Choosing the right tools to find the right people

Jacob B. Hirsh looks at performance prediction, an area with some of the strongest relationships in psychological research.

Good help is hard to find – at least when you’re using the wrong tools. Although selection and prediction performance has advanced over the past 100 years, many organisations continue to use outdated personnel selection techniques. A large body of research nonetheless indicates that tests of personality and cognitive ability are among the most effective predictors of workplace performance outcomes. This article outlines the importance of using valid selection techniques to choose the right people.

What is the value of performance prediction? What are the most effective selection techniques?

Be of the classic goals of psychometric assessment has been to predict performance based on psychological characteristics. Two major categories of psychometric instruments are tests of intelligence and personality, both of which have a long history in predicting behavioural outcomes. Intelligence tests, for example, were originally used to identify learning disabilities among schoolchildren, while personality tests were geared primarily toward the prediction of dysfunctional behaviour. Following their broader adoption during the two world wars, these techniques gained prominence as tools for assessing performance ability and facilitating job placement. Importantly the goals of psychometric assessment have expanded over time and now include not only the prediction of dysfunctional behaviour, but also performance differences across the normal range of psychological characteristics.

While psychometric testing and performance prediction have evolved considerably over the past 100 years, their value is often underestimated. In the past, the lack of research from this broad field of research is highlighted. Namely, research on performance prediction has often been about the importance of (a) choosing the right people, and (b) using the right tools to do so.

Choosing the right people

Most people would agree that in a competitive environment, the most qualified individual should be chosen for a given position. From there, there are many obstacles to the real-world implementation of this meritocratic ideal. One such obstacle is the fact that people tend to underestimate the massive performance and productivity differences that exist between individuals.

A powerful illustration of such person variability in productivity, which describes the unequal distribution of productivity in any creative domain (Price, 1963). According to this formula, the square root of the number of people working within a field produce 54 per cent of the total creative output. For example, if there were 100 scientists working on a problem, the 10 most productive researchers within this group would produce the same amount of material as the remaining 90. This concentration of creative work becomes even more pronounced at the highest ends of the productivity distribution, such that the most productive individuals within a domain generate disproportionately larger shares of productivity and decreases in morale. It has shown, for instance, that the 10 most prolific composers produced 47 per cent of the ‘masterworks’ identified within the field (Moles, 1998).

Although Price’s law was originally used to describe the unequal distribution of creative output, the substantial between-person variability in performance outcomes extends to non- creative work domains as well. Meta-analytic studies of performance variability indicate that as the work domain becomes more complex and interdependent, performance across individuals becomes larger. One way to examine this variability is as a percentage of an average employee’s output levels. Zero variability would indicate that all employees perform at the same level, whereas higher values indicate greater differences between individuals.

For skilled and semi-skilled workers, the standard deviation of work output as a percentage of average output is 19 per cent, for skilled work it is 52 per cent, and for managerial and professional work it is 48 per cent (Schmidt & Hunter, 1998). What this means is that a professional who performs at the 90th percentile (one standard deviation above the mean) will be 96 per cent more productive than an individual performing at the 10th percentile (one standard deviation below the mean). In financial terms, this performance difference would result in a £48,000 yearly productivity bonus in addition to a £2,500 yearly salary. These productivity differences become even more pronounced when they are summed across multiple people. Organisations that are able to identify and recruit high-performing individuals thus have a considerable economic and strategic advantage.

While selecting the best person is an important goal in itself, a parallel goal of no less importance is screening out undesirable candidates. The consequences of choosing the wrong people are substantial, as they lead to increased turnover rates, recruitment costs, and training expenses, along with lost productivity and decreases in morale. The high costs associated with replacing poorly performing individuals make it all the more important to identify and select the best performers in the first place.

Using the right tools

Because there are almost always more applicants than there are open positions, it is inevitable that some selection process is required. While the previous section highlighted the importance of identifying and selecting the right people, we now turn to the importance of using the right tools to do so.

Just as people tend to underestimate the productivity and performance differences that exist across individuals, they also tend to overestimate the effectiveness of common selection methods. A perfect illustration of this problem is found in the field of graphology, which involves the analysis of an individual’s handwriting to derive assessments of psychological characteristics and performance potential. Numerous empirical examinations of graphology suggest that it is completely ineffective at discriminating between high and low performers, providing little more than chance estimates of an individual’s potential. Nevertheless, this technique is an extremely popular selection tool in certain regions. In France, for instance, graphology-based psychological assessments are used by up to 50 per cent of all companies, and 80 per cent of all organisational consultants (Bradley, 2005).

While it may be easier to see the folly of graphology, there are in fact many widespread selection techniques that provide little more than chance estimates of who will succeed in which position. Some examples include education level, training and experience ratings, and academic achievement, which are all common selection methods that nonselectively provide wrong productive utility. Other popular selection methods, such as unstructured interviews, vary considerably in their effectiveness and are far from perfect.

Why, then, are ineffective selection techniques so popular, when there is a large body of literature identifying best practices for performance prediction? The discrepancy in research and practice in this domain reflects the nature of organisational decision making, which is influenced by many factors beyond the results of empirical validation studies.

Indeed, one of the most common reasons for not employing optimal selection methods is that many human resource managers simply do not believe in the real-world effectiveness of empirically validated selection tools (Terpaø & Rozell, 1997). This may not be surprising in light of the fact that most managers and staffing professionals are not deeply familiar with the academic literature. Despite many studies that examine the utility and validity of different selection procedures, the results of this research have not fully permeated the awareness of managers and decision makers. Selection practices vary substantially across nations, suggesting that the cultural context in which an organisation operates can influence the manner in which selection methods are evaluated and employed (Ryan et al., 1999).

In order to take advantage of the large individual differences in productivity, it is first necessary to identify the top candidates. This is clear that hiring the best people requires the use of selection methods that do not hire the best people who are not really suitable for the job. Broadly speaking, it reflects an individual’s ability to plan, reason, process information, and control his or her

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Conscientious individuals have a strong work ethic, and tend to be more effective at pursuing their goals. An individual who is low in conscientiousness will be more easily distracted, less organised, and less productive. Following conscientiousness, the most important personality trait for predicting success across multiple domains is emotional stability. Individuals who score highly on this trait experience less negative emotion and generally handle stress better. In contrast, less emotionally stable individuals will have higher levels of chronic stress and anxiety. This trait is particularly important for predicting performance in highly demanding positions, and is also associated with increased health, job satisfaction, and lower rates of job burnout (Judge & Foxo, 2003).

While most positions are best served by selecting for cognitive ability, conscientiousness, and emotional stability, certain positions can benefit from the examination of other traits as well. In particular, the outgoing, assertive, and talkative nature of extravers gives them an advantage in domains that require extensive social interaction. Extraversion therefore appears to be a good predictor of success in sales and management positions, in addition to the variables already discussed.

Openness, finally, is a good predictor of performance in domains requiring innovation and creative thinking. Individuals who score higher on measures of openness than their counterparts are more likely to thrive in roles that require the generation of novel ideas and solutions. This tendency is particularly pronounced in domains requiring high levels of Conscientiousness, such as medicine, accounting, and engineering. In general, the presence of clearly defined roles, close supervision, and limited individual variation in performance may help to reduce the discrepancy between more and less conscientious employees, thereby reducing the importance of this trait for predicting performance. By contrast, situations involving sudden unexpected crises or requiring immediate emergency action may enhance the importance of conscientiousness, as they require the individual to remain focused and maintain a high level of performance even under conditions of high stress and uncertainty. Cross-level research thus demonstrates that individual performance ability is still an important determinant of large-scale organisational effectiveness.

Another pathway by which individual characteristics influence group performance is through the leadership of the group's leader. Just as there is a great deal of variability among individual traits, so too is there tremendous variability in the quality of leadership. What is unique about leadership positions, however, is that they can directly influence the performance of not only their subordinates, but also other people. As a result, the performance of those in leadership positions has important implications for the broader success of the organisation. Recent analyses suggest that the variance in an organisation's profitability is directly influenced by the CEO's actions (Joye et al., 2003). Thus, while good managers can inspire a group towards higher levels of motivation and productivity, other leaders may be equally effective at hindering group performance. Indeed, a leader's actions may be substantially influenced by his or her personality profile (Judge et al., 2002).

The personality profile of a company's CEO has important implications for the financial performance of the organisation (Peterson et al., 2003).

Individuals and group performance

An important question for the field of performance prediction is whether an emphasis on individual attributes and abilities is the best strategy for ensuring organisational fitness. In particular, one might ask whether the dispositional qualities of high-performing individuals are still relevant in the context of large groups of people working towards a common goal. Although predictions of individual and group-level outcomes have traditionally been kept separate, more recent work has begun to combine them into multi-level models of group performance (Porphyri & Schyns, 2005).

What this research has shown is that individual-level variables remain important predictors of group-level outcomes. The success of a work team, for example, can be predicted by the cognitive ability and personality scores of its members (Barrick et al., 1998). These frameworks emphasise that individuals are not simply isolated units but are part of larger social systems. The performance of a group is thus one of the strongest relationships in psychology, and as such, has been the subject of extensive study for decades. The validity and utility of selection methods have been hotly debated, with some arguing that traditional methods are too simplistic and others asserting that modern approaches are insufficiently rigorous. This debate continues to this day, with researchers continuing to explore new methods of selection and assessment.