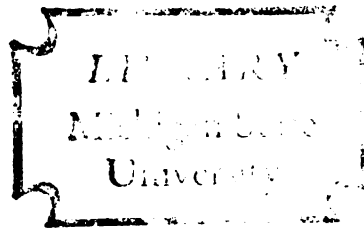


PURCHASING EFFECTIVENESS

Dissertation for the Degree of Ph. D.  
MICHIGAN STATE UNIVERSITY  
ROSS RICHARD RECK  
1977



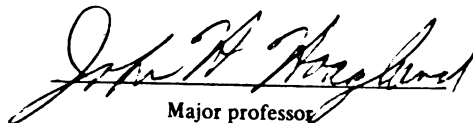
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## ABSTRACT

### PURCHASING EFFECTIVENESS

By

Ross Richard Reck

#### Purpose

The purpose of this research was to determine some of the individual characteristics that differentiated more effective from less effective purchasers. This was accomplished by empirically testing a Purchasing Effectiveness Profile. This profile was developed as a result of reviewing the literature pertaining to purchasing effectiveness and consisted of certain personality, socioeconomic, and performance measures. The personality measures included: self-esteem, need for certainty, external control, desire to satisfy higher order needs, and a Composite Personality Index. The socioeconomic measures included: age, years of purchasing experience, years with current firm, salary level, salary increase--last five years, satisfaction--purchasing career, satisfaction--current firm, number of positions--last five years, number of professional development activities attended per year, number of professional associations, and education level. The performance measures included: profit potential, procedures, sourcing, personal skills, departmental coordination, negotiation, product research, interfirm coordination, quality assurance, and overall effectiveness.

The need for this study stemmed from the fact that, on the average, purchasing departments in the manufacturing industry are responsible for spending over half the income their companies receive on materials and services. This means that the effectiveness of the purchasing function can have a significant impact on a company's profits. Since much of the activity involved in carrying out the purchasing function is performed by individual purchasers, knowledge of some of the characteristics that differentiate more effective from less effective purchasers should be of particular interest to purchasing and other corporate executives. A review of the literature, however, revealed only one study that had directly investigated purchasing effectiveness.

The data for this research was obtained by administering a mail questionnaire to a large national sample of purchasers. This survey resulted in 1,090 usable responses. Before these data could be analyzed, however, it was necessary to determine who, within the sample, were the more effective and the less effective purchasers. This was accomplished by utilizing the marketplace to identify a group of extremely more effective and a group of extremely less effective purchasers from the sample of respondents. Once identified, these two groups were compared and analyzed according to their mean scores on the ten purchasing performance measures. This analysis revealed that profit potential, personal skills, departmental coordination, negotiation, interfirm coordination, and overall effectiveness were the performance measures that differentiated more effective from less effective purchasers. Using these results as a

basis for differentiating more effective from less effective purchasers in the total sample involved adding together the response scores of each individual on these six performance measures to form a Purchasing Performance Index. This index served as the basis for dividing the sample into five levels of purchasing effectiveness. The mean scores of each of these five effectiveness levels on the personality and socioeconomic variables were then compared. This analysis indicated that self-esteem, desire to satisfy higher order needs, and the Composite Personality Index were positively related to effectiveness, and need for certainty and external control were negatively related to effectiveness. In addition, age, years of purchasing experience, salary level, salary increase--last five years, satisfaction--purchasing career, satisfaction--current firm, number of professional development activities attended per year, number of professional associations and education level were all shown to be positively related to purchasing effectiveness.

Based upon the findings of this study, the following conclusions were formulated:

1. There is a general congruence between purchasers' perceptions and their firms' perceptions of the purchasers' level of effectiveness.
2. The more effective purchasers perceived themselves as having superior ability to use their interpersonal skills.
3. More effective purchasers demonstrated a more positive self-image than less effective purchasers.
4. More effective purchasers tended to look at their jobs

Ross Richard Reck

from the standpoint of opportunities to reinforce their high self-image.

5. More effective purchasers tended to be more interested in developing themselves professionally.

**PURCHASING EFFECTIVENESS**

**By**

**Ross Richard Reck**

**A DISSERTATION**

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

**DOCTOR OF PHILOSOPHY**

**Department of Management**

**1977**

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1977

#### **DEDICATION**

**To my wife Marcia, whose patience, help, and understanding  
were necessary for the successful completion of this dissertation.**

## ACKNOWLEDGMENTS

Although it will never be possible to thank all of the people who aided in the successful completion of this dissertation, I would like to mention several in particular.

I am deeply indebted to my dissertation chairman, Dr. John H. Hoagland, who greatly assisted in locating mailing lists and financial help. In addition, Dr. Hoagland's continued guidance, constructive criticism, and encouragement were instrumental in bringing this study to a close.

I also wish to express my sincere thanks to the other members of my dissertation committee, Dr. William J. E. Crissy, Dr. Lawrence Foster and Dr. Robert Monczka for their assistance and encouragement.

A sincere note of gratitude goes out to the National Association of Purchasing Management for their support of this study through a Doctoral Research Grant. In addition, I wish to thank the Editors Group of the N.A.P.M. for their support in providing me with their mailing lists.

I am very grateful to Jan Wozniak and Jim Lukey of Michigan State University and Carol Waters of Arizona State University for their Computer Programming assistance.

I would like to thank my Colleagues at Arizona State University and especially Dr. Harold Fearon, Chairman of the Management Department, for their unselfish help in providing me with the time



to finish this research.

A very special note of recognition is appropriate for Tom and Nancy Loomis, Dan and Chris Carr, Barb Terova, John Nyland, Jerry Richardson, and especially Don Heid and Brian Long for their help and companionship during my years at Michigan State. A special note of thanks goes also to Jim McFillen and Ron Tatham of Arizona State, whose knowledge of Research and Statistics proved invaluable.

I would like to thank Jean Krepela, Leslie Meyer and Barbara Wegener for their typing assistance and especially Jo McKenzie who typed the final draft of this dissertation.

Finally, I would like to thank my wife Marcia for her unselfish help and encouragement.

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## CHAPTER I

### INTRODUCTION

#### Purpose

The purpose of this research is to determine some of the characteristics that differentiate more effective from less effective purchasers. This is accomplished by developing and testing the components of a Purchasing Effectiveness Profile.<sup>1</sup> This profile resulted from reviewing the literature pertaining to purchasing effectiveness and consists of certain personality, socioeconomic and performance measures. The personality measures include: self-esteem, need for certainty, external control, desire to satisfy higher order needs,<sup>2</sup> and the development of a new Composite Personality Index.<sup>3</sup> The Socioeconomic measures include: age, years with current firm, years of purchasing experience, salary level, percentage salary increase--last five years, satisfaction--purchasing career, satisfaction--current firm, number of positions--last five years, entry level position, present position, supervisor's position, position--five years hence, number of professional development activities attended per

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<sup>1</sup>The Purchasing Effectiveness Profile is developed and presented in Chapter II.

<sup>2</sup>The rationale for including these four personality variables in this study is presented in Chapter II.

<sup>3</sup>Development of this index is presented in Chapter V.

year, education level, employer's line of business, undergraduate college major, graduate college major, the number of professional associations, and sex.<sup>4</sup> The performance measures include: profit potential, procedures, sourcing, personal skills, departmental coordination, negotiation, product research, interfirm coordination, quality assurance, and overall effectiveness.<sup>5</sup>

### Need For The Study

On the average, purchasing departments in the manufacturing industry are responsible for spending more than half of the income their companies receive on materials and services.<sup>6</sup> This means that more dollars are spent for materials and services than for all other expenses combined, including wages, salaries, depreciation, and taxes. Therefore, the effectiveness of the purchasing function can have a significant impact on many corporations' profits. Since much of the activity involved in carrying out the purchasing function is performed by individual purchasers, knowledge of some of the characteristics that differentiate more effective from less effective purchasers should be of particular interest and use to purchasing and other corporate executives. Such information could assist purchasing executives in more effectively selecting, training, evaluating, and

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<sup>4</sup>The rationale for including these socioeconomic measures in this study is discussed in Chapter II.

<sup>5</sup>The rationale for including these performance measures in this study is presented in Chapter II.

<sup>6</sup>George W. Aljian, ed., Purchasing Handbook (3rd ed.; New York: McGraw-Hill, 1973), Section 1, p. 8; and Lamar Lee, Jr. and Donald W. Dobler, Purchasing and Materials Management (2nd ed.; New York: McGraw-Hill, 1971), pp. 9-10.

placing purchasing personnel, thereby potentially improving overall purchasing performance.

A review of the purchasing literature revealed a number of purchasing writers who felt that certain personality characteristics were related to purchasing performance.<sup>7</sup> Some of these characteristics included honesty, shrewdness, truthfulness, industriousness, executive ability, and adaptability. A review of the literature, also revealed that, although relationships between a number of personality characteristics and purchasing effectiveness had been theorized, none of these relationships had ever been proven to exist. One possible reason for this is that some of the personality characteristics such as truthfulness, industriousness, honesty, and shrewdness were rather general in nature and did not readily lend themselves to quantifying measurement. One step toward proving the existence of a relationship between personality characteristics and purchasing effectiveness would be to convert some of these general characteristics into specific personality characteristics for which measurement instruments are already available.

To date, however, it appears that only one researcher has directly explored the link between measurable personality characteristics and purchasing behavior.<sup>8</sup> In his study, David T. Wilson found that a purchasing agent's need for certainty and, to some extent, his

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<sup>7</sup>A review of the literature concerning purchasing effectiveness and personality characteristics is contained in Chapter II.

<sup>8</sup>David T. Wilson, "An Exploratory Study of the Effects of Personality and Problem Elements Upon Purchasing Agent Decision Styles," (unpublished Ph.D. dissertation, University of Western Ontario, London, Ontario, Canada, April, 1970).

level of self-confidence were good predictors of his decision-making style.<sup>9</sup> Although Wilson did not directly explore the link between measurable personality characteristics and purchasing effectiveness, the results of his research strongly implied that investigating this link would prove to be a fruitful undertaking.

A review of the purchasing literature also revealed a number of purchasing writers who felt that certain socioeconomic characteristics were related to purchasing effectiveness.<sup>10</sup> Some of these socioeconomic characteristics included age, experience, education, and financial rewards. The literature review also revealed that to date, only one researcher had directly investigated the link between socioeconomic characteristics and purchasing effectiveness.<sup>11</sup> In his study, Robert I. Cook concluded that there did seem to be a relationship between the age, experience, and education level of buyers and whether they were effective or ineffective performers. Cook's research suggested that further exploration of the relationship between socioeconomic characteristics and purchasing effectiveness would prove to be a worthwhile venture.

The research of Cook also appeared to be the only study that directly explored the relationship between the performance of certain purchasing activities and purchasing effectiveness. In his research,

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<sup>9</sup> Ibid., pp. 89-90.

<sup>10</sup> The literature pertaining to purchasing effectiveness and socioeconomic characteristics is reviewed in Chapter II.

<sup>11</sup> Robert I. Cook, Industrial Buyers: Critical Incidents Which Distinguish Between Effective and Ineffective Purchasing Performance (unpublished Ph.D. dissertation, Michigan State University, 1974).

Cook identified 28 purchasing activities;<sup>12</sup> and he found that certain of these activities tended to be more frequently associated with effective buyers whereas others tended to more frequently be associated with ineffective buyers. For example, Cook reported that the effective buyers tend to emphasize human relations skills as well as product knowledge while ineffective buyers seemed to be inept at following procedures and in communicating with other people.<sup>13</sup> These findings suggested that further investigation of the relationship between the performance of certain purchasing activities and purchasing effectiveness would prove to be a productive endeavor.

#### Description of Variables Used in the Study

##### Personality Variables

Self-esteem: The extent to which an individual perceives himself as being effective in dealing with problems that confront him.<sup>14</sup>

Need for certainty: The extent to which a person dislikes ambiguity or uncertainty of information.<sup>15</sup>

External control: The extent to which a person perceives events that happen to him as being beyond his control.<sup>16</sup>

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<sup>12</sup>Ibid., p. 111.

<sup>13</sup>Ibid., p. 134

<sup>14</sup>E. E. Ghiselli, Explorations in Managerial Talent (Pacific Palisades, California: Goodyear Publishing Company, Inc., 1971), pp. 54-55.

<sup>15</sup>Douglas N. Jackson, Manual for the Personality Review Form (London, Ontario: The University of Western Ontario, 1967), p. 32.

<sup>16</sup>Laurie A. Broedling, "Relationship of Internal-External Control to Work Motivation and Performance in an Expectancy Model," Journal of Applied Psychology, 60 (February, 1975), p. 65.



Desire to satisfy higher order needs: The degree to which an individual is desirous of obtaining higher order need satisfactions from his work. Higher order needs relate to an individual's need for social activity, status, and personal growth.<sup>17</sup>

Composite personality index: This index was developed by combining items from the research instruments used to measure the above four personality variables. The development of this index is discussed in Chapter VI.

### Socioeconomic Variables

Age: The respondent's chronological age.

Years with current firm: The number of years a purchaser has spent with his current firm.

Years of purchasing experience: The number of years the respondent has spent in the purchasing profession.

Salary level: The respondent's current salary level.

Salary increase--last five years: The percentage salary increase that the respondent has received during the last five years.

Satisfaction--purchasing career: The respondent's satisfaction with his career progress in purchasing.

Satisfaction--current firm: The respondent's overall satisfaction with the firm he currently works for.

Number of positions--last five years: The number of positions the respondent has held during the last five years; these can be

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<sup>17</sup>J. R. Hackman and E. E. Lawler III, "Employee Reactions to Job Characteristics," in Readings in Organizational Behavior and Human Performance, ed. W. E. Scott and L. L. Cummings (Homewood, Ill.: Richard D. Irwin, Inc., 1973), p. 224.

either purchasing or nonpurchasing positions.

Entry level purchasing position: The position at which an individual entered the purchasing profession. Examples of such entry level positions are: Clerk/Expediter, Assistant Buyer, Buyer, Purchasing Agent, Manager of Purchasing, and Vice-President of Purchasing.

Present purchasing position: The current position level of each participant in the study. A list of such positions is similar to that listed above under entry level purchasing position.

Supervisor's position: The position level occupied by a purchaser's immediate supervisor. The purchasing positions falling into this category are similar to the entry level positions listed above.

Position--five years hence: The position a purchaser expects to occupy five years into the future. The purchasing positions falling into this category are similar to those mentioned above. In addition, nonpurchasing positions and retirement are also included in this category.

Number of professional development activities attended per year: The number of professional development activities (seminars, meetings, training programs, etc.) the respondent attends per year.

Education level: The highest formal education level attained by the respondent.

Employer's line of business: The type of business activity engaged in by the respondent's employer as classified by one of the following categories: educational, governmental, industrial institutional, wholesale or retail.

Undergraduate college major: The respondent's major area of

study at the undergraduate level.

Graduate college major: The respondent's major area of study at the graduate level.

Number of professional associations: The number of professional associations in which the respondent holds active membership. Example of such organizations are:

1. National Association of Purchasing Management (N.A.P.M.).
2. National Institute of Government Purchasing (N.I.G.P.).
3. National Association of Educational Buyers (N.A.E.B.).
4. American Production and Inventory Control Society (A.P.I.C.S.).

Sex: Male or female.

#### Purchasing Performance Measures

Profit potential: The extent to which a purchaser's activities result in cost savings for his firm.

Procedures: A purchaser's normal adherence to his firm's established buying procedures.

Sourcing: The degree to which a purchaser searches for new suppliers or reevaluates old suppliers.

Personal skills: The successful expenditure of extra effort on the part of a purchaser to convince others in his organization to accept his proposals.

Departmental coordination: Effort a purchaser spends in communicating, providing reports, arranging meetings, or providing liaison within his department or organization.

Negotiation: The extent to which a purchaser's discussions

with his suppliers produce favorable results.

Product research: The amount of product research a purchaser performs by studying reference sources or questioning salesmen, suppliers, and users of similar products.

Interfirm coordination: The extent to which a purchaser arranges meetings between himself, members of his firm, and vendors in order to improve cooperation.

Quality assurance: A purchaser's investigation of quality by checking samples, having tests run, comparing items, or discussing possible adjustments with vendors.

Overall effectiveness: A purchaser's self-rating on total performance in his present purchasing position.

### Presentation Overview

Chapter I has presented an introduction to the topic being researched in this dissertation. Chapter II summarizes the relevant literature pertaining to purchasing effectiveness and presents the design of the research. In Chapter III, the procedures used to collect the data for this research are described. Chapter IV presents some of the characteristics of the sample population. Chapter V presents the evaluation of the purchasing performance measures as they relate to purchasing effectiveness. In Chapter VI, the personality measures are evaluated as they relate to purchasing effectiveness. Chapter VII presents the valuation of the socioeconomic measures as they relate to purchasing effectiveness. Finally, Chapter VIII contains the summary, conclusions, and recommendations of this study.

## CHAPTER II

### LITERATURE REVIEW AND RESEARCH DESIGN

A review of the literature pertaining to purchasing effectiveness was accomplished by first examining the writings and research concerning purchasing effectiveness and personality characteristics. Second, literature pertaining to purchasing effectiveness and socioeconomic characteristics was examined. Third, some of the previous writings and research relating to purchasing effectiveness and purchasing performance were analyzed. As a result of this review, a hypothetical Purchasing Effectiveness Profile was developed.

#### Previous Writings and Research Concerning Purchasing Effectiveness and Personality Characteristics

##### Literature Prior to 1900

Prior to the twentieth century, several writers in the purchasing field were already expressing what they thought were some of the necessary personality characteristics for effective purchasing. An article that appeared in 1892 mentioned the need for honesty and shrewdness on the part of a purchaser. The article stated:

I tell you, sir, if there is one place more than another in a large concern that requires an honest, shrewd, experienced, practical man to make money, it is the buyer's.<sup>1</sup>

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<sup>1</sup>"Machine Shop Notes," The Engineering Magazine, December, 1892, pp. 477-478, quoted in Harold E. Fearon and John H. Hoagland, Purchasing Research in American Industry (New York: American Management Association, 1963), Research Study 58, p. 22.

Four years later, J. Slater Lewis in his book The Commercial Organization of Factories, emphasized the importance of shrewdness for effective purchasing. Lewis stated:

Stores cannot, of course, be purchased advantageously without that particular shrewdness which is characteristic of a successful buyer; and no system of bookkeeping, however complete, can possibly dispense with that personal quality.<sup>2</sup>

#### Literature from 1900-WWII

In 1900, Hugo Diemer introduced tact as an important personality characteristic of an effective purchaser. Diemer believed that: "in securing good terms and low prices, much depends upon the shrewdness and tact of the purchasing agent."<sup>3</sup>

In 1915, C. S. Rindsfoos listed what he thought were the attributes of "the perfect purchasing agent." Rindsfoos pointed out that "honesty," "truthfulness," "industriousness," and "loyalty" were essential to success.<sup>4</sup> Rindsfoos went on to say that there were several characteristics that applied with peculiar force to successful purchasing. These were "broad-mindedness," "tact," and "a natural aptitude."<sup>5</sup>

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<sup>5</sup>*Ibid.*, pp. 51-55.

in 1928, they presented a list of fundamental standards of purchasing competence. Among these standards were "absolute honesty," "ability to reason calmly and logically," "executive ability," and "the ability to deal with people."<sup>6</sup> According to Gushee and Boffey:

These are the fundamental standards by which fitness for the purchasing function may be measured and which should be considered in the selection of an incumbent for the purchasing position. If, upon examination, a man cannot be fairly graded in each one of the standards he is likely to fall short of real competence in the work of buying.<sup>7</sup>

In another book published in 1928, entitled Principles of Scientific Purchasing, Norman F. Harriman discussed the importance of yet another personality characteristic and its relationship to effective performance--namely, the purchaser's mental attitude.

Harriman contended:

From the standpoint of the psychology of business relations, the purchaser's chief interest may be said to be in the manner in which his mental attitude effects the transaction. When the purchaser knows how his reactions influence the vendor, he is in a position to do his purchasing profitably.<sup>8</sup>

#### Literature from WWII to Present

There was a noticeable lack of purchasing literature during the 1930's<sup>9</sup> Furthermore, nothing more seemed to have been written concerning the relationship between purchasing effectiveness and personality characteristics until after 1945. In his 1946 article, "This

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<sup>6</sup>Edward T. Gushee and L. F. Boffey, Scientific Purchasing (New York: McGraw-Hill, Inc., 1928), pp. 16-20.

<sup>7</sup>Ibid., p. 19.

<sup>8</sup>Norman F. Harriman, Principles of Scientific Purchasing (New York: McGraw-Hill, Inc., 1928), p. 58.

<sup>9</sup>Fearon and Hoagland, Purchasing Research, p. 27; Robert I. Cook, Industrial Buyers, p. 19.

Business of Procurement," Howard T. Lewis emphasized that "the key to the procurement function is found in successful negotiation with vendors."<sup>10</sup> Lewis further stated that to be fit as a negotiator, an individual should possess high amounts of certain personal qualities: "integrity," "vision," "willingness to cooperate," "judgment," "intelligence," and "adaptability."<sup>11</sup>

John H. Hill, in his speech to the 38th Annual International Convention of the N.A.P.A. in 1953, reiterated what earlier writers had said concerning tact as a necessary characteristic of an effective purchaser. Hill stated that in addition to "tact," a good purchaser must have "poise," and "self-confidence."<sup>12</sup>

In 1959, A. L. McMillan introduced the personality concept of temperament when he discussed the qualifications for purchasing: "Not all persons are fitted temperamentally to perform the work of a purchasing office."<sup>13</sup> McMillan further pointed out that

Some personalities are irritated by the necessity of defining every item of dimension and quality, . . . Some people do not like the 'haggling' that goes even with the best of purchasing.... Such temperaments should seek other occupations than the field of purchasing.<sup>14</sup>

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<sup>10</sup>Howard T. Lewis, "The Business of Procurement," Harvard Business Review, Spring, 1946; reprinted in the Journal of Purchasing and Materials Management, Vol. 11, No. 2, 1975, p. 10.

<sup>11</sup>Ibid., p. 11.

<sup>12</sup>John H. Hill, "The Purchasing Revolution," the keynote address given to the 38th Annual International Convention of the National Association of Purchasing Agents in Los Angeles in 1953; reprinted in the Journal of Purchasing and Materials Management, Vol. 11, No. 2, 1975, p. 21.

<sup>13</sup>A. L. McMillan, The Art of Purchasing (New York Exposition Press, 1953), p. 355.

<sup>14</sup>Ibid.



In 1961, the National Association of Purchasing Management published a list of personality characteristics that were believed to be important contributors to success in professional purchasing.<sup>15</sup> The list was a summary of some of the characteristics mentioned by a few of the earlier purchasing authors. The personality characteristics included on the list were "integrity," "dependability," "initiative," "industriousness," "unusual ability to cooperate," "unusual tact," "ability to learn," "ability to work on details," "mechanical aptitude," "good human relations skills," "inquiring mind," and "a high sense of values and ethical standards."<sup>16</sup>

In their 1971 edition of Purchasing and Materials Management, Lamar Lee, Jr. and Donald W. Dobler commented on the N.A.P.M. list of personality characteristics:

The list is long, and many of the characteristics listed contribute to success in most professional areas; however, several characteristics receive greater emphasis in purchasing and therefore warrant further comment. Most purchasing authorities agree that top-flight buying requires an unusually high degree of initiative. The total framework within which a buyer operates is largely unstructured. He must depend upon his own initiative and imagination in developing sources of supply, good vendor relations, alternative materials, value analysis projects, and cooperative investigation with other operating departments. The extent to which a buyer is a "self-starter" greatly influences his success in these areas. A good buyer must also be especially tactful and must display genuine cooperative ability. A buyer's success depends ultimately upon the effectiveness of the relationships he develops with suppliers and with the technical personnel in his own organization. Such relationships can be achieved only through the use of tact and cooperative abilities of a high order.

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<sup>15</sup>I. V. Fine (ed.), Purchasing as a Career, a booklet prepared by the Project Development Committee on Purchasing as a Career, National Association of Purchasing Management, New York, 1961, pp. 14-15.

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<sup>16</sup>Ibid.

Although a buyer also spends considerable time dealing with people, much of his work also involves detailed analyses. Without patience and an aptitude for detailed investigation, a buyer would find it difficult indeed to arrive consistently at sound decisions.<sup>17</sup>

The purchasing literature presented thus far has only dealt with personality characteristics as they related to being an effective purchasing agent or buyer. In 1964, however, Victor H. Pooler attempted to answer the question, "What personality characteristics make for an effective purchasing manager?" Pooler contended that an effective purchasing manager

must be honest, loyal, reliable, intelligent, and mature and possess sound judgment. In these respects, the purchasing manager is no different from any other good manager. Still there are many more characteristics which are particularly conducive to success in purchasing management.<sup>18</sup>

According to Pooler, some of these additional characteristics were "flexibility," "the ability to stimulate subordinates to their best efforts," and "understanding the viewpoints and problems of others."<sup>19</sup>

The purchasing literature reviewed revealed a fair number of personality characteristics that the authors thought related in some way to purchasing effectiveness. It should be noted, however, that although relationships between certain personality characteristics and purchasing effectiveness were theorized, none of the writers proved the existence of such relationships.

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<sup>17</sup>Lamar Lee, Jr. and Donald W. Dobler, Purchasing and Materials Management (New York: McGraw-Hill, Inc., 1971), p. 543.

<sup>18</sup>Victor H. Pooler, Jr., The Purchasing Man and His Job (New York: American Management Association, 1964), p. 36.

<sup>19</sup>*Ibid.*, pp. 36-38.

To date, it appears that only one researcher has directly explored any relationship between measurable personality characteristics and purchasing behavior.<sup>20</sup> Although Wilson did not directly explore the link between measurable personality characteristics and purchasing effectiveness, the results of his study strongly implied that investigating this link would prove to be a fruitful undertaking. In a later study David T. Wilson and Blair Little found that a purchasing agent's need for certainty and to some extent his level of self-confidence were good predictors of his decisionmaking style.<sup>21</sup>

#### Personality Variables Selected for Testing

If the relationships between personality characteristics and purchasing effectiveness were to be explored, a question that needed to be answered was which measurable personality characteristics should be included in such research. Although the previously reviewed literature theorized that a large number of personality characteristics were related to purchasing effectiveness, the need for respondent cooperation required that the time necessary to answer the questionnaire should be limited. This time constraint, in turn, limited the number of measurable personality characteristics to be selected for inclusion in this study. Those personality traits eventually selected were self-esteem, need for certainty, external control, and the desire to

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<sup>20</sup>David T. Wilson, An Exploratory Study of the Effects of Personality and Problem Elements Upon Purchasing Agent Decision Styles (unpublished Ph.D. Dissertation, University of Western Ontario, London, Ontario, Canada, April, 1970).

<sup>21</sup>David T. Wilson and Blair Little, "Purchasing and Decision-Making Styles of Purchasing Managers," Journal of Purchasing and Materials Management, Vol. 6, No. 1 (1974), pp. 38-40.

satisfy higher order needs. The rationale for the inclusion of these particular personality traits is discussed in the following sections.

### Self-Esteem

The concept of self-esteem as used in this study was developed by Edwin Ghiselli.<sup>22</sup> The reason for selecting self-esteem was that it is a measurable personality characteristic that is virtually identical in definition to the "self-confidence" characteristic that Wilson found useful in predicting a purchaser's decision-making style.<sup>23</sup> It was reasoned that since this characteristic had already been shown to be related to a purchaser's decisionmaking style, it might also be related to a purchaser's level of effectiveness.

The high degree of similarity between self-esteem and self-confidence becomes apparent when their definitions are compared. Wilson defined self-confidence as "the degree of correspondence between an individual's ideal and actual self-concept."<sup>24</sup> Wilson further stated that self-confidence "may reflect a person's success in solving problems."<sup>25</sup> Ghiselli defined self-esteem as the extent to which an individual perceives himself as being effective in dealing with problems that confront him.<sup>26</sup> The reason the Ghiselli concept of

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<sup>22</sup>E. E. Ghiselli, Explorations in Managerial Talent (Pacific Palisades, California: Goodyear Publishing Company, Inc., 1971), pp. 54-61.

<sup>23</sup>The paragraph that follows compares the definitions of these two concepts.

<sup>24</sup>Wilson, An Exploratory Study, p. 29.

<sup>25</sup>Ibid., p. 30.

<sup>26</sup>Ghiselli, Explorations, pp. 54-55.



self-esteem was selected for use in this study over the self-confidence concept used by Wilson was that self-esteem appeared to be a more widely used personality concept.<sup>27</sup> Furthermore, the behavioral literature contains a number of accounts that attest to the validity of the instrument designed to measure the concept of self-esteem.<sup>28</sup>

Although no known research involving self-esteem has dealt with purchasers, the results of a number of studies do imply that persons with a high level of self-esteem will tend to be more effective. For instance, in a recent study involving self-esteem and performance, it was concluded that high self-esteem individuals tended to perform better than low self-esteem individuals.<sup>29</sup> Along these same lines, a study conducted by P. D. Hechler and Yoash Wiener concluded that high self-esteem individuals generally manifested higher quality work than those low on self-esteem.<sup>30</sup>

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<sup>27</sup>See, for instance, Jeffrey H. Greenhaus and Irwin J. Badin, "Self-Esteem Performance, and Satisfaction: Some Tests of a Theory," Journal of Applied Psychology, 59 (December, 1974), pp. 722-726; Abraham K. Korman, "Self-Esteem as a Moderator in Vocational Choice," Journal of Applied Psychology, 53 (January, 1969), pp. 188-192; Yoash Wiener, "Task Ego-Involvement and Self-Esteem as Moderators of Situationally Devalued Self-Esteem," Journal of Applied Psychology, 58 (October, 1973), pp. 233-238.

<sup>28</sup>See, for example, E. E. Ghiselli, The Self-Description Inventory Manual (University of California, Berkeley: available from author, undated), pp. 9-11; Abraham K. Korman, "Relevance of Personal Need Satisfaction for Overall Satisfaction as a Function of Self-Esteem," Journal of Applied Psychology, 51 (December, 1967), pp. 533-538; Skipton Leonard and Joseph Weitz, "Task Enjoyment and Task Perseverance in Relation to Task Success and Self-Esteem," Journal of Applied Psychology, 56 (October, 1971), pp. 414-471.

<sup>29</sup>Greenhaus and Badin, Self-Esteem, Performance, and Satisfaction, p. 722.

<sup>30</sup>P. D. Hechler and Yoash Wiener, "Chronic Self-Esteem as a Moderator of Performance Consequences of Expected Pay," Organizational Behavior and Human Performance, 11 (February, 1974), p. 104.

### Need for Certainty

The need for certainty is another measurable personality characteristic that Wilson found useful in predicting a purchaser's decisionmaking style.<sup>31</sup> It was reasoned that since this characteristic had already been shown to be related to a purchaser's decision-making style, it should be related to a purchaser's level of effectiveness. Other researchers have shown that people with a high need for certainty tended to perceive new or complex situations as a source of threat.<sup>32</sup> In addition, such individuals strongly disliked ambiguity and uncertainty of information.<sup>33</sup>

Although no studies were found that related the need for certainty to purchasing effectiveness, the research conducted by Wilson implied that more effective purchasers tended to have a lower need for certainty than less effective purchasers. Wilson's research showed that purchasers with a high need for certainty tended to be far more conservative in their decisionmaking.<sup>34</sup> Wilson also pointed out that purchasers with a high need for certainty would either avoid situations where uncertainty was high or would seek to reduce the uncertainty.<sup>35</sup>

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<sup>31</sup>David T. Wilson, "Industrial Buyers' Decision-Making Styles," Journal of Marketing Research, Vol. VIII (November, 1971), pp. 435-436.

<sup>32</sup>S. Budner, "Intolerance of Ambiguity as a Personality Variable," Journal of Personality, 30 (1962), p. 50.

<sup>33</sup>Douglas N. Jackson, Manual for the Personality Review Form (London, Ontario: The University of Western Ontario, 1967), p. 32.

<sup>34</sup>Wilson, Industrial Buyers, p. 435.

<sup>35</sup>Wilson, An Exploratory Study, p. 90.

### External Control

External control is defined as the extent to which an individual perceives events that happen to him as being beyond his control.<sup>36</sup> Persons who rate themselves low on external control tend to believe they can influence what happens to them whereas persons who rate themselves high on external control tend to believe that fate and forces beyond their control influence what happens to them.<sup>37</sup>

External control was selected for inclusion in this study both because it is a measurable personality characteristic and because it appeared to be closely related to shrewdness, tact, and the ability to cooperate, which several of the earlier purchasing writers considered to be closely related to purchasing effectiveness.<sup>38</sup> The apparent relationship between each of these characteristics and external control stems from the assumption that shrewdness, tact, and the ability to cooperate all involve a purchaser's ability to successfully influence those individuals with whom he works and deals. This implies that more effective purchasers will tend to rate themselves lower on external control than less effective purchasers.

### Desire to Satisfy Higher Order Needs

This personality characteristic is a measure of the degree to which individuals are desirous of obtaining higher order need

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<sup>36</sup>Laurie A. Broedling, "Relationship of Internal-External Control to Work Motivation and Performance in an Expectancy Model," Journal of Applied Psychology, 60 (February, 1975), p. 65.

<sup>37</sup>Ibid.

<sup>38</sup>See for example, Machine Shop Notes, quoted in Hoagland and Fearon, Purchasing Research, p. 22; Rindsfoos, Purchasing, p. 51; and Lewis, This Business, p. 10.

satisfaction from their work. Higher order needs relate to an individual's need for social activity, status, and personal growth.<sup>39</sup>

Lower order needs, on the other hand, refer to an individual's need for physical well-being and security.<sup>40</sup> Research by J. R. Hackman and

E. E. Lawler showed that people with a stronger desire to satisfy higher order needs performed most effectively when they were placed on jobs that were high on certain dimensions.<sup>41</sup> Specifically these dimensions were: variety (the opportunity to use a number of personally valued skills and abilities), autonomy (the chance to feel responsible for one's work), task identity (the opportunity to perform a whole piece of work) and feedback (the opportunity for an individual to find out how he is doing).<sup>42</sup> The research by Hackman and Lawler

also pointed out that individuals who were not desirous of satisfying their higher order needs on the job or who were incapable of dealing with complex jobs requiring large amounts of autonomy would probably be ineffective on such jobs and dissatisfied with them.<sup>43</sup> These findings suggested that it was critical, in the interest of facilitating effective performance, to achieve a match between the psychological makeup of an individual with the psychological demands and

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<sup>39</sup> A. H. Maslow, "A Theory of Human Motivation," Psychological Review, 50 (1943), pp. 370-396.

<sup>40</sup> Ibid.

<sup>41</sup> J. R. Hackman and E. E. Lawler III, "Employee Reactions to Job Characteristics," in Readings in Organization Behavior and Human Performance, ed. W. E. Scott and L. L. Cummings (Homewood, Ill.: Richard D. Irwin, Inc., 1973), p. 231.

<sup>42</sup> Ibid., pp. 218-219.

<sup>43</sup> Ibid., p. 232.

opportunities of a job.<sup>44</sup>

Many purchasing writers have in effect contended that a high proportion of purchasing jobs contained relatively high amounts of variety, autonomy, task identity, and feedback.<sup>45</sup> This suggests that current purchasing practitioners who have a relatively strong desire to satisfy their higher order needs on the job will tend to be the more effective purchasers.

#### Composite Personality Index

The four previously discussed personality variables were selected for this research both because they appeared to be related to purchasing effectiveness and because research instruments were available to measure them. It was suspected that if the individual item responses on these four research instruments were analyzed separately, certain items would be more strongly related to purchasing effectiveness than others. It was further suspected that if the responses on these certain items were added together to form a Composite Personality Index, that this new index might be more strongly related to purchasing effectiveness than any of the four original personality variables would be individually.

#### Previous Writings and Research Concerning Purchasing Effectiveness and Socioeconomic Characteristics

The socioeconomic characteristics selected for inclusion in this study were: age, experience, financial rewards, satisfaction,

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<sup>44</sup>Ibid., pp. 232-233.

<sup>45</sup>See for example, Harriman, Principles, pp. 13-16 and McMillan, The Art of Purchasing, pp. 334-338; J. H. Westing, I. V. Fine, and Gary J. Zenz, Purchasing Management (New York: John Wiley and Sons, Inc., 1976), pp. 9-12.

professional development activities, education, college majors, position levels, and sex. In the sections that follow, some of the literature pertaining to each of the above socioeconomic characteristics and its relationship to purchasing effectiveness will be presented.

### Age

Prior research by Robert Cook concluded that there did seem to be a relationship between a purchaser's age and whether he is effective or ineffective.<sup>46</sup> Cook's research utilized the critical incident technique by asking purchasers to describe situations in which they had observed a buyer performing in a particularly effective or ineffective manner. In addition to these incidents, information concerning each buyer's age, education, and purchasing experience was gathered. A comparison between the buyers' ages and whether or not they were effective or ineffective led to the findings that ineffective buyers tended to be under 30 years of age while the effective buyers tended to be 30 years of age or older.<sup>47</sup>

### Experience

Purchasing writers began discussing a relationship between experience and purchasing effectiveness sometime prior to the twentieth century. In 1887, Marshall M. Kirkman expressed the idea that experience was related to a purchaser's ability to save money for his firm. Kirkman said

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<sup>46</sup>Cook, Industrial Buyers, p. 137.

<sup>47</sup>Ibid., p. 116.

a capable purchasing agent, it is probable, can save his employer a greater sum through the exercise of experience and intelligence, than any other officer of like grade.<sup>48</sup>

In 1892, an article that appeared in the Engineering Magazine stated that experience was one of several important characteristics related to a purchaser's ability to make money for his firm: "if there is one place more than another in a large concern that requires an honest, shrewd, experienced, practical man to make money, it is the buyer's."<sup>49</sup>

In 1915, Rindsfoos put forth the notion that judgment was an important characteristic of successful purchasing. Rindsfoos then went on to state that "judgment is based on experience."<sup>50</sup> Cady, in his book, Industrial Purchasing, emphasized the idea that experience within one's own company is an important characteristic for successful purchasing.

The most important quality for any member of the purchasing department is his ability to align his thinking and his actions with the "feel" of the company. If he lacks this, then any technical training or previous experience as a purchasing agent may be the worst enemy of his chances to succeed. For this reason many purchasing agents prefer to select their personnel from within the company itself.<sup>51</sup>

In 1959, McMillan advanced the idea that a successful purchaser should have a variety of experiences: "The successful purchasing agent today must be a man of many parts."<sup>52</sup> McMillan further stated

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<sup>48</sup>Marshall M. Kirkman, The Handling of Railway Supplies-- Their Purchase and Disposition (Chicago: Charles N. Trivess, 1887), p. 42; quoted in Fearon and Hoagland, Purchasing Research, p. 22.

<sup>49</sup>Machine Shop Notes, p. 478.

<sup>50</sup>Rindsfoos, Purchasing, p. 55.

<sup>51</sup>Cady, Industrial Purchasing, pp. 207-208.

<sup>52</sup>McMillan, The Art of Purchasing, p. 335.

that experience as a salesman "is excellent training for the future buyer and purchasing specialist."<sup>53</sup> Furthermore, "Experience in store-rooms, inventory and cost accounting, production control, expediting and other related activities lead quite naturally to the purchasing office."<sup>54</sup>

The research of Cook pointed out that the duration of purchasing experience was also related to effective purchasing performance. Cook's data indicated that ineffective purchasers tended to have less than five years of purchasing experience while the effective purchasers tended to have five or more years of purchasing experience.<sup>55</sup>

In 1971, Stuart F. Heinritz and Paul V. Farrell discussed the types of experience and training they considered most likely to lead to success in purchasing; they noted that a successful purchaser should have:

1. Practical training in the production, stores, accounting, and engineering departments.
2. Practical training in all sections of the purchasing department; experience in, or familiarity with, clerical positions, and service as a buyer and assistant purchasing agent.<sup>56</sup>

The above writings and research have several implications for purchasing effectiveness. First, a more effective purchaser will tend

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<sup>53</sup>Ibid., p. 337.

<sup>54</sup>Ibid.

<sup>55</sup>Cook, Industrial Buyers, pp. 118-119.

<sup>56</sup>Stuart F. Heinritz and Paul V. Farrell, Purchasing (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971), pp. 69-70.



to have more years of purchasing experience. Second, a more effective purchaser will tend to have more years of experience with his current firm. Third, as a result of their wide training experiences, more effective purchasers will tend to have occupied more positions during the last several years.

### Financial Rewards

Over the years, a number of purchasing writers have contended that there is an important relationship between the financial rewards a purchaser receives and his level of effectiveness. For example, Gushee and Boffey considered financial rewards to be important for attracting and keeping competent people as well as for motivating and rewarding effective performance:

the competent purchasing agent must be properly rewarded. In the past, the tendency has been to set the wage for purchasing at a level far from commensurate with its performance. To attract and maintain the right type of men in purchasing, the remuneration must be in keeping with the responsibilities of the position and results achieved. An adequately paid purchasing agent may, and usually will, save from ten to a hundred times his salary as compared with the results obtained by a man who draws half the amount or less, it being assumed that salaries are paid in true relation to the efficiency of the individuals.<sup>57</sup>

In the 1945 edition of his book, Cady expressed an argument similar to that of Gushee and Boffey when he stated:

The ability of the purchasing department to attract and hold the highest type of personnel will depend largely upon the incentives offered. Salary, of course, is the primary incentive.... More than one large purchasing department is making the mistake of hiring too many men and paying each of them too little, rather than devoting the same budget to hiring fewer and better men. The purchasing agent who is underpaid is likely either to

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<sup>57</sup> Gushee and Boffey, Scientific Purchasing, p. 20.

accept too many favors from salesmen who have money to spend or to bolster his spirit by thinking of the size of the company he represents and so become overbearing and arrogant to the salesmen. Either course tends to reduce the high standard of cooperation which obtains the best results for purchasing departments.<sup>58</sup>

Some of the more recent writers in the purchasing field also thought there was a strong relationship between a purchaser's salary level and his level of effectiveness. In the 1971 edition of their book, Lee and Dobler stated that "No department operates at its full potential for long if its salary structure fails to reward individuals in relationship to their respective performance levels."<sup>59</sup>

Westing, Fine and Zenz went one step further when they discussed the role of salary increases:

it is important that some measure of ability and performance be devised and used periodically in rating the individual's (developmental) progress. On the basis of these ratings, the employee should be advised of his shortcomings or rewarded for his improvement with a salary increase.<sup>60</sup>

The above writings have at least two implications for purchasing effectiveness. First, more effective purchasers will tend to receive higher salaries. Second, more effective purchasers will tend to receive larger salary increases.

### Satisfaction

A number of purchasing writers have acknowledged some sort of positive relationship between satisfaction and purchasing effectiveness. In the 1964 edition of his book, The Purchasing Man and

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<sup>58</sup>Cady, Industrial Purchasing, pp. 209-210.

<sup>59</sup>Lee and Dobler, Purchasing, p. 556.

<sup>60</sup>Westing, Fine and Zenz, Purchasing Management, p. 405.

His Job, Victor Pooler listed what he called five non-cost incentives that were designed to improve a purchaser's level of satisfaction which, in turn, was supposed to increase a purchaser's level of effectiveness.<sup>61</sup> Pooler's non-cost incentives included:

1. Participation in the making of decisions.
2. Additional responsibility.
3. Special projects.
4. Opportunity to be heard.
5. More prestige on the job.<sup>62</sup>

Pooler went on to say that:

People want to get into the act! Poor performance on the job is due more to lack of involvement than to laziness or incompetence. The buyer who is allowed as much influence as possible on the decisions that affect him so that he can be a party to the problem and motivated to find the solution is a better producer than the one who feels no need to take action since "it's not my problem."<sup>63</sup>

Lee and Dobler also thought that effective purchasing performance was related to satisfaction. These authors contended that:

The wise (purchasing) manager knows that long run performance is dependent on the job satisfaction of his employees.... Over the long run, most people perform better when they enjoy their work. And people tend to enjoy a job more when their abilities and interests are fully utilized and challenged by the requirements of the job.<sup>64</sup>

The 1973 edition of the Purchasing Handbook also subscribed to the idea that purchasing effectiveness and satisfaction were positively related. The Handbook stated that purchasing jobs should be structured "in such a way as to optimize the job satisfaction factors

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<sup>61</sup>Pooler, The Purchasing Man, p. 70.

<sup>62</sup>Ibid.

<sup>63</sup>Ibid., p. 71.

<sup>64</sup>Lee and Dobler, Purchasing, pp. 541-542.

of achievement, recognition, the work itself, responsibility, advancement and growth opportunities."<sup>65</sup>

The above writings suggest at least two implications for purchasing effectiveness: (1) purchasers who are more satisfied with their purchasing career will tend to be more effective, and (2) purchasers who are more satisfied with the firm they currently work for will tend to be more effective.

### Professional Development Activities

Opportunities for professional development have often been made possible through the efforts of professional associations.

According to the Purchasing Handbook,

Professional associations are generally organized to draw together individuals who are members of the profession to provide them with the vehicle and tools for improving themselves and their profession through mutual cooperation, interchange of ideas, educational programs, ethical standards and other such means.<sup>66</sup>

Another author viewed professional associations as being a forum for an interchange of ideas and a discussion of problems while providing its members with a means of developing themselves professionally so as to increase their contributions to the profitability of their respective firms.<sup>67</sup>

A number of professional associations have been organized within the purchasing profession. The National Association of Purchasing Management has claimed to represent "a wide diversification

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<sup>65</sup>George Aljian, ed., Purchasing Handbook (3rd ed.; New York: McGraw-Hill, 1973), Section 27, p. 21.

<sup>66</sup>*Ibid.*, Section 29, p. 3.

<sup>67</sup>Frank J. Winters, "A Look Back. . .and Ahead," Journal of Purchasing and Materials Management, Vol. 11, No. 2 (Summer, 1975), pp. 47-48.

of business interests; it has members from large and small units of industrial, education, governmental, utility and distribution organizations."<sup>68</sup> Other purchasing professional organizations have been organized around specific segments of the purchasing profession. Some of these organizations include: the National Institute of Governmental Purchasing, the National Association of Education Buyers and the National Association of Hospital Purchasing Management. In addition, a number of professional associations have been organized that represent professions closely related to purchasing, such as the American Production and Inventory Control Society and the National Council of Physical Distribution Management.

Each of the above professional associations has claimed to exist, at least in part, for the purpose of assisting individuals in improving their level of effectiveness on the job.<sup>69</sup> These associations have accomplished this by providing educational programs such as seminars and workshops. At the same time, many of the national professional associations have also supported and assisted local professional associations in organizing professional development activities.<sup>70</sup> It therefore seems reasonable to expect that a more effective purchaser will tend to belong to a larger number of professional associations and will tend to participate more often in the professional development activities.

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<sup>68</sup> Aljian, Purchasing Handbook, Section 29, p. 12.

<sup>69</sup> Ibid., Section 29, pp. 13-17.

<sup>70</sup> Ibid., Section 29, pp. 17-28.

## Education

A college course in purchasing was offered at least as far back as 1917; the establishment of one purchasing course was the result of a cooperative effort between the Purchasing Agents Association of New York and New York University's School of Commerce, Accounts and Finance.<sup>71</sup> Harvard University also established a purchasing course during the 1917-1918 academic year and a few decades later there were purchasing courses in ninety colleges and universities throughout the United States and Canada.<sup>72</sup>

In 1945, E. L. Cady pointed out the fact that a number of colleges were teaching courses in purchasing and suggested that graduates of these schools might be good candidates for purchasing positions. Cady stated:

Many colleges and universities have a course in industrial purchasing given in conjunction with their schools of business administration.... The records of graduates of these schools may be consulted, and conversations with professors will elicit much about the graduates.... Engineering graduates who have the necessary ability to cooperate, with the instinct for ferreting out facts, often make good members of purchasing departments.<sup>73</sup>

In 1959, A. L. McMillan noted that "The academic training called for in purchasing offices has risen considerably in recent years."<sup>74</sup> Cady referred to a survey conducted in the state of Ohio in 1951 that showed 34 percent of the purchasers surveyed had college

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<sup>71</sup>Paul V. Farrell, Fifty Years of Purchasing (New York: National Association of Purchasing Agents, 1954), p. 31.

<sup>72</sup>Ibid.

<sup>73</sup>Cady, Industrial Purchasing, p. 209.

<sup>74</sup>McMillan, The Art of Purchasing, p. 335.

degrees:

in the younger group, aged 24 to 34 years, the percent (having college degrees) had risen to 56 percent, indicating that the requirement of a college degree will be a more common qualification for the purchasing office in future years.<sup>75</sup>

More recently, Heinritz and Farrell listed a college education as one of the personal qualifications most likely to lead to success as a purchasing executive.<sup>76</sup> They also listed a college degree as a desirable, although not a necessary personal qualification for individuals seeking buying positions.<sup>77</sup> Heinritz and Farrell went on to state, however, that if these people expected to advance to a position of top responsibility for purchasing management, they should "have the ambition and perseverance to acquire the equivalent educational qualifications through evening and extension courses."<sup>78</sup>

The study by Cook appeared to be the only piece of research that demonstrated a relationship between formal education and purchasing effectiveness. Cook found that purchasers with only a high school education "are not as likely to be effective as those with more education."<sup>79</sup>

Cook's findings, taken together with the other writings mentioned above imply that a more effective purchaser will tend to have achieved a higher level of formal education.

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<sup>75</sup>Cady, Industrial Purchasing, p. 209.

<sup>76</sup>Heinritz and Farrell, Purchasing, p. 69.

<sup>77</sup>Ibid., p. 73.

<sup>78</sup>Ibid.

<sup>79</sup>Cook, Industrial Buyers, p. 120.

### College Majors, Position Levels, and Sex

In order to gain additional insight into the type of people who were included in the sample, information was gathered concerning the respondents' undergraduate and graduate college majors, entry level position, present position, superior's position, desired position five years into the future, and sex. Because of time and resource limitations, this information was not related to purchasing effectiveness. Nevertheless, this information did prove useful in revealing several examples of possible sample bias. It should be noted, however, that plans are afoot to more thoroughly analyze these data in future research.

### Previous Writings and Research Concerning Purchasing Effectiveness and Purchasing Performance Measures

One problem that had to be faced with regard to evaluating purchasing performance was deciding whether to use ratings by superiors or self-ratings. Superior ratings involve having supervisors rate the performance of their subordinates. Self-ratings involve having the individuals rate their own performance. There were a number of subjective, as well as objective rating techniques that could have been used by superiors in rating the performance of their subordinates.<sup>80</sup> However, it was not possible to draw a sample that was statistically

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<sup>80</sup> Aljian, Purchasing Handbook, Section 27, pp. 22-23; John P. Campbell, Marvin D. Dunnette, Richard D. Arvey and Lowell V. Hellervik, "The Development and Evaluation of Behaviorally Based Rating Scales," Journal of Applied Psychology, Vol. 57, No. 1 (February, 1973), pp. 23-27; Lee and Dobler, Purchasing, pp. 556-558; Heinritz and Farrell, Purchasing, pp. 432-437; C. H. Lawshe, N. C. Kephart and E. J. McCormick, "The Paired Comparison Technique for Rating Performance of Industrial Employees," Journal of Applied Psychology, Vol. 33, No. 1 (February, 1949), pp. 69-77.



appealing.

An alternative research strategy that overcame many of the deficiencies of ratings by superiors was to identify performance dimensions that were common to most purchasing jobs and then ask the purchasers in different organizations to rate themselves on these identified performance dimensions.

In the past, several questions have been raised about the usefulness of self-ratings and their comparison to superior ratings. Some researchers have claimed that self-ratings tend to be more lenient and have less variability than superior ratings.<sup>81</sup> Other researchers have questioned the validity of self-ratings.<sup>82</sup> However, recent research by Herbert G. Heneman indicated that when self-ratings were obtained under conditions where they could be used solely for research purposes, they tended to be less lenient and more variable than superior ratings.<sup>83</sup> Heneman's findings also showed that self-ratings demonstrated less halo error than superior ratings.

The research of Cook was helpful in developing a self-rating

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<sup>81</sup>E. P. Prien and R. E. Liske, "A Comparative Analysis of Supervisor Ratings and Incumbent Self-Ratings of Job Performance," Personnel Psychology, Vol. 15 (1962), pp. 197-194; and G. C. Thornton, "The Relationship Between Supervisory and Self-Appraisals of Executive Performance," Personnel Psychology, Vol. 21 (1968), pp. 451-456.

<sup>82</sup>D. T. Campbell and D. W. Fiske, "Convergent and Discriminant Validation of the Multitrait-Multimethod Matrix," Psychological Bulletin, Vol. 56 (1959), pp. 81-105; and J. B. Miner, "Management Appraisal: A Capsule Review and Current References," Business Horizons, Vol. 11 (1968), pp. 83-96.

<sup>83</sup>Herbert G. Heneman, III, "Comparisons of Self and Superior Ratings of Managerial Performance," Journal of Applied Psychology, Vol. 59, No. 5 (October, 1974), pp. 638-642.

scale to measure purchasing performance. Cook identified 28 purchasing activities and ranked them in order of their frequency of occurrence;<sup>84</sup> he suggested that the frequency of occurrence of each of these activities might reflect their relative importance. Cook's ranking of these 28 purchasing activities is presented in Table II-1. The definition for each of these activities is presented in Appendix E.

It was assumed the purchasing activities that tended to occur more frequently would also tend to be more generally applicable across a wider variety of purchasing jobs. This implies that activities such as profit potential, procedures, and sourcing would tend to be engaged in by more purchasers than would activities such as scrap and surplus disposal, target pricing and forward buying. For this reason, the purchasing self-rating scale used in this study was developed from the purchasing activities that occurred most frequently in Cook's research.

The activities selected for inclusion in the purchasing self-rating scale were: profit potential, procedures, sourcing, personal skills, departmental coordination, negotiation, product research, interfirm coordination, and quality assurance. In addition, an activity called overall effectiveness was also added to the scale. The definitions of each of these activities were shortened in length in order to reduce the amount of space required by this scale on the mail questionnaire that was used to collect the data for this research. The definition of each of these activities as it appears on the mail questionnaire is presented below.

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<sup>84</sup> Cook, Industrial Buyers, pp. 109-115.

TABLE II-1--COMPARISON OF EFFECTIVE AND INEFFECTIVE BUYERS BY ACTIVITIES

Activity	Effective Buyers (N=172)		Ineffective Buyers (N=144)		Total Buyers (N=316)	
	Number	Percent	Number	Percent	Number	Percent
Profit Potential	135	78	109	76	244	77
Procedures	73	42	85	59	158	50
Sourcing	73	42	70	49	143	45
Personal Skills	76	44	60	42	136	43
Organizational Decisions	51	30	61	42	112	36
Departmental Coordination	58	34	50	35	108	34
Quality Assurance	54	31	49	34	103	33
Product Research	64	37	35	24	99	31
Vendor Assistance	58	34	32	22	90	28
Inter-Firm Coordination	49	28	32	22	81	26
Negotiation	44	26	26	18	66	21
Inventory Control	30	17	36	25	66	21
Competitive Bids	39	23	25	17	64	20
Substitutions	47	27	16	11	63	20
Market Analysis	29	17	26	18	55	17
Follow-Up	12	7	29	20	51	16
Specifications	30	17	20	14	50	16
Forecasting	25	15	23	16	48	15
Supplier Evaluation	23	13	21	15	44	14
Records	11	6	21	15	32	10
Transportation	15	9	16	11	31	10
Vendor Relations	7	4	21	15	28	9
Legal Considerations	5	3	22	15	27	9
Scrap & Surplus Disposal	10	6	14	10	24	8
Target Pricing	12	7	9	6	21	7
Forward Buying	13	8	7	5	20	6
Ethics	3	2	12	8	15	5
Make or Buy	7	4	3	2	10	3

Source: Cook, Industrial Buyers, p. 111.

Profit Potential - The extent to which your buying activities result in cost savings for your firm.

Procedures - Your normal adherence to your firm's established buying procedures.

Sourcing - The degree to which you search for new suppliers or reevaluate old suppliers.

Personal Skills - The successful expenditure of extra effort on your part to convince others in your organization to accept your proposals.

Departmental Coordination - Effort you spend in communicating, providing reports, arranging meetings, or providing liaison within your department or organization.

Negotiation - The extent to which your discussions with your suppliers produce favorable results.

Product Research - The amount of product research you perform by studying reference sources or questioning salesmen, suppliers, and users of similar products.

Interfirm Coordination - The extent to which you arrange meetings between yourself, members of your firm, and vendors in order to improve cooperation.

Quality Assurance - Your investigation of quality by checking samples, having tests run, comparing items, or discussing possible adjustments with vendors.

Overall Effectiveness - Rate yourself on total performance in your present purchasing position.

### Purchasing Effectiveness Profile

The review of the purchasing literature revealed previously discussed personality, socioeconomic, and performance measures that appeared to be related to purchasing effectiveness. These apparent relationships are presented in the Purchasing Effectiveness Profile shown in Figure II-1.

FIGURE II-1

## PURCHASING EFFECTIVENESS PROFILE

Characteristics of Less Effective Purchasers		Characteristics of More Effective Purchasers
<u>Personality Variables</u>		
Low	Level of Self-Esteem	High
High	Need for Certainty	Low
High	Degree of External Control	Low
Low	Desire to Satisfy Higher Order Needs	High
Low	Composite Personality Index	High
<u>Socioeconomic Variables</u>		
Low	Age	High
	Experience	
Low	a. Years of purchasing experience	High
Low	b. Years with current firm	High
Low	c. Number of Positions-- last five years	High
	Financial Rewards	
Low	a. Salary level	High
Low	b. Salary Increase-- last five years	High
	Satisfaction	
Low	a. Satisfaction--purchasing career	High
Low	b. Satisfaction--current firm	High

FIGURED II-1 (continued)

Characteristics of Less Effective Purchasers		Characteristics of More Effective Purchasers
Professional Development Activities		
Low	a. Number of professional development activities attended per year	High
	b. Membership in Professional associations	High
Low	Education Level	High
<u>Purchasing Performance Measures</u>		
Low	Profit Potential	High
Low	Procedures	High
Low	Sourcing	High
Low	Personal Skills	High
Low	Departmental Coordination	High
Low	Negotiation	High
Low	Product Research	High
Low	Interfirm Coordination	High
Low	Quality Assurance	High
Low	Overall Effectiveness	High

### Statistical Analysis

The original plan for data analysis involved the use of such classical statistical techniques as Pearson product-moment correlation, multiple regression, and factor analysis. The Pearson correlation was to be used in order to determine the strength and direction of any possible relationships between the personality or socioeconomic variables and purchasing effectiveness. Multiple regression was to be used for the purpose of determining the strength of any possible relationships between combinations of personality or socioeconomic variables and purchasing effectiveness. Factor analysis was to be used for the purpose of searching for any new variables that might underly the manifest data. These techniques were chosen for two reasons. First, it was expected that the responses on the items of the research questionnaire would be distributed in a reasonably normal manner. Second, it was assumed that the relationship between any of the variables to be analyzed would be reasonably linear.

Examination of the frequency of the questionnaire items, however, revealed that some of the data was not distributed normally as expected.<sup>85</sup> This examination uncovered a number of items that demonstrated either skewed or bi-modal response distributions. For example, the frequency distributions of items 64 through 75 in Appendix B were all heavily skewed on the high side of the mean. This response skewness indicates that the amount of variance recorded by these items was considerably less than if these

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<sup>85</sup>The mail questionnaire used to gather the data for this research is exhibited in Appendix A.

responses had been normally distributed. On the other hand, items 49, 50, 51, 62, 57, 61 and 62 of Appendix B demonstrated bi-modal response patterns in that high percentages of responses were clustered on both sides of the middle response category. These bi-modal response patterns indicate that these items were not linearly related to the items that exhibited either skewed or normal response distributions. Because of the number of skewed and bi-modal response distributions that were found to exist in the data, it was concluded that a straightforward application of the previously mentioned statistical techniques might be inappropriate and could possibly result in misleading or invalid interpretations. For this reason, a different data analysis approach was taken.

The methodology used to analyze the data involved the development of a purchasing effectiveness measure that was labelled the Purchasing Performance Index.<sup>86</sup> This index was the basis for dividing the entire sample into five levels of purchasing effectiveness. The mean scores of each of these five effectiveness groups on the four personality measures were then compared. The purpose of this comparison was to determine which, if any, of the personality variables were related to purchasing effectiveness. Similarly, the individual item responses on the four personality research instruments were also analyzed. Those individual items found to be most strongly related to purchasing effectiveness were added together to form a Composite Personality Index.<sup>87</sup>

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<sup>86</sup>This Purchasing Performance Index is developed in Chapter V.

<sup>87</sup>The personality variables are analyzed in Chapter VI.



The five effectiveness levels determined by the Purchasing Performance Index were also used to identify possible relationships between the socioeconomic measures and purchasing effectiveness. The scores of each of these five effectiveness groups on each of the socioeconomic measures were then compared in order to determine which of these measures were related to purchasing effectiveness.<sup>88</sup>

### Limitations

In conducting this research, no attempt was made to identify all the data on the questionnaire. Such an undertaking was well beyond the time and resource limitations of this single dissertation. It should be noted however, that in the interest of achieving further progress in the field of purchasing, plans to more thoroughly identify these data in the future are currently underway.

### Summary

The review of the purchasing literature revealed a number of personality variables that purchasing writers assumed were related to purchasing effectiveness. Some of these characteristics included honesty, shrewdness, truthfulness, industriousness, executive ability, and adaptability. The literature review further revealed that, although relationships between a number of personality characteristics had been theorized, none of these relationships had ever been proven<sup>?</sup> to exist. One possible reason for this was that some of the personality characteristics such as truthfulness, honesty, and shrewdness were rather general in nature and did not readily lend themselves to

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<sup>88</sup>The socioeconomic variables are analyzed in Chapter VII.

behavioral measurement. Thus, in testing the relationships between personality characteristics and purchasing effectiveness, it was decided to select personality characteristics for which measurement instrument already existed. Based upon the findings of the literature review, it was decided to test the relationships between purchasing effectiveness and self-esteem, need for certainty, external control, and the desire to satisfy higher order needs.

The literature review also revealed a number of purchasing writers who theorized that certain socioeconomic characteristics were related to purchasing effectiveness. Some of these socioeconomic characteristics included age, experience, education, and financial rewards. The literature review revealed that, to date, only one researcher had directly explored the link between socioeconomic and purchasing effectiveness. In his study, Cook concluded that there did seem to be a relationship between age, experience, and education level of buyers and whether they were effective or ineffective performers. Based upon Cook's findings and the findings of the literature review, it was decided to test the relationships between purchasing effectiveness and age, experience, financial rewards, satisfaction, professional development activities, and education.

The research of Cook also appeared to be the only study that directly explored the relationship between the performance of certain purchasing activities and purchasing effectiveness. This research proved helpful in developing a self-rating scale to measure purchasing performance. In this study, Cook identified 28 purchasing activities and ranked them in order of occurrence; he further suggested that the frequency of occurrence of each of these activities might reflect

their relative importance. For this reason, the purchasing self-rating scale used in this study was developed from the purchasing activities that occurred most frequently in Cook's research. These activities included profit potential, procedures, sourcing, personal skills, departmental coordination, negotiation, product research, interfirm coordination, and quality assurance. In addition, an activity called overall effectiveness was also added to the scale.

## CHAPTER III

### DATA COLLECTION

Obtaining the data for this research was accomplished by (1) developing a mail questionnaire, (2) identifying a sample population of purchasers, and (3) randomly sampling this population. The collected data from 1,090 usable respondents was then subjected to a "cleaning" procedure, which ensured that the information that appeared on the computer input cards accurately represented the data that appeared on the mail questionnaire.

#### Development of the Mail Questionnaire

##### Questionnaire Design

The questionnaire used to collect the data for this study was designed utilizing a marked-sense format. This type of questionnaire design had several distinct advantages: First, utilizing a marked-sense format cut down significantly on the physical length of the questionnaire. What would have been an eleven-page typewritten questionnaire was reduced to four pages of printed marked-sense questions.<sup>1</sup> This alone appeared to stimulate a higher response rate since the questionnaire did not seem too long to the respondent. Second, a marked-sense format gave the questionnaire a professional appearance. Judging from some of the respondents' comments, this

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<sup>1</sup>A copy of this questionnaire is exhibited in Appendix A.

also appeared to stimulate a higher response rate than would have normally been expected. Third, since the marked-sense questionnaires were read by an electronic scanner, the data were automatically punched onto the data cards. As a result, there was no need for a separate keypunching operation.

A cover letter was also designed to accompany the questionnaire. The cover letter explained that the information was needed for doctoral research and that the project was being financed, in part, through a Doctoral Research Grant from the National Association of Purchasing Management.<sup>2</sup> The letter also stated that the responses were completely confidential and would not be identified in any way.

#### Pilot Testing the Questionnaire

Before the questionnaire and cover letter were printed in final form, they underwent two pilot tests. The first pilot test involved thirty members of a local purchasing association. Each member of the pre-test group was given a copy of the cover letter, a questionnaire, and a postage-paid return envelope. They were then asked to read the cover letter and fill out the questionnaire making constructive comments in the margins as they went along. Each person in this pilot test was assured of total anonymity and was asked to mail the questionnaire and cover letter to the researcher in the return envelope provided. Twenty-four of the questionnaires and cover letters were returned and several of the comments made by the the pilot test group were incorporated into the next draft of the questionnaire and cover letter.

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<sup>2</sup>A copy of this cover letter is exhibited in Appendix A.

The next pilot test took place just prior to the time when the cover letter and questionnaire were ready to be printed in final form. This pilot test was comprised of 44 purchasers from across the United States, who were attending a one-week purchasing management seminar at Michigan State University. Seminar participants were given envelopes identical to the ones received by those who were ultimately included in the mail survey. The envelope contained a cover letter, a questionnaire, and a return envelope. Each person in the group was asked to read the cover letter and questionnaire and to make constructive comments as they went along. This group was also assured that anonymity and confidentiality would be maintained and were asked to return the questionnaire and cover letter in the return envelope provided. The comments and criticism made by this group were minor in nature compared to the first pilot test group.

In the sections that follow, the specific measurement tools used to collect the data for this study are presented.

### The Personality Measures

#### Self-Esteem

The respondent's level of self-esteem was measured with the self-assurance scale of the Ghiselli Self-Description Inventory.<sup>3</sup> The scale consisted of 31 pairs of personally-descriptive adjectives with one word from each pair relating to self-esteem. For the first fifteen pairs of adjectives, the respondents were asked to choose one

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<sup>3</sup>E. E. Ghiselli, Explorations in Managerial Talent (Pacific Palisades, California: Goodyear Publishing Company, Inc., 1971), pp. 54-55.

word from each pair that described them best. For the remaining sixteen pairs, the respondents were asked to choose one word from each pair that described them least. This scale was scored utilizing a weighting scheme developed by Ghiselli. The score for this scale was the sum of the weights of the items checked. The higher the score, the higher the degree of self-esteem possessed by the individual.

The Ghiselli instrument was selected to measure self-esteem because it was brief and simple. In addition, this scale has been widely used on managers of all levels as well as skilled and unskilled workers and students.<sup>4</sup>

In other previous research, the reliability of this instrument had been determined by Ghiselli utilizing the Kuder-Richardson formula 20.<sup>5</sup> Data for the calculation were obtained by administering the instrument to 300 employed adults and 50 industrial foremen. The reliability coefficients for the 300 adults and 50 foremen were .56 and .63, respectively.<sup>6</sup> In an attempt to verify these results, a reliability analysis was conducted using Cronbach's alpha formula (a generalization of the Kuder-Richardson formula 20) and the data from the 1,090 mail respondents involved in the present study.<sup>7</sup> This analysis yielded a reliability coefficient of .39.

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<sup>4</sup>E. E. Ghiselli, The Self-Description Inventory Manual (University of California, Berkeley: undated), p. 11.

<sup>5</sup>James L. Bruning and B. L. Kintz, Computational Handbook of Statistics (Glenview, Illinois: Scott, Foresman and Company, 1968), pp. 188-191.

<sup>6</sup>Ghiselli, Self-Description, p. 3.

<sup>7</sup>William A. Mehrens and Irvin J. Tehmann, Measurement and Evaluation in Education and Psychology (Chicago: Holt, Rinehart and Winston, Inc., 1973), p. 113.

It is generally accepted that a reliability of .70 or better is considered to be a high.<sup>8</sup> This means that the instrument is accurately measuring some characteristics of the people taking it. In addition, a reliability of .70 or better also means that the items on the instrument are producing similar patterns of response in different people.<sup>9</sup> Furthermore, a high reliability coefficient means that the items making up the instrument are homogeneous and inferred to be valid.<sup>10</sup> Although the reliability coefficients obtained on the Ghiselli instrument were less than .70, they were large enough to suggest that the instrument was still fairly accurately measuring some characteristic of the people to whom it was administered.<sup>11</sup>

The Ghiselli self-assurance scale is part I of the questionnaire found in Appendix A.

#### Need for Certainty

The Budner Intolerance of Ambiguity Scale was used to obtain a measure of the respondent's need for certainty.<sup>12</sup> The scale consisted of sixteen statements about which the respondents were asked to indicate their level of agreement. Scoring ranged from a 5 for strong agreement to a 1 for strong disagreement. The scores for each statement were then summed to obtain a measure of the respondent's overall need for certainty. A high score indicated a high need for

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<sup>8</sup> Bruning and Kintz, Handbook, p. 191.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> Mehrens and Tehmann, Measurement and Evaluation, p. 122.

<sup>12</sup> S. Budner, "Intolerance of Ambiguity as a Personality Variable," Journal of Personality, 30 (1962), pp. 29-50.



certainty.

This instrument had been administered to a wide variety of student groups ranging from undergraduate psychology students to medical students in varying stages of their career. The reliability coefficients (Cronbach's alpha) computed with data from these groups have averaged approximately .49.<sup>13</sup> When the reliability coefficient was computed from the responses used in the present study, a coefficient of .48 was obtained. This was consistent with Budner's findings.

Budner defended this modest demonstration of reliability by pointing out that the need for certainty is a rather complex construct;<sup>14</sup> he went on to say that, the more complex the construct is, the lower will be the reliability coefficient of a measure of it.<sup>15</sup> The implication here is that the reliability of the instrument is acceptable considering the complexity of the variable it is measuring.

The primary reasons for selecting this instrument were that it was brief and easily adaptable to a marked-sense format. Other scales were either two to three times longer or they required written responses. In addition, the Budner scale was easy to understand and simple to administer.

The Budner Intolerance of Ambiguity Scale is part IV of the questionnaire found in Appendix A.

#### External Control

The respondent's degree of external control was measured using a factored version of the Rotter Internal-External

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<sup>13</sup>Ibid., p. 35.

<sup>14</sup>Ibid., pp. 34-35.

<sup>15</sup>Ibid., p. 35.

Scale.<sup>16</sup> This scale consisted of eight pairs of statements with each pair consisting of one internal and one external statement. The respondent was asked to choose the statement from each pair with which he most strongly agreed. In scoring this scale, the number of external statements the respondent chose were added together. Thus, a high score on this scale signified high external control while a low score signified low external control.

The Rotter instrument was selected to measure external control because it was short in length. The instrument had been used on students, scientists, engineers, vocational rehabilitation clients, naval officers, and naval enlisted men. Through repeated use, this instrument has consistently yielded reliability coefficients (Kudner-Richardson) of .70 or better.<sup>17</sup> For purposes of verification, a reliability analysis was conducted for the factored version of the Rotter scale used in this study. The reliability was calculated using Cronbach's alpha formula and the data from the 1,090 mail respondents. The analysis yielded a reliability coefficient of .74, which conformed to Rotter's findings.

The Rotter Internal-External Scale is part III of the questionnaire found in Appendix A.

#### Desire to Satisfy Higher Order Needs

To obtain a measure of the degree to which the respondents were desirous of obtaining higher order need satisfaction from their

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<sup>16</sup>J. B. Rotter, "Generalized Expectancies for Internal versus External Control of Reinforcement," Psychological Monographs, 80 (1966), Whole No. 609.

<sup>17</sup>Ibid., p. 13.

work, an instrument developed by Hackman and Lawler was utilized.<sup>18</sup> The respondents were asked how much of certain opportunities and attributes they would like to have in their purchasing position. The respondents indicated the amount of each opportunity or attribute they would like by marking the appropriate number on the scale that followed each opportunity or attribute. The number 5 indicated the respondent would like the maximum amount of the attribute or opportunity while the number 1 indicated he would like none or the minimum amount. Scores on each of these twelve items were summed to obtain a measure of the strength of the respondent's overall level of higher order need.

The coefficient of reliability computed by Hackman and Lawler for this instrument in their study was .89. This was obtained using data from administering the instrument to 208 employees of a large utility.<sup>19</sup> The coefficient of reliability computed for this instrument using the data from the 1,090 respondents participating in the study was .85.

This instrument is part V of the questionnaire found in Appendix A.

#### Need for Achievement

A measure of the respondent's need for achievement was obtained using the Lynn Achievement Motivation Questionnaire.<sup>20</sup> The

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<sup>18</sup>J. Richard Hackman and Edward E. Lawler III, "Employee Reactions to Job Characteristics," in Readings in Organizational Behavior and Human Performance, ed. W. E. Scott and L. L. Cummings (Homewood, Ill.: Richard D. Irwin, Inc., 1973), p. 224.

<sup>19</sup>Ibid.

<sup>20</sup>Richard Lynn, "An Achievement Motivation Questionnaire," British Journal of Psychology, 60 (1969), pp. 529-534.

instrument consisted of eight questions to which the respondents were to answer "yes" or "no." Scoring the instrument involved giving the respondent one point for each correct answer. The points were then summed up to give an overall measure of the respondent's need for achievement.

The primary reason that this instrument was selected was that it does away with all the major disadvantages of the TAT (thematic aperception test) which involves open-ended responses and requires highly-skilled scorers. In addition, the reliability between such scorers had been shown to be far from perfect. On the other hand, Lynn's instrument was brief, easy to understand, and easy to administer. Lynn's instrument also required much less effort on the part of the respondent.

Although Lynn cited a fair amount of evidence supporting the validity of his instrument,<sup>21</sup> he did not mention its reliability. When the reliability of the Lynn instrument was calculated using the Cronbach alpha formula and the data from the 1,090 mail respondents, the result was a very low reliability coefficient of .08. Such a low reliability implies that the instrument failed to elicit similar response patterns from different people and therefore was not accurately measuring any characteristic of the people to whom it was administered. For this reason, the need for achievement, as measured with Lynn's instrument, was dropped from further analysis.

The Lynn Achievement Motivation Questionnaire is part II of the questionnaire found in Appendix A.

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<sup>21</sup>Ibid., pp. 31-34.

### The Socioeconomic Measures

Each of the socioeconomic variables included in the Purchasing Effectiveness Profile, as well as several others, were measured by asking the respondent to answer a question relating to each of these variables. Most of the questions involved having the respondent select one answer from the alternatives listed after each question. Several other questions required the respondent to write short answers. In all, eighteen questions were used to measure eighteen socioeconomic variables. A nineteenth socioeconomic variable, sex, was predetermined from the names on the mailing list prior to sending out the questionnaire. These questions appear as part VII of the questionnaire found in Appendix A.

### The Purchasing Performance Measures

To obtain some measures of purchasing performance, a self-rating scale was utilized. The scale consisted of ten performance measures on which each respondent was asked to rate himself in comparison to other purchasers. A self-rating of 1 indicated high performance on that dimension. The performance self-rating scale is part VI of the questionnaire found in Appendix A.

### Design of the Sample and Data Collection

The data necessary to carry out this research were collected through the use of a mail survey. With the help of Professor John H. Hoagland and the Editors Group of the National Association of Purchasing Management, a mailing list of over 15,000 purchasers was assembled. This list was comprised of purchasers from the major population centers of thirty states. With such a large sample

population of purchasers scattered across the entire United States, it was concluded that it was a reasonable representation, for purposes of this research, of the population of purchasers in general. It was further concluded that if a large enough random sample were taken from such a sample population, it should exhibit characteristics similar to the entire population of purchasers.

Once the entire mailing list was assembled, a random sample of 3,648 names was selected. A questionnaire was sent on June 27, 1975 to each person whose name turned up in the random sample. The cutoff date for including returned questionnaires in the analysis was August 2, 1975. The returns from this group included 1,090 usable responses, 88 unusable responses, and 65 responses that were returned for insufficient or obsolete addresses. As mentioned earlier, a cover letter accompanied the questionnaire explaining that the information was needed for doctoral research and that the research was being financed, in part, through a Doctoral Research Grant from the National Association of Purchasing Management. The letter also stated that the responses were completely confidential and would not be identified in any way. Also accompanying the questionnaire was a postage-paid return envelope. The respondents were instructed both in the cover letter and on the questionnaire to return the completed questionnaire in the return envelope provided.

#### Cleaning the Data

As the questionnaires were returned by the respondents, each was examined to ensure that the respondent had filled it out completely and that any erasures had been cleanly made. Any

questionnaires that were not properly filled out were removed from the sample.

Since a marked-sense format was used, the questionnaires were read by an electronic scanner and the data were automatically punched onto data cards. This automatic process of transferring data from the mail questionnaires onto the data cards, however, was not without its problems.

Visual comparison of the data cards and the questionnaires revealed two types of errors associated with transferring the data from the questionnaires onto the cards. One type of error involved the situation where the respondent changed a response but failed to cleanly erase the old response. A second type of data transfer error occurred when the respondent failed to mark a response heavy enough on the questionnaire to be read by the scanner. The data transfer problems were solved by using a special computer program to sort out those cases where either two responses or no response had been recorded for a particular item or question. Once these cases were sorted out, the associated mail questionnaires were examined and each incorrectly transferred response was corrected. Once all the corrections were made, the cards were again run through the error sorting program to ensure that no incorrectly punched cards were missed.

Although the error sorting procedure described above worked very well, there were still several data errors that needed to be corrected. These errors involved situations where the scanner picked up extraneous pencil marks from several of the questionnaires and recorded these marks as responses. This type of error was not

discovered until a frequency distribution of each item on the questionnaire had been run. A visual inspection of these frequency distributions revealed eleven cases where the responses, which were read by the scanner and punched onto the data cards, were outside the range of possible values for a particular question or item. These errors were eliminated by examining the erroneous questionnaires and making the necessary corrections.

### Summary

The methodology used to obtain the data for this research included the development and administration of a mail questionnaire to a large national sample of purchasers. This questionnaire was designed using a marked-sense format, which had several distinct advantages:

1) The length of the questionnaire was cut from eleven typewritten pages to four pages of printed marked-sense questions, 2) the marked-sense format gave the questionnaire a more professional appearance, and 3) since the questionnaires were read by an electronic scanner, the data were automatically punched onto computer input cards.

Numerous response errors, however, made it necessary to subject the data to a "cleaning" procedure. This procedure helped to ensure that the information that appeared on the computer input cards was exactly the same as the information that appeared on the mail questionnaires. Analysis of the data gathered with this methodology will be presented in Chapters IV, V, VI, and VII.



## CHAPTER IV

### CHARACTERISTICS OF THE SAMPLE POPULATION

The data collected for this study revealed a number of interesting characteristics concerning the sample population. Some of these characteristics are presented and discussed in the sections that follow.

#### Present Position

The present position of the purchasers in the sample population are presented in Table IV-1. Since the individuals in the sample were taken from membership lists of purchasing associations affiliated with the N.A.P.M., it seemed logical to assume that the distribution of present positions would be representative of N.A.P.M. members in general. It was further assumed that any sample drawn from N.A.P.M. affiliated members would be representative of the total population of purchasers. Analysis of Table IV-1 indicated, however, that this latter assumption was probably erroneous. For example, Table IV-1 shows that 42.5 percent of the sample were managers of purchasing, but less than one percent held the position of assistant buyer. This means that the sample population contained 58 managers of purchasing for every assistant buyer. It did not seem reasonable that such a ratio of managers to assistant buyers was an accurate representation of the total population of purchasers in general.

TABLE IV-1

## FREQUENCIES CONCERNING RESPONDENTS' PRESENT POSITION

Present Position	Absolute Frequency (Percent)	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Assistant Buyer	8	.7	.7
Buyer	125	11.5	12.2
Purchasing Agent	332	30.5	42.7
Manager of Purchasing	463	42.5	85.1
VP of Purchasing	64	5.9	91.0
Researcher	11	1.0	92.0
Other	<u>87</u>	<u>8.0</u>	100.0
Total	1,090	100.0	

Therefore, it was concluded that by including only N.A.P.M. affiliated purchasers in the sample, a possible sample bias was introduced. The possibility of a sample bias in turn restricted the conclusions that could be inferred from this sample.

The category "other" contained in Table IV-1 was used to categorize purchasers in the sample whose present position did not fit one of the available categories. Since a marked-sense questionnaire format was used to gather this information, there was no way to determine what types of positions were included in this category. Some of the unsolicited comments received on the questionnaire, however, indicated that these people held such positions as senior buyer, materials manager, or chief of supply. In the future, it is suggested that the

"other" category either be replaced with several additional position titles or with an open-ended response.

### Entry Level Position

The entry level positions of the sample population are presented in Table IV-2. As shown in the table, 62.5 percent of the sample entered the purchasing profession at the position of buyer or below. This, along with the information contained in Table IV-3 indicates that a fair number of purchasers were entering the purchasing profession at a relatively low position level and were working their way up through the ranks. For example, Table IV-3 shows that 17.3 percent of the managers of purchasing started out as clerks or expeditors, 13.4 percent entered the profession as assistant buyers, and 25.9 percent entered purchasing as buyers.

TABLE IV-2

### FREQUENCIES CONCERNING RESPONDENTS' ENTRY LEVEL POSITION

Entry Level Position	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Clerk-Expediter	188	17.2	17.2
Assistant Buyer	164	15.0	32.3
Buyer	329	30.2	62.5
Purchasing Agent	193	17.7	80.3
Manager of Purchasing	125	11.5	91.7
V.P. of Purchasing	20	1.8	93.6
Other	<u>70</u>	<u>6.5</u>	100.0
Total	1,090	100.0	

TABLE IV-3

## CROSSTABULATION OF PRESENT POSITION WITH ENTRY LEVEL POSITION

Present Position	Entry Level Position						Row Total
	Clerk/ Expediter	Assistant Buyer	Buyer	Purchasing Agent	Manager of Purchasing	V.P. of Purchasing	
Assistant Buyer	3 (37.5)	4 (50.0)	0 (0)	1 (12.5)	0 (0)	0 (0)	8 (100.0)
Buyer	26 (21.0)	32 (25.8)	56 (45.2)	4 (3.2)	1 (0.8)	0 (0)	124 (100.0)
Purchasing Agent	53 (16.0)	42 (12.7)	121 (36.4)	96 (28.9)	2 (0.6)	1 (0.3)	332 (100.0)
Manager of Purchasing	80 (17.3)	62 (13.4)	120 (25.9)	70 (15.1)	105 (22.7)	5 (1.1)	463 (100.0)
V. P. of Purchasing	8 (12.5)	8 (12.5)	11 (17.2)	14 (21.9)	8 (12.5)	12 (18.8)	64 (100.0)
Researcher	4 (36.4)	0 (0)	4 (36.4)	2 (18.2)	0 (0)	1 (9.1)	11 (100.0)
Other	14 (16.1)	16 (18.4)	17 (19.5)	6 (16.9)	9 (10.3)	1 (1.1)	87 (100.0)

Note: Row percentages are in parentheses.

It is interesting to note from the data in Table IV-2 that 15.0 percent of the sample population entered purchasing as assistant buyers. Yet, less than 1 percent of the sample population were currently occupying the position of assistant buyer. This seems to indicate that individuals who occupy higher level positions are more likely to become purchasing association members than those occupying lower position levels.

A further point worth noting is the relatively large number of individuals who have entered the purchasing profession at either the managerial or vice-president level. As shown in Table IV-2, 13.3 percent of the sample population entered purchasing either as managers or vice-presidents. This indicates that a fair number of individuals moved into these higher level purchasing positions from fields outside of purchasing.

#### Supervisor's Present Position

Information concerning the position level of the immediate supervisor of each purchaser contained in the sample population is presented in Table IV-4. As the table shows, almost 62 percent of the supervisor's positions were unaccounted for. One possible reason for this is that many of the purchasers in the sample may have been reporting to individuals who either occupied nonpurchasing positions or positions that were not listed on the questionnaire. One possible way of precluding this problem in future research is to use an open-ended question format for gathering this type of information.

TABLE IV-4

FREQUENCIES CONCERNING THE POSITION OF THE  
RESPONDENTS' SUPERVISORS

Supervisor's Position	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Assistant Buyer	2	.2	.2
Buyer	10	.9	1.1
Purchasing Agent	61	5.6	6.7
Manager of Purchasing	231	21.2	27.9
V. P. of Purchasing	111	10.2	38.1
Other	<u>675</u>	<u>61.9</u>	100.0
Other	1,090	100.0	

Position--Five Years Hence

The position that the sample population expected to occupy five years in the future is presented in Table IV-5. It was expected that this information might prove useful in providing insight into the aspiration level and position mobility of purchasing people. As shown in the table, 48.3 percent of the sample expected to either be managers or vice-presidents of purchasing. This implies that a significant proportion of the sample population expected to advance within the purchasing profession during the next five years. The data in Table IV-6 supports this implication. For example, 34.4 percent of the buyers expected to be purchasing agents in five years, 17.6 percent of the buyers expected to be managers of purchasing, and 2.4 percent expected to be vice-presidents. A similar pattern

TABLE IV-5

FREQUENCIES CONCERNING POSITIONS WHERE THE RESPONDENTS  
EXPECT TO BE FIVE YEARS IN THE FUTURE

Position Five Years From Now	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Assistant Buyer	1	.1	.1
Buyer	21	1.9	2.0
Purchasing Agent	147	13.5	15.6
Manager of Purchasing	326	30.0	45.6
V. P. of Purchasing	199	18.3	63.9
Non-Purchasing Position	246	22.7	86.6
Retired	<u>146</u>	<u>13.4</u>	100.0
Total	1,086	100.0	

of expected advancement held true for purchasing agents and managers of purchasing. The only alternatives available for vice-presidents were to either advance to a nonpurchasing position or to retire. An interesting point to note from Table IV-6 is that within the sample population, 159 purchasers expected to be vice-presidents during the next five years. Yet, of the 64 vice-presidents contained in the sample, only 38 expected to move on or retire. This implies that the competition for these high level purchasing positions might be somewhat keen, especially given the fact that some of these positions will be occupied by individuals currently occupying positions outside the purchasing field.

Table IV-5 also shows that 22.7 percent of the sample expected

TABLE IV-6

CROSSTABULATION OF PRESENT POSITION WITH EXPECTED  
POSITION FIVE YEARS IN THE FUTURE

Present Position	Position - Five Years Future							Row Total
	Assistant Buyer	Buyer	Purch. Agent	Manager of Purchasing	V.P. of Purch.	Non-purch. Position	Retired	
Assistant Buyer	1 (12.5)	2 (25)	2 (25)	0 (0)	1 (12.5)	1 (12.5)	1 (12.5)	8 (100.0)
Buyer	0 (0)	18 (14.4)	43 (34.4)	22 (17.6)	3 (2.4)	26 (20.8)	13 (10.4)	125 (100.0)
Purchasing Agent	0 (0)	0 (0)	92 (27.7)	126 (38)	23 (6.9)	49 (14.8)	42 (12.7)	332 (100.0)
Manager of Purchasing	0 (0)	1 (.2)	2 (.4)	167 (36.2)	132 (28.6)	98 (21.3)	61 (13.2)	461 (100.0)
V. P. of Purchasing	0 (0)	0 (0)	0 (0)	0 (0)	26 (40.6)	20 (31.3)	18 (28.1)	64 (100.0)
Researcher	0 (0)	0 (0)	1 (9.1)	3 (27.3)	1 (9.1)	4 (36.4)	2 (18.2)	11 (100.0)
Other	0 (0)	0 (0)	7 (8.2)	8 (9.4)	13 (15.3)	48 (56.5)	9 (10.6)	85 (100.0)

Note: Row percentages are in parentheses.



to occupy nonpurchasing positions sometime during the next five years. Since, however, this information was not gathered with an open-ended questionnaire format, there was no way to determine what types of positions these people expected to occupy. Such an anticipated movement could possibly have been to another firm, or the movement in and out of the purchasing field could have been part of the normal training and development programs of some firms. If such information is sought in future research, it is recommended that this specific item be expanded on a marked-sense format or that an open-ended format be used.

Table IV-5 further indicates that 13.4 percent of the sample expected to retire during the next five years. Table IV-6 shows however, that the percentage of persons retiring is relatively even across all purchasing positions with the exception of the vice-presidents where 28.1 percent expected to retire.

#### Number of Positions--Last Five Years

Information concerning the number of positions occupied by the sample population during the last five years is presented in Table IV-7. This table shows that 39.2 percent of the sample population have occupied the same position during the last five years. Table IV-8 points out that the percentage that occupied only one position during the last five years increased as the position level increased. For example 43.8 percent of the managers and 46.9 percent of the vice-presidents held only one position while only 32 percent of the buyers and 38 percent of the purchasing agents held only one position. One possible reason for this relationship is that in many firms manager

TABLE IV-7

FREQUENCIES CONCERNING THE NUMBER OF POSITIONS HELD BY  
EACH RESPONDENT DURING THE LAST FIVE YEARS

Number of Positions	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
One	427	39.2	39.2
Two	400	36.7	75.9
Three	190	17.4	93.3
Four	52	4.8	98.1
Five or More	<u>21</u>	<u>1.9</u>	100.0
Total	1,090	100.0	

of purchasing or vice-president of purchasing are the highest level purchasing positions. Once these positions are reached, there is no further room for advancement within the purchasing area. Hence, those who are fortunate enough to reach these positions have a tendency to remain in them for longer periods of time.

Table IV-7 also points out that 36.7 percent of the sample occupied two positions during the last five years. Table IV-8 shows that the percentage that occupied two positions tended to decrease as position level increased. Only 17.4 percent of the purchasers in the sample occupied three positions. Again the percentage tended to decrease as position level increased. Table IV-7 further points out that only 6.7 percent of the sample occupied four or more positions during the last five years. No meaningful analysis of this group

TABLE IV-8

CROSS TABULATION OF PRESENT POSITION WITH THE NUMBER  
OF POSITIONS HELD DURING THE LAST FIVE YEARS

Present Position	Positions--Last Five Years					Row Total
	One	Two	Three	Four	Five or More	
Assistant Buyer	1 (12.5)	4 (50)	2 (25)	1 (12.5)	0 (0)	8 (100.0)
Buyer	40 (32)	53 (42.4)	23 (18.4)	6 (4.9)	3 (2.4)	125 (100.0)
Purchasing Agent	126 (38)	137 (41.3)	55 (16.6)	9 (2.7)	5 (1.5)	332 (100.0)
Manager of Purchasing	203 (43.8)	145 (31.3)	83 (17.9)	21 (4.5)	11 (2.4)	463 (100.0)
V. P. of Purchasing	30 (46.9)	23 (35.9)	10 (15.6)	0 (0)	1 (1.6)	64 (100.0)
Researcher	2 (18.2)	6 (54.5)	1 (9.1)	2 (18.2)	0 (0)	11 (100.0)
Other	25 (28.7)	32 (36.8)	16 (18.4)	13 (14.9)	1 (1.1)	87 (100.0)

Note: Row percentages are in parentheses.

could be made, however, due to the small sample sizes of some of the position categories.

### Age

The ages of the sample population are presented in Table IV-9. As the table shows, the largest portion of the sample is fairly evenly distributed between the ages of 30 and 60. Table IV-10 shows that age tended to increase as position level increased. For example,

TABLE IV-9

## RESPONDENT FREQUENCIES CONCERNING AGE

Age	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Less than 30	107	9.8	9.8
30-40	324	29.7	39.5
41-50	317	29.1	68.6
51-60	271	24.9	93.5
Over 60	<u>71</u>	<u>6.5</u>	
Total	1,090	100.0	

as position level increased from buyer to vice-president, the percentage of purchasers who were less than 41 years of age decreased. On the other hand, as position level increased, the number of purchasers who were 41 years of age or older increased. One possible reason for this is that in many firms people are advanced, at least partly, on the basis of experience. One of the natural results of increased experience is increased age.

Years With Current Firm

The number of years each person in the sample had spent with his current firm is presented in Table IV-11. As the table shows, the largest percentage of purchasers had been with their firm for less than five years. Table IV-12 shows, however, that as position level increased from assistant buyer to vice-president, the percentage of

TABLE IV-10

## CROSSTABULATION OF PRESENT POSITION WITH AGE

Present Position	Age					Row Total
	Less than 30	30-40	41-50	51-60	Over 60	
Assistant Buyer	4 (50)	1 (12.5)	1 (12.5)	2 (25)	0 (0)	8 (100.0)
Buyer	34 (27.2)	45 (36.0)	28 (22.4)	8 (6.4)	10 (8)	125 (100.0)
Purchasing Agent	44 (13.3)	103 (31.0)	81 (24.4)	82 (24.7)	22 (6.6)	332 (100.0)
Manager of Purchasing	18 (3.9)	135 (29.4)	149 (32.2)	134 (28.9)	26 (5.6)	463 (100.0)
V. P. of Purchasing	1 (1.6)	13 (20.3)	20 (31.3)	20 (31.3)	10 (15.6)	64 (100.0)
Researcher	1 (9.1)	2 (18.2)	4 (36.4)	3 (27.3)	1 (9.1)	11 (100.0)
Other	5 (5.7)	24 (27.6)	34 (39.1)	22 (25.3)	2 (2.3)	87 (100.0)

Note: Row percentages are in parentheses.

purchasers who had been with their firm for less than five years tended to decrease. It is very interesting to note, on the other hand, that 23.5 percent of the managers and 25.0 percent of the vice-presidents had been with their companies less than five years. This indicates that nearly one-fourth of the individuals who occupied these higher level positions had probably moved into them from outside firms.

Table IV-11 also shows that 25.2 percent of the sample population had been with their present firms for more than twenty years.

TABLE IV-11

## RESPONDENT FREQUENCIES CONCERNING YEARS WITH CURRENT FIRM .

Number of Years with Current Firm	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Less than 5	293	26.7	26.9
5-10	253	23.2	50.1
11-15	148	13.6	63.6
16-20	121	11.1	74.8
More than 20	<u>275</u>	<u>25.2</u>	100.0
Total	1,090	100.0	

Table IV-12 shows that the percentage of these individuals tended to increase as position level increased. How much more than twenty years is a question that cannot be answered from the above data. To make these data more meaningful, the categories in Table IV-11 should have been expanded in five-year increments on out to at least more than forty years. From the existing data, there is no way to determine the actual make-up of this "more than 20" category and the analysis potential of these data is greatly reduced.

Years of Purchasing Experience

Experience has long been discussed in purchasing circles as an important determinant of purchasing effectiveness. The information contained in Tables IV-13 and IV-14 was gathered in order to determine if in fact there was any relationship between purchasing

TABLE IV-12

CROSSTABULATION OF PRESENT POSITION WITH YEARS  
WITH CURRENT FIRM

Present Position	Years with Current Firm					Row Total
	Less than 5	5-10	11-15	16-20	More than 20	
Assistant Buyer	5 (62.5)	0 (0)	2 (25)	0 (0)	1 (12.5)	8 (100.0)
Buyer	50 (40)	32 (25.6)	15 (12)	8 (6.4)	20 (16)	125 (100.0)
Purchasing Agent	93 (28)	81 (24.4)	42 (12.7)	36 (10.8)	80 (24.1)	332 (100.0)
Manager of Purchasing	109 (23.5)	102 (22)	70 (15.1)	56 (12.1)	126 (27.2)	463 (100.0)
V. P. of Purchasing	16 (25)	10 (15.6)	7 (10.9)	7 (10.9)	24 (37.5)	64 (100.0)
Reseacher	2 (18.2)	1 (9.1)	2 (18.2)	1 (9.1)	5 (45.5)	11 (100.0)
Other	18 (20.7)	27 (31.0)	10 (11.5)	13 (14.9)	19 (21.8)	87 (100.0)

Note: Row percentages are in parentheses.

experience and purchasing effectiveness. Table IV-13 shows that the sample population was fairly evenly divided in terms of experience levels. The analysis potential of this data could have been greatly improved, however, if the "years in purchasing" categories had been expanded in five-year increments on out to at least more than forty years. From the data shown in Table IV-13, there is no way to determine the actual make-up of the "more than 20" category.

TABLE IV-13  
RESPONDENT FREQUENCIES CONCERNING YEARS  
OF PURCHASING EXPERIENCE

Number of Years in Purchasing	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Less than 5	198	18.2	18.2
5-10	282	25.9	44.0
11-15	195	17.9	61.9
16-20	169	15.5	77.4
More than 20	<u>249</u>	<u>22.6</u>	
Total	1,090	100.0	

Table IV-14 shows there is a relationship between the level of experience and position level. For example, as position level increased from assistant buyer to vice-president, the percentage of purchasers with ten or less years of experience decreased. On the other hand, as position level increased, the percentage of purchasers with eleven or more years of experience increased.



TABLE IV-14

**CROSSTABULATION OF PRESENT POSITION  
WITH YEARS OF PURCHASING EXPERIENCE**

Present Position	Years of Purchasing Experience					Row Total
	Less than 5	5-10	11-15	16-20	More than 20	
Assistant Buyer	5 (62.5)	2 (25)	1 (12.5)	0 (0)	0 (0)	8 (100.0)
Buyer	53 (42.4)	39 (31.2)	15 (12.0)	7 (5.6)	11 (8.8)	125 (100.0)
Purchasing Agent	59 (17.8)	114 (34.3)	55 (16.6)	48 (14.5)	55 (16.9)	332 (100.0)
Manager of Purchasing	62 (13.4)	95 (20.5)	92 (19.9)	85 (18.4)	129 (27.9)	463 (100.0)
V. P. of Purchasing	5 (7.8)	7 (10.9)	12 (18.8)	13 (20.3)	27 (42.2)	64 (100.0)
Researcher	3 (27.3)	2 (18.2)	1 (9.1)	3 (27.3)	2 (18.2)	11 (100.0)
Other	11 (12.6)	23 (26.4)	19 (21.8)	13 (14.9)	21 (24.1)	87 (100.0)

Note: Row percentages are in parentheses.

**Salary Level**

The salary levels of the sample population are presented in Table IV-15. As the table shows, less than 2 percent of the sample made less than \$10,000; slightly more than 20 percent made \$25,000 or more. Because of limited number of salary categories used to gather the data in Table IV-15, there was no way to determine the complete salary range for the purchasers in the sample. This problem could have been eliminated, however, if the number of salary categories had been expanded in \$5,000 increments on out to at least \$50,000

TABLE IV-15  
FREQUENCIES CONCERNING SALARY LEVEL

Current Salary Level	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Under 10,000	20	1.8	1.8
10,000 - 14,999	271	24.9	26.7
15,000 - 19,999	352	32.3	59.0
20,000 - 24,999	228	20.9	79.9
25,000 or over	<u>219</u>	<u>20.1</u>	100.0
Total	1,090	100.0	

per year or over.

Table IV-16 shows that a positive relationship exists between position level and salary level. For example, as position level increased from assistant buyer to vice-president, the percentage of purchasers making \$14,999 or less tended to decrease, and the percentage of purchasers making \$15,000 or more tended to increase. Table IV-16 further shows that nearly 80 percent of the purchasers making \$25,000 or over were either managers or vice-presidents.

Percentage Salary Increase--Last Five Years

The data concerning the rate of salary increase of the sample population during the last five years are presented in Table IV-17. The table shows that only 7.8 percent of the sample received salary increases of 10 percent or less during the last five years; 18.2 percent received increases of more than 50 percent during the

TABLE IV-16  
CROSSTABULATION OF PRESENT POSITION  
WITH SALARY LEVEL

Present Position	Salary Level					Row Total
	Under 10,000	10,000 14,999	15,000 19,999	20,000 24,999	25,000 and over	
Assistant Buyer	1 (12.5)	6 (75)	1 (12.5)	0 0	0 0	8 (100.0)
Buyer	9 (7.2)	69 (55.2)	34 (27.2)	12 (9.6)	1 (.8)	125 (100.0)
Purchasing Agent	6 (1.8)	123 (37.0)	125 (37.7)	61 (18.4)	17 (5.1)	332 (100.0)
Manager of Purchasing	3 (.6)	59 (12.7)	154 (33.3)	125 (27.0)	122 (26.3)	463 (100.0)
V. P. of Purchasing	0 (0)	1 (1.5)	9 (14.1)	7 (10.9)	47 (73.4)	64 (100.0)
Researcher	0 (0)	3 (27.3)	5 (45.5)	0 (0)	3 (27.3)	11 (100.0)
Other	1 (1.1)	10 (11.5)	27 (31.0)	23 (26.4)	26 (29.9)	87 (100.0)

Note: Row percentages are in parentheses.

last five years. Table IV-18 shows there was a slight tendency for those occupying higher level positions to receive higher salary increases. For example, 52.6 percent of the vice-presidents and 36.5 percent of the managers received salary increases of 41 percent or greater. In contrast, only 28.4 percent of the purchasing agents and 36.0 percent of the buyers received salary increases of 41 percent or greater.

Because the salary increase data were gathered using only

TABLE IV-17

FREQUENCIES CONCERNING PERCENTAGE SALARY INCREASE  
DURING THE LAST FIVE YEARS

Percentage Salary Increase	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
0-10	85	7.8	7.8
11-20	214	19.6	27.4
21-30	238	21.8	49.3
31-40	170	15.6	64.9
41-50	185	17.0	81.8
More than 50	<u>198</u>	<u>18.2</u>	100.0
Total	1,090	100.0	

the categories presented in Table IV-17, the complete range of salary increases for the sample population could not be determined. This shortcoming could have been avoided if the number of 10 percent salary categories had been expanded, or if an open-ended response had been used for salary increases beyond 50 percent.

Satisfaction With Purchasing Career

Information concerning the respondents' level of satisfaction with their career progress in purchasing is summarized in Table IV-19. The table shows that only 17.3 percent of the sample population expressed themselves as being either very dissatisfied, moderately dissatisfied, or neutral in regard to their purchasing career progress, and 82.6 percent were either moderately or very satisfied.

TABLE IV-18

**CROSSTABULATION OF PRESENT POSITION WITH PERCENTAGE  
SALARY INCREASE DURING THE LAST FIVE YEARS**

Present Position	Percentage Salary Increase						Row Total
	0-10	11-20	21-30	31-40	41-50	More than 50	
Assistant Buyer	1 (12.5)	2 (25)	2 (25)	2 (25)	1 (12.5)	0 (0)	8 (100.0)
Buyer	21 (16.8)	28 (22.4)	20 (16.0)	11 (8.8)	21 (16.8)	24 (19.2)	125 (100.0)
Purchasing Agent	26 (7.8)	66 (19.9)	90 (27.1)	54 (16.2)	48 (14.4)	648 (14.4)	332 (100.0)
Manager of Purchasing	27 (5.8)	93 (20.1)	94 (20.3)	79 (17.1)	83 (17.9)	87 (18.8)	463 (100.0)
V. P. of Purchasing	2 (3.1)	6 (9.4)	12 (18.8)	10 (15.6)	15 (23.4)	19 (29.7)	64 (100.0)
Researcher	0 (0)	2 (18.1)	3 (27.3)	2 (18.1)	2 (18.1)	2 (18.1)	11 (100.0)
Other	8 (9.1)	17 (19.5)	17 (19.5)	12 (13.8)	15 (17.2)	18 (20.7)	87 (100.0)

Note: Row percentages are in parentheses.

TABLE IV-19

**FREQUENCIES CONCERNING THE RESPONDENTS' SATISFACTION  
WITH THEIR PURCHASING CAREER**

Satisfaction Level	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Very Dissatisfied	27	2.5	2.5
Moderately Dissatisfied	92	8.4	10.9
Neutral	70	6.4	17.3
Moderately Satisfied	565	51.8	69.2
Very Satisfied	336	30.8	100
Total	1,090	100.0	

Although this response pattern is heavily skewed toward the "very satisfied" of the response scale, Table IV-20 does reveal a positive relationship between position level and satisfaction with purchasing career. For example, as position level increased from assistant buyer to vice-president, the percentage of purchasers who were either neutral, moderately dissatisfied, or very dissatisfied tended to decrease. Conversely, as position level increased, the percentage of purchasers who were either moderately satisfied or very satisfied tended to increase.

TABLE IV-20  
CROSSTABULATION OF PRESENT POSITION WITH  
SATISFACTION WITH PURCHASING CAREER

Present Position	Satisfaction with Purchasing Career					Row Total
	Very Diss.	Mod. Diss.	Neutral	Mod. Sat.	Very Sat.	
Assistant Buyer	0 (0)	2 (25)	0 (0)	4 (50)	2 (25)	8 (100.0)
Buyer	8 (6.4)	19 (15.2)	10 (8.0)	65 (52)	23 (18.4)	125 (100.0)
Purchasing Agent	2 (.6)	30 (9)	24 (7.2)	177 (53.3)	99 (29.8)	332 (100.0)
Manager of Purchasing	11 (1.0)	32 (6.9)	25 (5.4)	243 (52.5)	152 (32.8)	463 (100.0)
V. P. of Purchasing	2 (3.1)	3 (4.7)	1 (1.6)	22 (34.4)	36 (56.3)	64 (100.0)
Researcher	1 (9.1)	0 (0)	1 (9.1)	7 (63.6)	2 (18.2)	11 (100.0)
Other	3 (3.4)	6 (6.9)	9 (10.3)	47 (54.0)	22 (25.3)	87 (100.0)

Note: Row percentages are in parentheses.

Satisfaction With Current Firm

Table IV-21 summarizes the respondents' level of satisfaction with the firm they currently worked for. This table is similar to Table IV-19 in that 17.5 percent of the sample were either neutral, moderately dissatisfied, or very dissatisfied with their current firm. On the other hand, 82.4 percent of the sample were either moderately or very satisfied with their current firm. Although this response pattern is heavily skewed toward the "very satisfied" end of the response scale, Table IV-22 does reveal a slight positive relationship between position level and satisfaction with one's firm. For example, as position level increased from assistant buyer to vice-president, the percentage of purchasers that were either moderately or very dissatisfied tended to decrease. Conversely, as position level increased, the percentage of purchasers who were either moderately or very satisfied with their present firm tended to increase.

TABLE IV-21

FREQUENCIES CONCERNING THE RESPONDENTS' SATISFACTION  
WITH THEIR CURRENT FIRM

Satisfaction Level	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Very Dissatisfied	41	3.8	3.8
Moderately Dissatisfied	108	9.9	13.7
Neutral	42	3.9	17.5
Moderately Satisfied	407	37.3	54.9
Very Satisfied	<u>492</u>	<u>45.1</u>	100.0
Total	1,090	100.0	

TABLE IV-22

**CROSSTABULATION OF PRESENT POSITION  
WITH SATISFACTION WITH CURRENT FIRM**

Present Position	Satisfaction with Current Firm					Row Total
	Very Diss.	Mod. Diss.	Neutral	Mod. Sat.	Very Sat.	
Assistant Buyer	0 (0)	3 (37.5)	0 (0)	2 (25)	3 (37.5)	8 (100.0)
Buyer	9 (7.2)	21 (16.8)	4 (3.2)	49 (39.2)	42 (33.6)	125 (100.0)
Purchasing Agent	10 (3.0)	27 (8.1)	16 (4.8)	124 (37.3)	155 (46.7)	332 (100.0)
Manager of Purchasing	17 (3.7)	38 (8.2)	17 (3.7)	177 (38.2)	214 (46.2)	463 (100.0)
V. P. of Purchasing	2 (3.1)	6 (9.4)	0 (0)	16 (25)	40 (62.5)	64 (100.0)
Researcher	1 (9.1)	0 (0)	0 (0)	5 (45.5)	5 (45.5)	11 (100.0)
Other	2 (2.3)	13 (14.9)	5 (5.7)	34 (39.1)	33 (37.9)	87 (100.0)

Note: Row percentages are in parentheses.

**Number of Professional Associations**

The information concerning the number of professional associations in which purchasers in the sample held active membership is presented in Table IV-23. Examples of professional associations include the National Association of Purchasing Management and the American Production and Inventory Control Society. Table IV-23 shows that nearly 70 percent of the sample belonged to only one professional association and less than 30 percent belonged to two or more.

Although there is very little dispersion in this pattern of response,



TABLE IV-23

FREQUENCIES CONCERNING THE NUMBER OF PROFESSIONAL ASSOCIATIONS IN WHICH THE RESPONDENTS HELD MEMBERSHIP

Number of Associations	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
0	65	6.0	6.0
1	734	67.3	73.3
2	201	18.4	91.7
3	63	5.8	97.5
4	19	1.7	99.3
5	5	.5	99.7
6	2	.2	99.9
7	<u>1</u>	<u>.1</u>	100.0
Total	1,090	100.0	

Table IV-24 does reveal a positive relationship between position level and the number of professional associations. For example, as position level increased, the percentage of purchasers who belonged to either zero or one association tended to decrease. On the other hand, as position level increased, the percentage of purchasers who belonged to two or more associations tended to increase.

Number of Professional Development Activities

The data concerning the number of professional development activities attended per year by purchasers in the sample population is presented in Table IV-25. Examples of professional development

TABLE IV-24

CROSSTABULATION OF PRESENT POSITION WITH  
NUMBER OF PROFESSIONAL ASSOCIATIONS

Present Position	Number of Professional Associations						Row Total
	Zero	One	Two	Three	Four	Five or More	
Assistant Buyer	2 (25)	5 (62.5)	1 (12.5)	0 (0)	0 (0)	0 (0)	8 (100.0)
Buyer	9 (7.2)	92 (73.6)	21 (16.8)	2 (1.6)	1 (.8)	0 (0)	125 (100.0)
Purchasing Agent	26 (7.8)	236 (71.1)	51 (15.4)	12 (3.6)	12 (3.6)	2 (.6)	332 (100.0)
Manager of Purchasing	21 (4.5)	305 (65.9)	92 (19.9)	34 (7.3)	34 (7.3)	2 (.4)	463 (100.0)
V. P. of Purchasing	2 (3.1)	36 (56.3)	14 (21.9)	7 (10.9)	7 (10.9)	3 (4.7)	64 (100.0)
Researcher	0 (0)	9 (81.8)	1 (9.1)	1 (9.1)	1 (9.1)	0 (0)	11 (100.0)
Other	5 (5.7)	51 (58.6)	21 (24.1)	7 (8)	7 (8)	1 (1.1)	87 (100.0)

activities include seminars, meetings, training programs, etc. Table IV-25 shows that nearly 50 percent of the sample attend three or less professional development activities per year. This finding implies that although most purchasers in the sample belonged to at least one professional association, a substantial proportion of these people do not very actively participate in their association's activities. This finding implies that employers who paid the membership fees for these relatively inactive members probably did not get much in the way of return on investment. On the brighter side, Table IV-25 shows that nearly 30 percent of the sample attended four to seven activities

per year and nearly 25 percent attended eight or more activities per year.

TABLE IV-25  
FREQUENCIES CONCERNING THE NUMBER OF PROFESSIONAL  
DEVELOPMENT ACTIVITIES ATTENDED PER YEAR

Number of Activities	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
0-3	507	46.5	46.5
4-7	324	29.7	76.3
8-11	135	12.4	88.6
12-15	83	7.6	96.3
More than 15	<u>41</u>	<u>3.8</u>	100.0
Total	1,090	100.0	

Table IV-26 shows that the pattern of response for each position level tended to be similar to the general pattern of response shown in Table IV-25. Thus, there appears to be no direct relationship between position level and the number of professional development activities attended per year.

TABLE IV-26

CROSSTABULATION OF PRESENT POSITION WITH THE NUMBER  
OF PROFESSIONAL DEVELOPMENT ACTIVITIES  
ATTENDED PER YEAR

Present Position	<u>Number of Professional Development Activities</u>					Row Total
	0-3	4-7	8-11	12-15	More than 15	
Assistant Buyer	4 (50)	3 (37.5)	0 (0)	1 (12.5)	0 (0)	8 (100.0)
Buyer	61 (20.8)	26 (14.4)	17 (14.4)	15 (12)	6 (4.8)	125 (100.0)
Purchasing Agent	162 (48.8)	86 (25.9)	46 (15.2)	21 (6.3)	17 (5.1)	332 (100.0)
Manager of Purchasing	208 (44.9)	154 (33.3)	56 (12.1)	33 (7.1)	12 (2.6)	463 (100.0)
V. P. of Purchasing	28 (43.8)	19 (29.7)	8 (12.5)	6 (9.4)	3 (4.7)	64 (100.0)
Researcher	1 (9.1)	4 (36.4)	4 (36.4)	1 (9.1)	1 (9.1)	11 (100.0)
Other	40 (46)	32 (36.8)	7 (8)	6 (6.9)	2 (2.3)	87 (100.0)

Note: Row percentages are in parentheses.

Education Level

Table IV-27 summarizes the education levels achieved by the purchasers in the sample population. The table shows that nearly 50 percent had achieved a bachelor's degree or higher and that 8.7 percent had achieved an advanced degree.

The data in Table IV-28 shows there is a positive relationship between position level and education level. For example, as position level increased, the percentage of purchasers with less than a

TABLE IV-27  
FREQUENCIES CONCERNING THE RESPONDENTS'  
EDUCATION LEVEL

Education Level	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
High School	105	9.6	9.8
Some College	450	41.3	51.1
Bachelor's Degree	296	27.2	78.1
Some Graduate School	144	13.2	91.3
Advanced Degree	<u>95</u>	<u>8.7</u>	100.0
Total	1,090	100.0	

TABLE IV-28  
CROSSTABULATION OF PRESENT POSITION WITH EDUCATION LEVEL

Present Position	Education Level					Row Total
	High School	Some College	Bachelor's Degree	Some Grad. School	Advanced Degree	
Assistant Buyer	1 (12.5)	4 (50.0)	2 (25.0)	1 (12.5)	0 (0)	8 (100.0)
Buyer	18 (14.4)	50 (40.0)	33 (26.4)	17 (13.6)	7 (5.6)	125 (100.0)
Purchasing Agent	37 (11.1)	153 (46.1)	86 (25.9)	32 (9.6)	24 (7.2)	332 (100.0)
Manager of Purchasing	41 (8.9)	184 (39.7)	136 (29.3)	65 (14.0)	37 (8.0)	463 (100.0)
V. P. of Purchasing	6 (9.4)	21 (32.8)	11 (17.2)	15 (23.4)	11 (17.2)	64 (100.0)
Researcher	0 (0)	6 (54.5)	2 (18.2)	1 (9.1)	2 (18.2)	11 (100.0)
Other	2 (2.3)	32 (36.8)	26 (29.9)	13 (14.9)	14 (16.1)	87 (100.0)

Note: Row percentages are in parentheses.

bachelor's degree tended to decrease. Conversely, as position level increased, the percentage of purchasers with a bachelor's degree or higher tended to increase. An interesting point worth noting is that 51.3 percent of the managers and 57.8 percent of the vice-presidents had a bachelor's degree or better; 40.6 percent of the vice-presidents had either attended graduate school or held an advanced degree.

#### Undergraduate Major

Information concerning the respondents' undergraduate college major is presented in Table IV-29. The table shows that the largest portion (51.6 percent) majored in business; 17.6 percent had either not attended college or had not selected a major area of study. The table also shows that 12.0 percent of the sample majored in engineering and 10.7 percent majored in either liberal arts or social science.

TABLE IV-29

#### FREQUENCIES CONCERNING RESPONDENTS' UNDERGRADUATE COLLEGE MAJOR

Undergraduate Major	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
None	192	17.6	17.6
Business	562	51.6	69.2
Engineering	131	12.0	81.2
Liberal Arts - Social Science	117	10.7	91.9
Science	60	5.5	97.4
Agriculture	13	1.2	98.6
Education	<u>15</u>	<u>1.4</u>	100.0
Total	1,090	100.0	

Table IV-30 shows that undergraduate majors were distributed across all purchasing positions in approximately the same proportion as shown in Table IV-29. Hence, there does not appear to be any direct relationship between position level and undergraduate college major.

#### Graduate Major

The graduate college majors of the sample population are presented in Table IV-31. As the table shows, 76.3 percent of the sample either did not attend graduate school or had not selected a major area of graduate study. Table IV-31 further points out that business was the most frequently chosen area of study among those who attended graduate school.

Table IV-32 shows that graduate majors were distributed across all position levels in much the same proportion as shown in Table IV-31. Thus, there does not appear to be any direct relationship between position level and graduate college major.

TABLE IV-30

## CROSSTABULATION OF PRESENT POSITION WITH UNDERGRADUATE COLLEGE MAJOR

Present Position	Undergraduate Major						Row Total
	None	Business	Engineering	Lib. Art. Soc. Sci.	Science	Agriculture	
Assistant Buyer	1 (12.5)	4 (50.0)	1 (12.5)	2 (25.0)	0 (0)	0 (0)	8 (100.0)
Buyer	23 (18.4)	60 (48.0)	12 (9.6)	20 (16.0)	6 (4.8)	2 (1.6)	125 (100.0)
Purchasing Agent	60 (18.1)	172 (51.8)	41 (12.3)	36 (10.8)	11 (3.3)	7 (2.1)	332 (100.0)
Manager of Purchasing	88 (19.0)	237 (51.2)	58 (12.5)	42 (9.1)	30 (6.5)	3 (.6)	463 (100.0)
V. P. of Purchasing	11 (17.2)	30 (46.9)	7 (10.9)	8 (12.5)	6 (9.4)	1 (1.6)	64 (100.0)
Researcher	0 (0)	7 (63.6)	1 (9.1)	2 (18.2)	0 (0)	0 (0)	11 (100.0)
Other	9 (10.3)	52 (59.8)	11 (12.6)	7 (8.0)	7 (88.0)	0 (0)	87 (100.0)

Note: Row percentages are in parentheses.



TABLE IV-31

FREQUENCIES CONCERNING RESPONDENTS'  
GRADUATE COLLEGE MAJOR

Graduate Major	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
None	830	76.3	76.3
Business	196	17.9	94.1
Engineering	19	1.7	95.9
Liberal Arts - Social Science	23	2.1	98.0
Science	13	1.2	99.2
Agriculture	2	.2	99.4
Education	<u>7</u>	<u>.6</u>	100.0
Total	1,090	100.0	

TABLE IV-32

## CROSSTABULATION OF PRESENT POSITION WITH GRADUATE COLLEGE MAJOR

Present Position	Graduate Major						Row Total
	None	Business	Engineering	Lib. Art. Soc. Sci.	Science	Agri-culture	Edu-cation
Assistant Buyer	7 (87.5)	1 (12.5)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Buyer	100 (80.0)	18 (14.4)	3 (2.4)	2 (1.6)	1 (.8)	1 (.8)	0 (0)
Purchasing Agent	269 (81.0)	46 (13.9)	4 (1.2)	6 (1.8)	3 (.9)	1 (.3)	3 (.9)
Manager of Purchasing	350 (75.6)	87 (18.8)	7 (1.5)	8 (1.7)	7 (1.5)	0 (0)	4 (.9)
V. P. of Purchasing	37 (57.8)	22 (34.4)	1 (1.6)	3 (4.7)	1 (1.6)	0 (0)	0 (0)
Researcher	8 (72.7)	0 (0)	1 (9.1)	1 (9.1)	1 (0)	0 (0)	0 (0)
Other	59 (67.8)	22 (25.3)	3 (3.4)	3 (3.4)	0 (0)	0 (0)	0 (0)

Note: Row percentages are in parentheses.

Employer's Line of Business

Information concerning the type of business activity of the respondents' employers is summarized in Table IV-33. This table shows that more than 60 percent of the sample population worked for industrial firms.

TABLE IV-33

FREQUENCIES CONCERNING THE LINE OF BUSINESS  
OF THE RESPONDENTS' EMPLOYERS

Line of Business	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Educational	47	4.3	4.3
Governmental	92	8.4	12.8
Industrial	667	61.2	74.0
Institutional	24	2.2	76.2
Wholesale	58	5.3	81.5
Retail	28	2.6	84.1
Other	<u>173</u>	<u>15.9</u>	100.0
Total	1,089	100.0	

The category "other," which appears in Table IV-33 was used to categorize purchasers whose employer's line of business did not fit one of the other categories. Since a marked-sense format was used to gather this information, there was no way to determine what types of firms were included in this category. Some of the unsolicited comments that appeared on some of the questionnaires indicated that a number of these people worked for utility firms. In the future, it is suggested that the "other" category either be replaced with several additional types of firms or an open-ended response.

Table IV-34 shows that the different lines of business were distributed across all position levels in much the same proportion as they appear in Table IV-33. Hence, there does not appear to be any direct relationship between position level and the employer's line of business.

### Sex

Table IV-35 shows that 95.2 percent of the sample population were men and only 4.8 percent were women. This ratio of men to women did not seem to be abnormal although there is reason to believe that it will change significantly in the future as more women enter the purchasing profession. Table IV-36 compares the distribution of men and women across all purchasing jobs. The table shows that a higher percentage of women tended to occupy lower level positions and a higher percentage of men tended to occupy the higher level positions. For example, 25.0 percent of the women were buyers as contrasted to only 10.8 percent of the men. On the other hand, 43.4 percent of the men were managers of purchasing as contrasted



TABLE IV-34

## CROSSTABULATION OF PRESENT POSITION WITH EMPLOYER'S LINE OF BUSINESS

Present Position	Employer's Line of Business					Row Total
	Educational	Governmental	Industrial	Institutional	Wholesale	
Assistant Buyer	2 (25.0)	1 (12.5)	4 (50.0)	1 (12.5)	0 (0)	8 (100.0)
Buyer	5 (4.0)	15 (12.0)	73 (58.4)	2 (1.6)	4 (3.2)	125 (100.0)
Purchasing Agent	11 (3.3)	40 (12.1)	198 (59.8)	7 (2.1)	8 (2.4)	331 (100.0)
Manager of Purchasing	22 (4.8)	25 (5.4)	295 (63.7)	12 (2.6)	11 (2.4)	463 (100.0)
V. P. of Purchasing	4 (6.3)	5 (7.8)	33 (51.6)	2 (3.1)	4 (6.3)	64 (100.0)
Researcher	0 (0)	2 (18.2)	7 (63.6)	0 (0)	0 (0)	11 (100.0)
Other	3 (3.4)	4 (4.6)	57 (65.5)	0 (0)	1 (1.1)	87 (100.0)

Note: Row percentages are in parentheses.



TABLE IV-35

FREQUENCIES CONCERNING THE NUMBER OF MALES  
AND FEMALES AMONG THE RESPONDENTS

Sex	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
Male	1,038	95.2	95.2
Female	<u>52</u>	<u>4.8</u>	100.0
Total	1,090	100.0	

TABLE IV-36

CROSSTABULATION OF PRESENT POSITION  
WITH SEX

Present Position	Sex	
	Male	Female
Assistant Buyer	6 (.6)	2 (3.8)
Buyer	112 (10.8)	13 (25.0)
Purchasing Agent	311 (30.0)	21 (40.4)
Manager of Purchasing	451 (43.4)	12 (23.1)
V. P. of Purchasing	63 (6.1)	1 (1.9)
Researcher	10 (1.0)	1 (1.9)
Other	85 (8.2)	2 (3.8)

Note: Column percentages are in parentheses.



to 23.1 percent of the women. In addition, 6.1 percent of the men were vice-presidents in contrast to only 1.0 percent of the women. It should also be noted that one woman made up this 1.9 percent.

### Summary

The foregoing analysis revealed a number of shortcomings concerning both the sample population and the data collected from the sample population. With respect to the sample population, the analysis uncovered an example of possible sample bias. This example centered around the fact that the ratio of managers of purchasing to assistant buyers within the sample population was 58 to 1. It concluded that although such a ratio of managers to assistant buyers may be representative of the population of N.A.P.M. affiliated purchasers, it was probably not representative of the total population of purchasers in general.

From the standpoint of data collection, the analysis revealed a number of shortcomings. One of these shortcomings involved the repeated use of the response category "other." Since a marked-sense questionnaire format was used to collect the data, this response category was designed to categorize responses that did not fit the categories listed in the questionnaire. As a result there was no way to determine the make-up of any of the "other" categories. This problem could have been avoided, however, if larger and more inclusive sets of response categories had been made available to the respondents, or if the "other" category had been replaced with an open-ended response.

Another data collection shortcoming involved several



instances where there were not enough response categories to accommodate the entire range of possible responses. This problem could have been avoided if the number of response categories had been increased, or if the highest response category had been made open-ended.

In spite of these biases and shortcomings, however, the data collected still proved useful for providing information concerning purchasing effectiveness. What is important to note is that these shortcomings and biases were recognized, and that the conclusions drawn from these data were made after giving full consideration to these biases and shortcomings.

## CHAPTER V

### PURCHASING PERFORMANCE MEASURES AND PURCHASING EFFECTIVENESS

The evaluation of the purchasing performance measures (questions 76-85 on the mail questionnaire) as they relate to purchasing effectiveness was accomplished in the following manner: first, the marketplace was utilized to identify a group of extremely more effective and a group of extremely less effective purchasers. Second, these two groups of purchasers were then compared and analyzed according to their scores on the ten purchasing performance measures. Third, as a result of this analysis, several of the purchasing performance measures were then combined into a Purchasing Performance Index. This index was subsequently used as a measure of purchasing effectiveness for the entire sample of purchasers.

#### Using the Marketplace to Determine More Effective and Less Effective Purchasers

Using the marketplace to determine who were more or less effective purchasers was based on the assumption that those individuals who received larger rewards tended to be more effective purchasers than those who received smaller rewards. The major problem in applying this assumption was deciding which reward or combination of rewards would best serve as criteria for determining who are more and less effective purchasers.

### Salary Level as a Criterion of Purchasing Effectiveness

The use of salary level as a criterion of purchasing effectiveness was based upon the premise that purchasers who received higher salaries tended to be more effective than those who received lower salaries. In order to test this premise, the sample of purchasers was divided into five groups in accordance with the salary level they were currently receiving. Since the group making under \$10,000 per year contained only twenty purchasers, it was decided to drop this group from the analysis due to the small sample size. The average scores of each of the four remaining salary groups on the ten purchasing performance measures were then compared to see which, if any, of these performance measures were related to salary level.

Also, several socioeconomic measures of these four salary groups were examined in this analysis. These were age, years with current firm, and years of purchasing experience. These measures were included in the analysis because it was suspected that one or more of these measures might be closely related to salary level. If this were the case, then any observed relationships between salary level and the performance measures might actually be the result of a relationship between one or more of the socioeconomic measures and the performance measures. This would imply that salary level was not an independent indicator of purchasing effectiveness, but, instead, might only be the result of age, years with current firm, or years of purchasing experience. The mean scores of the four salary groups on the purchasing performance measures as well as their mean scores on the socioeconomic measures are presented in Table V-1.

TABLE V-1

**COMPARISON OF PURCHASERS' SALARY LEVELS WITH SCORES  
ON THE TEN PURCHASING PERFORMANCE MEASURES AND  
SELECTED SOCIOECONOMIC MEASURES**

Performance Measures	Performance and Socioeconomic Scores			
	N=271 \$10,000- \$14,999	N=352 \$15,000- \$19,999	N=278 \$20,000- \$24,999	N=216 \$25,000 or More
Profit Potential	3.89	4.09	4.18	4.34
Procedures	4.08	4.17	4.09	4.18
Sourcing	3.96	4.02	4.00	4.14
Personal Skills	3.91	4.01	4.15	4.34
Departmental Coordination	3.67	3.96	4.05	4.19
Negotiation	3.92	4.08	4.21	4.34
Product Research	3.70	3.78	3.73	3.69
Interfirm Coordination	3.50	3.73	3.90	4.01
Quality Assurance	3.50	3.61	3.48	3.59
Overall Effectiveness	3.98	4.13	4.26	4.35
<u>Socioeconomic Measures</u>				
Age	2.40	2.83	3.12	3.44
Years with Current Firm	2.22	2.75	3.16	3.57
Years of Purchasing Experience	2.17	3.03	3.37	3.70

Note: N = The number of respondents in each salary group.

It becomes apparent upon examining the purchasing performance scores of the four salary groups that several of the performance measures demonstrated a positive and fairly consistent relationship with salary level. For example, as salary level increased, the profit potential scores also increased in fairly consistent increments. A similar relationship with salary level held true for personal skills, departmental coordination, negotiation, interfirm coordination, and overall effectiveness.

Several of the performance measures, however, did not demonstrate consistent relationships with salary level. For example, Table V-1 shows that as salary level increased from the \$10,000-\$14,999 bracket to the \$15,000-\$19,999 bracket, the procedures score also increased from 4.08 to 4.17. As salary level increased to the next higher bracket, however, the corresponding procedures score did not increase, but actually decreased to 4.09. Finally, as salary level increased to the \$25,000 and over bracket, the procedures score reversed direction again and increased. This same sort of inconsistent relationship with salary level also held true for sourcing, product research, and quality assurance.

As shown in Table V-1, all three of the socioeconomic measures demonstrated positive and consistent relationships with salary level. This implies that the apparent relationship between profit potential, personal skills, departmental coordination, negotiation, interfirm coordination, overall effectiveness and a purchaser's salary level might be the result of a relationship between these same six performance measures and either age, years with current firm, or years of purchasing experience. For this reason, it was decided to examine





other purchasing effectiveness criteria.

#### Position Level as Criterion of Purchasing Effectiveness

In using position level as a criterion of effectiveness, it was assumed that purchasers who occupied higher position levels tended to be more effective than those who occupied lower position levels. It was further assumed that a purchasing agent occupied a higher organizational position than a buyer, a manager of purchasing occupied a higher position than a purchasing agent, and a vice-president of purchasing occupied a higher position than a manager of purchasing.

In order to test this effectiveness criterion, the sample of purchasers was divided into four groups according to the position they currently held. Two of the position level groups, namely assistant buyer and researcher, were not included in the analysis since they contained small sample sizes of only eight and eleven respondents, respectively. The position level category of "other" was also not included since there was no way to determine what level of position any of these people currently occupied. The average scores of each of the four remaining position level groups on the ten purchasing performance measures were then compared.

The purpose of this comparison was to see if any of the performance measures were related to position level. In addition, the same three socioeconomic measures included in the previous analysis were also included in this analysis. The mean scores of the four position level groups on each of the ten purchasing performance measures and on the three socioeconomic measures are presented in Table V-2.

TABLE V-2

COMPARISON OF PURCHASERS' POSITION LEVELS WITH THEIR  
SCORES ON THE TEN PURCHASING PERFORMANCE MEASURES  
AND SELECTED SOCIOECONOMIC MEASURES

Performance Measures	Performance and Socioeconomic Scores			
	Buyer N=125	Purchasing Agent N=332	Manager of Purchasing N=463	Vice-Pres. of Purchasing N=64
Profit Potential	3.72	4.00	4.18	4.55
Procedures	3.80	4.13	4.15	4.08
Sourcing	3.98	3.96	4.05	4.23
Personal Skills	3.72	3.98	4.13	4.52
Departmental Coordination	3.51	3.83	4.03	4.16
Negotiation	3.91	4.04	4.20	4.44
Product Research	3.61	3.78	3.69	3.86
Interfirm Coordination	3.46	3.58	3.84	4.03
Quality Assurance	3.44	3.54	3.56	3.75
Overall Effectiveness	3.90	4.12	4.23	4.36
<u>Socioeconomic Measures</u>				
Age	2.32	2.80	3.03	3.39
Years with Current Firm	2.33	2.79	2.97	3.20
Years of Purchasing Experience	2.07	2.78	3.27	3.78

Note: N = The number of respondents in each salary group.



The findings of this analysis were similar to the findings of the previous analysis in that the strongest and most consistent relationships were found between position level and the scores on the performance measures of profit potential, personal skills, departmental coordination, negotiation, interfirm coordination, and overall effectiveness. Also, similar to the previous analysis, the performance measures of procedures, sourcing, product research, and quality assurance demonstrated the weakest and least consistent relationships with the effectiveness criterion. Furthermore, as was the case of salary level, the three socioeconomic measures also demonstrated strong positive relationships with position level. This means that position level, as a criterion of effectiveness, has the same drawback as does salary level in that it may be the result of age, years with current firm, and years of purchasing experience rather than the result of purchasing effectiveness.

#### The Combination of Salary Level and Position Level as a Criterion of Effectiveness

In both the previous two analyses, the socioeconomic measures of age, years with current firm, and years of purchasing experience appeared to be interrelated with the effectiveness criterion and the performance measures. In an attempt to eliminate some of these apparent interrelationships, it was decided to combine position level and salary level into a single purchasing effectiveness criterion. The assumption was that within each position level, those purchasers who received higher salaries tended to be more effective than those who received lower salaries. The findings of this analysis were similar to those previously mentioned in that the strongest and most

consistent relationships were found between the combination of salary level and position level and the scores on profit potential, personal skills, departmental coordination, negotiation, interfirm coordination, and overall effectiveness. Also, similar to the previous analyses, the three socioeconomic measures again demonstrated strong positive relationships with the combination of salary level and position level. This implies that the socioeconomic measures are once again interrelated with the effectiveness criterion. For this reason it was decided to analyze still another effectiveness criterion.

The Combination of Salary Level and Salary Increases  
as a Criterion of Purchasing Effectiveness with  
the Socioeconomic Measures Controlled

In each of the previous analyses, the three socioeconomic measures appeared to be interrelated with the effectiveness criteria and the purchasing performance measures. In an effort to control these apparent interrelationships, two groups of extreme levels of purchasing effectiveness were selected so that the interrelationships with the socioeconomic measures ran counter to those observed in the previous analyses.

One group consisted of purchasers deemed by the marketplace to be extremely more effective, and the other group consisted of those purchasers the marketplace deemed to be extremely less effective. The marketplace criteria for selection was the combination of salary level and salary increase. It was assumed that more effective purchasers tended to receive higher salaries and larger salary increases than less effective purchasers. The more effective group was limited to those purchasers who received salaries of \$20,000 per

year or more and who had received salary increases of 41 percent or higher during the last five years.

In an effort to ensure that this group was truly more effective and not just a collection of older and more experienced purchasers, selection was limited to those who were 40 years of age or younger. This limited the number of years a purchaser could have spent with his current firm as well as the number of years he could have spent in the purchasing profession. In addition, membership in this elite group was restricted to those purchasers who had occupied at least two positions during the last five years and who had achieved at least a bachelor's degree. This extremely more effective group therefore consisted of purchasers who were younger and less experienced, but who were mobile, college educated, received high salaries, and high salary increases.

The extremely less effective group consisted of those purchasers who received salaries under \$15,000 per year plus salary increases of 20 percent or less during the last five years. In order to ensure that this group was truly a less effective group and not just a collection of younger and less experienced purchasers, membership in this group was limited to those who were 30 years of age or older, who had been with their firms for five or more years, and who had five or more years of purchasing experience. This extremely less effective group therefore consisted of purchasers who were older and more experienced, but who were receiving low salaries and low salary increases. The mean scores of these extremely more effective and extremely less effective groups of purchasers on the purchasing performance measures and on the socioeconomic measures are presented

in Table V-3.

As shown in Table V-3, the mean scores of the extremely more effective group were much higher than those of the extremely less effective group on profit potential, personal skills, departmental coordination, negotiation, interfirm coordination, and overall effectiveness. On the other hand, the differences on procedures, sourcing, product research, and quality assurance were small or nonexistent. Furthermore, the big difference in this analysis as compared to previous analyses is that positive relationships between the socioeconomic measures and the effectiveness criterion were eliminated.

This comparative analysis of the extremely more and less effective groups showed that profit potential, personal skills, departmental coordination, negotiation, interfirm coordination, and overall effectiveness are performance measures that can differentiate more effective from less effective purchasers, at least at the extreme levels of effectiveness.

A Purchasing Performance Index as a  
Measure of Purchasing Effectiveness

At this point, the analysis has produced six performance measures that differentiate 44 extremely more effective purchasers from 58 extremely less effective purchasers. It should be noted that these six performance measures have a valid relationship with purchasing effectiveness and are not the result of age, experience, or company seniority. The next problem that had to be dealt with was how these six performance measures could be used to differentiate the more effective purchasers from the less effective purchasers in the entire sample. In order to resolve this problem, it was decided

TABLE V-3

COMPARISON OF THE EXTREMELY MORE EFFECTIVE AND EXTREMELY  
LESS EFFECTIVE PURCHASERS ON THE BASIS OF THEIR SCORES  
ON THE TEN PURCHASING PERFORMANCE MEASURES AND  
SELECTED SOCIOECONOMIC MEASURES

Performance Measures	Performance and Socioeconomic Scores	
	N=58 Less Effective	N=44 More Effective
Profit Potential	3.74	4.41
Procedures	4.21	4.02
Sourcing	3.93	4.11
Personal Skills	3.81	4.43
Departmental Coordination	3.69	4.27
Negotiation	3.83	4.45
Product Research	3.62	3.61
Interfirm Coordination	3.26	4.16
Quality Assurance	3.41	3.41
Overall Effectiveness	3.86	4.50
<u>Socioeconomic Measures</u>		
Age	3.52	1.91
Years with Current Firm	3.81	1.82
Years of Purchasing Experience	3.14	2.14

Note: N = The number of purchasers in each effectiveness group.



to combine each individual's total score on these six performance measures to form a composite Purchasing Performance Index. These composite performance indices could then be divided into groups representing different levels of purchasing effectiveness, and the personality characteristics of each of these groups could then be analyzed.

The scores on this index had a possible range of 6 to 30 with 6 indicating a very low level of effectiveness and 30 indicating a very high level of effectiveness. Once the scores on the Purchasing Performance Index (hereinafter referred to as the PPI), were computed, the next step of this analysis was to decide upon a logical basis for classifying these scores into levels of purchasing effectiveness. This decision involved analyzing the frequency distribution of the scores on the PPI for the entire sample. This frequency distribution is presented in Table V-4. The histogram shown in Figure V-1 illustrates the shape of this distribution.

As Table V-4 shows, the actual scores on the PPI ranged from 12 to 30 with a mean of 24.13 and a standard deviation of 3.43. Based upon this information, the size of the sample, and the shape of the distribution; it was decided to divide the PPI scores of the sample into five effectiveness groups of comparable size. These groups were labelled as low, medium-low, medium, medium-high, and high in terms of their level of effectiveness. The criteria used for determining which PPI scores were included in each of these effectiveness groups will be discussed in the paragraphs that follow.

The low-effective group was composed of individuals whose PPI scores fell one standard deviation or more below the mean.

TABLE V-4

THE FREQUENCY DISTRIBUTION OF THE SCORES ON THE PURCHASING  
PERFORMANCE INDEX FOR THE ENTIRE SAMPLE

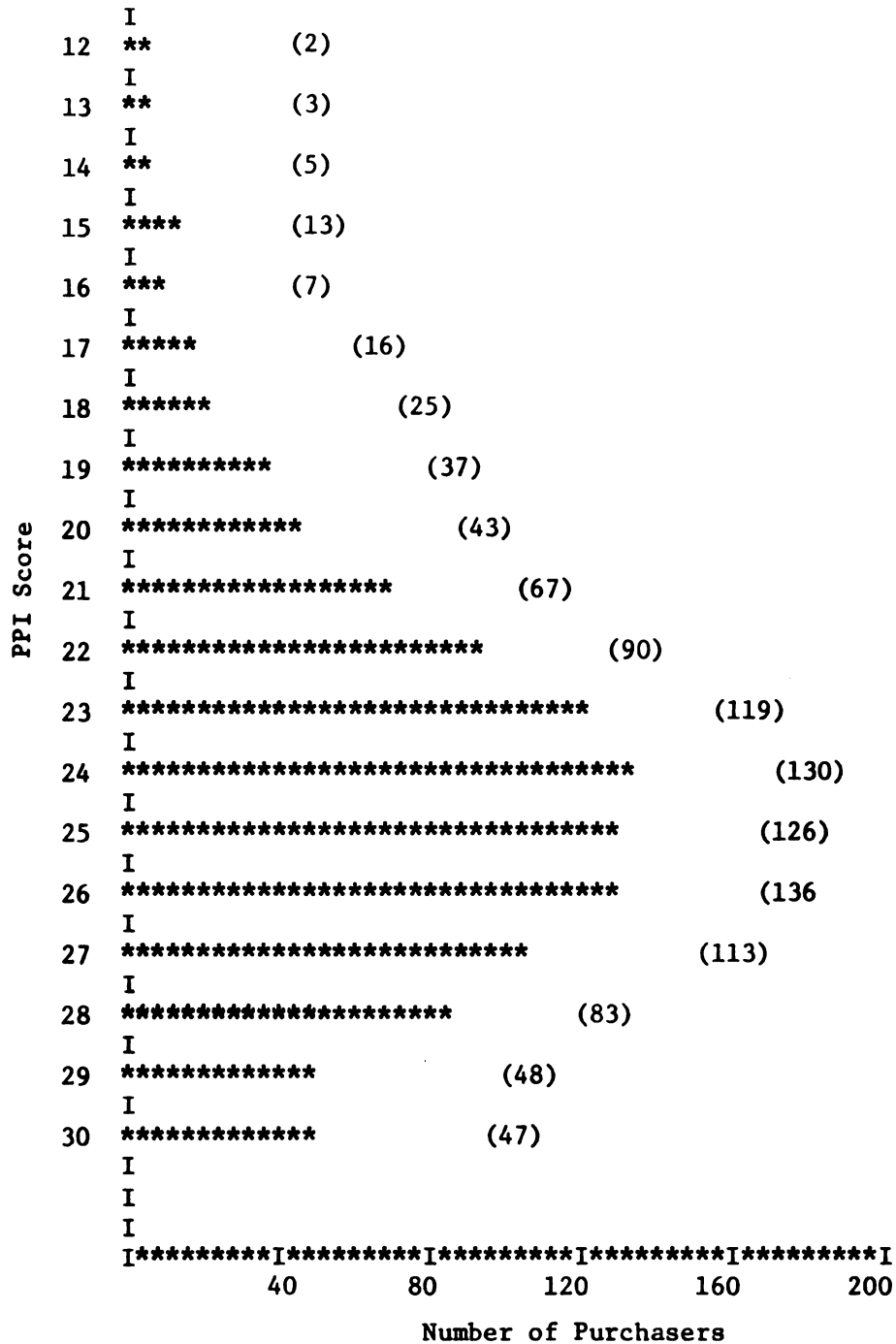
PPI Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
12	2	.2	.2
13	3	.3	.5
14	5	.5	.9
15	13	1.2	2.1
16	7	.6	2.8
17	16	1.5	4.2
18	25	2.3	6.5
19	37	3.4	9.9
20	43	3.9	13.9
21	67	6.1	20.0
22	90	8.3	28.3
23	119	10.9	39.2
24	130	11.9	51.1
25	126	11.6	62.7
26	126	11.6	74.2
27	103	9.4	83.7
28	83	7.6	91.3
29	48	4.4	95.7
30	<u>47</u>	<u>4.3</u>	100.0
Total	1,090	100.0	

Mean = 24.13

Standard Deviation = 3.43

FIGURE V-1

HISTOGRAM OF THE REQUENCY DISTRIBUTION OF THE SCORES ON THE  
PURCHASING PERFORMANCE INDEX FOR THE ENTIRE SAMPLE



Since the mean PPI score was 24.13 and the standard deviation was 3.43, individuals with PPI scores of 21 or below were classified as being low-effective. Because of an apparent irregularity in the distribution of these PPI scores, however, it was decided not to include persons in this group with PPI scores of 15 or below. This apparent irregularity can be seen by examining Figure V-1. Figure V-1 shows that as the PPI scores decreased from 24, so did the number of purchasers who demonstrated these scores. For example, as the PPI score decreased from 24 to 23, the number of people who demonstrated each of these scores decreased from 130 to 119. This relationship held until the PPI score decreased to 15. As Figure V-1 shows, thirteen purchasers posed a PPI score of 15, which was an increase of 6 rather than the expected decrease from the number who posted a score of 16. This apparent irregularity in the data may have been due to a number of things such as random occurrence or misinterpretation of the instrument on the part of some of these respondents. Since it was not possible to pinpoint the nature of this apparent irregularity in the distribution and since only 23 purchasers were involved, it was decided to eliminate these individuals from this analysis rather than take a chance on their biasing the results. With these 23 purchasers eliminated from the analysis, the low-effective group contained 195 purchasers.

Individuals who demonstrated PPI scores that fell one standard deviation or more above the mean were classified as being high-effective. Hence, this group contained those 178 purchasers whose PPI scores were 28 or above.

The medium-effective group included those individuals whose

PPI scores fell one point either side of the mean. Since the mean PPI score was 24.13, this group contained those individuals with PPI scores of 24 or 25. This medium-effective group contained 256 purchasers.

The remaining two groups of purchasers were classified as medium-low-effective and medium-high-effective. The medium-low group was made up of those individuals whose PPI scores were either 22 or 23. The medium-high group contained those individuals whose PPI scores were either 26 or 27. These two groups contained 209 and 229 purchasers, respectively.

In the chapter that follows, the personality characteristics of the entire sample as they relate to these five levels of purchasing effectiveness will be evaluated.

### Summary

In an effort to identify those individuals within the sample who were more or less effective purchasers, four effectiveness criteria were utilized. These were salary level, position level, the combination of salary level and position level, and the combination of salary level and salary increase. Salary level, position level, and the combination of salary level and position level were applied to the total sample of purchasers but failed as effectiveness criteria because of their apparent interrelationships with socioeconomic measures of age, years of purchasing experience, and years of company seniority.

In an effort to find an effectiveness criterion that was not interrelated with the socioeconomic measures, the combination of

salary level and salary increase was utilized as an effectiveness criterion to select a small group of extremely more effective and a small group of extremely less effective purchasers. These groups were selected in such a manner that their interrelationships with the socioeconomic measures ran counter to those observed in the previous analyses. With the effects of the socioeconomic measures removed, it was concluded that the combination of salary level and salary increase was a useful criterion for differentiating extremely more effective from extremely less effective purchasers. Applying this effectiveness criterion resulted in the identification of six performance measures that differentiated extremely more effective from extremely less effective purchasers. These measures were profit potential, personal skills, departmental coordination, negotiation, interfirm coordination and overall effectiveness. Each individual's total score on these six performance measures were then added together to form a Purchasing Performance Index. This index was then used to divide the entire sample into five levels of purchasing effectiveness.

## CHAPTER VI

### PERSONALITY MEASURES AND PURCHASING EFFECTIVENESS

Evaluation of the personality measures as they related to purchasing effectiveness was accomplished as follows: First, the Purchasing Performance Index was used to divide the entire sample of purchasers into five levels of effectiveness. Second, the average scores of each of these five effectiveness groups on the four personality variables included in this study were compared. The purpose of this comparison was to determine which of these personality variables were related to effectiveness. Third, in a similar manner, the individual items that made up the instruments used to measure the four personality variables were also analyzed. Fourth, those individual items that were found to be most strongly related to purchasing effectiveness were combined to form a Composite Personality Index.

#### Personality Characteristics of the More and Less Effective Purchasers

Analysis of the personality characteristics of the more and less effective purchasers was accomplished in two steps. First, the personality variables used in this study were analyzed as they related to purchasing effectiveness. Second, the individual items that made up the instruments used to measure these personality variables (questions 1-75 on the mail questionnaire) were also evaluated as

they related to purchasing effectiveness.

Analysis of the Personality Variables as  
They Relate to Purchasing Effectiveness

Analysis of the personality variables as they related to purchasing effectiveness was accomplished by comparing the mean scores of each of the five effectiveness levels on the four personality variables included in this study. The purpose of this comparison was to determine which, if any, of these personality variables were related to purchasing effectiveness. The scores of the five effectiveness levels on the four personality variables are presented in Table VI-1.

TABLE VI-1

COMPARISON OF PURCHASERS' EFFECTIVENESS LEVELS WITH  
THEIR SCORES ON THE FOUR PERSONALITY VARIABLES

Personality Variables	Personality Variable Scores				
	N=195 Low	N=209 Medium- Low	N=256 Medium	N=229 Medium- High	N=178 High
Self-Esteem	24.44	28.31	28.32	29.24	30.29
Need for Certainty	43.63	42.76	41.97	41.04	41.78
External Control	3.88	3.26	3.21	2.82	2.60
Desire to Satisfy Higher Order Needs	51.00	52.59	53.66	54.63	55.85



Self-Esteem<sup>1</sup>

Upon examining Table VI-1, it can be seen that self-esteem demonstrated a positive and fairly consistent relationship with purchasing effectiveness. For example, as the level of effectiveness increased from low to high, so did the self-esteem score. This means that the more effective purchasers tended to see themselves as being more competent in handling the problems that confronted them than did less effective purchasers.

Need for Certainty<sup>2</sup>

As shown in Table VI-1, the need for certainty demonstrated a negative but not a totally consistent relationship with purchasing effectiveness. For example, as the level of effectiveness increased from low to medium-high, the need for certainty score decreased from 43.63 to 41.04 in fairly consistent increments. As the level of effectiveness increased from medium-high to high, however, the corresponding need for certainty score did not decrease but actually increased from 41.04 to 41.78. Although this inconsistency tended to weaken the relationship between need for certainty and purchasing effectiveness, the tendency still existed for more effective purchasers to have a lower need for certainty than less effective purchasers. This means that more effective purchasers had less tendency to perceive new or complex situations as a source of threat than did less effective purchasers.

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<sup>1</sup>The Ghiselli instrument was used to measure self-esteem and was discussed in Chapter III.

<sup>2</sup>The Budner instrument was used to measure need for certainty and was discussed in Chapter III.

### External Control<sup>3</sup>

According to Table VI-1, external control was also negatively related to purchasing effectiveness. This indicates that the more effective purchasers tended to more strongly feel that they could influence things that happen to them. Conversely, there was a tendency for the less effective purchasers to more strongly feel that events that happened to them were beyond their control.

### Desire to Satisfy Higher Order Needs<sup>4</sup>

The desire to satisfy higher order needs demonstrated the strongest and most consistent positive relationship with purchasing effectiveness. Table VI-1 shows that as the level of effectiveness increased from low to high, the score on this personality variable also increased. This means that the more effective purchasers tended to be more desirous than less effective purchasers of obtaining satisfaction from their work of their needs for social activity, status, and personal growth.

### Analysis of the Individual Personality Items as They Relate to Purchasing Effectiveness

This analysis was carried out in four parts. Each focused on the set of items that constituted one of the personality instruments. The first items analyzed were those that made up the self-esteem instrument. This analysis was followed in turn by analyses

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<sup>3</sup>The Rotter instrument was used to measure external control and was discussed in Chapter III.

<sup>4</sup>The Hackman and Lawler instrument was used to measure the desire to satisfy higher order needs and was discussed in Chapter III.

of the items that made up the need for certainty instrument, the external control instrument, and the desire to satisfy higher order needs instrument (hereinafter referred to as the higher order need instrument).

#### Analysis of the Self-Esteem Items

This analysis involved comparison of the mean scores of each of the five levels of effectiveness on the 31 items that made up the self-esteem instrument (questions 1-31 on the mail questionnaire). The purpose of this comparison was to determine which of the self-esteem items were related to purchasing effectiveness. It should be noted that this instrument involved having the respondents choose from pairs of adjectives the one word that described them best or least. On the first fifteen pairs of adjectives, the respondents were asked to select the one adjective from each pair that they thought described them best. For items 16-31, the respondents were asked to select the one adjective from each pair they thought described them less well.

The mean scores of the five levels of effectiveness on the 31 self-esteem items are presented in Table VI-2. For the first fifteen items, the scores shown in the table indicate the proportion of respondents in each level of effectiveness who felt that the top adjective in the pair described them best. For items 16-31, the scores shown in the table indicate the proportion of respondents in each level of effectiveness who felt that the top adjective in the pair described them less well. The numbers in the extreme right column of the table indicate the difference between the proportions of high-effective purchasers who selected the top adjective and the

TABLE VI-2  
COMPARISON OF PURCHASERS' EFFECTIVENESS LEVELS WITH THEIR  
SCORES OF THE THIRTY-ONE SELF-ESTEEM ITEMS

Questionnaire Item Number	Individual Self-Esteem Items	Individual Item Scores					Relationship Index
		Low	Medium- Low	Medium	Medium- High	High	
1	Understanding Thorough	.68	.57	.56	.46	.42	-.26
2	Loyal Dependable	.28	.21	.27	.26	.30	+.02
3	Unaffected Alert	.20	.14	.11	.07	.07	-.13
4	Sharp-Witted Deliberate	.29	.36	.32	.37	.41	+.12
5	Kind Jolly	.81	.86	.84	.79	.88	+.07
6	Enterprising Intelligent	.43	.47	.44	.44	.44	+.01
7	Progressive Thrifty	.52	.64	.66	.72	.76	+.24
8	Thoughtful Fair-Minded	.29	.34	.24	.23	.26	-.03
9	Social Steady	.35	.35	.41	.43	.44	+.09
10	Pleasant Modest	.66	.68	.68	.69	.78	+.12

TABLE VI-2---Continued

Questionnaire Item Number	Individual Self-Esteem Items	Individual Item Scores				Relationship Index
		Low	Medium- Low	Medium	Medium- High	High
11	Responsible Reliable	.50	.58	.64	.65	.70
12	Dignified Civilized	.29	.40	.36	.42	.46
13	Imaginative Self-Controlled	.30	.46	.52	.58	.70
14	Sympathetic Patient	.42	.44	.41	.43	.49
15	Stable Foresighted	.72	.59	.54	.41	.43
16	Shy Lazy	.15	.10	.15	.13	.09
17	Immature Quarrelsome	.54	.63	.68	.69	.71
18	Unfriendly Self-Seeking	.60	.63	.61	.59	.68
19	Conceited Infantile	.39	.30	.28	.22	.28
20	Shallow Stingy	.50	.58	.56	.58	.58
21	Unstable Frivolous	.69	.73	.75	.70	.74

+.06

TABLE VI-2--Continued

Questionnaire Item Number	Individual Self-Esteem Items	Individual Item Scores					Relationship Index
		Low	Medium- Low	Medium	Medium- High	High	
22	Dreamy Dependent	.67	.66	.67	.69	.62	-.05
23	Apathetic Egotistical	.38	.56	.53	.55	.64	+.26
24	Despondent Evasive	.62	.66	.75	.69	.74	+.12
25	Weak Selfish	.56	.69	.66	.76	.81	+.25
26	Fussy Submissive	.42	.31	.33	.28	.25	-.17
27	Opinionated Pessimistic	.41	.39	.26	.25	.26	-.15
28	Shiftless Bitter	.60	.63	.69	.68	.73	+.13
29	Hard-Hearted Self-Pitying	.49	.34	.38	.32	.33	-.17
30	Cynical Aggressive	.78	.86	.87	.89	.95	+.17
31	Undependable Resentful	.71	.77	.77	.73	.77	+.06

Note: The scores of the first fifteen items indicate the proportion of respondents in each level of effectiveness who felt that the top adjective described them best. The scores on items 16-31 indicate the proportion of respondents in each level of effectiveness who felt that the top adjective described them less well.



low-effective purchasers who selected the top adjective. This difference provides a rough measure of the magnitude of the relationships between these individual self-esteem items and purchasing effectiveness. This difference will be hereinafter referred to as the relationship index.

In order to facilitate analyzing the data in Table VI-2, the 31 self-esteem items were classified as having either a relatively strong or a relatively weak relationship with purchasing effectiveness. Those items that demonstrated a relationship index (column 8 in Table VI-2) of .10 or greater were classified as having relatively strong relationships with purchasing effectiveness. Those items that demonstrated a relationship index of less than .10 were classified as having relatively weak relationships with purchasing effectiveness.

It becomes apparent upon examining the scores of the first fifteen items in Table VI-2 that several of the items demonstrated relatively strong negative relationships with purchasing effectiveness. Upon examining item number 1, for example, it can be seen that as the level of effectiveness increased from low to high, the proportion of purchasers who chose to describe themselves as understanding rather than thorough decreased. In addition, items 3 and 14 also demonstrated relatively strong negative relationships with purchasing effectiveness. This means that as the level of effectiveness increased, a decreasing proportion of purchasers chose to describe themselves as unaffected as opposed to alert, and stable as opposed to foresighted.

Analysis of the first fifteen items in Table VI-2 also



revealed that items 4, 7, 10, 11, 12 and 13 demonstrated relatively strong positive relationships with purchasing effectiveness. This means that as the effectiveness level increased, an increasing proportion of purchasers chose to refer to themselves as sharp-witted rather than deliberate, progressive rather than thrifty, pleasant rather than modest, responsible rather than reliable, dignified rather than civilized, and imaginative rather than self-controlled.

Items 2, 5, 6, 8, 9, and 14 all demonstrated relatively weak relationships with purchasing effectiveness. This means that as the level of effectiveness increased, the proportion of purchasers who preferred to be described by the top adjective changed very little. These items were of little value in differentiating more effective from less effective purchasers.

Analysis of items 16-31 in Table VI-2 indicated that several items demonstrated relatively strong negative relationships with purchasing effectiveness. Upon examining items 11, 26, 27 and 29, it can be seen that as the effectiveness level increased, a decreasing proportion of purchasers chose not to be described as conceited rather than infantile, fussy rather than submissive, opinionated rather than pessimistic, and hard-hearted rather than self-pitying.

Items 17, 23, 24, 25, 28 and 30 demonstrated relatively strong relationships with purchasing effectiveness. This means that as the effectiveness level increased, an increasing proportion of purchasers chose not to refer to themselves as immature rather than quarrelsome, apathetic rather than egotistical, dependent rather than evasive, weak rather than selfish, shiftless rather than bitter,



and cynical rather than aggressive.

Items 18, 20, 21, 22 and 31 all demonstrated relatively weak relationships with purchasing effectiveness. This indicates that as the level of effectiveness increased, relatively similar proportions of purchasers chose to describe themselves by the top adjective. For this reason, these items were of little use in differentiating more effective from less effective purchasers.

This analysis revealed that more effective purchasers tended to have a more positive self-image than less effective purchasers. They saw themselves as being more progressive, competent, and confident than did their less effective counterparts. This analysis also revealed that questionnaire items 1, 3, 4, 7, 10, 11, 12, 13, 15, 17, 19, 23, 24, 25, 26, 27, 28, 29 and 30 were the self-esteem items that were most useful in differentiating more effective from less effective purchasers. On the other hand, questionnaire items 2, 5, 6, 8, 9, 14, 16, 18, 20, 21, 22 and 30 were the self-esteem items that were least useful in differentiating more effective from less effective purchasers.

#### Analysis of the Need for Certainty Items

In this analysis, the mean scores of each of the five levels of effectiveness on the sixteen items that made up the need for certainty instrument (questions 48-63 on the mail questionnaire) were compared. The objective of this comparison was to determine which of these sixteen items were related to purchasing effectiveness. This instrument involved having the respondents indicate the extent to which they agreed or disagreed with sixteen statements that represented commonly held opinions. A response of 1 represented

strong disagreement with the statement, and a response of 5 represented strong agreement. The scores shown in Table VI-3 represent the average response of each effectiveness level on the sixteen need for certainty items. These sixteen items are presented in the second column in Table VI-3 in summary form. These items can be found in their complete form in part IV of the questionnaire exhibited in Appendix A. The far right column of Table VI-3 contains the relationship index, which indicates the difference between the average score of the high effective group and the average score of the low effective group on each of the sixteen items. This difference provides a rough measure of the magnitude of the relationships between these individual need for certainty items and purchasing effectiveness.

Before analyzing the data in Table VI-3, the sixteen need for certainty items were classified as having either a relatively strong or a relative weak relationship with purchasing effectiveness. Those items that demonstrated a relationship index (the far right column in Table VI-3) of .20 or greater were classified as having relatively strong relationships with purchasing effectiveness. Those items that demonstrated a relationship of less than .20 were classified as having relatively weak relationship with purchasing effectiveness.

As can be seen from examining Table VI-3, several items demonstrated relatively strong positive relationships with purchasing effectiveness. For example, as the level of effectiveness increased from low to high, the scores on items 48, 49, 56, 57, 58 and 59 also tended to increase. This means that as the level of effectiveness

TABLE VI-3  
COMPARISON OF PURCHASERS' EFFECTIVENESS LEVELS WITH THEIR  
SCORES ON THE SIXTEEN NEED FOR CERTAINTY ITEMS

Questionnaire Item Number	Item Abbreviation	Individual Item Scores					Relationship Index
		Low	Medium- Low	Medium	Medium- High	High	
48	Expert should have a definite answer.	2.49	2.58	2.50	2.60	2.72	+ .23
49	All problems can be solved.	3.24	3.46	3.22	3.43	3.83	+ .59
50	Directions must be clear.	2.67	2.60	2.59	2.42	2.52	- .15
51	Tackle small problems.	2.72	2.68	2.68	2.52	2.58	- .14
52	I prefer the familiar.	3.22	3.24	3.24	3.03	2.94	- .28
53	I prefer the regular life.	2.44	2.29	2.41	2.12	2.07	- .37
54	I prefer familiar people.	3.80	3.68	3.49	3.25	3.34	- .46
55	We should all have similar values.	1.94	1.69	1.77	1.53	1.69	- .25
56	Would like to live in foreign country.	2.19	2.56	2.49	2.62	2.63	+ .144

TABLE VI-3---Continued

Questionnaire Item Number	Item Abbreviation	Individual Item Scores					Relationship Index
		Low	Medium- Low	Medium	Medium- High	High	
57	I dislike schedules.	2.34	2.30	2.46	2.45	2.61	+ .27
58	I prefer complicated problems	2.89	2.97	3.10	3.09	3.40	+ .51
59	I prefer different people.	3.16	3.32	3.39	3.67	3.51	+ .35
60	I appreciate the com- plexity of things.	2.33	2.22	2.44	1.97	2.21	- .12
61	Decisions are often based on insuffi- cient information.	2.41	2.35	2.52	2.35	2.22	- .19
62	Vagueness breeds originality.	1.51	1.54	1.41	1.62	1.42	- .09
63	A supervisor should make you wonder.	2.07	2.19	2.14	2.26	1.91	- .16

increased, purchasers tended to more strongly agree with the following statements:

- An expert who doesn't come up with a definite answer probably doesn't know too much.
- There is really no such thing as a problem that can't be solved.
- I would like to live in a foreign country for a while.
- People who fit their lives to a schedule probably miss most of the joy of living.
- It is more fun to tackle a complicated problem than to solve a simple one.
- Often the most interesting and stimulating people are those who don't mind being different and original.

Table VI-3 also contains several items that demonstrated relatively strong negative relationships with purchasing effectiveness. For instance, as the level of effectiveness increased from low to high, the scores on items 52, 53, 54 and 55 tended to decrease. This means that as the level of effectiveness increased, purchasers tended to agree less strongly with the following statements:

- What we are used to is always preferable to what is unfamiliar.
- A person who leads an even, regular life in which few surprises or unexpected happenings arise, really has a lot to be grateful for.
- I like parties where I know most of the people more than ones where all or most of the people are complete strangers.
- The sooner we all acquire similar values and ideals, the better.

Items 50, 51, 60, 61, 62 and 63 all demonstrated relatively weak relationships with purchasing effectiveness. This means that as the level of purchasing effectiveness increased from low to high,

the scores on each of these items changed very little. For this reason, these items were of little use in differentiating more effective from less effective purchasers.

This analysis indicated that more effective purchasers were more tolerant of situations involving uncertainty. In addition, more effective purchasers were less likely to perceive complex or unfamiliar situations as sources of threat. Furthermore, more effective purchasers expressed a higher level of self-confidence than did less effective purchasers. This analysis also pointed out that questionnaire items 48, 49, 52, 53, 54, 55, 56, 57, 58 and 59 were the need for certainty items that were most useful in differentiating more effective from less effective purchasers. On the other hand, items 50, 51, 60, 61, 62 and 63 were the need for certainty items that were least useful in differentiating more effective from less effective purchasers.

#### Analysis of the External Control Items

This analysis involved comparing the mean scores of each of the five levels of effectiveness on the eight items that made up the external control instrument (questions 40-47 on the mail questionnaire). The external control instrument involved having the respondents choose, from among pairs of statements, the one statement with which they most strongly agreed. The scores of the five levels of effectiveness on the eight external control items are presented in Table VI-4. These scores represent the proportion of respondents in each level of effectiveness who most strongly agreed with the top statement of each pair. The eight pairs of external control statements are presented in the second column of Table VI-4 in abbreviated



TABLE VI-4  
COMPARISON OF PURCHASERS' EFFECTIVENESS LEVELS WITH THEIR  
SCORES ON THE EIGHT EXTERNAL CONTROL ITEMS

Questionnaire Item Number	Item Abbreviation	Individual Item Scores					Relationship Index
		Low	Medium- Low	Medium	Medium- High	High	
40	People get the respect they deserve. An individual's worth passes unrecognized.	.56	.67	.68	.70	.73	+ .17
41	Breaks make effective leaders. Advantage of oppor- tunities makes leaders.	.16	.7	.15	.14	.08	- .08
42	Success is a matter of work. Getting a good job is luck.	.58	.61	.65	.70	.64	+ .06
43	Getting what I want has nothing to do with luck. Often best to decide by flipping a coin.	.81	.85	.87	.87	.89	+ .08
44	Being the boss is a matter of luck. Being the boss is a matter of ability.	.18	.13	.13	.13	.08	- .10

TABLE VI-4--Continued

Questionnaire Item Number	Item Abbreviation	Low	Individual Item Scores			Relationship Index
			Medium- Low	Medium	Medium- High	
45	We are trapped. We are in control.	.53	.40	.43	.32	.31
46	Our lives are controlled by accidents. There is no such thing as luck.	.72	.64	.64	.57	.55
47	I have little influence. Luck plays no role in my life.	.52	.42	.43	.35	.29
						-.23

form. These statements can be found in their complete form in part III of the questionnaire exhibited in Appendix A.

The extreme right column of the table contains the relationship index, which indicates the difference between the proportions of high effective and low effective purchasers who most strongly agreed with the top statement of each pair. This difference provides a rough measure of the size of the relationship between the individual external control items and purchasing effectiveness. Using the relationship index, these eight items were classified as having either a relatively strong or a relatively weak relationship with purchasing effectiveness. Those items that demonstrated a relationship index of .10 or greater were classified as having a relatively strong relationship with purchasing effectiveness. Items that demonstrated a relationship index of less than .10 were classified as having a relatively weak relationship with purchasing effectiveness.

Upon examining Table VI-4, it becomes apparent that several items demonstrated relatively strong negative relationships with purchasing effectiveness. For instance, as the effectiveness level increased, the scores on items 44, 45, 46 and 47 decreased. This indicates that decreasing proportions of the more effective purchasers most strongly agreed with the following statements:

- Who gets to be the boss often depends on who was lucky enough to be in the right place first.
- As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.
- Most people don't realize the extent to which their lives are controlled by accidental happening.

--Many times I feel that I have little influence over the things that happen to me.

Conversely, this means that increasing proportions of the more effective purchasers most strongly agreed with the statements listed below:

--Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

--By taking an active part in political and social affairs the people can control world events.

--There really is no such thing as "luck."

--It is impossible for me to believe that chance or luck plays an important role in my life.

Only item 40, shown in Table VI-4, posted a relatively strong positive relationship with purchasing effectiveness. This means that as the level of effective increased, an increasing proportion of purchasers tended to agree that "In the long run people get the respect they deserve in this world," as opposed to agreeing that "An individual's worth often passes unrecognized no matter how hard he tries."

Items 41, 42 and 43 demonstrated relatively weak relationships with purchasing effectiveness. Therefore, the scores on these items changed very little as the level of effectiveness increased. These three items were, consequently, of little value in differentiating more effective from less effective purchasers.

The above analysis pointed out that the more effective purchasers expressed a higher level of confidence in their ability to influence things that happen to them. These more effective purchasers tended to believe that they were in control of their lives and that luck or fate had little or no influence on them. This

analysis also revealed that questionnaire items 40, 44, 45, 46 and 47 were the external control items that were most useful in differentiating more effective from less effective purchasers. Questionnaire items 41, 42 and 43 were the external control items that were least useful in differentiating more effective from less effective purchasers.

#### Analysis of the Higher Order Need Items

In this analysis, the mean scores of the five levels of effectiveness on the twelve items that made up the instrument used to measure an individual's desire to satisfy his higher order needs (questions 64-75 on the mail questionnaire) were compared. This instrument involved having the respondents indicate what amount of certain opportunities they wished to have in their purchasing positions. A response of 1 indicated that a respondent desired a minimum amount of a given opportunity while a response of 5 indicated that the respondent desired the maximum amount of an opportunity. The scores in Table VI-5 represent the average response of each level of effectiveness on the twelve items that made up this instrument. These twelve items are presented in the second column in Table V-5 in summary form. These items can be found in their complete form in part V of the questionnaire exhibited in Appendix A. The far right column of the table contains the relationship index, which indicates the difference between the average scores of the high effective and low effective groups on each of the twelve items. This difference provides a rough measure of the magnitude of the relationships between these twelve items and purchasing effectiveness.

Before analyzing the data in Table VI-5, the twelve higher

TABLE VI-5  
COMPARISON OF PURCHASERS' EFFECTIVENESS LEVELS WITH THEIR  
SCORES ON THE TWELVE HIGHER ORDER NEED ITEMS

Questionnaire Item Number	Item Abbreviation	Individual Item Scores				Relationship Index
		Low	Medium- Low	Medium	Medium- High	High
64	Opportunity for personal growth.	4.29	4.47	4.62	4.75	4.85
65	Feeling of accomplishment.	4.48	4.65	4.75	4.82	4.87
66	Chance for challenging work.	4.34	4.49	4.68	4.77	4.89
67	Opportunity to complete work.	4.42	4.37	4.43	4.54	4.57
68	Opportunity for performance feedback.	4.42	4.47	4.63	4.58	4.71
69	Opportunity to participate.	4.36	4.60	4.68	4.76	4.82
70	Freedom of action.	3.72	3.99	3.97	4.01	4.19
71	Opportunity for variety.	4.10	4.24	4.28	4.52	4.60
72	Chance for independent thought and action.	4.21	4.40	4.47	4.62	4.70
73	Chance to do a whole job.	4.27	4.29	4.38	4.29	4.38
74	Opportunity to find out how I am doing.	4.25	4.35	4.45	4.48	4.60
75	Opportunity to do a number of things	4.14	4.27	4.41	4.48	4.61

+4.47

order need items were classified as having either a relatively strong or a relatively weak relationship with purchasing effectiveness.

Those items that demonstrated a relationship index of .20 or greater were classified as having a relatively strong relationship with purchasing effectiveness. Those items that demonstrated a relationship index of less than .20 were classified as having relatively weak relationships with purchasing effectiveness.

As can be seen from examining Table VI-5, almost all of the higher order need items demonstrated relatively strong positive relationships with purchasing effectiveness. For instance, as the level of effectiveness increased from low to high, the scores on items 64, 65, 66, 68, 69, 70, 71, 72, 74 and 75 also tended to increase. This means that as the level of effectiveness increased, purchasers tended to more strongly desire the following opportunities in their present purchasing positions:

- The opportunity for personal growth and development.
- The feeling of worthwhile accomplishment.
- The chance to do challenging work.
- The feeling that I know whether I am performing my job well or poorly.
- The opportunity for participation in the determination of methods, procedures, and goals.
- The freedom to do pretty much what I want.
- The opportunity for variety.
- The chance for independent thought and action.
- The opportunity to find out how I am doing.
- The opportunity to do a number of things.

Items 67 and 73 demonstrated relatively weak relationships

with purchasing effectiveness. This means that as the level of effectiveness increased, the scores on these two items changed very little. These items were therefore of little value in differentiating more effective from less effective purchasers.

This analysis revealed that more effective purchasers expressed a stronger preference for jobs that provide opportunities for variety, challenge, performance feedback, personal growth and development, and independent thought and action than did less effective purchasers. This reflects a high level of confidence on the part of these more effective purchasers that they would perform well when placed in such jobs. In addition, this analysis also revealed that questionnaire items 64, 66, 68, 69, 70, 71, 72, 74 and 75 were the higher order need items that were most useful in differentiating more effective from less effective purchasers. Furthermore, questionnaire items 67 and 73 were the higher order need items that were least useful in differentiating more effective from less effective purchasers.

#### Summary of the Personality Characteristics of More and Less Effective Purchasers

Analysis of the personality characteristics of more and less effective purchasers indicated that more effective purchasers saw themselves as being more self-assured and in control of events that surrounded them. They perceived themselves as being more tolerant of uncertainty and they expressed a much stronger desire to satisfy their higher order needs. In addition, the more effective purchasers saw themselves as being more thorough as opposed to understanding, progressive as opposed to thrifty, imaginative as opposed to



self-controlled, foresighted as opposed to stable, selfish as opposed to weak, and egotistical as opposed to apathetic. These more effective purchasers also tended to discount the role that luck played in their lives and expressed a stronger preference for complicated problems as opposed to simple ones. Furthermore, the more effective purchasers more strongly preferred jobs that provided opportunities for variety, challenge, performance, feedback, personal growth and development, and independent thought and action.

#### Developing a Composite Personality Index

The foregoing analyses have shown that when the individual item responses on the four research questionnaires were analyzed separately, certain items were more strongly related to purchasing effectiveness than others. It was suspected that if the responses on these certain items were added together to form a Composite Personality Index, this new index might be more strongly related to purchasing effectiveness than any of the four original personality variables would be individually. This analysis resulted in selecting nineteen questionnaire items for inclusion in the Composite Personality Index (hereinafter referred to as the CPI). The Pearson Correlations between the four original personality variables, the CPI, and purchasing effectiveness as measured by the PPI are presented in Table VI-6.

As the table shows, all the correlations were significant at the .001 level. Furthermore, the personality variable that demonstrated the strongest relationship with purchasing effectiveness was the CPI. This indicates that the CPI may prove useful for

TABLE VI-6

CORRELATIONS AMONG THE PERSONALITY VARIABLES,  
THE CPI AND PURCHASING EFFECTIVENESS

Variables	Purchasing Effectiveness
Self-esteem	.29
Need for Certainty	-.13
External Control	-.17
Desire to Satisfy Higher Order Needs	.33
CPI	.46

Note: N = 1,067. All correlations are significant at the .001 level.

predicting purchasing effectiveness in future research.

#### Summary

In order to determine which of the four personality variables included in this study were related to purchasing effectiveness, the Purchasing Performance Index was used to divide the entire sample of purchasers into five levels of effectiveness. The average scores of each of these five effectiveness groups on the four personality variables were then compared. This comparison revealed that self-esteem and the desire to satisfy higher order needs were positively related to effectiveness whereas the need for certainty and external control were negatively related to effectiveness.

In a similar manner, the individual items that made up the instruments used to measure the four personality variables were also analyzed. Those individual items that were found to be most strongly

related to purchasing effectiveness were then combined to form a Composite Personality Index. Subsequent analysis showed this index to be more strongly related to purchasing effectiveness than any of the original personality variables. In the chapter that follows, the socioeconomic measures of the entire sample will be evaluated as they relate to purchasing effectiveness.

## CHAPTER VII

### SOCIOECONOMIC MEASURES AND PURCHASING EFFECTIVENESS

Evaluation of the socioeconomic measures as they related to purchasing effectiveness involved the following steps: First, the sample population was divided into the five effectiveness levels determined by the PPI in Chapter V. Second, the average scores of each of these five levels on the socioeconomic measures included in this study were then compared. Third, the socioeconomic measures were analyzed according to the relative strength of their relationships with purchasing effectiveness. Fourth, the socioeconomic characteristics of the lower effectiveness range were compared to those of the higher effectiveness range. Finally, previous research concerning age, years of purchasing experience, and education level was replicated.

#### Socioeconomic Characteristics of More and Less Effective Purchasers

The average scores of the five levels of purchasing effectiveness on the socioeconomic measures are presented in Table VII-1. The far right-hand column of this table contains the Relationship Index. This index indicates the difference between the average score of the high effective group and the low effective group on a particular socioeconomic measure. Therefore, this index provides a relative measure of the strength of the relationship between a

TABLE VII-1  
COMPARISON OF PURCHASERS' EFFECTIVENESS LEVELS  
WITH THEIR SCORES ON THE SOCIOECONOMIC MEASURES

Socioeconomic Measures	Socioeconomic Scores					Relationship Index
	N=195	N=209	N=256	N=229	N=178	
	Low	Medium-Low	Medium	Medium-High	High	
Age	2.76	2.78	2.98	2.87	3.08	+ .32
Years with Current Firm	2.78	2.82	2.97	2.79	2.92	+ .14
Years of Purchasing Experience	2.64	2.86	3.05	3.10	3.36	+ .72
Salary Level	2.80	3.22	3.38	3.47	3.84	+1.04
Salary Increase--Last Five Years	3.31	3.68	3.68	3.90	3.90	+ .59
Satisfaction--Purchasing Career	3.37	3.99	4.04	4.06	4.25	+ .54
Satisfaction--Current Firm	3.84	4.09	4.27	4.07	4.29	+ .45
Number of Positions--Last Five Years	1.85	1.92	1.98	1.95	1.97	+ .12
Number of Professional Development Activities Attended Per Year	1.67	1.87	1.99	2.04	2.06	+ .39
Education Level	2.47	2.65	2.76	2.83	2.77	+ .30
Number of Professional Associations	2.16	2.23	2.34	2.45	2.47	+ .31

Note: N = The number of purchasers in each level of effectiveness.

specific socioeconomic measure and purchasing effectiveness.

For purposes of analysis, the socioeconomic measures in Table VII-1 were classified as having either a relatively strong or a relatively weak relationship with purchasing effectiveness. Those socioeconomic measures that demonstrated a relationship index of .25 or greater were classified as having a relatively strong relationship with purchasing effectiveness. Those socioeconomic measures that demonstrated a relationship index of less than .25 were classified as having a relatively weak relationship with purchasing effectiveness.

It becomes apparent upon examining Table VII-1, that most of the socioeconomic measures demonstrated relatively strong positive relationships with purchasing effectiveness. For example, as the level of effectiveness increased, so did the score associated with age. Similar relationships held true between purchasing effectiveness and years of purchasing experience, salary level, salary increase--last five years, satisfaction--purchasing career, satisfaction--current firm, number of professional development activities attended per year, education level, and number of professional associations.

Two of the socioeconomic measures, however, demonstrated relatively weak relationships with purchasing effectiveness. For example, as the level of effectiveness increased, the score on years with current firm changed very little. A similar relationship existed for number of positions--last five years. For this reason, these socioeconomic measures were of little use in differentiating more effective from less effective purchasers.

The findings in Table VII-1 are interpreted as follows:

First, those individuals who were classified as being more effective were also recognized as such by the firms for which they worked as evidenced by the higher salary levels and larger percentage of salary increases they received. Second, more effective purchasers tended to have had more years of purchasing experience, which tended to make them older than less effective purchasers. Third, more effective purchasers expressed a higher level of satisfaction with their purchasing career and with their current firm than did less effective purchasers. Fourth, the more effective purchasers tended to be more interested in developing professionally than did their less effective counterparts. This is evidenced by the fact that more effective purchasers tended to participate in more professional development activities, belong to more professional associations, and possess a higher level of formal education than less effective purchasers.

Relative Importance of the Socioeconomic Characteristics  
of More and Less Effective Purchasers

Additional insight concerning the relationships between the socioeconomic measures and purchasing effectiveness was gained when the socioeconomic measures were ranked according to the strength of their relationship with purchasing effectiveness. This analysis provided insight as to the relative importance of each socioeconomic measure in terms of its relationship with purchasing effectiveness. These relationships are presented in rank-order form in Table VII-2.

Table VII-2 shows that salary level demonstrated the strongest relationship with purchasing effectiveness and salary increase--last five years demonstrated the third strongest relationship.

TABLE VII-2  
RANK-ORDERED COMPARISON OF PURCHASERS' EFFECTIVENESS LEVELS  
WITH THEIR SCORES ON THE SOCIOECONOMIC MEASURES

Socioeconomic Measures	Socioeconomic Scores					Relationship Index
	N=195	N=209	N=256	N=229	N=178	
	Low	Medium-Low	Medium	Medium-High	High	
Salary Level	2.80	3.22	3.38	3.47	3.84	+1.04
Years of Purchasing Experience	2.64	2.86	3.05	3.10	3.36	+ .72
Salary Increase--Last Five Years	3.31	3.68	3.68	3.90	3.90	+ .59
Satisfaction--Purchasing Career	3.71	3.99	4.04	4.06	4.25	+ .54
Satisfaction--Current Firm	3.84	4.09	4.27	4.07	4.29	+ .45
Number of Professional Development Activities Attended Per Year	1.67	1.87	1.99	2.04	2.06	+ .39
Age	2.76	2.78	2.98	2.87	3.08	+ .32
Number of Professional Associations	2.16	2.23	2.34	2.45	2.47	+ .31
Education Level	2.47	2.65	2.76	2.83	2.77	+ .30
Years With Current Firm	2.78	2.82	2.87	2.79	2.92	+ .14
Number of Positions--Last Five Years	1.85	1.92	1.98	1.95	1.97	+ .12

Note: N = The number of purchasers in each level of effectiveness.



This suggests that salary level and rate of salary increase play a relatively important role with regard to differentiating more effective and less effective purchasers. This finding should be of particular interest to those who manage purchasing people, for these are the individuals who often either control or at least influence the salary level and the rate of salary increase received by their subordinates. Those who manage purchasing people should ensure that these financial rewards do in fact reward those individuals who perform most effectively.

Years of purchasing experience also demonstrated a relatively strong relationship with purchasing effectiveness. This finding should also be of interest to managers of purchasers since experience, in addition to being something that can be acquired over a long period of years of working in a profession, can also be acquired in a much shorter period of time through a planned and deliberate training and development program.

Satisfaction--purchasing career, and satisfaction--current firm, both turned out to be relatively important with respect to differentiating more effective from less effective purchasers. This suggests to managers that general dissatisfaction on the part of an individual purchasers could be an important indicator of less effective performance.

The number of professional development activities attended per year, the number of professional associations and education level all fell toward the lower-middle part of the continuum in terms of relative importance. These socioeconomic measures, however, are still important to those who manage purchasing people because

these are areas the manager can easily monitor and influence. If an individual is developing himself professionally by participating in professional development activities or by furthering his formal education, this could be an indicator of more effective performance. Just as important, however, if an individual purchaser shows little or no interest in developing himself professionally, this could be an important indicator of less effective performance.

Age turned out to be slightly higher than education level in terms of importance in differentiating more effective from less effective purchasers. It was suspected, however, that the strength of this relationship was due to the close association between age and experience and not because of the relative importance of age alone in differentiating between more and less effective purchasers. This close association between age and experience was discussed in Chapter IV.

Years with current firm and number of positions--last five years turned out to be the lowest in terms of relative importance in differentiating more effective from less effective purchasers. They are, therefore, less useful in differentiating more effective from less effective purchasers.

Comparison of the Socioeconomic Characteristics  
of the lower Effectiveness Range With Those of  
the Higher Effectiveness Range

Further insight was gained from the information in Table VII-2 when the scores on the socioeconomic measures of the two lower effective groups (low and medium-low) were compared with the scores of the two higher effective groups (medium-high and high). For

example, as effectiveness increased from low to medium-low, salary level increased from 2.80 to 3.22 for an increase of .42. Similarly, as effectiveness increased from medium-high to high, salary level increased from 3.47 to 3.84 for an increase of .37. The fact that these two increases were nearly equal indicates that salary level is equally useful in differentiating more effective from less effective purchasers at either the lower range or the higher range of the effectiveness scale. As Table VII-2 shows, similar relationships held true for years of purchasing experience, satisfaction--purchasing career, and satisfaction--current firm.

When other socioeconomic measures were analyzed in this manner, however, a different set of relationships was revealed. For example, as the level of effectiveness increased from low to medium-low, the salary increase score went up from 3.31 to 3.68 for an increase of .37. As the level of effectiveness increased from medium-high to high, the salary increase score registered no change. This indicates that salary increase was more useful in differentiating more effective from less effective purchasers at the lower range of the effectiveness scale than at the higher range. As Table VII-2 shows, similar relationships also held true for the number of professional development activities attended per year, the number of professional associations, education level, and the number of positions--last five years.

#### Replication of Prior Research

The literature review in Chapter II pointed out that the research of Cook was the only known study that related age, purchasing

experience, and education level with purchasing effectiveness. In his research, Cook concluded that there did seem to be a relationship between a buyer's age, experience, and education and whether or not he was effective or ineffective. Cook found that most effective buyers were from 30-50 years of age, had over ten years of purchasing experience and were college graduates. Cook also found that when the ineffective buyers were compared to the effective buyers, most ineffective buyers were under 30 years old, had less than five years of purchasing experience, and had only a high school education.<sup>1</sup>

In an effort to determine whether or not the findings from the current study replicated the findings of the Cook study, it was necessary to make the two sets of data compatible. This meant regrouping the age, experience, and education categories of the current study so that they matched the categories used by Cook. Making the effectiveness categories of this study compatible with those used in the Cook study, however, was a bit more involved. In the Cook study, buyers were categorized as being either effective or ineffective. In the current study, purchasers were categorized as being more or less effective on a five-level scale of effectiveness; in an effort to make the effectiveness categories compatible with Cook's, the medium effectiveness category was eliminated from this study. The two lower effectiveness categories (low and medium-low) were then labelled as being ineffective while the two higher effectiveness categories (medium-high and high) were labelled as being effective.

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<sup>1</sup>Robert I. Cook, Industrial Buyers: Critical Incidents Which Distinguish Between Effective and Ineffective Performance (unpublished doctoral dissertation, Michigan State University, 1974), p. 129.

The data from the Cook study concerning age and effectiveness is presented in Table VII-3 along with the data from the current study in comparable form. The table shows that in both studies, most of the effective purchasers were between 30 and 50 years old. Both sets of data also point out that most of the purchasers who were under 30 years of age were classified as being ineffective. Thus, from the findings of both studies it appears that younger purchasers are most prone to ineffective performance.

Information from the two studies concerning years of purchasing experience is presented in Table VII-4. The table shows that in both studies, the majority of purchasers with less than five years of experience were ineffective; as the years of experience increased, the number of effective purchasers also increased. Thus, the findings of both studies imply that effectiveness increases with years of experience.

Comparison of the findings of the two studies concerning education level is presented in Table VII-5. The table shows that half of the purchasers in Cook's study and nearly half (47.8) percent of the purchasers in the current study were college graduates; in both studies, the majority of the effective purchasers were college graduates. The table further shows that in both studies, most of the purchasers who possessed only a high school education were ineffective.

### Summary

In order to analyze the socioeconomic measures as they related to effectiveness, the five effectiveness levels, as determined by the Purchasing Performance Index, were utilized. The mean

TABLE VII-3  
EFFECTIVE AND INEFFECTIVE PURCHASERS COMPARED BY AGE GROUPS

	Under 30				30-50				Over 50				Total			
	Years				Years				Years							
	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data
Number of Effective	16 (11)* (30)#	31 (7.6)* (40.3)#	113 (76)* (60)#	246 (60.4)* (50.4)#	20 (13)* (50)#	130 (32.0)* (52.8)#	149 (100)* (53)#	407 (100)* (52.2)#								
Number of Ineffective	37 (28)* (70)#	46 (11.3)* (59.7)#	76 (57)* (40)#	242 (59.9)* (49.6)#	20 (15)* (50)#	116 (28.7)* (47.2)#	133 (100)* (47)#	404 (100)* (49.8)#								152
Total Number	53 (19)* (100)#	77 (9.5)* (100)#	189 (67)* (100)#	488 (60.2)* (100)#	40 (14)* (100)#	246 (30.3)* (100)#	282 (100)* (100)#	811 (100)* (100)#								

Note: \* connotes Row Percentages; # connotes Column Percentages.

<sup>1</sup>Cook, Industrial Buyers, p. 116.

TABLE VII-4  
EFFECTIVE AND INEFFECTIVE PURCHASERS COMPARED  
COMPARED BY YEARS OF PURCHASING EXPERIENCE

	Under 5				5-10				Over 10				Total	
	Years		Years		Years		Years		Years		Years		Total	
	Cook <sup>1</sup> Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data
Number of Effective	28 (19)* (33)#	53 (13.0)* (35.6)#	54 (36)* (57)#	95 (23.3)* (47.0)#	67 (45)* (65)#	259 (63.6) (56.3)#	149 (100)* (53)#	407 (100)* (50.2)#						
Number Ineffective	57 (43)* (67)#	96 (23.8)* (64.4)#	40 (30)* (43)#	107 (26.5)* (53.0)	36 (27)* (35)#	201 (49.8)* (43.6)#	133 (100)* (47)#	404 (100)* (49.8)#						
Total Number	85 (30)* (100)#	149 (18.4)* (100.0)	94 (33)* (100)#	202 (24.9)* (100.0)#	103 (37)* (100)	460 (56.7)* (100.0)#	282 (100)* (100)#	811 (100)* (100)#						

Note: \*connotes Row Percentages; #connotes Column Percentages.

<sup>1</sup>Cook, Industrial Buyers, p. 118.

TABLE VII-5  
EFFECTIVE AND INEFFECTIVE BUYERS COMPARED BY EDUCATION LEVEL

	High School		Some College		College Graduate		Total	
	Cook <sup>1</sup> Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data	Cook Data	Reck Data
Number Effective	17 (11)* (35)#	30 (7.4)* (37.0)#	52 (35)* (57)#	162 (39.8)* (47.4)#	80 (54)* (56)#	215 (52.8)* (55.4)#	149 (100)* (53)#	407 (100)* (50.2)#
Number Ineffective	32 (24)* (65)#	51 (12.6)* (63.0)#	39 (29)* (43)#	180 (44.6)* (52.6)#	62 (47)* (44)#	173 (42.8)* (44.6)#	133 (100)* (47)	404 (100)* (49.8)#
Total Number	49 (17)* (100)#	81 (10.0)* (100)#	91 (32)* (100)#	342 (42.2)* (100)#	142 (50)* (100)#	388 (47.8)* (100)#	282 (99)* (100)#	811 (100)* (100)#

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Note: \*connotes Row Percentages; #connotes Column Percentages.

<sup>1</sup>Cook, Industrial Buyers, p. 120.



scores of each of these five effectiveness groups on the socioeconomic measures included in this study were then compared. This comparison revealed that age, years of purchasing experience, salary level, salary increase--last five years, satisfaction--purchasing career, satisfaction--current firm, number of professional development activities attended per year, education level, and number of professional associations were all positively related to purchasing effectiveness.

Analysis of the relative strength of the relationships between the socioeconomic measures and purchasing effectiveness revealed that salary level, years of purchasing experience, salary increase--last five years, satisfaction--purchasing career, and satisfaction--current firm were the most important in terms of differentiating more effective from less effective purchasers. On the other hand, years with current firm, and number of positions--last five years were shown to be the least important.

Comparison of the socioeconomic scores of the lower effectiveness range with those of the higher effectiveness range showed that salary level, years of purchasing experience, satisfaction--purchasing career, and satisfaction--current firm were equally useful in differentiating more effective from less effective purchasers at either end of the effectiveness scale. Salary increase--last five years, the number of professional associations, the number of positions--last five years, and education level, however, were shown to be more useful in differentiating more effective from less effective purchasers at the lower end of the effectiveness scale.

The effort to replicate the previous research of Cook proved successful. Both the findings of the Cook study and the findings

of the current study showed that most of the effective purchasers were from 30 to 50 years of age, had over ten years of purchasing experience, and were college graduates. The results of both studies further concurred that when the ineffective purchasers were compared to the effective purchasers, most ineffective purchasers were under 30 years of age, had less than five years of purchasing experience, and had only a high school education.

## CHAPTER VIII

### SUMMARY AND CONCLUSIONS

This chapter summarizes the research effort and reviews the research findings. Conclusions and recommendations are also presented.

#### Research Summary

The objective of this research was to determine some of the characteristics which differentiated more effective from less effective purchasers. A review of the purchasing and related literature revealed a number of personality, socioeconomic, and performance measures that appeared to be related to purchasing effectiveness. These relationships were summarized in the Purchasing Effectiveness Profile presented at the end of Chapter II.

The research methodology used to test the appropriateness of this profile included the development and administration of a mail questionnaire to a large national sample of purchasers. With the help of Professor John H. Hoagland and the Editors of the National Association of Purchasing Management, a mailing list of over 15,000 purchasers was assembled. This list was comprised of purchasing association members from the major population centers of thirty states. From this mailing list a random sample of 3,648 names was selected to whom the research questionnaire was mailed. The

questionnaires were mailed on June 27, 1975 and the cutoff date for including returned questionnaires in the analysis was August 2, 1975. The returns from this group contained 1,090 usable questionnaires, 88 unusable questionnaires, and 65 questionnaires that were returned for insufficient or obsolete addresses.

Analysis of the sample revealed that approximately 60 percent of the respondents were between 30-50 years of age, had spent 15 or fewer years with their present firms and had 15 or fewer years of purchasing experience. Furthermore, nearly 75 percent of the sample received salaries of \$15,000 per year or more and had received salary increases of 21 percent or greater during the last five years.

Analysis of the sample further pointed out that more than 80 percent of the respondents belonged to two or fewer professional associations while more than 70 percent attended seven or fewer professional development activities per year. In addition, more than 90 percent of the sample had attended college with more than 50 percent majoring in business.

Further analysis of the sample population revealed an example of possible sample bias. This example of possible sample bias centered around the fact that the largest proportion of the sample population (more than 42 percent) were managers of purchasing. This apparent bias in favor of managers of purchasing was further highlighted by the fact that the ratio of managers of purchasing to assistant buyers was 58:1. It was concluded that although such a ratio of managers to assistant buyers may be representative of the population of N.A.P.M. affiliated purchasers, it was

probably not representative of the total population of purchasers in general.

Before the purchasing performance measures could be analyzed as they related to purchasing effectiveness, it was necessary to determine who, within the sample, were more and less effective. In an effort to accomplish this, four effectiveness criteria were applied to the sample population. These were salary level, position level, the combination of salary level and position level, and the combination of salary level and percentage salary increase. Salary level, position level, and the combination of salary level and position level failed, however, as effectiveness criteria because of their apparent interrelationships with age, years of purchasing experience, and years of company seniority. Because of these apparent interrelationships, there was no way to be certain if the observed relationships between the purchasing performance measures and the effectiveness criteria were valid or if they were the result of a relationship between the performance measures and age, years of purchasing experience, or years of company seniority.

In an effort to find an effectiveness criterion that was not interrelated with age, years of purchasing experience, and years of company seniority, the combination of salary level and percentage salary increase was used to select a small group of extremely high effective purchasers and a small group of extremely low effective purchasers. The extremely high effective group was limited to those purchasers who received salaries of \$20,000 per

year or more and who had received salary increases of 41 percent or higher during the last five years. In an effort to ensure that this group was truly an elite group and not just a collection of older and more experienced purchasers, selection was limited to those who were 40 years of age or younger. This limited the number of years a purchasers could have spent with his current firm as well as the number of years he could have spent in the purchasing profession. In addition, membership in this elite group was restricted to those who had occupied at least two positions during the last five years and who had achieved at least a bachelor's degree. This extremely more effective group therefore consisted of purchasers who were younger and less experienced but who were mobile, college educated, and received high salaries plus high percentage salary increases.

The extremely low effective group consisted of those purchasers who received under \$15,000 per year plus salary increases of 20 percent or less during the last five years. In order to ensure that this group was truly a less effective group and not just a collection of younger and less experienced purchasers, membership in this group was limited to those who were 30 years of age or older, who had been with their firms for five or more years, and who had five or more years of purchasing experience. This extremely less effective group therefore consisted of those purchasers who were older and more experienced but who were receiving low salaries and low percentage salary increases.

With the effects of age, experience, and company seniority controlled, it was concluded that the combination of salary and

salary increase was a useful criterion for differentiating extremely more effective from extremely less effective purchasers. Applying this criterion resulted in the identification of 44 extremely more effective and 58 extremely less effective purchasers. When the mean scores of the two groups on the ten purchasing performance measures were compared, six of the performance measures were shown to differentiate the extremely more effective group from the extremely less effective group. These were profit potential, personal skills, departmental coordination, negotiation, interfirm coordination, and overall effectiveness. Using these results as a basis for differentiating more effective from less effective purchasers in the total sample involved adding together the response scores of each individual on the above six performance measures to form a composite Purchasing Performance Index. This index served as the basis for dividing the sample into five levels of purchasing effectiveness.

Analysis of the personality variables as they related to purchasing effectiveness involved utilizing the five effectiveness levels that were determined by the Purchasing Performance Index. The mean scores of each of the five effectiveness levels on the four personality variables were then compared. This comparison revealed that self-esteem and the desire to satisfy higher order needs were positively related to purchasing effectiveness, and the need for certainty and external control were negatively related to effectiveness.

Similarly, the individual item responses on the four personality research instruments were also analyzed. The scores on

the individual items found to be most strongly related to purchasing effectiveness were added together to form a Composite Personality Index. Subsequent analysis showed this index to be more strongly related to purchasing effectiveness than any of the original personality variables.

The five effectiveness levels determined by the Purchasing Performance Index were also used to analyze possible relationships between the socioeconomic variables and purchasing effectiveness. The mean scores of each of these five effectiveness levels on each of the socioeconomic variables included in this study were then compared. This comparison revealed that age, years of purchasing experience, salary level, salary increase--last five years, satisfaction--purchasing career, satisfaction--current firm, number of professional development activities attended per year, education level and number of professional associations were all positively related to purchasing effectiveness.

An effort to replicate the previous findings of Robert Cook also proved successful. Both the findings of the Cook study and the findings of the current study showed that most of the effective purchasers were from 30 to 50 years of age, had over ten years of purchasing experience and were college graduates. The results of both studies further concurred that when the ineffective purchasers were compared to the effective purchasers, most ineffective purchasers were under 30 years of age, had less than five years of purchasing experience, and had only a high school education.



### Research Findings

The Purchasing Effectiveness Profile proved itself credible in that most of its predictions were confirmed. Specific findings were:

1. Personality Findings (see Chapter VI)

- a. More effective purchasers tend to have a higher level of self-esteem than less effective purchasers.
- b. More effective purchasers tend to have a lower need for certainty than less effective purchasers.
- c. More effective purchasers tend to have a lower need of external control than less effective purchasers.
- d. More effective purchasers tend to be more desirous of satisfying their higher order needs than less effective purchasers.
- e. More effective purchasers tend to rate themselves higher on the Composite Personality Index than less effective purchasers.

2. Socioeconomic Findings (see Chapter VII)

- a. More effective purchasers tend to be older than less effective purchasers.
- b. More effective purchasers tend to have more years of purchasing experience than less effective purchasers.
- c. More effective purchasers tend to receive higher salaries than less effective purchasers.
- d. More effective purchasers tend to receive larger percentage salary increases than less effective purchasers.
- e. More effective purchasers tend to be more satisfied with their purchasing career than less effective purchasers.
- f. More effective purchasers tend to be more satisfied with the firm they are currently working for than less effective purchasers.
- g. More effective purchasers tend to participate in more professional activities per year than

less effective purchasers.

- h. More effective purchasers tend to hold active membership in more professional associations than less effective purchasers.
- i. More effective purchasers tend to have achieved a higher level of formal education than less effective purchasers.

### 3. Performance Findings (see Chapter V)

More effective purchasers tended to rate themselves higher than less effective purchasers on the following purchasing performance measures:

- a. Profit potential.
- b. Personal skills.
- c. Departmental coordination.
- d. Negotiation.
- e. Interfirm coordination.
- f. Overall effectiveness.

### Conclusions

The following conclusions are made based upon the research findings:

- 1. Individuals classified as being more effective by the Purchasing Performance Index were perceived as more effective both by themselves and by their respective companies. Their companies recognized them as more effective by giving them higher salaries and higher percentage salary increases. The individual's recognized their own high level of effectiveness through their self-ratings on the outcome performance measures of profit potential and overall effectiveness. This indicates a general congruence between the purchasers' perceptions and the firms' perceptions of the purchasers'

level of effectiveness.

2. More effective purchasers perceived themselves as having a superior ability to use their interpersonal skills. This is evidenced by the fact that the more effective purchasers tended to rate themselves higher on personal skills, departmental coordination, negotiation and interfirm coordination than less effective purchasers. It should be noted that success on each of these performance measures depends upon being able to communicate effectively with others.
3. More effective purchasers demonstrated a more positive self-image than did the less effective purchasers. According to their own self-perceptions, these more effective purchasers were more self-confident, more in control and more tolerant of uncertainty. They also saw themselves as being more progressive, foresighted, and egotistical; they expressed a higher level of satisfaction with their overall work situation.
4. More effective purchasers tended to look at their jobs from the standpoint of opportunities to reinforce their high self-perception. They expressed a stronger preference for jobs that provided opportunities for variety, challenge, performance feedback, personal growth and development, independent thought and action, and performing a job in its entirety.
5. More effective purchasers tended to be more interested in developing themselves professionally. This is

evidenced by the fact that they tended to participate in more professional development activities per year and belong to more professional associations than less effective purchasers. They also tended to have achieved a higher level of formal education than their less effective counterparts.

### Recommendations

The following recommendations are offered:

1. The results of this study combined with those of other studies reviewed in Chapter II suggest that the effectiveness of potentially more effective purchasers could be improved by the redesign of purchasing jobs to include: variety (the opportunity to use a number of personally valued skills), autonomy (the chance to feel responsible for one's work), task identity (the opportunity to perform a whole piece of work) and feedback (the opportunity for an individual to find out how he is doing).
2. Purchasing performance measures that were shown to differentiate more effective from less effective purchasers could serve as a focus for the efforts of those responsible for the training and development of purchasing personnel.
3. Purchasing performance measures that were shown to differentiate more effective from less effective purchasers could be used by purchasing managers to

improve their present method of evaluating individual purchasing performance.

4. Purchasing performance measures that were shown to differentiate more effective from less effective purchasers could prove useful to purchasers at all levels as a guide for self-evaluation and self-improvement.
5. Since several personality variables were shown to be related to purchasing effectiveness, such variables should be given more attention in future purchasing research.

#### Commentary

In the interests of aiding future researchers the following suggestions are offered:

1. The self-rating technique should be employed in future research as a means for obtaining individual performance ratings. This allows such research to be economically conducted across larger and more representative samples of purchasers.
2. The marked-sense questionnaire format should be employed in future research as a means for obtaining large amounts of data from a mail questionnaire, and also for achieving a reasonable response rate. This type of format reduces the physical length and improves the appearance of the questionnaire. Using the marked-sense format also facilitates rapid processing of the data once the

questionnaires have been returned.

Final Comment

This research has accomplished its purpose: to determine some of the characteristics that differentiate more effective from less effective purchasers. In conducting this research, however, far more data was collected than it was possible to analyze in a single dissertation. In the interest of achieving further progress in the field of purchasing, plans for utilizing these data in future research are currently underway.

## **APPENDIX A**

### **COVER LETTER AND QUESTIONNAIRE**

Dear Purchaser:

Purchasing progress is achieved through research. To help achieve this progress, we need a few minutes of your time today.

Please complete and return the enclosed questionnaire which will assist in determining factors that enhance effective purchasing. This research is being conducted at Michigan State University, and is being financed, in part, by the National Association of Purchasing Management through a Doctoral Research grant to Mr. Ross Reck.

The results of this research will be published in various purchasing periodicals so that it can be helpful to many in improving purchasing. Responses are completely confidential and are not identified in any way. If you wish a summary of the research results, please return to us, now or later, a name and address.

This questionnaire can be answered in about fifteen minutes. Your prompt response is important and will be greatly appreciated.

Please join with us in advancing purchasing knowledge.

Yours for purchasing progress,

John H. Hoagland  
Professor of Management

JHH:das



# PURCHASING RESEARCH QUESTIONNAIRE

From Michigan State University

ANSWER SHEET NUMBER

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

## General Directions.

For research purposes at Michigan State University, answer each question at the top of the page. All replies will remain anonymous, so please be frank and honest. For each item, please mark your answer with a #2 pencil. Make your marks firm and clear. Erase when necessary. Example: ☐ ☒ ☐

## Part I

In each of the pairs of words, mark the word you think best describes you **better**.

- |                                |                                |                              |                                 |
|--------------------------------|--------------------------------|------------------------------|---------------------------------|
| 1. understated<br>thoughtful   | 2. unassuming<br>unpretentious | 3. unaffected<br>alert       | 4. sharp-witted<br>deliberate   |
| 5. lively<br>careless          | 6. outgoing<br>friendly        | 7. confident<br>timid        | 8. free-spirited<br>fair-minded |
| 9. sociable<br>shrewd          | 10. personable<br>resourceful  | 11. unpretentious<br>refined | 12. dignified<br>civilized      |
| 13. unassuming<br>self-assured | 14. unassuming<br>friendly     | 15. unaffected<br>friendly   |                                 |

In each of the pairs of words, mark the word you think describes you **less** well.

- |                                |                                 |                              |                                  |
|--------------------------------|---------------------------------|------------------------------|----------------------------------|
| 16. shy<br>shy                 | 17. unassuming<br>unpretentious | 18. unaffected<br>alert      | 19. confident<br>timid           |
| 20. lively<br>careless         | 21. outgoing<br>friendly        | 22. confident<br>timid       | 23. free-spirited<br>fair-minded |
| 24. sociable<br>shrewd         | 25. personable<br>resourceful   | 26. unpretentious<br>refined | 27. dignified<br>civilized       |
| 28. unassuming<br>self-assured | 29. unassuming<br>friendly      | 30. unaffected<br>friendly   | 31. confident<br>timid           |

## Part II

Please mark the space **Yes** or **No** to each of the following statements. Be sure to answer each question.

- |  |     |    |
|--|-----|----|
| 32. Do you feel that you are a person who is very confident? | Yes | No |
| 33. Do you feel that you are a person who is very outgoing?  | Yes | No |
| 34. Do you feel that you are a person who is very confident? | Yes | No |
| 35. Do you feel that you are a person who is very outgoing?  | Yes | No |
| 36. Do you feel that you are a person who is very confident? | Yes | No |
| 37. Do you feel that you are a person who is very outgoing?  | Yes | No |
| 38. Do you feel that you are a person who is very confident? | Yes | No |
| 39. Have you always been a person who is very confident?     | Yes | No |

## Part III

Below are several pairs of statements. Mark the space corresponding to the statement from each pair with which you **more strongly** agree. Please mark the space corresponding to the statement from **EACH** pair.

- |   |  |
|---|--|
| 40. In the long run, people who are very confident are better off than those who are not. |  |
| 41. In the long run, people who are very outgoing are better off than those who are not.  |  |
| 42. In the long run, people who are very confident are better off than those who are not. |  |
| 43. In the long run, people who are very outgoing are better off than those who are not.  |  |
| 44. In the long run, people who are very confident are better off than those who are not. |  |
| 45. In the long run, people who are very outgoing are better off than those who are not.  |  |
| 46. In the long run, people who are very confident are better off than those who are not. |  |
| 47. In the long run, people who are very outgoing are better off than those who are not.  |  |

Listed below are statements representing different behaviors. Indicate the extent to which you agree or disagree by marking the appropriate space on the scale shown below each statement. The numbers and their meanings are indicated below. **EXAMPLE:** 0 1 2 3 4 5

0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8

If you **strongly disagree**, mark space number 1.

If you **disagree somewhat**, mark space number 2.

If you are **neutral**, mark space number 3.

If you **somewhat agree**, mark space number 4.

If you **strongly agree**, mark space number 5.

Indicate what you **give your opinion on every statement**

40. A person who doesn't come up with a definite answer probably doesn't know the answer.

strongly disagree 1 2 3 4 5 strongly agree

41. A person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

42. A man's job is where what is to be done and how it is to be done are analyzed.

strongly disagree 1 2 3 4 5 strongly agree

43. A person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

44. What we are used to is always preferable to what is better.

strongly disagree 1 2 3 4 5 strongly agree

45. A person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

46. I expect to where I know most of the people more than I do where I don't most of the people are not people strangers.

strongly disagree 1 2 3 4 5 strongly agree

47. I am a person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

48. I want to live in a foreign country for a while.

strongly disagree 1 2 3 4 5 strongly agree

49. I am a person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

50. I am a person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

51. I am a person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

52. People who are not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

53. I am a person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

54. Supervisors who hand out large assignments give a chance for more work at a good and trusty.

strongly disagree 1 2 3 4 5 strongly agree

55. I am a person who is not sure of an answer is probably not a good person.

strongly disagree 1 2 3 4 5 strongly agree

## Part V

Listed below are statements referring to some opportunities and attributes of products or products. Indicate the amount of each you would have in your purchasing position by marking the appropriate space on the scale shown below each statement. The numbers and meanings are indicated below:

If you desire the **minimum amount**, mark space number 1.

If you desire a **small amount**, mark space number 2.

If you desire a **moderate amount**, mark space number 3.

If you desire a **large amount**, mark space number 4.

If you desire the **maximum amount**, mark space number 5.

56. The opportunity for personal growth and development.

minimum 1 2 3 4 5 maximum

57. The opportunity for personal growth and development.

minimum 1 2 3 4 5 maximum

58. The chance to do other pay work.

minimum 1 2 3 4 5 maximum

59. The opportunity for personal growth and development.

minimum 1 2 3 4 5 maximum

60. The chance to know who there are performing much better than you.

minimum 1 2 3 4 5 maximum

61. The opportunity for personal growth and development.

minimum 1 2 3 4 5 maximum

ANSWER SHEET NUMBER									
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

70. The freedom to do pretty much what I want  
 minimum 1 2 3 4 5 maximum
71. The opportunity to be creative  
 minimum 1 2 3 4 5 maximum
72. The chance for independent thought and action  
 minimum 1 2 3 4 5 maximum
73. The chance to be a part of something big, new, better, and different  
 minimum 1 2 3 4 5 maximum
74. The opportunity to take out how I feel about  
 minimum 1 2 3 4 5 maximum
75. The chance to try new things and do old things  
 minimum 1 2 3 4 5 maximum

## Part VI

Listed below are several dimensions of purchasing positions. Rate yourself in comparison to other purchasers on each dimension by marking the appropriate space on the scale which follows each statement. The numbers in that order from left to right are indicated below:

- If your performance is **very low**, mark space number 1.  
 If your performance is **moderately low**, mark space number 2.  
 If your performance is **average**, mark space number 3.  
 If your performance is **moderately high**, mark space number 4.  
 If your performance is **very high**, mark space number 5.

76. **Profit Potential** — The extent to which you try to get as low a cost sales for your firm.  
 low 1 2 3 4 5 high
77. **Procedures** — How much you like to follow a set pattern of buying procedures.  
 low 1 2 3 4 5 high
78. **Sourcing** — The degree to which you search for new sources of merchandise and suppliers.  
 low 1 2 3 4 5 high
79. **Personal Skills** — The extent to which you are able to get the best price for your firm by using your own initiative to accept your proposals.  
 low 1 2 3 4 5 high
80. **Departmental Coordination** — Effort you spend in coordinating with, providing reports, arranging meetings, or providing liaison within your department or organization.  
 low 1 2 3 4 5 high
81. **Negotiation** — The extent to which you are able to get the best price for your firm by using your own initiative to accept your proposals.  
 low 1 2 3 4 5 high
82. **Product Research** — The amount of product research you perform by studying reference sources or questioning salesmen, suppliers, and users of similar products.  
 low 1 2 3 4 5 high
83. **Inter-firm Cooperation** — The extent to which you are able to get the best price for your firm by using your own initiative to accept your proposals.  
 low 1 2 3 4 5 high
84. **Quality Assurance** — Your investigation of quality by checking samples, buying tests run, comparing items, or discussing possible adjustments with vendors.  
 low 1 2 3 4 5 high
85. **Overall Effectiveness** — How you rate your performance in your position as a purchaser.  
 low 1 2 3 4 5 high

## Part VII

This final section of the questionnaire is aimed at obtaining some information about your background. This information is critical to the success of this study, so please answer each question. Please mark only **one** answer for each question.

86. What is your age?  
 1. less than 20 2. 20-40 3. 41-50 4. 51-60 5. Over 60
87. How many years have you been in your present position?  
 1. less than 5 2. 5-10 3. 11-15 4. 16-20 5. more than 20
88. How many total years have you been in purchasing?  
 1. less than 5 2. 5-10 3. 11-15 4. 16-20 5. more than 20

1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

89. What is your present salary level?

- |                        |                        |                        |
|------------------------|------------------------|------------------------|
| 1. Under \$10,000      | 2. \$10,000 - \$14,999 | 3. \$15,000 - \$19,999 |
| 4. \$20,000 - \$24,999 | 5. \$25,000 or over    |                        |

90. How satisfied are you with your present salary level?

- |               |            |             |         |
|---------------|------------|-------------|---------|
| 1. Not at all | 2. Not too | 3. Somewhat | 4. Very |
| 1. Not at all | 2. Not too | 3. Somewhat | 4. Very |

91. Overall, how satisfied are you with your career progress and advancement?

- |                         |                            |                         |                   |
|-------------------------|----------------------------|-------------------------|-------------------|
| 1. very dissatisfied    | 2. moderately dissatisfied | 3. moderately satisfied | 4. very satisfied |
| 4. moderately satisfied | 5. very satisfied          |                         |                   |

92. How satisfied are you with the career opportunities available to you?

- |                         |                            |
|-------------------------|----------------------------|
| 1. very dissatisfied    | 2. moderately dissatisfied |
| 3. moderately satisfied | 4. very satisfied          |

93. How many different positions have you held during the last five years?

- |         |                 |          |
|---------|-----------------|----------|
| 1. one  | 2. two          | 3. three |
| 4. four | 5. five or more |          |

94. How many different titles have you held during the last five years?

- |                       |                          |                 |                |                          |
|-----------------------|--------------------------|-----------------|----------------|--------------------------|
| 1. One or less titles | 2. Two titles            | 3. Three titles | 4. Four titles | 5. More than four titles |
| 4. Four titles        | 5. More than four titles |                 |                |                          |

95. Of the position titles listed below, which one best describes your present position?

- |                          |                                 |                     |
|--------------------------|---------------------------------|---------------------|
| 1. Assistant buyer       | 2. Buyer                        | 3. Purchasing Agent |
| 4. Manager of Purchasing | 5. Vice President of Purchasing | 6. President        |
|                          |                                 | 7. Other            |

96. How many different titles have you held during the last five years?

- |                       |                          |                 |
|-----------------------|--------------------------|-----------------|
| 1. One or less titles | 2. Two titles            | 3. Three titles |
| 4. Four titles        | 5. More than four titles |                 |

97. In what position do you expect to be five years from now?

- |                          |                                 |                     |
|--------------------------|---------------------------------|---------------------|
| 1. Assistant buyer       | 2. Buyer                        | 3. Purchasing Agent |
| 4. Manager of Purchasing | 5. Vice President of Purchasing | 6. President        |
|                          |                                 | 7. Other            |

98. How many times per year do you call at home to check on the progress of your work?

- |               |                 |              |
|---------------|-----------------|--------------|
| 1. 0-2        | 2. 3-4          | 3. 5 or more |
| 4. 12 or more | 5. more than 12 |              |

99. What level of education have you completed?

- |                         |                    |                      |
|-------------------------|--------------------|----------------------|
| 1. High school graduate | 2. Some college    | 3. Bachelor's degree |
| 4. Some graduate school | 5. Advanced degree |                      |

100. How satisfied are you with the responsibility of your present position?

- |               |             |         |
|---------------|-------------|---------|
| 1. Not at all | 2. Somewhat | 3. Very |
| 4. Not at all | 5. Somewhat | 6. Very |

101. If you attended college, what was your major area of study?

102. Please list the professional associations in which you might or might not belong. Examples are NAAM, IAP, NAAB, APUS, NCI.

Reader code for questions 101, 102, and 103. Please do not mark in this box. Thank you.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 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1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121 1122 1123 1124 1125 1126 1127 1128 1129 1130 1131 1132 1133 1134 1135 1136 1137 1138 1139 1140 1141 1142 1143 1144 1145 1146 1147 1148 1149 1150 1151 1152 1153 1154 1155 1156 1157 1158 1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181 1182 1183 1184 1185 1186 1187 1188 1189 1190 1191 1192 1193 1194 1195 1196 1197 1198 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1210 1211 1212 1213 1214 1215 1216 1217 1218 1219 1220 1221 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1422 1423 1424 1425 1426 1427 1428 1429 1430 1431 1432 1433 1434 1435 1436 1437 1438 1439 1440 1441 1442 1443 1444 1445 1446 1447 1448 1449 1450 1451 1452 1453 1454 1455 1456 1457 1458 1459 1460 1461 1462 1463 1464 1465 1466 1467 1468 1469 1470 1471 1472 1473 1474 1475 1476 1477 1478 1479 1480 1481 1482 1483 1484 1485 1486 1487 1488 1489 1490 1491 1492 1493 1494 1495 1496 1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511 1512 1513 1514 1515 1516 1517 1518 1519 1520 1521 1522 1523 1524 1525 1526 1527 1528 1529 1530 1531 1532 1533 1534 1535 1536 1537 1538 1539 1540 1541 1542 1543 1544 1545 1546 1547 1548 1549 1550 1551 1552 1553 1554 1555 1556 1557 1558 1559 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569 1570 1571 1572 1573 1574 1575 1576 1577 1578 1579 1580 1581 1582 1583 1584 1585 1586 1587 1588 1589 1590 1591 1592 1593 1594 1595 1596 1597 1598 1599 1600 1601 1602 1603 1604 1605 1606 1607 1608 1609 1610 1611 1612 1613 1614 1615 1616 1617 1618 1619 1620 1621 1622 1623 1624 1625 1626 1627 1628 1629 1630 1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644 1645 1646 1647 1648 1649 1650 1651 1652 1653 1654 1655 1656 1657 1658 1659 1660 1661 1662 1663 1664 1665 1666 1667 1668 1669 1670 1671 1672 1673 1674 1675 1676 1677 1678 1679 1680 1681 1682 1683 1684 1685 1686 1687 1688 1689 1690 1691 1692 1693 1694 1695 1696 1697 1698 1699 1700 1701 1702 1703 1704 1705 1706 1707 1708 1709 1710 1711 1712 1713 1714 1715 1716 1717 1718 1719 1720 1721 1722 1723 1724 1725 1726 1727 1728 1729 1730 1731 1732 1733 1734 1735 1736 1737 1738 1739 1740 1741 1742 1743 1744 1745 1746 1747 1748 1749 1750 1751 1752 1753 1754 1755 1756 1757 1758 1759 1760 1761 1762 1763 1764 1765 1766 1767 1768 1769 1770 1771 1772 1773 1774 1775 1776 1777 1778 1779 1780 1781 1782 1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801 1802 1803 1804 1805 1806 1807 1808 1809 1810 1811 1812 1813 1814 1815 1816 1817 1818 1819 1820 1821 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2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2

## **APPENDIX B**

**THE FREQUENCY DISTRIBUTIONS OF THE RESPONSES  
FOR EACH ITEM ON THE RESEARCH QUESTIONNAIRE**

TABLE B-1

FREQUENCY DISTRIBUTIONS OF THE RESPONDENTS' SCORES  
ON THE INDIVIDUAL SELF-ESTEEM ITEMS

Questionnaire Item Number	Item Description	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
1	Understanding	587	53.9	53.9
	Thorough	503	46.1	100.0
2	Loyal	298	27.3	27.3
	Dependable	792	72.7	100.0
3	Unaffected	127	11.7	11.7
	Alert	963	88.3	100.0
4	Sharp-witted	376	34.5	34.5
	Deliberate	714	65.5	100.0
5	Kind	908	83.3	83.3
	Jolly	182	16.7	100.0
6	Enterprising	482	44.2	44.2
	Intelligent	608	55.8	100.0
7	Progressive	715	65.6	65.6
	Thrifty	375	34.4	100.0
8	Thoughtful	292	26.8	26.8
	Fair-minded	798	73.2	100.0
9	Sociable	429	39.4	39.4
	Steady	661	60.6	100.0
10	Pleasant	753	69.1	69.1
	Modest	337	30.9	100.0
11	Responsible	665	61.0	61.0
	Reliable	425	39.0	100.0
12	Dignified	415	38.1	38.1
	Civilized	675	61.9	100.0
13	Imaginative	569	52.2	52.5
	Self-controlled	521	47.8	100.0
14	Sympathetic	476	43.7	43.7
	Patient	614	56.3	100.0
15	Stable	589	54.0	54.0
	Foresighted	501	46.0	100.0
16	Shy	137	12.6	12.6
	Lazy	953	87.4	100.0
17	Immature	705	64.7	64.7
	Quarrelsome	385	35.3	100.0

TABLE B-1--Continued

Questionnaire Item Number	Item Description	Absolute Frequency	Frequency (Percent)	Cumulative Frequency (Percent)
18	Unfriendly	672	61.7	61.7
	Self-seeking	418	38.3	100.0
19	Conceited	321	29.4	29.4
	Infantile	769	70.6	100.0
20	Shallow	610	56.0	56.0
	Stingy	480	44.0	100.0
21	Unstable	788	72.3	72.3
	Frivolous	302	27.7	100.0
22	Dreamy	724	66.4	66.4
	Dependent	366	33.6	100.0
23	Apathetic	570	52.3	52.3
	Egotistical	520	47.7	100.0
24	Despondent	753	69.1	69.1
	Evasive	337	30.9	100.0
25	Weak	750	68.8	68.8
	Selfish	340	31.2	100.0
26	Fussy	349	32.0	32.0
	Submissive	741	68.0	100.0
27	Opinionated	337	30.9	30.9
	Pessimistic	753	69.1	100.0
28	Shiftless	722	66.2	66.2
	Bitter	368	33.8	100.0
29	Hard-hearted	405	37.2	37.2
	Self-pitying	685	62.8	100.0
30	Cynical	945	86.7	86.7
	Aggressive	145	13.3	100.0
31	Undependable	812	74.5	74.5
	Resentful	278	25.5	100.0

Note: For items 1-15, the respondents were asked to indicate which adjective from each pair described item best. For items 16-31, the respondents were asked to indicate which adjective from each pair described them less well.





TABLE B-2

FREQUENCY DISTRIBUTION OF THE INDIVIDUAL NEED  
FOR ACHIEVEMENT ITEMS

Questionnaire Item Number and Abbreviated Item Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
32: It's easy to relax on a vacation.	Yes	756	69.4	69.4
	No	334	30.6	100.0
33: Annoyed with impunctuality.	Yes	916	84.0	84.0
	No	174	16.0	100.0
34: Dislike seeing things wasted.	Yes	1,067	97.9	97.9
	No	23	2.1	100.0
35: I like getting drunk.	Yes	77	7.1	7.1
	No	1,013	92.9	100.0
36: I forget about job after working hours.	Yes	510	46.8	46.8
	No	580	53.2	100.0
37: Prefer congeniality over competence	Yes	108	9.9	9.9
	No	982	90.1	100.0
38: Ineffeciency makes me angry.	Yes	968	88.8	88.8
	No	122	11.2	100.0
39: I work hard to be the best.	Yes	982	90.1	90.1
	No	108	9.9	100.0

TABLE B-3

FREQUENCY DISTRIBUTIONS OF THE RESPONDENTS' SCORES  
ON THE INDIVIDUAL EXTERNAL CONTROL ITEMS

Questionnaire Item Number	Abbreviated Item Description	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
40	People get respect.	724	66.4	66.4
	Worth passes unrecognized.	366	33.6	100.0
41	Breaks make leaders.	156	14.3	14.3
	Work makes leaders.	934	85.7	100.0
42	Work makes success.	696	63.9	63.9
	A good job is luck.	394	36.1	100.0
43	Luck makes no difference.	934	85.7	85.7
	Best to flip a coin	156	14.3	100.0
44	Being boss is luck.	144	13.2	13.2
	Being boss is ability.	946	86.8	100.0
45	We are trapped.	434	39.8	39.8
	We are in control.	656	60.2	100.0
46	Accidents control lives.	682	62.6	62.6
	There is no luck.	408	37.4	100.0
47	I have little influence.	440	40.4	40.4
	Luck plays no role.	650	59.6	100.0



TABLE B-4

FREQUENCY DISTRIBUTIONS OF THE RESPONDENTS' SCORES  
ON THE INDIVIDUAL NEED FOR CERTAINTY ITEMS

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
48: An expert should have a definite answer.	Strongly Disagree	218	20.0	20.0
	Disagree Somewhat	415	38.1	58.1
	Neutral	157	14.4	72.5
	Somewhat Agree	209	19.2	91.7
	Strongly Agree	91	18.3	100.0
49: All prob- lems can be solved.	Strongly Agree	131	12.0	12.0
	Disagree Somewhat	250	22.9	35.0
	Neutral	70	6.4	41.4
	Somewhat Agree	316	29.0	70.4
	Strongly Agree	323	29.6	100.0
50: Directions must be clear.	Strongly Disagree	320	29.4	29.4
	Disagree Somewhat	329	30.2	59.5
	Neutral	110	10.1	69.6
	Somewhat Agree	171	15.7	85.3
	Strongly Agree	160	14.7	100.0
51: Tackle small problems.	Strongly Disagree	294	27.0	27.0
	Disagree Somewhat	281	25.8	52.8
	Neutral	145	13.3	66.1
	Somewhat Agree	261	23.9	90.0
	Strongly Agree	109	10.0	100.0
52: I prefer the fam- iliar.	Strongly Disagree	176	16.1	16.1
	Disagree Somewhat	243	22.3	38.4
	Neutral	122	11.2	49.6
	Somewhat Agree	344	31.6	81.2
	Strongly Agree	205	18.8	100.0
53: I prefer the regu- lar life.	Strongly Disagree	346	31.7	31.7
	Disagree Somewhat	388	35.6	67.3
	Neutral	133	12.2	79.5
	Somewhat Agree	153	14.0	93.6
	Strongly Agree	70	6.4	100.0
54: I prefer familiar people.	Strongly Disagree	55	5.0	5.0
	Disagree Somewhat	177	16.2	21.3
	Neutral	242	22.2	43.5
	Somewhat Agree	384	35.2	78.7
	Strongly Agree	232	21.3	100.0

TABLE B-4--Continued

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
55: We should all have similar values.	Strongly Disagree	647	59.4	59.4
	Disagree Somewhat	253	23.2	82.6
	Neutral	73	6.7	89.3
	Somewhat Agree	69	6.3	95.6
	Strongly Agree	48	4.4	100.0
56: Would like to live in a foreign country.	Strongly Disagree	176	16.1	16.1
	Disagree Somewhat	93	8.5	24.6
	Neutral	170	15.6	40.2
	Somewhat Agree	309	28.3	68.5
	Strongly Agree	342	41.4	100.0
57: I dislike schedules.	Strongly Disagree	81	7.4	7.4
	Disagree Somewhat	258	23.7	31.1
	Neutral	141	12.9	44.0
	Somewhat Agree	343	31.5	75.5
	Strongly Agree	267	24.5	100.0
58: I prefer complicated problems.	Strongly Disagree	34	3.1	3.1
	Disagree Somewhat	99	9.1	12.2
	Neutral	108	9.9	22.1
	Somewhat Agree	360	33.0	55.1
	Strongly Agree	489	44.9	100.0
59: I prefer different people.	Strongly Disagree	25	2.3	2.3
	Disagree Somewhat	31	2.8	5.1
	Neutral	60	5.5	10.6
	Somewhat Agree	373	34.2	44.8
	Strongly Agree	601	55.1	100.0
60: I appreci- ate the complexity of things.	Strongly Disagree	116	10.6	10.6
	Disagree Somewhat	246	22.6	33.2
	Neutral	164	15.0	48.2
	Somewhat Agree	386	35.4	83.6
	Strongly Agree	178	16.3	100.0
61: Decisions are often based on insuffi- cient in- formation.	Strongly Disagree	136	12.5	12.5
	Disagree Somewhat	196	18.0	30.5
	Neutral	89	8.2	38.7
	Somewhat Agree	447	41.0	79.7
	Strongly Agree	222	20.4	100.0

TABLE B-4--Continued

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
62: Vagueness breeds originality	Strongly Disagree	359	32.9	32.9
	Disagree Somewhat	288	26.4	59.3
	Neutral	90	8.3	67.6
	Somewhat Agree	252	23.1	90.7
	Strongly Agree	101	9.3	100.0
63: A super- visor should make you wonder.	Strongly Disagree	209	19.2	19.2
	Disagree Somewhat	199	18.3	37.5
	Neutral	130	11.9	49.4
	Somewhat Agree	353	32.4	81.8
	Strongly Agree	199	18.3	100.0

TABLE B-5

FREQUENCY DISTRIBUTION OF THE RESPONDENTS' SCORES  
ON THE INDIVIDUAL HIGHER ORDER NEED ITEMS

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
64: Opportunity for per- sonal growth	Minimum Amount	2	.2	.2
	Small Amount	9	.8	1.0
	Moderate Amount	83	7.6	8.6
	Large Amount	245	22.5	31.1
	Maximum Amount	751	68.9	100.0
65: Feeling of accomplish- ment.	Minimum Amount	1	.1	.1
	Small Amount	3	.3	.4
	Moderate Amount	27	2.5	2.9
	Large Amount	251	23.0	25.9
	Maximum Amount	808	74.1	100.0
66: Chance for challenging work.	Minimum Amount	0	0	0
	Small Amount	5	.5	.5
	Moderate Amount	48	4.4	4.9
	Large Amount	295	27.1	31.9
	Maximum Amount	742	68.1	100.0
67: Opportunity to complete work.	Minimum Amount	1	.1	.1
	Small Amount	20	1.8	1.9
	Moderate Amount	117	10.7	12.7
	Large Amount	304	27.9	40.6
	Maximum Amount	648	59.4	100.0
68: Opportunity for per- formance feedback.	Minimum Amount	3	.3	.3
	Small Amount	8	.7	1.0
	Moderate Amount	84	7.7	8.7
	Large Amount	275	25.2	33.9
	Maximum Amount	720	66.1	100.0
69: Opportunity to par- ticipate.	Minimum Amount	2	.2	.2
	Small Amount	4	.4	.6
	Moderate Amount	48	4.4	5.0
	Large Amount	281	25.8	30.7
	Maximum Amount	755	69.3	100.0
70: Freedom of action.	Minimum Amount	12	1.1	1.1
	Small Amount	51	4.7	5.8
	Moderate Amount	235	21.6	27.4
	Large Amount	455	41.7	69.1
	Maximum Amount	337	30.9	100.0

TABLE B-5---Continued

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
71: Opportunity for variety.	Minimum Amount	0	0	0
	Small Amount	14	1.3	1.3
	Moderate Amount	123	11.3	12.6
	Large Amount	439	40.3	52.8
	Maximum Amount	514	47.2	100.0
72: Chance for independent thought and action.	Minimum Amount	0	0	0
	Small Amount	4	.4	.4
	Moderate Amount	72	6.6	7.0
	Large Amount	423	38.8	45.8
	Maximum Amount	591	54.2	100.0
73: Chance to do a whole job.	Minimum Amount	7	.6	.6
	Small Amount	26	2.4	3.0
	Moderate Amount	141	12.9	16.0
	Large Amount	337	30.9	46.9
	Maximum Amount	579	53.1	100.0
74: Opportunity to find out how I am doing.	Minimum Amount	7	.6	.6
	Small Amount	20	1.8	2.5
	Moderate Amount	121	11.1	13.6
	Large Amount	303	27.8	41.4
	Maximum Amount	639	58.6	100.0
75: Opportunity to do a number of things.	Minimum Amount	2	.2	.2
	Small Amount	18	1.7	1.9
	Moderate Amount	113	10.4	12.2
	Large Amount	394	36.1	48.3
	Maximum Amount	563	51.7	100.0



TABLE B-6

FREQUENCY DISTRIBUTION OF THE RESPONDENTS' SCORES  
ON THE INDIVIDUAL PERFORMANCE MEASURES

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
76: Profit potential.	Very Low	10	.9	.9
	Moderately Low	25	2.3	3.2
	Average	204	18.7	21.9
	Moderately High	463	42.5	64.4
	Very High	388	35.6	100.0
77: Procedures.	Very Low	12	1.1	1.1
	Moderately Low	40	3.7	4.8
	Average	175	16.1	20.8
	Moderately High	440	40.4	61.2
	Very High	423	38.8	100.0
78: Sourcing.	Very Low	7	.6	.6
	Moderately Low	39	3.6	4.2
	Average	226	20.7	25.0
	Moderately High	470	43.1	68.1
	Very High	348	31.9	100.0
79: Personal Skills.	Very Low	9	.8	.8
	Moderately Low	38	3.5	4.3
	Average	189	17.3	21.7
	Moderately High	487	44.7	66.3
	Very High	367	33.7	100.0
80: Departmental Coordination.	Very Low	20	1.8	1.8
	Moderately Low	61	5.6	7.4
	Average	245	22.5	29.9
	Moderately High	404	37.1	67.0
	Very High	360	33.0	100.0
81: Negotiation.	Very Low	5	.5	.5
	Moderately Low	20	1.8	2.3
	Average	170	15.6	17.9
	Moderately High	542	49.7	67.6
	Very High	353	32.4	100.0
82: Product Research.	Very Low	19	1.7	1.7
	Moderately Low	83	7.6	9.4
	Average	311	28.5	37.9
	Moderately High	445	40.8	78.7
	Very High	232	21.3	100.0



Table B-6--Continued

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
83: Interfirm Coordin- ation.	Very Low	22	2.0	2.0
	Moderately Low	88	8.1	10.1
	Average	298	27.3	37.4
	Moderately High	413	37.9	75.3
	Very High	269	24.7	100.0
84: Quality Accurance.	Very Low	51	4.7	4.7
	Moderately Low	122	11.2	15.9
	Average	330	30.3	46.1
	Moderately High	363	33.3	79.4
	Very High	224	20.6	100.0
85: Overall Effective- ness.	Very Low	1	.1	.1
	Moderately Low	7	.6	.7
	Average	136	12.5	13.2
	Moderately High	620	56.9	70.1
	Very High	326	29.9	100.0

TABLE B-7

FREQUENCY DISTRIBUTION OF THE RESPONDENTS' SCORES  
ON THE SOCIOECONOMIC MEASURES

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
86: Age.	Less than 30	107	9.8	9.8
	30-40	324	29.7	39.5
	41-50	317	29.1	68.6
	51-60	271	24.9	93.5
	Over 60	71	6.5	100.0
87: Years with current firm.	Less than 5	293	26.9	26.9
	5-10	253	23.2	50.1
	11-15	148	13.6	63.7
	16-20	121	11.1	74.8
	More than 20	275	25.2	100.0
88: Years with purchasing experience.	Less than 5	198	18.2	18.2
	5-10	282	25.9	44.0
	11-15	195	17.9	61.9
	16-20	169	15.5	77.4
	More than 20	246	22.6	100.0
89: Salary level.	Under 10,000	20	1.8	1.8
	10,000-14,999	271	24.9	26.7
	15,000-19,999	352	32.3	59.0
	20,000-24,999	228	20.9	79.9
	25,000 and over	219	20.1	100.0
90: Salary increase-- last five years.	0-10	85	7.8	7.8
	11-20	214	19.6	27.4
	21-30	238	21.8	49.3
	31-40	170	15.6	64.9
	41-50	185	17.0	81.8
	More than 50	198	18.2	100.0
91: Satisfac- tion-- purchasing career.	Very Dissatisfied	27	2.5	2.5
	Moderately Dis- satisfied	92	8.4	10.9
	Neutral	70	6.4	17.3
	Moderately Satisfied	565	51.8	69.2
	Very Satisfied	336	30.8	100.0



TABLE B-7--Continued

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
92: Satisfac- tion--current firm.	Very Dissatisfied	41	3.8	3.8
	Moderately Dis- satisfied	108	9.9	13.7
	Neutral	42	3.9	17.5
	Moderately Satisfied	407	37.3	54.9
	Very Satisfied	492	45.1	100.0
93: Number of positions-- last five years.	One	427	39.2	39.2
	Two	400	36.7	75.9
	Three	190	17.4	93.3
	Four	52	4.8	98.1
	Five or more	21	1.9	100.0
94: Entry level position.	Clerk/Expediter	188	17.2	17.2
	Assistant Buyer	164	15.0	32.3
	Buyer	329	30.2	62.5
	Purchasing Agent	193	17.7	80.3
	Manager of Purchasing	125	11.5	91.7
	V.P. of Purchasing	20	1.8	93.6
	Other	71	6.5	100.0
95: Present Position.	Assistant Buyer	8	.7	.7
	Buyer	125	11.5	12.2
	Purchasing Agent	332	30.5	42.7
	Manager of Purchasing	463	42.5	85.1
	V.P. of Purchasing	64	5.9	91.0
	Researcher	11	1.0	92.0
	Other	87	8.0	100.0
96: Position of immediate supervisor.	Assistant Buyer	2	.2	.2
	Buyer	10	.9	1.1
	Purchasing Agent	61	5.6	6.7
	Manager of Purchasing	231	21.2	27.9
	V.P. of Purchasing	111	10.2	38.1
	Other	675	61.9	100.0
97: Expected position-- five years hence.	Assistant Buyer	1	.1	.1
	Buyer	21	1.9	2.0
	Purchasing Agent	147	13.5	15.6
	Manager of Purchasing	326	30.0	45.6
	V.P. of Purchasing	199	18.3	63.9
	Non-purchasing Position	246	22.7	86.6
	Retired	146	13.4	100.0

TABLE B-7--Continued

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
98: Number of professional development programs attended per year.	0-3	507	46.5	46.5
	4-7	324	29.7	76.3
	8-11	135	12.4	88.6
	12-15	83	7.6	96.3
	More than 15	41	3.8	100.0
99: Education level.	Less than high school	2	.2	.2
	High school	105	9.6	9.8
	Some college	450	41.3	51.1
	Bachelor's degree	294	27.0	78.1
	Some graduate school	144	13.2	91.3
	Advanced degree	95	8.7	100.0
100: Employer's line of business.	Educational	47	4.3	4.3
	Governmental	92	8.4	12.8
	Industrial	667	61.2	74.0
	Institutional	24	2.2	76.2
	Wholesale	58	5.3	81.5
	Retail	28	2.6	84.1
	Other	173	15.9	100.0
101: Undergrad- uate college major.	None	192	17.6	17.6
	Business	562	51.6	69.2
	Engineering	131	12.0	81.2
	Liberal Arts-- Social Science	117	10.7	91.9
	Science	60	5.5	97.4
	Agriculture	13	1.2	98.6
	Education	15	1.4	100.0
102: Graduate college major.	None	831	76.3	76.3
	Business	195	17.9	94.1
	Engineering	19	1.7	95.9
	Liberal Arts-- Social Science	23	2.1	98.0
	Science	13	1.2	99.2
	Agriculture	2	.2	99.4
	Education	7	.6	100.0

TABLE B-7--Continued

Questionnaire Item Number & Abbreviated Description	Response Category	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
103: Number of professional associations.	0	65	6.0	6.0
	1	734	67.3	73.3
	2	201	18.4	91.7
	3	63	5.8	97.5
	4	19	1.7	99.3
	5	5	.5	99.7
	6	2	.2	99.9
	7	1	.1	100.0
104: Sex.	Male	1,038	95.2	95.2
	Female	52	4.8	100.0



## **APPENDIX C**

### **A SUMMARY OF THE RESPONSES CONCERNING THE PERSONALITY VARIABLES**

Self-Esteem

Each respondent's level of self-esteem was measured with the self-assurance scale of the Ghiselli Self-Description Inventory. This scale is part I of the questionnaire appearing in Appendix A, and is explained in Chapter III. The scores ranged from 11 to 41 with a higher score indicating a higher level of self-esteem. The frequency distribution of the self-esteem scores for the 1,090 respondents participating in the study is presented in Table C-1. The frequency distributions of the responses of each item that made up the instrument used to measure self-esteem are presented in Table B-1.

TABLE C-1

FREQUENCY DISTRIBUTION OF THE RESPONDENTS'  
SELF-ESTEEM SCORES

Self-Esteem Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
11	2	.2	.2
12	1	.1	.3
13	2	.2	.5
14	2	.2	.6
15	5	.5	1.1
16	5	.5	1.6
17	13	1.2	2.8
18	16	1.5	4.2
19	25	2.3	6.5
20	35	3.2	9.7
21	32	2.9	12.7
22	34	3.1	15.8
23	51	4.7	20.5
24	50	4.6	25.0
25	56	5.1	30.2
26	61	5.6	35.8
27	73	6.7	42.5
28	70	6.4	48.9
29	73	6.7	55.6
30	79	7.2	62.8
31	69	6.3	69.2

TABLE C-1--Continued

Self-Esteem Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
32	78	7.2	76.3
33	71	6.5	82.8
34	58	5.3	88.2
35	45	4.1	92.3
36	36	3.3	95.6
37	19	1.7	97.3
38	16	1.5	98.8
39	6	.6	99.4
40	4	.4	99.7
41	<u>3</u>	<u>.3</u>	100.0
Total	1,090	100.0	

Need for Certainty

The Budner Intolerance of Ambiguity Scale was used to measure each respondent's need for certainty. This scale is part IV of the questionnaire found in Appendix A, and is explained in Chapter III. The respondents' scores on this scale ranged from 18 to 70 with a high score indicating a high need for certainty. These scores are summarized in Table C-2. The frequency distributions of the responses on each item that made up the instrument used to measure need for certainty are presented in Table B-4.

TABLE C-2

FREQUENCY DISTRIBUTION OF THE RESPONDENTS'  
NEED FOR CERTAINTY SCORES

Need for Certainty Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
18	1	.1	.1
20	1	.1	.2
22	1	.1	.3
25	2	.2	.5
26	2	.2	.6
27	10	.9	1.6
28	9	.8	2.4
29	12	1.1	3.5
30	11	1.0	4.5
31	17	1.6	6.1
32	15	1.4	7.4
33	21	1.9	9.4
34	25	2.3	11.7
35	32	2.9	15.6
36	61	5.6	20.2
37	50	4.6	24.8
38	47	4.3	29.1
39	50	4.6	33.7
40	66	6.1	39.7
41	76	7.0	46.7
42	65	6.0	52.7
43	54	5.0	57.6
44	65	6.0	63.6
45	55	5.0	68.6
46	56	5.1	73.8
47	48	4.4	78.2
48	42	3.9	82.0
49	42	3.9	85.9

TABLE C-2--Continued

Need for Certainty Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
50	31	2.8	88.7
51	26	2.4	91.1
52	23	2.1	93.2
53	23	2.1	95.3
54	10	.9	96.2
55	11	1.0	97.2
56	10	.9	98.2
57	7	.6	98.8
58	3	.3	99.1
59	2	.2	99.3
60	1	.1	99.4
61	1	.1	99.4
62	4	.4	99.8
65	1	.1	99.9
70	<u>1</u>	<u>.1</u>	100.0
Total	1,090	100.0	

External Control

External control was measured using a factored version of the Rotter Internal-External Scale. This scale is explained in Chapter III and is part III of the questionnaire found in Appendix A. The respondents' scores on this scale ranged from 0 to 9 with a higher score indicating a higher degree of external control. The scores of the 1,090 respondents are summarized in Table C-3. The frequency distributions of the responses on each item that made up the instrument used to measure external control are presented in Table B-3.



TABLE C-3

FREQUENCY DISTRIBUTION OF THE RESPONDENTS'  
EXTERNAL CONTROL SCORES

External Control Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
0	225	20.6	20.6
1	104	9.5	30.2
2	124	11.4	41.6
3	160	14.7	56.2
4	150	13.8	70.0
5	112	10.3	80.3
6	110	10.1	90.4
7	54	5.0	95.3
8	35	3.2	98.5
9	<u>16</u>	<u>1.5</u>	100.0
Total	1,090	100.0	



Desire to Satisfy Higher Order Needs

A measure of the respondents' desire to satisfy their higher order needs was obtained using an instrument developed by Hackman and Lawler. This instrument is Part V of the questionnaire found in Appendix A and is explained in Chapter III. The scores of the respondents on this instrument ranged from 25 to 60 with a higher score indicating a stronger desire to satisfy one's higher order needs. A frequency distribution of the respondents' higher order need scores is presented in Table C-4. The frequency distributions of the responses on each item which made up the instrument used to measure desire to satisfy higher needs are presented in Table B-5.

TABLE C-4

FREQUENCY DISTRIBUTION OF THE RESPONDENTS'  
HIGHER ORDER NEED SCORES

Higher Order Need Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
25	1	.1	.1
33	1	.1	.2
35	1	.1	.3
36	5	.5	.7
37	2	.2	.9
38	2	.2	1.1
39	3	.3	1.4
40	2	.2	1.6
41	6	.6	2.1
42	6	.6	2.7
43	11	1.0	3.7
44	15	1.4	5.0
45	32	2.9	8.0
46	23	2.1	10.1
47	44	4.0	14.1
48	50	4.6	18.7
49	38	3.5	22.2
50	59	5.4	27.6
51	66	6.1	33.7
52	60	5.5	39.2
53	61	5.6	44.8
54	70	6.4	51.2

TABLE C-4--Continued

Higher Order Need Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
55	76	7.0	58.2
56	73	6.7	64.9
57	87	8.0	72.8
58	91	8.3	81.2
59	53	4.9	86.1
60	<u>152</u>	<u>13.9</u>	100.0
Total	1,090	100.0	

Need for Achievement

The respondents' need for achievement was measured using the Lynn Achievement Motivation Questionnaire. This instrument is part II of the questionnaire found in Appendix A and is explained in Chapter III. The scores ranged from 2 to 8 with a higher score indicating a higher need for achievement. A frequency distribution of the respondents' need for achievement scores is presented in Table C-5. The frequency distributions of the responses on each item that made up the instrument used to measure need for achievement are presented in Table B-2.

TABLE C-5

FREQUENCY DISTRIBUTION OF THE RESPONDENTS'  
NEED FOR ACHIEVEMENT SCORES

Need for Achievement Score	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
2	6	.6	.6
3	13	1.2	1.7
4	50	4.6	6.3
5	177	16.2	22.6
6	381	35.0	57.5
7	284	26.1	83.6
8	<u>179</u>	<u>16.4</u>	100.0
Total	1,090	100.0	

## **APPENDIX D**

### **DEFINITIONS OF THE ACTIVITIES OF EFFECTIVE AND INEFFECTIVE BUYERS**



## ACTIVITIES OF EFFECTIVE AND INEFFECTIVE BUYERS\*

1. Profit Potential. The buyer's activities are reported as producing savings or causing a change in costs. Requires judgment on how to meet company cost goals.
2. Transportation. The buyer reviews transportation modes, services, possible improvements in delivery time or cost.
3. Departmental Coordination. The buyer develops mutually helpful relations with other units in the firm as well as in his purchasing group. Communicates, provides reports, literature, educates. Provides liaison in the firm. Arranges meetings.
4. Competitive Bids. Uses the bidding process. Asks for quotes.
5. Ethics. The buyer is honest and truthful in his operations. Avoids situations which could reflect unfavorably on him or his firm.
6. Follow-Up. The buyer knows the status of purchase orders and takes corrective action when necessary. Follows through to see that procedures are completed satisfactorily.
7. Forecasting. The buyer projects trends for supply, demand, prices.
8. Forward Buying. The buyer purchases more material than is needed for current requirements, but not beyond actual foreseeable needs. Determines when to buy based on changes in the situation.
9. Interfirm Coordination. Arranges meetings between himself, members of his firm, vendors, or customers to improve cooperation. Communicates, advises of problems.
10. Inventory Control. The buyer checks stock balances, usage rates, seeks to provide or maintain a sufficient supply of material. Plans to increase or decrease inventory levels.
11. Legal Considerations. The buyer plans his activities to avoid problems in contractual areas.
12. Make or Buy. The buyer is involved in a make or buy situation.

\*Activities taken from Robert I. Cook, Critical Incidents Which Distinguish Between Effective and Ineffective Performance (unpublished Ph.D. dissertation, Michigan State University 1974), pp. 148-150.

13. Market Analysis. The buyer studies the market for information on previous or current supply, demand, or price conditions.
14. Negotiation. The buyer discusses the various factors of a purchase with a supplier to obtain a better value. Understanding of terms and conditions is sought. Mutual benefits are anticipated.
15. Organizational Decisions. The buyer makes decisions involving the formal organizational structure. He acts on some questions related to the chain-of-command or the flow of authority and responsibility. Contacts another unit for advice, assistance or clarification. He may challenge requisitions, releases or recommendations of others. Reacts to orders from superiors.
16. Procedures. The buyer usually follows established procedures. Any changes should bring improvement. May decide to use blanket orders. May omit or change the sequence of a step in the regular procedure. Studies new systems, procedures.
17. Product Research. The buyer increases his knowledge of the items he buys. Studies reference sources, questions salesmen, suppliers, users of similar products.
18. Quality Assurance. The buyer investigates to achieve desired quality. He checks samples, has tests run, compares items, discusses any adjustments with vendor.
19. Records. The buyer is conscious of the importance of maintaining complete, correct records of transactions and having them available for reference.
20. Scrap and Surplus Disposal. The buyer arranges the disposition of excess or scrap material.
21. Sourcing. The buyer searches for suppliers, checks old and new sources. Investigates and evaluates capabilities. May need to develop and encourage a new source. Stimulates competition.
22. Specifications. The buyer reviews specifications and may suggest a change in a dimension, material, or design. He is concerned with standards.
23. Substitutions. The buyer recommends a substitute product or an alternative manufacturing process to his firm. Proposes a solution to a problem.
24. Supplier Evaluation. The buyer reviews the capability and performance of existing vendors. Visits supplier facilities.

25. Target Pricing. The buyer works to develop a proper price by analyzing or estimating a supplier's material, labor, and overhead costs.
26. Personal Skills. The buyer is able to convince others in the firm to accept his proposals. Defends his viewpoints. Spends extra effort, personal time, to solve problems. Weakness in these skills is indicated by a lack of initiative, by delays in taking actions, and a lack of insight in dealing with others.
27. Vendor Assistance. The buyer seeks the vendor's expertise in solving a problem. He asks for suggestions. He may ask the vendor to try a new method or alternative. May also provide assistance to a vendor by buying for him, etc.
28. Vendor Relations. The buyer works to develop friendly, courteous, continuing relations with his suppliers. Intends to create mutually satisfactory inter-actions and to avoid ill-will.

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