A STUDY OF EMPATHIC ABILITY AND OF THE VALIDITY OF SOME INDICES OF JOB SATISFACTION

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A STUDY OF EMPATHIC ABILITY AND OF THE VALIDITY OF SOME INDICES OF JOB SATISFACTION

By

William A. Schell

AN ABSTRACT

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THESIS

WILLIAM A. SCHELL

ABSTRACT

The purpose of this study was to determine the validity of two supposed job-satisfaction questionnaires, and to study certain empathic relationships on the job, using one of them.

The questionnaires were administered nonanonymously to 168 employees of a small furniture factory. For the purpose of obtaining data to determine the validity of the job-satisfaction indices, supervisors, their subordinate foremen, and workers were asked to fill out the Science Research Associates Employee Inventory, Bullock's Job Satisfaction Scale, and five objective-type criterion questions. For the purpose of obtaining empathy data, the subjects were asked to fill out Bullock's scale as modified by the author for empathic purposes.

Fifteen of the respondents were rejected for incomplete sets of data. The respondents were arbitrarily divided into departmentally stratified random samples of 101 subjects (validation sample) and 52 subjects (cross-validation sample). For the validation sample correlations were run between performance on: SRA Inventory and a particular pattern of responses to three criterion questions, and also to a particular pattern of responses to five criterion questions; Bullock's Scale and a particular pattern of responses to three criterion

questions, and also to a particular pattern of responses to five criterion questions; SRA Inventory and Bullock's scale. The results obtained were verified by the cross-validation sample.

The empathic ability of employees was evaluated and the evaluation verified by three procedures: successful proportions, tetrachoric r, and the index of forecasting efficiency.

The results of the study indicated that there was reason to assume the respondents to the identified questionnaire gave unbiased answers. Significant relationships were found between the job-satisfaction indices and the criterion questions. A marked relationship was found between the job-satisfaction indices. The findings on both validation and cross validation supported the major hypothesis that empathic ability on the job was a function of personal proximity and echelon status. Within the area of job satisfaction it was found that: Foremen were better empathizers with their coordinates than (a) workers with their foreman, (b) workers with their coordinates, and (c) foremen with their workers. The following findings were tentative: Supervisors were better empathizers with their subordinate foremen than (a) workers with their foremen, (b) workers with their coordinates, and (c) foremen with their workers.

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INTRODUCTION

This study arose from an interest in job satisfaction and empathy. Within the past decade a number of indices have been constructed to measure workers' job satisfaction. The principal problem of this study was to determine the validity of two supposed job-satisfaction questionnaires, and to study certain empathic relationships on the job using one of these questionnaires.

The two job-satisfaction scales used in this study were: SRA Employee Inventory and Bullock's version of Hoppock's scale (Appendices A and B). These two scales, together with five criterion questions (Appendix E), were used to explore the validity of a number of statements of job satisfaction, and to examine the empathic abilities of employees in a furniture factory.

BACKGROUND

Validation of Job-Satisfaction Indices

In the literature there is confusion and disagreement in the usage of such terms as "job satisfaction," "industrial morale," and "employee attitude." Blum (1) has attempted to clarify some of these concepts. For the purposes of this study his definitions were found to be acceptable:

> Job satisfaction is the result of various attitudes the employee holds toward his job, toward related factors, and toward life in general.
>
> Industrial morale may be defined as the possession of a feeling, on the part of the employee of being accepted by and belonging to a group of employees through adherence to common goals and confidence in the desirability of these goals.
>
> [An] employee attitude can be considered a readiness to act in one way rather than another in connection with specific factors related to a job.

The problem of validating a job-satisfaction questionnaire is concerned with establishing certain criteria which can successfully differentiate between satisfied and less satisfied employees on the job. The difficulties presented in selecting or constructing criteria are numerous. Job-satisfaction indices, being attitude tests, have

many potential validities and can be validated from many different viewpoints, provided certain requisite assumptions are accepted. Any final determination of a criterion will be a compromise placed on a continuum somewhere between subjectivity and objectivity.

Hoppock (10) validated his job-satisfaction scale by the usage of four subjective "self-estimate" criterion questions. Woods' (20) so-called "Morale" scale, which is really a job-satisfaction index, was "validated" by sixty-eight raters (face validity) employing the Thurstone technique (18). Kerr (11) obtained a correlation of 0.25 between his job-satisfaction scale and job-tenure rate. In a summary of validity studies of his job-satisfaction scale, Kerr (11) reported many different criteria. Among these criteria were absenteeism, sociometric status, the empathic ability of craftsmen, and spontaneity of grievances. Brayfield and Rothe (2), using a job-satisfaction scale with some face validity, found a t ratio significant at the 1 percent level between scores on their scale for supposedly satisfied versus dissatisfied groups of subjects. In addition, they found a correlation of 0.92 between scores on their scale and that of Hoppock. Burns, Thurstone, et al. (7), referring to the SRA Employee Inventory, made an appeal for face validity in that inventory results were confirmed by means of ". . . the considered judgments

of experienced observers" and ". . . by conducting non-directive interviews." Bullock (3), using a modified Hoppock scale, endeavored a more systematic validation. A difference in mean scores on this scale significant at the 0.003 percent level of confidence was obtained between employee and ex-employee groups of an animal breeders' association. The relationship between judges' ratings of satisfaction and scores on the scale was explored, and a comparison made between scores on the scale and responses to each of three criterion questions (Appendix D). Each of these questions was a matter of objective fact rather than subjective opinion or attitude. This scale score-criterion question relationship found by Bullock was examined further in the present study.

Empathic Relationships in Job Satisfaction

Recently there has arisen a research interest in the specific problem of investigating the perception of thoughts and feelings of other people, a process which has been termed "empathy." Dymond's (5) work in this field had led to a commonly accepted definition. Empathy is ". . . the imaginative transposing of ones self into the thinking, feeling and acting of another and so structuring the world as he does." Empathy may be differentiated from projection in that

projection is the process whereby the individual ascribes his own personal feelings to another. As Hastdorf and Bender (9) have said, "Projection is more autistic and personal than empathy. . . . Empathic ability seems more objective, more cognitive, and more truly perceptive of the psychological structure of the other person."

Winslow (19), after presenting a questionnaire dealing with attitudinal topics such as religion, American foreign policy, current economic policy, et cetera, found that empathy-wise the opinions of eighty-six pairs of friends yielded an average product-moment correlation coefficient of 0.24. Dymond (5) has indicated that closer relations in the home led to higher empathic ability. The Studies in Industrial Empathy, by Remmers and Remmers (16) and Remmers and Miller (17), have shown that management tends to overestimate labor leaders' scores on the "How Supervise?" test of psychologically "best" supervisory attitudes, and that labor leaders tend to underestimate management's scores on the test. Libo (13) found that, in a labor-relations attitude questionnaire in which union leaders and management leaders were asked to predict the responses of the other group, the management group predicted with significantly less error than did the union group.

From these empathy-attitude studies it has been shown that (a) closer relations yielded higher empathic ability, and (b) while empathic correlations obtained were of a low order, management leaders appeared to be better empathizers than labor leaders.

Nonanonymous Attitude Questionnaires

Several writers in the field of attitude testing have expressed the belief that attitude questionnaires should be administered anonymously, as identified respondents may give biased answers (4, 6, 15). However, Hamel and Reif found that "essentially the same responses to individual items were obtained on an employee attitude scale whether the subject was asked to identify himself or was allowed to remain anonymous!' (8). In Hamel and Reif's study the questionnaires were given by the staff of a university organization, and further, the subjects were repeatedly assured that the questionnaires would be used for confidential research purposes. In this study, since it was necessary to identify respondents, it was decided to follow a similar procedure in order to encourage unbiased responses.

HYPOTHESES

Validity of the Job-Satisfaction Indices

It is hypothesized that obtained relationships between responses to either of the two scales under consideration and responses to any of several possible combinations of five criterion questions will support the validity of either or both scales as measures of job satisfaction in so far as the criterion questions are good measures of job satisfaction.

Empathic Relationships in Job Satisfaction

The major hypothesis with respect to empathy on the job is: Empathic ability is a function of personal proximity and echelon status. Stated more explicitly, this hypothesis becomes:

1. Closer working relationships are more conducive of greater empathy than less-close relationships.

2. A higher echelon work group will have more empathy with their coordinates than a lower echelon work group will have with their coordinates.

PROCEDURE

The general procedure used in this study consisted of the administration of two job-satisfaction questionnaires in order to (a) determine the validity of these job-satisfaction indices, and (b) explore certain empathic relationships in this area through the use of one of them. The questionnaires used, the employee sample, and the procedure followed are described further.

The Measuring Instruments

The Science Research Associates Inventory and Bullock's version of Hoppock's Job Satisfaction Scale were used in this study. The SRA Employee Inventory was composed of seventy-eight items, distributed among fifteen categories (7) which were assumed to measure various aspects of job satisfaction. The categories were: Job Demands (5 items); Working Conditions (6 items); Pay (4 items); Employee Benefits (4 items); Friendliness and Cooperation of Fellow Employees (4 items); Supervisor-Employee Interpersonal Relations (8 items); Confidence in Management (7 items), Technical Competence of Supervision (6 items); Effectiveness of

Administration (5 items); Adequacy of Communication (6 items); Security of Job and Work Relations (7 items); Status and Recognition (6 items); Identification with the Company (4 items); Opportunity for Growth and Advancement (4 items); Reactions to the Inventory (2 items). The items were arranged so that the total category and inventory scores could be obtained from an answer pad without using stencils. There were three possible responses to each item: "Agree," "?," "Disagree." Responses were entered on a separate answer pad. The answer pads were so constructed that, for each item, the response indicating satisfaction was the only one scored. A "?" response was considered the equivalent of indicating dissatisfaction, and not scored.

Bullock's Job Satisfaction Scale was composed of ten items requiring evaluations of the employing organization, the job itself, or the respondent's own position in the work group. The aforementioned items were a modification of Hoppock's scale. As used by Bullock, the ten items were arranged on a Likert-type scale (14) with five alternative responses offered for each item. The five alternative responses were arbitrarily assigned values of from 1 to 5, with the highest value indicating satisfaction and the lowest value lack of satisfaction; thus the minimum satisfaction score would be 10 and the maximum would be 50.

In this study, Bullock's scale (Appendix B) and five criterion questions (Appendix E) were used to differentiate between the satisfied and less satisfied employees. To each of these five questions there were three alternative responses: "Yes," "?," "No." A "?" response was arbitrarily considered the equivalent of the response indicating lack of satisfaction. In addition, Bullock's scale was rephrased, changing the personal pronoun so that an employee could answer the questionnaire for another person (Appendix C).

The Administration

In order to identify the respondents, the questionnaires were administered nonanonymously to 168 employees (almost the entire work force) of a small furniture factory in Michigan. The questionnaires were given departmentally on company time in groups of five to twenty-five employees. For the purpose of obtaining data to determine the validity of the job-satisfaction indices, supervisors, their subordinate foremen, and workers were asked to fill out the SRA Employee Inventory, Bullock's Job Satisfaction Scale, and five criterion questions (Appendices A, B, E). For the purpose of obtaining empathy data, supervisors were asked to fill out Bullock's modified job satisfaction scale (Appendix C) for one coordinate and three

subordinate foremen. Foremen were asked to fill out the modified scale for one coordinate, their immediate supervisor, and three subordinate workers. Workers were asked to fill out the modified scale for one coordinate and their immediate foreman.

The Validation of the Job-Satisfaction Indices

Fifteen sets of the respondents' data were rejected for being incomplete. For the validation and cross-validation purposes, the remaining 153 respondents' data were arbitrarily divided into departmentally stratified random samples of 101 subjects (validation sample) and 52 subjects (cross-validation sample). A two-for-one selection ratio from each department was maintained where practical. However, certain departments were arbitrarily combined (Appendix F).

Using the validation-sample data, correlations were run between performance on:

1. SRA Inventory and a particular pattern of responses to the three criterion questions.

2. Bullock's scale and a particular pattern of responses to the three criterion questions.

3. SRA Inventory and a particular pattern of responses to the five criterion questions.

4. Bullock's scale and a particular pattern of responses to the five criterion questions.

5. SRA Inventory and Bullock's scale.

Regressions equations were derived for predicting SRA Employee Inventory scores from a knowledge of scores on Bullock's scale, and vice versa. In addition, regression equations were derived for predicting the selected pattern of response to the three and five criterion questions from a knowledge of scores on the SRA Inventory and/or Bullock's scale.

The Validation of the Empathic Relationships in Job Satisfaction

Sufficient data were available to make it feasible to explore five possible empathic relationships. These were studies of the correlation between:

1. The responses to the Bullock scale (Appendix C) attributed by the foremen to their coordinates and the responses made by the coordinates themselves.

2. The responses to the Bullock scale (Appendix C) attributed by the supervisors to their subordinate foremen and the responses made by the foremen themselves.

3. The responses to the Bullock scale (Appendix C) attributed by the workers to their foremen and the responses made by the foremen themselves.

4. The responses to the Bullock scale (Appendix C) attributed by the workers to their coordinates and the responses made by the coordinates themselves.

5. The responses to the Bullock scale (Appendix C) attributed by the foremen to their workers and the responses made by the workers themselves.

Three different methods were used to ascertain the extent of these empathic relationships. Using each subject's own questionnaire as a criterion, the proportion of successful empathic estimates was computed for the ten questions. For each item there were five response categories in the order of 1 to 5. If A chose 4 and B predicted 4, it was considered a successful estimate, but if B predicted otherwise it was considered unsuccessful. An average proportion of successful and unsuccessful estimates was thus obtained for each of the above groups. The null hypothesis was tested to determine whether the frequency of successful estimates was significantly in excess of chance. A t test was computed of the differences between successful proportions when comparing one group with another.

The second method employed was as follows: A 5 x 5 table was prepared for each group, placing a subject's own response and its paired empathic estimate in the appropriate cell. A distribution resulted in which the rows of the table served for the dispersion of the subjects' scores (X axis) and the columns for the dispersion of the predicted empathic estimates (Y axis). The data were artificially reduced to two categories in both X and Y, resulting in a 2 x 2 table. A tetrachoric correlation coefficient was computed by the cosine-pi formula. The null hypothesis that each group's correlation was not significantly different from zero was tested. Finally, using the same 2 x 2 tables, the forecasting efficiency for each of the five empathic relationships was calculated.

Cross Validation

In general, the procedures followed in validating the study were employed in the cross validation of it. Where it was appropriate, a regression equation based upon the validation sample was used in making predictions for the cross-validation sample. This was the case in connection with verifying the validity of the job-satisfaction scales. In cross validating the job-satisfaction scales, predicted values of a pattern of criterion-question responses were

correlated with the observed patterns of responses to the criterion questions, and differences in the validation versus the cross-validation coefficients were examined. In cross-validation, the successful proportions, tetrachoric correlations, and forecasting efficiency data were computed for the cross-validation sample and compared with the validation sample.

RESULTS

The Validation of the Job-Satisfaction Indices

The Pearsonian correlation coefficient between the SRA Inventory scores (X) and Bullock's index scores (Y) was $r = 0.740 \pm 0.045$. The prediction equations in raw score form were: (A) $Y = 0.359X + 19.3$; (B) $X = 1.53Y - 5.08$.

Distributions of response to the criterion questions are shown in Table I. In each set of criterion questions, a particular answer to each question tends to indicate satisfaction of the respondent with the job; any other response does not. Those responses indicating job satisfaction are called (for convenience) the "correct" responses. The criterion of job satisfaction (or the lack of it) is then (for the purposes of this study) an acceptable "pattern" of responses to the (three or five) criterion questions. Each distribution of response was dichotomized (as indicated in Table I) to permit the computation of point biserial correlation coefficients between the scores on each job-satisfaction scale and each criterion. The point biserial correlations between the job-satisfaction scores and the criterion questions are shown in Table II. The t tests of the point biserial correlations

TABLE I

DISTRIBUTION OF RESPONSES TO THREE- AND FIVE-QUESTION CRITERIA (N = 101)

3-Question Criterion		5-Question Criterion	
P'	N	P'	N
3/3*	63	5/5	23
2/3	29	4/5*	34
1/3	8	3/5	27
0/3	1	2/5	12
		1/5	4
		0/5	1

P' is the number of "correct" responses expressed as a ratio of the number (three or five) of possible responses.

* Dichotomized at this point; subjects below this score considered as less satisfied.

Note: The "correct" responses indicating job satisfaction were (for either the three- or five-question type criterion):

11 yes
12 yes
13 no
14 no
15 no

See Appendices D and E.

TABLE II

POINT BISERIAL CORRELATIONS BETWEEN JOB-SATISFACTION INDICES AND CRITERION QUESTION (N = 101)

Job-Satisfaction Index	3-Question Criterion	t Ratio	5-Question Criterion	t Ratio
SRA Inventory	0.417	4.55*	0.484	5.50*
Bullock's index	0.408	4.45*	0.420	4.61*

* $r_{p.b.}$ significantly other than zero beyond the 0.1 percent level of confidence.

were all significantly different from zero at the 0.1 percent level of confidence. The hypothesis that there was a relationship between the job-satisfaction indices and the criterion questions was accepted as tenable, subject to cross-validation support. The regression equations for predicting the three (Y_3) and five (Y_5) question criterion scores from a knowledge of either the SRA Inventory (X_S) or Bullock (X_B) job-satisfaction scores were:

$$(C)\ Y_3 = 0.020\ X_S + 1.43$$

$$(D)\ Y_3 = 0.040\ X_B + 0.958$$

$$(E)\ Y_5 = 0.039\ X_S + 1.45$$

$$(F)\ Y_5 = 0.069\ X_B + 0.878$$

The multiple R's for predicting the three- and five-question criterion scores from a knowledge of both job-satisfaction scale scores were $R_3 = 0.440$ and $R_5 = 0.493$. Both were significantly different from zero beyond the 1 percent level of confidence. The multiple regression equations derived to predict the three- and five-question criteria from a knowledge of the SRA Inventory scores (X_S) and Bullock's index scores (X_B) were:

$$(G)\ Y_3 = 0.013\ X_S + 0.022\ X_B$$

$$(H)\ Y_5 = 0.019\ X_S + 0.023\ X_B$$

These regression equations (A through H) are employed later in the cross validation of the job-satisfaction indices (see page 24).

Of interest were the responses to category 15, items 77 and 78, of the SRA Inventory. The mean category score was 1.71, which, when interpreted on the SRA profile sheet (Appendix G), showed a high average acceptance by the validation-sample respondents of the procedure in making this job-satisfaction survey. There is some assurance that the responses made by the employees were unbiased by an administrative procedure involving identification of each respondent.

The Validation of the Empathic Relationships in Job Satisfaction

The ability of various groups of employees to predict the responses of other employees to items on the Bullock verson of Hoppock's scale is shown in Table III. The proportion of successful predictions made was significantly greater than chance at the 0.1 percent level of confidence in every case. The t test of differences in empathic ability of the five groups showed that within the area of job satisfaction the following differences (subject to confirmation by cross validation) were significant: (a) Foremen were better empathizers of associate formen than workers were of their foremen. (b) Foremen appeared to have greater empathic ability than workers did when each group endeavored to empathize with its associates.

TABLE III

COMPARISON OF VALIDATION GROUPS' EMPATHIC ABILITY BASED ON SUCCESSFUL PROPORTIONS AND t TESTS OF DIFFERENCES BETWEEN THEM

Group	Proportion of Successful Predictions			t Test Between Proportions (P)				
	N	P	q	1	2	3	4	5
1	90	0.578*	0.422	-	1.02	2.97'	3.12'	3.00'
2	80	0.500*	0.500		-	1.51	1.59	1.63
3	460	0.409*	0.591			-	0.070	0.337
4	840	0.407*	0.593				-	0.312
5	250	0.396*	0.604					-

N = number of predicted responses.

* Successful proportions significantly greater than chance (one correct response out of five, or 20%) at 0.1 percent level of confidence.

q = unsuccessful proportions.

' Significant beyond 1 percent level of confidence.

Group 1. Foremen's empathic estimates of associate foremen.

Group 2. Supervisors' empathic estimates of subordinate foremen.

Group 3. Workers' empathic estimates of their foremen.

Group 4. Workers' empathic estimates of associate workers.

Group 5. Foremen's empathic estimates of their workers.

(c) Foremen were better empathizers with their associate foremen than they were with their subordinate workers.

Tetrachoric correlations were computed for the five groups in order to explore empathic ability from another point of view. Originally, there were 5 x 5 contingency tables showing the five possible predictions of response (to any item on the Bullock version of Hoppock's scale) along the Y axis and the five possible observed responses along the X axis. The 5 x 5 tables for each group were reduced to 2 x 2 in order to solve for tetrachoric r. The arbitrary divisions were made each way between the fourth and fifth response category. See Table IV. Tetrachoric r's that were significantly other than zero were found for groups 1 and 4. Examining empathic ability from a consideration of tetrachoric r's, foremen and workers successfully empathized with their associates (subject to confirmation by cross validation). Other attempts at empathy by the groups examined here failed.

The 2 x 2 contingency tables were then used to compute the index of forecasting efficiency with which each of the employee groups (1 to 5) could predict responses to Bullock job-satisfaction items of fellow employees as indicated in Table IV. Subject to confirmation, (a) foremen apparently predicted Bullock job-satisfaction responses

TABLE IV

TETRACHORIC CORRELATIONS AND FORECASTING EFFICIENCIES OF THE VALIDATION GROUPS' EMPATHIC ESTIMATES

Group	N	a	b	c	d	r tet.	sigma r tet.	t Ratio	Forecasting Efficiency (%) **
1	90	32	16	14	28	0.500	0.165	3.03'	30.4
2	80	16	8	25	31	0.344	0.184	1.87	14.6
3	460	100	63	160	137	0.119	0.075	1.57	0
4	840	79	86	144	531	0.448	0.067	6.79'	0
5	250	46	74	43	87	0.101	0.089	0.881	0

N = number of empathic estimates.
a, b, c, d = obtained cell frequencies.
' = r tet. other than zero beyond 1 percent level of confidence.

Group 1. Foremen's empathic estimates of associate foremen.
Group 2. Supervisors' empathic estimates of subordinate foremen.
Group 3. Workers' empathic estimates of foremen.
Group 4. Workers' empathic estimates of associate workers.
Group 5. Foremen's empathic estimates of their workers.

** Index of forecasting efficiency = 100 $\dfrac{\left[\text{No. of correct responses with a knowledge of cell frequencies}\right] - \left[\text{No. of correct responses without a knowledge of cell frequencies}\right]}{\left[\text{No. of correct responses without a knowledge of cell frequencies but with a knowledge of row and column totals}\right]}$

* Schema

Empathizer's Prediction of Response	Responses Actually Reported	
	b	a
	d	c

of their associates with some forecasting efficiency apparently other than zero; and (b) supervisors succeed in empathizing in a similar manner with their subordinate foremen, in that here too the index of forecasting efficiency is greater than zero.

The Cross Validation of the Job-Satisfaction Indices

The regression equations (A) and (B) were used to predict the job-satisfaction scores of employees in the cross-validation sample. Predicted scores were correlated with actual scores. The correlation between the predicted SRA Inventory scores and the actual scores was: $r = 0.787 \pm 0.053$. The correlation between the predicted Bullock index scores and the subjects' actual scores was: $r = 0.783 \pm 0.054$. The t tests of difference between the actual correlations and the original r of 0.740 were not significant. The correlation between the job-satisfaction indices was upheld on cross validation. Either index could be used to predict performance on the other.

The regression equations (C), (D), (E), and (F) were used to predict performance of employees in the cross-validation sample on the three- and five-question criteria. These predicted criterion scores were correlated with observed criterion scores. The results are summarized in Table V. The correlations between scores

TABLE V

CROSS VALIDATION OF SRA AND BULLOCK SCALES THROUGH CORRELATION BETWEEN PREDICTED AND OBSERVED RESPONSES TO THREE- AND FIVE-QUESTION CRITERIA

Criterion	N	Correlation	Fisher z Equivalent	t Ratio
3-question	101*	$r_{SRA-3} = 0.417$*	0.444	0.137'''
	52	$r_{SRA-3} = 0.397$'	0.420	
	101*	$r_{B-3} = 0.408$*	0.433	0.463'''
	52	$r_{B-3} = 0.338$''	0.352	
5-question	101*	$r_{SRA-5} = 0.484$*	0.528	0.508'''
	52	$r_{SRA-5} = 0.413$'	0.439	
	101*	$r_{B-5} = 0.420$*	0.447	0.480'''
	52	$r_{B-5} = 0.348$''	0.363	

* Values taken from Table II.

' Significantly different from zero beyond the 1 percent level of confidence.

'' Significantly different from zero beyond the 5 percent level of confidence.

''' No significant difference between paired Fisher z equivalents of the correlations.

predicted from the SRA Inventory and the actual criterion scores were not significantly different from zero beyond the 1 percent level of confidence. The correlations between scores predicted from the Bullock scale and the actual criterion scores were not significantly different from zero beyond the 5 percent level of confidence. The t tests showed that differences between Fisher's z equivalents of the correlations were not significantly different. Thus, the prediction of criterion question scores from a knowledge of the scores of either index was upheld on cross validation. The hypothesis pertaining to relationships between the job-satisfaction indices and the criterion questions was supported.

The multiple regression equations (G) and (H) were used to predict the performance of employees in the cross-validation sample on the three- and five-question criteria. These predicted criterion scores were correlated with actual criterion question scores. The results can be found in Table VI. The correlations r_3 and r_5 of the cross-validation sample between the predicted criterion scores and the actual criterion scores were significantly different from zero at the 1 percent level of confidence. The prediction of criterion question scores from a knowledge of both of the job-satisfaction

TABLE VI

CROSS VALIDATION OF MULTIPLE R's USED TO PREDICT THREE- AND FIVE-QUESTION CRITERIA

Criterion	N	Correlations	Fisher's z Equivalent	t Ratio
3-question	101	$R_3 = 0.440$*	0.471	0.434'
	52	$r_3 = 0.376$*	0.395	
5-question	101	$R_5 = 0.493$*	0.539	0.708'
	52	$r_5 = 0.393$*	0.415	

* Significantly different from zero at 1 percent level.

' No significant difference between either R_3 and r_3 or R_5 and r_5.

indices was upheld on cross validation. The hypothesis pertaining to relationships between the job-satisfaction indices and the criterion questions is accepted as highly tenable. To the extent that the criterion questions were valid criteria of job satisfaction, the job-satisfaction indices used herein have been validated.

The mean category score for category 15, items 77 and 78, was 1.79. This can be interpreted on the SRA profile sheet (Appendix G) as a high acceptance by the cross-validation sample respondents of administrative procedure in making this job-satisfaction survey. There is then some further assurance that the responses made by both samples of employees were unbiased by an administrative procedure requiring identification of each respondent.

The Cross Validation of Empathic Relationships in Job Satisfaction

Replication, with another (the cross-validation) sample of employees, of the study of empathic ability summarized in Table III resulted in the findings in Table VII. Here again, the proportion of successful predictions of response to the Bullock version of Hoppock's scale was significantly greater than chance for every group of employees studied. Moreover, the differences in empathic ability between one group and another apparent from Table III were supported in Table VII.

TABLE VII

COMPARISON OF CROSS-VALIDATION GROUPS' EMPATHIC ABILITY BASED ON SUCCESSFUL PROPORTIONS AND t TESTS OF DIFFERENCES BETWEEN THEM

Group	Proportion of Successful Predictions			t Test Between Proportions (P)				
	N	P	q	1	2	3	4	5
1	60	0.733*	0.267	-	2.47''	4.94'	5.31'	3.44'
2	70	0.529*	0.471		-	1.69	2.42''	0.489
3	290	0.417*	0.583			-	1.15	1.57
4	420	0.374*	0.626				-	2.61'
5	160	0.494*	0.506					-

N = number of predicted responses.

* Successful proportions significantly greater than chance (one correct response out of five, or 20%) at the 0.1 percent level.

q = unsuccessful proportions.

' Significant beyond 1 percent level.

'' Significant beyond 5 percent level.

Group 1. Foremen's empathic estimates of associate foremen.
Group 2. Supervisors' empathic estimates of subordinate foremen.
Group 3. Workers' empathic estimates of their foremen.
Group 4. Workers' empathic estimates of associate workers.
Group 5. Foremen's empathic estimates of their workers.

A cross-validation study of empathic ability through the use of tetrachoric correlation coefficients replicating the work done in producing Table IV resulted in Table VIII. This table supports the earlier finding that foremen and workers both succeed in predicting their associates' responses to items on the Bullock version of Hoppock's scale. From a comparison of Tables IV and VIII, on the basis of the forecasting efficiency data, within the area of job satisfaction the following statements about empathy can be made:

1. Foremen were better empathizers with their associates than (a) workers were with their foremen, (b) foremen were with their associates, and (c) workers were with their associates.

2. Supervisors were better (and more stable) empathizers of their subordinate foremen than (a) workers with their foremen, (b) workers with their associates, and (c) foremen with their workers. The statements about supervisors' empathic abilities were considered tentative because of their lack of confirmation by the successful proportions and tetrachoric r data.

TABLE VIII

TETRACHORIC CORRELATIONS AND FORECASTING EFFICIENCIES OF THE CROSS-VALIDATION GROUPS' EMPATHIC ESTIMATES

Group	N	a	b	c	d	r tet.	Sigma r tet.	t Ratio	Forecasting Efficiency (%)
1	60	33	4	10	13	0.742	0.219	3.38'	6.98
2	60	12	6	17	25	0.306	0.200	1.53	19.4
3	290	78	25	115	72	0.258	0.097	2.67'	0
4	420	36	46	62	276	0.457	0.097	4.71'	0
5	160	28	40	23	69	0.284	0.129	2.20''	0

N = number of empathic estimates.

a, b, c, d = obtained cell frequencies.

' r tet. other than zero beyond 1 percent level of confidence.

'' r tet. other than zero beyond 5 percent level of confidence.

Group 1. Foremen's empathic estimate of associate foremen.
Group 2. Supervisors' empathic estimate of subordinate foremen.
Group 3. Workers' empathic estimate of foremen.
Group 4. Workers' empathic estimate of associate workers.
Group 5. Foremen's empathic estimate of their workers.

CONCLUSIONS

The results of this study indicated that there was a high average acceptance of this nonanonymous job-satisfaction survey when administered by a university organization wherein respondents' individual answers were kept confidential. A marked relationship was found between the job-satisfaction indices of this study. To the extent that the three- and five-question criteria were valid measures of job satisfaction, the job-satisfaction indices used herein have been further validated by the fact that there were substantial relationships between the job-satisfaction indices and the criterion questions. Bullock's finding of a significant relationship between the three criterion questions and his job-satisfaction scale was confirmed.

The major hypothesis that on-the-job empathic ability was a function of personal proximity and echelon status was supported by the findings. The subordinate hypothesis that closer working relationships are more conducive of greater empathy than less-close relationships was sustained. Foremen had greater empathy with their coordinates' job satisfaction than with that of their workers' job satisfaction. Foremen were also better empathizers with their

coordinates' job satisfaction than workers were with their foremen's job satisfaction. Confirmed also was the hypothesis that a higher echelon work group will have more empathy with their coordinates than a lower echelon work group will have with their coordinates. Foremen were better empathizers with their coordinates' job satisfaction than workers were with their coordinates' job satisfaction.

The following findings were considered tentative: Supervisors were better empathizers with their subordinate foremen's job satisfaction than workers were with their foremen's job satisfaction. Supervisors were better empathizers with their subordinate foremen's job satisfaction than workers were with their coordinates' job satisfaction. Supervisors were better empathizers with their subordinate foremen's job satisfaction than foremen were with their workers' job satisfaction.

DISCUSSION

The Validity of the Job-Satisfaction Indicies

A high correlation was obtained between Bullock's Job Satisfaction index scores and the SRA Employee Inventory scores: $r = 0.740$. This was confirmed further by the fact that it was possible to predict either of the index scores of a sample of employees using regression equations derived from the relationships found between the index scores of another sample of employees.

As interpreted by the SRA profile sheet (Appendix G), the high average acceptance of this nonanonymous job-satisfaction survey can be attributed to its method of administration. Hamel and Reif's (8) procedure was followed closely in that the questionnaires were administered by a university organization and written and oral instructions stressed the fact that the questionnaires would be used for confidential research purposes. In all probability, it can be assumed that the employees of this survey gave truthful and unbiased responses.

The hypothesis that there were relationships between the job-satisfaction indices and the criterion questions was accepted as

tenable. This was indicated by the fact that it was possible to predict the criterion-question scores of a sample of employees from a knowledge of their job-satisfaction scores, by regression equations derived from the relationships between the job-satisfaction indices and the criterion-question scores of another independent sample of employees. The usage of the particular criterion questions should be considered for their effect upon the results. The basic assumption behind these criterion questions was that, on the basis of three or five objective experiences, the questions considered as a whole could effectively discriminate between a satisfied and a less satisfied or dissatisfied employee. To the extent that this assumption was valid, the job-satisfaction indices used herein have been validated by this study. However, it is possible that other objective criterion questions could have been selected and devised that would have better discriminating power between satisfied and less-satisfied employees. It is suggested that such a list of ten or fifteen objective criterion questions of this nature would perhaps be a better job-satisfaction index in themselves, than the presently used attitudinal job-satisfaction indices.

Another factor that would have affected the results was the decision to use point biserial r for the correlation of the job-

satisfaction indices and the criterion questions. The distributions that were obtained of the criterion-question scores were not normal, and it was arbitrarily assumed that a parent population of furniture firms also would not be normal. However, if the parent population were normal, a biserial r could have been used which would have given higher correlations between the job-satisfaction indices and the criterion questions. In either case the point biserial r was a more conservative estimate of the magnitude of the correlations.

The Empathic Relationships in Job Satisfaction

It appeared that the groups studied herein had empathy with their own group's and other groups' job satisfaction. This is illustrated by the successful proportions data of Table III and confirmed by said data of Table VII. All the successful proportions of empathic estimates were significantly greater than chance at the 0.1 percent level of confidence. However, the results of this study could have emphasized the fact that part of the successful prediction of another person's responses may have been due to projection rather than empathy. The need for a methodology for differentiating between projection and empathy is great, but as yet no successful technique has been devised to cope with this problem.

The hypothesis that within the area of job satisfaction empathy was a function of personal proximity and echelon status was accepted as tenable. The results of the three procedures to evaluate empathic ability indicated that both of these factors were operative. The secondary hypothesis that closer working relationships were more conducive of greater empathy than less-close relationships was sustained. Foremen were better empathizers of their associate foremen's job satisfaction than they were of their workers' job satisfaction. Moreover, foremen were better empathizers of their associate foremen's job satisfaction than workers were of their foremen's job satisfaction. Confirmed further was the hypothesis that a higher echelon group will have more empathy with their associates than a lower echelon group with its associates. This was corroborated by the finding that foremen were better empathizers with their associate foremen's job satisfaction than workers were with their associate workers' job satisfaction.

Of interest are the tentative findings wherein supervisors were better empathizers with their subordinate foremen than (a) workers with their foremen's, (b) workers with their associates', and (c) foremen with their workers' job satisfaction. These particular relationships were sustained only by the forecasting-efficiency data.

Of interest is the first relationship which could generate the hypothesis that superiors to a group had greater empathy with that group than subordinates of the group.

Of importance was the usage of tetrachoric r to determine the strength of the empathic estimates. The obtained data were such that the only possibility of estimating correlation was by this coefficient. The data were attenuated in that there were five categories. Three of the groups had truncated distributions, and all of the distributions were skewed to the highly satisfied side. When the data for the groups were dichotomized between the fourth and fifth category response some of the marginal proportions were low. A dichotomization between any other category responses would have created zero cell frequencies. All other coefficients of correlation were rejected because of these conditions and r tet. was computed. In spite of these difficulties r tet. in the cross-validation data of Table VIII confirmed the findings of the successful proportions data in Tables III and VII. However, its failures in the validation data of Table IV are probably due to the low number of estimates particularly for groups 1 and 2. The lack of stability of the forecasting efficiency of group 1 may also be due to the insufficient N's of both the validation and cross-validation groups. The tentative supervisory findings may have been confirmed further if the N's for group 2 had been greater.

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APPENDIX

APPENDIX A

SRA Employee Inventory

Purpose of the Inventory. Your company would like to know what you think about your job, your pay, your boss, and the company in general. This Inventory is designed to help you tell us your ideas and opinions quickly and easily without signing your name. This booklet contains a number of statements. All you have to do is to mark a cross by each statement to show how you feel. It is easy to do and you can be completely frank in your answers.

How to fill in the Inventory. Read each statement carefully and decide how you feel about it. You will agree with some statements, and you will disagree with others. You may be undecided about some. To help you express your opinion, three possible answers have been placed beside each statement:

	AGREE	?	DISAGREE
I would rather work in a large city than in a small town.....	☐	☐	☐

Choose the answer most like your own opinion and mark a cross in the box under it.

For example:

This person feels he wants to work in a large city:

	AGREE	?	DISAGREE
I would rather work in a large city than in a small town.....	☒	☐	☐

This person wants to work in a small town:

	AGREE	?	DISAGREE
I would rather work in a large city than in a small town.....	☐	☐	☒

This person can't decide between a large city and a small town:

	AGREE	?	DISAGREE
I would rather work in a large city than in a small town.....	☐	☒	☐

This is not a test. There are no "right" answers and no "wrong" answers. It is your own, honest opinion that we want.

Work rapidly but [illegible]. Do *not* spend too much time on any one statement. If you cannot decide about a statement, mark the "?" box, and go on to the next statement. Some of the statements may not be worded exactly the way you would like them. However, answer them the best way you can. Be sure to mark *every* statement. Leave no blanks. Mark only one answer for each statement. If you make a mistake, do NOT erase your mark. Put a circle around the cross inside the box like this ⊠ , and mark a cross in the correct box.

General information. Do *not* make any marks in this booklet. Do *not* sign your name on the Answer Pad. *Be sure* to fill in the blanks for general information on the back of the Answer Pad. This information will be used only to make the results more meaningful. It will not be used to find out which Answer Pad is yours. *Please turn now* to the back of the Answer Pad and fill in the general information.

When you have finished. Check to see that you have marked every statement. If you think anything has been left out, or if there is any special thing that is worrying you about your work, please write or print your *comments* in the space provided on the Answer Pad. When you are finished, remove the Answer Pad from the booklet and drop your Answer Pad in the ballot box.

Go on to the next page

1. The hours of work here are O.K.....
2. Management does everything possible to prevent accidents in our work.....
3. Management is doing its best to give us good working conditions.....
4. In my opinion, the pay here is lower than in other companies.....
5. They should do a better job of handling pay matters here.....
6. I understand what the company benefit program provides for employees.....
7. The people I work with help each other out when someone falls behind or gets in a tight spot.....
8. My boss is too interested in his own success to care about the needs of employees.....
9. My boss is always breathing down our necks; he watches us too closely.....
10. My boss gives us credit and praise for work well done.....
11. Management here does everything it can to see that employees get a fair break on the job.....
12. If I have a complaint to make, I feel free to talk to someone up-the-line.....
13. My boss sees that employees are properly trained for their jobs.....
14. My boss sees that we have the things we need to do our jobs.....
15. Management here is really trying to build the organization and make it successful.....
16. Management here sees to it that there is cooperation between departments.....
17. Management tells employees about company plans and developments.....
18. They encourage us to make suggestions for improvements here.....
19. I am often bothered by sudden speed-ups or unexpected slack periods in my work.....
20. Changes are made here with little regard for the welfare of employees.....
21. Compared with other employees, we get very little attention from management.....
22. Sometimes I feel that my job counts for very little in this organization.....
23. The longer you work for this company the more you feel you belong.....
24. I have a great deal of interest in this company and its future.....
25. I have little opportunity to use my abilities in this organization.....
26. There are plenty of good jobs here for those who want to get ahead.....

27. I often feel worn out and tired on my job.....

28. They expect too much work from us around here.....

29. Poor working conditions keep me from doing my best in my work.....

30. For my kind of job, the working conditions are O.K.....

31. I'm paid fairly compared with other employees.....

32. Compared with other companies, employee benefits here are good.....

33. A few of the people I work with think they run the place.....

34. The people I work with get along well together.....

35. My boss has always been fair in his dealings with me.....

36. My boss gets employees to work together as a team.....

37. I have confidence in the fairness and honesty of management.....

38. Management here is really interested in the welfare of employees.....

39. Most of the higher-ups are friendly toward employees.....

40. My boss keeps putting things off; he just lets things ride.....

41. My boss lets us know exactly what is expected of us.....

42. Management fails to give clear-cut orders and instructions.....

43. I know how my job fits in with other work in this organization.....

44. Management keeps us in the dark about things we ought to know.....

45. Long service really means something in this organization.....

46. You can get fired around here without much cause.....

47. I can be sure of my job as long as I do good work.....

48. I have plenty of freedom on the job to use my own judgment.....

49. Everybody in this organization tries to boss us around.....

50. I really feel part of this organization.....

51. The people who get promotions around here usually deserve them.....

52. I can learn a great deal on my present job.....

53. My job is often dull and monotonous.....

54. There is too much pressure on my job.....

55. Some of the working conditions here are annoying.....

56. I have the right equipment to do my work.....

57. My pay is enough to live on comfortably.....

58. I'm satisfied with the way employee benefits are handled here.....

59. The company's employee benefit program is O.K.....

60. The people I work with are very friendly.....

61. My boss really tries to get our ideas about things.....

62. My boss ought to be friendlier toward employees.....

63. My boss lives up to his promises.....

64. Management here has a very good personnel policy.....

65. Management ignores our suggestions and complaints.....

66. My boss knows very little about his job.....

67. My boss has the work well organized.....

68. This company operates efficiently and smoothly.....

69. Management really knows its job.....

70. They have a poor way of handling employee complaints here.....

71. You can say what you think around here.....

72. You always know where you stand with this company.....

73. When layoffs are necessary, they are handled fairly.....

74. I am very much underpaid for the work that I do.....

75. I'm really doing something worthwhile in my job.....

76. I'm proud to work for this company.....

77. Filling in this Inventory is a good way to let management know what employees think.....

78. I think some good may come out of filling in an Inventory like this one.....

Go on to the next pag

Write your comments

in the space provided on the back of the Answer Pad.

ANSWER PAD

for the

SRA Employee Inventory

FORM AH

Prepared by
The Employee Attitude Research Group,
The Industrial Relations Center of the University of Chicago

Please use number 7-1582 when reordering this answer pad.

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Do not mark the spaces in this column unless you are told to do so.	AGREE ? DISAGREE	AGREE ? DISAGREE	AGREE ? DISAGREE
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General Information

1. GROUP	2. DATE
3.	4.

Please write your comments here.

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APPENDIX B

Your name _____

The following statements will help you to describe how you feel about your job. Think about your experience while working on the job and check those statements which most accurately and honestly answer these questions.

---

1. Place a check mark in front of the statement which best tells how good a job you have.
   ___A. The job is an excellent one, very much above the average.
   ___B. The job is a fairly good one.
   ___C. The job is only average.
   ___D. The job is not as good as average in this kind of work.
   ___E. The job is a very poor one, very much below the average.

2. Place a check mark in front of the statement which best describes your feelings about your job.
   ___A. I am very satisfied and happy on this job.
   ___B. I am fairly well satisfied on this job.
   ___C. I am neither satisfied nor dissatisfied--it is just average.
   ___D. I am a little dissatisfied on this job.
   ___E. I am very dissatisfied and unhappy on this job.

3. Check one of the following statements to show how much of the time you are satisfied with your job.
   ___A. Most of the time.
   ___B. A good deal of the time.
   ___C. About half the time.
   ___D. Occasionally.
   ___E. Seldom.

4. Place a check mark in front of the statement which best tells what kind of an organization it is to work for.
   ___A. It is an excellent organization to work for--one of the best organizations I know of.
   ___B. It is a good organization to work for but not one of the best.

___C. It is only an average organization to work for. Many others are just as good.
___D. It is below average as an organization to work for. Many others are better.
___E. It is probably one of the poorest organizations to work for that I know of.

5. Place a check mark in front of the statement which best tells how your feelings compare with those of other people you know.
___A. I dislike my job much more than most people dislike theirs.
___B. I dislike my job more than most people dislike theirs.
___C. I like my job about as well as most people like theirs.
___D. I like my job better than most people like theirs.
___E. I like my job much better than most people like theirs.

6. Place a check mark in front of the statement which best tells how you feel about the work you do on your job.
___A. The work I do is very unpleasant. I dislike it.
___B. The work I do is not pleasant.
___C. The work is just about average. I don't have any feeling about whether it is pleasant or not.
___D. The work is pleasant and enjoyable.
___E. The work is very enjoyable. I very much like to do the work called for on this job.

7. Check one of the following which best describes any general conditions which affect your work or comfort on this job.
___A. General working conditions are very bad.
___B. General working conditions are poor--not so good as the average for this kind of job.
___C. General working conditions are about average, neither good nor bad.
___D. In general, working conditions are good, better than average.
___E. General working conditions are very good, much better than average for this kind of job.

8. Check one of the following statements which best tells how you feel about changing your job.
   ___A. I would quit this job at once if I had anything else to do.
   ___B. I would take almost any other job in which I could earn as much as I am earning here.
   ___C. This job is as good as the average and I would just as soon have it as any other job but would change jobs if I could make more money.
   ___D. I am not eager to change jobs but would do so if I could make more money.
   ___E. I do not want to change jobs even for more money because this is a good one.

9. Suppose you had a very good friend who is looking for a job in your line of work and you know of a vacancy in this organization which your friend is well qualified to fill. Would you:
   ___A. Recommend this job as a good one to apply for?
   ___B. Recommend this job but caution your friend about its shortcomings?
   ___C. Tell your friend about the vacancy but not anything else, then let him decide whether to apply or not?
   ___D. Tell your friend about the vacancy but suggest that he or she look for other vacancies elsewhere before applying?
   ___E. Try to discourage your friend from applying by telling the bad things about the job?

10. On the line below, place a check mark to show how well satisfied you are with this job. You may place your mark anywhere on the line either above one of the statements or between them.

Completely dissatisfied	More dissatisfied than satisfied	About half and half	More satisfied than dissatisfied	Completely satisfied

APPENDIX C

Your name_____

The following statements will help you to describe how your associate, your superior, your subordinate feels about his job. Think about his experience while working on the job and check those statements which tell how you think he would answer these questions.

Now check for whom you are answering these statements: My Associate ( ) My Superior ( ) My Subordinate ( ) His full name is _____

_____

1. Place a check mark in front of the statement which best tells how good a job he has.
   ___A. His job is an excellent one, very much above the average.
   ___B. His job is a fairly good one.
   ___C. His job is only average.
   ___D. His job is not as good as average in this kind of work.
   ___E. His job is a very poor one, very much below the average.

2. Place a check mark in front of the statement which best describes his feelings about his job.
   ___A. He is very satisfied and happy on his job.
   ___B. He is fairly well satisfied on his job.
   ___C. He is neither satisfied nor dissatisfied--it is just average.
   ___D. He is a little dissatisfied on his job.
   ___E. He is very dissatisfied and unhappy on his job.

3. Check one of the following statements to show how much of the time he is satisfied with his job.
   ___A. Most of the time.
   ___B. A good deal of the time.
   ___C. About half the time.
   ___D. Occasionally.
   ___E. Seldom.

4. Place a check mark in front of the statement which best tells what he thinks of this company as a place to work.
   ___A. He thinks it is an excellent organization to work for--one of the best organizations he knows of.
   ___B. He thinks it is a good organization to work for but not one of the best.
   ___C. He thinks it is only an average organization to work for. Many others are just as good.
   ___D. He thinks it is below average as an organization to work for. Many others are better.
   ___E. He thinks it is probably one of the poorest organizations to work for that he knows of.

5. Place a check mark in front of the statement which best tells how his feelings compare with those of other people he knows.
   ___A. He dislikes his job much more than most people dislike theirs.
   ___B. He dislikes his job more than most people dislike theirs.
   ___C. He likes his job about as well as most people like theirs.
   ___D. He likes his job better than most people like theirs.
   ___E. He likes his job much better than most people like theirs.

6. Place a check mark in front of the statement which best tells how he feels about the work he does on his job.
   ___A. The work he does is very unpleasant. He dislikes it.
   ___B. The work he does is not pleasant.
   ___C. The work is just about average. He doesn't have any feeling about whether it is pleasant or not.
   ___D. The work is pleasant and enjoyable.
   ___E. The work is very enjoyable. He very much likes to do the work called for on his job.

7. Check one of the following which best describes any general conditions which affect his work or comfort on the job.
   ___A. His general working conditions are very bad.
   ___B. His general working conditions are poor--not so good as the average for this kind of job.
   ___C. His general working conditions are about average, neither good nor bad.
   ___D. In general, his working conditions are good, better than average.
   ___E. His general working conditions are very good, much better than average for this kind of job.

8. Check one of the following statements which best tells how he feels about changing his job.
   ___A. He would quit this job at once if he had anything else to do.
   ___B. He would take almost any other job in which he could earn as much as he is earning here.
   ___C. His job is as good as the average and he would just as soon have it as any other.
   ___D. He is not eager to change jobs but he would do so if he could make more money.
   ___E. He does not want to change jobs even for more money because this is a good one.

9. Suppose he had a very good friend who is looking for a job in his line of work and he knows of a vacancy in this organization which his friend is well qualified to fill. Would he:
   ___A. Recommend this job as a good one to apply for?
   ___B. Recommend this job but caution his friend about its shortcomings?
   ___C. Tell his friend about the vacancy but not anything else, then let him decide whether to apply or not?
   ___D. Tell his friend about the vacancy but suggest that he or she look for other vacancies elsewhere before applying?
   ___E. Try to discourage his friend from applying by telling him the bad things about the job?

10. On the line below, place a check mark to show how well satisfied he is with his job. You may place your mark anywhere on the line above one of the statements or between them.

Completely dissatisfied	More dissatisfied than satisfied	About half and half	More satisfied than dissatisfied	Completely satisfied

APPENDIX D

Draw a circle around "Yes" if your answer is "yes," or a circle around "No" if your answer is "no." If you don't know or are not sure draw a circle around the question mark.

Circle only one answer for each question.

Yes ? No 11. Since working here, have you had any pay raise or promotion?

Yes ? No 12. Have you ever recommended this organization or a job with this organization to one of your friends?

Yes ? No 13. Since working here, have you registered with an employment agency or applied for a job with any other organization?

APPENDIX E

The next five questions may be answered in the following way:

Draw a circle around "Yes" if your answer is "yes," or a circle around "No" if your answer is "no." If you don't know or are not sure draw a circle around the question mark.

Circle only one answer for each question.

Yes ? No 11. Since working here, have you had any pay raise or promotion?

Yes ? No 12. Have you ever recommended this organization or a job with this organization to one of your friends?

Yes ? No 13. Since working here, have you registered with an employment agency or applied for a job with any other organization?

Yes ? No 14. Since working here, have you had any grievance in connection with your job?

Yes ? No 15. Have you ever tried to transfer to another job or department?

APPENDIX F

BREAKDOWN BY DEPARTMENTS OF THE STRATIFIED RANDOM SAMPLES OF EMPLOYEES

Department or Echelon	Total N (153)	Validation Sample N (101)	Cross-Validation Sample N (52)
Supervisors	5	3	2
Foremen	15	9	6
Office	21	15	6
Finish and trim	25	17	8
Veneer	12	8	4
Molded plywood	12	8	4
Machine	16	10	6
Cabinet and coordinating	24	15	8
Shipping and misc.	9	7	2
Upholstering	15	9	6

REPORT of SURVEY RESULTS on the SRA EMPLOYEE INVENTORY

THIRD EDITION
OCTOBER 1952

Company APPENDIX G Group(s) Profiled

Number in Group Date of Survey

PERCENTILE SCALE	VERY LOW					LOW					AVERAGE										HIGH					VERY HIGH				
	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	96	97	98	99
I—Job Demands	1.35	1.54	1.67	1.80	1.90	2.32	2.58	2.81	2.92	3.00	3.10	3.21	3.30	3.36	3.42	3.52	3.60	3.71	3.80	3.86	3.95	4.08	4.22	4.28	4.33	4.40	4.49
II—Working Conditions	1.39	1.63	1.82	1.99	2.10	2.60	2.92	3.15	3.30	3.45	3.57	3.69	3.78	3.92	4.05	4.19	4.29	4.41	4.53	4.64	4.78	4.94	5.12	5.18	5.26	5.35	5.45
III—Pay	.22	.30	.38	.43	.50	.64	.72	.81	.91	1.01	1.10	1.20	1.29	1.35	1.47	1.58	1.66	1.76	1.83	1.92	2.03	2.21	2.53	2.64	2.75	2.85	3.05
IV—Employee Benefits	.78	.87	.98	1.07	1.16	1.55	1.83	2.02	2.19	2.32	2.45	2.58	2.69	2.78	2.88	2.94	3.04	3.11	3.19	3.28	3.37	3.50	3.65	3.71	3.75	3.79	3.85
V—Friendliness & Cooperation of Fellow Employees	1.45	1.62	1.74	1.82	1.90	2.17	2.34	2.44	2.52	2.61	2.68	2.75	2.82	2.88	2.93	3.00	3.05	3.13	3.21	3.29	3.36	3.43	3.56	3.60	3.65	3.71	3.76
VI—Supervisor-Employee Interpersonal Relations	2.24	2.52	2.71	2.86	3.00	3.63	3.96	4.18	4.42	4.61	4.75	4.92	5.13	5.31	5.44	5.56	5.74	5.89	6.04	6.22	6.42	6.63	6.90	6.96	7.06	7.15	7.24
VII—Confidence in Management	1.59	1.87	2.02	2.13	2.28	2.76	3.13	3.44	3.64	3.72	3.88	4.00	4.17	4.35	4.51	4.68	4.85	5.01	5.22	5.40	5.58	5.77	6.07	6.12	6.21	6.30	6.44
VIII—Technical Competence of Supervision	1.87	2.19	2.43	2.55	2.63	3.01	3.21	3.39	3.50	3.65	3.76	3.87	3.97	4.09	4.16	4.30	4.43	4.51	4.60	4.69	4.81	4.97	5.20	5.23	5.28	5.36	5.37
IX—Effectiveness of Administration	1.02	1.33	1.50	1.58	1.65	1.89	2.09	2.24	2.35	2.47	2.61	2.75	2.88	3.00	3.12	3.24	3.36	3.48	3.60	3.72	3.86	4.03	4.24	4.29	4.35	4.39	4.48
X—Adequacy of Communication	1.40	1.59	1.75	1.87	1.96	2.27	2.49	2.71	2.87	3.02	3.16	3.27	3.39	3.51	3.65	3.79	3.94	4.10	4.25	4.38	4.51	4.73	4.99	5.05	5.10	5.18	5.36
XI—Security of Job and Work Relations	1.73	1.90	2.07	2.16	2.27	2.60	2.87	3.09	3.17	3.26	3.42	3.56	3.67	3.79	3.90	4.01	4.12	4.23	4.39	4.59	4.80	5.03	5.38	5.44	5.51	5.72	5.93
XII—Status and Recognition	2.19	2.34	2.44	2.51	2.59	3.82	3.03	3.22	3.36	3.50	3.64	3.72	3.84	3.94	4.03	4.10	4.21	4.26	4.41	4.52	4.66	4.82	5.05	5.13	5.20	5.33	5.48
XIII—Identification with the Company	1.37	1.49	1.61	1.68	1.76	1.96	2.12	2.26	2.41	2.52	2.64	2.78	2.89	2.98	3.06	3.12	3.19	3.26	3.33	3.41	3.51	3.58	3.69	3.74	3.77	3.81	3.88
XIV—Opportunity for Growth & Advancement	.92	1.03	1.18	1.19	1.25	1.46	1.61	1.76	1.89	2.01	2.10	2.21	2.30	2.39	2.48	2.56	2.65	2.77	2.88	2.97	3.08	3.21	3.35	3.40	3.43	3.47	3.57
Total—Inventory as a Whole	23.20	27.05	28.10	29.25	30.44	34.70	37.05	38.40	39.90	41.80	43.40	45.00	45.60	46.95	48.60	50.25	51.30	52.85	54.05	55.70	57.00	58.90	61.00	61.95	62.72	63.85	65.20
XV—Reactions to the Inventory	1.15	1.21	1.24	1.27	1.29	1.40	1.45	1.49	1.53	1.55	1.58	1.60	1.62	1.64	1.66	1.69	1.71	1.74	1.77	1.80	1.83	1.88	1.93	1.95	1.96	1.97	1.98
PERCENTILE SCALE	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	96	97	98	99

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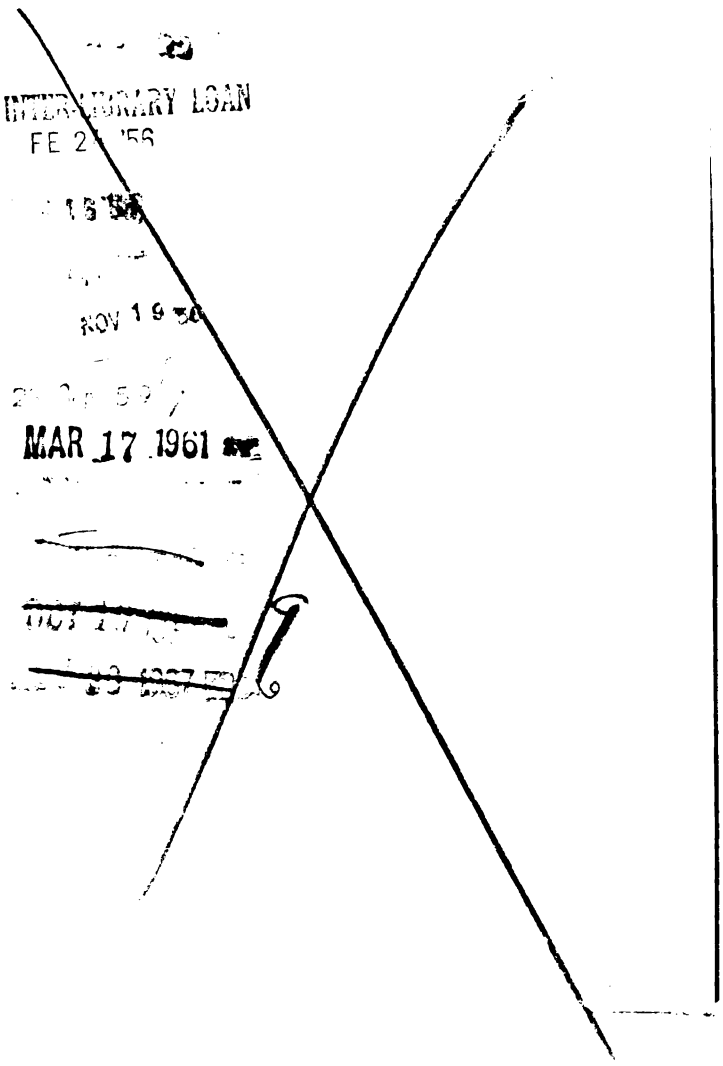
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