A THEORY OF PERSONNEL SELECTION

A Dissertation
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This is to certify that the

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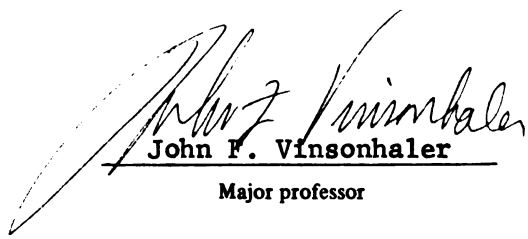

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ABSTRACT

A THEORY OF PERSONNEL SELECTION

By

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There is a need in personnel selection to be able to explain and predict phenomena. At present, there is no theory of personnel selection that incorporates all of the major elements. Neither test theory nor decision theory is comprehensive enough to include a sufficient analysis of personnel selection.

The purpose of this study was to generate a new theory of personnel selection (selection theory) and to explicate the personnel selection process by means of the new theory. It was also the purpose of this study to determine if selection theory predicted which people would be selected and to determine if selection theory predicted better than present theory.

Aspects of classical test theory and decision theory were reviewed for their application to a theory of personnel selection. Classical test theory was found to be primarily concerned with the accuracy of measurement or prediction. Decision theory was found to be primarily concerned with maximizing the utility of a personnel decision in terms of the possible outcomes.

Selection theory is based on the psychological construct of satisfaction of the decisionmakers. The probability of selection is a function of satisfaction and the applicant selected is the applicant who maximizes the satisfaction of the decisionmakers. The critical distinction between present theory and selection theory is that the selection decision may or may not be influenced by the probabilities of job success or other out-

comes. Selection theory is more general than present theory in that probability of job success or other outcome could be one component of overall satisfaction.

To establish the links between the postulates of selection theory and the real world of selection decisions, a selection score model was used. In effect, the model produced a range of scores for the applicants with the highest score maximizing the satisfaction of the decisionmakers. A positive correlation between selection score and satisfaction of the decisionmakers was hypothesized.

The design consisted of four separate group studies. The selection score was computed for each of the applicants in the four group studies. These selection scores were analyzed to test the postulates of selection theory. The results of this study confirmed that selection theory predicted who was selected and that selection theory predicted who was selected better than present theory.

Selection theory provides a means to rationalize and externalize the decisionmaking process for selection decisions. Therefore, various models of selection theory can be used to make selection decisions based on the satisfaction of the decisionmakers. Models of selection theory can also be used to study the decisionmaking process in relation to the psychological construct of satisfaction. Essentially, selection theory can be applied to any situation in which a subset of elements is to be selected from a larger set of similar elements.

A THEORY OF PERSONNEL SELECTION

By

Robert Dean Shoop

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Chapter 1: The Problem

Need

At present there is no theory of personnel selection that incorporates all of the major elements in personnel selection. Neither test theory nor decision theory is comprehensive enough to include a sufficient analysis of personnel selection. "Our selection programs need the support of a sound theoretical foundation--one which can stand the public scrutiny and pressures to which it is subjected. Evidence suggests that such a base does not now exist."[1]

Personnel selection is choosing an applicant from among other applicants. Some of the elements in personnel selection are the applicants, the people who make the selection decision, application blanks, and tests. These are typical of the elements usually analyzed. However, many other elements are often not even considered.

The first stage in the development of any science is the classification of elements. At first, this may be defining the elements or deciding which elements are actually to be considered. As these elements are defined and classified, the search begins for the identification and understanding of the principles that govern the interaction of those elements.

The environment of personnel selection is complex. A selection decision is often influenced by several decisionmakers with conflicting preferences for the applicant to be hired. The concept of a monolithic decisionmaking structure for the environment of personnel selection is not appropriate.

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[1]Nesta M. Gallas, "Toward a Theory of Selection", Recruitment and Selection in the Public Service, ed. J. J. Donovan (Chicago: Public Personnel Association, 1968), p. 22.

The environment of personnel selection is further complicated by the inclusion of variables other than test score. Such variables as friendship, politics, race, and sex are often very critical in the selection decision. These variables are not typically considered to be related to future job performance. However, they do influence the selection decision.

The effect of test score on a selection decision is often minimized for a variety of reasons. One example of this is the case of tests being used to screen applicants for final consideration. If the tests indicate that the group of applicants eligible for final consideration can all do the job equally well, then something must be used to make the selection decision. The selection decision is then based on a variable not necessarily related to future job performance. Another example of test score being minimized is for a decisionmaker not to give test score any weight. This decisionmaker may be influenced by variables completely unrelated to future job performance.

The use of test scores is designed to predict future job performance. The use of test scores is <u>not</u> designed to predict who will be selected or to explain why someone was selected. The field of personnel selection is lost in a maze of prediction models. The problem is how to escape the maze and discard the mental set of prediction models.

There is a need in personnel selection to be able to explain and predict phenomena. "The principal objective of a science, other than the description of empirical phenomena, is to establish, through laws and theories, general principles by means of which the empirical phenomena can be explained, accounted for, and prescribed."[1]

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[1]Warren S. Torgerson, <u>Theory and Methods of Scaling</u> (New York: John Wiley and Sons, Inc., 1958), p. 1.

If the objective of personnel selection is to make a selection decision, then there should be a greater awareness of what elements exist and how those elements influence the selection decision. Test score does influence the selection decision. However, other variables also influence the selection decision. Some of these variables are related to job performance and some of these variables are not related to job performance.

Purpose

The purpose of this study is to:

1. Generate a new theory of personnel selection.
2. Relate this theory to past theories and research findings.
3. Explicate the personnel selection process by means of the new theory.
4. Verify some major predictions.
   A. Determine if this new theory predicts which people will be selected.
   B. Determine if this new theory predicts better than present theory.

Overview

In Chapter 2, the relevant literature is reviewed. This review shows the inadequacies of present theories as they relate to personnel selection. The majority of this review is concerned with test theory and decision theory.

Following this review of the literature, a new theory of personnel selection is developed in Chapter 3. A mathematical model of the theory is presented. Components of the theory are defined by means of this mathematical model.

The design of this study is presented in Chapter 4. The Populations, Hypotheses, and Procedures are described in this chapter.

The results of this study are presented in Chapter 5. Tables are used to summarize the data. This data is the product of following Procedures in Chapter 4.

The Summary, Conclusions, and Implications for Future Research are presented in Chapter 6.

Chapter 2: Review of the Literature

Introduction

The first step in this review of the literature was to consider the services of the Educational Resources Information Center (ERIC). After looking through the Thesaurus of ERIC Descriptors, it was decided to do a computer search. The descriptors used were "personnel selection" and either "theories" or "models" or "simulation" or "systems approach." Using this strategy, 21 references were obtained from the data base. The abstracts of these references were reviewed for their relevance to a theory of personnel selection. None of these references were considered to be particularly relevant to the development of a theory of personnel selection. The titles of these references are included in the bibliography.

The next step in this review of the literature was to consider the services of Dialogue for a computer search of Psychological Abstracts. The descriptors used were "personnel selection" and either "theories" or "theory formulation" or "theory verification." Using this strategy, only four references were obtained from the data base. The abstracts of these references were reviewed for their relevance to a theory of personnel selection. This second computer search produced very little for the development of a theory of personnel selection. The titles of these references are included in the bibliography.

In conjunction with these computer searches, manual searches were also conducted for materials older than those contained in the data bases. Classical test theory and decision theory were the subjects of articles and books that came closest to a theory of personnel selection. Therefore, classical test theory and decision theory comprise this review of the literature. They also comprise the foundation of a more comprehensive theory of personnel selection.

Classical Test Theory

Classical test theory had its beginnings in the physical sciences. From the physical sciences and through experimental psychology, classical test theory came to be concerned with the accuracy of measurement. As test theory progressed, it also became concerned with the accuracy of a prediction from a test. These are the concepts of reliability and validity.

"Measurement, in psychology and elsewhere in science, begins with a procedure for identifying elements of the real world with the elements or constructs of an abstract logical system (a model) through the precise semantic definition of the basic elements of the theory."[1]

Classical test theory is based on the assumption that a person's obtained score is composed of his true score and error:

$$X = T + E$$

Three further basic assumptions are:

1. The mean of the errors is zero. $M_E = 0$
2. The error scores are uncorrelated. $r_{EE} = 0$
3. The error scores are uncorrelated with true scores. $r_{ET} = 0$

From such assumptions it can be derived that the obtained variance of a test is composed of the true variance and the error variance:

$$\sigma_X^2 = \sigma_T^2 + \sigma_E^2$$

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[1] Frederick M. Lord and Melvin R. Novick, Statistical Theories of Mental Test Scores (Reading, Massachusetts: Addison-Wesley Publishing Company, 1968), p. 16.

Reliability is then defined as the proportion of true variance to total variance:

$$r = \frac{\sigma^2_T}{\sigma^2_X}$$

"...repeated measurements of a series of objects or individuals will ordinarily show some consistency. The block of wood that was the heaviest the first time the set of blocks was weighed will tend to be among the heaviest blocks the second time, and consistency will be the rule among all the blocks of the set. The same, to a degree, will be the case for the weights of the boys in a classroom or for their performance on a test of reading comprehension. This tendency toward consistency from one set of measurements to another is called reliability."[1]

Within the general framework of classical test theory and the concepts of reliability and validity, it is worthwhile to consider the concepts of expectancy tables. This concept is related to the theoretical and practical problem of predicting future performance. Even though a test is found to be reliable, it is also important to determine how useful the test is for predicting future performance. To determine how useful a test is for predicting future performance, expectancy tables can be quite valuable.

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[1]Julian C. Stanley, "Reliability", Educational Measurement, ed. Robert L. Thorndike (Second Edition; Washington, D.C.: American Council on Education, 1971), p. 356.

"We believe that it may be of value to point out the very considerable improvement in selection efficiency which may be obtained with small correlation coefficients."[1] Having defined the problem, Taylor and Russel presented a set of tables to compare the relative selection efficiencies of particular selection situations. Given a specified selection ratio, validity coefficient of a test, and success rate of the employees without the test, the tables give the success rate if the test were used. A test is more useful if the following conditions exist:

1. validity coefficient that is relatively higher
2. selection ratio that is relatively lower
3. success ratio that is relatively closer to .5

A strongly contested issue in the prediction of future performance is clinical versus actuarial prediction. This debate is a good example of the problem of deciding which tests to use and how to score those tests. "One of the major methodological problems of clinical psychology concerns the relation between the 'clinical' and 'statistical' (or 'actuarial') methods of prediction... The problem is to predict how a person is going to behave."[2] Having defined the problem, Meehl presents the arguments in this often heated controversy. In his preface, he summarizes his thesis, "There is no convincing reason to assume that explicitly formalized mathematical rules and the clinician's creativity are equally suited for

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[1]H. C. Taylor and J. T. Russel, "The Relationships of Validity Coefficients to the Practical Effectiveness of Tests in Selection: Discussion and Tables", Journal of Applied Psychology, XXXIII, No. 5 (1939), 571.

[2]Paul E. Meehl, Clinical versus statistical prediction; a theoretical analysis and a review of the evidence (Minneapolis: University of Minnesota Press, 1954), p. 3.

any given kind of task, or that their comparative effectiveness is the same for different tasks. Current clinical practice should be much more critically examined with this in mind than it has been."[1]

Classical test theory has contributed much to the scientific use of psychological tests. Furthermore, it has stood up very well under more modern mathematical and statistical analyses. However, a comprehensive analysis of personnel selection must consider more than the concepts of reliability and validity.

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[1] Ibid., vi.

Decision Theory

"Psychologists, economists, political scientists, educational administrative theorists, and others have been studying the whole process of decision making and have built various models describing how people should make decisions. Although these models vary somewhat in detail, they have several things in common.

1. Decision making is defined as the act of choosing among various courses of action or their alternatives.
2. Each alternative (or course of action) has several possible outcomes.
3. Each outcome has, at least theoretically, some given probability (chance) of occurrence.
4. Each outcome has a certain utility value (or desirability).
5. The expected utility value (or desirability) of each alternative in the decision making process can be obtained by considering the probabilities and utilities of all the possible outcomes for each alternative.
6. The alternative with the highest expected utility value should be then chosen."[1]

Essentially, decision theory is concerned with decision making in the face of uncertainty. This uncertainty is that of not knowing which outcome will occur. Therefore, the focus of attention is on the possible outcomes of a decision.

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[1]William A. Mehrens and Irvin J. Lehman, Measurement and Evaluation in Education and Psychology (New York: Holt, Rinehart and Winston, Inc. 1973), p. 4.

"The personnel manager wishes to know whom to hire; ...It is therefore desirable that a theory of test construction and use consider how tests can best serve in making decisions. Little of present test theory, however, takes this view. Instead, the test is conceived as a measuring instrument, and test theory is directed primarily toward the study of accuracy of measurement on a continuous scale."[1]

The original edition of Psychological Tests and Personnel Decisions was first published in monograph form in 1957. It was a pioneering work and it is rapidly becoming a classic in the field of psychological tests. It represents an effort to apply statistical decision theory to personnel decisions. While classical test theory is primarily concerned with the accuracy of measurement, decision theory as applied to psychological tests is primarily concerned with using the test(s) to make a personnel decision.

As Cronbach and Gleser consider decision theory in relation to test theory, they go far beyond adding the concept of validity to the concept of reliability. They also consider the cost of testing and the utility of the set of decisions. Utility is determined by adding the expected payoff for each score, weighted by the probability of that score and subtracting the cost of gathering the information. The result is a measure for determining the optimum strategy.

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[1]Lee J. Cronbach and Goldine C. Gleser, Psychological Tests and Personnel Decisions (Second Edition; Urbana, Illinois; University of Illinois Press, 1965), p. 1.

"If we know the distribution of scores y_i in the population tested, the expected net utility for a large number of decisions is determined simply by adding the expected payoff for each y_i, weighted by the probability of that score. This can be stated algebraically, using the following symbols:

U = utility of the set of decisions

N = the number of persons about whom decisions are made

y = information category

t = treatment

c = outcome

e_c = value of outcome

C_y = cost of gathering information

$$U = N \sum_y p_y \sum_t p_{t/y} \sum_c p_{c/yt} e_c - N \sum_y p_y C_y.$$

The p_y describe the assumed y distribution, the $p_{t/y}$ are the entries of the strategy matrix, and the $p_{c/yt}$ are the entries of the validity matrix. C_y may or may not vary from score to score. Whatever strategy gives the greatest value of U is to be preferred."[1]

A very major problem in using decision theory is that, "The assignment of values to outcomes is the Achilles' heel of decision theory. Once outcomes have been evaluated, one can proceed in a fully rigorous fashion to compare particular decisions or general strategies. The evaluation of outcomes, however, seems often to be arbitrary and subjective, leading

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[1] Ibid., 24.

one to question whether any of the conclusions from decision theory can be trustworthy if the starting point itself is open to dispute."[1] Furthermore, this problem becomes especially critical as the number of similar decisions approaches zero.

In terms of using decision theory as a theoretical framework for personnel selection, there is even a more basic problem. Decision theory assumes that there are several possible outcomes for each alternative and that each outcome has a certain utility value. However, variables such as race, sex, friendship, and political influence could not always be considered as tests but they are variables that exist in the personnel selection process. There really is no utility value to be associated with each outcome because the outcomes might not even be considered in the personnel selection process. This basic problem exists if utility values are to be determined on an empirical or even a subjective basis. For example, a person could choose a friend for the job with absolutely no consideration of later job performance or any other outcome.

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[1] Ibid., 121.

Summary

Each theory has its own particular goals and objectives. Also, each theory emphasizes certain considerations at the expense of other considerations. Certain aspects of classical test theory and decision theory were reviewed for their application to a theory of personnel selection. They were considered to be useful as a starting point or foundation.

Classical test theory was found to be primarily concerned with the accuracy of measurement or prediction. Decision theory was found to be primarily concerned with maximizing the utility of a personnel decision in terms of the possible outcomes. A further assumption of both classical test theory and decision theory is that the person with the higher test score should be selected. Even though decision theory is concerned with maximizing utility, the persons to be selected are still the ones with the highest scores on the test that is used.

Each of these theories meets many of its own particular goals and objectives for those psychological phenomena that it considers. For a theory of personnel selection, they are useful as far as they go. However, a comprehensive theory of personnel selection must consider many other variables. These variables include age, friendship, marital status, political affiliation, race, residence, sex, military status, and many others. These variables may or may not be related to future performance.

Chapter 3: Development of Selection Theory

Introduction

Selection theory is based on the premise that there is more to personnel selection than accuracy of measurement or evaluating alternatives regarding their outcomes. If a theory of personnel selection is to explain why someone was selected or to predict who will be selected, then there must be more. There must be included those variables that influence the personnel selection process.

Test theory and decision theory provide a means to determine who "should" be selected. This "should" refers to who will do best on the job. However, it is often the case that the people involved in making a personnel selection decision are not very concerned with how well a selectee will perform on the job. If they are concerned with how well a selectee will perform on the job, this consideration might be only one of many other considerations.

Selection theory is more general than either test theory or decision theory in relation to personnel selection. The accuracy of measurement and utility of a decision are components within the larger framework of a more comprehensive theory of personnel selection.

Selection theory is designed to handle both "should" and reality. If success on the job maximizes the satisfaction of the decisionmakers, then the person who is most likely to succeed will probably be selected. If something else or a combination of other things maximizes the satisfaction of the decisionmakers, then the selection will be influenced in that direction.

Selection Theory

The postulates of selection theory are:

1. Personnel selection occurs within a finite set of applicants and decisionmakers.
2. Associated with each applicant in the set is an index of satisfaction of the decisionmakers.
3. The applicant selected is the applicant who maximizes the satisfaction of the decisionmakers.

The critical distinction between present theory and selection theory is not that it encompasses more variables. The critical distinction is that the selection decision may or may not be influenced by the probabilities of job success or other outcomes. The important factor in selection theory is the satisfaction of the decisionmakers.

Satisfaction is the degree to which an applicant meets the requirements of the decisionmakers. In selection theory, this satisfaction of the decisionmakers is related to the selection decision:

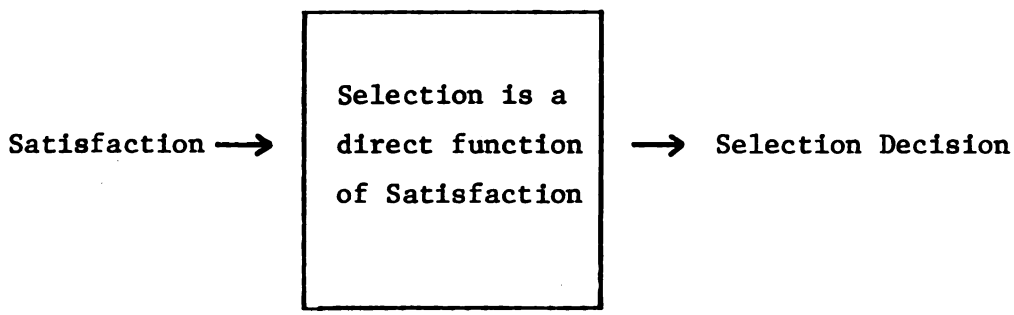

Figure 3.1 Correspondence of satisfaction and selection decision.

If an applicant meets the requirements of the decisionmakers to a relatively low degree, then his chances of being selected are relatively low. As defined, there is a positive correlation between the construct of satisfaction and the actual selection decision.

A Basic Model

To establish the links between the construct of satisfaction (theory) and the selection decision (real world), a model is used. The postulates of selection theory must somehow be empirically tested. The linear model used in this study is selection score:

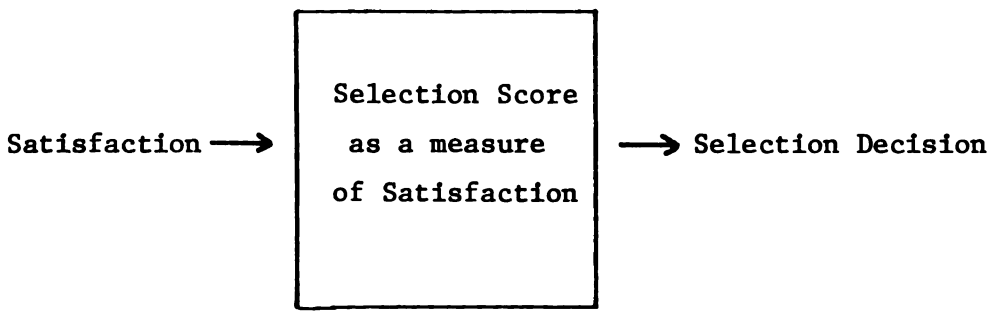

Figure 3.2 Correspondence of satisfaction, selection score, and selection decision.

The person with the highest selection score is the one who would be selected. In effect, the model produces a range of scores with the highest score maximizing the satisfaction of the decisionmakers. That is, the higher the selection score is, the higher the satisfaction of the decisionmakers. As defined, there is a positive correlation between selection score and satisfaction of the decisionmakers.

More specifically, the components of this model are:

$$S(k) = \sum_{i}\sum_{j} W(i)\, W(ij)\, V(ijk) + E$$

$S(k)$ = selection score for applicant k

$W(i)$ = weight for decisionmaker i

$W(ij)$ = preference weight that decisionmaker i gives to variable j

$V(ijk)$ = point value that decisionmaker i gives to k^{th} applicant on variable j

E = error

A decisionmaker is considered to be any person who has an influence on a particular personnel selection decision. Each decisionmaker has a weight proportional to the amount of influence he exerts on the decision. The possible determination of the weights for the decisionmakers of a given situation are:

1. Ask the chief administrator for the decisionmakers and their respective weights.
2. Ask each decisionmaker what he thinks his weight is.
3. Ask each decisionmaker what he thinks the weights of all the other decisionmakers are.
4. Have a researcher, administrative analyst, or some such person analyze the situation to set the weights.
5. Compute or estimate all other parts of the basic formula and then solve for W(i) using multiple regression. The W(i) will come out as the beta weights for this technique.
6. Use various averages and/or combinations of 1-5.

The choice of variables and their respective weights are at the discretion of each decisionmaker. A variable can be anything that science has been able to quantify. The variable could be a true/false test item, a multiple choice test item, racial category, or just about anything. Interactions of variables can be handled as they are in multiple regression techniques by the combination of those variables into a composite variable. The point values for the ranges and categories within a variable are at the discretion of each decisionmaker.

Each particular selection situation has a set of weights for the decisionmakers. The weights of the decisionmakers sum to 1. Each decisionmaker has a set of weights for the variables. These weights sum to 1. Each weight is positive. The point values for the ranges and categories within a variable sum to 1. Each point value is positive. All of these variables range from 0 to 1. There is no need for negative weights in this model. For example, a negative weight for a college education can be handled by giving higher point values to categories of less than a college education. The result of using this model is a selection score S(k) for each person.

Example

A supervisor and a personnel director are involved in selecting an entry level filing clerk. The weights of the decisionmakers are:

W(i)	Supervisor	.7
	Personnel Director	.3

The preference weights that the decisionmakers give to the variables are:

		Supervisor	Personnel Director
W(ij)	Race	.1	.9
	Sex	.5	.1
	High School Graduate	.4	0

The point values that the decisionmakers give to the categories within the variables are:

			Supervisor	Personnel Director
V(ijk)	Race	Non-white	0	1
		White	1	0
	Sex	Female	1	0
		Male	0	1
	High School Graduate	No	0	*
		Yes	1	*

*No preference weight W(ij) given to that variable by the personnel director.

These weights and point values were arbitrarily assigned solely for the purposes of this example. In actual practice, these weights and point values are determined through various data gathering techniques. The point values in this example were restricted to 0 or 1 for emphasis and clarity. In actual practice, these point values range from 0 to 1.

Listed below are the applicants in this example and their respective selection scores S(k):

1.	Non-White	Female	Not High School Graduate	S(1) = .62
2.	Non-White	Female	High School Graduate	S(2) = .90
3.	Non-White	Male	Not High School Graduate	S(3) = .30
4.	Non-White	Male	High School Graduate	S(4) = .58
5.	White	Male	Not High School Graduate	S(5) = .10
6.	White	Male	High School Graduate	S(6) = .38
7.	White	Female	Not High School Graduate	S(7) = .42
8.	White	Female	High School Graduate	S(8) = .70

The person selected was non-white, female, and a high school graduate. The selection score S(k) for this person was .90. The person least likely to be selected was white, male, and not a high school graduate. The selection score S(k) for this person was .10. These selection scores were computed by using the basic model and the decisionmaker weights W(i), preference weights W(ij), and point values V(ijk) in the example.

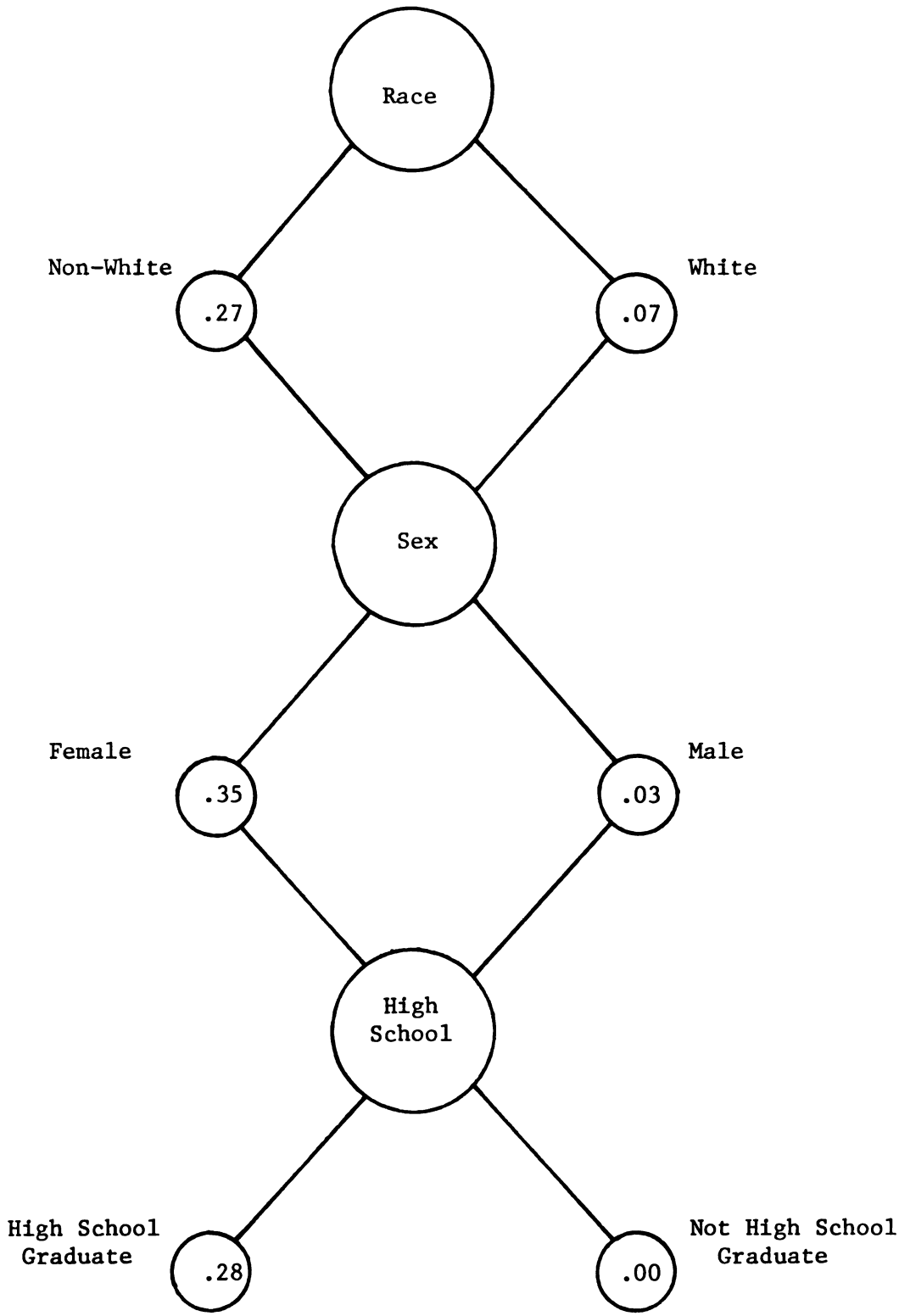

Figure 3.3 Analysis of selection scores in the example.

By tracing down the tree structure in Figure 3.3, the selection score of each applicant can be determined. The values in the branches of the tree structure were obtained by using the basic model and summing over the decisionmaker weights W(i) and their preference weights W(ij) for a single category rather than for an applicant. For example, the non-white result was obtained by .7 (W(i) of supervisor) x .1 (W(ij) of supervisor) x 0 (V(ijk) of supervisor) + .3 (W(i) of personnel director) x .9 (W(ij) of personnel director) x 1 (V(ijk) of personnel director). Actually, this was one third of the computations for an applicant's selection score S(k) as there were three variables.

It is interesting to note the hypothetical combination of variables in the branches of the tree structure. Since the actual weight of a variable is a function of the variance of its components, sex is the most important variable in the example. High school is second and race is third.

In this example, the lowest possible selection score is .10. Applicant E (White, Male, Not High School Graduate) has this selection score. For an applicant to obtain a selection score of .00, there would have to be a .00 branch for each variable in the tree structure. In effect, such an applicant would meet none of the stated requirements for any of the decisionmakers.

In this example, the highest possible selection score is .90. Applicant B (Non-White, Female, High School Graduate) has this selection score. For an applicant to obtain a selection score of 1.00, there would have to be a branch that included all of the possible points for each variable in the tree structure. That is, each of the other branches would have to be .00. In effect, such an applicant would meet all of the stated requirements for all of the decisionmakers.

Summary

Selection theory for choosing an applicant from a set of applicants was presented. The important factor in selection theory is the satisfaction of the decisionmakers. The satisfaction of the decisionmakers may or may not be influenced by the probabilities of job success.

Selection theory was proposed to be more general than either classical test theory or decision theory for the field of personnel selection. That is, classical test theory and decision theory can be considered as components of selection theory for decisionmaking in choosing an applicant from a set of applicants.

A mathematical model of the theory was presented and components of the theory were defined by means of this mathematical model. A simple example was given to illustrate the model. The result of using this model was a selection score S(k) for each person that ranged from 0 to 1. The higher the selection score S(k), the more likely a person was to be selected.

The model of selection score was used as a link between the postulates of selection theory and the real world of actual selection decisions. However, the model is only one of many others that could have been used. The main item of interest is the theory and not the model that is used to test the theory.

Chapter 4: Design of the Study

Introduction

The purpose of the design is to test some major predictions of selection theory. These predictions are that this theory could predict which people would be selected and that this theory could predict better than present theory.

The basic approach taken is that of four separate group studies. Each group is considered to determine if the above predictions hold for that particular group. The selection score S(k) is computed for each of the applicants in the four group studies. S(k) is then compared with those applicants who were actually selected to test the above predictions.

This study considers population values of the four separate group studies. No attempt is made to consider these values as samples from a larger population. As theory formulation and theory verification progress, better definitions of samples and populations in the field of personnel selection will evolve. However, adequate definitions of samples and populations do not presently exist. Therefore, the application of inferential statistics would neither be appropriate nor meaningful.

The variables used in this study were age, college status, marital status, residence, sex, test score, and military status. Information on these variables was available from the application form of the Missouri Personnel Division. While other variables could have helped to further reduce the error component in the basic model, information on these other variables was not available for all applicants. Therefore, some of the error component for the basic model in this study was due to the exclusion of other variables such as friendship, political influence, and race.

Populations

The four group studies were on the Caseworker, Clerk I, Employment Service Technician, and Hospital Attendant I job classifications of the Missouri Personnel Division. See Appendix A for the specifications of these job classifications. These were State of Missouri job classifications that were within the state merit system.

These job classifications were chosen because of their size. Computing S(k) on a larger number of applicants and selectees reduced the effect of the error component in the model. These job classifications were also chosen to represent relatively different types of job classifications.

Within each job classification, a specific selection situation was chosen that best met the following criteria:

1. sufficient number of selectees
2. cooperation of decisionmakers
3. cooperation of personnel director
4. minimal turnover of decisionmakers
5. availability of information to compute S(k)

Table 4.1 shows some of the characteristics of the four selection situations that were chosen. A person selected was defined as a person who was appointed to a position. A person not selected was defined as a person who was considered for the vacancy and was not appointed. Excluded from both of these definitions were those people who during the final period of consideration, either decided not to appear for the hiring interview or decided not to accept the job offer.

The process of personnel selection for a state agency is to request a certificate of eligibles from the Missouri Personnel Division. This

Table 4.1 Characteristics of selection situations.

	Caseworker	Clerk I	Employment Service Technician	Hospital Attendant I
Number Selected	6	13	12	50
Number Not Selected	10	15	14	8
Number of Decisionmakers	1	4	2	1

certificate of eligibles includes the applicants for a particular job vacancy. These applicants are in rank order by test score and the state agency must choose one of the top applicants who is willing to accept that particular job. Prior to May 2, 1974, the state agency had to choose one of the top three applicants. On May 2, 1974, this was expanded to allow the state agency to choose one of the top five applicants.

The Caseworker selection situation encompassed all those selected between November, 1973 and September, 1974. The Clerk I encompassed all those selected between February, 1972 and September, 1974. The Employment Service Technician encompassed all those selected between July, 1972 and November, 1974. The Hospital Attendant I encompassed all those selected between October, 1974 and December, 1974.

Hypotheses

To test whether or not this theory of personnel selection predicted who was selected, it was proposed that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0, 1) would be greater than zero.

To test whether or not this theory of personnel selection predicted who was selected better than present theory, it was proposed that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0, 1) would be greater than the point-biserial correlation coefficient between test score and not selected, selected (0, 1).

The first of these two hypotheses is relatively direct and needs no further justification. The second of these two hypotheses is based on the assumption of test theory and decision theory that the person with the highest test score should be selected. In effect, personnel agencies are informally using a combination of test theory and decision theory in their use of tests to place applicants in rank order. Given the constraints of time and resources, personnel agencies use the best tests available to predict future job performance.

Procedures

The following steps were taken:

1. Four separate selection situations were chosen according to the criteria listed in the section on the populations. The personnel director of these state agencies was contacted to identify the possible decisionmakers.
2. A structured interview was given to each of the possible decisionmakers. The primary structure of this interview was the questionnaire included on the following page. After a short explanation that this was a research project on personnel selection and that the responses were completely confidential, this questionnaire was presented to the decisionmaker. The first question was used to determine the weights of the decisionmakers. The decisionmaker weights W(i) were determined from the estimates of each of the decisionmakers. If the result was not equal to one, each decisionmaker weight was divided by the total of the decisionmaker weights so that the decisionmaker weights W(i) summed to 1 for each situation. The second question was used to determine the preference weights W(ij) that the decisionmakers gave to each of the variables and the point values V(ijk) that the decisionmakers gave to the ranges and categories within those variables.
3. The selection score S(k) was computed for each person in each selection situation.
4. For each selection situation, a point-biserial correlation coefficient was computed between S(k) and not selected, selected

Group Number _____

I. As a decisionmaker, what percentage of the decision do you feel you actually have in hiring this employee? _____

II.	Percentage of Importance	Point Values					Total
Age	_____	18 - 25 _____	26 - 33 _____	34 - 41 _____	42 - 49 _____	50 or over _____	100
College Student	_____	No college _____	Some college _____	College graduate _____			100
Marital Status	_____	Single _____	Married _____	Divorced _____	Widowed _____	Separated _____	100
Residence	_____	City resident _____	County resident _____	State resident _____			100
Sex	_____	Male _____	Female _____				100
Test Score	_____	70 - 75 _____	76 - 81 _____	82 - 87 _____	88 - 93 _____	94 or over _____	100
Veteran	_____	Yes _____	No _____				100

Total 100%

(0, 1). For each selection situation, a point-biserial correlation coefficient was computed between test score and not selected, selected (0, 1).

5. A reliability estimate was made of the decisionmaker weights W(i), the preference weights W(ij), and the point values V(ijk) by the test-retest method. The period of time between the first and second questionnaires was two months.
6. The data was analyzed to determine if the major predictions of the study were correct.

Summary

Four group studies were conducted within the Caseworker, Clerk I, Employment Service Technician, and Hospital Attendant I job classifications of the Missouri Personnel Division. Selection scores S(k) were computed for each selection situation.

For each selection situation, point-biserial correlation coefficients were computed between selection score S(k) and not selected, selected (0, 1) and between test score and not selected, selected (0, 1). These point-biserial correlation coefficients were analyzed to determine if the major predictions of the study were correct.

Chapter 5: Analysis of Results

Introduction

The results presented and analyzed in this chapter are the product of the design in the preceding chapter. Data was first collected for the selection situation on the Clerk I. This proceeded very smoothly and data was then collected for the Employment Service Technician, Caseworker, and Hospital Attendant I selection situations.

The cooperation of the Personnel Directors and the decisionmakers was very good. The decisionmakers were assured of the confidentiality of their responses and this encouraged them to discuss their hiring preferences. This cooperation was particularly significant for the collection of data in politically and legally sensitive areas.

The questionnaire was easily understood and it provided a useful structure for the interview. This questionnaire provided a means of uniformly determining the decisionmaker weights W(i), preference weights W(ij), point values V(ijk), and the test-retest reliabilities for each selection situation.

Results

For the Caseworker and Hospital Attendant I selection situations, there was only one decisionmaker. Therefore, the weight of each of these decisionmakers W(i) for their respective selection situations was 1. For the Clerk I, there were four decisionmakers. The weights of these decisionmakers were .25, .15, .75, and .50. These weights summed to 1.65 and each weight was divided by 1.65 so that the weights summed to 1. The converted weights were .15, .09, .45, and .30 respectively. For the Employment Service Technician, there were two decisionmakers. The weights of these decisionmakers were .90 and .40. These weights summed to 1.30 and each weight was divided by 1.30 so that the weights summed to 1. The converted weights were .69 and .31 respectively.

The decisionmaker for the Caseworker selection situation was the county director of a county welfare office. The decisionmaker for the Hospital Attendant I was the director of nursing for a mental institution. The decisionmakers for the Clerk I were the personnel director, bureau chief, section head, and unit head for a large office. The decisionmakers for the Employment Service Technician were the director and assistant director of a county Employment Security office.

Table 5.1 shows the preference weights W(ij) that the decisionmakers gave to each variable in the four selection situations. For the Clerk I and Employment Service Technician a weighted average is listed in the table. This weighted average was based on the weight of each respective decisionmaker. The Average listed in the last column of the table is a simple average of the four selection situations.

Table 5.1 Relative importance of variables as described by decisionmakers.

	Caseworker	Clerk I	Employment Service Technician	Hospital Attendant I	Average
Age	.15	.18	.19	.30	.20
College Student	.30	.05	.39	.10	.21
Marital Status	.05	.07	.07	.10	.07
Residence	.10	.08	.17	.20	.14
Sex	.10	.06	.00	.30	.12
Test Score	.25	.51	.08	.00	.21
Veteran	.05	.05	.10	.00	.05

For the Caseworker selection situation the one decisionmaker gave test score a weight of .25. For the Clerk I the four decisionmakers gave test score an average weight of .51. For the Employment Service Technician the two decisionmakers gave test score an average weight of .08. For the Hospital Attendant I the one decisionmaker gave test score a weight of .00. The overall average weight for test score in the four selection situations was .21.

Figure 5.1 graphically shows the point values V(ijk) that the decisionmakers gave to the five score ranges within the variable of test score. For example, the decisionmaker in the Caseworker selection situation gave point values of .10, .15, .20, .25, and .30 to the score ranges 70-75, 76-81, 82-87, 88-93, and 94 or over, respectively. There was a perfect, positive correlation between point value and score range. The other three selection situations had somewhat different relationships as depicted in the graphs.

The actual point values V(ijk) for the ranges and categories of each of the variables in the four selection situations are included in Appen-

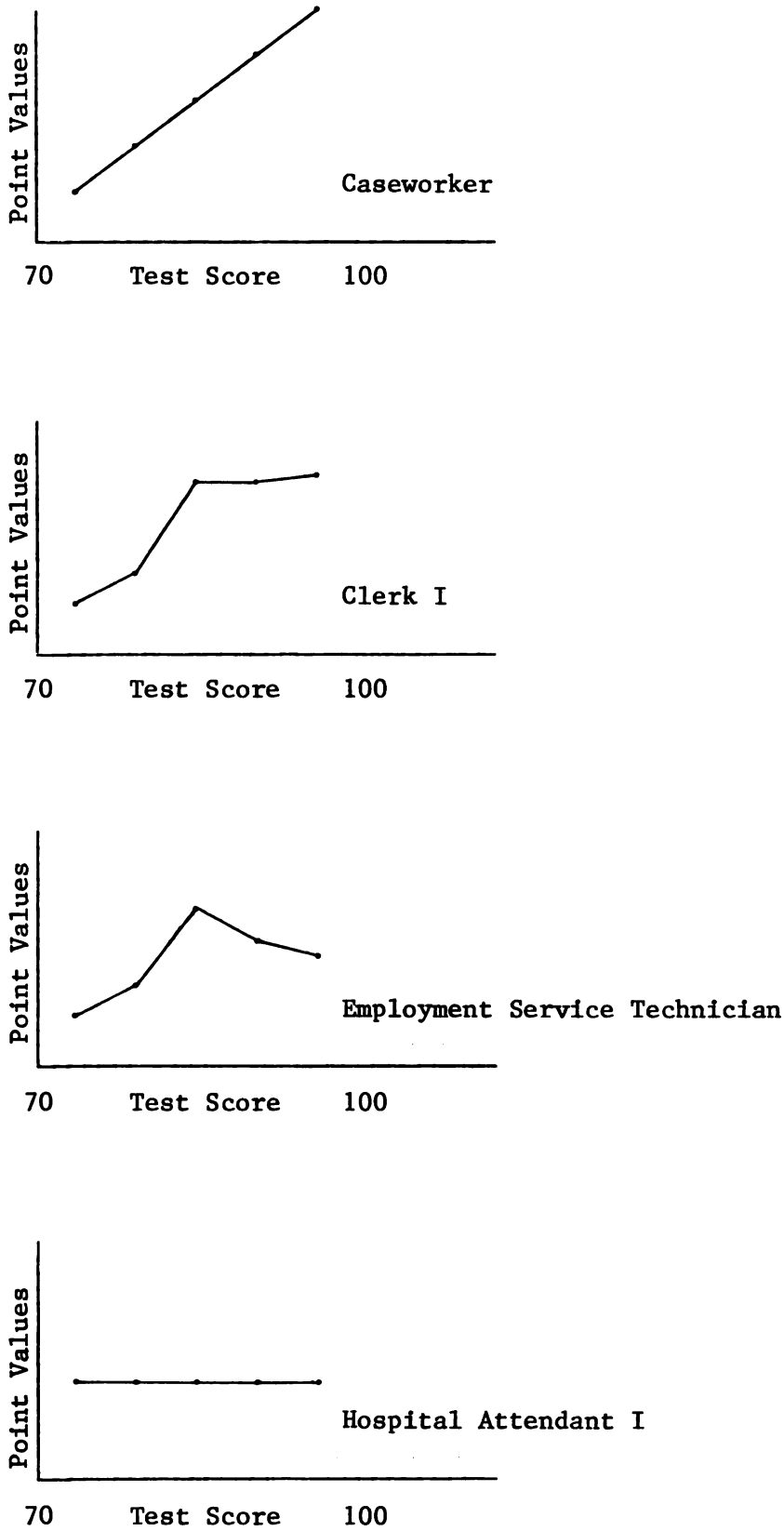

Figure 5.1 Point values V(ijk) for score ranges within test score.

Table 5.2 Test-retest reliabilities of weights of decisionmakers W(i).

Caseworker	Clerk I	Employment Service Technician	Hospital Attendant I
1.00	1.00	1.00	1.00

dix B. For the Clerk I and Employment Service Technician selection situations the point values listed are a weighted average of the decisionmakers who gave that particular variable a weight greater than 0. No point values were determined for those variables that were given a weight of 0.

Tables 5.2, 5.3, and 5.4 show the test-retest reliabilities for W(i), W(ij), and V(ijk). These reliabilities are Spearman rank-order correlation coefficients between the first and second questionnaires. The reliabilities for Caseworker and Hospital Attendant I in Table 5.2 are listed as 1.00 even though there was only one decisionmaker for each selection situation. Each decisionmaker in these selection situations made the statement on the first and second questionnaires that they were the only decisionmaker.

Table 5.3 Test-retest reliabilities of preference weights given to variables by the decisionmakers W(ij).

	Caseworker	Clerk I				Employment Service Technician		Hospital Attendant I
Decisionmaker	1	1	2	3	4	1	2	1
	.94	.88	.86	.11	.86	.79	.24	.94

The information in Table 5.4 is complicated by some of the decisionmakers only giving weight to a particular variable on one of the questionnaires. If a decisionmaker did not give any weight to a variable, it would not have been logical to then ask the decisionmaker for his choice of point values V(ijk) within that variable. This situation is identified

by a single asterisk. A double asterisk identified those situations in which a decisionmaker chose not to give any weight to that variable on both of the questionnaires. This double asterisk actually identified a very reliable situation.

Table 5.4 Test-retest reliabilities of point values given by the decisionmakers V(ijk).

	Caseworker	Clerk I				Employment Service Technician		Hospital Attendant I
Decisionmaker	1	1	2	3	4	1	2	1
Age	.90	.98	.90	.90	1.00	.90	.93	.83
College Student	1.00	**	**	1.00	.88	1.00	1.00	*
Marital Status	.78	**	*	.75	**	.93	*	.83
Residence	1.00	1.00	*	1.00	*	1.00	1.00	1.00
Sex	1.00	1.00	**	1.00	**	**	*	1.00
Test Score	1.00	1.00	1.00	.95	1.00	.79	.93	**
Veteran	1.00	**	**	1.00	**	1.00	1.00	**

*Weight not given to that variable for one questionnaire.

**Weight not given to that variable for both questionnaires.

Table 5.5 shows the point-biserial correlation coefficients between test score and not selected, selected (0,1) and the point-biserial correlation coefficients between selection score S(k) and not selected, selected (0,1) for each selection situation and the overall average. The Average in the last column is the simple average of the four selection situations.

Table 5.5 Point-biserial correlation coefficients for relationship with selection decision.

	Caseworker	Clerk I	Employment Service Technician	Hospital Attendant I	Average
Test score	-.07	-.07	-.04	.10	-.02
Selection score	.24	.25	.00	.10	.15

The first hypothesis of this study was that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0,1) would be greater than zero. This hypothesis was correct for three out of the four selection situations. This hypothesis was also correct for the average of the four situations.

The second hypothesis of this study was that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0,1) would be greater than the point-biserial correlation coefficient between test score and not selected, selected (0,1). This hypothesis was correct for three out of the four selection situations. This hypothesis was also correct for the average of the four situations.

The above results are discussed in the next section. The overall, positive results of the study are considered and explanations are suggested for occurrences such as the .00 correlation coefficient for Employment Service Technician.

Discussion

The weights of the decisionmakers were very stable over a period of time. This period of time was approximately two months for each decisionmaker. Each selection situation produced test-retest reliabilities for decisionmaker weights W(i) of 1.00. This indicates that the decisionmakers were consistent in their estimates of the decisionmaker weights. However, there were considerable overestimates of influence for the two selection situations having more than one decisionmaker. This indicates that the decisionmakers were not aware of their absolute amount of influence in the selection decision for these two selection situations.

The preference weights W(ij) that the decisionmakers gave to the variables were not as stable over a period of time as were the weights of the decisionmakers. This was especially true for one of the decisionmakers for the Clerk I and one of the decisionmakers for the Employment Service Technician. The other decisionmaker for the Employment Service Technician was also not very reliable in the assignment of weights to the variables. However, the overall reliabilities in three out of the four selection situations was quite high.

The point values that the decisionmakers gave to the ranges and categories within the variables were quite stable. The only variable in which point values fluctuated very much was Marital Status. Two of the decisionmakers also changed their mind about whether to give this variable any weight. Overall, there was an indication that the decisionmakers were consistently aware of their point values V(ijk) for different ranges and categories within the variables.

The consistency of the responses for W(i), W(ij), and V(ijk) indicates that these quantities exist as measurable phenomena. There was an adequate,

reliable base on which to analyze the validity of the basic model and the subsequent generation of the selection scores.

Table 5.1 dramatically shows that there was more to personnel selection in these four selection situations than test score. Test score had an overall average weight of .21. The total of the other variables had an overall average weight of .79. This is almost a 4:1 ratio in favor of the other variables. If more variables had been included in the study, this ratio could have been even larger. The results in this table support the theory of personnel selection as put forth in Chapter 3 of this study.

Three out of the four selection situations support the hypothesis that this theory predicts which people will be selected. The selection situation that does not support this theory is the Employment Service Technician. A post hoc analysis of the selection situation shows why this might have happened. The following are more specific characteristics of the Employment Service Technician selection situation:

1. The diversity of job duties was greater than any of the other three selection situations.

2. The average reliabilities of W(ij) were lower than any of the other three selection situations.

3. The decisionmakers stated that there had been an evolution of criteria over the past three years. The major criteria of a few years ago were no longer the major criteria today.

4. The decisionmakers stated that there were other more important variables than those in the questionnaire. One of these variables was ability to get along with others in the office.

Three out of the four selection situations support the hypothesis that this theory predicts better than present theory which people will be selected. The selection situation that does not support this theory is

the Hospital Attendant I. A post hoc analysis of the selection situation shows why this might have happened.

The decisionmaker for the Hospital Attendant I stated that test score had no influence on the selection decision. Therefore, applicants were considered in order of their appearance on the employment list. This order was supported by the rules of the Personnel Division that they must choose someone from the top five. Since the order of applicants on the employment list was by test score, there would be some relationship between test score and selection decision. It is important to note that had the decisionmaker given any weight at all to test score, the correlation coefficient between selection score S(k) and the selection decision would have been greater than the correlation coefficient between test score and the selection decision. This is true because the correlation coefficient between test score and the selection decision and the correlation coefficient between selection score and the selection decision are both positive, while there is less than a perfect, positive correlation between test score and selection score.

Summary

Table 5.6 shows how each of the hypotheses were supported by the data in this study. Hypothesis 1 was that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0,1) would be greater than zero. Hypothesis 2 was that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0,1) would be greater than the point-biserial correlation coefficient between test score and not selected, selected (0,1). A plus

Table 5.6 Outcome of Hypotheses

	Caseworker	Clerk I	Employment Service Technician	Hospital Attendant I	Average
Hypothesis 1	+	+	=	+	+
Hypothesis 2	+	+	+	=	+

sign indicates that the hypothesis was supported. An equal sign indicates that the hypothesis was not supported (zero results). There were no reversals in the data for the hypotheses of the study. It is particularly important to note that the overall average supports both of the hypotheses.

Chapter 6: Summary and Conclusions

Summary

The use value of a comprehensive theory of personnel selection is significant. There is a need in personnel selection to be able to explain and predict phenomena. At present, there is no theory of personnel selection that incorporates all of the major elements in the personnel selection system. Neither test theory nor decision theory is comprehensive enough to include a sufficient analysis of the personnel selection system.

The purpose of this study was to:

1. Generate a new theory of personnel selection.
2. Relate this theory to past theories and research findings.
3. Explicate the personnel selection process by means of the new theory.
4. Verify some major predictions.
   A. Determine if this new theory predicted which people would be selected.
   B. Determine if this new theory predicted better than present theory.

Certain aspects of classical test theory and decision theory were reviewed for their application to a theory of personnel selection. Classical test theory was found to be primarily concerned with the accuracy of measurement or prediction. Decision theory was found to be primarily concerned with maximizing the utility of a personnel decision in terms of the possible outcomes.

The theory of personnel selection presented in this study was based on the premise that there was more to personnel selection than accuracy of measurement or evaluating alternatives regarding their outcomes. If

a theory of personnel selection was to explain why someone had been selected or to predict who would be selected, then there had to be more. Those variables had to be included that influenced the personnel selection process.

The postulates of this theory of personnel selection were:

1. Personnel selection occurs within a finite set of applicants and decisionmakers.
2. Associated with each applicant in the set is an index of satisfaction.
3. The applicant selected is the applicant who maximizes the satisfaction of the decisionmakers.

The basic model for the theory of personnel selection that a person is selected when the satisfaction of the decisionmakers is maximized was:

$$S(k) = \sum_{i}\sum_{j} W(i)\, W(ij)\, V(ijk) + E$$

$S(k)$ = selection score for person k

$W(i)$ = weight for decisionmaker i

$W(ij)$ = weight that decisionmaker i gives to variable j

$V(ijk)$ = points that decisionmaker i gives to k^{th} person on variable j

E = error

The person with the highest score is the one who would be selected. In effect, the model produces a range of scores with the highest score maximizing the satisfaction of the decisionmakers. That is, the higher the selection score is, the higher the satisfaction of the decisionmakers.

As defined, there is a positive correlation between selection score and satisfaction of the decisionmakers.

The approach taken was that of four separate group studies. The selection score S(k) was computed for each of the applicants in the four group studies. S(k) was then compared with those applicants who were actually selected to test the following hypotheses:

1. To test whether or not this theory of personnel selection predicted who was selected, it was proposed that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0,1) would be greater than zero.
2. To test whether or not this theory of personnel selection predicted who was selected better than present theory, it was proposed that the point-biserial correlation coefficient between selection score S(k) and not selected, selected (0,1) would be greater than the point-biserial correlation coefficient between test score and not selected, selected (0,1).

The first hypothesis was correct for three out of the four selection situations. The first hypothesis was also correct for the average of the four situations. The second hypothesis was correct for three out of the four selection situations. The second hypothesis was also correct for the average of the four situations.

Conclusions

The conclusions in this study are:

1. There is a need in personnel selection to be able to explain and predict phenomena.
2. The theory of personnel selection presented in this study predicted which people would be selected.
3. The theory of personnel selection presented in this study predicted better than present theory.
4. The theory of personnel selection presented in this study was able to explain and predict phenomena in the field of personnel selection.

Implications for Future Development

Selection theory provides a means to rationalize and externalize the decisionmaking process for selection decisions. Therefore, various models of selection theory can be used to make selection decisions based on the satisfaction of the decisionmakers. There are many selection situations that presently exist in which variables unrelated to future performance play a very major role. One example is the selection of applicants for medical school. There are mounting pressures to increase the proportion of minorities and women of those applicants selected for admission. If the decisionmakers attempt to achieve this objective by the use of traditional prediction models, they are doomed to failure. If the decisionmakers use an unstructured conglomeration of poorly defined procedures, the result is confusion and frustration. A logical and rational alternative is to use a model based on selection theory.

Various models of selection theory can also be used to study the decisionmaking process from a behavioral or psychological viewpoint. Prediction models are based on a combination of statistics and economics. Selection theory is based on the psychological construct of satisfaction of the decisionmakers. Classical test theory and decision theory are prescriptive theories. These theories state which applicants should be selected. Selection theory is not a prescriptive theory. This theory predicts which applicants will actually be selected. If the decision-making process is to be realistically studied, then prescriptive theories are not appropriate. How can a determination be made of the variables involved in decisionmaking if the basic premise of how decisions are made is wrong?

There are many areas of inquiry related to selection that could benefit from a new perspective of general satisfaction instead of a perspective based on outcome. Essentially, selection theory can be applied to any situation in which a subset of elements is to be selected from a larger set of similar elements.

Appendix A

CASEWORKER
(Social Services)
(Public Assistance)

DEFINITION

This is entry-level professional social service work in the area of public welfare.

Employees of this class are responsible for providing preventive and elementary protective social services to public welfare clients, including children, adults and the aged. More difficult cases are referred to social service personnel of higher rank. Work may involve as a primary assignment the determination of initial and continuing eligibility for recipients of aid to dependent children, general relief, food stamps, medical assistance and other public assistance categories and appropriate referral to social service or other community resources. Workers receive close supervision from a designated supervisor within the framework of agency rules, regulations and procedures.

EXAMPLES OF WORK PERFORMED (Any one position may not include all of the duties listed nor do the listed examples include all tasks which may be found in positions of this class.)

Evaluates the need for services and provides appropriate casework services to families, children, adults and aged needing preventive services in such areas as employment and employability, juvenile delinquency prevention, family counseling in cases involving absent parents and reuniting families, family life education, appropriate referral of ADC families who need physical and mental health services, etc.; aids recipients in achieving self-care and self-responsibility and helps them in social and community adjustment.

Interviews and counsels clients regarding their personal, family and economic problems and refers case to a superior for final assignment.

Maintains liaison with volunteers at the county level in coordinating the operations of a volunteer program.

Assists individuals to utilize resources under the auspices of the Division of Welfare and in the community.

Aids recipients in achieving self-support and self-responsibility and helps them in social and community adjustment.

Prepares summaries of social service activity to be used in making a determination of medical eligibility for public assistance.

Interviews applicants and conducts investigations to determine initial and continuing eligibility for public assistance through public and other records to secure, evaluate and interpret data essential in determining eligibility for public assistance and provides emergency services at the point of intake.

Makes home visits to recipients who are unable to travel to the office to establish initial or continuing eligibility.

Refers, when necessary, families and children or adults and aged receiving assistance to other community resources or personnel of higher rank.

Prepares and maintains case records and prepares reports as required.

Performs other duties as assigned.

CASEWORKER (Cont'd)

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES

Knowledge of current social, economic and community health problems.
Some knowledge of individual and group behavior.
Some knowledge of the principles and methods of interviewing.
Some knowledge of the general provisions, objectives and philosophy of public welfare programs.
Ability to work harmoniously with applicants, recipients, the general public, and with other employees.
Ability to exercise good judgment in evaluating situations and in making decisions.
Ability to express ideas clearly, both orally and in writing and to interpret laws and regulations.

MINIMUM EXPERIENCE AND TRAINING QUALIFICATIONS (The following statement represents the minimum experience and training standards which will be used to admit or reject applicants for tests, provided that equivalent substitution will be permitted in case of deficiencies in either experience or education.)

Graduation from an accredited four-year college or university. (Full-time paid professional or technical employment in the field of social welfare in a public or private agency may be substituted on a year for year basis for the required college education.)

OR

High school graduation plus four years of full-time paid employment in one or more of the following types of work:

1. Technical or professional work in the fields of social service, education, community organization, or related areas, or in business, personnel or public administration involving responsible public contacts.
2. Responsible clerical work (above the entry level) involving frequent public contacts such as credit interviewer, complaint clerk, receptionist (other than routine routing of office traffic), or related work; responsible persuasive sales work (other than counter sales).
3. Stenographic experience with the Missouri Division of Welfare involving taking and transcribing social case histories; or responsible clerical work above the entry level with the Division involving the technical aspects of public assistance application processing.

OR

One year of full-time paid employment as a Public Assistance Worker with the Missouri Division of Welfare.

CLERK I

DEFINITION

This is clerical work of ordinary difficulty which follows well-established procedures.

Employees of this class perform a variety of standardized clerical duties which can be easily learned on the job. Detailed instructions are given at the beginning of work and on subsequent new assignments; however, after employees become familiar with particular procedures, they may work with more independence on routine aspects of the work. Work involving more varied tasks is given closer supervision than that which is repetitive in nature, but work is normally reviewed or verified upon completion.

EXAMPLES OF WORK PERFORMED

(Any one position may not include all of the duties listed nor do the listed examples include all tasks which may be found in positions of this class.)

Performs elementary arithmetical computations following specific and clear-cut instructions.
Files correspondence and documents alphabetically, by subject and by serial number; searches files upon request, checks out desired material and sees that material is returned to proper place.
Sets up file folders preparing subject or name headings.
Transfers simple data from field reports to ledgers, removes data when no longer required and prepares summary reports in tabular form after consulting ledger.
Answers telephone, notes callers and message; receives mail, opens and distributes to appropriate sections; delivers oral and written messages by foot as instructed; wraps packages, weighs and mails; keeps simple records.
Operates a variety of simple office equipment including photostat machine, addressograph, mimeograph machine and related equipment.
Operates telephone switchboard with limited number of trunk lines and extensions.
Types routine data in form letters and on status cards.
Performs related work as assigned.

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES

Some knowledge of modern office practices, procedures and equipment.
Some knowledge of business English, spelling and arithmetic.
Ability to understand and follow simple oral and written directions.
Ability to learn assigned clerical tasks within a reasonable time, to adhere to prescribed routines, and to develop some skill in the operation of common office appliances.
Ability to make simple arithmetical computations and tabulations accurately and with reasonable speed.
Ability to establish and maintain harmonious working relationships with other employees and the public.
Clerical aptitude and good general intelligence.

CLERK I (Cont'd)

MINIMUM EXPERIENCE AND TRAINING QUALIFICATIONS (The following statement represents the minimum experience and training standards which will be used to admit or reject applicants for tests, provided that equivalent substitution will be permitted in case of deficiencies in either experience or education.)

Graduation from a standard high school.

EMPLOYMENT SERVICE TECHNICIAN

DEFINITION

This is advanced interviewing and related work of a technical and complex nature in the employment service phase of the Employment Security Program.

Employees of this class devote the major portion of their time to the full range of job placement activities including order taking, selection, referral, follow up, and development of job orders. In the smallest local offices work may include delegation of lead-worker responsibility for all Employment Service activities; however, in other offices work of this class typically involves primary specialization on a full, or nearly full-time basis in skilled placement and related activities. Work also includes selection and referral of applicants for specialized employability or training programs and community action programs. Work is performed under the general supervision of a superior, but the employee is expected to handle ordinary assignments independently and to exercise judgment and initiative within the framework of broad policies and procedures.

EXAMPLES OF WORK PERFORMED (Any one position may not include all of the duties listed nor do the listed examples include all tasks which may be found in positions of this class.)

Accepts and records job orders from all types of employers, securing sufficient performance and nonperformance requirement information concerning the job to properly fill the order; conducts complex interviews with applicants who have filled out a portion of the application card by the self-application process; selects applications from the file; conducts selection interviews; and makes referrals to employers on the basis of an evaluation of the applicant's qualifications. May make promotional telephone calls to employers to solicit jobs for qualified applicants.

Maintains effective working relationships with employers during the course of the order-filling process, determines results and adequacy of previous referrals; reviews results of contacts with a supervisor or employer relations representative to discuss any problems encountered such as possible need for technical services; may act as the employer relations representative in a medium size office, informing employers of services, facilities, policies, and operating methods of the Division.

May act as selection and referral officer in the selection of applicants for entry into the training under specialized employability programs.

Participates in various community activities having to do with the community action programs.

Performs a variety of related technical and public contact work in serving applicants and in dealing with employers, schools, training institutions, and other organizations.

Performs related work as assigned.

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES

Knowledge of occupations and the qualifications required of workers and of the technique of interviewing and job placement.

Knowledge of current employment conditions and practices in private industry.

EMPLOYMENT SERVICE TECHNICIAN (Cont'd)

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES (Cont'd)

Knowledge of current social, economic, and industrial problems as they relate to the Employment Security program.
Working knowledge of principles and objectives underlying the public employment service program and of the applicable state and federal laws.
Working knowledge of office procedures, practices, and equipment.
Ability to establish and maintain harmonious working relationships with other employees, applicants, employers, training institutions, community organizations, etc.
Ability to obtain basic facts in an interview situation and to match worker qualifications with specific job requirements in the placement process.

MINIMUM EXPERIENCE AND TRAINING QUALIFICATIONS (The following statement represents the minimum experience and training standards which will be used to admit or reject applicants for tests, provided that equivalent substitution will be permitted in case of deficiencies in either experience or education.)

One year of full-time experience as an Employment Security Deputy II.

OR

Four years of full-time paid employment in professional, technical, or responsible related public contact work in one or more of the following fields: business, personnel, or public administration, law, vocational counseling, social work, or in the employment security program, including at least one year in the special qualifying experience described below; and graduation from a standard high school. (College education with specialization in the social sciences; public, business, or personnel administration; education; or law may be substituted on a year for year basis for the required experience.)

SPECIAL QUALIFYING EXPERIENCE

1. Technical employment in the State Employment Service or Unemployment Insurance programs at the level of Employment Security Deputy II. (Two years of full-time employment as an Employment Security Deputy I or an Employment Security Aide II may be substituted for one year as a Deputy II.)
2. Comparable full-time technical or professional experience in the recruitment, interviewing, selection, classification, placement, training, and/or counseling of personnel in public or private employment; or responsible supervisory or related work involving substantial participation in one or more of these aspects of personnel management.
3. Responsible community organization, public relations, or related public contact work in such areas as industrial development, business organization and management, labor relations, or related areas.

HOSPITAL ATTENDANT I

DEFINITION

This is trainee-level non-professional nursing and related work in the care of patients in a State institution for the mentally ill or mentally retarded.

Employees in this class perform routine psychiatric and general nursing duties which can be readily learned on the job. Work also involves receiving formal training in various aspects of patient care preparatory to assuming the responsibilities of a Psychiatric Aide I. Close supervision is received from a higher ranking nursing staff member. Over-all supervision is received from a professional nurse.

EXAMPLES OF WORK PERFORMED (Any one position may not include all of the duties listed nor do the listed examples include all tasks which may be found in positions of this class.)

Gives general nursing care under supervision, including shaving, bathing, trimming nails, and other related personal hygiene functions.
Observes and reports changes in patient behavior, and physical condition.
Assists with patients' activities within the nursing unit and, under supervision, assists with other activities in special areas.
Maintains a safe, clean and agreeable ward environment by performing general duties, which may include making beds, serving meals, care of hospital equipment, etc.
Maintains records necessary for patient care and ward management as assigned.
Performs related work as assigned.

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES

Some knowledge of the general nature of mental illness and mental retardation and the ability to maintain an effective working relationship with patients.
Ability to perform manual tasks involving patient care and ward cleaning activities.
Ability and willingness to acquire knowledge in the general care and treatment of patients including basic nursing and the principles of personal hygiene.
Ability to understand and conform to hospital rules and regulations and practices.
Ability to establish and maintain harmonious working relationships with other employees and the public.
Ability to understand and follow written and oral directions.
Ability to keep simple ward records.
Good physical condition and emotional stability.

HOSPITAL ATTENDANT I (Cont'd)

MINIMUM EXPERIENCE AND TRAINING QUALIFICATIONS (The following statement represents the minimum experience and training standards which will be used to admit or reject applicants for tests, provided that equivalent substitution will be permitted in case of deficiencies in either experience or education.)

Completion of the tenth grade.

OR

Completion of the eighth school grade, supplemented by one year of responsible paid employment.

Appendix B

HOSPITAL ATTENDANT I

Group Number _____

I. As a decisionmaker, what percentage of the decision do you feel you actually have in hiring this employee? _____

II.	Percentage of Importance	Point Values					Total
Age	_____	18 - 25 .00	26 - 33 .10	34 - 41 .35	42 - 49 .35	50 or over .20	100
College Student	_____	No college .30	Some college .60	College graduate .10			100
Marital Status	_____	Single .05	Married .40	Divorced .15	Widowed .30	Separated .10	100
Residence	_____	City resident .30	County resident .50	State resident .20			100
Sex	_____	Male 1.00	Female .00				100
Test Score	_____	70 - 75 _____	76 - 81 _____	82 - 87 _____	88 - 93 _____	94 or over _____	100
Veteran	_____	Yes _____	No _____				100

Total 100%

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