A SURVEY OF SELECTED OFFICE WORKERS AND THEIR OFFICE MANAGERS TO DETERMINE DIFFERENCES OF OPINIONS CONCERNING OFFICE WORKERS' DUTIES AND RESPONSIBILITIES

By

BRENDA JEAN MOSCOVE

Bachelor of Science
Ferris State College
Big Rapids, Michigan
1961

Master of Arts
Michigan State University
East Lansing, Michigan
1969

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
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Thesis Approved:

Arnold Owinby
Thesis Adviser

Robert L. Alciatore

Lloyd K. Garrison

[signature]

D. Durham
Dean of the Graduate College

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CHAPTER I

INTRODUCTION

Little research has been conducted to determine the duties and traits expected of office workers who have completed a two-year college program in office administration. Although many follow-up studies have determined the titles of jobs held by former students, there is a need for specific information about the duties performed by and competencies desirable in office workers. Business educators at the college level seem to be developing an interest in determining exactly what college-prepared office workers can and should do on the job. As cited in the review of literature, some educators are becoming increasingly aware of the need for detailed, pertinent data upon which to base curriculum development. This information is particularly needed at the present time as the community college office education and mid-management programs are increasing in annual enrollment and as technology is constantly changing the business world.

This study compares the opinions of office workers and their office managers with regard to the duties performed by office workers and their competence in performing these duties; the frequency with which office workers operate various machines and their competence in operating these machines; the decision-making opportunities given to office workers, the desirability of decision-making by office workers, and their competence in making valid decisions; the traits that are

important in decision-making and the degree to which office workers possess and exhibit these traits; and the present and future trends for the office workers concerning personal traits, individual autonomy, general knowledge, specialized skills, and decision-making. The study is an attempt to gather specific information about these topics from two important sources: the office worker and the office manager.

This study demonstrates how an integrated approach, that is, one which gathers information from both managers and office workers, can be useful to business educators in planning and revising curricula. Information gathered from both sources is compared and analyzed to aid in the construction of a curriculum that will better teach the skills and traits necessary for satisfactory office employment. What office workers are doing and what they should be doing are often two different things. A report from either office workers or business management may be insufficient for curriculum planning purposes.

If only management officials are surveyed concerning duties performed and traits needed by beginning workers, bias may result because management may have an unrealistic and idealistic concept of the factors involved in the job performance. They may fail to view the job from the workers' points of view. Management does, however, establish certain job requirements and can be an invaluable source of information relative to the types and numbers of workers hired, the general employment skills and attitudes desired, the areas in which workers are superior or deficient, and future employment trends.

Tonne and Nanassy (54) on pages 476-477 and 481 state that office workers surveyed in follow-up studies sometimes bias their responses in order to make their present positions appear more impressive to the

educator. Also, it is difficult to determine from worker surveys whether or not office workers are doing all the things desired by employers. Therefore, sound curriculum revision cannot be made solely on the basis of follow-up studies of office workers.

The integrated approach attempts to eliminate bias that might occur by analyzing the responses of either group exclusively. It further permits testing for significant differences of opinions between office workers and employers so the findings have credibility beyond that of the traditional opinion survey. If the opinions of the office workers and office managers are significantly different, these differences must be analyzed and understood in curriculum planning.

The data gathered in this study may be examined by business educators for implications in office administration curriculum planning and revision. The data are concerned with specific information related to the office worker instead of with general, broad findings. The specific nature of the data provides a means of identifying the exact duties and machine operations, competence levels, decision-making opportunities, decision-making traits, and future trends for office workers useful in improved curriculum development. The data can also be used to indicate specific areas in office education needing further research and evaluation.

Statement of the Problem

The purpose of this study is to compare the opinions of office workers and their office managers concerning: (1) the duties performed by office workers and the degree of competency with which they perform these duties; (2) the frequency with which office workers operate

various machines and the degree of competence with which they operate these machines; (3) the decision-making opportunities given to office workers, the desirability of decision-making by office workers, and their degree of competence in making valid decisions; (4) the traits that are important in decision-making and the degree to which the office workers possess and exhibit these traits; and (5) the present and future trends for office workers with regard to personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

The major null hypothesis is:

> There is no significant difference of opinions between office workers and their office managers with respect to the duties involved in office work and the competence with which the office worker performs these duties; the frequency with which office workers operate the office machines and the competence with which office workers operate these machines; the decision-making opportunities existing for office workers, the desirability of decision-making by office workers, and the competence with which the office workers make decisions; the traits needed for decision-making by office workers and the degree with which the office workers possess and exhibit these decision-making traits; and the present and future trends for office workers with regard to personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

To more specifically identify the differences of opinions that might exist, the following null hypotheses will be tested:

1. There is no significant difference of opinions between office workers and their office managers with respect to the frequency of specific duties involved in office work.

2. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competence with which office workers perform specific duties involved in office work.

3. There is no significant difference of opinions between office workers and their office managers with respect to the frequency of specific machine operating duties involved in office work.

4. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competence with which office workers perform these specific machine operating duties involved in office work.

5. There is no significant difference of opinions between office workers and their office managers with respect to the frequency and desirability of individual decision-making opportunities by office workers.

6. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competency with which office workers make decisions.

7. There is no significant difference of opinions between office workers and their office managers with respect to the importance of specific decision-making traits needed by office workers.

8. There is no significant difference of opinions between office workers and their office managers with respect to the degree to which office workers possess and exhibit these specific decision-making traits.

9. There is no significant difference of opinions between office workers and their office managers with respect to specific present and future trends for office workers with regard to personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

Significance of the Study

This study points out differences of opinions of office workers and their managers concerning the office worker's competency in performing these activities. The study is significant because these differences of opinions should be analyzed and evaluated in revising and developing business education curricula. In commenting about current surveys of businessmen's opinions, Tonne and Nanassy (54) on page 476-477 state that the business educator sometimes assumes that the businessman knows all the answers. If the businessman does not know all the answers, as Tonne and Nanassy infer, then a survey of businessmen

is not sufficient for curriculum planning. Tonne and Nanassy also caution against using the follow-up study as the sole basis for curriculum planning because of the possible bias of the respondents. An integrated approach, surveying both the office worker and his office manager, would seem to yield more reliable information. This study, through the application of the integrated approach, shows biases that might exist by gathering data from only office managers or office workers and shows how the integrated survey approach can be one aspect of curriculum development and revision.

Because of the rapidly changing nature of the business world, business education programs must constantly revise and adapt curricula to meet the needs of the business world. Tonne and Nanassy (54) on pages 467-477 state that specific information must be gathered about the nature of the office duties and competencies instead of the general type of follow-up surveys and management surveys that have been popular. They criticize these general surveys because they seem to do little more than reveal the workers' job titles and overall duties without differentiating between the important and unimportant aspects of the job. This study gathers specific information from office workers and their managers needed by business educators in determining the skills and competencies important for job success. Such information is useful in planning courses and content.

Currently, the nature of office administration's role in the business world is changing. Past education in office administration has been somewhat confined to the study of manual and mechanical means of communicating, accounting, and record keeping. The present availability of computerized information has transformed office administration from

a supporting function to one of facilitating and directing the information flow in productive ways permeating the whole company. Lemasters and Stead (30) on pages 25-29 of their article state that all graduates should be able to assume some degree of managerial responsibilities and make decisions. This opinion is supported by Tonne and Nanassy (54) on page 37 and Place, Hicks, and Wilkinson (45) on pages 203-580 who discuss such topics as systems analysis, managerial training, and decision-theory as integral parts of the office administration curriculum. This study furnishes specific information about decision-making opportunities and traits that is needed for curriculum planning.

Business educators may wish to collect similar data from other populations, or they may find a need for more information related to a particular aspect of this study. In such cases, a model is provided by which additional research designs may be patterned.

Methods and Procedures

Four hundred office workers and their 400 office managers employed in 9 classifications of business and industries in the nation's 14 largest cities were included in the sample (see Table II on page 37). The business and industry classifications were: real estate; manufacturing; banking; retail; government; insurance; legal; medical; and schools, colleges and universities. The job classifications were: secretary, stenographer, typist, file clerk, receptionist, bookkeeper, mail clerk, machine operator, and data processing operator. It is important to note that responses were collected from 400 office workers and their 400 office managers.

A survey instrument was designed to gather the needed data and was

mailed to the personnel directors of the selected firms along with a letter identifying the type of participants to be selected from each firm and the definitions of the various job titles of the workers to be selected. Each personnel director then distributed the questionnaires to an office worker who qualified and her manager.

The data were analyzed by the Mann-Whitney U Test, and the findings are reported in frequency and percentage tables. A descriptive discussion of the significant findings follows each statistical analysis. A complete discussion of the methods and procedures is presented in Chapter III.

Limitations of Study

The limitations of this study are: (1) 400 beginning office workers who completed a two-year office administration collegiate curriculum from 1966 through 1970 were surveyed; (2) a cross-section of office workers possessing 9 job titles were surveyed; (3) a cross-section of office workers employed in 9 classifications of business and industry were surveyed; (4) a cross-section of office workers in the nation's 14 largest cities were surveyed; (5) the 400 office managers of the participating office workers were surveyed; (6) questionnaire responses were confined primarily to the categories provided on the survey instrument, although provision was made for additional comment; and (7) a selected sampling method instead of a random sampling method was used.

Definition of Terms

Business education. Tonne and Nanassy (54) on page 12 define a

business education as an education that:

> . . . is school learning (1) for competency in business occupations--this learning involves skill learning and the development of occupational intelligence; and (2) to make students better consumers of the services of business and better members of the economic community.

Business educator. A business educator is one who offers students the type of training and education defined above.

Competence. Competence means capability.

Decision. Weber and Peters (55) on page 31 define a decision as "the alternative chosen over other alternatives. Alternatives may be actions, opinions, judgments, or beliefs."

Decision-making. Weber and Peters (55) on page 5 state that decision-making is "defining the problem, developing alternatives, and selecting the alternative."

Decision-making trait. A decision-making trait is a characteristic of the office worker needed for selecting the proper alternative and taking the needed action. These characteristics in this study are: judgment; initiative; responsibility; curiosity; dependability; self-confidence; critical, rational, and logical thinking; intuition; anticipation of business needs; adaptability; ability to form valid conclusions; objectivity; and ability to communicate ideas and questions in verbal and written form.

Duties. Duties are tasks involved in office work which are as follows: dictation; transcription; typing; filing; bookkeeping; composing; processing mail; telephoning; receptionist; administrative (planning, consulting, advising); and information processing.

Office Administration Curriculum. An Office Administration Curriculum is a title given to a two-year college-level program for the

preparation of office workers.

Office machines. Office machines are the machines involved in office work. In this study, the office machines are: electric typewriter; manual typewriter; dictating equipment; rotary calculator; printing calculator; electronic calculator; check writer; reproducing equipment (photocopy, duplicating, offset); mail meter; bookkeeping machine; adding machine; keypunch; verifier; collator; reproducer; accounting machine; card sorter; interpreter; data converting equipment; paper-tape equipment; computer console; random access devices; and summary punch.

Office machine operations. Office machine operations are the duties requiring the office worker to operate the following office machines: electric typewriter; manual typewriter; dictating equipment; rotary calculator; printing calculator; electronic calculator; check writer; reproducing equipment (photocopy, duplicating, offset); mail meter; bookkeeping machine; adding machine; keypunch; verifier; collator; reproducer; accounting machine; card sorter; interpreter; data converting equipment; paper-tape equipment; computer console; random access devices; and summary punch.

Office manager. An office manager is a person who is the immediate superior or supervisor of the office worker performing the duties, machine operations, and decision-making as described in the questionnaire.

Office workers. Office workers are those who completed a two-year Office Administration Curriculum at the college level within the last five years (1966 through 1970) and who are currently employed in office work.

CHAPTER II

REVIEW OF RELATED LITERATURE

In an article reviewing the methods and topics of proposals used by business educators in thesis or dissertation writing from 1952 to 1956, William C. Himstreet (19) on pages 148-150 reported that:

1. A questionnaire-interview was used by sixty percent of the researchers.
2. A statistical analysis or method was used by only seven percent of the researchers.
3. Much of the research was irrelevant or redundant.

This study is an attempt to use the questionnaire survey method along with a statistical analysis of the data to provide research that will be of value to business educators in curriculum evaluation and in establishing the criteria upon which a curriculum should be based.

Much writing has been done on the need for business educators to gather specific data regarding tasks and attitudes needed for job success. The changing technology and requirements of the work world necessitate constant and pertinent evaluation. The first section of this chapter will review literature of an introductory nature supporting the need for the present study.

A number of follow-up studies have been done in the high school to determine the occupations entered by business graduates. A few have dealt specifically with the duties and attitudes involved in job performance. Very few studies have been made of this nature at the

collegiate level. Samples of this type of survey will be reviewed in the second section of this chapter.

Some literature is beginning to appear utilizing an integrated approach; that is, various combinations of opinions from management, workers, and business educators. This literature is reviewed in the third section of the chapter.

Business educators frequently consult management in curriculum planning. Selections from studies and articles utilizing businessmen as resource persons will be reviewed in the fourth section of the chapter.

An increasing amount of literature in business education and in management is appearing concerning the demand for decision-making and problem-solving ability in office workers. The final section of the chapter reviews some of the literature as it relates to the office administration curriculum.

Introductory Literature

James A. Hallam (15) on pages 10-15 and 90-104 reported an informal survey of high school and college business educators regarding those areas in business education which were in need of further research. Among his findings was the need for more research in curriculum and course content of college business education so that a more effective curriculum could be designed. This problem was among the top ten problem areas revealed in his research study.

In their current textbook, Tonne and Nanassy (54) on pages 476-477 cited the need for an end to general information gathering and the need for contacting the immediate supervisor of the office worker for

detailed, accurate information about the worker's duties, attitudes, and job performance. An interpretation of their comments related to employer surveys or employee surveys directs business educators to gather specific information relating to job performance and to use this information in curriculum planning and revision.

Evelyn Meredith (36) on pages 28-89 reported her research related to some aspects of selected business community surveys. Respondents reported that these investigations were made to collect information necessary for administering business education programs and for guidance. No one effective technique for securing the needed information was determined. A variety of instruments and methods was used, and no standard survey form has yet been devised that can be used uniformly in such surveys to gather information for business curriculum revision.

Much literature emphasizes the need for office workers to become administrative assistants. In his doctoral dissertation, Alton V. Finch (10) on page 111 concluded that qualifications for an administrative assistant were a combination of skills, the ability to get along with others, judgment, and at least a minimum of two years of college where studies should include courses in management, economics, and psychology. He surveyed former college graduates in an effort to determine the relationships between collegiate business education and the business careers of graduates. Skill development, judgment, and personal relations are concerns of the present research study.

Follow-Up Studies

Most follow-up studies are taken to survey office or business education graduates regarding the relationship of the courses taken and

their degree of helpfulness as preparation for the job. Often these do not deal directly with the duties and attitudes required by employers, and these general surveys have been omitted from this chapter.

A National Business Education Quarterly summary of research done by Sister Mary Shawn Perkins (43) on page 46 indicated that Mercy High School business graduates were surveyed to obtain information about office employment in Milwaukee. Her study attempted to define the duties and attitudes needed by office workers as reported by the office workers. As a result of the survey, the duties and skills needed by office workers were identified. It was interesting to note that the reasons given for job failure were: lack of interest, personality faults, and lack of skill, respectively. It appears that motivation and personality traits are more important to keeping a job than are job skills. However, this emphasis on motivation and personality traits could be related directly to Tonne and Nanassy's (54) conclusion on pages 298-315 that business education does adequately prepare the office workers with job skills. Therefore, there are few complaints about skill areas by workers and employers; but emphasis on the skill areas is still important.

Dr. Robert A. Lowry (33) on pages 261-293 listed an excellent bibliography of follow-up studies, mostly at the high school level. Although a few of the studies listed were devised to obtain information about particular job duties and skills, most of the follow-up studies differ from this research in that they are of an occupational information nature designed to ascertain the job title of the office worker's present position. Also, no statistical analyses are performed on the data; and only one group, former students now employed in office work,

are surveyed.

A few follow-up studies that have been completed at the college level for business education are not included in this review of literature because these studies disclose only general occupational data. Such studies are typified by the following title listed in the Business Education Index: A Follow-up Study of the Educational and Employment Activities and the Present Status of the Business Education Graduates of Middle Tennessee State College, Murfreesboro, Tennessee, 1953-1962 (21) on page 34. This study includes general occupational information that is related to the curriculum but does not include any specific information regarding what skills, duties, and attitudes are actually involved in the office job.

A follow-up study by Alton V. Finch (10) of graduates of eleven colleges and universities in North Carolina to determine the relationship between undergraduate collegiate business education and business careers concluded on page 111 that:

> Students seeking a major in business education should be made fully aware of what they should expect to encounter upon graduation with respect to job opportunities, duties, responsibilities, salary, and advancement.

His study relates to this survey because it indicates a need for gathering more specific job information to be used in teaching and planning office and business education programs to realistically prepare graduates for the business world and to prepare them to adjust to the work situation rapidly and successfully.

In an article discussing follow-up studies for curriculum evaluation in the business education area, Andrew DeCraene (7) on page 144 stated:

Evidences indicate that business education programs have been

> improved as a result of a follow-up study. However, there are many evidences to indicate that the follow-up study is placed in the inactive file . . . business educators may believe that they know more about the training of office workers than anyone else and refuse to accept suggestions from businessmen or graduates . . . . A follow-up study of graduates and a survey of the employers of graduates will provide the kind of evaluation that so often is needed.

The research and literature summarized in this section point out the need for comprehensive surveys to be used in curriculum evaluation.

Integrated Studies

A few integrated studies have been made by business educators in an effort to gain a more comprehensive picture of the job situation. An integrated study attempts to gather data from two or more sources, synthesize the data, and report it in useful form.

The dissertation abstract concerning an Atlanta, Georgia, study by Henry Lovern (32) on page 1991 indicated the research was designed to give a comprehensive view of the employment situation in that city. The questionnaire-survey method was used to survey teachers, management, beginning office workers (some graduates of Atlanta schools were included in this sample), and experienced office workers to determine the job classifications and job traits needed for successful employment. Lovern also used personal interviews with management personnel in fifty firms. He found that discharge of office workers was primarily due to unsatisfactory personal relations with the employer and other workers rather than because of unsatisfactory skill performance. In fact, there was little consistency among the three hundred ninety total workers sampled concerning the actual duties performed on the job. This study related solely to high school graduates and contained a percentage

analysis of the data without a subsequent statistical analysis for significant differences of opinions between groups.

A survey of respondents from seven industries and five business associations was made by Bette Stead and cited in the National Business Education Quarterly (50) on pages 49-50. The study determines administrative management duties and specific curriculum recommendations based upon the survey responses. The decisions and problems faced by administrative management are identified as personnel, finance, equipment selection, records maintenance, and new systems and procedures recommendations. Creativity is essential for job success because these positions encompass many responsibilities. A modern office worker must be able to make decisions and assume responsibility in addition to actual task performance. She surveyed management-level personnel in her study.

A dissertation abstract indicated that Jack Noodell (40) on page 3568 surveyed high school business graduates and businessmen employing those graduates to obtain information about requirements needed for the successful employment of office workers. Personal traits and initiative were especially important. He concluded that additional office procedures courses need to be offered to adequately prepare students for the office worker role.

These integrated studies have been included because they do comprise a more sophisticated survey than those using only one group--office workers, teachers, or employers in determining classroom needs. By using an integrated survey, significant differences of opinions between groups can be ascertained giving the findings more validity than those in less formal studies.

The need for more comprehensive studies to synthesize views and

data in the office education field was clearly pointed out in a dissertation abstract of Francis Hitzelberger's (20) study on page 2437. His survey was an attempt to compare the opinions of two groups of respondents, secondary business classroom teachers and business education leaders, regarding current classroom practices and objectives. His study emphasized the discrepancies in opinions between groups concerned with business education. The survey determined that opinions of teachers and leaders differ concerning the objectives, practices, and requirements for business education. In fact, the curricula in the high schools did not reflect either group's opinions. From his survey, it appears that, until the discrepancies in opinions are identified concerning the business curriculum and until these differences of opinions are analyzed and understood, the curriculum will probably contain many ambiguous principles that hinder the successful preparation of youths for employment.

A Delta Pi Epsilon article indicated that Warren C. Weber (56) on pages 6-11 had eighty-three secretaries (NSA members in Phoenix, Arizona), thirty-one executives, and twenty-two secretarial block vocational office education teachers in the Phoenix area do a Q-sort of sixty items concerning office work. The respondents were not selected on the basis of educational background but were selected because of their individual job titles. He applied a statistical analysis to the results to determine differences and agreements among the groups concerning the importance of the items to the office worker and her job. Weber found strong agreement regarding the importance of dependability, initiative, resourcefulness, ability to plan and organize work, judgment, and common sense for the office workers' job success. In

addition, he found significant differences in opinions among the groups concerning the importance of duties and training for office workers. Teachers did not emphasize fundamental business understandings as much as secretaries and executives did. Teachers overemphasized the importance of typing, stenographic, and machine duties in comparison to the other two groups. Besides indicating that personal traits were important, Weber's study indicated that some differences do exist among opinions concerning which traits are important, what duties are important, and what training is important for office workers. A study of different types of office workers in a larger geographic area who have been selected according to educational backgrounds would add to the data that Weber has gathered and furnish additional comparisons of opinions that will substantiate or contradict Weber's Phoenix findings. Weber did not match secretaries and executives. Matching the two groups could give specific data locating discrepancies in the two groups' opinions.

Integrated approaches were also used in less sophisticated studies not including formal statistical analyses of the data by Irene Bass and Charles Reilly (3) described on pages 13-45, Catherine Delaney (8) described on pages 11-29, and Wilbur Krauth (26) reported on pages 12-38 in surveying former business students employed in offices and their employers. After the data were reported and responses of graduates and employers were compared, the implications of the integrated surveys were used for curriculum revision. Percentage differences and similarities in responses between the groups surveyed formed the basis for a more comprehensive and intelligent curriculum revision and ultimately led to a better understanding between the educators, workers, and

employers concerning the vital components of successful office workers.

The integrated studies appear to indicate that knowledge of the differences and similarities of opinions between office workers, office employers, and/or business educators is important for effective curriculum revision. They also indicate that, in some cases, personal traits such as those needed for decision-making are becoming more important for the office worker. Furthermore, they indicate a growing interest of business educators for more comprehensive and integrated information by which curriculum building can be improved.

Management Studies

Nolan, Hayden and Malsbary (39) on page 74 stated:

> . . . the best results will be obtained if curriculum revision is looked upon as a cooperative enterprise in which business teachers, outside curriculum specialists, representatives of nonbusiness departments in which business students will be enrolled, a representative committee of employers, and the administration all participate.

The necessity for gathering and integrating the opinions of business teachers, curriculum specialists, nonbusiness teachers, employers, and administrators for use in business education curriculum revision is pointed out by this quote. If a reference to the office worker per se had been included, the group would appear to be complete. Business educators have been consulting employers for many years. However, as cited by Tonne and Nanassy (54) on pages 467-477, they have often failed to consult the immediate superior of the office worker and have failed to gain accurate information concerning the actual job performance and requirements. These business educators urged more pertinent management surveys at the office supervisory level.

A dissertation abstract of research done by William Gleason (11) on page 1339 indicated that a jury of business educators and managers in the farm service industry evaluated the duties of office workers, sales personnel, and field personnel in that industry for implications regarding the course and material content of the educational programs preparing such workers. Final agreement was reached between management and educators on the traits, functions, skills, characteristics, and social attributes needed by such workers. The educators used these data in revising related programs and also in establishing valuable management contacts for resource information and public relations purposes. Personal traits, administrative abilities, and human relations were emphasized as having an increasingly important place in educational programs for these workers.

In a management-survey research project reported in an article, Jean McCutcheon of Washtenaw Community in Ann Arbor, Michigan, reasoned that office managers should know what types of employees were needed, the competencies required for their successful job performance, and the values placed on certain aspects of the office-worker's competencies. A questionnaire survey was taken of forty-six company managers. A major conclusion of McCutcheon (35) on page 12 was:

> . . . some agreement ought to be reached between teacher and office manager and school and business as to what, precisely, a student should be qualified to do when he or she steps through the employment office door.

Surveys of business management have been taken by William Kruse (27) reported on pages 10-52, Estella Coley (4) reported on pages 1-31, Frances Bailey (2) reported on pages 6-18, and Sr. M. Cecila Grynkiewicz (14) reported on pages 3-27 in attempts to gain specific information

concerning the job opportunities, duties, and deficiencies of beginning office workers. These are more specific studies than occupational information studies and can yield specific information for the curriculum expert.

Many surveys are taken of management opinions concerning the occupational trends of the future. This type of study yields general information concerning overall business trends. However, the surveys are seldom detailed enough to give information concerning specific duties, traits, and competencies needed by the office worker for successful job performance. It is difficult to find surveys and studies of management at the supervisory level that yield specific information concerning job requirements and attitudes. A need exists for more detailed study in this area.

Decision-Making

Studies have been conducted on the decision-making process using various simulated models or using experimental techniques. However, little specific research dealing with the relationship of decision-making to the office worker or its place in the office administration program has been conducted. The first of this section is devoted to a review of current literature (not research) related to decision-making and the office worker.

A quote from an article by Irma Stierwalt (51) on page 401 shows the growing recognition of the need for the office worker and secretary to make decisions:

> There seems to be agreement among both the businessmen and the secretaries that superior secretaries not only need to be adept in the basic skills , . ., but they also need to

> be able to work things out for themselves. A secretary is given very few instructions, and then she works under very little supervision. Therefore, it would seem that our curriculum in business education should include some practice in decision-making for the prospective secretary.

In an article, Dr. Mary Ellen Oliverio (42) on pages 26 and 31 discussed decision-making and its inclusion in the business curriculum. A student should be able to make rational decisions by the time his training nears conclusion. Doing what has to be done in a prescribed way is no longer sufficient for the business worker.

The latter part of this section reviews literature directly concerned with administrative management and decision-making and with developments in the management field pertaining to training in handling management decisions. The management literature is included because many of the management theories regarding decision-making appear to be applicable to the office administration and business education fields.

Administrative management and members of administrative management associations were surveyed to determine the duties and responsibilities of the office administrator as well as other managers. The results of the survey by John Jones (22) reported on page 98 were:

1. Typical decisions and problems facing administrative management are personnel, finance, equipment, records maintenance, and new systems and procedures recommendations.

2. Administrative management personnel hold responsible positions as indicated by position titles and span of control.

3. Creativity is essential for success in administrative management.

4. Administrative management personnel have the authority to implement programs within their own areas . . . .

Since it appears that the administrative manager should be skilled in decision-making, it seems logical to conclude that office workers

aspiring to reach management levels should possess some degree of decision-making skill.

Robert A. Gordon and James E. Howell (12) on pages 98-99 stated that regarding education for business the need for sound judgment and the ability of the office worker to reach decisions on the basis of available information continues to be a critical need. Gordon and Howell supported the assumption that office administrators and workers need experience in decision-making. It seems logical that some decision-making experience can be provided by the office administration curriculum at the collegiate level.

Gerald Thomas (53) on pages 13-45 developed a model for a management training program for office supervisors as a result of the growing interest and need for training some office workers for managerial duties including decision-making. Management indicated that workers had not been adequately trained for decision-making by the standard office administration curriculum. His model is easily adaptable for collegiate office education curriculum use.

Rosemary Pledger (46) on pages 295-297 stated in her article that the secretary is achieving more status in the firm now than ever before. She must be involved in more executive decision-making and must assume greater responsibility for managerial duties. Without assuming more executive responsibilities, she is denied any additional status. For these reasons, a need is indicated for increased emphasis on training responsible office workers capable of making decisions.

Further support for improving the decision-making ability of office workers was evidenced in an article by Mary Greene Hamilton (17) on page 153 as she discussed the college woman and her success in the

business world. She stated:

> One of the major complaints of employers is that women are inclined to reason subjectively when faced with a business problem. This factor has tended to eliminate women from administrative positions in the past.

She contended that with proper training in decision-making, women have been accepted in administrative positions. College must train women to reason objectively in making valid decisions.

Daniel Katz and Robert L. Kahn have discussed job satisfaction at some length. The employees higher in job satisfaction were found to be those who participated in more decision-making responsibilities and whose jobs provided a variety of duties for performance. A general conclusion of Katz and Kahn (23) on page 372 was: " . . . that a more varied and demanding task produces greater job satisfaction than routine, repetitive activity." Their review of related experiments and literature indicated that much must be done to determine more about job satisfaction concepts and duty performance. They also urged a unification of the views of employees and management. Job satisfaction seemed intrinsically involved with decision-making opportunities.

Management is becoming increasingly aware of the importance of proper office administration as a major contributor to the success of the firm. Management is seeking better trained office managers who can assume extensive administrative responsibilities. In his article, S. Kuttner (29) on pages 10-13 outlined steps for proper office management. Many of these steps concerned decision-making and problem solving. Since office managers are promoted from the office employees in many instances, the office worker trained in decision-making would be in an advantageous position for advancement.

Management literature contains entire volumes devoted to decision-making by individuals and by the firm. A few that are particularly applicable to this study are cited next.

C. Weber and G. Peters (55) on pages 5-40 devised various models to help individuals in making administrative decisions. They present theories related to identifying problems, proposing alternatives, generating the outcomes of the various alternatives, selecting the best alternative, and evaluating the result of the decisions. Some decisions are routine and do not require new alternatives. They merely require a repetition of previous actions. Other decisions are non-routine and require completion of the decision-making cycle each time.

David W. Miller and Martin K. Starr examined the structure of decision problems from an integrated approach compiled after reviewing all existing decision-making methods. Miller and Starr's (37) principles in teaching decision-making stated on page viii are:

1. How to recognize the appropriate classification for a decision problem, and

2. How to approach problems of each class in accord with the present theory.

They consider decision-making as a basic part of all human activity.

James G. March and Herbert A. Simon (34) on page 169 discuss decision theory from the framework of rational human choice by stating:

> It has been the central theme of this chapter that the basic features of organization structure and function are derived from the characteristics of human problem-solving processes and rational human choice. Because of the limits of human intellective capacities in comparison with the complexities of the problems that individuals and organizations face, rational behavior calls for simplified models that capture the main features of a problem without capturing all its complexities.

> The simplifications have a number of characteristic features: (1) Optimizing is replaced by satisficing--the requirement that satisfactory levels of the criterion variables be attained. (2) Alternatives of action and consequences of action are discovered sequentially through search processes. (3) Repertories of action programs are developed by organizations and individuals, and these serve as the alternatives of choice in recurrent situations. (4) Each action program is capable of being executed in semi-independence of the others--they are only loosely coupled together.
>
> Action is goal-oriented and adaptive. But because of its approximating and fragmented character, only a few elements of the system are adaptive at any given one time; the remainder are, at least in the short run, 'givens.' So, for example, an individual or organization may attend to improving a particular program, or to selecting an appropriate program from the existing repertory to meet a particular situation.

Their principles are intended to help individuals and organizations make rational decisions based upon intelligently gathered and compiled information.

Harold F. Smiddy indicates that he fears individuals will conclude that decision-making is a computerized process after reviewing management theories like those previously mentioned. In his article, Smiddy (49) on page 318 interprets the decision-making theories by stating:

> A precisely opposite philosophical approach is, of course, equally possible, namely, to carry out research to produce organizing, managing, and information-system principles which, while employing the most advanced concepts of information technology, can be used to avoid centralized planning and decision-making, and can consequently be used to get the planning and deciding done directly at the workplace to an ever-increasing degree. This will be all the more true as businesses and their functions become more and more complex.

His opinion is that decisions made by individuals are becoming increasingly important for workers at all levels. Smiddy does not feel that the majority of important business decisions are made by groups instead of individuals. Therefore, he advocates that each individual worker be

able to make rational decisions.

Barry E. Collins and Harold Guetzcow (5) reported on pages 2-123 their attempt to integrate the research efforts concerning individual and group decision-making into a usable set of principles. They reviewed the research available on the topic and developed working hypotheses from all theories on small group and individual behavior in decision-making that were supported by sound empirical evidence. Their purpose was to provide a guide for middle management to use in managing individuals and groups effectively for decision-making purposes and for determining the proper mix of individual and group characteristics for optimum use in decision-making.

Much of the theory on decision-making has been applied to simulations or games as methods of better teaching of decision-making. Paul S. Greenlaw, Lowell W. Herron, and Richard H. Rawdon (13) on page 56 discuss a business simulation or game as:

> . . . a sequential decision-making exercise structured around a model of a business operation, in which participants assume the role of managing the simulated operation. Although the term 'game' in a technical sense implies competitive interaction . . . a growing number of games provide for competition only in the sense that each team or participant attempts to operate as efficiently as possible in a similar or identical environment.

They stated that during the past several years the traditional lecture and discussion methods of teaching management principles have been increasingly supplemented by the case study approach, role playing, and many other problem-solving approaches, including decision simulation, in an effort to better prepare the student to adjust to decision-making in the business environment.

Miller and Starr (37) on pages 127-134 and Joel M. Kibbee, Clifford J. Craft, and Burt Nanus (25) on pages 315-336 also discuss games. The

Carnegie Tech Management Game and the AMA Top Management Decision Simulation (28) as reported by Kurtz on pages 30-61 are widely used simulations to provide decision-making experiences in a businesslike environment.

Some business educators are studying management principles and attempting to relate them to business education curricula. Evidence that business educators are considering management teaching devices such as those mentioned in this section is presented on pages 14-16 in Jerome I. Levanthal's (31) article listing methods of providing decision-making experiences in the business and distributive education classroom. He suggests experiences such as brainstorming, simulation, case problems, role playing, and conference and group leadership study. He states that decision-making must be taught and that in the business and distributive education classroom there is no room for rigid, textbook-oriented approaches to this subject. He advocates innovative teaching methods for teaching decision-making.

James R. Kurtz (28) on pages 15-60 analyzed the practicability and use of management games in business education as an aid to teaching about business and individual decisions more effectively. He concluded that some of the games could be used to teach decision-making more effectively.

It appears from the literature that business educators are becoming more interested in the decision-making process and are exploring management educators' approaches to teaching the topic. It also appears that much further research and material related to decision-making needs to be investigated as it is becoming necessary for employees and employers to make more decisions and more complex decisions than ever before.

Summary of Literature

Because few studies have been done concerning the collegiate office administration curriculum, the literature reviewed indicates a need for integrated studies to gather specific information to be used in collegiate office administration curriculum implementation and revision. The literature also indicates a growing need for curriculum revision in the collegiate office administrative area. The literature further indicates that management surveys have usually contained generalities and have failed to obtain information from the immediate superior of the office worker. The immediate superior is the person who is most familiar with the duties and attitudes needed for successful job performance. A few studies have tried an integrated approach using combination surveys of business educators, management, leaders, and workers.

The literature further indicates a growing recognition of the need for decision-making experiences for the future office worker. The qualities and extent of decision-making duties on the job must be analyzed and incorporated into curriculum plans.

The literature indicates the various differences of opinions among workers, management, educators, and business leaders concerning the office worker and his duties and competencies. The need for an analysis of these differences of opinions for the purpose of improving the curriculum is evident.

In addition, the literature seems to indicate that many of the existing management theories and teaching methods concerning decision-making instruction can be applied to instruction in business education decision-making. This change in teaching methodology could supplement

or take the place of complete curriculum revision if a separate course in decision-making cannot be offered for the office administration student.

From all the literature, it seems apparent that: (1) Specific facts should be gathered concerning the college-prepared office worker, her job duties performed, and her competency level of performing office duties; (2) Information must be gathered concerning the office worker's decision-making opportunities, competency, and traits; (3) There is a growing awareness on the part of business educators that integrated and comprehensive information is needed for curriculum revision and for evaluating teaching methodology; (4) There is a growing interest on the part of business educators in teaching decision-making and in management's approach to this type of instruction; and (5) There is an increasing trend for the office worker to assume more job responsibilities and to make more decisions, which means that personal traits and judgment leading to effective decision-making must be included in the collegiate office administration curriculum.

CHAPTER III

METHODS AND PROCEDURES

Sample Selection

To gather the needed data for testing the hypotheses, survey responses were obtained from 400 office workers and their 400 immediate supervisors. The office workers were selected from the following 9 different job title categories: (1) secretary, (2) stenographer, (3) typist, (4) file clerk, (5) receptionist, (6) bookkeeper, (7) mail clerk, (8) machine operator, and (9) data processing operator. The 9 job titles were selected on the basis of a general survey of related literature which indicated that office workers were most frequently employed in jobs designated by these titles.

The participating firms were selected from listings in Poor's Register of Corporations, Directors, and Executives (47) on pages 16-165 and supplemented, where necessary, from listings in the telephone books of selected cities. The 9 business and industrial classifications used for selecting the participating firms were: (1) real estate; (2) manufacturing; (3) banking; (4) retail; (5) government; (6) insurance; (7) legal; (8) medical; and (9) schools, colleges and universities.

The business and industrial categories except for schools, colleges, and universities and the legal and medical categories, were comparable with the standard industrial classification listed in Poor's

Register of Corporations, Directors, and Executives (47) on pages 16-165. The first 5 firms in the 14 largest cities appearing in the register were selected for the survey. Because 3 categories in the register (legal; medical; and schools, colleges, and universities) did not list at least 5 firms for each city, the telephone directories of the needed cities were used to supplement these categories. The first listings in these categories in the various telephone directories were used until a total of 5 businesses and industries in each category had been selected.

The Occupational Outlook Handbook 1970-1971 (41) on pages 271-290 indicated that 9 business and industrial classifications of firms currently employed and showed a potential for employing the greatest numbers of office workers in the future. The sample was stratified by using the business and industrial classifications in order to obtain responses from office workers and office managers in various types of firms.

All participants were employed in the nation's 14 largest cities as reported in the Statistical Abstract of the United States: 1969 (52) pages 4-62. The cities used in the study were: (1) New York, (2) Chicago, (3) Los Angeles, (4) Philadelphia, (5) Detroit, (6) Baltimore, (7) Houston, (8) Cleveland, (9) Washington, (10) St. Louis, (11) Milwaukee, (12) San Francisco, (13) Boston, and (14) Dallas. The nation's 14 largest cities were selected in an attempt to eliminate bias that would occur if the respondents were located in one concentrated geographic area. The 14 largest cities were also selected because the city size insured that the desired number of each category of respondents could eventually be obtained. Because the number of respondents

from each city is nearly equal, either 28 or 29 per city, any bias from respondents concentrated in one particular geographical area should be eliminated.

Only office workers with a two-year college education in an office administration program were included in the sample. For each office worker included in the study, a response was received from her immediate supervisor.

A total of 630 firms were initially contacted, and the first 400 responses from office workers and their office managers falling into the proper categories were included in the final sample. Follow-ups were made, and 100 additional firms were contacted until the desired 400 had responded.

Although this sampling technique was not random, it was felt that it was appropriate and necessary for this study. Preliminary study showed that it was impossible to obtain lists of office employees with two years of college experience in office administration stratified by the proper job titles and business and industrial classifications. Such a list was necessary for random sampling. The National Secretaries' Association offered to randomly sample member secretaries, but this technique would not have included the various job categories of office workers previously discussed. Because information from office workers with 9 different job titles and employed by firms in 9 different business and industrial classifications would give a good cross section of workers' responses to be used in this study, it was decided to proceed without a random sample in order to gather the needed data. This lack of random sample technique may point out the need for better means of compiling lists of office workers classified in various ways that would

enable business educators and other interested persons to do better research in the office worker area.

Table I shows the distribution by business and industry classifications of office workers and their office managers among the various job categories. The questionnaires used for the office workers and their office managers had one of these 9 categories checked by the researcher before the questionnaire was mailed. The office worker's job title had to be similar to the job title checked in order for him to be eligible for participation. An attempt was made to keep the number of respondents in each category approximately equal in order to eliminate any bias that could occur if any one group were more heavily represented in the final analysis than other groups. Between 43 and 45 office workers and their respective office managers in each job classification responded to the questionnaire.

Table II shows the total distribution of respondents by job title categories for each of the 14 cities included in the sample. Table III shows the total distribution of respondents by industry category and city. As described by Tables I, II, and III, the respondents from each of the 9 industry categories, 9 job categories, and 14 city categories were evenly distributed in order to eliminate any bias that could occur if the majority of workers and managers were employed in any one classification of industry, job category, or city.

Mailing Procedure

The mailing procedure was developed after consultation with office workers, office managers, business educators and doctoral committee members. A trial mailing was made to selected personnel directors to

TABLE I

TOTAL DISTRIBUTION OF OFFICE WORKER AND OFFICE MANAGER RESPONDENTS BY INDUSTRY CATEGORY AND JOB CATEGORY

Business or Industry Category	Job Category* 1	2	3	4	5	6	7	8	9	Total
1. Real Estate	5	5	5	5	5	5	5	5	5	45
2. Manufacturing	5	3	5	5	5	5	5	5	5	43
3. Banking	5	5	5	5	5	5	5	5	5	45
4. Retail	5	5	5	4	5	5	5	5	5	44
5. Government	5	5	5	5	5	5	5	5	5	45
6. Insurance	5	5	5	5	5	5	5	5	5	45
7. Legal	5	5	5	5	5	5	4	5	5	44
8. Medical	5	5	5	5	5	5	5	5	5	45
9. Schools, colleges, and universities	5	5	5	5	5	5	5	5	4	44
Total	45	43	45	44	45	45	44	45	44	400

*Job Category--1. Secretarial 2. Stenographic 3. Typist 4. File Clerk 5. Receptionist 6. Bookkeeper 7. Mail Clerk 8. Machine Operator 9. Data Processing Operator

TABLE II

TOTAL DISTRIBUTION OF OFFICE WORKER AND OFFICE MANAGER RESPONDENTS BY JOB CATEGORY AND CITY

Job Title	City														Total
	NY	CHIC	LA	PHIL	DET	BALT	HOUS	CLEVE	WASH	STLOU	MIL	SF	BOS	DAL	
Secretary	3	3	3	3	4	3	3	3	4	3	3	3	3	4	45
Steno.	3	3	3	4	3	3	3	3	3	3	3	3	3	3	43
Typist	3	3	3	4	3	3	3	4	3	3	3	3	4	3	45
File Clerk	3	3	4	3	3	3	3	4	3	3	3	3	3	3	44
Recept.	3	3	4	3	3	3	4	3	3	3	3	4	3	3	45
Bkkr.	3	4	3	3	3	3	4	3	3	3	4	3	3	3	45
Mail Clerk	3	4	3	3	3	4	3	3	3	3	3	3	3	3	44
Machine Op.	4	3	3	3	3	4	3	3	3	4	3	3	3	3	45
D.P. Op.	4	3	3	3	4	3	3	3	3	3	3	3	3	3	44
Total	29	29	29	29	29	29	29	29	28	28	28	28	28	28	400

TABLE III

TOTAL DISTRIBUTION OF OFFICE WORKER AND OFFICE MANAGER RESPONDENTS
BY CITY AND INDUSTRY CATEGORIES

Industry	City														Total
	NY	CHIC	LA	PHIL	DET	BALT	HOUS	CLEVE	WASH	STLOU	MIL	SF	BOS	DAL	
Real Estate	3	3	3	3	4	3	3	3	4	3	3	3	3	4	45
Manufacturing	3	3	3	4	3	3	3	3	3	3	3	3	3	3	43
Banking	3	3	3	4	3	3	3	4	3	3	3	3	4	3	45
Retail	3	3	4	3	3	3	3	4	3	3	3	3	3	3	44
Government	3	3	4	3	3	3	4	3	3	3	3	4	3	3	45
Insurance	3	4	3	3	3	3	4	3	3	3	4	3	3	3	45
Legal	3	4	3	3	3	4	3	3	3	3	3	3	3	3	44
Medical	4	3	3	3	3	4	3	3	3	4	3	3	3	3	45
Schools, etc.	4	3	3	3	4	3	3	3	3	3	3	3	3	3	44
Total	29	29	29	29	29	29	29	29	28	28	28	28	28	28	400

insure that the selected procedure would result in a response from the proper office worker and her office manager.

A cover letter (see Appendix A) was sent to the personnel directors of the selected firms (see Appendix B) explaining the purpose of the survey and asking them to select the particular office workers and their office managers who qualified for the survey. In the same mailing, the personnel director received two more cover letters addressed to the office worker and her office manager, questionnaires for the office worker and her office manager, and two stamped return envelopes. The personnel director's cover letter specifically outlined the educational requirement and job title of the office worker. The letter also stipulated that the office manager was to be the immediate superior of the office worker. An additional page including the Dictionary of Occupations (9) definition (see Appendix A) for each job title taken from pages 4-25 was attached to the letter in an attempt to make certain that the respondents had positions comparable with the title prechecked on the questionnaire. By specifying the exact job definitions and the two-year college education in office administration areas, the personnel directors could select the appropriate participants within their firms.

One hundred seventy-seven usable responses to the initial questionnaire mailing were received by December 12, 1970. The 473 personnel directors of the office workers and office managers not responding to the initial mailing by December 11, 1970, were again contacted with a follow-up letter of December 12, 1970. The initial mailing had been coded so that follow-up of nonrespondents could be done easily. By December 24, 1970, 332 of the initial 630 had responded. Nonrespondents at this time were assumed to be nonparticipants. One hundred additional

businesses and industrial firms were contacted using the needed stratification of workers by job category, city, and business and industrial classification. Sixty-eight usable responses were received by January 8, 1971, thus completing the needed returns from 400 office workers and their office managers.

By using this procedure, it was possible to keep the industry stratification proportionate, the job classifications proportionate, the city stratification proportionate, and to complete the sampling within a six-week period. Also, this procedure provided a comprehensive sample representing a cross-section of firms and office workers from the nation's fourteen largest cities.

Questionnaire

A survey of literature indicated that there was no standard questionnaire suitable for gathering the information desired for the study. After consulting business education faculty members and committee members at Oklahoma State University, a questionnaire (see Appendix C) was designed. After consultations with office workers, office managers, business educators, and doctoral committee members, the questionnaire was revised. The questionnaire consists of:

1. Section I. A general information section to identify the office worker respondent by job category, educational experience, and years of work experience; the office manager respondent was identified by job title and type of worker supervised.

2. Section II. Information concerning the duties and competencies involved in the office work and the machine operation duties and competencies involved in the office work.

3. Section III. Information concerning the frequency and desirability of decision-making opportunities and competency of the office workers, the importance of certain

decision-making traits and the degree with which the decision-making trait is exhibited and possessed by the office worker.

4. Section IV. Information concerning present and future trends for the office worker.

The questionnaire was developed from a review of literature and was designed to gather specific information related to the purpose of the study and adaptable to a statistical analysis.

Section I on general information was designed to identify the job title, educational experience, and work experience of the worker responding and being rated by her office manager. The information contained in this section of the office worker's form included: (1) educational experience beyond high school, (2) number of previous jobs with other firms, (3) number of months and years with the present firm, (4) total years' office experience, and (5) a listing of the nine job titles with one job title checked by the researcher before the questionnaire was mailed. For example, if the worker receiving a questionnaire with a check beside secretary did not have the job title of secretary, she was instructed to return the questionnaire to her personnel director. The checking of the job category on the office manager's form also enabled the office manager to ascertain that he was reporting on the worker in the proper job category. The office manager respondent was identified by job title and title of office worker to be evaluated in this section. The responses were from the proper personnel if the personnel director selected the proper office worker and her office manager and if each respondent ascertained that she was properly qualified.

The duties listed in Section II, Parts A and B, of the questionnaire were developed after surveying current literature. The duties

were: (1) dictation, (2) transcription, (3) typing, (4) filing, (5) bookkeeping, (6) composing, (7) processing mail, (8) telephoning, (9) receptionist, (10) administrative (planning, consulting, and advising), and (11) information processing (organizing, condensing, and categorizing data). This list was compiled after reviewing literature, specifically writings by Agnew, Meehan, and Oliverio (1) on pages 1-12, Tonne and Nanassy (54) on pages 282-316, and Place and Hicks (44) on pages 9-12.

Section II, Parts C and D, on machine operation duties and competencies (items 1-11) include the following machines: (1) electric typewriter, (2) manual typewriter, (3) dictating equipment, (4) rotary calculator, (5) printing calculator, (6) electronic calculator, (7) check writer, (8) reproducing equipment (photocopy, duplicating, and offset), (9) mail meter, (10) bookkeeping machine, and (11) adding machine. This listing of machines was used in a unpublished Master's independent study paper (38) reported on pages 15-44. The listing resulted from consultation with business educators and business education faculty members at Michigan State University.

Section II, Parts C and D, on data processing equipment operated (items 12-23) included: (12) keypunch, (13) verifier, (14) collator, (15) reproducer, (16) accounting machine, (17) card sorter, (18) interpreter, (19) data converting equipment, (20) paper-tape equipment, (21) computer console, (22) random access devices, and (23) summary punch. This listing was derived from a doctoral study by Elva Hallstrom (16) which listed on pages 41-92 the most frequently used machines involved in data processing instruction in twenty-one counties in Illinois. The list was also substantiated by a U. S. Office of Education publication

(6) on pages 10-21 on data processing.

The definitions for decision-making included in Section III were quoted directly from Weber and Peters (55) on pages 5 and 31. The definitions were:

> Decision. A decision is the alternative chosen over other alternatives. Alternatives may be actions, opinions, judgments, and/or beliefs.
>
> Decision-Making. Decision-making is defining the problem, developing alternatives, and selecting the alternative.

Miller and Starr (37) on pages 1-30 also contained similar definitions. A general survey of management literature and business education literature concerning decision-making and cited in Chapter II substantiated these definitions.

Section III, Parts A and B, was designed for decision-making information related to this study. Part A contained the following questions: (1) How much opportunity does the office worker have for individual decision-making on the job? (2) How much opportunity for individual decision-making on the job is desirable for the office worker? Part B asked: (1) How much competence does the office worker display in making decisions on the job?

Section III, Part C, of the questionnaire requires the office worker and office manager to describe the importance of specific decision-making traits for the office worker's job success. The traits were: (1) judgment; (2) initiative; (3) responsibility; (4) curiosity; (5) dependability; (6) self-confidence; (7) critical, rational, and logical thinking; (8) intuition; (9) anticipation of business needs; (10) adaptability; (11) ability to form valid conclusions; (12) objectivity; and (13) ability to communicate ideas and conclusions in verbal

and written forms. Section III, Part D, of the questionnaire requires the office worker and office manager to describe the degree with which the decision-making traits are possessed and exhibited by the office worker. Many of the traits resulted from the findings of Weber (56) cited on pages 6-11 of his article concerning office workers', executives', and vocational office education teachers' opinions of the most important traits for office workers. Additional traits resulting from discussions with office workers, office managers, and business teachers, as well as traits resulting from a review of business education literature listed in the bibliography were included on the questionnaire.

Section IV concerns present and future trends for office workers. The following five statements were contained in this section: (1) Presently and in the future, personal traits are becoming more important for success in office work than they have previously been. (2) In the future, office workers will assume more independence and autonomy. (3) In the future, more general knowledge will be needed for office workers than has been previously needed. (4) In the future, higher skill specialization will be needed for office employment than previously was needed. (5) In the future, decision-making ability will be as important as actual job skills possessed by office workers. Business education and management literature reviewed and included in the bibliography mentioned these trends. Business educators, office workers, and office managers also supported these items.

A final revision was made on the questionnaire after it was examined by office workers, office managers, business educators and doctoral committee members. The materials were sent to 30 personnel managers in the Lansing, Michigan, area with whom the researcher had previously

worked. The directors were asked to comment and make suggestions about the instruments and the survey procedures. The personnel directors had their office workers and office managers fill out the forms and also make comments. The job classifications and industry classifications were comparable to those used in the final study. The forms were returned to the researcher and the results analyzed. After reviewing their comments related to the form and procedure used, business educators and committee members at Oklahoma State University were also asked for their comments. A revised questionnaire was made and submitted to the doctoral committee members at Oklahoma State University. The final questionnaire was a result of this entire process.

Statistical Analysis

With the exception of the general information section of the questionnaire, the data are quantifiable into ordinal categories; and the Mann-Whitney U Test for two independent samples, the office supervisors and the office workers, was used in analyzing the data. Sidney Siegel describes the applicability of the Mann-Whitney U Test. Siegel (48) on page 116 stated:

> When at least ordinal measurement has been achieved, the Mann-Whitney U Test may be used to test whether two independent groups have been drawn from the same population. This is one of the most powerful of the nonparametric tests, and it is a most useful alternative to the parametric *t* test when the researcher wishes to avoid the *t* test's assumptions, or when the measurement in the research is weaker than interval scaling.

Because the information collected is not interval data and the assumptions related to interval data in a parametric test are not met, the U test is appropriate for the analysis of the two independent

samples. The test enables the researcher to identify significant differences of opinions between the office managers and the office workers at the .05 significance level. An overall comparison of the differences of opinions on the entire questionnaire can be made, and an analysis can be performed on each item and on any combination of items or sections deemed important. The various sections of the questionnaire are tested followed by individual testing of each item. Each item or statement on the questionnaire was answered by checking one category on a scale of five that could be used for statistical testing.

Since each group included in the sample has more than 100 respondents, the sample size is sufficient to reduce any sampling error to a minimum.

Descriptive Analysis

The data collected were classified and tabulated in a series of percentage tables as well as statistically tested. The tables and descriptive analyses of the data are included in the findings. The descriptive analyses isolate differences of opinions between the office workers and office managers and point out specific factors that are important for office education. The findings have implications for actual curriculum and methodology revision in office education. For example, if the findings show which duties are necessary for the office worker to perform frequently and the competency levels with which the office workers perform the duties are not very high, the curriculum content can be altered to give more attention to developing a high competency level in performance of the important duties. If the competence level related to performing other specific duties is high but the frequency

of duty performance is low, the curriculum should not emphasize these skills too highly. If the competence level of performance on a certain machine is high but the frequency of use is low, perhaps the curriculum should not emphasize extensive training on this machine. Many other examples could be cited, but these specific points will be covered in Chapter IV.

CHAPTER IV

FINDINGS

The 9 related null hypotheses and the 1 research null hypothesis listed in Chapter I were statistically tested by the Mann-Whitney U from the data gathered in the questionnaire survey of the 400 respondent office workers and their respective 400 office managers.

For interpreting the data regarding significance, the .05 significance level is used throughout the research. The .05 significance level requires a z score (result obtained by applying the Mann-Whitney U test using the large-group formula) of at least 1.96. The obtained z score is an indication of the number of standard deviations from the mean on a bell-shaped curve, and the significance level is an indication of the probability of the z score occurring only by chance. The .05 significance level means that the results could occur by chance not more than 5 percent of the time. In other words, the difference of opinions is actually significant at least 95 percent of the time if the z score is 1.96 or higher.

A z score was computed for each null hypothesis. The obtained z was compared with the required z of 1.96 at the .05 significance level. If the obtained z was equal to or greater than the 1.96, the probability of the obtained results occurring by chance was equal to or less than .05; and the null hypothesis can be rejected. Since the related null hypotheses and null research hypothesis were stated in the null form

which assumes no existing difference of opinions between the two groups, a significant result (z of 1.96 or greater) is evidence that a difference of opinions does exist between the two groups. In this case, a visual examination of the tabled frequency data and an examination and discussion of the tabled percentage data along with the z scores for each item in the questionnaire section isolates the items related to the opinion differences.

Conversely, if the obtained z is less than the required z of 1.96, the probability of the actual results occurring by chance is greater than .05. In this case, the null hypothesis is accepted; and evidence exists that there is no significant difference of opinions between the two groups. It is also possible for the null hypothesis to have an overall z score of less than 1.96, an insignificant difference of opinions, while some of the individual items in the questionnaire section have z scores of more than 1.96, significant differences of opinions. The percentages and z scores for each item resulting in a significant score will be discussed fully. The individual item analyses are performed to isolate differences of opinions on individual items that might not be disclosed by testing the null hypothesis only.

The data are reported in each of the following sections by frequency and percentage tables. The discussion is limited to the data reported in the percentage tables, and interested readers may observe the frequency data by scanning the frequency tables. The data are also reported in tables showing z scores for each individual item and are further discussed.

Although some results may be statistically insignificant, some insignificant findings can be important to this research because

similarities of opinions indicate items or null hypotheses that should or should not receive continued emphasis in the preparation of office workers. For example, if there is no significant difference concerning overall trends for office workers but both groups report that skill specialization will become less important than it presently is for office workers while general knowledge will become more important, the implication of this statement should be examined. It would, therefore, seem logical that a more diversified program of office worker preparation providing broad general knowledge would be needed in the future. For this reason, it is important to report and analyze insignificant differences of opinions.

Null Hypotheses Findings of Significant Differences

For a significant difference to exist at the .05 significance level, the obtained *z* score must be 1.96 or greater. The null hypotheses with a *z* score of 1.96 or greater, or those recording significant differences of opinions, are reported in this section.

Competence of Office Workers' Specific Duty Performance

> Hypothesis 2. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competence with which office workers perform specific duties involved in office work.

The office workers and office managers were asked to respond to the items concerning general office duty performance by the office worker by checking one response, on a scale of one to five, indicating the degree of competence with which the office worker performed the duties. The responses were classified as: (1) competence not required

on the job, (2) competence needs improvement to satisfy me, (3) average competence, (4) satisfactory competence, and (5) excellent competence.

The detailed responses of the office workers and office managers are reported in Table IV. To aid in interpreting Table IV and all subsequent frequency tables, only the first line of Table IV will be explained as it should be read. Frequency of responses regarding the office workers' level of competence in performing specific dictation duties can be reported as follows: 135 of the 400 office workers and 88 of the 400 office managers responded that the office worker performed dictation duties with excellent competence; 102 of the 400 office workers and 47 of the 400 office managers responded that the office worker performed dictation duties with satisfactory competence; 53 of the 400 office workers and 60 of the 400 office managers responded that the office worker performed dictation duties with average competence; 43 of the 400 office workers and 150 of the 400 office managers reported that office workers needed to improve their competence in performing dictation duties; and 67 of the 400 office workers and 55 of the 400 office managers reported that dictation was not an on-the-job requirement for the office workers. The total number of responses for each group was 400 and the aggregate total of responses was 800.

The obtained z score of 2.03 reported in Table V leads to the rejection of Null Hypothesis 2. Consequently, a significant difference of opinions exists between office workers and office managers regarding the office workers' competence in performing specific office duties.

The z scores for the individual items are included in Table V. Significant differences of opinions existed between the two groups on the office workers' competence in performing all duties except

TABLE IV

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE COMPETENCE WITH WHICH THE OFFICE WORKERS PERFORM SPECIFIC OFFICE DUTIES

5--Excellent Competence 4--Satisfactory Competence 3--Average Competence 2--Needs Improvement
1--Not Required

Duty	Competence Category by No. of Responses										Each Group Total	Total
	5		4		3		2		1			
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.		
Dictation	135	88	102	47	53	60	43	150	67	55	400	800
Transcription	130	71	101	52	62	53	38	152	69	72	400	800
Typing	128	31	99	66	95	108	30	157	48	38	400	800
Filing	160	134	131	102	53	98	41	46	15	20	400	800
Bookkeeping	42	38	152	33	16	101	96	128	94	100	400	800
Composing	45	30	84	35	114	132	79	121	78	82	400	800
Processing mail	70	62	103	167	80	106	82	44	65	21	400	800
Telephoning	175	154	125	140	51	77	36	20	13	9	400	800
Receptionist	64	69	101	96	148	162	37	30	50	43	400	800
Administrative (planning, consulting, advising)	63	21	159	65	55	90	72	208	51	16	400	800
Information processing (organizing, condensing, and categorizing data)	75	30	120	53	88	86	80	212	37	19	400	800
Total Response	1087	728	1277	856	815	1073	634	1268	587	475	4400	8800

*O.W. stands for Office Workers' Response
**O.M. stands for Office Managers' Response

TABLE V

RESULTS OF MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE COMPETENCE WITH WHICH THE OFFICE WORKERS PERFORM SPECIFIC OFFICE DUTIES

	z Score	Significant or Insignificant
Overall Null Hypothesis	2.03	significant
Duty		
Dictation	5.45	significant
Transcription	6.77	significant
Typing	9.57	significant
Filing	3.01	significant
Bookkeeping	4.21	significant
Composing	3.80	significant
Processing mail	4.51	significant
Telephoning	.87	insignificant
Receptionist	.64	insignificant
Administrative	7.45	significant
Information processing	7.80	significant

telephoning (z of .87) and receptionist (z of .64) duties. Significant z scores are: dictation, z of 5.45; transcription, z of 6.77; typing, z of 9.57; filing, z of 3.01; bookkeeping, z of 4.21; composing, z of 3.80; processing mail, z of 4.51; administrative, z of 7.45; and information processing, z of 7.80.

A comparison of the percentage responses of both groups regarding the office workers' degree of competence in performing specific office duties is reported in Table VI. An examination of this table should help explain exact responses resulting in a significant difference of opinions in the two groups' responses. To assist in reading Table VI and all subsequent percentage tables, the first line, "Dictation," is explained as it should be read. Of the total responses from office workers and office managers regarding the dictation competence of office workers: 34 percent of the office workers and 23 percent of the office managers indicated excellent competence; 26 percent of the office workers and 11 percent of the office managers indicated satisfactory competence; 13 percent of the office workers and 15 percent of the office managers indicated average competence; 11 percent of the office workers and 37 percent of the office managers indicated competence needs improvement; and 16 percent of the office workers and 14 percent of the office managers indicate that dictation competence is not required. Each group's percentage response totals 100 percent.

Percentage responses in Table VI indicated that 11 percent of the office workers, compared with 37 percent of the office managers, expressed a desire for the office worker to improve competence in dictation. Sixty percent of the office workers compared to only 34 percent of the office managers indicated at least satisfactory competence in

TABLE VI

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE COMPETENCE WITH WHICH THE OFFICE WORKERS PERFORM SPECIFIC DUTIES

5--Excellent Competence 4--Satisfactory Competence 3--Average Competence
2--Needs Improvement 1--Not Required

Duty	Frequency Category by % of Responses										Total % for Each Group
	5		4		3		2		1		
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	
Dictation	34	23	26	11	13	15	11	37	16	14	100
Transcription	32	18	25	13	17	13	9	38	17	18	100
Typing	32	8	25	17	24	27	7	39	12	9	100
Filing	40	34	33	26	13	24	10	11	4	5	100
Bookkeeping	11	10	38	8	4	25	24	32	23	25	100
Composing	11	9	21	8	29	33	20	30	19	20	100
Processing mail	18	16	26	42	20	26	20	11	16	5	100
Telephoning	44	39	31	35	13	19	9	5	3	2	100
Receptionist	16	17	25	24	37	41	9	8	13	10	100
Administrative (planning, consulting, advising)	15	5	40	16	14	23	18	52	13	4	100
Information processing (organizing, condensing, and categorizing data)	19	8	30	13	22	21	20	53	9	5	100

* O.W. stands for Office Worker's response

** O.M. stands for Office Manager's response

dictation (categories 5 and 4). It appears that few office workers feel the need for improvement in dictation skill while about one-third of the office managers indicate that their office workers need improvement in this area. Further, only about one-third of the office managers consider their office worker's skill to be at least satisfactory while almost two-thirds of the office workers think their skill in dictation is at least satisfactory.

Nine percent of the office workers, compared with 38 percent of the office managers, indicated that the transcription competence of the office worker needed improvement. Fifty-seven percent of the office workers, compared to only 31 percent of the office managers, indicated at least satisfactory competence in the office workers' performance of transcription duties. It appears that few office workers feel the need for improvement in transcription skill while over one-third of the office managers indicate that their office workers need improvement in this area. Further, only about one-third of the office managers consider their office worker's skill at least satisfactory while almost two-thirds of the office workers think their skill in transcription is at least satisfactory.

Seven percent of the office workers, compared with 39 percent of the office managers, indicated that the office workers' typing needed improvement; while 57 percent of office workers, compared with 25 percent of the office managers, indicated that the office workers' typing competence was satisfactory or excellent. About one-fourth of each group responded with the average competence category. It appears that over half of the office workers, compared to about one-fourth of the office managers, consider typing skill to be at least satisfactory.

Almost two-fifths of the office managers, compared to less than one-tenth of the office workers, responded with the needs improvement category. Again, few office workers feel the need for improvement; but office managers seem to feel that there is a need for improvement in typing skill.

Combining the excellent and satisfactory categories, 73 percent of the office workers, compared to 60 percent of the office managers, indicated that the office workers' filing competence was at least satisfactory. Only 13 percent of the office workers, compared to 24 percent of the office managers, indicated average competence. It appears that few respondents consider the need for improvement with only about one-tenth of each group responding with the needs improvement category. Filing appears to be a job requirement of many workers as few respondents indicated the not required category. Over four-fifths of both groups indicated at least average competence. However, almost three-fourths of the office workers responded with at least satisfactory competence while less than two-thirds of the office managers responded with at least satisfactory.

Concerning bookkeeping competence, 49 percent of the office workers, compared to only 18 percent of the office managers, reported that the office workers' competence was satisfactory or better; while only 4 percent of the office workers, compared to 25 percent of the office managers, reported the office workers' bookkeeping competence was average. However, 24 percent of the office workers and 32 percent of the office managers responded with the needs improvement category. About one-fourth of each group consider bookkeeping as not required. However, almost one-fourth of the office workers and one-third of the office

managers indicate that bookkeeping skills need improvement. It appears that office workers consider their bookkeeping skills to be more satisfactory than do the office managers, but some members of both groups appear to consider some need for improvement. Over half the office workers, compared to about two-fifths of the office managers, consider bookkeeping skills to be at least average.

Thirty-two percent of the office workers, compared to only 17 percent of the office managers, reported that the office workers' composition competence was satisfactory or excellent. Twenty percent of the office workers, compared to 30 percent of the office managers, indicated that the office workers' composition competence needed improvement. It appears that office workers' composing skill may need improvement since about one-fourth of the office workers and about one-third of the office managers responded in the needs improvement category. Further, about one-third of the office workers and less than one-fifth of the office managers indicated that the office workers' composing skill was at least satisfactory.

Forty-four percent of the office workers, compared to 58 percent of the office managers, indicated that the office workers' competence in processing mail was at least satisfactory. However, 20 percent of the office workers, compared to only 11 percent of the office managers, responded with the needs improvement category. However, over three-fifths of the office workers and over four-fifths of the office managers responded with at least average. It appears that the office workers are satisfactorily performing mail processing duties.

Fifty-five percent of the office workers, compared to only 21 percent of the office managers, indicated that the office workers'

competence in administrative areas was satisfactory or better. Eighteen percent of the office workers, compared to 52 percent of the office managers, responded with needs improvement. It appears that the office workers' administrative skills could be improved since over one-half of the office managers responded with the needs improvement category. Further, almost three-fourths of the office workers, compared with less than one-half of the office managers responded that administrative skills were at least average.

Forty-nine percent of the office workers, compared to only 21 percent of the office managers, indicated that the office workers' competence in information processing was at least satisfactory. Only 20 percent of the office workers, compared to 53 percent of the office managers, indicated a need for improvement. It appears that the office workers' skill in performing information processing duties needs improvement as indicated by over one-half the office managers' responses. Further, almost three-fourths of the office workers, but only two-fifths of the office managers, responded with at least average.

The percentage differences in the two groups' responses regarding the office workers' competence in telephoning and receptionist duties (resulting in insignificant z scores) were more uniform than for the items on which a significant z score was obtained. Seventy-five percent of the office workers and 74 percent of the office managers responded that the office worker performed telephoning duties with excellent competence or satisfactory competence. Forty-one percent of each of the two groups indicated at least a satisfactory competence level concerning the office workers' performance of receptionist duties. Thirty-seven percent of the office workers and 41 percent of the office

managers indicated the average competence category.

The findings of this section indicate that the office workers almost consistently indicated more favorable competence levels regarding the office workers' performance of specific office duties than did the office managers with the exception of processing mail. Regarding the office workers' competence in dictation, transcription, typing, bookkeeping, composing, processing mail, administrative, and information processing, from 30 percent to 53 percent of the office managers, compared to 7 percent to 24 percent of the office workers, indicated competence needs improvement. The percentage of office managers indicating a need for improved competence appears substantial enough to warrant the attention of the business educator in curriculum development and revision. Tonne and Nanassy's assumption (54) on pages 450-481 cited in the review of literature that skill areas are adequately handled by existing business education programs may need re-examining.

It appears that the majority of office workers are satisfactorily performing telephoning and receptionist duties.

It is interesting to note that the office workers' tendency to indicate a more favorable competency level in relation to their performance is repeated in null hypotheses 4, 6, and 8.

Frequency and Desirability of Office Workers' Opportunities for Decision-Making

> Hypothesis 5. There is no significant difference of opinions between office workers and their office managers with respect to the frequency and desirability of individual decision-making opportunities by office workers.

The office workers were asked to respond to two questions concerning the opportunities for the office worker to make on-the-job

decisions: (1) How much opportunity do you have for individual decision-making on the job? (2) How much opportunity would you like for decision-making opportunities on the job? The office managers were asked to respond to the following questions: (1) How do you describe opportunities for your office worker's decision-making on the job? (2) How much opportunity would you like for your office worker to have for making on-the-job decisions?

The frequency of decision-making opportunities was described as: (1) never, (2) rarely, (3) average of one or two times every month, (4) average two or three times a week, and (5) daily.

Table VII shows the frequency responses for office worker and office manager.

Because the obtained $\underline{z}$ score on Table VIII was 2.08, the overall null hypothesis of no difference of opinions between groups regarding the frequency and desirability of office workers' decision-making opportunities is rejected.

The individual $\underline{z}$ scores for the two questions are also included in Table VIII. A significant $\underline{z}$ score of 8.04 was obtained regarding the frequency of the office workers' decision-making opportunities. However, the $\underline{z}$ score of .10 resulting from asking the office worker how much decision-making opportunity the office worker desired and from asking the office managers how much decision-making opportunities they desired for the office workers indicated no significant difference of opinions between the two groups.

A comparison of the percentage responses of both groups regarding the office workers' decision-making opportunities are reported in Table IX. An examination of the percentage data shows marked differences in

TABLE VII

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE FREQUENCY AND DESIRABILITY OF THE WORKERS' DECISION-MAKING OPPORTUNITIES

5--Daily 4--Average of two or three times a week 3--Average of one or two times every month 2--Rarely 1--Never

Question:	Frequency Category by No. of Responses										Each Group Total	Total
	5		4		3		2		1			
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.		
***How much opportunity do you have for individual decision-making on the job? (on office workers' questionnaire)	122	78	227	152	33	88	13	82	5	0	400	800
****How much opportunity would you like for decision-making opportunities on the job? (on office workers' questionnaire)	142	207	220	56	10	75	21	42	7	20	400	800
Total Responses	264	285	447	208	43	163	34	124	12	20	800	1600

*O.W. stands for Office Worker's response

**O.M. stands for Office Manager's response

***How do you describe opportunities for your office worker's decision-making on the job? (on office manager's questionnaire)

****How much opportunity would you like for your office worker to have for making on-the-job decisions? (on office manager's questionnaire)

TABLE VIII

RESULTS OF MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE FREQUENCY AND DESIRABILITY OF THE OFFICE WORKERS' DECISION-MAKING OPPORTUNITIES

	z Score	Significant or Insignificant
Overall Null Hypothesis	2.08	significant
Question		
*How much opportunity do you have for individual decision-making on the job? (on office worker's questionnaire)	8.04	significant
**How much opportunity would you like for decision-making opportunities on the job? (on office worker's questionnaire)	.10	insignificant

*How do you describe opportunities for your office worker's decision-making on the job? (on office manager's questionnaire)

**How much opportunity would you like for your office worker to have for making on-the-job decisions? (on office manager's questionnaire)

TABLE IX

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE FREQUENCY AND DESIRABILITY OF THE OFFICE WORKERS' DECISION-MAKING OPPORTUNITIES

5--Daily 4--Average of two or three times a week 3--Average of one or two times every month 2--Rarely 1--Never

Question:	Frequency Category by % of Responses										Total % for Each Group
	5		4		3		2		1		
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	
***How much opportunity do you have for individual decision-making on-the-job? (on office worker's questionnaire)	31	20	57	38	8	22	3	20	1	0	100
****How much opportunity would you like for decision-making opportunities on the job? (on office worker's questionnaire)	36	52	55	14	3	19	5	10	1	5	100

*O.W. stands for Office Worker's response

**O.M. stands for Office Manager's response

***How do you describe opportunities for your office worker's decision-making on the job? (on office manager's questionnaire)

****How much opportunity would you like for your office worker to have for making on-the-job decisions? (on office manager's questionnaire)

the two groups' responses to the two questions. These differences of office workers' and office managers' responses should help explain the exact responses leading to the significant z scores. Eighty-eight percent of the office workers, contrasted to 58 percent of the office managers, reported that the office worker had daily decision-making opportunities or decision-making opportunities on an average of two or three times a week. Only 8 percent of the office workers, compared with 22 percent of the office managers, reported decision-making on an average of one or two times every month. Only 3 percent of the office workers, contrasted to 20 percent of the office managers, reported office worker decision-making opportunities as rare. Most office workers feel they make decisions at least two or three times a week while little more than half the office managers feel the office workers make decisions this often. It appears that office managers feel that office workers make considerably fewer decisions than the office workers feel they make.

Concerning the office workers' and office managers' desired frequency of decision-making opportunities for the office worker, an insignificant z score was reported. However, the percentages are reported because of possible implications for curriculum development and revision. Ninety-one percent of the office workers, compared to 66 percent of the office managers, indicated a desire for daily decision-making or a desire for decision-making averaging two or three times a week. Only 3 percent of the office workers, compared to 19 percent of the office managers, expressed a desire for decision-making on an average of one or two times every month. Almost every month all the office managers and two-thirds of the office workers reported a desire for decision-

making at least two or three times a month. It appears that both groups desire frequent decision-making by the office worker.

The findings of this section indicate that frequent decision-making opportunities exist for over half of the office workers. Also, a majority of the office workers and office managers expressed the desire for the office worker to have frequent decision-making opportunities. It is interesting to note that the office workers indicated more frequent decision-making opportunities than did the office managers (88 percent office workers' contrasted with 58 percent office managers' responses in the top two frequency categories). Also, a higher percentage of office workers' responses than office managers' responses (91 percent office workers' contrasted to 66 percent office managers' responses) indicated a desire for more frequent decision-making opportunities. Possibly, office managers may not feel that their office workers are capable of making acceptable decisions or are reluctant to admit that office workers do make decisions. Two of the many possible reasons for this difference in response percentages are: (1) Office managers consider office workers lacking in decision-making ability, or (2) Office managers underestimate the capabilities and responsibilities of office workers in this area. Whatever the reason for the discrepancy, it does appear that the office managers would provide more decision-making opportunities if they were convinced that the office workers could make acceptable decisions. Further research to determine why office workers are not making as many decisions as desired is warranted.

Competency Displayed by Office Workers in Making On-The-Job Decisions

> Hypothesis 6. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competency with which office workers make decisions.

The office workers and office managers were asked to describe the degree of competency with which the office workers made on-the-job decisions. Degree of competence was categorized as: (1) competence not required on the job, (2) competence needs improvement to satisfy me, (3) average competence, (4) satisfactory competence, and (5) excellent competence.

Table X shows the frequency distribution of the responses for office worker and office manager.

Table XI shows the obtained z score of 10.97 exceeded the required 1.96 for testing the null hypothesis. Thus, the null hypothesis is rejected, and a significant difference of office workers' and office managers' opinions related to the office workers' decision-making competence is asserted.

The questionnaire section included only the single question for office workers: "How much competence do you display in making decisions on the job?" The office managers were asked: "How competent is your office worker in making decisions on the job?" The significant z score for the item analysis was also 10.97 as shown in Table XI.

Table XII shows the percentage responses for both groups regarding the office workers' decision-making competence. An examination of this table should help further explain the exact responses resulting in a significant difference of opinions. Sixty-two percent of the office workers, compared with 25 percent of the office managers, reported the

TABLE X

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE OFFICE WORKERS' DECISION-MAKING COMPETENCE

5--Excellent Competence 4--Satisfactory Competence 3--Average Competence
2--Needs Improvement 1--Competence not required

	Competence Category by No. of Responses										Each Group	
	5		4		3		2		1			
Question:	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	Total	Total
*** How much competence do you display in making decisions on your job? (on office worker's questionnaire)	101	49	150	53	84	88	62	206	3	4	400	800
Total Responses	101	49	150	53	84	88	62	206	3	4	400	800

* O.W. stands for Office Worker's response

** O.M. stands for Office Manager's response

*** How competent is your office worker in making decisions on the job? (on office manager's questionnaire)

TABLE XI

RESULTS OF THE MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE OFFICE WORKERS' DECISION-MAKING COMPETENCE

	z Score	Significant or Insignificant
Overall Null Hypothesis	10.97	significant
Question		
*How much competence do you display in making decisions on your job? (on office worker's questionnaire)	10.97	significant

*How competent is your office worker in making decisions on the job? (on office manager's questionnaire)

TABLE XII

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE OFFICE WORKERS' DECISION-MAKING COMPETENCE

5--Excellent Competence 4--Satisfactory Competence 3--Average Competence
2--Needs Improvement 1--Competence not required

Question:	Competence Category by % of Responses										Total % for Each Group
	5		4		3		2		1		
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	
*** How much competence do you display in making decisions on your job? (on office worker's questionnaire)	25	12	37	13	21	22	16	52	1	1	100

* O.W. stands for Office Worker's response

** O.M. stands for Office Manager's response

*** How competent is your office worker in making decisions on the job? (on office manager's questionnaire)

office workers' decision-making competence as excellent or satisfactory. Only 16 percent of the office workers, compared to 52 percent of the office managers, reported that competence needs improvement.

The findings of this section indicate that the office workers' competence in decision-making needed improvement, according to about half of the office managers responding. However, almost two-thirds of the office workers reported their competence as at least satisfactory. This response trend is similar to the office workers' tendency to indicate higher levels of competency than the office managers as evidenced in null hypothesis 2. It must be recognized that the workers may be more cognizant of their own job requirements related to decision-making than the office managers. At any rate, the more positive trend for office workers' responses and the more negative trend for office managers' responses regarding competence must again be noted.

Description of Importance of Specific Decision-Making Traits for Office Workers

> Hypothesis 7. There is no significant difference of opinions between office workers and their office managers with respect to the importance of specific decision-making traits needed by office workers.

The two groups were asked to respond to the importance of thirteen decision-making traits: (1) judgment; (2) initiative; (3) responsibility; (4) curiosity; (5) dependability; (6) self-confidence; (7) critical, rational and logical thinking; (8) intuition; (9) anticipation of business needs; (10) adaptability; (11) ability to form valid conclusions; (12) objectivity; and (13) ability to communicate ideas and conclusions in verbal and written form. They recorded their answers

regarding the importance of each trait by checking one of the following five categories: (1) not important on the job, (2) rarely important, (3) average importance, (4) above average importance, and (5) highly important.

Table XIII contains the frequency responses in each category for both office workers and office managers.

The obtained z score of 3.92 reported in Table XIV leads to the rejection of the null hypothesis. Office workers and office managers do not agree upon the importance of various decision-making traits for the office workers.

The z scores for the individual items are included in Table XIV. Significant differences of opinions existed between the two groups for eight traits: (1) initiative, z of 4.08; (2) responsibility, z of 7.97; (3) dependability, z of 12.42; (4) critical, rational and logical thinking, z of 9.86; (5) adaptability, z of 12.11; (6) ability to form valid conclusions, z of 7.93; (7) objectivity, z of 9.28; and (8) ability to communicate ideas and conclusions in verbal and written form, z of 10.71. Insignificant z scores are: judgment (z of 1.54), curiosity (z of 1.22), self-confidence (z of .22), intuition (z of .02), and anticipation of business needs (z of .27).

A comparison of the percentage responses of both groups regarding the importance of specific decision-making traits is reported in Table XV. An examination of the table should indicate the exact responses resulting in the significant differences of opinions. Regarding initiative, 63 percent of the office workers, compared to 45 percent of the office managers, responded with highly important or above average importance. In the opposite direction, only 22 percent of the office

TABLE XIII

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE IMPORTANCE OF SPECIFIC DECISION-MAKING TRAITS

5--Highly Important 4--Above Average Importance 3--Average Importance
2--Rarely Important 1--Not needed on the Job

Trait	Importance Category by No. of Responses										Each Group Total	Total
	5		4		3		2		1			
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.		
Judgment	200	203	101	48	89	132	8	13	2	4	400	800
Initiative	150	130	98	51	90	110	58	85	4	24	400	800
Responsibility	250	150	87	91	54	136	7	21	2	2	400	800
Curiosity	111	117	89	80	101	132	75	69	24	2	400	800
Dependability	302	151	85	89	10	128	2	24	1	8	400	800
Self-Confidence	198	201	104	89	69	78	26	32	3	0	400	800
Critical, rational and logical thinking	101	253	75	34	203	101	18	11	3	1	400	800
Intuition	150	127	84	92	67	129	88	46	11	6	400	800
Anticipation of business needs	206	214	98	71	85	98	10	15	1	2	400	800
Adaptability	106	281	107	36	87	69	62	13	38	1	400	800
Ability to form valid conclusions	126	249	88	36	109	81	63	32	14	2	400	800
Objectivity	97	218	89	54	105	106	88	19	21	3	400	800
Ability to communicate ideas and conclusions in verbal and written form	117	268	82	56	139	49	33	24	29	3	400	800
Total Responses	2114	2562	1187	827	1208	1349	538	404	153	58	5200	10,400

* O.W. stands for Office Workers' response
** O.M. stands for Office Managers' response

TABLE XIV

RESULTS OF THE MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE IMPORTANCE OF SPECIFIC DECISION-MAKING TRAITS

	z Score	Significant or Insignificant
Overall Null Hypothesis	3.92	significant
Trait		
Judgment	1.54	insignificant
Initiative	4.08	significant
Responsibility	7.97	significant
Curiosity	1.22	insignificant
Dependability	12.42	significant
Self-Confidence	.22	insignificant
Critical, rational, and logical thinking	9.86	significant
Intuition	.02	insignificant
Anticipation of business needs	.27	insignificant
Adaptability	12.11	significant
Ability to form valid conclusions	7.93	significant
Objectivity	9.28	significant
Ability to communicate ideas and conclusions in verbal and written form	10.71	significant

TABLE XV

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE IMPORTANCE OF SPECIFIC DECISION-MAKING TRAITS

5--Highly Important 4--Above Average Importance 3--Average Importance
2--Rarely Important 1--Not needed on the Job

Trait	Frequency Category by % of Responses										Total % for Each Group
	5		4		3		2		1		
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	
Judgment	50	51	25	12	22	33	2	3	1	1	100
Initiative	38	32	25	13	22	28	14	21	1	6	100
Responsibility	62	38	22	23	14	34	2	5	0	0	100
Curiosity	28	29	22	20	25	33	19	17	6	1	100
Dependability	75	38	21	22	3	32	1	6	0	2	100
Self-Confidence	50	50	26	22	17	20	6	9	1	0	100
Critical, rational and logical thinking	25	63	19	9	51	25	4	3	1	0	100
Intuition	37	32	21	23	17	32	22	11	3	2	100
Anticipation of business needs	52	54	25	18	21	25	2	3	0	0	100
Adaptability	26	70	27	9	22	18	16	3	9	0	100
Ability to form valid conclusions	32	62	22	9	27	20	15	8	4	1	100
Objectivity	24	54	22	14	27	27	22	3	5	2	100
Ability to communicate ideas and conclusions in verbal and written form	29	67	21	14	35	12	8	6	7	1	100

* O.W. stands for Office Workers' response

** O.M. stands for Office Managers' response

workers, contrasted to 28 percent of the office managers, responded with average importance. Furthermore, only 14 percent of the office workers, compared to 21 percent of the office managers, responded that initiative was rarely important. While both office workers and office managers regarded initiative as a trait of average importance or above, there was a discrepancy in the degree of importance placed on this trait by the two groups. Some 73 percent of the office managers and 85 percent of the office workers ranked this trait in the top three categories, but office workers placed greater importance on it than office managers.

While 84 percent of the office workers indicated that responsibility was at least above average in importance, only 61 percent of the office managers indicated these categories. In the opposite direction, only 14 percent of the office workers, compared to 34 percent of the office managers, responded with average importance.

Again, almost all respondents ranked responsibility as an important trait, but office workers tended to think it is highly important whereas office managers think it is of average or above average importance.

For dependability, 96 percent of the office workers, compared to 60 percent of the office managers, indicated the highly important or above average importance categories. Only 3 percent of the office workers, contrasted to 32 percent of the office managers, indicated that dependability had average importance. More office workers than office managers ranked dependability as highly important while more office managers than office workers ranked the trait as average in importance. Over three-fifths of both groups ranked dependability as above average or highly important.

Critical, rational, and logical thinking was highly important or of above average importance to 44 percent of the office workers compared to 72 percent of the office managers. Fifty-one percent of the office workers, compared to only 25 percent of the office managers, indicated the importance of critical, rational, and logical thinking as average. Over half the office managers rated this trait as highly important while about half the office workers rated it as of average importance. The trait is considered important to both groups, but office managers consider it to be much more important than office workers do.

Adaptability was at least of above average importance to 53 percent of the office workers and 79 percent of the office managers. Sixteen percent of the office workers compared to only 3 percent of the office managers, indicated that adaptability was rarely important. While over half of both groups indicated at least above average importance for adaptability, there was a discrepancy in the importance placed on this trait by the two groups. Almost three-fourths of the office managers and only one-fourth of the office workers ranked adaptability as highly important.

The ability to form valid conclusions was highly important or of above average importance to 54 percent of the office workers contrasted to 71 percent of the office managers. Again, over half of both groups ranked the ability to form valid conclusions as an important trait, but two-thirds of the office managers considered it highly important compared to only about one-third of the office workers.

Forty-six percent of the office workers, compared to 68 percent of the office managers, considered objectivity as at least of above average importance. Twenty-two percent of the office workers, contrasted

to 3 percent of the office managers, indicated that objectivity was rarely important. While over half the office managers considered objectivity highly important, the office workers' responses were fairly evenly distributed among categories 5, 4, 3, and 2.

The ability to communicate ideas and conclusions in verbal and written form was considered highly important or of above average importance by 50 percent of the office workers compared to 81 percent of the office managers. Thirty-five percent of the office workers, compared to only 12 percent of the office managers, responded with average importance. Again, the office managers ranked the ability to communicate ideas and conclusions in verbal and written form as more highly important than office workers. Over two-thirds of the office managers, compared to less than one-third of the office workers responded with highly important. One-half of the office workers responded with the average or less categories.

The percentage analyses can be summarized as follows: While all of the above traits are considered important, (1) office workers consider initiative, responsibility, and dependability to be more important than office managers do. (2) Office managers consider critical, rational, and logical thinking; adaptability; ability to form valid conclusions; objectivity; and the ability to communicate ideas and conclusions in verbal and written form to be more important than office workers do.

Percentage scores are also reported for insignificant traits because of possible implications for curriculum development and revision. The greatest discrepancy concerning judgment occurred in the categories of above average importance and average importance. Twenty-five percent of the office workers, compared to only 12 percent of the office

managers, responded that judgment had above average importance for the office worker. Only 22 percent of the office workers, contrasted to 33 percent of the office managers, responded with average importance in discussing judgment's importance to the office worker. Therefore, the decisions of office workers and office managers differed only concerning the degrees of above average importance and average importance. It should be noted that over 50 percent of the office workers and office managers considered judgment as highly important; and almost all of the remaining respondents, both office workers and office managers, rated it as at least average in importance. The office workers considered judgment to be slightly higher in importance than did the office managers.

Curiosity was ranked at least above average according to the responses of 50 percent of the office workers and 49 percent of the office managers. Little discrepancy of opinions concerning the importance of curiosity occurred between the two groups' responses in the 5 categories.

About seventy-five percent of both groups, office workers and office managers, indicated that self-confidence was highly important or of above average importance. Again, little discrepancy between the two groups was indicated by the distribution of responses among the 5 categories.

Fifty-eight percent of the office workers and 55 percent of the office managers indicated intuition to be of at least above average importance. Some difference of opinions occurred in the average importance category with only 17 percent of the office workers' responses, compared to 32 percent of the office managers' responses, in this

category. While over half of both groups consider intuition to be of above average importance, more office managers consider intuition to be of average importance than office workers do. Thus, there is a slight tendency for office managers to rank the trait more important than office workers do.

The anticipation of business needs was at least of above average importance according to 77 percent of the office workers and 72 percent of the office managers. There was little discrepancy between the two groups' opinions as distributed among the 5 response categories.

While office workers considered judgment to be slightly more important than office managers did, office managers considered intuition to be slightly more important than office workers did. Curiosity, self-confidence, and the anticipation of business needs were considered to be important traits by about half or more of both groups with little discrepancy of opinions occurring in the distribution of the percentage responses among the two groups.

The findings of this section indicate that office managers value more versatile, creative, and administrative traits in office workers as indicated by the office managers' responses in the highly important categories for the office managers concerning: (1) critical, rational, and logical thinking, 63 percent response; (2) adaptability, 70 percent response; (3) ability to form valid conclusions, 62 percent response; (4) objectivity, 54 percent response; and (5) ability to communicate ideas and conclusions in verbal and written form, 67 percent. The office workers' responses for these items were considerably lower (25 to 32 percent response). The findings indicate that office workers value routine, staid traits like responsibility (62 percent response)

and dependability (75 percent response) more highly than do the office managers (38 percent response for both traits). It also appears that both groups, office workers and office managers, consider judgment, self-confidence, and the anticipation of business needs as highly important for the office workers' decision-making. It seems that the business educator should study these traits further in designing and revising curriculum to develop the most desirable decision-making traits for office workers.

Degree With Which Office Workers Possess and Exhibit Specific Decision-Making Traits On-The-Job

> Hypothesis 8. There is no significant difference of opinions between office workers and their office managers with respect to the degree to which office workers possess and exhibit these specific decision-making traits.

The questionnaire answer categories provided were: (1) not applicable to the job, (2) need to possess more of the trait, (3) average degree, (4) satisfactory degree, and (5) superior degree.

Table XVI shows the frequency of each groups' responses in each category.

The obtained z score for this hypothesis of 2.51 reported in Table XVII leads to the rejection of the null hypothesis. There is a significant difference of the two groups' opinions. The z scores for the individual items are reported in Table XVII. Significant differences of opinions existed between the two groups regarding the office workers' possession and exhibition of all traits except: responsibility (z of .00), and intuition (z of 1.25). Significant z scores for the other traits are: (1) judgment, z of 10.40; (2) initiative, z of 14.06;

TABLE XVI

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE DEGREE WITH WHICH OFFICE WORKERS POSSESS AND EXHIBIT SPECIFIC DECISION-MAKING TRAITS

5--Superior Degree 4--Satisfactory Degree 3--Average Degree
2--Need to Possess More 1--Not applicable to the Job

Trait	Degree Category by No. of Responses										Each Group Total	Total
	5		4		3		2		1			
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.		
Judgment	121	68	198	91	52	101	25	139	4	1	400	800
Initiative	115	42	208	73	31	45	41	223	5	17	400	800
Responsibility	135	130	158	169	55	51	45	42	7	8	400	800
Curiosity	122	75	234	102	33	52	3	167	8	4	400	800
Dependability	151	128	197	150	23	74	28	48	1	0	400	800
Self-Confidence	139	118	183	159	54	102	16	19	8	2	400	800
Critical, rational, and logical thinking	147	67	132	85	43	61	66	168	12	19	400	800
Intuition	117	99	108	105	98	113	57	81	20	2	400	800
Adaptability	127	65	161	71	82	83	14	165	16	16	400	800
Ability to form valid conclusions	131	57	129	83	82	65	41	190	17	5	400	800
Anticipation of business needs	131	62	152	88	87	47	27	201	3	2	400	800
Objectivity	142	68	157	109	45	53	40	167	16	3	400	800
Ability to communicate ideas and conclusions in verbal and written form	133	93	168	122	62	45	36	138	1	2	400	800
Total Responses	1711	1072	2185	1407	747	892	439	1748	118	81	5200	10,400

*O.W. stands for Office Workers' response

**O.M. stands for Office Managers' response

TABLE XVII

RESULTS OF THE MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE DEGREE WITH WHICH OFFICE WORKERS POSSESS AND EXHIBIT SPECIFIC DECISION-MAKING TRAITS

	z Score	Significant or Insignificant
Overall Null Hypothesis	2.51	significant
Trait		
Judgment	10.40	significant
Initiative	14.06	significant
Responsibility	.00	insignificant
Curiosity	11.32	significant
Dependability	3.98	significant
Self-Confidence	2.78	significant
Critical, rational, and logical thinking	9.02	significant
Intuition	1.25	insignificant
Anticipation of business needs	11.26	significant
Adaptability	10.92	significant
Ability to form valid conclusions	9.59	significant
Objectivity	8.86	significant
Ability to communicate ideas and conclusions in verbal and written form	6.70	significant

(3) curiosity, $\underline{z}$ of 11.32; (4) dependability, $\underline{z}$ of 3.98; (5) self-confidence, $\underline{z}$ of 2.78; (6) critical, rational and logical thinking, $\underline{z}$ of 9.02; (7) anticipation of business needs, $\underline{z}$ of 11.26; (8) adaptability, $\underline{z}$ of 10.92; (9) ability to form valid conclusions, $\underline{z}$ of 9.59; (10) objectivity, $\underline{z}$ of 8.86; and (11) ability to communicate ideas and conclusions in verbal and written form, $\underline{z}$ of 6.70.

A comparison of the percentage responses of both groups' opinions of the degree with which office workers possess and exhibit certain decision-making traits is reported in Table XVIII. An examination of the table should help further explain the exact responses resulting in a significant difference of opinions in the two groups' responses. Responses indicate that 80 percent of the office workers, compared to only 40 percent of the office managers, reported that the office workers possessed and exhibited a superior degree or satisfactory degree of judgment in making decisions. In the opposite direction, only 13 percent of the office workers, compared to 26 percent of the office managers, responded that the office workers possessed and exhibited an average degree of judgment in decision-making situations. Only 6 percent of the office workers, contrasted to 34 percent of the office managers, responded that the office workers need to possess more judgment. It is apparent that office workers regard their skill in judgment as being adequate. Further, 93 percent of the office workers ranked their possession of this trait as being at least average while 66 percent of the office managers considered their office workers' judgment to be at least average. Even though one-third of the office managers think their office workers' judgment needs improvement, a majority of office workers do possess at least average skill as shown by the responses of

TABLE XVIII

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE DEGREE WITH WHICH OFFICE WORKERS POSSESS AND EXHIBIT SPECIFIC DECISION-MAKING TRAITS

5--Superior Degree 4--Satisfactory Degree 3--Average Degree
2--Need to Possess More 1--Not Applicable to the Job

Trait	Degree Category by % of Responses										Total % for Each Group
	5		4		3		2		1		
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	
Judgment	30	17	50	23	13	26	6	34	1	0	100
Initiative	29	11	52	18	8	11	10	56	1	4	100
Responsibility	34	33	40	42	14	13	11	10	1	2	100
Curiosity	31	18	58	26	8	13	1	42	2	1	100
Dependability	36	32	50	38	7	25	7	5	0	0	100
Self-Confidence	38	32	49	38	6	18	7	12	0	0	100
Critical, rational, and logical thinking	37	17	33	21	10	15	17	42	3	5	100
Intuition	29	25	27	26	25	28	14	20	5	1	100
Adaptability	32	16	40	18	20	21	4	41	4	4	100
Ability to form valid conclusions	33	14	33	21	21	16	10	48	3	1	100
Anticipation of business needs	33	16	38	22	21	12	7	50	1	0	100
Objectivity	36	16	39	27	11	12	10	42	4	3	100
Ability to communicate ideas and conclusions in verbal and written form	33	23	42	31	16	11	9	35	0	0	100

*O.W. stands for Office Workers' response

**O.M. stands for Office Managers' response

two-thirds of the office managers.

Twenty-nine percent of the office workers, compared to 11 percent of the office managers, responded that the office workers possessed and exhibited a superior degree of initiative. A satisfactory degree of initiative was indicated by 52 percent of the office workers, contrasted to only 18 percent of the office managers. In the opposite direction, only 10 percent of the office workers, compared to 56 percent of the office managers, responded in the needs to possess more category. There is much disagreement between office workers and office managers concerning the office worker's initiative. Just over 80 percent of the office workers consider their initiative to be at least satisfactory while over half of the office managers indicate that their office worker needs to possess more initiative.

Fifty-eight percent of the office workers, compared to 26 percent of the office managers, indicated the satisfactory degree category regarding curiosity. While over half of both groups indicated that the office workers possess and exhibit at least an average degree of curiosity, 97 percent of the office workers' responses, compared to 57 percent of the office managers' responses, occur in the top three categories. Further, 42 percent of the office managers, contrasted to only 1 percent of the office workers, indicated that the office workers need to possess more. There is a tendency for the office worker to respond more frequently in the higher categories than the office managers do. Almost all office workers reported at least average while a significant percent (42 percent) of office managers reported the office worker needs to possess more.

Eighty-six percent of the office workers and seventy percent of

the office managers responded that at least a satisfactory degree of dependability was possessed and exhibited. The business education curriculum must be adequately providing experiences for developing dependability.

Eighty-seven percent of the office workers, compared to 70 percent of the office managers, indicated that the office workers possessed and exhibited at least a satisfactory degree of self-confidence in decision-making. Only 6 percent of the office workers, compared to 18 percent of the office managers, responded with average degree. While there is a tendency for office workers to rank the degree of self-confidence as more satisfactory than office managers rank the trait, there is not as much difference in the two groups' responses as there is on some of the other traits.

Regarding critical, rational and logical thinking, 70 percent of the office workers, compared to 38 percent of the office managers, responded with superior degree or satisfactory degree. In the opposite direction, only 17 percent of the office workers, compared to 42 percent of the office managers, responded with need to possess more. While more than half the office managers stated that office workers possess and exhibit at least an average degree, almost half the office managers indicated that the office workers need to possess more. Again, the office workers ranked themselves more highly than the office managers did.

Only 4 percent of the office workers, compared to 41 percent of the office managers, indicated the office workers need to possess more adaptability. Again, 55 percent of the office managers indicated at least average. However, 92 percent of the office workers ranked

themselves at least average in adaptability. Most office workers say adaptability is at least average while a substantial percent (41 percent) of the office managers say the trait needs improvement. The tendency for the office workers to rank themselves more highly was evident in these responses.

At least an average degree of the ability to form valid conclusions was possessed and exhibited by office workers according to 87 percent of the office workers compared to 51 percent of the office managers. In the opposite direction, only 10 percent of the office workers, compared to 48 percent of the office managers, indicated the need to possess more category. Although over half the office managers indicated the average or above categories, almost half indicated the office workers need to possess more. The office workers' responses resulted in much higher rankings than did the office managers' responses.

Seventy-one percent of the office workers, compared to 38 percent of the office managers, indicated at least a satisfactory degree of the office worker's anticipation of business needs. However, only 7 percent of the office workers, compared to 50 percent of the office managers, indicated the need to possess more category. About three-fourths of the office workers consider their anticipation of business needs as satisfactory; more than one-half of the office managers say that the office worker's possession and exhibition of the trait needs improvement.

Eighty-six percent of the office workers, compared to 55 percent of the office managers, reported that the office worker possessed and exhibited at least an average degree of objectivity in decision-making situations. In the opposite direction, only 10 percent of the office

workers, contrasted to 42 percent of the office managers, responded that the office workers need to possess more objectivity in decision-making. Once again, over half of both groups stated that at least an average degree of the trait was possessed and exhibited by the office workers; but the office workers ranked themselves higher. A substantial percent (42 percent) of the office managers indicated needs improvement while most office workers indicated at least average.

Ninety-one percent of the office workers, compared to 65 percent of the office managers, responded that the office workers possessed and exhibited at least an average degree of the ability to communicate ideas and conclusions in verbal and written form. In the opposite direction, only 9 percent of the office workers, contrasted to 35 percent of the office managers, responded with the need to possess more category. While the office workers tended to rate themselves more highly, the differences in opinions were not as great as on some of the other traits. Almost all office workers ranked themselves at least average, but a little more than one-third of the office managers indicated that the office workers need to possess more.

The response trends in the significant findings can be summarized:

(1) Office workers consistently ranked themselves higher in the possession and exhibition of the traits resulting in significant z values than did the office managers.

(2) Over one-third of the office managers consider that the office worker needs to possess and exhibit more judgment; initiative; curiosity; dependability; critical, rational, and logical thinking; adaptability; ability to form valid conclusions; anticipation of business needs; objectivity; and the ability to communicate ideas and conclusions in verbal and written form.

(3) While self-confidence resulted in some opinion differences, over three-fourths of the respondents indicated at least an average degree.

Some of the decision-making traits possessed and exhibited by office workers resulted in insignificant z scores. These percentages are reported because of possible implications for curriculum development and revision. Eighty-eight percent of both groups reported that the office workers possessed and exhibited at least an average degree of responsibility. The data show that almost all the office workers are responsible and that over three-fourths of the office workers and office managers agree that office workers possess this trait to a satisfactory or superior degree. Very little improvement is needed in this area.

Eighty-one percent of the office workers and 79 percent of the office managers indicated at least an average degree regarding intuition. Very little improvement is needed in this area as over one-half of both groups indicated the superior degree or satisfactory degree categories.

The insignificant findings concerning decision-making traits possessed and exhibited by office workers indicate that little improvement is needed in developing responsibility or intuition.

The findings of this section indicate that the office managers desire their office workers to possess and exhibit almost all of the listed traits as indicated by the office managers' responses in the need to possess more categories for: (1) judgment, 34 percent response; (2) initiative, 56 percent response; (3) curiosity, 42 percent response; (4) critical, rational and logical thinking, 42 percent response; (5) adaptability, 41 percent response; (6) ability to form valid conclusions, 48 percent response; (7) anticipation of business needs, 50 percent response; (8) objectivity, 42 percent response; and (9) the ability to communicate ideas and conclusions in verbal and

written form, 35 percent response. These responses were considerably higher than those of the office workers (1 to 17 percent responses). The data tend to support the previous findings indicating that office managers desire more versatile, creative, and administrative traits in office workers. Both groups, office workers and office managers, indicated that the office worker possesses and exhibits an adequate degree of responsibility, self-confidence, and intuition in decision-making. The data show a tendency for the office workers to rank themselves higher than office managers do on their degree of possession and exhibition of most of the decision-making traits. It appears that the business educator should study these findings for designing and revising the curriculum to develop the most desirable decision-making traits for office workers.

Null Hypotheses Findings of No Significant Differences

If the obtained z score is less than 1.96, the probability that the differences of opinions occurred by chance is greater than .05; therefore, the null hypothesis is accepted that there is no significant difference between the opinions of the two groups. The null hypotheses for which there were no significant differences in opinions of office workers and office managers are reported in this section.

Frequency of Specific Duty Performance

> Hypothesis 1. There is no significant difference of opinions between office workers and their office managers with respect to the frequency of specific duties involved in office work.

The office workers and office managers were asked to indicate how often the office worker performed the following office duties: (1)

dictation, (2) transcription, (3) typing, (4) filing, (5) bookkeeping, (6) composing, (7) processing mail, (8) telephoning, (9) receptionist, (10) administrative, and (11) information processing. They recorded their responses in five frequency classifications for each listed duty: (1) never, (2) rarely, (3) average of one or two times a month, (4) average of two or three times a week, and (5) daily.

Table XIX shows the frequency of responses in each classification for both office workers and office managers.

The z of .79 which is less than the required z of 1.96, as reported in Table XX, leads to the acceptance of this null hypothesis. Office workers and office managers do agree on the frequency with which the office workers perform specific office duties. The individual z scores for all the specific duties were insignificant. The insignificant z scores reported are: (1) dictation, z of .47; (2) transcription, z of .51; (3) typing, z of .33; (4) filing, z of .07; (5) bookkeeping, z of .15; (6) composing, z of .39; (7) processing mail, z of .00; (8) telephoning, z of 1.00; (9) receptionist, z of .44; (10) administrative, z of .24; and (11) information processing, z of .48.

Table XXI contains the two groups' percentage responses for the office workers' frequency of performance of specific duties. An examination of the two groups' responses regarding specific duties is warranted because of the implications of these percentages for curriculum development and curriculum revision. Only 9 percent of both groups, office managers and office workers, indicated daily dictation duties. Combining the average of one or two times every month, rarely, and never categories, 72 percent of the office workers and office managers reported that dictation duties occurred on an average of one or two

TABLE XIX

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE FREQUENCY OF THE OFFICE WORKERS' PERFORMANCE OF SPECIFIC OFFICE DUTIES

5--Daily 4--Average of two or three times a week 3--Average of one or two times every month 2--Rarely 1--Never

Duties Performed	Frequency Category by No. of Responses										Each Group Total	Total
	5		4		3		2		1			
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.		
Dictation	37	37	78	78	178	167	40	46	67	72	400	800
Transcription	37	37	78	77	178	168	40	46	67	72	400	800
Typing	157	159	102	104	63	61	31	38	47	38	400	800
Filing	201	199	88	93	56	62	40	26	15	20	400	800
Bookkeeping	54	52	65	66	73	74	110	107	98	101	400	800
Composing	63	60	108	102	79	88	70	68	80	82	400	800
Processing Mail	79	75	91	93	80	81	81	90	69	61	400	800
Telephoning	205	214	110	117	37	29	33	30	15	10	400	800
Receptionist	92	94	59	65	113	106	84	90	52	45	400	800
Administrative (planning, consulting, advising)	88	83	119	132	72	69	65	63	56	53	400	800
Information processing (organizing, condensing, and categorizing data)	90	87	123	126	75	69	72	64	40	54	400	800
Total Response	1103	1097	1021	1053	1004	974	666	668	606	608	4400	8800

* O.W. stands for Office Workers' response

** O.M. stands for Office Managers' response

TABLE XX

RESULTS OF THE MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE FREQUENCY WITH WHICH THE OFFICE WORKERS PERFORM SPECIFIC OFFICE DUTIES

	z Score	Significant or Insignificant
Overall Null Hypothesis	.79	insignificant
Duty		
Dictation	.47	insignificant
Transcription	.51	insignificant
Typing	.33	insignificant
Filing	.07	insignificant
Bookkeeping	.15	insignificant
Composing	.39	insignificant
Processing mail	.00	insignificant
Telephoning	1.00	insignificant
Receptionist	.44	insignificant
Administrative (planning, consulting, advising)	.24	insignificant
Information processing (organizing, condensing, and categorizing data)	.48	insignificant

TABLE XXI

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE FREQUENCY OF THE OFFICE WORKERS' PERFORMANCE OF SPECIFIC DUTIES

5--Daily 4--Average of two or three times a week 3--Average of one or two times every month 2--Rarely 1--Never

Duties Performed	Frequency Category by % of Responses										Total % for Each Group
	5		4		3		2		1		
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	
Dictation	9	9	19	19	45	42	10	12	17	18	100
Transcription	9	9	19	19	44	42	10	12	18	18	100
Typing	39	39	25	26	16	15	8	10	12	10	100
Filing	50	50	22	23	14	16	10	7	3	5	100
Bookkeeping	14	13	16	16	18	19	27	27	25	25	100
Composing	15	16	27	25	20	22	18	17	20	20	100
Processing Mail	20	19	23	24	20	20	20	22	17	15	100
Telephoning	51	54	28	29	9	7	8	7	4	3	100
Receptionist	23	23	15	16	28	27	21	23	13	11	100
Administrative (planning, consulting, advising)	22	21	30	33	18	17	16	16	14	13	100
Information processing (organizing, condensing, and categorizing data)	22	22	31	32	19	17	18	16	10	13	100

*O.W. stands for Office Workers' response

**O.M. stands for Office Managers' response

times every month or less. Both groups indicated that dictation is not frequently performed by the office worker. However, 37 percent of the office managers responded that the office worker's competence in dictation skills needs improvement (see Table VI on page 55). It appears that office managers might dictate more frequently if the office worker's skill in taking dictation improves. The implications of these findings should be studied further for curriculum revision and development.

Only 9 percent of both groups responded with the daily category regarding the office workers' transcription duties; while 72 percent of both groups indicated the average of one or two times every month or less categories. The data indicated that transcription duties are not frequently performed by the office worker. However, 38 percent of the office managers responded that the office worker's competence in transcription skills needs improvement (see Table VI on page 55). It appears that office managers might require the office workers to transcribe more frequently if the office workers' transcription skill improves. The implications of these findings should be studied further.

Thirty-nine percent of both groups, office workers and office managers, indicated daily performance of typing duties by the office workers. About 65 percent of both groups indicated typing was performed at least on an average of two or three times a week. The data indicate that a majority of office workers frequently perform typing duties.

Fifty percent of the two groups, office workers and office managers, responded that the office workers performed filing duties daily. Almost 75 percent of both groups indicate that the office worker frequently files material.

Regarding the frequency of performance of bookkeeping duties, 70 percent of the office workers and 71 percent of the office managers responded with on an average of one or two times every month or less. These findings indicate that bookkeeping duties are not frequently included in at least 70 percent of the office workers' duties.

Forty-two percent of the office workers and 41 percent of the office managers indicated that composing duties were performed by the office worker at least on an average of two or three times a week. However, 58 percent of the office workers and 59 percent of the office managers indicated the average of one or two times every month or less categories. It appears that a little less than half the office workers perform composing duties frequently, while a little more than half do not. The frequency of performance is not as easily determined as that of other duties.

Forty-three percent of both groups indicated mail processing at least on an average of two or three times a week. However, 57 percent of both groups indicated the average of two or three times a month or less categories. Like composing duties, a little less than half of the office workers are involved in frequent mail processing and a little more than half have infrequent involvement in mail processing duties.

Seventy-nine percent of the office workers and 83 percent of the office managers responded that the office workers performed telephoning duties on the average of at least two or three times a week. The data show that over three-fourths of the office workers are frequently concerned with telephone duties.

Thirty-eight percent of the office workers and 39 percent of the office managers responded that the office workers performed receptionist

duties at least on an average of two or three times a week. However, 62 percent of the office workers and 61 percent of the office managers indicated the average of one or two times every month or less categories. While over one-third of both groups' respondents indicated frequent receptionist duties, almost two-thirds of both groups stated that this was not a frequent duty.

Fifty-two percent of the office workers and 54 percent of the office managers indicated at least the average of two or three times a week categories regarding the frequency of the office workers' performance of administrative duties. However, 48 percent of the office workers and 46 percent of the office managers consider administrative duties to be performed on an average of one or two times every month or less. A little more than half the respondents indicate frequent administrative duties, while a little less than half indicate infrequent duties. Again, the implications of this finding are not as clear as the implications for many of the other duties.

Fifty-three percent of office workers and 54 percent of office managers indicated at least an average of two or three times a week for information processing duties. However, combining categories 3, 2, and 1 shows that 47 percent of the office workers and 46 percent of the office managers report that information processing duties are performed on an average of one or two times every month or less. Again, a little more than half performed the duties frequently, while less than half infrequently performed them.

The findings of this section indicate that office workers and office managers share similar opinions of the frequency with which the office workers perform specific office duties. The duties resulting in

responses of over 60 percent of both groups, office workers and office managers, in the two highest frequency categories are: (1) typing, (2) filing, and (3) telephoning. Around 50 percent of the office workers and office managers also fairly agree that some office duties are performed only on an average of 1 or 2 times a month or less: (1) composing, (2) mail processing, (3) administrative duties, and (4) information processing. The implications of these findings should be further examined for clarification. Some duties are not frequently performed by office workers (indicated by about 60 percent of the respondents) as indicated by responding in the average of one or two times every month or less categories: (1) dictation, (2) transcription, (3) bookkeeping, and (4) receptionist. However, the implications of these findings concerning dictation and transcription are not clear because almost 40 percent of the office managers previously reported that the office worker needs improved competency in using these skills (see Table VI on page 55). It seems that the business educator should thoroughly study these responses related to the frequency of specific duty performance for developing and revising the office administration curriculum.

Frequency of Office Workers' Machine Operation Duties

> Hypothesis 3. There is no significant difference of opinions between office workers and their office managers with respect to the frequency of specific machine operating duties involved in office work.

The two groups of respondents were asked to indicate the frequency with which the office worker operated the following office machines: (1) electric typewriter, (2) manual typewriter, (3) dictating equipment,

(4) rotary calculator, (5) printing calculator, (6) electronic calculator, (7) check writer, (8) reproducing equipment, (9) mail meter, (10) bookkeeping machine, (11) adding machine, (12) keypunch, (13) verifier, (14) collator, (15) reproducer, (16) accounting machine, (17) card sorter, (18) interpreter, (19) data converting equipment, (20) paper-tape equipment, (21) computer console, (22) random access devices, and (23) summary punch. The frequency categories provided for their response were: (1) never, (2) rarely, (3) one or two times a month, (4) two or three times a week, and (5) daily.

The frequency of responses in each category for office workers and office managers are reported in Table XXII.

The obtained z score of 1.24 reported in Table XXIII leads to the acceptance of Null Hypothesis 3. There is no significant difference between the opinions of office workers and office managers regarding the frequency of specific machine operating duties involved in office work.

The z scores for the individual machines are also reported in Table XXIII. The only significant z score concerned the frequency of the office workers' operation of the rotary calculator which resulted in a z of 2.24.

Insignificant z scores are: (1) electric typewriter, z of .99; (2) manual typewriter, z of .46; (3) dictating equipment, z of 1.63; (4) printing calculator, z of .56; (5) electronic calculator, z of .15; (6) check writer, z of .21; (7) photocopy, z of .09; (8) duplicating, z of .36; (9) offset, z of 1.02; (10) mail meter, z of .32; (11) bookkeeping machine, z of .79; (12) adding machine, z of .92; (13) keypunch, z of .46; (14) verifier, z of .21; (15) collator, z of .45; (16) reproducer, z of .04; (17) accounting machine, z of .00; (18) card

TABLE XXII

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE FREQUENCY OF OFFICE WORKERS' SPECIFIC MACHINE OPERATION DUTIES

5--Daily 4--Average of two or three times a week 3--Average of one or two times every month 2--Rarely 1--Never

	Frequency Category by No. of Responses										Each Group	
	5		4		3		2		1			
Machines Operated	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	Total	Total
Electric Typewriter	178	160	66	78	34	30	32	38	90	94	400	800
Manual Typewriter	24	21	43	44	52	51	39	35	242	249	400	800
Dictation Equipment	101	97	99	86	57	47	52	51	91	119	400	800
Rotary Calculator	99	81	141	137	35	30	43	39	82	113	400	800
Printing Calculator	62	57	153	172	50	46	31	28	104	97	400	800
Electronic Calculator	42	45	68	64	36	39	130	122	124	130	400	800
Check Writer	56	47	68	84	102	97	32	36	142	136	400	800
Reproducing Equipment:												
Photocopy (Xerox, etc.)	152	156	86	81	41	37	33	39	88	87	400	800
Duplicating (Ditto)	91	85	54	61	37	34	26	22	192	198	400	800
Offset	69	65	78	70	24	18	29	32	200	215	400	800
Mail Meter	120	131	39	34	36	21	43	35	162	179	400	800
Bookkeeping Machine	51	42	47	35	26	37	77	82	199	204	400	800
Adding Machine	87	81	120	116	53	47	51	58	89	98	400	800
Keypunch	49	45	62	68	41	47	25	27	223	213	400	800
Verifier	47	51	63	64	39	37	75	72	176	176	400	800
Collator	41	36	65	69	31	28	120	118	143	149	400	800
Reproducer	43	45	64	61	41	38	53	59	199	197	400	800
Accounting Machine	7	7	9	10	5	4	8	8	371	371	400	800
Card Sorter	39	40	71	74	29	24	47	26	214	236	400	800
Interpreter	41	58	62	65	35	34	39	32	223	211	400	800
Data Converting Equipment	15	15	9	11	13	11	11	11	352	352	400	800
Paper-Tape Equipment	6	5	11	13	4	4	5	5	374	373	400	800
Computer Console	37	34	64	67	36	39	64	59	199	201	400	800
Random Access Devices	17	15	15	17	8	6	23	24	337	338	400	800
Summary Punch	8	7	10	12	5	3	9	11	368	367	400	800
Total Response	1482	1426	1567	1593	870	809	1097	1069	4984	5103	10,000	20,000

*O.W. stands for Office Workers' response

**O.M. stands for Office Managers' response

TABLE XXIII

RESULTS OF THE MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE FREQUENCY OF THE OFFICE WORKERS' SPECIFIC MACHINE OPERATION DUTIES

	z Score	Significant or insignificant
Overall Null Hypothesis	1.24	insignificant
Machine		
Electric Typewriter	.99	insignificant
Manual Typewriter	.46	insignificant
Dictating Equipment	1.63	insignificant
Rotary Calculator	2.24	significant
Printing Calculator	.56	insignificant
Electronic Calculator	.15	insignificant
Check Writer	.21	insignificant
Reproducing Equipment:		
Photocopy (Xerox, etc.)	.09	insignificant
Duplicating (Ditto)	.36	insignificant
Offset	1.02	insignificant
Mail Meter	.32	insignificant
Bookkeeping Machine	.79	insignificant
Adding Machine	.92	insignificant
Keypunch	.46	insignificant
Verifier	.21	insignificant
Collator	.45	insignificant
Reproducer	.04	insignificant
Accounting Machine	.00	insignificant
Card Sorter	.90	insignificant
Interpreter	1.38	insignificant
Data Converting Equipment	.01	insignificant
Paper-Tape Equipment	.13	insignificant
Computer Console	.09	insignificant
Random Access Devices	.12	insignificant
Summary Punch	.12	insignificant

sorter, z of .90; (19) interpreter, z of 1.38; (20) data converting equipment, z of .01; (21) paper-tape equipment, z of .13; (22) computer console, z of .09; (23) random access devices, z of .12; and (24) summary punch, z of .12.

The percentage responses of the two groups of the frequency of the office workers' machine operation duties are reported in Table XXIV.

There was a significant difference of opinion between office workers and office managers concerning the frequency of operation of the rotary calculator. Fifty-eight percent of the office workers and 54 percent of the office managers indicated the average of two or three times a week or more categories. Forty-two percent of the office workers, compared to 46 percent of the office managers, indicated the average of one or two times every month or less categories. While over half of both groups responded with the frequent categories, a little less than half of both groups indicated that the rotary calculator was not frequently used in office work.

An examination of the two groups' responses for various machines that resulted in insignificant z scores is warranted because of the implications for machine instruction in the curriculum. Sixty-one percent of the office workers and 60 percent of the office managers responded that the office worker used the electric typewriter at least on an average of two or three times a week. Further, 45 percent of the office workers and 40 percent of the office managers responded with the daily category. The electric typewriter is frequently operated in office work.

The manual typewriter was never used by the office workers, according to 60 percent of the office workers and 62 percent of the office

TABLE XXIV

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE FREQUENCY OF OFFICE WORKERS' SPECIFIC MACHINE OPERATION DUTIES

5--Daily 4--Average of two or three times a week 3--Average of one or two times every month 2--Rarely 1--Never

	Frequency Category by % of Responses										
	5		4		3		2		1		Total % for
Machines Operated	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	Each Group
Electric Typewriter	45	40	16	20	8	8	8	9	23	23	100
Manual Typewriter	6	5	11	11	13	13	10	9	60	62	100
Dictating Equipment	25	25	25	21	14	13	12	12	24	29	100
Rotary Calculator	23	20	35	34	10	8	11	10	21	28	100
Printing Calculator	16	14	38	43	13	12	7	7	26	24	100
Electronic Calculator	11	11	17	16	9	10	32	30	31	33	100
Check Writer	14	12	17	21	26	24	8	9	35	34	100
Reproducing Equipment:											
Photocopy (Xerox, etc.)	38	39	22	20	10	9	8	10	22	22	100
Duplicating (Ditto)	23	21	14	15	9	9	6	6	48	49	100
Offset	17	16	20	18	6	5	7	8	50	53	100
Mail Meter	30	33	10	9	9	5	10	9	41	44	100
Bookkeeping Machine	13	11	12	8	7	9	19	21	49	51	100
Adding Machine	22	20	30	29	13	12	13	15	22	24	100
Keypunch	12	11	16	17	10	12	6	7	56	53	100
Verifier	12	13	16	16	10	9	18	18	44	44	100
Collator	10	9	16	17	8	7	30	30	36	37	100
Reproducer	11	11	16	16	10	11	13	13	50	49	100
Accounting Machine	2	2	2	2	1	1	2	2	93	93	100
Card Sorter	10	10	18	19	7	6	12	6	53	59	100
Interpreter	11	14	16	15	8	8	9	7	56	56	100
Data Converting Equipment	4	4	2	3	3	3	3	2	88	88	100
Paper-Tape Equipment	2	2	2	4	1	1	1	1	93	93	100
Computer Console	9	9	16	17	9	10	16	14	50	50	100
Random Access Devices	4	4	4	4	2	2	6	6	84	84	100
Summary Punch	2	2	3	3	1	0	2	3	92	92	100

*O.W. stands for Office Workers' response

**O.M. stands for Office Managers' response

managers. In fact, only 17 percent of the office workers and 16 percent of the office managers reported usage at least on an average of two or three times a week or more. Therefore, the manual typewriter is rarely used in the office.

About half of both groups indicated frequent use of dictating equipment. Fifty percent of the office workers and 46 percent of the office managers indicated that dictating equipment was used at least on an average of two or three times a week. Combining the average of one or two times every month or less categories shows that 50 percent of the office workers and 54 percent of the office managers indicated that dictating equipment was not frequently used. Further, about one-fourth of the office workers and office managers responded with the never category.

Fifty-four percent of the office workers and 57 percent of the office managers indicated that the printing calculator was used at least on an average of two or three times a week. However, 46 percent of the office workers and 43 percent of the office managers responded in categories 3, 2, and 1. Thus a little less than half of both groups indicated the printing calculator was used on an average of one or two times every month or less. Further, about one-fourth the office workers and office managers responded with the never category.

Regarding the electronic calculator, 72 percent of the office workers and 73 percent of the office managers responded in the average of one or two times every month or less categories. The electronic calculator was not frequently used by almost three-fourths of the office workers.

Sixty-nine percent of the office workers and 67 percent of the

office managers indicated that the check writer was only used on an average of one or two times every month or less. Only 31 percent of the office workers and 33 percent of the office managers responded that the check writer was used at least on an average of two or three times a week. Therefore, it appears that the check writer is infrequently used by over two-thirds of the office workers and is never used by over one-third of the office workers.

Sixty percent of the office workers and 59 percent of the office managers responded that the office workers used the photocopy machine at least on an average of two or three times a week. Forty percent of the office workers and 41 percent of the office managers responded that the photocopy machine was used on an average of one or two times every month or less. Further, well over half the office workers use the photocopy equipment frequently.

Sixty-three percent of the office workers and 64 percent of the office managers indicated that duplicating machines were used on an average of one or two times every month or less. Further, almost one-half responded that the duplicating machine was never used. Only about one-third of both groups responded that the office workers use the duplicator as often as two or three times a week.

Sixty-three percent of the office workers and 66 percent of the office managers reported that the office workers use offset equipment on an average of one or two times every month or less. In fact, 50 percent of the office workers and 53 percent of the office managers reported in the never category. However, almost one-third of both groups responded that the offset was used at least two or three times a week.

Forty-one percent of the office workers and 44 percent of the

office managers indicated that the mail meter was never used. However, in the opposite direction, 40 percent of the office workers and 42 percent of the office managers indicated that the mail meter was used at least on an average of two or three times a week. Further, about one-third use the mail meter daily.

Forty-nine percent of the office workers and 51 percent of the office managers indicated that the bookkeeping machine was never used. About two-thirds of both groups responded with rarely or less. Only 25 percent of the office workers and 19 percent of the office managers responded with at least two or three times a week. Therefore, the bookkeeping machine is not frequently used by many office workers.

The adding machine was used at least on an average of two or three times a week by office workers according to the responses of 52 percent of the office workers and 49 percent of the office managers. However, 48 percent of the office workers and 51 percent of the office managers responded that the office worker did not frequently use the adding machine. The implication of these findings for training on the adding machine is not clear. Further study of the adding machine and its use by the office worker seems warranted.

Two of the items related to data processing, the verifier and collator, and the responses were predominantly in the rarely and never categories. Sixty-two percent of both groups' responses related to verifier usage occurred in the rarely or never categories. Sixty-six percent of the office workers and 67 percent of the office managers indicated categories 2 and 1 regarding collator usage. It appears that the verifier and collator are rarely, if ever, used by about two-thirds of the office workers. About one-fourth of the respondents indicated

that the verifier and collator were used at least two or three times a week.

The remainder of the items were related to data processing equipment, and the responses were predominantly in the never category. Fifty-six percent of the office workers and 53 percent of the office managers responded that the office workers never used keypunch equipment. However, about one-fourth the respondents indicated frequent use. The frequency of the office workers' use of the reproducer was never according to 50 percent of the office workers and 49 percent of the office managers. However, about one-fourth the respondents indicated frequent use. Ninety-three percent of the office workers and 93 percent of the office managers responded that the accounting machine was never used by the office worker. Fifty-three percent of the office workers and 59 percent of the office managers indicated that the card sorter was never used by the office worker. Further, about two-thirds of the respondents indicated the rarely or never categories. One-fourth of the respondents indicated at least two or three times a week. Regarding the interpreter, 56 percent of both groups responded with the never category. About two-thirds of both groups indicated the rarely or never categories. About one-fourth of the respondents indicated at least two or three times a week. Eighty-eight percent of both groups indicated that the data converting equipment was never used by the office worker. Ninety-three percent of both groups responded with the never category regarding paper-tape equipment. Fifty percent of both groups responded that the office worker never used the computer console. About two-thirds indicated the rarely and never categories. However, about one-fourth indicated that the computer console was frequently

used. The random access equipment was never used according to 84 percent of each group. Ninety-two percent of the office workers and office managers indicated that the summary punch was never used by the office workers.

The insignificant findings regarding frequency of the office workers' machine operation duties can be summarized:

(1) Basically, office workers and office managers share similar opinions of the frequency with which the office workers perform specific machine operation duties.

(2) Over sixty percent of the respondents reported frequent use (categories 5 and 4) of the electric typewriter.

(3) Between 40 and 60 percent of the respondents reported frequent use (categories 5 and 4) of the adding machine, dictating equipment, printing calculator, photocopy, and mail meter; however, between 40 and 60 percent of the respondents also reported infrequent use (categories 3, 2, and 1) of these same machines. The direct implications of the frequency of the usage of these machines must be further studied.

(4) Over 60 percent of both groups reported infrequent use (categories 3, 2, and 1) of the manual typewriter, electronic calculator, check writer, duplicating machine, bookkeeping equipment, offset, and collator and verifier (the last two items are data processing equipment).

(5) Over 80 percent of the respondents indicated that certain kinds of data processing equipment are never used. This equipment includes the accounting machine, data converting equipment, paper-tape equipment, random access device, and summary punch.

(6) Further between 40 and 60 percent of the respondents indicated that various pieces of data processing equipment were never used. These pieces include the keypunch, reproducer, card sorter, interpreter, and computer console.

The only significant score resulted from the operation of the rotary calculator. However, between 40 and 60 percent of the respondents reported frequent usage, while between 40 and 60 percent reported infrequent usage. Therefore, the direct implications of the significant

item must be studied further.

It seems that the business educator should study these responses concerning the frequency with which office workers operate specific office machines further in developing and revising the office administration curriculum to adequately prepare the office worker in operating the most frequently used office machines and to determine those machines on which only incidental training is needed because of infrequent operation.

It would be of interest to study further the question of which office job categories involve the use of data processing equipment by office workers and which office job categories do not require the use of any data processing equipment. A marked pattern would indicate changes that would produce a more efficient and adequate office education curriculum. Also, it would be interesting to know why they don't use the equipment--whether there is no demand for using such equipment or whether they don't use it because workers do not know how to operate the equipment. Perhaps there is no consistent pattern of use or non-use of data processing equipment by job categories at all, but this point seems worthy of future research efforts by those interested in office education curriculum.

Competence of Office Workers' Machine Operation

> Hypothesis 4. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competence with which office workers perform these specific machine operating duties involved in office work.

The questionnaire provided the opportunity for office workers and office managers to indicate the office workers' competence level in

operating the following office machines: (1) electric typewriter, (2) manual typewriter, (3) dictating equipment, (4) rotary calculator, (5) printing calculator, (6) electronic calculator, (7) check writer, (8) reproducing equipment, (9) mail meter, (10) bookkeeping machine, (11) adding machine, (12) keypunch, (13) verifier, (14) collator, (15) reproducer, (16) accounting machine, (17) card sorter, (18) interpreter, (19) data converting equipment, (20) paper-tape equipment, (21) computer console, (22) random access devices, and (23) summary punch.

The questionnaire provided the opportunity for office workers and office managers to indicate the office workers' competence level in operating the following categories: (1) not required on the job, (2) needing improvement, (3) average, (4) satisfactory, and (5) excellent.

Table XXV shows the frequency of responses in each category by the office workers and office managers regarding the office workers' machine operating competence.

The application of the statistical test resulted in a z score of .99 as reported in Table XXVI. The z score is well below the required z of 1.96; therefore, the null hypothesis that office workers and office managers agree upon the office workers' competence in operating office machines is accepted.

Table XXVI reports the z scores for the questionnaire section's individual items concerning machine operating competence. The eight significant z scores resulting from the two groups' opinions for the office workers' competence in operating machines are: (1) manual typewriter, z of 5.28; (2) dictating equipment, z of 5.26; (3) rotary calculator, z of 5.22; (4) electronic calculator, z of 6.00; (5) adding machine, z of 2.66; (6) keypunch, z of 2.36; (7) verifier, z of 4.09;

TABLE XXV

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE OFFICE WORKERS' MACHINE OPERATING COMPETENCE

5--Excellent Competence 4--Satisfactory Competence 3--Average Competence
2--Needs Improvement 1--Not Required

	Competence Category by No. of Responses										Each Group Total	Total
	5		4		3		2		1			
Machines Operated	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.		
Electric Typewriter	150	161	87	53	21	33	52	61	90	92	400	800
Manual Typewriter	18	37	34	95	35	20	21	17	292	231	400	800
Dictating Equipment	131	63	98	91	31	33	47	102	93	111	400	800
Rotary Calculator	122	67	101	58	8	37	89	137	80	101	400	800
Printing Calculator	84	42	52	75	8	63	152	122	104	98	400	800
Electronic Calculator	45	31	158	72	67	101	7	17	123	179	400	800
Check Writer	75	81	91	67	81	110	7	6	146	136	400	800
Reproducing Equipment:												
Photocopy (Xerox, etc.)	121	113	101	110	80	85	9	17	89	75	400	800
Duplicating (Ditto)	103	101	61	52	42	35	13	21	181	191	400	800
Offset	67	58	81	65	29	68	15	32	208	177	400	800
Mail Meter	131	108	44	50	17	51	7	11	201	180	400	800
Bookkeeping Machine	62	55	64	55	13	62	11	27	250	201	400	800
Adding Machine	173	163	89	35	49	35	8	78	81	89	400	800
Keypunch	88	37	16	21	8	53	17	88	271	201	400	800
Verifier	87	38	75	23	31	52	18	86	189	201	400	800
Collator	36	34	98	65	39	75	34	89	193	137	400	800
Reproducer	51	49	87	20	42	42	18	91	202	198	400	800
Accounting Machine	11	9	3	15	7	3	1	3	378	370	400	800
Card Sorter	43	32	71	43	35	41	21	53	230	231	400	800
Interpreter	53	35	68	35	20	37	9	51	250	242	400	800
Data Converting Equipment	15	13	1	1	1	4	2	10	381	372	400	800
Paper-Tape Equipment	13	3	5	6	2	8	1	1	379	382	400	800
Computer Console	75	31	53	24	24	54	23	92	225	199	400	800
Random Access Devices	30	13	27	29	5	19	1	9	337	330	400	800
Summary Punch	13	8	4	7	2	9	2	11	379	365	400	800
Total Responses	1797	1382	1569	1167	697	1130	585	1232	5352	5089	10,000	20,000

*O.W. stands for Office Workers' response
**O.M. stands for Office Managers' response

TABLE XXVI

RESULTS OF THE MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE OFFICE WORKERS' SPECIFIC MACHINE OPERATING COMPETENCE

	z Score	Significant or Insignificant
Overall Null Hypothesis	.99	insignificant
Machine		
Electric Typewriter	.15	insignificant
Manual Typewriter	5.28	significant
Dictating Equipment	5.26	significant
Rotary Calculator	5.22	significant
Printing Calculator	.07	insignificant
Electronic Calculator	6.00	significant
Check Writer	.06	insignificant
Reproducing Equipment:		
Photocopy (Xerox, etc.)	.04	insignificant
Duplicating (Ditto)	.72	insignificant
Offset	.56	insignificant
Mail Meter	.05	insignificant
Bookkeeping Machine	1.94	insignificant
Adding Machine	2.66	significant
Keypunch	2.36	significant
Verifier	4.09	significant
Collator	1.23	insignificant
Reproducer	2.04	significant
Accounting Machine	1.12	insignificant
Card Sorter	1.27	insignificant
Interpreter	.97	insignificant
Data Converting Equipment	1.28	insignificant
Paper-Tape Equipment	.57	insignificant
Computer Console	1.13	insignificant
Random Access Devices	.21	insignificant
Summary Punch	1.81	insignificant

and (8) reproducer, z of 2.04. Insignificant z scores were obtained for the following seventeen machines: (1) electric typewriter, z of .15; (2) printing calculator, z of .07; (3) check writer, z of .06; (4) photocopy, z of .04; (5) duplicating, z of .72; (6) offset, z of .56; (7) mail meter, z of .05; (8) bookkeeping machine, z of 1.94; (9) collator, z of 1.23; (10) accounting machine, z of 1.12; (11) card sorter, z of 1.27; (12) interpreter, z of .97; (13) data converting equipment, z of 1.28; (14) paper-tape equipment, z of .57; (15) computer console, z of 1.13; (16) random access devices, z of .21; and (17) summary punch, z of 1.81.

A comparison of the percentage responses of both groups regarding the office workers' machine operating competence is reported in Table XXVII. An examination of this table should further explain the exact responses resulting in a significant difference of opinions in the two groups' responses. Only 13 percent of the office workers, compared to 33 percent of the office managers, indicated at least satisfactory competence regarding the office workers' operation of the manual typewriter. However, 73 percent of the office workers, compared to 58 percent of the office managers, indicated the competence not required category. A majority of respondents reported that competence on the manual typewriter was not needed.

Fifty-six percent of the office workers, contrasted to 39 percent of the office managers, responded with at least the satisfactory competence categories regarding the office workers' competence in operating dictating equipment. Only 12 percent of the office workers, compared to 25 percent of the office managers, responded with the competence needs improvement category. However, 24 percent of the office workers and 28

TABLE XXVII

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING THE OFFICE WORKERS' MACHINE OPERATING COMPETENCE

5--Excellent Competence 4--Satisfactory Competence 3--Average Competence
2--Needs Improvement 1--Not Required

	Competence Category by % of Responses										
	5		4		3		2		1		Total % for
Machines Operated	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	Each Group
Electric Typewriter	37	42	22	13	5	8	14	15	22	22	100
Manual Typewriter	4	9	9	24	9	5	5	4	73	58	100
Dictating Equipment	33	16	23	23	8	8	12	25	24	28	100
Rotary Calculator	31	17	25	15	2	9	22	33	20	26	100
Printing Calculator	21	10	13	19	2	16	38	30	26	25	100
Electronic Calculator	11	8	39	18	17	2	2	4	31	45	100
Check Writer	19	20	23	17	20	28	2	1	36	34	100
Reproducing Equipment:											
Photocopy (Xerox, etc.)	30	28	25	28	21	21	1	4	23	19	100
Duplicating (Ditto)	26	25	15	13	11	9	3	5	45	48	100
Offset	17	15	20	16	7	17	3	8	53	44	100
Mail Meter	33		11	12	4	13	2	3	50	45	100
Bookkeeping Machine	16	14	16	14	3	16	3	6	62	50	100
Adding Machine	43	41	22	9	12	8	2	20	21	22	100
Keypunch	22	9	4	5	2	13	4	22	68	51	100
Verifier	22	10	19	6	8	13	4	21	47	50	100
Collator	9	9	26	16	9	19	8	22	48	34	100
Reproducer	13	12	22	5	11	11	4	22	50	50	100
Accounting Machine	2	2	1	4	2	1	0	1	94	93	100
Card Sorter	11	8	18	10	9	10	5	13	58	58	100
Interpreter	13	9	17	9	5	9	3	12	62	61	100
Data Converting Equipment	4	3	0	0	0	1	1	3	95	93	100
Paper-Tape Equipment	3	1	1	2	1	2	0	0	95	95	100
Computer Console	18	8	13	6	6	14	5	23	58	49	100
Random Access Devices	8	3	7	7	1	5	0	2	84	83	100
Summary Punch	3	2	1	2	1	2	1	3	94	91	100

*O.W. stands for Office Workers' response
**O.M. stands for Office Managers' response

percent of the office managers indicated competence was not required. While about one-fourth of the respondents say that competence is not required, one-fourth of the office managers say that competence in operating dictating machines needs improvement.

Regarding the office workers' competence in operating the rotary calculator, 56 percent of the office workers, compared to 32 percent of the office managers, responded with at least the satisfactory competence category. Only 22 percent of the office workers, compared to 33 percent of the office managers, responded with the competence needs improvement category. About one-fourth of both groups indicated that competence was not required.

Fifty percent of the office workers, compared to 26 percent of the office managers, indicated at least the satisfactory competence category regarding the office workers' operation of the electronic calculator. In the opposite direction, only 17 percent of the office workers, compared with 25 percent of the office managers, indicated average competence. Only 31 percent of the office workers, compared to 45 percent of the office managers, responded that competence was not required. Almost one-half of the office managers' responses indicated that the office worker did not need competence in operating the electronic calculator.

Sixty-five percent of the office workers, compared to only 50 percent of the office managers, responded with at least the satisfactory competence category regarding the office workers' competence in operating the adding machine. Only 2 percent of the office workers, contrasted to 20 percent of the office managers, indicated that competence needs improvement.

The final three significant z scores relate to the office workers'

competence in operating data processing equipment. Twenty-six percent of the office workers, compared to only 14 percent of the office managers, indicated that the office workers operated the keypunch with at least satisfactory competence. Only 4 percent of the office workers, compared to 22 percent of the office managers, indicated the competence needs improvement category. However, 68 percent of the office workers, compared to 51 percent of the office managers, indicated the competence not required category. Over half of both groups indicated that the office worker needs no competence in operating the keypunch.

Forty-one percent of the office workers, compared to only 16 percent of the office managers, responded with at least the satisfactory competence category regarding the office workers' operation of the verifier. In the opposite direction, only 4 percent of the office workers, compared to 21 percent of the office managers, responded that the office workers' competence in operating the verifier needs improvement. However, the response trend noted in keypunch competence was repeated; 47 percent of the office workers and 50 percent of the office managers responded that competence was not required.

Thirty-five percent of the office workers, compared with only 17 percent of the office managers, indicated that the office workers operated the reproducer with at least satisfactory competence. In the opposite direction, only 4 percent of the office workers, contrasted to 22 percent of the office managers, responded with the competence needs improvement category. Again, half of each groups' responses occurred in the not required category.

The significant findings concerning the office workers' competence

in machine operation can be summarized:

(1) The office workers tended to rank their competence in machine operation somewhat higher than office managers (dictation equipment, rotary calculator, electronic calculator, adding machine, keypunch, verifier, and reproducer).

(2) Over fifty percent of both groups indicated at least satisfactory competence in operating the adding machine.

(3) Over fifty percent of the office workers indicated at least satisfactory competence in operating dictating equipment, rotary calculators, and electronic calculators; however, less than 50 percent of the office managers indicated the satisfactory competence or above categories.

(4) About fifty percent of both groups indicated that competence was not required in operating the manual typewriter, keypunch, verifier, and reproducer.

(5) While responses totaled 33 percent or less, considerably more office managers than office workers indicated a need for improved competence in operating the dictating equipment, rotary calculator, adding machine, keypunch, verifier, and reproducer.

An examination of the items having insignificant z scores is warranted because of the implications of this information for machine instruction in the curriculum. Fifty-nine percent of the office workers and 55 percent of the office managers indicated that the office workers operated the electric typewriter with at least satisfactory competence. Only 22 percent of the two groups' responses indicated that competence was not required. Therefore, skill on the electric typewriter is needed in over three-fourths of the jobs, and schools seem to be preparing most office workers satisfactorily in this area.

Thirty-four percent of the office workers, compared to only 29 percent of the office managers, responded that the office workers displayed at least satisfactory competence in printing calculator operation.

However, 38 percent of the office workers and 30 percent of the office managers indicated that competence in printing calculator operation needs improvement. Also, 26 percent of the office workers and 25 percent of the office managers indicated that competence was not required. One-fourth say competence is not needed, and about one-third say competence needs improvement. The implication of these data is not clear and further research is indicated.

While 42 percent of the office workers and 37 percent of the office managers indicated at least satisfactory competence in operating the check writer, over one-third of the two groups' responses occurred in the not required category. Very few respondents indicated that competence needs improvement.

Regarding photocopy equipment, 55 percent of the office workers and 56 percent of the office managers indicated the at least satisfactory competence category. Twenty-three percent of the office workers and 19 percent of the office workers say competence is not needed. Almost no responses occurred in the needs improvement category.

Forty-one percent of the office workers and 38 percent of the office managers indicated that the office workers' competence in operating the duplicating machine was at least satisfactory. However, 45 percent of the office workers and 48 percent of the office managers indicated the competence not required category relating to the office workers' operation of duplicating equipment. Almost no responses occurred in the needs improvement category. It appears that further research is warranted to clarify the implications of the data concerning duplicating equipment.

Fifty-three percent of the office workers and 44 percent of the

office managers indicated the competence not required category regarding offset equipment. About one-third of both groups' responses indicated at least satisfactory competence. Almost none of the respondents desired improved competence. Further research is indicated to clarify the implications of this data.

Fifty percent of the office workers and 45 percent of the office managers indicated the not required category for the mail meter. Over one-third of both groups, 44 percent of the office workers and 39 percent of the office managers, responded with at least satisfactory competence. No improvement was needed according to almost all of the respondents. The results are somewhat inconclusive, and further research is indicated.

Sixty-two percent of the office workers, compared to 50 percent of the office managers, indicated that competence in operating the bookkeeping machine was not required. Almost one-third of the two groups, 32 percent of the office workers and 28 percent of the office managers, responded with at least satisfactory competence. No improvement appears needed.

The remaining machines resulting in insignificant z scores related to data processing equipment. The largest percentage responses of both groups, office workers and office managers, occurred in the competence not required category. Forty-eight percent of the office workers, compared to 34 percent of the office managers, responded that competence was not required regarding operation of the collator. Forty-four percent of the respondents indicated at least average of above competence. Also, 22 percent of the office managers desired improvement.

Ninety-four percent of the office workers and 93 percent of the

office managers responded with the competence not required category related to the office workers' operation of the accounting machine.

The competence not required category was indicated by 58 percent of both groups, office workers and office managers, regarding operation of the card sorter. Thirty-eight percent of both groups responded with at least average competence.

Sixty-two percent of the office workers and 61 percent of the office managers indicated the competence not required category regarding the office workers' operation of the interpreter. Forty-six percent of the office workers and 27 percent of the office managers responded with at least average competence.

Also, competence was not required in operating data converting equipment as indicated by 95 percent of the office workers' responses and 93 percent of the office managers' responses.

Ninety-five percent of both groups, office workers and office managers, responded that competence was not required regarding the office workers' operation of paper-tape equipment.

Fifty-eight percent of the office workers, compared to 49 percent of the office managers, indicated that competence was not required for operating the computer console. Thirty-seven percent of the office workers and 28 percent of the office managers responded with at least average competence. Also, 23 percent of the office managers desired improvement.

Regarding the random access device, 84 percent of the office workers and 83 percent of the office managers indicated the competence not required category. Ninety-four percent of the office workers and 91 percent of the office managers responded that competence was not

required related to operation of the summary punch.

The insignificant findings can be summarized:

(1) While there was less discrepancy between the two groups' percentage responses concerning machine operating competence, the office workers had a slight tendency to rank themselves higher than office managers.

(2) Over half of both groups indicated at least satisfactory competence in operating the electric typewriter and photocopy equipment.

(3) Between 25 and 50 percent of both groups indicate at least satisfactory competence in operating the check writer, duplicating machine, printing calculator, offset, and mail meter; however, between 25 and 50 percent indicated that competence in operating these machines was not required.

(4) Between 25 and 50 percent of the respondents indicated that printing calculator operating competence needs improvement.

(5) Fifty percent or more of the respondents indicated that competence in operating the bookkeeping machine was not required.

(6) The not required category was indicated by over 75 percent of the respondents regarding competence in operating the accounting machine, data converting equipment, paper-tape equipment, random access devices, and summary punch (all items are data processing equipment).

(7) Between 50 percent and 75 percent of the respondents indicated that competence was not required in operating the card sorter, interpreter, and computer console (data processing equipment).

(8) Slightly less than half the respondents indicated the not required category for the collator.

It appears that the business educator should study these findings regarding the office workers' competence in machine operation in developing and revising the office administration curriculum with regard to which machines need to be taught for competency and which should be taught for acquaintance levels. Also, it is possible that some machine training could be eliminated.

It appears from the above findings that the business educator should study further why about 20 percent of office managers reported that the office workers needed to improve competence in operating the keypunch, verifier, collator, reproducer, and computer console; while about half of the office workers and office managers indicated that competence was not required in operating these machines. Also, it would be interesting to discover why so little competence is required in data processing machine operation. Perhaps as office workers gained proficiency in basic data processing equipment operation, the office managers would provide additional opportunities for the workers to utilize such equipment. Whatever the reason, the full implications of these response patterns are not determinable from this research; but the data disclose interesting tendencies warranting future study by office educators.

The findings also further support the response trend of the office workers to indicate somewhat higher competency than the office manager as indicated previously in Null Hypotheses 2, 4, and 6.

Present and Future Trends for Office Workers

> Hypothesis 9. There is no significant difference of opinions between office workers and their office managers with respect to specific present and future trends for office workers with regard to personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

The questionnaire contained five statements concerning present and future trends for office workers: (1) Presently and in the future, personal traits are becoming more important for success in office work than they have previously been; (2) In the future, office workers will assume more independence and autonomy; (3) In the future, more general

knowledge will be needed for office workers than has been previously needed; (4) In the future, higher skill specialization will be needed for office employment than previously was needed; and (5) In the future, decision-making ability will be as important as actual job skills possessed by office workers. The respondents were asked to indicate their opinions of the validity of the statement by checking one of five categories for each statement: (1) not at all true, (2) rarely might be true, (3) might be true, (4) highly probably but not positive, and (5) true.

Table XXVIII shows the frequency of responses in each category by the office workers and office managers regarding present and future trends for office workers.

The resultant $\underline{z}$ score of 1.20 reported in Table XXIX is not significant. Office workers and office managers anticipate the same present and future trends for office workers. Thus, the null hypothesis is accepted.

Table XXIX reports the $\underline{z}$ scores for the five questions regarding certain present and future trends for office workers. One statement resulted in a $\underline{z}$ of 3.42 indicating a significant difference of opinions between the two groups. The statement was: In the future, higher skill specialization will be needed for office employment than previously was needed. Insignificant $\underline{z}$ scores were reported for: (1) personal traits becoming important, $\underline{z}$ of .31; (2) more office worker autonomy, $\underline{z}$ of .05; (3) more need for general knowledge, $\underline{z}$ of 1.06; and (4) decision-making ability as important as job skills, $\underline{z}$ of 1.34.

A comparison of the percentage responses of both groups regarding present and future trends for office workers is given in Table XXX. An

TABLE XXVIII

FREQUENCY DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING SPECIFIC PRESENT AND FUTURE TRENDS FOR OFFICE WORKERS

5--True 4--Highly Probable but not Positive 3--Must be True
2--Rarely would be True 1--Not at all True

Trend	Credibility Category by No. of Responses										Each Group Total	Total
	5		4		3		2		1			
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.		
Personal traits becoming more important	248	261	92	63	31	34	18	30	11	12	400	800
More office worker autonomy	217	211	118	131	27	30	23	18	15	10	400	800
More general knowledge needed for office workers	213	203	147	141	13	17	14	34	13	5	400	800
Higher skill specialization	62	57	84	62	16	11	132	108	106	162	400	800
Decision-making ability as important as actual job skills	231	249	139	125	11	16	11	7	8	3	400	800
Total Responses	971	981	580	522	98	108	198	197	153	192	2000	4000

*O.W. stands for Office Workers' response

**O.M. stands for Office Managers' response

TABLE XXIX

RESULTS OF THE MANN-WHITNEY U TEST REGARDING THE OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS OF THE PRESENT AND FUTURE TRENDS FOR OFFICE WORKERS

	z Score	Significant or Insignificant
Overall Null Hypothesis	1.20	Insignificant
Trend		
Personal traits becoming more important	.31	insignificant
More office worker autonomy	.05	insignificant
More general knowledge needed for office workers	1.06	insignificant
Higher skill specialization	3.42	significant
Decision-making ability as important as actual job skills	1.34	insignificant

TABLE XXX

PERCENTAGE DATA OF OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS REGARDING SPECIFIC PRESENT AND FUTURE TRENDS FOR OFFICE WORKERS

5--True 4--Highly Probable but not Positive 3--Must be True
2--Rarely would be True 1--Not at all True

Trend	Credibility Category by % of Responses										Total % for Each Group
	5		4		3		2		1		
	O.W.*	O.M.**	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	O.W.	O.M.	
Personal traits becoming more important	62	65	23	16	8	9	5	7	2	3	100
More office worker autonomy	54	53	30	32	7	8	5	4	4	3	100
More general knowledge needed for office workers	53	51	37	35	3	4	4	9	3	1	100
Higher skill specialization	16	14	21	15	4	3	33	27	26	41	100
Decision-making ability as important as actual job skills	53	51	37	35	3	4	4	9	3	1	100

*O.W. stands for Office Workers' response

**O.M. stands for Office Managers' response

examination of this table should help explain the exact responses resulting in a significant z score. Thirty-seven percent of the office workers, compared to 29 percent of the office managers, indicated that it was at least highly probable but not positive that higher skill specialization would be needed by the office worker. However, 59 percent of the office workers, compared to 68 percent of the office managers, indicated that it was rarely true or not at all true that higher skill specialization would become more important for office workers. Over half the two groups indicated that no increase in skill specialization would be needed for future office workers, and more office managers than office workers emphasized this trend. Over one-third of the office workers and almost one-third of the office managers indicate that it is not very probable that more skill specialization will be needed.

An examination of the items having insignificant z scores is warranted because of the implications for curriculum development and revision. Eighty-five percent of the office workers and 81 percent of the office managers responded that it was true or highly probably that personal traits are becoming more important for the office worker. Little discrepancy occurred in the two groups' opinions since over three-fourths of both groups indicated that personal traits would increase in importance for office workers.

Similarly, over three-fourths of both groups, 84 percent of the office workers and 85 percent of the office managers, indicated that it was true or highly probable that the office worker would become more autonomous.

It was true or highly probable that more general knowledge would be needed for the office worker, as indicated by 90 percent of the

office workers and 86 percent of the office managers. Again, over three-fourths of both groups' opinions were reported in these two categories.

It was also true or highly probable that decision-making ability was as important as actual job skills for the office worker, as reported by 90 percent of the office workers and 86 percent of the office managers. The same response pattern was repeated regarding this ability with over three-fourths of both groups responding in these two categories.

The findings of this section can be summarized:

(1) The opinions of the two groups differed significantly concerning the trend that higher skill specialization would become more important for future office workers; however, over half of both groups indicated that this trend was rarely true or not at all true (Office workers responded more frequently in the higher categories than did the office managers).

(2) Over three-fourths of both groups indicated that personal traits, autonomy, general knowledge, and decision-making ability would become more important for future office workers.

It appears that these findings related to present and future trends for office workers should be studied by the business educator in developing and revising curriculum.

Null Research Hypothesis Findings

There is no significant difference of opinions between office workers and their office managers with respect to the duties involved in office work and the competence with which the office worker performs these duties; the frequency with which office workers operate the office machines and the competence with which office workers operate these machines; the decision-making opportunities existing for office workers, the desirability of decision-making by office workers, and the competence with which the office workers make decisions; the traits needed for decision-making by office workers and

> the degree with which the office workers possess and exhibit these decision-making traits; and the present and future trends for office workers with regard to personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

The purpose of this null hypothesis is to determine if office workers and office managers agree in their responses on the total questionnaire and, thus, share like opinions regarding: (1) the duties performed by office workers and their competence in performing these duties; (2) the frequency with which office workers operate various machines and their competence in operating these machines; (3) the decision-making opportunities given to office workers, the desirability of decision-making by office workers, and their degree of competence in making valid decisions; (4) the traits that are important in decision-making and the degree to which the office workers possess and exhibit these traits; and (5) the present and future trends for the office workers concerning personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

In order to test the main null hypothesis, the questionnaire was designed with five response categories for each section. The categories were assigned numerical weights of 5, 4, 3, 2, and 1 with five indicating the most frequent or highest competence level and one indicating the lowest frequency or competence level. The trends section consistently maintained weighting direction with five being the most true statement and one being the least true statement. The total points were then ranked for the individual questionnaires, and the Mann-Whitney U statistic was applied to test the main null hypothesis. Table XXXI summarizes the responses on the completed questionnaire by category weight and percent of total responses.

TABLE XXXI

SUMMARY TABLE OF TOTAL OFFICE WORKERS' AND OFFICE MANAGERS' OPINIONS AS REPORTED BY CATEGORY WEIGHTS ON THE TOTAL QUESTIONNAIRE

	Office Workers					Office Managers				
Category Weight:	5	4	3	2	1	5	4	3	2	1
Frequency of Duty Performance	1103	1021	1004	666	606	1097	1053	974	668	608
Percent of Total	25	23	23	15	14	25	24	22	15	14
Competence of Duty Performance	1087	1277	815	634	587	728	856	1073	1268	475
Percent of Total	25	27	21	14	13	16	20	24	29	11
Frequency of Machine Operation	1482	1567	870	1097	4984	1426	1593	809	1069	5103
Percent of Total	15	15	9	11	50	14	16	8	11	51
Competence of Machine Operation	1797	1569	697	585	5352	1382	1167	1130	1232	5089
Percent of Total	18	16	7	6	53	13	12	11	13	51
Decision-Making Frequency & Desirability	264	447	43	34	12	285	208	163	124	20
Percent of Total	33	56	5	4	2	36	26	20	16	2
Decision-Making Competence	101	150	84	62	3	49	53	88	206	4
Percent of Total	25	37	21	16	1	12	13	22	52	1
Decision-Making Trait Importance	2114	1187	1208	538	153	2562	827	1349	404	58
Percent of Total	41	22	23	11	3	49	15	26	8	2
Degree of Decision-Making Trait Possession and Exhibition	1711	2185	747	439	118	1072	1407	892	1748	81
Percent of Total	33	42	15	8	2	22	26	17	34	1
Trends	971	580	98	198	153	981	522	108	197	192
Percent of Total	49	29	5	9	8	49	26	5	10	10
TOTAL IN RESPONSE CATEGORY	10,630	9,983	5,566	4,253	11,968	9,582	7,686	6,586	6,916	11,630
PERCENT OF TOTAL RESPONSE	24%	24%	11%	10%	29%	22%	19%	16%	17%	28%

The entire questionnaire responses result in a significant $\underline{z}$ of 2.13 which is greater than the required $\underline{z}$ of 1.96. Therefore, the null hypothesis is rejected. A significant difference of opinions exists between office workers and office managers regarding:

1. The office workers' competence in performing specific office duties,
2. The frequency and desirability of decision-making opportunities existing for office workers,
3. The office workers' competence in making decisions,
4. The importance of specific decision-making traits needed by office workers, and
5. The office workers' possession and exhibition of specific decision-making traits.

The total frequency of each groups' responses, office workers' and office managers' responses, reported in Table XXXI was 42,400. The aggregate frequency response total was 84,800. According to the frequency responses in Table XXXI, the following total group frequency responses by category weights are indicated: (1) category five, 10,630 of the 42,400 total office workers' responses and 9,582 of the 42,400 total office managers' responses; (2) category four, 9,983 of the 42,400 total office workers' responses and 7,686 of the 42,400 total office managers' responses; (3) category three, 5,566 of the 42,400 total office workers' responses and 6,586 of the 42,400 total office managers' responses; (4) category two, only 4,253 of the 42,400 total office workers' responses and 6,916 of the 42,400 total office managers' responses, and (5) category one, 11,968 of the 42,400 total office workers' responses and 11,630 of the 42,400 office managers' responses.

Regarding the significant null hypotheses, Table XXXI can isolate the frequency response categories leading to significant differences of

opinions.

Insignificant differences of opinions exist between office workers and office managers regarding:

1. The frequency with which the office workers perform specific office duties,
2. The frequency of the office workers' specific machine operation duties,
3. The degree of competence with which the office workers perform specific machine operation duties, and
4. The present and future trends for office workers.

Regarding the insignificant null hypotheses, Table XXXI can show important patterns in the similarities between the office workers' and office managers' total responses.

Table XXXI also contains total percentage responses for the office workers and office managers concerning the various null hypotheses. Each groups' percent totals 100 percent. The total percentage responses for all 9 null hypotheses can be reported as follows: (1) category five, 24 percent office workers' total responses and 22 percent office managers' total responses; (2) category four, 24 percent office workers' total responses and 19 percent office managers' total responses; (3) category three, 11 percent office workers' total responses and 16 percent office managers' total responses; (4) category two, 10 percent office workers' total responses and 17 percent office managers' total responses; and (5) category one, 29 percent office workers' total responses and 28 percent office managers' total responses.

The total percentage responses reported in Table XXXI can further help determine the differences of opinions between the office workers and office managers resulting in significant null hypotheses findings.

Fifty-two percent of the office workers' total responses, compared to only 36 percent of the office managers' total responses, indicated categories 5 and 4 for the office workers' competence in performing specific office duties. In the other direction, only 27 percent of the office workers' total responses, compared to 40 percent of the office managers' total responses, occurred in categories 2 and 1.

Regarding the frequency and desirability of the office workers' decision-making opportunities, 89 percent of the office workers' total responses, compared to 62 percent of the office managers' total responses, occurred in categories 5 and 4. In the opposite direction, 6 percent of the office workers' total responses, compared to 18 percent of the office managers' total responses, relating to the office workers' frequency and desirability of decision-making opportunities occurred in categories 2 and 1.

Sixty-two percent of the office workers, contrasted to only 25 percent of the office managers, responded with categories 5 and 4 regarding the office workers' decision-making competence. Only 17 percent of the office workers, compared with 53 percent of the office managers, responded with categories 2 and 1.

Sixty-three percent of the office workers' total responses, compared to 64 percent of the office managers' total responses, occurred in categories 5 and 4 regarding the importance of specific decision-making traits. However, only 14 percent of the office workers, compared with 10 percent of the office managers, indicated categories 2 and 1.

Regarding the degree of the office workers' possession and exhibition of certain decision-making traits, 75 percent of the office workers' total responses, compared to 48 percent of the office managers'

total responses, occurred in categories 5 and 4. In the opposite direction, only 10 percent of the office workers' total responses, compared to 35 percent of the office managers' total responses occurred in categories 2 and 1.

It is important to notice that the office workers indicated the higher categories more frequently than did the office managers on the questionnaire sections leading to significant differences of opinions.

Table XXXI can also indicate important patterns in the similarities between the office workers' and office managers' total responses relating to the insignificant null hypotheses. Forty-eight percent of the office workers' and 49 percent of the office managers' responses to the office workers' frequency of specific office duties occurred in categories 5 and 4. Twenty-nine percent of both groups' responses occurred in categories 2 and 1.

Categories 2 and 1 were indicated by 61 percent of the office workers' total responses and 62 percent of the office managers' total responses regarding the office workers' frequency of operation of specific office machines. Only 30 percent of both groups' responses occurred in categories 5 and 4.

Also, categories 2 and 1 were indicated by 59 percent of the office workers' total responses and 64 percent of the office managers' total responses relating to the office workers' competence in operating specific office machines. Thirty-four percent of the office workers and 25 percent of the office managers responded with categories 5 and 4. Regarding competence, the office workers ranked themselves slightly higher than the office managers ranked them.

Categories 5 and 4 were indicated by 78 percent of the office workers' and 75 percent of the office managers' total responses relating to present and future trends for office workers. Only 17 percent of the office workers and 20 percent of the office managers responded with categories 2 and 1.

The specific findings related to the nine null hypotheses have previously been discussed. The overall findings, in addition to the significant and insignificant null hypotheses enumerated above, tend to support the contention that the office workers tend to indicate higher competence levels than do the office managers.

The overall findings related to the significant null hypotheses are summarized:

(1) Office workers ranked themselves higher than office managers did concerning the office workers' competence in performing specific office duties, the frequency and desirability of decision-making opportunities, competence in decision-making, and the possession and exhibition of specific decision-making traits.

(2) Over half the responses for both groups occurred in categories 5 and 4 concerning the frequency and desirability of decision-making opportunities and the importance of specific decision-making traits for the office workers.

(3) Over half the office workers' responses but less than half the office managers' percentage responses occurred in categories 5 and 4 concerning the office workers' competence in performing specific duties, competence in decision-making, and possession and exhibition of specific decision-making traits.

The important overall findings contained in Table XXXI relating to the insignificant null hypotheses are:

(1) More than half of both groups, office workers and office managers, responded in categories 2 and 1 concerning the frequency of specific machine operating duties and machine operating competence. It appears that many machines are rarely or never used by the office workers and that competence in operation is either not required

or needs improvement (in a few cases already enumerated).

(2) Over half of both groups responded in categories 5 and 4 regarding the present and future trends for office workers.

(3) Slightly less than half of both groups indicated categories 5 and 4 concerning the frequency of specific office duties.

(4) Office workers ranked themselves slightly higher than office managers concerning machine operating competence. More office managers than office workers indicated a need for improvement in the office workers' machine operating competence.

The overall significant and insignificant findings seem to indicate that office workers have an overall tendency to indicate higher response categories than do the office managers as indicated by the total percentage responses reported on the entire table.

Summary

The Mann-Whitney U Test was applied to the data gathered from the questionnaire survey of office workers and office managers. The data gathered centered around the research null hypothesis:

> There is no significant difference of opinions between office workers and their office managers with respect to the duties involved in office work and the competence with which the office worker performs these duties; the frequency with which office workers operate the office machines and the competence with which office workers operate these machines; the decision-making opportunities existing for office workers, the desirability of decision-making by office workers, and the competence with which the office workers make decisions; the traits needed for decision-making by office workers and the degree with which the office workers possess and exhibit these decision-making traits; and the present and future trends for office workers with regard to personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

First, nine individual null hypotheses breaking the major null hypothesis down into its component parts were tested in an effort to

locate and examine any possible differences of opinions between the two groups. Table XXXII summarizes the significant and insignificant differences of opinions existing between the office workers and office managers.

Significant Differences of Opinions

According to the tabled data, the following null hypotheses indicate differences of opinions; consequently, the null hypotheses must be rejected:

> Hypothesis 2. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competence with which office workers perform specific duties involved in office work.
>
> Hypothesis 5. There is no significant difference of opinions between office workers and their office managers with respect to the frequency and desirability of individual decision-making opportunities by office workers.
>
> Hypothesis 6. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competency with which office workers make decisions.
>
> Hypothesis 7. There is no significant difference of opinions between office workers and their office managers with respect to the importance of specific decision-making traits needed by office workers.
>
> Hypothesis 8. There is no significant difference of opinions between office workers and their office managers with respect to the degree to which office workers possess and exhibit specific decision-making traits.

The z scores for the individual items relating to each null hypothesis have been computed and discussed in detail in each section of this chapter. The implications of these findings for office administration curriculum and for future research will be discussed in detail in the final chapter.

TABLE XXXII

SUMMARY TABLE OF SIGNIFICANT AND INSIGNIFICANT NULL HYPOTHESES AND RESEARCH NULL HYPOTHESIS

Research Null Hypothesis:	Significant Values	Insignificant Values
No significant difference between office workers and office managers on the total questionnaire	2.13	
Null Hypothesis:		
1. No significant difference regarding the office workers' frequency of specific duty performance		.79
2. No significant difference regarding the office workers' competence of specific duty performance	2.03	
3. No significant difference regarding the office workers' frequency of specific machine operation duties		1.24
4. No significant difference regarding the office workers' competence in machine operation		.99
5. No significant difference regarding the office workers' frequency and desirability of decision-making opportunities	2.08	
6. No significant difference regarding the office workers' decision-making competence	10.97	
7. No significant difference regarding the importance of specific decision-making traits	3.92	
8. No significant difference regarding the office workers' possession and exhibition of specific decision-making traits	2.51	
9. No significant difference regarding the office workers' present and future trends		1.20

Insignificant Differences of Opinions

An examination of the summary table shows that four null hypotheses are accepted. Therefore, on four of the questionnaire sections, office workers and office managers expressed similar opinions.

> Hypothesis 1. There is no significant difference of opinions between office workers and their office managers with respect to the frequency of specific duties involved in office work.
>
> Hypothesis 3. There is no significant difference of opinions between office workers and their office managers with respect to the frequency of specific machine operating duties involved in office work.
>
> Hypothesis 4. There is no significant difference of opinions between office workers and their office managers with respect to the degree of competence with which office workers perform these specific machine operating duties involved in office work.
>
> Hypothesis 9. There is no significant difference of opinions between office workers and their office managers with respect to specific present and future trends for office workers with regard to personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

The individual z scores for each item relating to the insignificant null hypotheses have been computed and discussed in detail in this chapter. Their implications for office administration curriculum and future research are discussed in the final chapter.

Other Comments

No comments other than incidental ones were made by the respondents in the space provided for additional comment.

Significant Main Null Hypothesis

A z value of 2.13 leads to the rejection of the main null hypothesis. An examination of the data reported shows that the two groups

differ significantly with respect to the following aspects of the main null hypothesis: (1) the office workers' competence in performing specific office duties, (2) the frequency and desirability of the office workers' decision-making opportunities, (3) the office workers' decision-making competence, (4) the importance of specific decision-making traits to the office worker, and (5) the office workers' degree of possession and exhibition of specific decision-making traits.

For gathering sufficient and accurate information concerning these five areas important to the office workers' job success for use in planning and revising the office education curriculum, it appears that office educators should consult both groups. The results of the information gathering should be integrated and synthesized in order to eliminate any bias that obviously occurs in any one group's responses. The findings indicate that the office workers tend to rank themselves higher than office managers.

It appears that either office workers or office managers could give sufficient information on which to base curriculum plans with respect to: (1) the frequency of the office workers' performance of certain duties, (2) the frequency of the office workers' machine operation duties, (3) the competence of the office workers' machine operation performance, and (4) the present and future trends for office workers (the accepted null hypotheses).

The next chapter includes a detailed discussion of the recommendations and implications of the findings on the office administration curriculum. The chapter discusses future research needs as indicated by this study. It also includes general recommendations based upon the findings.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Statement of the Problem

The problem of this study was to compare the opinions of office workers and their office managers concerning: (1) the duties performed by office workers and their competence in performing these duties; (2) the frequency with which office workers operated various machines and their competence in operating these machines; (3) the decision-making opportunities given to office workers, the desirability of decision-making by office workers, and their competence in making valid decisions; (4) the traits that were important in decision-making and the degree to which office workers possessed and exhibited these traits; and (5) the present and future trends for the office worker concerning personal traits, individual autonomy, general knowledge, specialized skills, and decision-making.

Significance and Background of Study

A review of related literature indicated that these writers thought specific facts should be gathered concerning the college-prepared office worker and her job duties and competence; machine duties and competence; decision-making frequency, desirability, and competence; important traits for decision-making; and present and future trends. For

proper office administration curricula revision and development, such things should be determined as identifying the office workers' important individual duties, machine duties, personal traits, decision-making ability, decision-making opportunities, and decision-making traits. The degree of competency needed by the office worker in performing the individual duties and in possessing and exhibiting the individual traits should be determined, along with the future trends for office workers regarding personal traits, worker autonomy, general knowledge, higher skill specialization, and decision-making abilities.

This study is significant to business educators because it points out discrepancies existing between the opinions of office managers and office workers concerning the duties and decision-making opportunities involved in office work. The study also points out differences of opinions between office workers and office managers concerning the competencies with which the office workers perform duties and make decisions. The findings also disclose the need for better coordination of information from management and office workers as well as the need for future research to understand the origination of the differences of opinions. The study suggests that some changes in teaching methodology and curriculum structure may be needed, particularly regarding developing specific skills and decision-making abilities in future office workers.

Methods and Procedures

To gather the needed data for testing the null research hypothesis and related null hypotheses, survey responses were obtained from 400 office workers and their immediate supervisors. The participants were selected from firms located in the nation's fourteen largest cities from

listings in Poor's Register of Corporations, Directors, and Executives (47) on pages 16-165, supplemented by telephone book listings where necessary. The office worker's and office manager's questionnaires were coded so that responses were used only if they were received from both the office worker and her office manager. Only office workers with a two-year college education in office administration during 1966 through 1970 and their respective office managers were included in the findings.

An office worker's and an office manager's questionnaire were designed based upon consultations with business educators, office workers, and office managers, as well as upon an extensive review of related literature. After analyzing the information, the questionnaires were further revised. Each questionnaire consisted of the following four sections: (1) general information, (2) duties and competencies involved in office work and machine operation, (3) decision-making opportunities, desirability, competency, the importance of decision-making traits, and the degree to which the traits are possessed and exhibited on the job, and (4) present and future trends for office workers.

The responses on each section of the questionnaire were recorded on a scale of one through five. The Mann-Whitney U test at the .05 significance level was applied to the research null hypothesis and related null hypotheses to determine statistically significant differences of opinions. The U test was also applied to individual items related to each null hypothesis. The data were also classified and reported in frequency and percentage tables with an accompanying descriptive analysis of the findings.

Significant Findings

A z score of 2.13 was obtained on the research null hypothesis which lead to its rejection. The related null hypotheses were tested indicating the exact location and nature of the overall opinion differences.

The results of the statistical tests on the null hypotheses disclosed that office workers' and office managers' opinions differed significantly with respect to: (1) the office workers' competencies in performing specific office duties, (2) the frequency and desired frequency of the office workers' decision-making opportunities, (3) the office workers' decision-making competencies, (4) the importance of specific decision-making traits to the office workers, and (5) the degree to which the office workers possess and exhibit these specific decision-making traits.

In addition, z scores were obtained for the individual items in the questionnaire sections. The results of these tests were fully discussed in Chapter IV. The implications of these tests will be included in the conclusions and recommendations in this chapter.

Insignificant Findings

Insignificant Null Hypotheses

The tests of four null hypotheses resulted in insignificant differences of opinions. There were no significant differences of opinions between office workers and office managers with regard to: (1) the specific duties involved in office work, (2) the frequency of specific machine operating duties involved in office work, (3) the degree

of competence with which office workers perform specific machine operating duties, and (4) the present and future trends for office workers.

The individual items were also statistically tested. The results of these tests were included in Chapter IV, and the implications of the findings are discussed in this chapter.

Conclusions

From an examination of the findings, the following general and specific conclusions were evident:

(1) Business educators can expect to find significant differences of opinions existing between office workers and office managers with respect to the office workers' competencies in performing specific office duties, the frequency and desirability of the office workers' decision-making opportunities, the office workers' decision-making competencies, the importance of decision-making traits to the office worker, and the degree to which the office workers possess and exhibit these decision-making traits.

(2) The office workers perceived their competence in performing specific duties and machine operations at a higher level than did the office manager. They also reported a higher degree of competence in decision-making and a higher level of possession and exhibition of decision-making traits than office managers thought they did. Because the office workers consistently responded to these items in the higher categories more often than the office managers, it is necessary to survey both office workers and office managers in order to have a complete picture for curriculum workers. These differences should be reconciled for use in revising and designing the business and office administration

curriculum.

(3) Considerable data for use in business education curriculum design and revision can be gathered from either office workers or office managers regarding duties involved in office work, the office workers' frequency of machine operation, the competence with which workers operate the machines (although the workers' responses will probably be somewhat higher than the managers' responses but not significantly so), and certain present and future trends for office workers. Therefore, in these areas worker or management surveys may be sufficient for gathering needed information.

(4) It appears that existing curricula are providing good training for the office workers in carrying out typing, filing, telephoning, and receptionist duties.

(5) Over half of the respondents indicated that composing, mail processing, administrative, and information processing duties were frequently performed by the office worker; and a little less than half the respondents indicated they were infrequently performed. Therefore, the business educator needs to examine further the frequency with which office workers perform these duties to determine the amount of time, extent of training, and methodology used in presenting these skills. The relationship between the frequency of these duties and the office workers' competence in performing these duties must be studied further since office managers' responses indicated that competence needed improvement.

(6) Because of the large number of office workers' and office managers' responses indicating infrequent use of dictating, transcribing, and bookkeeping skills, and the tendency of some office managers to indicate that competence needed improvement, the business educator needs

to examine the existing curriculum and analyze further research data to determine the extent of training, the amount of time, and methodology used in presenting these skills (i.e., intensive training for a few students, acquaintanceship for all students, etc.).

(7) It appears that business education programs are providing considerable training on electric typewriters, adding machines, and photocopy equipment as these machines are frequently used in the office and both office workers and office managers report satisfactory competence.

(8) Dictating equipment and rotary calculators are often used by office workers; over half the office workers but less than half the office managers indicated satisfactory competence levels. About one-third the office managers indicated that competence needed improvement. Further research should determine the extent of business education training needed in operating this equipment.

(9) Both groups, office workers and office managers, indicated that the manual typewriter and bookkeeping machine were infrequently used and that competence was not required for job success. It appears that extensive training in operating these machines need not be included in office administration programs.

(10) The printing calculator was frequently used by office workers; about one-third of the office workers and office managers reported that competence was satisfactory; one-third indicated needs improvement; and one-third indicated not required. The implications of these findings for the business educator need further study.

(11) The electronic calculator, mail meter, check writer, offset equipment, and duplicating equipment were not frequently used by the office worker. While around half of both groups indicated satisfactory

competence, around one-third of both groups indicated competence was not required. It appears that the competence levels attained by office workers using these machines are satisfactory; however, because many respondents indicate that competence is not required, the business educator may wish to carefully study how much time and what competence levels are needed in training on these machines.

(12) A large number of respondents from both groups indicated that the accounting machine, data converting equipment, paper-tape equipment, random access device, card sorter, summary punch, and interpreter were seldom, if ever, used and that competence was not a job requirement. It appears that little training on these data processing machines and equipment is necessary for many office workers.

(13) While the keypunch, verifier, reproducer, collator, and computer console were not frequently used data processing equipment, around twenty percent of the office managers indicated competence needed improvement. This somewhat limited desire for better competence in operating these machines might indicate that these machines would be used more often if qualified operators could be obtained. Before establishing training programs and competence levels for these machines, further study of the implications of these data are needed.

(14) Because office managers indicated a general desire for workers to improve decision-making competence, it appears that office managers would provide more decision-making opportunities for office workers if they were convinced of the workers' abilities to make good decisions.

(15) Further research is warranted to determine why office workers are not making as many decisions as desired by office managers.

(16) Highly important decision-making traits indicated by office managers were: critical, rational, and logical thinking; adaptability; ability to form valid conclusions; objectivity; and ability to communicate ideas and conclusions in verbal and written form. Responsibility, dependability, intuition, curiosity, self-confidence, and anticipation of business needs were considered highly important by both groups. More office workers than office managers considered initiative and judgment important. Because of the high importance of these traits, business educators need to include emphasis on developing them in the office administration curriculum.

(17) The office managers indicated a general desire for the office worker to possess and exhibit more (1) judgment; (2) initiative; (3) curiosity; (4) critical, rational, and logical thinking; (5) anticipation of business needs; (6) adaptability; (7) ability to form valid conclusions; (8) objectivity; and (9) ability to communicate ideas and conclusions in verbal and written form. Based upon these findings, the business educator could include added emphasis in the office administration curriculum for developing these traits as well as continuing to include the development of the other traits.

(18) The office managers desire more versatile, creative, and administrative trait development than do the office workers as more office managers than office workers indicated many of these traits to be at least of "above average importance." Further research needs to be performed to determine why the office managers desire more versatile, creative, and administrative traits in office workers than office workers desire.

(19) Office workers in the future will need to be more autonomous, more conscious of decision-making, more conscious of personal traits, and have more general knowledge than present office workers. The business educator must devise a curriculum that produces such workers.

Recommendations

General Recommendations

(1) Business educators should use integrated (management and worker) surveys to gather suitable, specific information concerning the workers' competence in performing general office duties, frequency and desirability of the office workers' decision-making opportunities, the office workers' decision-making competencies, the importance of decision-making traits to the office worker, and the degree to which office workers possess and exhibit decision-making traits. The integrated survey is necessary to identify discrepancies that arise between the two groups that might be misleading in formulating curriculum revision and design.

(2) Surveys of either office workers or office managers may be adequate to gather considerable information for curriculum design and revision concerning general office duties, frequency of machine operation, machine operating competence, and certain present and future trends for office workers.

Curriculum Recommendations

Relative to the office administration curriculum, it is recommended

that:

(1) Added emphasis be included improving the prospective office workers' competencies in performing the following duties: dictation, transcription, typing, filing, bookkeeping, composing, processing mail, administrative, and information processing (see dictation, transcription, and bookkeeping in Future Research Recommendations).

(2) Continued training for a high degree of competence be included for performing typing, filing, telephoning, and receptionist duties.

(3) An examination of training offered in performing dictating, transcribing, bookkeeping, composing, mail processing, administrative, and information processing duties be undertaken to determine the amount of time, extent of training, and methodology used in presenting these skills.

(4) A continuation of offering training necessary to develop a high degree of competence on the following office machines be included: electric typewriter, photocopy equipment, and adding machines.

(5) No extensive training for a high degree of competence may be necessary for operating the following machines: manual typewriter, bookkeeping machine, mail meter, check writer, offset, and duplicating equipment.

(6) No extensive training for a high degree of competence may be necessary for operating the following data processing machines: accounting machine, data converting equipment, paper-tape equipment, random access device, card sorter, summary punch, and interpreter.

(7) Decision-making experiences be included developing a high competence in the office workers' decision-making abilities.

(8) Some experiences developing the following decision-making traits should be provided: critical, rational, and logical thinking; adaptability; ability to form valid conclusions; ability to communicate ideas and conclusions in verbal and written form; responsibility; dependability; intuition; curiosity; self-confidence; anticipation of business needs; initiative; and judgment.

(9) Special emphasis be given improving the possession and exhibition of these decision-making traits: judgment; initiation; curiosity; critical, rational, and logical thinking; anticipation of business needs; adaptability; ability to form valid conclusions; objectivity; and ability to communicate ideas and conclusions in verbal and written form.

(10) Workers who are autonomous, are more conscious of decision-making and its related traits, and having more general knowledge than present office workers should be developed through good office administration programs.

Future Research Recommendations

Relative to future research in the office administration curriculum area, it is recommended that the business educator perform further research to determine:

(1) The extent and competence levels necessary for dictating, transcribing, bookkeeping, composing, mail processing, administrative, and information processing duties.

(2) The extent and competency levels with which instruction should be provided on the following machines: dictating equipment, rotary calculators, printing calculators, electronic calculators, mail meter, check writer, and offset equipment.

(3) Why office managers reported a need for improved competence in operating the keypunch, verifier, collator, reproducer, and computer console, while at the same time indicating that these data processing machines were hardly used.

(4) Why office workers are not making as many decisions as desired by office managers.

(5) Why office managers desire more versatile, creative, and administrative traits in office workers than the office workers desire.

(6) Exactly which office workers with various job titles actually perform data processing duties.

It appears from the findings of this research that the integrated survey approach has considerable merit as one aspect of curriculum revision and development. It also appears that the specific implications of this study should be examined by business educators in revising and developing office administration collegiate programs.

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APPENDIX A

COVER LETTERS

* REQUIREMENTS FOR SELECTING OFFICE WORKER CANDIDATES--IMPORTANT!!

ALL WORKERS MUST HAVE BEEN IN COLLEGE DURING 1966 to 1970. They must have been enrolled in a two-year Office Administration program or similar program. If they do not have this educational prerequisite, they are not to be selected for this survey. If you have no one who qualifies, return the forms.

JOB CLASSIFICATION DEFINITIONS

SECRETARY. Performs clerical tasks as taking dictation, typing, assuming minor executive duties, reminding executives of appointments, interviewing and screening office visitors, reminding people of coming events, and writing routine correspondence

STENOGRAPHER. Takes shorthand or speed-writing notes by hand or by machine and reports them

TYPIST. Records data by means of typing

FILE CLERK. Classifies, sorts, files correspondence, records, and other data

RECEPTIONIST. Answers telephone, gives information to visitors coming into a business regarding matters of the business and directions, keeps records of calls and callers, makes appointments and sets up interviews

BOOKKEEPER. Computes, classifies, and records numerical data to keep sets of financial records complete, operates bookkeeping machines, computing machines, and accounting and recording equipment

MAIL CLERK. Prepares incoming and outgoing mail for distribution, stamps mail, reads and sorts incoming mail, seals and stamps outgoing mail and packages

MACHINE OPERATOR. Makes copies of data by means of reproducing or photo machines; also operates office machines not considered data processing equipment

DATA PROCESSING EQUIPMENT OPERATOR. Operates machine that records, stores, processes, and transcribes data from punch cards, paper tape, magnetic tape, or other sources; solves math., engineering, or technical problems by using data processing equipment; keeps records or supplies information by using the equipment

PLEASE KEEP THESE DEFINITIONS IN MIND WHEN YOU ARE SELECTING PEOPLE FROM THE OFFICE WORKER GROUP TO PARTICIPATE IN THE SURVEY!

*** This page was sent to only personnel managers.**

Apartment D 5
2640 Dole
Honolulu, Hawaii 96822
November 30, 1970

Personnel Director
Name of Firm
Address
City, State ZIP

Dear Sir:

With your help, research can be completed concerning the office workers' needs for a two-year college education. This research should be beneficial to you and your firm because it would enable colleges and universities to prepare better office workers for your employment. As a doctoral candidate in business education at Oklahoma State University, I am surveying office workers who have completed a two-year college-level office administration program and who are employed in nine specific job classifications in nine various types of business and industry in the nation's fourteen largest cities. Your help is needed in locating these workers and their office manager (direct supervisor) in your firm. Would you please take a minute of your time to study the enclosed job classification definitions, notice the job classification checked on the questionnaires of the worker desired from your firm, and select the name of the worker to be surveyed. Remember, he or she must have had two years' of college experience in the office administration field and must fill a position that is comparable to the one checked on the questionnaire and that matches the definition provided.

Once you have selected the worker, would you please give the office worker's questionnaire to that worker, encourage her to fill it out and return it, and assure her that the results will be confidential. Then would you please contact the office worker's immediate supervisor, give the supervisor the office manager's questionnaire and name of the worker to be rated, encourage the supervisor to complete and return the questionnaire, and assure the supervisor that the contents are confidential. You will also find a worker's and manager's cover letter enclosed that should clarify the purpose of the survey for them.

Your cooperation is needed and will be appreciated because you are the sole person in the firm that has access to the records that will enable the proper persons to be contacted. Without your help, the study cannot be completed. Because of your interest and help, I will be glad to furnish you with an abstract of the completed research for your own use if you will contact me. It should furnish some interesting findings that will lead to better business and office education college programs as well as better worker-management relations.

Sincerely,

Brenda J. Moscove
Educational Doctorate Candidate
Oklahoma State University

Enclosures

Apartment D 5
2640 Dole
Honolulu, Hawaii 96822
November 30, 1970

Office Employee
Name of Firm
Address
City, State ZIP

Dear Office Employee:

Your help is needed in gathering data for a doctoral dissertation in business education at Oklahoma State University. You have been selected to participate in a national survey of office employees and office managers in various firms to determine the exact duties and competencies, decision-making involvement, and present and future trends for the office worker in certain job categories in certain types of businesses and industries. The data resulting from your responses will be used in evaluating college and university office and business education curriculum as well as furnishing insight into worker-management relations.

Because you have been selected for this survey, won't you please take the time to complete and return the office employee's questionnaire. An envelope is furnished for your convenience. The results will be confidential. A copy of the research abstract will be sent to your personnel director at his request and he will share the information with you. Please take advantage of this opportunity to share your opinions and experiences with interested business educators.

Sincerely,

Brenda J. Moscove
Educational Doctorate Candidate
Oklahoma State University

Enclosures

Apartment D 5
2640 Dole
Honolulu, Hawaii 96822
November 30, 1970

Office Manager
Name of Firm
Address
City, State ZIP

Dear Office Manager:

Your help is needed in gathering data for a doctoral dissertation in business education at Oklahoma State University. You have been selected to participate in a national survey of office employees and office managers in various firms to determine the exact duties and competencies, decision-making involvement, and present and future trends for the office worker in certain job categories in certain types of businesses and industries. The data resulting from your responses will be used in evaluating college and university office and business education curriculum as well as furnishing insight into work-management relations.

Because you have been selected for this survey, won't you please take the time to complete and return the office manager's questionnaire. The name of the office worker you are rating will be given to you by your personnel director. The office worker is not aware that you are rating her. The results will be kept purely confidential. A return envelope is furnished for your convenience. A copy of the completed research abstract will be sent to your personnel director at his request and he will share the information with you. Please take advantage of this opportunity to share your opinions and experiences with interested business educators.

Sincerely,

Brenda J. Moscove
Educational Doctorate Candidate
Oklahoma State University

Enclosures

Apartment D 5
2640 Dole
Honolulu, Hawaii 96822
December 12, 1970

Personnel Director
Name of Firm
Address
City, State ZIP

Dear Personnel Director:

A few days ago you were contacted about selecting office workers and office managers to participate in a national survey concerning the exact duties and competencies, decision-making involvement, and present and future trends for the office worker in certain job categories in certain types of businesses and industries. The replies have not yet been received from your office worker and office manager. Because your participation is desired, will you please check with your office worker and the office manager to encourage them to participate and return the questionnaires at the earliest possible date.

Your cooperation is appreciated. Don't forget to contact me about receiving an abstract of the completed research.

Sincerely,

Brenda J. Moscove
Educational Doctorate Candidate
Oklahoma State University

For additional mailings, the same cover letters and follow-up letters were used with changed dates for job and firm categories originally resulting in nonresponse.

APPENDIX B

PARTICIPATING FIRMS BY CITY

PARTICIPATING FIRMS BY CITY

New York

Canal Randolph Corp.
North River Securities
Ogus, Rabinovich & Ogus, Inc.
Ascot Textile Corp.
Associated Yarn Products
Atlantic Yarns
Federal Reserve Bank
Amalgamated Bank
American Bank & Trust Co.
Abrahams Bros.
Alexander's Department Store
Allied Stores Marketing Corp.
Capital District St. Park Commission
Labor Department
Department of Environmental Conservation
AFIA
All City Insurance Co.
American Foreign Insurance Co.
Peter G. Abbey, Attorney
Begley & Gurnlan, Attorneys
Bender, Hesson, Ford, & Grogan, Attorneys
Dr. Arthur Adams
Dr. Janis Best
Dr. W. Boland
Dr. Robert Brealt
Alexander Hamilton Institute
FAS International, Inc.
Association for Retarded Children, Inc.
Gishop Gibbons High School

Chicago

Montgomery Ward Real Estate Corp.
Turner, Bailey & Zoll, Inc.
Globe Corp.
Richard Sutton Corp.
A. G. Busch
Edson, Inc.
Aetna St. Bank
Lake View Trust & Savings
Lincoln National Bank

Root Bros.
Aldens
Carson-Pirie-Scott
Alcoholic Treatment Center
Auto License Dept.
Aviation Dept.
American Motorists Insurance Co.
American Mutual Reinsurance Co.
Bankers Life & Casualty Co.
Continental Casualty
Aaron, Aaron, Schemberg & Hess, Attorneys
George Abbamonto, Attorney
Salvatore Abbene, Attorney
Jerome L. Abrahams
Interstate United Corp.
Aaronson & Aaronson, Limited
Dr. Armando Abadin
American Technical Society
Bell & Howell Co.
LaSalle Extension University

Los Angeles

Carnaco Equipment Co.
Atherton Real Estate Corp.
McCulloch Oil Corp.
Campus Quilted
Jenkins-Wright
American Sportsman Manufacturing Co.
Union Bank
United California Bank
American City Bank
Hayward Lumber Inv. Co.
Broadway-Hale Stores, Inc.
Phoenix Furniture
Host International
County Administration Office
California State Agricultural Commission
Animal Shelter
Assessor's Office
Fire Underwriter's Association
Insurance Co. of N. America
Keystone Ins. Co.
George L. Aames, Attorney
Roy H. Aaron, Attorney
Aarons-Lehman, Attorneys
American Medical Enterprises
California Medical Center
Dr. Louis Bartosh
Academy of International Studies
Aldana School
Ambassador College

Philadelphia

Phillip Bourse
Berwin Corp.
St. Lawrence & Adirondack
Pennsylvania Elastic
Wm. Whitaker Sons, Inc.
Frankfort Woolen Mills, Inc.
Nicetown Dye Works
Fidelity-Philadelphia Trust Co.
Girard Trust Bank
Provident Tradesmen's Bank
Bank & Trust Co. of Old York Road
Asam Bros.
Silo, Inc.
Stern Co.
Army Electronic Command
City Hall
Civil Defense
Pennsylvania General Insurance Co.
Penna Manufacturer's Association Casualty
Potomac Insurance Co.
Legal Council of Public Welfare
County Court
Sheriff's Office
N1-1400 Clinic
N2-17005 Broad Clinic
Office of the Medical Examiner
Board of Public Education
Morris Square School
Seventh Street Methodist School

Detroit

Paul Hardeman, Inc.
Maxon, Inc.
Realty Development Corp.
Realty Equity Co.
No Sag Spring
John Johnson Co.
Allen, Inc.
Bank of the Commonwealth
Bank of Commerce
Bank of Commerce-Canadian Imperial
Mohawk Lumber Supply Co.
Bormans, Inc.
J. L. Hudson Co.
City Building & Safety Engineering Dept.
City Building Bureau
City Children & Youth Commission
National Casualty Co.

Standard Accident Insurance Co.
Michigan Mutual Liability
Circuit Court
Circuit Court Clerk
Juvenile Court
Dr. Bruce Douglas
Commission of Health & Social Service
Franklin Settlement Pediatric Clinic
Alger School
Amos School
Ann Arbor Trail School
Apprentice Training School

Baltimore

Fair Lanes, Inc.
Blums, Inc.
Canton Co. of Baltimore
Belter Hoisery Corp.
Cardue Fantasies, Inc.
Comfort Spring Corp.
Equitable Trust Bank
Banker's Guaranty Corp.
Brager-Gutman, Inc.
Epstein L. Sons, Inc.
Hochschild
Aging Commission
Agricultural Science Department
Board of Library Trustees
Calvert Fire Insurance Co.
Fidelity Development Co.
Maryland Casualty Co.
Circuit Court Administration
Circuit Court Clerk
Juvenile Services
State Attorney
Catonsville Center
Egges & Melrose Avenue Center
Dundalk Center
Essex Center
Board of Education
Community College Office
Special Education Administration
Bank of Glen Burnie

Houston

Ada Oil Co.
J. Bettes Co.
Interstate Co.
Triumph, Inc.
Bag-Bagging Corp.
Merichem Co.

Houston Bank and Trust Co.
North Side State Bank
Bank of Texas
Warren Electric Co.
Lacks Distributors
National Convenience Stores, Inc.
City Aviation Dept.
City Planning Dept.
City Secretary
Civic Center
American General Insurance
PanAmerican Fire & Casualty Co.
PanAmerican Insurance Co.
American Insurance Agency
City Legal Dept.
Bankruptcy Court
Arthur Moller, Attorney
Blue Ridge Clinic
Canal Clinic
Central Clinic
University of Houston
University of St. Thomas
University of Texas

Cleveland

J. M. Clemistaw Co.
Forest City Enterprises
Real Estate Board
F. C. Thornton Co.
Wagner Awning Manufacturing Co.
Dougherty Lumber Co.
Federal Reserve Bank
Society National Bank
Bank of Cleveland
Bank of Berea
Pioneer Standard Electronics, Inc.
Banner, Inc.
Fries-Schual Co.
Giant Tiger Stores
Cleveland Convention Center
Income Tax Division
Air Pollution Control
Progressive Mutual Insurance
Insurance Board of Cleveland
Insurance Co. of North America
Bankruptcy Referees (U. S. Court & Customs)
Federal Court Reporter (U. S. Court & Customs)
Probation & Parole (U. S. Court & Customs)
Dr. J. Glenn Smith
City Health Clinic
Jones Memorial Hospital
Bay Village School

Bedford Hts. School
Brooksville City School

Washington, D. C.

State University Realtors
Linden Corp.
Disc, Inc.
Donohue Construction Co.
Timber Engineering Co.
Wm. C. Miller Furniture Co.
Publishers Co.
Import Bank of the U. S.
Rigas National Bank
Alexandria National Bank
Hechinger Co.
Garfinkel Brooks Bros.
S. Kann Sons Co.
Alcoholic Beverage Control Board
Armory Board
City Hall Complaint Center
Criterion Insurance Co.
Fireman's Insurance Co.
Government Employees Insurance Co.
Adams, Porter, Radigan & Mays, Attorneys
Ahalt & Hays, Attorneys
Akin, Gump, Strauss, Hauer, & Feld, Attorneys
Dr. R. Abell
Dr. Daniel Abramson
Dr. Adam Haki
Capitol Radio Education Institute, Inc.
National Radio Institute
Abbey School

St. Louis

Real Estate Management Co.
Real Estate Management Consultants
Real Estate Marketing Corp.
Interco, Inc.
H. Wenzel Tent Duck Co.
Western Textile Products Co.
Federal Reserve Bank
Manchester Bank
Mound City Trust Co.
Carps, Inc.
Famous Barr Co.
Gem International
U. S. Agriculture Dept.
U. S. Bureau of Labor Statistics
U. S. Civil Service Commission
General Insurors, Inc.
Transit Casualty Co.

Volkswagen Insurance Co.
U. S. Attorney
U. S. Court of Appeals
U. S. Justice Department (Civil Rights Division)
Out-Patient Clinic
Public Health Service
County Hospital
Chief Medical Examiner
Academy of Sacred Heart
Adams School
Annunciation School

Milwaukee

American Appraisal Co.
City Realty
Real Estate, Inc.
E. Z. Painter
Hansen Glove Corp
Bouer Paper Co.
American City Bank & Trust Co.
Marshall Ilsley Bank
Bank of Commerce
T. C. Essex Co.
T. A. Chapman
Milwaukee Boston Store Co.
County Agriculture Business Agent
County Air Pollution Control
County Airport
Northwestern National Insurance Co.
Mortgage Guarantee Insurance Corp.
AAA
Security Insurance
Children's Court
Family Court Commission
County Clerk
General Hospital
Out-Patient Clinic
Dr. T. B. Muirdale
Alcott School
Allen School
Audoban School

San Francisco

Allied Properties
Liberty Farms
ISI, Inc.
Keyston Bros.
Kora Corp. Industries
Koret of California
Federal Reserve Bank
Sumitomo Bank of California

Bank of Canton
American Mercantile Co.
City of Paris
Emporium Caswell Co.
Adoption Agency
State Assembly
Assessor's Office
Board of Equalization
American Insurance Co.
AAA
Fireman's Fund
Attorney General
Stephen Abbott, Attorney
Sol Abrams, Attorney
Dr. Robert Abbott
Dr. Jacob Abouau
Dr. Alan L. Abrams
Eltora Soul Science Academy
American Academy of Asian Studies, Inc.
Brandon's Language School

Boston

National Realty Investors
Boston Wharf
Great Northern, Inc.
Southern Worsted Mills, Inc.
Edward H. Best
Forte Dupee Sawyer Co.
Federal Reserve Bank
Fiduciary Trust Co.
State Street Bank
Broadway National Bank
Wm. Filenes Sons Co.
Jordan Marsh
Hotel Corp. of America
Burlington Civil Defense
Chelsea City Hall
Everett City Hall
American Employers Union
Commercial Union Insurance Co. of America
Employers Liability Assurance
Antonio Abbene, Attorney
Michael Arvatin, Attorney
Ralph R. Bagley, Attorney
Dr. Louis Alfano
Allergy Medical Association
American Society of Abdominal Surgeons
Berlitz School of Language
Burlington Superintendent of Schools
Chelsea City Superintendent of Schools

Dallas

L. & L. Realty Corp.
Bonanza International Development Co.
Century Boulevard Corp.
Diversa, Inc.
Well Made Manufacturing Products, Inc.
Charming Belt Novelty, Inc.
American Foam Rubber Products
Federal Reserve Bank
Preston State Bank
Bank of Dallas
Neiman-Marcus Bros.
Titche-Geottinger Co.
Duke-Ayres, Inc.
City Action Center
City Planning Office
Civil Defense & Disaster Commission
Combined American Insurance Co.
Gulf Insurance Co.
Republic Insurance Co.
Police Department
Bankruptcy Court
FBI
Tuberculosis Clinic
Venereal Disease Clinic
Dental Health Clinic
Eastfield College
El Centro College
Mountain View College

Addresses have not been included because many of the participants indicated that they did not desire to be put on a mailing list for future surveys. They cooperated in this survey with the understanding that they would not be repeatedly contacted for other similar research projects in the future.

APPENDIX C

QUESTIONNAIRE

BEGINNING OFFICE EMPLOYEE'S QUESTIONNAIRE

Section I. GENERAL INFORMATION

Educational experience beyond high school _____
Number of previous jobs with other firms _____
Number of months and years with your present firm _____
Total years' office experience _____

Please look below to see if your job title is comparable to the job category checked. If not, return the questionnaire to the personnel director.

1. Secretary _____
2. Stenographer _____
3. Typist _____
4. File Clerk _____
5. Receptionist _____
6. Bookkeeper _____
7. Mail Clerk _____
8. Machine Operator _____
9. Data Processing Worker _____

Section II. DUTIES AND COMPETENCE LEVEL

Part A. How often do you perform the following duties? Place an X in the proper column.

5--Daily
4--Average of two or three times a week
3--Average of one or two times a month
2--Rarely
1--Never

Duties Performed:	5	4	3	2	1
1. Dictation					
2. Transcription					
3. Typing					
4. Filing					
5. Bookkeeping					
6. Composing					
7. Processing Mail					
8. Telephoning					
9. Receptionist					
10. Administrative (planning, consulting, advising)					
11. Information processing (organizing condensing, and categorizing data)					

Part B. How competent are you in performing the following duties? Place an X in the proper column.

5--Excellent Competence
4--Satisfactory Competence
3--Average Competence
2--Competence needs improvement to satisfy me
1--Competence not required on my job

Duties Performed:	5	4	3	2	1
1. Dictation					
2. Transcription					
3. Typing					
4. Filing					
5. Bookkeeping					
6. Composing					
7. Processing Mail					
8. Telephoning					
9. Receptionist					
10. Administrative (planning, consulting, advising)					
11. Information processing (organizing, condensing, and categorizing data)					

Part C. How often do you operate the following machines? Place an X in the proper column.

5--Daily
4--Average of two or three times a week
3--Average of one or two times a month
2--Rarely
1--Never

Machines Operated:	5	4	3	2	1
1. Electric Typewriter					
2. Manual Typewriter					
3. Dictating Equipment					
4. Rotary Calculator					
5. Printing Calculator					
6. Electronic Calculator					
7. Check Writer					
8. Reproducing Equipment----------					
a. Photocopy (Xerox, etc.)					
b. Duplicating (Ditto, etc.)					
c. Offset					
9. Mail Meter					
10. Bookkeeping Machine					
11. Adding Machine					
12. Keypunch					
13. Verifier					
14. Collator					
15. Reproducer					
16. Accounting Machine					
17. Card Sorter					
18. Interpreter					
19. Data Converting Equipment					
20. Paper-Tape Equipment					
21. Computer Console					
22. Random Access Devices					
23. Summary Punch					

Part D. How competent are you in operating the following machines? Place an X in the proper column.

5--Excellent Competence
4--Satisfactory Competence
3--Average Competence
2--Competence needs improvement to satisfy me
1--Competence not required on my job

Machines Operated:	5	4	3	2	1
1. Electric Typewriter					
2. Manual Typewriter					
3. Dictating Equipment					
4. Rotary Calculator					
5. Printing Calculator					
6. Electronic Calculator					
7. Check Writer					
8. Reproducing Equipment----------					
a. Photocopy (Xerox, etc.)					
b. Duplicating (Ditto, etc.)					
c. Offset					
9. Mail Meter					
10. Bookkeeping Machine					
11. Adding Machine					
12. Keypunch					
13. Verifier					
14. Collator					
15. Reproducer					
16. Accounting Machine					
17. Card Sorter					
18. Interpreter					
19. Data Converting Equipment					
20. Paper-Tape Equipment					
21. Computer Console					
22. Random Access Devices					
23. Summary Punch					

Section III. DECISION-MAKING INFORMATION

Definitions: Decision. A decision is the alternative chosen over other alternatives. Alternatives may be actions, opinions, judgments, and/or beliefs.

Decision-Making. Decision-making is defining the problem, developing alternatives, and selecting the alternative.

Please keep these definitions in mind when you are completing Section III.

Part A. Answer the following two statements by placing an X in the proper column.

5--Daily
4--Average of two or three times a week
3--Average of one or two times a month
2--Rarely
1--Never

Question:	5	4	3	2	1
1. How much opportunity do you have for individual decision-making on your job?					
2. How much opportunity would you like for decision-making opportunities on your job?					

Part B. Answer the following statement by placing an X in the proper column.

5--Excellent Competence
4--Satisfactory Competence
3--Average Competence
2--Competence needs improvement to satisfy me
1--Competence not required on my job

Question:	5	4	3	2	1
1. How much competence do you display in making decisions on your job?					

Part C. How would you describe the importance of each of the following decision-making traits in your job? Place an X in the proper column.

5--Highly Important
4--Above Average Importance
3--Average Importance
2--Rarely Important
1--Not important on the job

Decision-Making Trait:	5	4	3	2	1
1. Judgment					
2. Initiative					
3. Responsibility					
4. Curiosity					
5. Dependability					
6. Self-Confidence					
7. Critical, rational, and logical thinking					
8. Intuition					
9. Anticipation of business needs					
10. Adaptability					
11. Ability to form valid conclusions					
12. Objectivity					
13. Ability to communicate ideas and conclusions in verbal and written forms					

Part D. How would you describe the degree with which you possess the following decision-making traits and exhibit these traits on your job?

5--Superior Degree
4--Satisfactory Degree
3--Average Degree
2--Need to possess more of the trait
1--Not applicable to the job

Decision-Making Trait:	5	4	3	2	1
1. Judgment					
2. Initiative					
3. Responsibility					
4. Curiosity					
5. Dependability					
6. Self-Confidence					
7. Critical, rational, and logical thinking					
8. Intuition					
9. Anticipation of business need					
10. Adaptability					
11. Ability to form valid conclusions					
12. Objectivity					
13. Ability to communicate ideas and conclusions in verbal and written form					

Section IV. PRESENT AND FUTURE TRENDS FOR OFFICE WORKERS

How does each following statement apply to trends in your firm for office workers? Indicate your answer by placing an X in the proper column.

5--True
4--Highly probable but not positive
3--Might be true
2--Rarely would be true
1--Not at all true

Trends for the Office Worker	5	4	3	2	1
1. Presently and in the future, personal traits are becoming more important for success in office work than they have previously been.					
2. In the future, office workers will assume more independence and autonomy.					
3. In the future, more general knowledge will be needed for office workers than has been previously needed.					
4. In the future, higher skill specialization will be needed for office employment than previously was needed.					
5. In the future, decision-making ability will be as important as actual job skills possessed by office workers.					

Your additional comments and evaluations will be appreciated in the following space.

_____

_____

OFFICE MANAGER'S QUESTIONNAIRE

Section I. GENERAL INFORMATION

Title of your job _____

TYPE OF OFFICE WORKER SUPERVISED: The check mark indicates the job title of the office worker on whom you are reporting.

1. Secretary _____
2. Stenographer _____
3. Typist _____
4. File Clerk _____
5. Receptionist _____
6. Bookkeeper _____
7. Mail Clerk _____
8. Machine Operator _____
9. Data Processing Worker _____

Section II. DUTIES AND COMPETENCE LEVEL

Part. A. How often does your office worker perform the following duties? Place an X in the proper column.

5--Daily
4--Average of two or three times a week
3--Average of one or two times a month
2--Rarely
1--Never

Duties Performed:	5	4	3	2	1
1. Dictation					
2. Transcription					
3. Typing					
4. Filing					
5. Bookkeeping					
6. Composing					
7. Processing Mail					
8. Telephoning					
9. Receptionist					
10. Admistrative (planning, consulting, advising)					
11. Information processing (organizing, condensing, and categorizing data)					

Part B. How competent is your office worker in performing the following duties? Place an X in the proper column.

5--Excellent Competence
4--Satisfactory Competence
3--Average Competence
2--Competence needs improvement to satisfy me
1--Competence not required on my job.

Duties Performed:	5	4	3	2	1
1. Dictation					
2. Transcription					
3. Typing					
4. Filing					
5. Bookkeeping					
6. Composing					
7. Processing Mail					
8. Telephoning					
9. Receptionist					
10. Administrative (planning, condensing, and categorizing data)					

Part C. How often does your office worker operate the following machines? Place an X in the proper column.

5--Daily
4--Average of two or three times a week
3--Average of one or two times every month
2--Rarely
1--Never

Machines Operated:	5	4	3	2	1
1. Electric Typewriter					
2. Manual Typewriter					
3. Dictating Equipment					
4. Rotary Calculator					
5. Printing Calculator					
6. Electronic Calculator					
7. Check Writer					
8. Reproducing Equipment					
a. Photocopy (Xerox, etc.)					
b. Duplicating (Ditto, etc.)					
c. Offset					
9. Mail Meter					
10. Bookkeeping Machine					
11. Adding Machine					
12. Keypunch					
13. Verifier					
14. Collator					
15. Reproducer					
16. Accounting Machine					
17. Card Sorter					
18. Interpreter					
19. Data Converting Equipment					
20. Paper-Tape Equipment					
21. Computer Console					
22. Random Access Devices					
23. Summary Punch					

Part D. How competent is your office worker in operating the following machines? Place an X in the proper column.

5--Excellent Competence
4--Satisfactory Competence
3--Average Competence
2--Competence needs improvement to satisfy me
1--Competence not required on the job

Machines Operated:	5	4	3	2	1
1. Electric Typewriter					
2. Manual Typewriter					
3. Dictating Equipment					
4. Rotary Calculator					
5. Printing Calculator					
6. Electronic Calculator					
7. Check Writer					
8. Reproducing Equipment					
9. Mail Meter					
10. Bookkeeping Machine					
11. Adding Machine					
12. Keypunch					
13. Verifier					
14. Collator					
15. Reproducer					
16. Accounting Machine					
17. Card Sorter					
18. Interpreter					
19. Data Converting Equipment					
20. Paper-Tape Equipment					
21. Computer Console					
22. Random Access Devices					
23. Summary Punch					

Section III. DECISION-MAKING INFORMATION

Definitions: Decision. A decision is the alternative chosen over other alternatives. Alternatives may be actions, opinions, judgments, and/or beliefs.

Decision-Making. Decision-making is defining the problem, developing alternatives, and selecting the alternative.

Please keep these definitions in mind when you are completing Section III.

Part A. Answer the following two statements by placing an X in the proper column.

5--Daily
4--Average of two or three times a week
3--Average of one or two times every month
2--Rarely
1--Never

Question:	5	4	3	2	1
1. How do you describe opportunities for your office worker's decision-making on the job?					
2. How much opportunity would you like for your office worker to have for making on-the-job decisions?					

Part B. Answer the following statement by placing an X in the proper column.

5--Excellent Competence
4--Satisfactory Competence
3--Average Competence
2--Competence needs improvement to satisfy me
1--Competence not required on my job

Question:	5	4	3	2	1
1. How competent is your office worker in making decisions on the job?					

Part C. How would you describe the importance of each of the following decision-making traits for your office worker? Place an X in the proper column.

5--Highly Important
4--Above Average Importance
3--Average Importance
2--Rarely Important
1--Not important on the job

Decision-Making Trait:	5	4	3	2	1
1. Judgment					
2. Initiative					
3. Responsibility					
4. Curiosity					
5. Dependability					
6. Self-Confidence					
7. Critical, rational, and logical thinking					
8. Intuition					
9. Anticipation of business needs					
10. Adaptability					
11. Ability to form valid conclusions					
12. Objectivity					
13. Ability to communicate ideas and conclusions in verbal and written form					

Part D. How would you describe the degree with which your office worker possesses the following decision-making traits and exhibits these traits on the job? Place an X in the proper column.

5--Superior Degree
4--Satisfactory Degree
3--Average Degree
2--Need to possess more of the trait
1--Not applicable to the job

Decision-Making Trait:	5	4	3	2	1
1. Judgment					
2. Initiative					
3. Responsibility					
4. Curiosity					
5. Dependability					
6. Self-Confidence					
7. Critical, rational, and logical thinking					
8. Intuition					
9. Anticipation of business need					
10. Adaptability					
11. Ability to form valid conclusions					
12. Objectivity					
13. Ability to communicate ideas and conclusions in verbal and written form					

Section IV. PRESENT AND FUTURE TRENDS FOR OFFICE WORKERS

How does each following statement apply to trends in your firm for office workers? Indicate your answer by placing an X in the proper column.

5--True
4--Highly probable but not positive
3--Might be true
2--Rarely would be true
1--Not at all true

Trends for the Office Worker	5	4	3	2	1
1. Presently and in the future, personal traits are becoming more important for success in office work than they have previously been.					
2. In the future, office workers will assume more independence and autonomy.					
3. In the future, more general knowledge will be needed for office workers than has been previously needed.					
4. In the future, higher skill specialization will be needed for office employment than was previously needed.					
5. In the future, decision-making ability will be as important as actual job skills possessed by office workers.					

Your additional comments and evaluations will be appreciated in the following space.

_____

_____

VITA

Brenda Jean Moscove

Candidate for the Degree of

Doctor of Education

Thesis: A SURVEY OF SELECTED OFFICE WORKERS AND THEIR OFFICE MANAGERS TO DETERMINE DIFFERENCES OF OPINIONS CONCERNING OFFICE WORKERS' DUTIES AND RESPONSIBILITIES

Major Field: Business Education

Biographical:

Personal Data: Born in Grayling, Michigan, the daughter of Mr. and Mrs. Edward L. Rankin, on February 23, 1940.

Education: Graduated from Lowell High School, Lowell, Michigan, in June, 1957; attended Ferris State College from 1957 to 1961; received the Bachelor of Science degree from Ferris State College in 1961, with a major in Business; attended Michigan State University from 1963 to 1969; received the Master of Arts degree from Michigan State University in 1969, with a major in Business Education; attended Oklahoma State University from 1969 to 1972; completed requirements for the Doctor of Education degree at Oklahoma State University in July, 1972, with a major in Business Education.

Professional Experience: Business Department Chairman and teacher, Lowell Area Schools, Lowell, Michigan, 1961 to 1968; Instructor of Business Education, Honolulu Business College, Honolulu, Hawaii, 1970 to 1971; Assistant Professor of Business Administration, Chaminade College, Honolulu, Hawaii, 1971 to present; Who's Who Among Students in America's Colleges and Universities, 1961; Delta Mu Delta; Pi Omega Pi; Delta Pi Epsilon; National Business Education Association; Hawaii Business Education Association; American Marketing Association; Hawaii Sales and Marketing Association; American Association of University Professors.