Introduction to Psychometric Assessment

This review is intended to provide a succinct but comprehensive overview of the current methodology, application and efficacy of psychometric assessment tools in UK recruitment and selection. Just as a means of a foundation stone for the Psychology in Selection group.

The structure of the review is as follows:

- The relevance of personality psychometrics to contemporary recruitment
- Important concepts and parameters to consider when assessing job performance and personality

This review will touch upon other methods of recruitment in discussing the concept of triangulation of methods, however, the focus will be on psychometrics, specifically psychometric measurements concerning individual personality.

The review provides a research foundation for the psychometric elements integrated within the many recruitment systems.

In past decades, the recruitment process was largely unstructured and prone to poor candidate selection due to inaccurate methods of assessment, much allowance for individual bias was tolerated, informal entry procedures were commonplace long with a reliance on non-scientific selection methods such as ‘intuition’. Nowadays, recruiters and applicant screeners engaged in human resources (HR) have a wealth of established tools at their disposal to select-in and sift-out candidates, ensuring that suitable individuals are chosen for job roles.

The relevance of personality psychometrics

It is firstly important to examine the contribution of psychometrics to the current recruitment process. Modern recruiters have a wide variety of other sources of valuable information and robust tools that can be used to improve the accuracy of personnel selection: application forms, CV screening, online aptitude, verbal and numerical tests, telephone, video and in-person interviews, situational judgement tests and live assessment centres.

Each of these methods has established benefits and weaknesses:

Application forms provide direct answers to specific questions that an organisation wants answered but, depending on format, they often do little to differentiate between suitable candidates and the best candidates. They are also highly prone to social desirability bias.

CV screening is a ubiquitous tool in recruitment. It is more difficult to compare candidate responses across metrics compared to using application forms, however, it allows for a more complete background of the individual. The rise in demand for jobs in relation to skilled work available has led to an influx of CVs that few major recruiters can cope with processing effectively. Due to this, large organisations have resorted to relying on ATS (applicant tracking) software, which often incorrectly sifts-out high potential candidates due
to formatting issues. Additionally, in a job market with high levels of competition, CVs are also prone to applicant deception.

Interviewing in all forms is an almost universal step in the recruitment process. Interviews were originally a largely unstructured affair, however this approach was prone to multiple forms of interviewer bias (similar-to-me, confirmation, affective heuristic) and relied heavily on whether ‘rapport’ could be generated between the organisational representative and the interviewee. By contrast, structured interviews use a set of questions, repeated to all candidates. Although some organisations will still use an unstructured interview at a later stage of the recruitment process, most sizable organisations now use the structured format. Whether conducted by video, phone or in person, structure makes like-for-like comparisons between individuals much easier to obtain, whilst minimising the potential for charisma to outweigh competency. Additionally, having multiple interviewers present (or reviewing, if the footage is recorded) can negate the problem of individual biases.

Aptitude, verbal and numerical tests are all form of psychometric assessment that (pending reliable and valid assessment measures) provide clear ordinal data on which applicants have performed the best in that specific area. A key issue for these tests is ensuring that they have direct relevance to the role being applied for. Although GMA (general mental ability) gives an indication of a candidate’s ability to process information, this is only one facet of their potential and it does not, in isolation, predict on the job performance.

In contrast to the previous methods, situational judgement tests and assessment centres have been designed specifically to provide a comparison of how candidates perform in real-world job scenarios.

Whilst a situational judgement test can, to some degree, be integrated into an application form or an interview, it is only capable of assessing how a candidate claims they would act, in theory. By contrast, an assessment centre is a practical exercise which, in short, aims to test what a candidate can actually achieve in practice as opposed to what they know in theory. The downside to assessment centres is largely the resource cost (money and time) required to design and administer their operation.

In combination with the other methods, a psychometric test aims to provide measurable, objective data that offers recruiters a better all-round view of a candidate’s suitability. Well designed and validated psychometric testing offer scientific credibility and objectivity to the recruitment process. It provides a fair and accurate way of assessing candidates, as all applicants will be given a standardized test.

Important concepts and parameters to consider when assessing job performance and personality

Many recruiters and employers are unaware that there is a difference between psychometric and other forms of testing. This is largely because the importance of objective, scientifically based assessment is poorly understood and undervalued. As a result, many organizations find themselves using tests that are unable to accurately predict outcomes and results such as job performance.
The first aspect to consider in the design and implementation of any psychometric scale is, what metric or output are we trying to measure?

In this context, we are attempting to select suitable candidates for a job role, therefore, the metric we are looking at is predicted job performance; essentially, how well do we estimate the candidate will be able to perform the role in question.

As some HR systems cater to recruiters from a wide range of backgrounds, it is key to approach the term 'job performance' with a degree of care. To design an effective psychometric assessment for this purpose, it must meet certain criteria with regards to reliability and validity.

An assessment must be standardized to allow a fair opportunity to all applicants. It must be standardised in materials, instruction, scoring and interpretation of results.

The test must be able to measure the same constructs or aspects of the individual each time and demonstrate that the construct which is claimed to be measured, actually is being measured.

Taken together, these factors must be able to differentiate between candidates in a way that is meaningful to the recruiter. The assessment must provide an output that makes it simple for an assessor to compare the differences displayed between candidates and how these differences are related to organisational outcomes. If a system cannot reliably determine the best candidate on multiple occasions, then it is of little value; if a system cannot differentiate between candidates meaningfully in the first place, then it is worth even less.

With these considerations in mind, we must ask two fundamental questions: “what do we mean by performance in the given context?” and “how do we measure this performance?”. Within psychometrics, these questions are known as the criterion problem (Bennett et al, 2006). The simple answer to the first question is that we are looking for which candidate will be likely to attain the best job performance. In looking at this question in more depth, it becomes apparent that the second question cannot be answered with a single sentence and we must look to existing literature to identify what performance is and how best to measure it in a workplace context.

Further analysis will be discussed in our next paper.