A PSYCHOMETRIC STUDY OF TWO INDICES OF JOB SATISFACTION

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By

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AN ABSTRACT

Submitted to the School of Graduate Studies of Michigan State University of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

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Two job satisfaction inventories and five criterion questions were administered non-anonymously to 165 workers in a Michigan furniture factory. The purpose of the study was to compare the inventories with each other, establish reliability and validity coefficients for them, examine the criterion, and to explore the possibility of constructing shorter forms of the inventories.

A method of stratified random sampling was used to separate the 165 workers into a 111-worker validation group and a 54-worker cross-validation group. Appropriate statistical procedures were then followed to carry out the purpose of the study.

The findings indicated that the inventories correlated significantly with each other, and significantly with a three, a five, and a four item criterion. Cross-validation was successful for both inventories separately on the five and four item criteria, and in combination on the three, five, and four item criteria. The inventories were both found to have high internal consistency. The criteria were improved by removal of one item which did not seem to measure the same thing as the other four items.

New forms of the inventories were made up on the basis of item reliability and on the basis of item validity as established on the four item criterion. The new forms were found to have validity coefficients which were not

significantly different from validity coefficients found for the original forms. Internal consistency of the new forms of the inventories remained high although the item numbers of the inventories were greatly reduced.

ACKNOWLEDGMENTS

The writer of this thesis would like to express her sincere gratitude for the aid and helpful advice given to her throughout this study by Dr. James S. Karslake, her major professor, and Dr. Carl F. Frost. Without the experienced guidance of these professors, the task of carrying out this project and writing the thesis would have been much more difficult.

This thesis is one of several being written on various aspects of job satisfaction testing. The writer would like to express her appreciation for the assistance and moral support given her by one of the other graduate students working in this area, Mr. William A. Schell.

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INTRODUCTION

The plan for this study grew out of an interest by the writer in how job satisfaction is currently being measured in industry and in whether or not the measuring instruments now in use might be improved. The problem of this study was to select one or more inventories of job satisfaction in current use and do a psychometric study on them. The purpose of such a study was specifically to compare the inventories with each other, establish their reliability and validity coefficients, and to explore the possibility of constructing them in shorter form.

A perusal of the literature concerning the measurement of job satisfaction led to the selection of two inventories in current use for analysis. The inventories chosen were the Hoppock job satisfaction scale as revised by Bullock, and an employee attitude inventory designed by the Science Research Associates. (Appendices A and B). Three criterion questions used by Bullock and two criterion questions added by this writer formed the composite of questions used in the examination of validity in this study. (Appendix C).

DEFINITIONS

The following definitions apply to this study:

Validity - An item or inventory is valid to the extent that it measures what it is supposed to measure.

Cross-Validity - An item or an inventory has cross-validity to the extent that validity will hold from sample to sample of the parent population.

Reliability - An item or an inventory is reliable to the extent that it measures the same thing if applied over and over in the same situation.

Job Satisfaction - Job satisfaction is a positive feeling held to some degree by an employee towards his job and all factors that he sees as related to his job.

BACKGROUND

During the last few decades, there has been a growing interest in the human relations approach to better productivity in industry. Numerous studies have led to the inference that there is a high, positive relationship between worker satisfaction with a job, and productivity. (4, 6, 8, 9, 11, 14, 16, 17, 18, 19, 20, 21, 22, 25, 26, 27, 28, 33, 34, 35, 36, 38). Because of this inferred relationship, interest has grown in the problem of how job satisfaction can be measured.

Publication of research attempting to analyze job satisfaction dates mainly from the time of World War I. These publications have not generally provided tools of practical value for measuring job satisfaction. On the whole, the early research has contributed many lists of factors "felt" to be important components of morale. Only recently has any work been done in actual factor analysis of inventories which are supposed to measure job satisfaction. Using the Science Research Associates Employee Inventory, Baehr (3) found four basic factors which seemed to be held in common by widely different groups of employees. The names given to these factors were, Immediate Supervision, Job Satisfaction, Integration in the Organization, and Friendliness and Cooperation of Fellow Employees.

Ash (2) also did a factor analysis on categories within the Science Research Associates Employee Inventory. He found five factors which he called, Personality Integration, Job Rewards, Management Effectiveness, Imediate Supervision, and General Job Satisfaction.

Wherry (36) re-worked the same data used by Baehr and Ash. He reported the following factors: a General Factor, Working Conditions and Environment, Financial Reward, Supervision, and Effective Management and Administration.

Both early and recent research concerning factors important in job satisfaction contain many areas of agreement in the factors found, although validation of the factors statistically is not reported. The research to date in this area is limited, but is certainly not without merit, since the similarity in factors found can form a base for the design of more objective research on job satisfaction.

Recent Test-Analysis Literature

Within the last few years, the writers of some publications have expressed problems encountered in validation research and have suggested various methods and procedures to be used in such research. Concerning methods, Long and Sandiford (24) report twenty-two methods which may be used for analysis of reliability or validity of tests.

Anastasi (1) has pointed out problems that may be encountered in criterion selection for validation studies.

After a thorough analysis of current literature on test validation, she notes that,

> "...validity is not a function of the test but of the use to which the test is put. A test may have high validity for one criterion and low or negligible validity for another."

She quotes Guilford's statement that a test may be valid for anything with which it correlates. In other words, Anastasi brings out the point that a test is valid for use only to the extent that it measures the behavior we are interested in. The problem pointed out here is that of selecting a criterion for validation which will be in line with the intended use of the test.

Nagle (29), McConnel (27), Sanford (24), and Bullock (7) all state that objective measures of behavior are best for criteria when the inventories being validates are subjective in nature. McConnel (27) notes that,

> "Attitude surveys, whether conducted by paper and pencil tests or interviews, are essentially reactions to artificial situations. Both the paper and pencil and the interviewer's questions are stimuli, but they are not the same stimuli which call forth the kind of behavior which is ultimately the thing of real interest."

Concerning the problem of cross-validation of inventories, the Psychological Corporation (31) states that cross-validation is necessary "to protect us from being fooled into putting confidence in a relationship which <u>happens</u> to hold true for the group we started with but which will let us down in the long run." Cureton (10) also brings

out the idea that to establish the validity of a revised inventory, by again using the same group the original inventory was validated upon, is a highly risky procedure.'

Recent Test-Analysis Research

On all of the job satisfaction inventories reported in the literature, where any sort of statistical analysis was attempted, some form of reliability coefficient was established, whether in the form of test-retest reliability or internal consistency of the scale. Bullock (7) reported a split-half reliability, for his version of the Hoppock scale, of 0.81. The Science Research Associates Employee Inventory (12) was reported to have a test-retest reliability of 0.89.

There have been a few publications in the last few years concerning attempts to validate job satisfaction inventories. The Thurstone technique of validation by the judgment of "experts" is reported by Wood (38) and by Bullock (7). Brayfield and Rothe (6) and Bullock (7) have used t-tests to determine whether or not there is a significant mean difference between scores obtained by the most satisfied workers and scores obtained by the least satisfied workers. Brayfield and Rothe (6) validated an inventory by correlating it with another job satisfaction inventory. They found a correlation of 0.92 between the Hoppock job satisfaction inventory and their own.

The use of criterion questions for the validation of job satisfaction inventories has been reported by Hoppock (15), Kerr (16, 17), and Bullock(7). Hoppock used "self-estimate" criterion questions for the validation, Kerr (16, 71) used job-tenure rate for his criterion, and Bullock (7) used three objective data criterion questions.

The University of Chicago Research Group (12) reported a "good correspondence" between scores obtained on the Science Research Associates Inventory and the "considered judgments of experienced observers." They also reported establishment of validity for the inventory by comparison of test results with the results of non-directive interviews on a cross-section of employees.

This writer could not find evidence of cross validation studies on job satisfaction inventories reported in the literature.

HYPOTHESES

1. The two job satisfaction inventories used in this study will correlate highly with each other and with the criteria.

2. Validity coefficients obtained for each of the two inventories will be significantly other than zero and will be upheld when they are cross-validated.

3. Short forms of the inventories made up on the basis of the items on each inventory which agree best with the criteria will be more valid than short forms of the inventories made up on the basis of the items which agree best with each inventory as a whole.

PROCEDURE

The procedure followed in this study was to administer two job satisfaction inventories and five criterion questions to the workers in a furniture factory. The findings were then statistically analysed. A detailed description of the inventories, the criterion questions, the subjects used, and the statistical procedure follows.

The Inventories

The two job satisfaction inventories chosen for use in this study were, the Employee Inventory published by the Science Research Associates in 1952 (and hereafter in this study referred to as the "SRA") and the Bullock version of the Hoppock job satisfaction scale published by the Bureau of Business Research at Ohio State University in 1952 (and hereafter in this study referred to as the "OSU"). The SRA has enjoyed wide application as a tool for measuring employee attitudes concerning satisfaction with various aspects of the work situation.

The General Manual of the SRA (12) contains the following statement concerning the test:

> "The SRA Employee Inventory was developed to provide an accurate measure of employee attitudes toward the work environment. It is an inexpensive, easily

> interpreted, quickly scored questionnaire designed for use in all types of companies, including factories, offices, and retail stores."
>
> "The seventy-eight items in the SRA Employee Inventory reflect the kinds of things employees say about their jobs in a wide range of business and industrial situations." "It is phrased in simple language that is understandable to all employees with a fourth grade education or better."

From information derived in non-directive interviews by the Industrial Research group at the University of Chicago, fifteen major categories were chosen and then item construction took place within the chosen categories. The items were not arranged on the inventory proper according to category. The item arrangement was such, however, that scoring could be done from the answer pads according to category. The possible responses to each item were, "Agree", "?", and "Disagree". The items were worded so that on some, a response of "Agree" would indicate satisfaction, and on some a response of "Disagree" would indicate satisfaction. A response of "?" to any item indicated other than satisfaction. By the selective placement of carbon on the answer pads, only satisfied responses were recorded, and scores were computed by adding the number of satisfied responses. The highest possible score indicating greatest satisfaction was seventy-eight.

The OSU inventory, according to Bullock (7), "is composed of ten items requiring evaluations of the employing organization, the job itself, or the respondent's own position in the work group." A scale of the type used by

Likert (23) was used for the five alternative responses to each item. Each set of five alternatives was arbitrarily given values of 1, 2, 3, 4, and 5 with 5 indicating the greatest amount of satisfaction and 1 the least on each question. The highest possible score indicating greatest satisfaction on the job was 50.

The Criteria

Five questions were administered which were assumed to be objective measures of job satisfaction. The first three were designed by Bullock (7) (Appendix D), and the last two were designed in connection with this study (Appendix E). Each question had three possible responses. "Yes", "?", and "No". For some of the questions "Yes" was the answer to indicate satisfaction and for some of the questions "No" was the answer to indicate satisfaction. "?" was always considered to indicate other than satisfaction.

The five questions were used in the following three ways: First, as a three question criterion to partially replicate Bullock's attempt to validate the Hoppock material, (Appendix D). Second, as a five question criterion on the assumption that five were a more adequate criterion than three, (Appendix E). Third, as a four question criterion upon finding through item analysis that one question was essentially irrelevant and should be discarded. (Appendix F).

The hypotheses were examined primarily with reference to the four item criterion.

In every instance the respondents were divided into two groups, the satisfied and less satisfied, on the basis of their responses to the criterion questions. (See Appendix G for the division).

The Subjects

The two job satisfaction inventories and five criterion questions were administered to 168 of the 175 employees of a furniture manufacturing company in a small town in Michigan. Seven ill, night, or part-time workers were not present during the testing and an opportunity was given to these employees to respond by mail. Three of these seven responded. A total of six responses had to be thrown out because they were incomplete. The total sample with complete test results was 165.

The entire company participated in the study, including executives, foremen, office, and factory workers. The executives were given the inventories first, and then the foremen took the inventories in a group. Following administration of the scales to the foremen, an article was written for the Company newssheet explaining to the workers what the procedures would be, the purpose of the testing, and words to dispell as much as possible fears and distrust concerning the testing. Two days later, the entire Company was tested

in groups of 30 or less. Students working on this study administered the scales in the absence of members of management. Care was taken to establish an atmosphere of confidence and trust, since the administration had to be nonanonymous for the purpose of another student's thesis.

The furniture company had used the services of a consulting psychologist for some time when the survey was given, and many "reforms" in management practices, personnel policy, and wage administration had been suggested and at least partially carried out at the time of the study. However, the workers were paid on a group-incentive basis and at the time of the survey, the announcement had just been made that, for the first time in many months, there would be no bonus because production had gone down.

The 165 subjects were divided into two groups (I) and (II) by a method of stratified random sampling. There were 111 subjects in Group I, and 54 in Group II. Studies of item and test reliability and validity were all based upon the subjects in Group I. Group II was used wholly for the purpose of cross-validating anything found or developed on the basis of Group I performance.

Statistical Analysis

Both Group I and Group II scores were computed and compared for the two inventories and for the criterion questions. The procedure was then as follows:

1. A Pearson product-moment coefficient of correlation between scores on the two job satisfaction inventories was computed.

2. Items were analyzed by the Kelley method (24) to determine item reliability, and to determine item validity on the basis of the four item criterion.

3. Using items found to be reliable at the 5% level of significance or higher, a new, shorter form of each of the two inventories was formed. Using items found to be valid at the 5% level of significane or higher, a new, shorter form of each of the two inventories was formed. Thus, each of the two original forms of the job satisfaction inventories had two corresponding short forms each--one composed of items considered reliable, the other composed of items considered valid.

4. Point-biserial coefficients of correlation were used to establish validities of the original forms of the SRA and OSU separately and in combination, and of the four short forms of the inventories.

5. Cross validities for all forms of the inventories were established.

6. Kuder-Richardson formula 21 was used to determine the internal consistency of all forms of the SRA and OSU.

7. The Spearman-Brown formula was used to compare reliabilities and validies of the short forms with the longer forms of the inventories.

FINDINGS

Table I shows Group I and II mean scores and standard deviations on each of the two inventories and the three forms of criterion. *t* ratios established show no significant differences between Groups I and II on any of the means.

The Pearson correlation between the original forms of the SRA and OSU (SRA_{78} and OSU_{10}) was 0.755.

Use of the Kelley method to determine item reliabilities resulted in a 53 item SRA (SRA_{53}) (Appendix H), and a 9 item OSU (OSU_9) (Appendix I). Use of the Kelley method to determine item validities on the basis of the four item criterion resulted in a 15 item SRA (SRA_{15}) (Appendix J) and a 6 item OSU (OSU_6) (Appendix K).

Table II shows point biserial validity coefficients and Pearson cross-validity coefficients of the SRA_{78} and OSU_{10}, alone and in combination, with the 3 item (Y_3), 5 item (Y_5), and 4 item (Y_4) criteria. Point biserial validity coefficients are also shown for SRA_{53}, SRA_{15}, OSU_9, and OSU_6 with the 4 item criterion. Pearson cross-validity coefficients are reported for SRA_{53} and OSU_9 on the 4 item criterion.

Regression equations for predicting criterion scores on the basis of inventory scores were as follows:

$$Y_3 = 0.0196X_{SRA_{78}} + 1.375$$
$$Y_3 = 0.0460X_{OSU_{10}} + 0.675$$
$$Y_3 = 0.028X_{OSU_{10}} + 0.0103X_{SRA_{78}} + 0.798$$

$$Y_5 = 0.023X_{SRA_{78}} + 1.738$$
$$Y_5 = 0.0585X_{OSU_{10}} + 1.256$$
$$Y_5 = 1.65 - 0.0177X_{OSU_{10}} + 0.0456X_{SRA_{78}}$$

$$Y_4 = 0.073X_{SRA_{78}} - 1.529$$
$$Y_4 = 0.054X_{OSU_{10}} + 0.415$$
$$Y_4 = 0.0100X_{SRA_{78}} - 0.046X_{OSU_{10}} - 1.314$$
$$Y_4 = 0.055X_{SRA_{53}} + 0.526$$
$$Y_4 = 0.061X_{OSU_9} + 0.353$$
$$Y_4 = 0.056X_{SRA_{53}} - 0.0014X_{OSU_9} + 0.438$$

Table III shows Kuder-Richardson internal consistency reliability coefficients for the original and short forms of the SRA and OSU.

In Table IV, the previously reported reliability and validity coefficients are compared with reliability and validity coefficients which might be expected if the shorter forms of the inventories were inflated or deflated in length.

TABLE I

COMPARISON OF MEANS SCORES OBTAINED BY GROUPS I AND II ON THE INVENTORIES AND CRITERIA

	Group I	Group II	t ratio
M_{sra}	55.37	59.20	0.20
σ_{sra}	14.06	13.48	
M_{osu}	38.86	39.30	0.05
σ_{osu}	6.16	6.44	
$M_{3\text{-crit}}$	2.46	2.69	0.02
$\sigma_{3\text{-crit}}$	0.69	0.54	
$M_{5\text{-crit}}$	3.51	3.78	0.65
$\sigma_{5\text{-crit}}$	1.09	0.98	
$M_{4\text{-crit}}$	2.51	2.85	0.29
$\sigma_{4\text{-crit}}$	1.06	0.83	

No t ratio found to be significantly other than zero.

TABLE II

VALIDITY AND CROSS-VALIDITY FINDINGS FOR ALL FORMS OF THE JOB SATISFACTION INVENTORIES

Inventory	3 Item Crit.		5 Item Crit.		4 Item Crit.	
	Val.	C-Val.	Val.	C-Val.	Val.	C-Val.
SRA_{78}	0.40----0.10"		0.49	0.36	0.56	0.47
SRA_{53}					0.43	0.24
SRA_{15}					0.38	
OSU_{10}	0.41----0.09"		0.33	0.45	0.31	0.48
OSU_{9}					0.33	0.54
OSU_{6}					0.51	
SRA_{78}+OSU_{10}	0.45	0.24	0.50	0.43	0.59	0.48
SRA_{53}+OSU_{9}					0.43	0.23
SRA_{15}+OSU_{6}					0.40	

"...not significantly other than zero

----...significantly different from each other.

TABLE III

KUDER-RICHARDSON RELIABILITY COEFFICIENTS

FOR ALL FORMS OF THE INVENTORIES

Inventory	Reliability
SRA_{78}	0.93
SRA_{53}	0.85
SRA_{15}	0.71
OSU_{10}	0.79
OSU_{9}	0.99
OSU_{6}	0.88

All reliability coefficients above were found to be significantly other than zero.

TABLE IV

SPEARMAN-BROWN INFLATION AND DEFLATION OF ORIGINAL RELIABILITY AND VALIDITY COEFFICIENTS* FOR DIFFERING INVENTORY LENGTHS

	78 items	53 items	15 items		10 items	9 items	6 items
Validity Coefficients:							
SRA_{78}	0.56	0.46	0.19	OSU_{10}	0.31	0.29	0.21
SRA_{53}	0.53	0.43	0.17	OSU_{9}	0.36	0.33	0.24
SRA_{15}	0.76	0.68	0.38	OSU_{6}	0.64	0.61	0.51
Reliability Coefficients:							
SRA_{78}	0.93	0.90	0.72	OSU_{10}	0.79	0.78	0.69
SRA_{53}	0.89	0.85	0.61	OSU_{9}	0.99	0.99	0.98
SRA_{15}	0.91	0.89	0.71	OSU_{6}	0.92	0.92	0.88

*Originals are underlined.

RESULTS

1. The two job satisfaction inventories used in this study correlated highly with each other and significantly with the three, five, and four item criteria.

2. Validity coefficients obtained for each of the two inventories were significantly other than zero and were upheld when cross-validated on the five and four item criteria, but not on the three item criterion.

3. Short forms of the inventories made up on the basis of the items on each inventory which agreed best with the four item criterion were <u>not</u> significantly more valid than short forms of the inventories made up on the basis of the items which agreed best with each inventory as a whole. However, when the Spearman-Brown formula was used to make the above comparison with the forms equated in length, the opposite was true. That is, two inventories of equal length made up on the basis of the items which agreed best with the four item criterion <u>were</u> significantly more valid than inventories made up on the basis of the items which agreed best with each inventory as a whole.

COMMENTS

Since it is possible that the findings of this study were specific to the industrial situation used and might differ from industry to industry, the suggestion should be made that inter-industry research be conducted.

It should be mentioned that there was a choice of statistics which could be used to establish validity coefficients in this study. It was not known if the furniture industry as a whole would show a normal distribution of job satisfaction on the inventories used or not. If it was assumed to be true, biserial correlation coefficients could have been used for establishing validity in the sample of the furniture industry used in this study. Such statistics would have resulted in higher validity coefficients than point biserial results. However, since satisfaction in the sample used was not normally distributed, it was felt that the assumption might also be made that the furniture industry as a whole might have a non-normal distribution. Since there was a degree of doubt about the normality of the parent population, point-biserial coefficients were chosen because they gave the more conservative estimates of validity.

It was considered possible that the use of larger samples might have resulted in higher validity coefficients also.

The Kelley method of upper and lower 27 percents was chosen for the item analyses because the method is supposed to eliminate masking of differences between satisfied and other-than-satisfied groups due to crowding around the 50% range of the distribution of satisfaction scores. The method eliminated this masking by taking, "not the difference between the percentage proportions of the upper and lower groups answering the item correctly, but the distance, in sigma units between the ordinates which cut off these respective proportions from the area of the normal curve". (24, p. 31).

An additional note concerning this study should be made about its non-anonymity. Since the findings showed questions 77 and 78 on the SRA to be neither reliable nor valid, and because of the care taken to assure the workers that their names would be seen only by two graduate students and used for research purposes only, it was felt that the results were not influenced by identification. However, in further research this factor might well be kept in mind, and interpretation of the results of this study should be made with the procedure followed in mind.

DISCUSSION AND CONCLUSIONS

The hypothesis that the SRA and OSU would correlate highly with each other was supported by the findings in this study. This correlation was predicted on the basis of the fact that both inventories were supposed to measure job satisfaction.

The hypothesis that validity coefficients obtained for each of the two inventories would be significantly other than zero was supported by the findings. These findings also supported the Bullock study (7). Further, it was found that validity coefficients obtained for each of the short forms of the two inventories were significantly other than zero.

The hypothesis that validity coefficients would continue to be greater than zero when cross-validated was upheld except in the case of the validity coefficients obtained for the three item criterion on the SRA_{78} and OSU_{10}. This finding was in disagreement with the findings of another student using the same statistics on the same data but with a different separation of Groups I and II from the parent population. This writer had no ready explanation for the disagreement found except to speculate that some form of bias may have occurred in designating Groups I and II. Some support may be given to this speculation by another strange finding

in this study. That is, on the five and four item criteria, the OSU_{10} and OSU_9 both had higher cross-validity coefficients than validity coefficients. Although the difference was not significant, the trend was apparent and unexpected. It seemed possible that perhaps the Group II scores used in this study were atypical of the parent population in some ways.

The hypothesis that short forms of the inventories made up on the basis of item validity would be more valid than short forms of the inventories made up on the basis of item reliability was not upheld. There were no significant differences in validity coefficients computed for the SRA_{78}, SRA_{53}, and SRA_{15}; nor for the OSU_{10}, OSU_9, and OSU_6. This finding in itself is worthy of note, however, since it appears that the short forms could be used just as well as the long forms to measure job satisfaction, with considerable practical savings in necessary administration time. Further, use of the Spearman-Brown formula to compare validity coefficients with the inventories equated for length, pointed out that the SRA_{15} and OSU_6 both had significantly higher validity coefficients than would be expected from the original form of either inventory.

The internal consistency of the inventories was high, and remained so in spite of considerable shortening of the inventories. The conclusion from this finding was that both tests were quite homogeneous, although some items measured the same thing better than others. This conclusion would

lead to the suggestion that further research might well assign item weights on the basis of how well each item measured the criterion, and determine validity and cross-validity on the basis of these weighted scores. It would be supposed that item weighting might significantly increase the validity and cross-validity coefficients found.

The items found to be most valid on the SRA came from nearly every one of the categories on the inventory. The only missing categories were Employee Benefits, Friendliness and Cooperation of Fellow Employees, Technical Competence of Supervision, Opportunity for Growth and Advancement, and Reactions to the Inventory. Of special interest was the fact that Identification with the Company contained 4 items, all of which were both reliable and valid. It was especially worthy of note in view of the fact that only one of the factor analysis studies (37) mentioned named this category as having weight in any factor found.

Since all valid items except 4 and 47 were also reliable, and since it was assumed that all reliable items measured what the test as a whole measured, it appeared that the items which were reliable, but not valid, accounted for some of the lack of perfect agreement between what the inventory measured and what the criterion measured. Possibly the SRA measured something more than job satisfaction that included job satisfaction within it.

Items in the categories called Pay, Friendliness and Cooperation of Fellow Employees, and Technical Competence of Supervision, did not agree well with either the test as a whole or with the criterion. It would seem probable that the items within these general categories were not especially related to job satisfaction in so far as the criterion and test measure job satisfaction.

The fact that items relating to Pay did not agree with the rest of the SRA or with the criterion to any great extent seemed to go along with the finding that the criterion question concerning pay did not agree with the other 4 criterion questions. Criterion item one asked whether the worker had <u>received a reward</u> on the job, whereas the other four criterion questions asked whether or not the worker had <u>expressed behavior</u> which might have been assumed to show dissatisfaction with the job. The conclusion here was that perhaps it cannot be assumed that receiving a reward on the job necessarily leads to satisfaction. It appeared that questions concerning behavior expressing dissatisfaction would be a safer objective criterion for satisfaction than questions which required the assumption that satisfaction should result from particular behavior directed toward the worker.

Concerning the OSU, it may be noted that removal of item 5, which did not agree with either the criterion or the rest of the inventory, improved the internal consistency of the inventory to the point where all 9 of the remaining items

appeared to really measure the same thing. An appraisal of the OSU at face value indicated that items 1, 2, 3, 5, 6, and 10 measured the same thing. However, the fact that item 5 was neither reliable nor valid seemed to indicate that a person seeing himself as satisfied or dissatisfied in comparison with other people (in item 5) was not the same thing as asking him how satisfied he actually was. This finding is understandable if it is noted that the worker had no opportunity to indicate on the question how satisfied he felt "others" were--or, indeed, whom he had in mind by "others".

Item 4 on the OSU was supposed, at face value, to be very similar to the items in Category 13 on the SRA, and it was not surprising, then, that the item was both reliable and valid. Question 7 appeared to ask the same question as item 29 on the SRA, which was also both reliable and valid. Question 8 seemed to be very closely related to criterion questions 3 and 5.

The findings indicated that the OSU questions which were both reliable and valid, seemed either to agree with the SRA, the criterion, or ask specifically if the worker was satisfied with his job. This finding allowed further support to the assumption made previously that the criterion measured job satisfaction, and that the area of overlapping measurement between the SRA and OSU measured job satisfaction. The findings also allowed the possible conclusion that the questions on the OSU which were reliable, but not valid, measured

job satisfaction, because of the high internal consistency of the test. Apparently, however, these items did not predict dissatisfied behavior as well as those items which were both reliable and valid. Perhaps weighted scores on the OSU would also improve prediction of the criterion scores, as was previously suggested concerning the SRA.

It seemed possible that future research in terms of criterion selection would do well to use the OSU questions that expressly questioned satisfaction, as guides in determining the criteria. This suggestion was supported in the findings by the indication that paper and pencil expressions of dissatisfaction, on items which specifically questioned satisfaction, were correlated with whether or not the worker had shown actual behavior expressing dissatisfaction. To the extent that such behavior would be undesirable to a company, it would certainly appear to be worthwhile to ask the questions concerning satisfaction. Furthermore, future research might well be concerned with just what dissatisfied behavior is undesirable to industry--and this undesirable behavior could then be put in question form and used as a criterion for validation of further job satisfaction inventories.

Another possibility for further research might be to more closely inspect the items on the SRA which did not seem to be reliable or valid in this study, and, by selection of further criteria, discover what behavior these items on the SRA will predict. The items on the SRA appeared valuable

in making a category profile of attitudes within industry, but it would have seemed more profitable to know what the profile meant in terms of what each Category actually measured. From a practical standpoint, the question may be asked whether or not we cared what relative standing a company or department obtained in its answers unless we knew what desirable or undesirable behavior could be predicted from the answers given.

The findings of this study further allowed the supposition that a shorter form of the SRA could be devised which would predict undesirable behavior as well or better than the long form has done.

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APPENDIX A

THE OSU

The following statements will help you to describe how you feel about your job. Think about your experience while working on this job and check those statements which most accurately and honestly tell how you feel about it.

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 better.
   - ___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 B

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 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.....

Write your comments

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

ANSWER PAD

for the

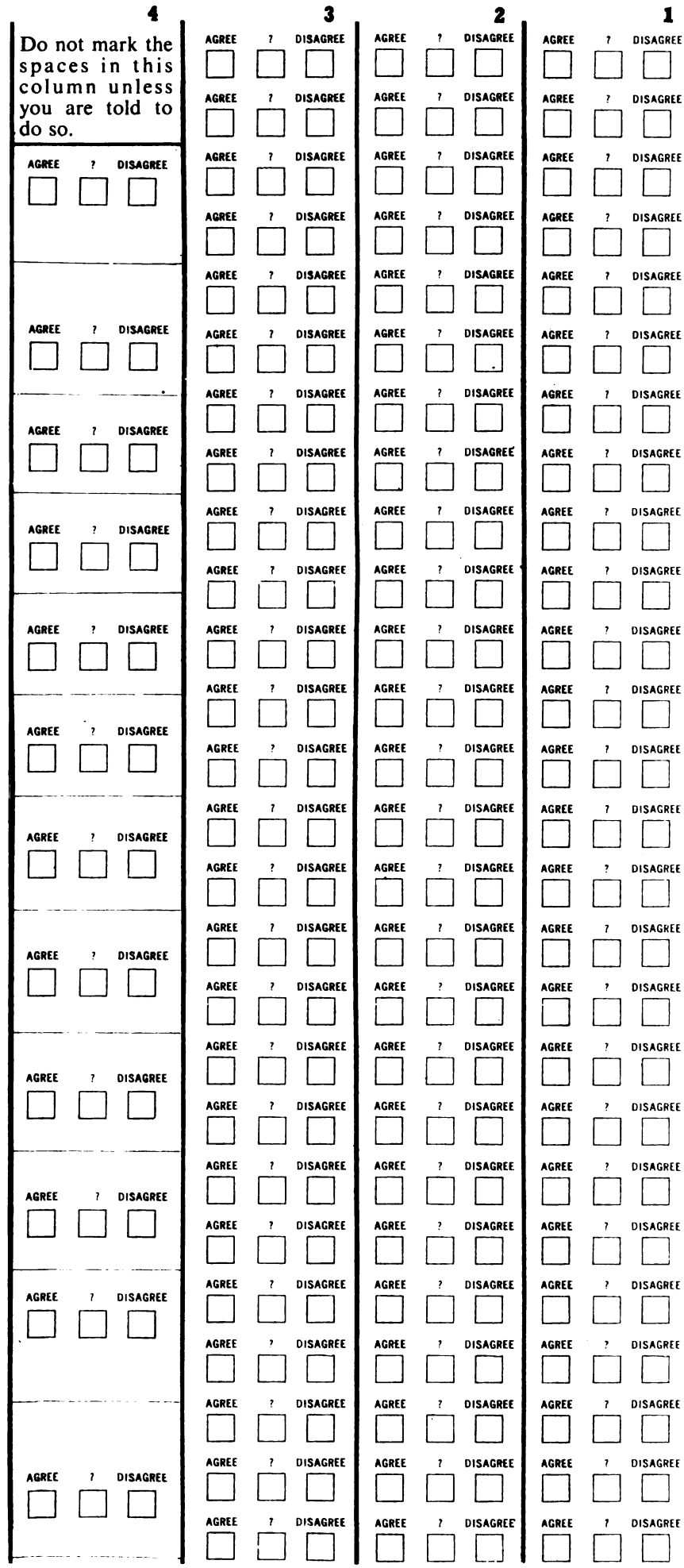
SRA Employee Inventory

FORM AH

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

Published by SCIENCE RESEARCH ASSOCIATES, INC., 57 West Grand Avenue, Chicago 10, Illinois.

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



ANSWER SHEET

General Information

1. GROUP	2. DATE
3.	4.

CATEGORY

II
IV
VI
VIII
X
XII
XIII
XIV
XV

1	27	53	2	28	54
3	29	55	4	30	56
5	31	57	6	32	58
7	33	59	8	34	60
9	35	61	10	36	62
11	37	63	12	38	64
13	39	65	14	40	66
15	41	67	16	42	68
17	43	69	18	44	70
19	45	71	20	46	72
21	47	73	22	48	74
23	49	75	24	50	76
25	51	77	26	52	78

I II III IV V VI VII VIII IX X XI XII XIII XIV XV

79	DISAGREE	?	AGREE
80	DISAGREE	?	AGREE
81	DISAGREE	?	AGREE
82	DISAGREE	?	AGREE
83	DISAGREE	?	AGREE
84	DISAGREE	?	AGREE
85	DISAGREE	?	AGREE
86	DISAGREE	?	AGREE
87	DISAGREE	?	AGREE
88	DISAGREE	?	AGREE
89	DISAGREE	?	AGREE
90	DISAGREE	?	AGREE

Do not write in this space.

General Information

1. GROUP	2. DATE
3.	4.

Please write your comments here.

To remove Answer Pad, lift here

APPENDIX C

THE CRITERION

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	1.	Since working here, have you had any pay raise or promotion?
Yes	?	No	2.	Have you ever recommended this organization or a job with this organization to one of your friends?
Yes	?	No	3.	Since working here, have you registered with any employment agency or applied for a job with any other organization?
Yes	?	No	4.	Since working here, have you had any grievance in connection with your job?
Yes	?	No	5.	Have you ever tried to transfer to another job or department?

APPENDIX D

THE THREE ITEM CRITERION

Yes	?	No	1. Since working here, have you had any pay raise or promotion?
Yes	?	No	2. Have you ever recommended this organization or a job with this organization to one of your friends?
Yes	?	No	3. Since working here, have you registered with an employment agency or applied for a job with any other organization?

APPENDIX E

THE FIVE ITEM CRITERION

Yes	?	No	1.	Since working here, have you had any pay raise or promotion?
Yes	?	No	2.	Have you ever recommended this organization or a job with this organization to one of your friends?
Yes	?	No	3.	Since working here, have you registered with an employment agency or applied for a job with any other organization?
Yes	?	No	4.	Since working here, have you had any grievance in connection with your job?
Yes	?	No	5.	Have you ever tried to transfer to another job or department?

APPENDIX F

THE FOUR ITEM CRITERION

Yes	?	No	1.	Have you ever recommended this organization or a job with this organization to one of your friends?
Yes	?	No	2.	Since working here, have you registered with an employment agency or applied for a job with any other organization?
Yes	?	No	3.	Since working here, have you had any grievance in connection with your job?
Yes	?	No	4.	Have you ever tried to transfer to another job or department?

APPENDIX G

NUMBER OF WORKERS SATISFIED OR LESS THAN SATISFIED ACCORDING TO THE THREE CRITERION FORMS

	3 Item Criterion	5 Item Criterion	4 Item Criterion
Crit. for satisfied	3 out of 3	4 or more out of 5	3 or more out of 4
Number satisfied	65	60	58
Number less than satisfied	46	51	53

APPENDIX H

53 ITEM SRA

Items						
	3	20	27	37	50	61
	6	21	28	38	51	63
	8	22	29	40	52	64
	9	23	30	41	53	68
	11	24	32	42	55	69
	12	25	33	44	57	70
	15	26	36	45	58	71
	16			46	59	72
	17			49		73
						74
						75
						76

APPENDIX I

9 ITEM OSU

Items	1
	2
	3
	4
	6
	7
	8
	9
	10

APPENDIX J

15 ITEM SRA

Items:

4, 9, 12

15, 17, 23, 24, 28

29, 49, 50, 71, 76

APPENDIX K

6 ITEM OSU

Items:

1, 2, 4, 7, 8, 10