

## *On Generalizing Research Findings*

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*Is there a test that will assist supervisors in making employment decisions? Research conducted in Indiana indicates that the Adaptability Test may serve that purpose. Use of the test under seemingly similar circumstances in Louisiana produced different results. These differing results raise the questions: To what extent can applied research be generalized from one population to another? What constitutes "seemingly similar circumstances" for such research?*

THE ANSWER to the question, "Can research findings be generalized?" is a qualified yes. Research findings can be generalized from one situation to another if the study population is representative of both situations. Otherwise, it may be necessary to validate within the specific situation in which they will be used. In many cases where situations appear to be similar, sub-surface differences may cancel the similarities and make research findings obtained in one situation inapplicable in another.

An example of this is shown by an experience in Louisiana: A study conducted in Indiana was compared with one conducted in Louisiana. Both studies were seeking some means of predicting performance of new employees. The Indiana study examined both agents and assistant agents; the Louisiana study looked at the position of assistant county agent doing 4-H Club work.

Louisiana Extension is continuously hiring personnel to these 4-H positions. Since the organization's contact with 4-H members is largely through these agents, selection of assistant county agents for 4-H work is an important personnel function.

To be considered for a position as an assistant county agent in Louisiana, an applicant must be a graduate of an accredited college with a bachelor of science degree in some area of agriculture, and have an undergraduate grade-point average of at least 2.5 (4.0 = A). Each individual seeking employment is requested to submit the following materials: (1) A completed application form which in-

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cludes information concerning personal characteristics, farm experience, educational background, experience in 4-H work, and previous employment and character references, (2) an official transcript of all earned college credits, (3) a one-page handwritten statement entitled, Why I Want to Be an Extension Worker, (4) three letters of recommendation, and (5) a recent photograph.

These materials provide information which the supervisor can use to make employment decisions. However, he must analyze this information himself. The supervisor is continually searching for methods of improving this selection process and of predicting ultimate agent performance levels. This is true not only in Louisiana but in many other states.

Is there some device that will provide this assistance in determining levels of performance? Research conducted in Indiana strongly indicates that the Adaptability Test may be that device. But experimental use of the test under seemingly similar conditions in Louisiana produced different results. This may mean that applied research must be carefully examined in the specific population in which the findings are to be put to use. Care must be exercised in generalizing to other populations.

#### THE INDIANA STUDY

E. R. Ryden<sup>1</sup> reports the results of four years of exploratory efforts to determine the possibility of utilizing psychological tests in selecting county Extension agents in Indiana. Extensive testing of the Adaptability Test, the Strong Vocational Interest Blank, the Survey of Interpersonal Values, the Gordon Personal Profile, and the Thurstone Temperament Schedule was done from 1961-65. As a result of this testing, the Aviator Scale of the SVIB and the AT were combined, along with grade-point averages, to form a prediction equation.

Of the instruments tested, the Adaptability Test was singled out as the one which consistently correlated significantly with job performance. When first tested in 1961 with 92 county and 82 assistant county agents, the study revealed a significant positive relationship between the AT scores and performance rating of agents. Based on these findings, it was concluded that the probability of an applicant ultimately having a high performance rating as a county agent could be estimated on the basis of his AT scores. In 1963 the usefulness of the AT was reexamined with 80 agents classified as administra-

<sup>1</sup>E. R. Ryden, "Predicting Successful Performance," *Journal of Cooperative Extension*, III (Summer, 1965), 103-9.

ters. Again it was shown that the AT correlated significantly with the job performance score, supporting the conclusion that the AT could be used as a predictor of success in the position of county agent.

#### THE LOUISIANA STUDY

During 1966 a study was conducted in Louisiana in an effort to see whether, and to what extent, scores on the AT might indicate the potential performance level of Extension agents doing 4-H Club work. The sample for the study consisted of 45 assistant and associate county 4-H agents. All agents in this job category from throughout the state were included in the study if they had been employed for at least two years. Form "A" of the AT was administered to these individuals.

As in the Indiana study, the paired comparison system of personnel appraisal was used to determine the level of job performance of the agents in this study.<sup>2</sup> The district agent and the 4-H program specialist in each Extension district made these determinations. In using the system of paired comparison, all individuals to be evaluated are presented to the evaluator in all possible pairs. The evaluator judges which one of the pair is of greater value than the other in some defined respect. This can be an individual character trait or over-all job performance. In this study the supervisors judged each pair of individuals on the basis of over-all job performance. A numerical score, representing the number of times each individual was judged higher than every other individual, was obtained. Performance scores were determined by calculating the proportion of first choices each individual received as compared to the number of first choices received by every other individual.<sup>3</sup> This calculation was made by the following formula:

$$M_p = \frac{C + .5n}{nN}$$

Where C = total number of choices given an individual  
 N = number of raters  
 n = number of individuals being rated  
 M<sub>p</sub> = performance score

<sup>2</sup> C. H. Lawshe and N. C. Kephart, *Manual for Use with the Lawshe-Kephart Personnel Comparison System* (Lafayette, Indiana: Purdue University, 1963).

<sup>3</sup> J. P. Guilford, *Psychometric Methods* (New York: McGraw Hill Book Co., 1955), p. 225.

The relationship between AT scores and performance scores was established. Significance of relationship was determined by statistical analysis using a simple correlation technique. There was very little correlation between AT scores and job performance scores as indicated by a plus .006 coefficient of correlation (0.0 represents no correlation, 1.0 represents perfect correlation).

#### WHY DIFFERENT RESULTS?

Findings in the Louisiana study are different from those of the Indiana study, although seemingly identical methods were used to determine both the test scores of mental ability and job performance.

This lack of consistency in findings may be due to different employment procedures. Procedures used by Extension in some states tend to select a specific type of individual, thus creating a very homogeneous group. In addition, in-service training which these individuals receive may tend to add to their homogeneity.

A study of the two samples would probably reveal some striking differences between individuals in the study—differences which could contribute to the different findings. For example, there might be a basic difference between 4-H agents and all agents. In addition, the supervisor's concept of high- and low-level performance may differ in the two states. All of this seems to point up the desirability of examining the population from specific research to see if the findings can be generalized to another situation.

#### SUMMARY

Supervisors who interview and employ Extension agents are continually trying to improve the selection process. There is a need for some device which will assist in predicting the potential performance level of the new employee. Research in Indiana indicated that the Adaptability Test will do just that. However, a seemingly similar study conducted in Louisiana showed no significant relationship between AT scores and job performance scores. If, in fact, the Louisiana study was a replication of the Indiana study, a possible explanation is that the agents studied in Louisiana represent a different population than those studied in Indiana. However, it should be recognized that there may be other variations. As was suggested, supervisors may use different bases (criteria) for judging effective performance from one state to another. These variations in results emphasize the desirability of examining research critically as a prerequisite to generalizing the findings.