

Select Assessment Systems: Overview of Results

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TECHNICAL REPORT

Introduction

Since 1993, Select International has been helping organisations assess and hire individuals at all positions, from entry-level to executive, in a wide range of industries.

The process of selecting, promoting and developing effective employees is fundamental to the success of any organisation. Select's research and experience has consistently shown that effective performers demonstrate specific behaviours and possess key attributes. These assets clearly impact their organisations' bottom line and separate them from their less successful counterparts.

Select International's assessment approaches have evolved and changed in line with their clients' unique needs. Today, Select International offers unprecedented flexibility, comprehensiveness and accuracy. As with all of Select's systems, applied research studies have been conscientiously conducted to determine what works best, what does not work and how best to improve the assessment process – in the process, reducing time and increasing accuracy.

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Systems vs. Tools

Performance is multi-faceted. Therefore, no single assessment method is enough. Select International firmly believes and their research demonstrates, that multiple assessment approaches are warranted. The result is a comprehensive assessment system – one that yields more robust results than by using a single approach.

While Select systems vary based on the specific needs of the organisation, each system incorporates multiple assessment methodologies to maximise accuracy, fairness and realism.

Team Member Assessment Research Findings

The following information summarises several empirical studies that have been conducted using Select's assessment systems for entry, professional and leadership positions.

Note that in some of these studies, a correlation between scores on the assessment and some external criteria is provided (e.g., supervisor ratings of job performance). Table 1 below provides generally accepted psychometric standards for determining the strength of correlation coefficients in behavioural science settings.

Table 1. Ranges in Correlation Coefficients

Range in Correlation	Strength of Relationship between Predictor Coefficient ¹
r = .00 - .19	Little, if any, relationship
r = .20 - .29	Small/Moderate relationship
r = .30 - .39	Moderately strong relationship
r = .40 - .50	Strong relationship
r > .50	Very strong relationship

Summary of Entry-Level Manufacturing Validation Studies

From 1995 through 2003 Select conducted 14 separate empirical validation studies of its assessment system for entry-level manufacturing employees in the U.S. All told, the sample represented 1,853 individuals from a broad range of manufacturing organisations. Sample size by study ranged from 31 to 384. In each of these studies there was information about the individual's performance on the assessment as well as their performance on the job. A correlation was calculated between these two scores.

¹ Taken from ranges in effect sizes described by Cohen (1977).

A list of the types of industries from which the studies were conducted is shown below, along with the sample size (n) for each. Note that for some industries, multiple studies were conducted.

- Automotive (n=158)
- Automotive Parts (n=58)
- Building Products (n=40)
- Colored Dies (n=120)
- Custom Engineered Materials (n=43)
- Electronics/Communications (n=226)
- Farm Equipment (n=214)
- Fibreglass & Glass (n=384)
- Frozen Foods (n=31)
- Heavy Truck (n=172, n=72)
- Television Sets (n=124, n=55, n=267)
- Truck Engine (n=92)

Using an approach referred to as meta-analysis, we were able to combine the results across these studies taking into account the sample size as well as the magnitude of the correlation. The results of this meta-analysis indicated that the average correlation for the Select Assessment for Manufacturing is r=.58. This indicates a very strong relationship exists between the assessment scores and actual job performance. To put this number in perspective, according to similar meta-analyses, the Select system is:

- Two times as accurate as a structured, behavioural interview
- Almost four times as accurate as an unstructured, behavioural interview

It's important to keep in mind that these results are only for the computer-based portion of the assessment process. When combined with an up-front screen and followed up with an interview, role play production simulation or other types of assessments, the overall accuracy will increase by as much as 25%.

Leaders & Professional Assessment Research Findings

Establishing Footprints

To help their clients make the best decisions, Select International establishes success profiles or "footprints." The footprints identify individuals who are most likely to succeed in the target position within the organisation. These footprints are typically established by first evaluating a representative sample of existing employees at the company. These employees' assessment performances are compared to organisational results.

Over the years, Select International has found that, for leadership and professional positions, a footprint is a more appropriate decision-making tool than simply focusing on overall scores or simple pass/fail decisions. Footprints help organisations focus on what is truly important and help define the profile of success for leaders and professionals in their organisations.

Study 1 – Group Leaders for a Television Manufacturer

Group leaders at this 5,000-employee facility oversee several teams of manufacturing employees. Group leaders typically have four to eight team leaders reporting to them, with a total of 20 to 70 total employees reporting to them. A total of 73 current group leaders were assessed using the Select Assessment for Leadership System. In addition, data was collected from the group leaders’ supervisors regarding their job performance.

The overall competency profile scores from the assessment system correlated $r = 0.50$ with supervisor ratings of performance. As the ranges in Table 1 demonstrate, these results are statistically significant and would be considered to be a strong relationship.

In addition, the results of this study indicated substantial differences in job performance existed between individuals who met the footprint vs. those who did not.

According to the salaries of these employees and a standardised ROI formula, group leaders who met the profile are worth at least \$21,000 more to the organisation than those who did not meet the footprint.²

Study 2 – Managers in a Construction/ Mining Company

Managers in this firm oversaw multiple work groups that were, in turn, led by frontline supervisors. As part of a larger developmental program, these managers were assessed using the Select Assessment for Leadership System. Ratings of manager effectiveness were gathered from their direct subordinates (i.e. the frontline supervisors who reported to them), as well as their bosses. Footprints were established for the managers based on job analyses and discussions of the organisation’s goals. One hundred five managers participated in this study.

²Refer to Cascio, W. F. (1987). *Applied Psychology in Personnel Management*. (Third Edition), Englewood Cliffs, NJ: Prentice-Hall, for a discussion of utility and the value of SDy (standard deviation in job performance).

The correlation between the overall assessment profile and ratings of effective job performance from direct reports and the supervisor is shown below.

	Direct Reports	Supervisor
Overall Profile	$r = .60$	$r = .45$

These correlations are very strong – especially ratings from the direct reports. The managerial assessment system was clearly in strong alignment with ratings of effectiveness from the direct reports of these managers.

Study 3 – Management Trainees in a Vehicle Leasing Firm

As part of a project to establish a means of selecting and then developing candidates into their management training program, this organisation assessed a group of 36 current management trainees. Management trainees are identified as high potential individuals and are then placed on a 12-24 month management development career track. Their direct supervisors were asked to rate the management trainees’ job performance, according to structured rating criteria.

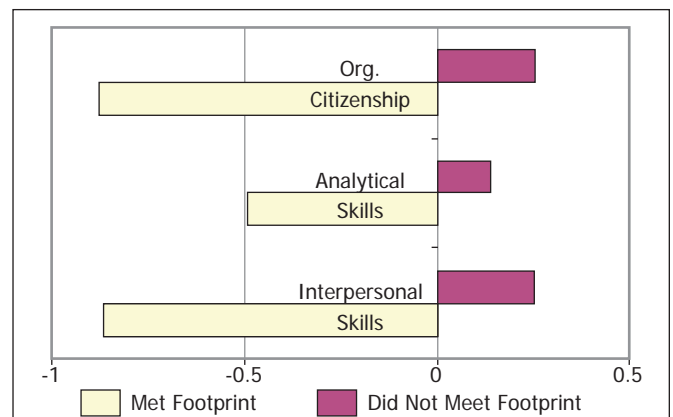
Correlations between the footprint scores and the three primary job performance factors are shown in Table 2 below.

Table 2. Correlation Between Overall Footprint Score and 3 Key Job Performance Factors

	Correlation
Organisational Citizenship	.79
Analytical Skills	.42
Interpersonal/Leadership Skills	.72

These results indicate that there is a very strong correlation between the overall assessment footprint score and job performance.

Figure 1. Comparison of Met vs. Did Not Meet Footprint for Three Key Job Performance Factors



The results in Figure 1 clearly show that those individuals who met the assessment footprint substantially outperform those who did not meet the footprint.

The average difference in job performance was 0.96 standard deviations. Using the same ROI formula described in Study 1, applying this footprint would result in an average difference in performance of almost \$20,000 per person per year.

Legal Defensibility

As with all of its assessment systems, Select International developed its leader and professional assessment system to comply with professional standards as presented in the **Standards for Educational and Psychological Testing** (American Educational Research Association, American Psychological Association, and the National Council on Measurement in Education, 1985), the **Principles for the Validation and Use of Personnel Selection Procedures** (Society for Industrial and Organizational Psychology, Inc., 1987), and the **Uniform Guidelines on Employee Selection Procedures**, 1978.

In addition, this system was designed to evaluate, assess and serve as a fair predictor of relevant job performance for members of various demographic groups, including all individuals identified as members of "protected groups," as defined by Title VII of the Civil Rights Act of 1964, Title I of the Americans with Disabilities Act of 1990, the Age Discrimination in Employment Act of 1978 and the Civil Rights Act of 1991.

Over the past 10 years, Select International has developed and implemented selection and assessment systems for well over 100 clients and assessed individuals from over 80 countries. Over 1 million individuals have been evaluated by Select International assessment and selection systems. In addition, Select has conducted over 50 empirical validation studies to evaluate the quality of its systems. During this time period, Select has participated in a number of legal reviews by corporate attorneys, independent law firms, the Equal Employment Opportunity Commission (EEOC) and the Office of Federal Contract Control Programs (OFCCP). Selection and assessment systems developed by Select International have consistently met the standards and scrutiny of these reviews.

No client of Select International has failed to successfully defend a selection or assessment system developed by Select International against claims of discrimination or unfair hiring practices.

Closing

The Select Assessment for Entry-Level Manufacturing as well as for Leaders & Professionals provides a comprehensive and accurate assessment of competencies critical for success in a wide range of positions. The results are both consistent and powerful. The assessment can be customised to meet the specific needs of each organisation, is available over the Internet, and can be combined with a structured telephone interview by a trained assessor.

By creating a customised footprint, Select International is able to fine-tune the accuracy and greatly improve the usefulness of the system for their clients.