

Validity of the Weighted Application Blank Across Four Job Criteria: A Meta-Analysis

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This study examined the validity of the weighted application blank (biodata) in predicting a variety of job criteria. A total of 52 empirical studies were located and their data combined using the technique of meta-analysis. The results indicate that the weighted application blank was an effective method for predicting performance ($r = .36$), tenure ($r = .28$), employee theft ($r = .38$), and credit risk ($r = .48$).

The application blank is probably the most widely used initial employee selection device and is often the first glimpse an employer has of a prospective employee. By examining the information included on the application, employers make preliminary judgments about the applicants they consider unqualified for open positions and those they believe should continue in the selection process. In addition, data obtained from these forms may be used to gain other important information such as Equal Employment Opportunity/Affirmative Action information, reference information, and supplementary details on which to focus during the selection interview.

Most garden variety application blanks request a standard set of information such as name, address, social security number, education, and past work history. However, some employers and researchers have modified their application blanks to include items that would not be considered standard. Information related to distance from work, type of residence, acquaintances in the company, and membership in organizations are some examples of the types of non-standard items that might be asked.

Researchers have found that some of these non-traditional items seem to be better predictors of a variety of job criteria than standard items. For example, Rosenbaum (1976) found that uncommon application questions correlated with increased likelihood of theft while other researchers found strong relationships between non-standard information and credit risk (Buel, 1968; McGrath, 1960). However, the largest body of research has focused on the correlation between application items and employee performance and tenure.

Once researchers realized that certain unique items were better predictors of employee behavior than others, they began assigning numerical values, or "weighting" them. This led to the development of the Weighted Application Blank (WAB), which depending on the type of questions asked, can also be referred to as the Biodata Questionnaire. Although it is time consuming to construct, there can be clear advantages to this technique. Once developed, the weighted application blank is relatively inexpensive and is not easily faked by applicants because they are unaware of how their responses are assessed. In addition, this method is quite flexible and can be used for a variety of positions such as those requiring long and costly training, positions where the turnover rate is abnormally high, or where a large number of applicants are seeking only a few job openings (England, 1971).

Regulations in employment practices have led to the elimination or restriction of certain types of information requested on applications. Items must not discriminate nor show adverse impact to any protected groups. Additionally, information obtained must be job related in order to adhere to the Uniform Guidelines. Because of these considerations, some items in earlier studies that refer to age, marital status, height, weight, disabilities, and financial history are now regarded as inappropriate by today's standards.

There have been many research studies that have examined the success of the WAB at predicting relevant job success, and, as is the case with most topics, the results have been mixed. At the extremes, Kirnan and her colleagues (1989), found a correlation of .22 between the WAB and performance, while Aamodt and Pierce (1987) obtained a correlation of .76 for the same criterion. Therefore, it is the purpose of this study to statistically combine the various empirical results obtained by other researchers to see whether the weighted application blank does have some predictive value in selecting employees. What this study will not do, is tell us which items are better predictors. Because the types of information

requested can vary with each weighted application blank, and because most researchers report only overall results rather than individual item outcomes, this study can only analyze the effectiveness of this technique as a whole.

METHOD

Meta-analysis is a statistical method that allows the researcher to derive one overall effect size from a large body of research. The basic procedure begins with a review of the relevant literature. In researching weighted application blanks, a total of 53 available validity studies were located. These studies were divided into four major groups based on the criterion being predicted: performance, tenure, credit risk, and employee theft. Specifically, 22 studies were found that looked at performance with a total sample size of 20,905; 27 investigating tenure yielding a sample size of 70,737 subjects; 2 that looked at predicting credit risk of bank loan applicants with a sample of 269; and two that examined employee theft with a total of 200 subjects.

The literature was summarized quantitatively, using meta-analytic techniques. A frequent procedure in meta-analysis is to convert the summary statistics to standard scores, but since all relevant research reported correlational results, no conversion was necessary. Using the method developed by Schmidt, Hunter, and Jackson (1982), each study was weighted by its sample size, and an overall effect size (r) was computed for each separate criteria. Next, the overall variance was calculated and corrected for sampling error. Finally, a conservative 95% confidence interval was computed to determine certainty of the final effect sizes.

RESULTS

As shown in Table 1, the results of the current meta-analysis revealed significant mean validities for all four criteria: performance ($r = .36$), tenure ($r = .28$), likelihood of theft ($r = .38$), and credit risk ($r = .48$). Overall, this analysis revealed very little variance among studies after correcting for sampling error. Because of this, it was unnecessary to search for moderating variables.

It is interesting to look at the tremendous effect that one group of studies conducted by the Navy Personnel Research & Development

Center (Quenette, Ward, Trent, & Laabs, 1990) had on the overall results obtained for the criteria of tenure.

Table 1

Meta-analysis Results

	Criterion			
	Performance	Tenure	Theft	Credit
Mean Effect Size	.36	.28	.38	.48
Total N	20,905	70,737	200	269
Number of Studies	22	27	2	2
Variance	.0294	.0010	.0073	.0146
Variance expected by sampling error	.0008	.0003	.0073	.0044
Corrected Variance	.0286	.0007	.0038	.0102
95% Confidence Interval				
Lower Bound	.35	.27	.26	.39
Upper Bound	.37	.28	.49	.57

Table 2 shows a comparison calculated with and without this group of studies. As can be seen, the sample size increased from 18,732 to 70,737 with the inclusion of the Navy research and, since the effect size was weighted by the number in the sample, the overall correlation for tenure was influenced considerably. Specifically, Quenette and her colleagues examined two alternate forms of the weighted application blank and obtained correlations of .25 and .26. When the other studies were combined with these results, the overall correlation for tenure dropped to .28. While this may seem like a significant drop, both correlation coefficients are still highly significant.

Table 2

Comparison of Tenure Results Without U.S. Navy Study

	Overall	Without Navy
Mean Effect Size	.28	.34
Total N	70,737	18,732
Number of Studies	27	25
Variance	.0010	.0040
Variance expected by sampling error	.0003	.0010
Corrected Variance	.0007	.0030
95% Confidence Interval		
Lower Bound	.27	.33
Upper Bound	.28	.35

CONCLUSION

Whether organizations should include a weighted application blank in their selection process depends on the validity of their current method. This statistical analysis of the WAB indicates that it can be moderately effective in predicting both job performance and tenure. In addition, if we use the few available studies as guidelines, the WAB also seems to be effective in predicting both likeliness of theft and credit risk.

Because of past charges of unfairness, today's companies may be leery of incorporating this technique into their selection procedure. In researching earlier studies, it is quite common to find questions about physical attributes, events beyond the applicant's control, or items unrelated to job success. Clearly, information of this type is inappropriate in assessing an applicant's potential. However, recent research, such as that by Gandy and Dye (1989) has concentrated on maintaining the effectiveness of the WAB while providing forms that are non-discriminatory. This type of study shows that WABs can be unbiased and still be better predictors of job criteria than other methods. As long as the employer insures that the information is relevant to the job and legal, the weighted application blank can be a cost effective method of selection.

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Note: This paper is an extension of an earlier meta-analysis conducted by Ge Ge Ellenburg, Lisa Hicks, Rob Stewart, and Mark Kremen.