text{RANGE} \times \sqrt{\frac{1}{N(I)} + \frac{1}{N(J)}}
\]
with the following value(s) for RANGE: 3.53
- No two groups are significantly different at the .050 level

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
\[
\text{MEAN}(J) - \text{MEAN}(I) \geq 3.9256 \times \text{RANGE} \times \sqrt{\frac{1}{N(I)} + \frac{1}{N(J)}}
\]
with the following value(s) for RANGE: 3.70
- No two groups are significantly different at the .050 level
Variable ROLESTRE
By Variable INDCLASS Industry Group

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>F Ratio</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>858.0684</td>
<td>429.0342</td>
<td>4.3590</td>
<td>.0248</td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
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<td>2263.7778</td>
<td>98.4251</td>
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<td></td>
<td></td>
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<tr>
<td>Total</td>
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<td>3121.8462</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Multiple Range Tests: Tukey-HSD test with significance level .050

The difference between two means is significant if

\[
\text{MEAN}(J) - \text{MEAN}(I) \geq 7.0152 \times \text{RANGE} \times \sqrt{1/N(I) + 1/N(J)}
\]

with the following value(s) for RANGE: 3.53

(*) Indicates significant differences which are shown in the lower triangle

<table>
<thead>
<tr>
<th>Mean INDCLASS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>38.4444 Grp 3</td>
<td></td>
</tr>
<tr>
<td>39.7778 Grp 2</td>
<td></td>
</tr>
<tr>
<td>51.5000 Grp 1 *</td>
<td></td>
</tr>
</tbody>
</table>

207
Variable ROLESTRE
By Variable INDCLASS Industry Group

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
\[ \text{MEAN}(J) - \text{MEAN}(I) \geq 7.0152 \times \text{RANGE} \times \sqrt{\frac{1}{N(I)} + \frac{1}{N(J)}} \]
with the following value(s) for RANGE: 3.70

(*) Indicates significant differences which are shown in the lower triangle

\[ \begin{array}{c|c|c|c}
  3 & 2 & 1 \\
\end{array} \]

Mean INDCLASS

\[ \begin{array}{c|c}
  51.5000 & \text{Grp 1} \\
  39.7778 & \text{Grp 2} \\
  38.4444 & \text{Grp 3} \\
\end{array} \]
Variable: SUPERNUM
By Variable: INDCLASS Industry Group

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
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<td>389.4074</td>
<td>194.7037</td>
<td>6.7225</td>
<td>.0048</td>
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<tr>
<td>Within Groups</td>
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<td>695.1111</td>
<td>28.9630</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>1084.5185</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Range Tests: Tukey-HSD test with significance level .050

The difference between two means is significant if

\[
\text{MEAN}(J) - \text{MEAN}(I) \geq 3.8055 \times \text{RANGE} \times \sqrt{1/N(I) + 1/N(J)}
\]

with the following value(s) for RANGE: 3.52

(*) Indicates significant differences which are shown in the lower triangle

<table>
<thead>
<tr>
<th>Mean</th>
<th>INDCLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>.6667</td>
<td>Grp 3</td>
</tr>
<tr>
<td>.7778</td>
<td>Grp 1</td>
</tr>
<tr>
<td>8.7778</td>
<td>Grp 2</td>
</tr>
</tbody>
</table>

Homogeneous Subsets (highest and lowest means are not significantly different)

Subset 1
Group     Grp 3     Grp 1
Mean      .6667    .7778

Subset 2
Group     Grp 2
Mean      8.7778
Variable: SUPERNUM  
By Variable: INDCLASS  Industry Group

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
\[ \text{MEAN}(J) - \text{MEAN}(I) \geq 3.8055 \times \text{RANGE} \times \sqrt{\frac{1}{N(I)} + \frac{1}{N(J)}} \]
with the following value(s) for RANGE: 3.69

(*) Indicates significant differences which are shown in the lower triangle

<table>
<thead>
<tr>
<th></th>
<th>G</th>
<th>G</th>
<th>G</th>
</tr>
</thead>
<tbody>
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<td>r</td>
<td>r</td>
<td>r</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
</tbody>
</table>

3 1 2

<table>
<thead>
<tr>
<th>Mean</th>
<th>INDCLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>.6667</td>
<td>Grp 3</td>
</tr>
<tr>
<td>.7778</td>
<td>Grp 1</td>
</tr>
<tr>
<td>8.7778</td>
<td>Grp 2</td>
</tr>
</tbody>
</table>

Homogeneous Subsets (highest and lowest means are not significantly different)

Subset 1
<table>
<thead>
<tr>
<th>Group</th>
<th>Grp 3</th>
<th>Grp 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>.6667</td>
<td>.7778</td>
</tr>
</tbody>
</table>

Subset 2
<table>
<thead>
<tr>
<th>Group</th>
<th>Grp 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>8.7778</td>
</tr>
</tbody>
</table>