EFFECTS OF PERFORMANCE LEVELS OF SUBJECT MATTER EXPERTS
ON JOB ANALYSIS OUTCOMES

THESIS

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

By

Charlotte Friedersdorff Boyd
Denton, Texas
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Much research has been undertaken to determine how Subject Matter Expert characteristics affect job analysis outcomes. The current study seeks to discover if performance levels are related to current incumbents ratings of their positions. A group of 114 corporate associates, from two administrative positions, served as Subject Matter Experts (SME) for this study. Separate job analyses for each position were conducted using the Job Analysis Task Checklist. The results for each job were analyzed to determine if SME performance levels affected job analysis outcomes. The results for both jobs showed that there were very few differences in job analysis results as a function of SME performance levels.
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CHAPTER I

INTRODUCTION

Job analysis has long been a leading responsibility of industrial/organizational psychologists and consultants. Job analysis is the basis for many selection, promotion, and appraisal decisions in organizations, and with new legislation in the areas of equal employment opportunity and the Americans with Disabilities Act, job analysis has become an even more important tool for organizations to utilize. Proper job analysis can help an organization to protect itself from the rising number of lawsuits resulting from employee claims of non-job related discrimination.

Despite the obvious social and financial implications that can be associated with inadequate job analysis procedures, little research has been conducted in the area of sample characteristics of the Subject Matter Experts. Subject Matter Experts consist of job incumbents, supervisors, and any individual deemed knowledgeable about the particular position being analyzed, either through first hand experience or research. The typical Subject Matter Expert, however, is the job incumbent. Research needs to focus on the job incumbent and determine if certain
characteristics of job incumbents make them better Subject Matter Experts, and therefore, more likely to give an accurate and valid description of their position in a job analysis.

Some research has been directed toward this area in determining if certain Subject Matter Expert characteristics such as gender, education, effectiveness, performance, length of tenure, etc., affect job analysis outcomes. The question all comes down to error and the most effective way to reduce it. Is it more effective to randomly select the Subject Matter Expert sample, for job analysis, to keep sampling error to a minimum, or is it better to select Subject Matter Experts specifically, based on a certain set of characteristics, where increased sampling error may be offset by a decrease in measurement error?

Little research has been conducted to determine how and if race affects job analysis outcomes. However, Aamodt, Kimbrough, Keller, and Crawford (1982) did address the issue of race and job analysis in their study. Aamodt et al. used university dormitory supervisors as the Subject Matter Experts in their analysis, and using the Critical Incidents Technique, they discovered that the types of incidents generated by African-American Subject Matter Experts were significantly different from those generated by Caucasian Subject Matter Experts.
Arvey, Passino, and Lounsbury (1977) wanted to discover if differences existed in job analysis based upon gender. Using the Position Analysis Questionnaire (PAQ) as their source of ratings, Arvey et al. found that sex of the job incumbent had no significance on the PAQ ratings. However, sex of the job analyst was significant in that female job analysts consistently gave lower PAQ scores than male analysts, regardless of the sex of the incumbent. Aamodt et al. (1982) found no significant differences between males and females in the generation of critical incidents in their study.

Smith and Hakel (1979) have suggested that it makes little practical difference who supplies the information to job analysis inventories. In a study they conducted using the Position Analysis Questionnaire (PAQ), Smith and Hakel found no significant differences in ratings between job analysis experts who were thoroughly familiar with the jobs under analysis, and a selected group of college students whose only information on the jobs being analyzed were the position names. These findings seem to suggest that it makes no difference in a job analysis, using the PAQ, who fills the instrument out, expert or naive raters. This finding brings up questions about the usefulness of structured job analysis instruments in general.

Cornelius, Denisi, and Blencoe (1984) published a follow-up paper to Smith and Hakel's. Cornelius et al.
replicated Smith and Hakel's original study and found much lower convergent validities than Smith and Hakel did originally. Cornelius et al. pointed out that observed correlations between expert and naive raters do not constitute equivalence but rather are indicative of similar response profiles. Cornelius et al. concluded that PAQ ratings from job experts versus naive raters are not equivalent, and therefore, not interchangeable.

Cornelius and Lyness (1980) conducted a study investigating judgment strategies used by Subject Matter Experts in job analysis. In their analysis of the data they discovered a significant relationship between the educational level of the Subject Matter Expert and the extent of agreement between the Subject Matter Expert and the professional job analyst's ratings of the position being analyzed. In the same study, Cornelius and Lyness found no relationship between the length of time in the position and the accuracy of the Subject Matter Expert ratings.

Wexley and Silverman (1978) conducted a study using retail store managers to determine if level of individual effectiveness influenced job analysis outcomes. Three cost-related measures of manager effectiveness were used. The Subject Matter Experts were distributed a questionnaire and asked to make ratings of importance and time spent on major work activities. The Subject Matter Experts were also asked to rate the importance of certain worker characteristics
needed for successful job performance. Wexley and Silverman found no significant differences between the ratings of the ineffective versus effective managers. They felt that their results suggested that high and low performers can be used in job analysis, since both groups appear to rate the job comparably.

Conley and Sackett (1987) also conducted a study to try to determine the effects of using high versus low performing job incumbents in a job analysis. They conducted their study using high and low performing juvenile police officers and their supervisors. Each group was asked to separately generate lists of tasks and knowledge, skills, abilities, and other related characteristics, also known as KSAsOs for the position of youth officer. The generated lists were found to be virtually identical, and any discrepant tasks or KSAsOs listed by the groups were found to be unimportant, in later ratings. Then each group was given inventories, created using the generated tasks and KSAsOs, and asked to rate their importance. When a discriminant analysis procedure was performed on the ratings of the different groups, no significant differences were found. Aamodt et al. (1982) also found no significant differences in job analysis results as a function of the individual's performance.

Several researchers have also conducted studies looking at many group characteristics to see if a combination of
group characteristics may contribute to more accurate job analysis by the Subject Matter Expert population. Green and Stutzman (1986) evaluated several methods of selecting respondents to structured job analysis questionnaires to try to determine which methods produced the most reliable and accurate results. One method involved obtaining employee measures that assessed performance and background characteristics. This information was, in turn, used to determine who were the most knowledgeable about the job in question, and therefore, more likely to rate the job accurately. A second method involved collecting job analysis information from all potential Subject Matter Experts, computing indices of determination on the entire sample, and then selecting a sub-sample of the entire sample that most accurately rated the job. Accuracy was measured using the D-index that assesses similarity between individual Subject Matter Expert ratings and the population's mean rating; and through the use of a carelessness index, which measured the individual's tendency to rate tasks as important, which were known to be unrelated to the particular position being analyzed.

Green and Stutzman reached four general conclusions as a result of their investigations. First, they concluded that different selection measures yield slightly different job analysis respondents. Secondly, they discovered that not all Subject Matter Experts are equally accurate in how
they rate the job, and inaccuracy can be screened for using the carelessness index. Thirdly, they concluded that in most analyses the number of Subject Matter Experts needs to be more than three to obtain reliable results, and lastly, Green and Stutzman concluded that the more unstable and changing the nature of the job, the more important it is to choose accurate Subject Matter Experts.

Mullins and Kimbrough (1988) also conducted research to determine if different groups of job incumbents would yield different job analysis outcomes. Using a sample group of university patrolpersons, Mullins and Kimbrough formed different Subject Matter Expert groups on the basis of a multidimensional scaling procedure, seniority level, and educational level. Seniority level and level of education were not found to affect job analysis outcomes. However, the multidimensional scaling technique was found to produce discriminant functions in the job analysis outcomes, and the discriminant functions were related, in turn, to supervisor rank orderings of the incumbents. Mullins and Kimbrough asserted that the results of their study indicate that different Subject Matter Experts produce different job analysis outcomes. Furthermore, Mullins and Kimbrough suggested that Subject Matter Experts should be selected based upon a stratified random sampling model, because they feel it is important to include individuals from all levels
of characteristics, to get the most reliable and accurate job analysis outcomes.

O'Reilly, Parlette, and Bloom (1980) hypothesized that variations in perceptions of job characteristics may be associated with perceptual biases reflecting the Subject Matter Experts' frames of reference and general job attitudes, and not be a result of differing objective task characteristics, at all. One's frame of reference includes such things as their race, gender, past experiences, education, tenure, socioeconomic status, among other things. Conducting their study using Public Health Nurses as the Subject Matter Experts, O'Reilly et al. found significant differences between reported outcomes and Subject Matter Experts' frames of reference. The researchers offered two alternatives for their findings, 1) Objective variations in the tasks may lead to variations in individual differences, or 2) One's individual characteristics result in systematic biases in perceptions of tasks. O'Reilly et al. believed that the latter conclusion was more appropriate to their study findings. Most significantly, O'Reilly et al. argued that systematic differences in task description appear to stem, in part, from the incumbent's overall satisfaction with the job, and not the other way around.

In light of these research findings, the present study was designed to investigate the relationship between job performance level of the Subject Matter Experts and their
responses to a job analysis questionnaire. This is an important area of study in the job analysis realm because organizations want to receive the most accurate picture of the positions in their company for the financial and ethical reasons discussed earlier. Although previous studies of a similar nature found that performance was not related to job analysis, the present study was conducted for two reasons. First, only a handful of studies have examined the relationship between Subject Matter Expert performance levels and job analysis outcomes, and replication of previous research is an important principle in the discipline of industrial/organizational psychology, and science, in general. Second, the type of positions examined in this study differ from those of previous studies. The earlier studies examining the relationship of performance to job analysis outcomes used managers, police officers, and dorm supervisors as Subject Matter Experts. All of these jobs involve complex and changing environments, and performance levels may be harder to measure. The current study deals with administrative and secretarial workers. These types of positions perform more repetitive functions on a day to day basis, and therefore, individual administrative workers surveyed should respond in a more similar fashion, than perhaps workers in a more dynamic environment such as management or public service.
Hypotheses

1. There will be no differences between the means for high and low performers on all eleven dimensions of the Job Analysis Task Checklist for Clerical, Secretarial, and Administrative Occupations (JATC), using the time-spent-ratings scale.

2. There will be no differences between the internal consistency reliability coefficients for high and low performers on all eleven JATC dimensions, using the time-spent-ratings scale.

3. There will be no differences between the interrater reliability coefficients for high and low performers on all eleven JATC dimensions, using the time-spent-ratings scale.

4. There will be no differences between within group variances for high and low performers.
CHAPTER II

METHOD

Subjects

A job analysis was conducted on all corporate administrative positions of a large international retail organization. The job analysis sample pool was based on 108 corporate administrative positions, with a total number of 1,317 incumbents. From the total number of incumbents, 590 were selected to fill out the Job Analysis Task Checklist for Clerical, Secretarial, and Administrative Occupations (JATC), created by Psychological Services, Inc., and serve as the Subject Matter Experts (SME's) for the current job analysis.

The subjects used for the investigation of the stated hypotheses consisted of 181 incumbent administrative associates selected from two positions. These subjects were composed of Merchandise Records Assistants, whose primary responsibilities are to provide the buying unit or Merchandise Operations with diversified clerical and arithmetic support; and Merchandise Support Assistants, whose primary responsibilities are to provide the buying unit with diversified clerical arithmetic support and efficient administration of secretarial functions and
activities. These two positions were selected for the current study after careful examination of all the positions, because of the large number of incumbents in each position, and because these two positions were located in fewer departments than the other positions containing 75 or more associates. It was important to control for department location in the current study because this study was interested in job analysis profile differences that result from performance differences, and not profile differences that may be a result of working in the same position but in different departments.

Subjects from these two positions were selected using a stratified random sample to include incumbents from each department and from each available performance level. It was also decided to try to select incumbents who had held their current positions for one year or more, whenever possible, because it was felt that these subjects would be more familiar with the position and, therefore, more adequately fulfill the duties of a Subject Matter Expert. Minorities were also included, whenever possible, to minimize the possibility of subsequent concerns of cultural fairness when the results of the job analysis are used for such things as performance appraisal updating. Based on the aforementioned criteria, 72 of the 108 Merchandise Records Assistants, and 109 of the 175 Merchandise Support
Assistants were selected to participate in the current study.

Of those selected, 37 Merchandise Records Assistants (51%) accurately completed and returned their JATC's on time. These 37 associates were located in five different departments. Seventy-eight percent (29) of the respondents were female and 22% (8) were male. Approximately, 62% of the Merchandise Records Assistant subjects were non-minorities and 38% were minorities. Average age of these subjects was 40.1 years with an average time in company of 4.3 years and an average time in position of 1.9 years. Salaries of these subjects ranged $17,098 to $26,083, with a mean income of $20,748 for the group. The mean performance score for this group of subjects was '2.5' on a '1' to '5' scale, where '1' signifies exceptional performance and '5' signifies unacceptable performance.

Seventy-seven Merchandise Support Assistants (71%) accurately completed and returned their JATC's on time. These 77 associates were located across 10 different departments. Approximately 95% (73) of the respondents were female and 1% (1) were male (gender data were unavailable on three subjects). Approximately, 74% of the Merchandise Support Assistant subjects were non-minorities and 23% were minorities. Average age of these subjects was 37.9 years with an average time in company of 5.3 years and an average time in the current position of 2.1 years. Salaries of
these subjects ranged from $17,971 to $28,538, with a mean income of $22,421 for the group. The mean performance score for this group of subjects was '2.4' on a '1' to '5' scale, where '1' signifies exceptional performance and '5' signifies unacceptable performance. This created a total sample pool of 114 Subject Matter Experts on which data analysis was conducted.

Instruments

The Job Analysis Task Checklist for Clerical, Secretarial, and Administrative Occupations (JATC), published by Psychological Services, Inc., was chosen to use in the current study (see Appendix A). This instrument was chosen for two reasons. First, the JATC was used on the original 1987 job analysis of corporate administrative positions, which this current study is serving to update. Secondly, an examination was undertaken of all the current position descriptions available for corporate administrative positions, and through a qualitative analysis, it was determined that the JATC adequately covered all major task areas.

Design

Each subject in the job analysis was sent a JATC and a cover letter explaining the purpose of the current job analysis and the reason the subjects were chosen because of their status as Subject Matter Experts (see Appendix B for cover letter). The cover letter also let the subjects know
that if for any reason they felt they were unable to complete the survey, they were under no obligation to do so. A return envelope was also provided in the packet sent to subjects, so they could easily return the JATC to the Personnel Research department, which was conducting the job analysis. In addition, a follow-up letter was sent to all associates who had not returned their JATC's by the original due date to find out why the JATC had not been returned, and to allow subjects another opportunity to return their completed JATC's (see Appendix C).

**Data Analysis**

A one-way analysis of variance was run using level of performance as the independent variable and the eleven task dimensions of the JATC, on the time-spent-ratings scale, as the dependent variable. The time-spent-ratings scale will be the scale used in this analysis, and any subsequent analysis, because frequency scales provide a more descriptive and less value-laden measure of the job tasks than importance scales do, because importance scales may be measuring shared (or divergent) Subject Matter Expert values, rather than objective components of the task (Landy & Vasey, 1991). Performance will be categorized into two levels, high performers and low performers. High performers will be defined by those subjects who received a performance appraisal rating of '1' or '2' on a scale of '1' to '5' with '1' representing exceptional performance and '5'
representing unacceptable performance. Low performers will be defined by those subjects who received a performance appraisal rating of '3' or '4' or '5' on the aforementioned scale. The performance appraisal ratings are kept as part of the associates' records and performance ratings are evaluated and updated on a yearly basis.

The 11 task dimensions of the JATC have been defined by Psychological Services, Inc. as a result of the extensive research PSI has done using their instrument, and include Job Dimension 1 - Filing, Recording, and Checking; Job Dimension 2 - Communicating Orally; Job Dimension 3 - Making Decisions; Job Dimension 4 - Calculating and Summarizing Data; Job Dimension 5 - Supervising; Job Dimension 6 - Typing; Job Dimension 7 - Bookkeeping; Job Dimension 8 - Mailing and Shipping; Job Dimension 9 - Using Shorthand; Job Dimension 10 - Requisitioning; and Job Dimension 11 - Operating Machines (see Appendix A for complete descriptions of task job dimensions).

Internal consistency reliability measures will be determined using the time-spent-ratings scale for high and low performers, on all eleven job dimensions. Interrater reliability among high and low performers will also be tested on all eleven job dimensions.

Intra-rater reliability will also be looked at by examining within group variances between high and low performers. Within group variances will be examined by
using the non-parametric signs test, to test if there are any differences between the variances within groups among high and low performers.

Using the above criteria, all analysis will be run separately on the two positions being examined in this study. The first position of Merchandise Records Assistants is composed of 14 high performers and 17 low performers. The second position of Merchandise Support Assistants is composed of 43 high performers and 29 low performers. These two positions will be analyzed separately in order to run parallel studies to test the proposed hypotheses. Separate analysis of the positions is supported by the fact that in an analysis run by Psychological Services, Inc., these two positions were located in two different job families, and therefore, would be expected to produce different task profiles.
CHAPTER III

RESULTS

Hypothesis 1

It was hypothesized that no mean differences would be found between high and low performers on all eleven dimensions of the JATC, using the time-spent ratings scale. Table 1 gives a breakdown of the means, standard deviations, and F-ratios for all eleven JATC dimensions on the time-spent ratings scale for Merchandise Records Assistants. No statistically significant differences were found for job dimension means between high and low performing Merchandise Records Assistants. Table 2 gives the same breakdown of means, standard deviations, and F-ratios for Merchandise Support Assistants. A statistically significant difference was found between high and low performing Merchandise Support Assistants on Job Dimension 3 - Making Decisions, with an F-ratio = 6.59 (p < .01). No significant differences were found for the other ten dimensions.

Hypothesis 2

It was hypothesized that no difference would be found between the internal consistency reliability coefficients for high and low performers on all eleven dimensions of the JATC, using the time-spent ratings scale.
Internal consistency reliability coefficients were found for each group separately. Table 3 lists the internal consistency reliability coefficients for Merchandise Records Assistants. In this analysis no statistically significant differences were found between alpha coefficients between high and low performers.

Table 4 lists the internal consistency reliability coefficients for Merchandise Support Assistants. Statistically significant differences were found between high and low performers for two of the eleven JATC dimensions, namely Job Dimension 6 - Typing (p < .05) and Job Dimension 10 - Requisitioning (p < .05). No other statistically significant differences were found in this analysis.

**Hypothesis 3**

It was stated that no differences would be found between the interrater reliability coefficients between high and low performers on all eleven dimensions of the JATC, using the time-spent ratings scale. Table 5 shows the interrater reliability coefficients for high and low performing Merchandise Records Assistants. No statistically significant differences were found between high and low performers on any of the eleven JATC dimensions. No statistically significant differences were found between high and low performing Merchandise Support Assistants,
either, on the measure of inter-rater reliability, as is supported by Table 6.

**Hypothesis 4**

The final hypothesis stated that no differences would be found between within groups variances for high and low performers. No significant within groups variance differences were found for Merchandise Records Assistants (Table 7 and Figure 1) or Merchandise Support Assistants (Table 8 and Figure 2).
CHAPTER IV

DISCUSSION

For the most part the null hypotheses suggested at the beginning of this paper were upheld. However, there are a few very interesting exceptions, where statistical significance was found, that need to be discussed further. In comparing the overall job dimension means, between high and low performers, no significant differences were found among the Merchandise Records Assistants, however, a significant result was found on one job dimension among the Merchandise Support Assistants. It was found that on the average, high performing Merchandise Support Assistants spend more time in decision making processes than low performing Merchandise Support Assistants. This finding is in line with earlier postulations that in positions which require more input and initiative from the employees, such as making their own decisions, high performers may give a more accurate picture of the position requirements. On the other hand, this finding may indicate that higher performers take it on themselves to think out their daily work processes more clearly than low performers, and this increased decision making may lead to higher performance.
When examining the internal consistency reliabilities for Merchandise Records Assistants, separately, no significant differences were found between high and low performers. When examining the same for Merchandise Support Assistants, it was found that high performers had significantly higher internal consistency reliabilities, than low performers, in the job dimensions of typing and requisitioning.

An analysis of the interrater reliabilities for both groups identified no differences and a comparison of within groups variances of both positions also yielded no differences. On the face of things, it appears that once again it seems to make no difference who is selected to serve as a Subject Matter Expert for job analysis. However, this study needs to be examined more closely to determine if this is entirely true. First, the selection of the subjects for this study needs to be examined. The two positions, Merchandise Records Assistants and Merchandise Support Assistants, were so chosen because both positions were administrative positions which were thought to be involved in more routine day to day functions, than positions studied in previous research, and because they provided a large subject pool from which to run data analysis.

The entire population from which the subject pool was drawn was quite large, however, as often happens in research, not all subjects responded to the survey which was
sent out, thereby further limiting the initial subject pool. An analysis run on final subjects in this study seemed to indicate that the pool was still representative of the original population, however, it is still possible that there may be an undetermined characteristic that is possessed by those subjects who responded to the survey versus those who did not. If such a factor did exist it may effect the research results which have been obtained. This is a common problem in all scientific study which must rely on the voluntary nature of the subject pool.

In the original proposition to this research, it was also stated that this study was being undertaken because it represented a different kind of position from those previously studied under Subject Matter Expert research. Namely, previous studies have tended to deal with higher level jobs such as managers and police officers. It was hypothesized that the administrative positions in this study constituted a different kind of job because the positions should consist of more routine day to day functions, than those previously researched. However, during the course of this study through analysis and one-on-one discussions with Subject Matter Experts a different picture from the one expected emerged. In talking with many different Merchandise Records Assistants, it was discovered that a far wider range of activities and duties are being performed than those listed in the official position description.
Some Merchandise Records Assistants in different departments, and even the same departments, were performing entirely different jobs from one another. No one seemed to agree on what their primary responsibilities and duties were and it might have been possible that individuals with the same job title were not performing the same job at all.

The Merchandise Support Assistants were in more agreement on what their position entailed. The job is slightly elevated from a routine administrative position and much more decision making and responsibility are inherent in the position than was originally thought. This does bring up the interesting finding that high performing Merchandise Support Assistants were found to spend significantly more time in decision making processes than low performing individuals. This finding could have implications for both lower administrative positions up to higher level management positions.

In conducting a job analysis the organization needs to decide what picture they wish to have of the positions. Do they want an average picture of how the position is executed, or do they want to know how the position is most accurately and highly executed? If an organization wants to fill its positions with those most highly qualified for the position, they may want to base their job analysis on those individuals who are doing the best possible job for the organization at that time, because it appears that there may
be differences between how high and low performers not only 
execute their jobs, but also in how they perceive them.

Despite the fact that few significant findings were 
found in this study further research should still be 
encouraged into the area of Subject Matter Expert selection 
for job analysis. Such research should be conducted using 
larger and more carefully controlled sample pools. Using 
all incumbents as Subject Matter Experts in a job analysis 
may give fairly reliable results, however, further research 
might want to compare the effects of using all incumbents 
versus using high performers only. By comparing the results 
of high performers to those of all incumbents, future job 
analyses may be able to be conducted using smaller sample 
 sizes, making the process less time consuming and more 
efficient for organizations. Through further research into 
these issues organizations can set up more efficiently their 
recruiting, hiring, and training practices.
Job Dimension 1: Filing, Recording, and Checking

Includes locating, assembling, and classifying items or materials within a systematic file based on established rules; copying and/or recording written or numerical information to complete forms and records; and checking materials to verify consistency, accuracy, and completeness.

Checking & Reviewing

30. Inspects forms, correspondence, or written material to determine whether required information is present and/or accurate.

29. Checks a list of names and/or numbers against another list for accuracy and completeness.

31. Checks for inconsistencies between two or more items of information.

28. Determines whether specific items are present in a list.

33. Checks the accuracy of calculations mentally or with paper and pencil.

34. Checks others' work to verify that correct procedures have been followed.

Classifying & Filing

4. Assembles items into a specific sequence (alphabetical, numerical, or other).

5. Determines the category in which a particular item belongs.

3. Locates items in a systematic (alphabetical, numerical, or other) file.

2. Places materials in proper position in a systematic (alphabetical, numerical, or other) file.

1. Classifies materials according to a specific set of rules.

7. Looks up procedures or codes in reference manuals.

6. Designs filing systems.
23. Makes routine entries in record books or on standard forms.

24. Fills out forms by hand.

Copying and Recording

22. Selects specific data from one place and copies it to another.

25. Makes lists of items falling into specific categories.

Compiling

62. Consults books, manuals, catalogs, files, records, legal descriptions, microfilm, microfiche, CRT displays, computer printouts, etc., in order to obtain necessary information.

61. Searches for missing records, orders, or other materials.

Calculating

35. Counts various types of items.

Miscellaneous

103. Collates pages by hand
Job Dimension 2: Communicating Orally

Includes answering, relaying, and recording telephone messages; receiving visitors; discussing problems and answering questions; explaining complex procedures, policies, and instructions; and scheduling and coordinating meetings and appointments.

Reception Activities

76. Records telephone messages.
74. Answers all incoming telephone calls.
75. Transfers incoming calls to proper location.
77. Keeps track of whereabouts of office personnel.
73. Greets visitors.

Oral Communications

80. Receives or makes inquiries about matters of a simple nature (involving little judgment) over the phone.
78. Receives or makes inquiries about matters of a simple nature (involving little judgment) in person.
81. Receives or makes inquiries about matters of a complex nature (involving considerable judgment) over phone.
83. Communicates complex information over telephone.
79. Receives or makes inquiries about matters of a complex nature (involving considerable judgment) in person.
84. Communicates complex information in person.
82. Persuades others to take action or change their point of view.

Miscellaneous

106. Notifies individuals of scheduled meetings.
105. Arranges meeting by consulting a time schedule or by contacting the persons concerned.
108. Makes plane and hotel reservations.
109. Helps people fill out forms.
107. Establishes follow-up dates on correspondence and other materials.
Job Dimension 3: Making Decisions

Includes analyzing information, determining steps required to resolve/address problems and issues, defining the type of information/data needed, and establishing how to interpret/use information. Decision-making activities are generally based on established policies and procedures.

Decision Making

54. Determines courses of action, based on clear rules or policy statements.

59. Analyzes data or information to determine underlying principles and/or solve problems.

60. Determines the nature of problems contained in applications, correspondence, and other written material.

58. Establishes priorities.

57. Interprets policies, rules, and regulations.

52. Plans or schedules own work activities.

53. Determines types of information or data to be recorded.

51. Determines which procedures are to be followed in completing a project.

55. Determines disposition of incoming correspondence.

47. Approves or rejects applications, requests, claims, etc., on the basis of clear rules and regulations.

50. Determines which forms or records are to be used in gathering data.

56. Makes routine assignments of facilities, or other types of items on the basis of a set of rules.

Writing

67. Initiates correspondence or memoranda without following a model.

66. Prepares routine correspondence using model paragraphs or form letters.
72. Draws up contracts, specifications, or other forms requiring specialized knowledge.
Job Dimension 4: Calculating and Summarizing Data

Includes basic computations of numerical data, using paper and pencil or calculator. Written reports, graphs, or financial statements may be prepared to summarize and present results and findings.

Operating Office Machines

94. Operates simple office machines (the operation of which can be learned in several minutes) which require the repetitive entering of numerical data, such as a 10-key adding machine or calculator.

Calculating

45. Solves problems involving numerical data.

46. Reconciles data on several different forms or reports.

43. Adds, subtracts, multiplies, and/or divides fractions, decimals, and/or percentages mentally or with paper and pencil.

42. Adds, subtracts, multiplies, and/or divides whole numbers mentally or with paper and pencil.

44. Performs complex calculations involving roots, powers, formulas, or specific sequences of action with the aid of a calculator.

Compiling

63. Tallies data.

64. Designs charts or graphs to represent data.

Writing

68. Systematically organizes and presents material in a report.

69. Writes a report summarizing information from various sources.

71. Prepares financial or numerical statements.

65. Writes routine reports.
Job Dimension 5: Supervising

Includes planning and distributing work to others, coordinating work schedules, and evaluating job performance.

Supervising

86. Assigns duties or tasks.
85. Plans or schedules the work of others.
87. Evaluates the performance of others.
88. Coordinates activities of other employees.
90. Monitors the performance of others.
89. Trains new clerical employees.
91. Resolves minor grievances.
92. Recommends salary action.
93. Interviews job applicants.

Writing

70. Makes out routine schedules of work, appointments, or other events.
Job Dimension 6: Typing

Includes preparing documents from other typed materials, longhand notes, or dictation. Preparing tables, forms, charts, and graphs may be included. Proofreading is often associated with this dimension, as is the operation of copy machines, facsimiles, etc.

Typing and Word Processing

14. Types from straight copy.
12. Types from other people's longhand notes.
17. Types statistical or numerical material.
15. Types information in appropriate spaces on special forms.
16. Types formal correspondence.
18. Types complicated tables.
10. Types addresses on envelopes.
13. Types dictation from transcribing machine.

Checking and Reviewing

32. Proofreads materials for errors in typing, spelling, punctuation, grammar, capitalization and/or vocabulary.

Operating Office Machines

95. Operates simple office machines (the operation of which can be learned in several minutes) which do not require the repetitive entering of numerical data, such as a copying machine or transcribing machine.
Job Dimension 7: Bookkeeping

Includes posting of accounts by recording debits and credits and updating and maintaining accounting ledgers. Also included is handling and balancing cash against receipts, and referencing tables to locate rates and other costs.

Classifying and Filing
8. Assigns credits and debits to proper accounts.
9. Determines rates, costs, or other amounts on the basis of tables.

Calculating
37. Receives, counts, or pays out cash.
38. Computes wages, taxes, commissions, payments, etc.
41. Maintains accounting ledgers.
39. Keeps a running balance of specific entries.
40. Balances cash on hand against receipts.
Job Dimension 8: Mailing and Shipping

Includes assembling and preparing materials to be mailed or shipped; determining postage, class, or shipping rate; and collecting and distributing mail or other materials.

Mailing

100. Assembles materials to be mailed or shipped.

102. Determines class of mail to use to meet customer requirements.

101. Determines postage for materials being mailed.

Miscellaneous

104. Picks up materials from and/or distributes materials to the proper persons.
Job Dimension 9: Using Shorthand

Includes using shorthand to take dictation or to record meeting minutes, and typing from shorthand notes.

Typing and Word Processing

11. Types from shorthand, etc. notes.

Steno

20. Uses shorthand or other form of speedwriting to take dictation.

21. Takes shorthand, etc., notes at meetings.
Job Dimension 10: Requisitioning

Includes completing and recording merchandise or service orders, determining what supplies are to be ordered, and keeping track of stock inventory.

Copying and Recording

26. Records orders for merchandise or service.
27. Fills out requests for materials or information.

Calculating

36. Keeps track of stock inventory.

Decision Making

49. Determines amounts of supplies to be ordered.
48. Makes estimates of needs, or requirements such as for a budget.
Job Dimension 11: Operating Machines

Includes using machines to enter or calculate data, or operating machines which require continual adjustments such as an offset printing press.

Operating Office Machines

97. Operates complex office machines requiring extensive instructions, such as a computer terminal or bookkeeping machine.

99. Operates a keypunch, key data entry machine, or verifying machine.

96. Operates office machines requiring the development of special skills necessary to continually adjust and maintain the machine, such as an offset printing press.

98. Cleans, repairs, or adjusts office machines.

Typing and Word Processing

19. Types messages on a teletype.
APPENDIX B

COVER LETTER TO ASSOCIATES
The following is a generic example of the initial cover letter that was sent out to all associates selected to participate in the job analysis.

SUBJECT: JOB ANALYSIS TASK CHECKLIST

The Purpose of the enclosed questionnaire is to obtain accurate information about your position. You have been selected because you are a "job expert" or one of the individuals most qualified to describe the various activities and job requirements for your position.

The job information is very important to ensure that position descriptions are complete and current. Additionally, the performance appraisal process for administrative positions is currently being reviewed and revised. Your input via this questionnaire is necessary to ensure the revised process is based upon job information that is complete and current.

Please consider the following when completing the enclosed questionnaire:

1. There are no right or wrong answers. We need your opinion because you are the job expert for your position.

2. If you feel you cannot or do not want to complete the questionnaire, please return it to this department.

3. Start on page 3 of the Job Analysis Task Checklist. Read the instructions and then proceed to complete the questionnaire. Do not complete page 2 because we will do this for your questionnaire.

4. Please complete your questionnaire and return it in the envelope provided.

If you have any questions or concerns please call this department.

Thank you very much for your assistance.
APPENDIX C

FOLLOW-UP LETTER
The following is a generic example of the follow-up cover letter that was sent out to all associates selected to participate in the job analysis.

SUBJECT: FOLLOW-UP REQUEST FOR THE JOB ANALYSIS TASK CHECKLIST

The purpose of the Job Analysis Task Checklist we recently sent you is to ensure that we accurately understand the responsibilities and duties of your position. The information received from the Checklist will be used in the revision of the Company's Performance Appraisal Process for your position.

Since we have not heard from you, this follow-up is a request for you to complete the Job Analysis Task Checklist for your position. If you feel that you cannot complete the Checklist, please let us know.

Please complete your questionnaire, as soon as possible, and return it to this department. If you have any questions or you need another copy of the Job Analysis Task Checklist, please call this department.

Thank you very much for your assistance.
APPENDIX D

TABLES
### Table 1

**Means and Standard Deviations of Time-Spent-Ratings by Job Dimension**

**Merchandise Records Assistants**

<table>
<thead>
<tr>
<th>Job Dimension</th>
<th>High Performers (N=14)</th>
<th>Low Performers (N=17)</th>
<th>F Ratio</th>
<th>F Prob.</th>
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<tbody>
<tr>
<td>1-Filing, Recording, Checking</td>
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<td>Mean: 0.35 SD: 0.13</td>
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<tr>
<td>2-Communicating Orally</td>
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<td>Mean: 0.10 SD: 0.09</td>
<td>0.03</td>
<td>ns</td>
</tr>
<tr>
<td>3-Making Decisions</td>
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<td>Mean: 0.13 SD: 0.10</td>
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<td>ns</td>
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<td>6-Typing</td>
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<td>7-Bookkeeping</td>
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<td>Mean: 0.04 SD: 0.03</td>
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<tr>
<td>11-Operating Machines</td>
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<td>Mean: 0.10 SD: 0.16</td>
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ns - Not significant
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<tr>
<th>Job Dimension</th>
<th>High Performers (N=43)</th>
<th>Low Performers (N=29)</th>
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<th>F Prob.</th>
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</thead>
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<td>SD</td>
<td>Mean</td>
<td>SD</td>
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<td>.20</td>
<td>.15</td>
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<td>3-Making Decisions</td>
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<td>.11</td>
<td>.12</td>
<td>.08</td>
</tr>
<tr>
<td>4-Calc/Summarizing Data</td>
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<td>.06</td>
<td>.06</td>
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<td>.02</td>
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<td>.00</td>
<td>.01</td>
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<td>8-Mailing/Shipping</td>
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<td>.02</td>
<td>.03</td>
<td>.03</td>
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<td>.01</td>
<td>.00</td>
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<td>10-Requisitioning</td>
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<td>.02</td>
<td>.03</td>
<td>.04</td>
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<td>11-Operating Machines</td>
<td>.09</td>
<td>.09</td>
<td>.11</td>
<td>.13</td>
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</table>

ns - Not significant
Table 3

Coefficient Alphas of High Performers (HP) and Low Performers (LP) for Job Dimensions of Merchandise Records Assistants

<table>
<thead>
<tr>
<th>Job Dimension</th>
<th># of items</th>
<th>$r_{xx}$ for HP (N=14)</th>
<th>$r_{xx}$ for LP (N=17)</th>
<th>Z Test</th>
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<td>.96</td>
<td>-1.18</td>
</tr>
<tr>
<td>3-Making Decisions</td>
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<td>4-Calc/Summarizing Data</td>
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<td>-.05</td>
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<td>-0.54</td>
</tr>
<tr>
<td>6-Typing</td>
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<td>.89</td>
<td>1.69</td>
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<td>7-Bookkeeping</td>
<td>7</td>
<td>.47</td>
<td>.13$^a$</td>
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<tr>
<td>8-Mailing/Shipping</td>
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<td>.65</td>
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<tr>
<td>9-Using Shorthand</td>
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<td>zero variance</td>
<td>0.0</td>
<td>zero variance</td>
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<tr>
<td>10-Requisitioning</td>
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<td>.60</td>
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<td>11-Operating Machines</td>
<td>5</td>
<td>.23$^a$</td>
<td>.03$^a$</td>
<td>0.51</td>
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</table>

Note. Fisher's $z_r$ transformation was used to convert coefficient alphas into correlations, so that a Z-test could be performed to determine if the alpha's were statistically significant from one another. HP = High Performers, LP = Low Performers.

$^a$ Zero variance items exist.
Table 4
Coefficient Alpha of High Performers (HP) and Low Performers (LP) for Job Dimensions of Merchandise Support Assistants

<table>
<thead>
<tr>
<th>Job Dimension</th>
<th># of items</th>
<th>( r_{xx} ) for HP (N=43)</th>
<th>( r_{xx} ) for LP (N=29)</th>
<th>Z Test</th>
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<td>2-Communicating Orally</td>
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<td>3-Making Decisions</td>
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<td>4-Calc/Summarizing Data</td>
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<td>6-Typing</td>
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<td>.72</td>
<td>2.47*</td>
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<td>7-Bookkeeping</td>
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<td>.04*</td>
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</table>

Note. Fisher's \( z \) transformation was used to convert coefficient alphas into correlations, so that a Z-test could be performed to determine if the alpha's were statistically significant from one another. HP = High Performers, LP = Low Performers.

* Zero variance items exist

* Significant at \( p \leq .05 \) level
Table 5

Inter-rater Reliability Coefficients of High Performers (HP) and Low Performers (LP) for Job Dimensions of Merchandise Records Assistants

<table>
<thead>
<tr>
<th>Job Dimension</th>
<th># of cases</th>
<th>$r_{xx}$ for HP (items=14)</th>
<th>$r_{xx}$ for LP (items=17)</th>
<th>Z Test</th>
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Note. Fisher's $z_r$ transformation was used to convert coefficient alphas into correlations, so that a Z-test could be performed to determine if the alpha's were statistically significant from one another. HP = High Performers, LP = Low Performers.

$^a$ Zero variance items exist
Table 6

Inter-rater Reliability Coefficients of High Performers (HP) and Low Performers (LP) for Job Dimensions of Merchandise Support Assistants

<table>
<thead>
<tr>
<th>Job Dimension</th>
<th># of cases (items=43)</th>
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<th>r for LP (items=29)</th>
<th>Z</th>
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</thead>
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<tr>
<td>2-Communicating Orally</td>
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<td>3-Making Decisions</td>
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Note. Fisher's z, transformation was used to convert coefficient alphas into correlations, so that a Z-test could be performed to determine if the alpha's were statistically significant from one another. HP = High Performers, LP = Low Performers.

a Zero variance items exist
Table 7
Non-Parametric Signs Test to Compare Within Groups Variances Between High Performers (HP) and Low Performers (LP)
Merchandise Records Assistants

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<th>Sign</th>
<th>SD Within Groups LP</th>
<th>Sign</th>
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Table 8

Non-Parametric Signs Test to Compare Within Groups Variances Between High Performers (HP) and Low Performers (LP)

Merchandise Support Assistants

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<th>Job Dimension</th>
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<th>Sign</th>
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APPENDIX E
FIGURES
Figure 1
Chi-Square Illustration Comparing High Performers and Low Performers Within Groups Variance for Merchandise Records Assistants

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<tr>
<td>Low Performers</td>
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<tr>
<td>Totals</td>
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</tbody>
</table>

Chi-square = .2
df = 1

Median within groups variance = .0680

Note. HP = High Performers, LP = Low Performers
Chi-Square Illustration Comparing High Performers and Low Performers Within Groups Variance for Merchandise Support Assistants

<table>
<thead>
<tr>
<th></th>
<th>+</th>
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<th>Totals</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Totals</td>
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</tbody>
</table>

Chi-square = .2

df = 1

Median within groups variance = .0583

Note. HP = High Performers, LP = Low Performers
REFERENCES


structured job analysis questionnaire. Personnel Psychology, 32, 677-692.


