

A silhouette of a man's head in profile, facing right, is positioned on the left side of the slide. The head is filled with a glowing blue neural network or brain scan overlay, with various nodes and connecting lines. The background is a dark blue gradient with faint, larger-scale neural network patterns.

What Can You Do with Psychometric Tests?

Beyond Traditional Use Cases

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[1] Introduction

In 2018, it isn't an understatement to find psychometrics endorsed itself into pivotal parts of the employee lifecycle. This is enough for it to become rather indispensable, at least for the pseudo-majority that utilizes its functionalities.

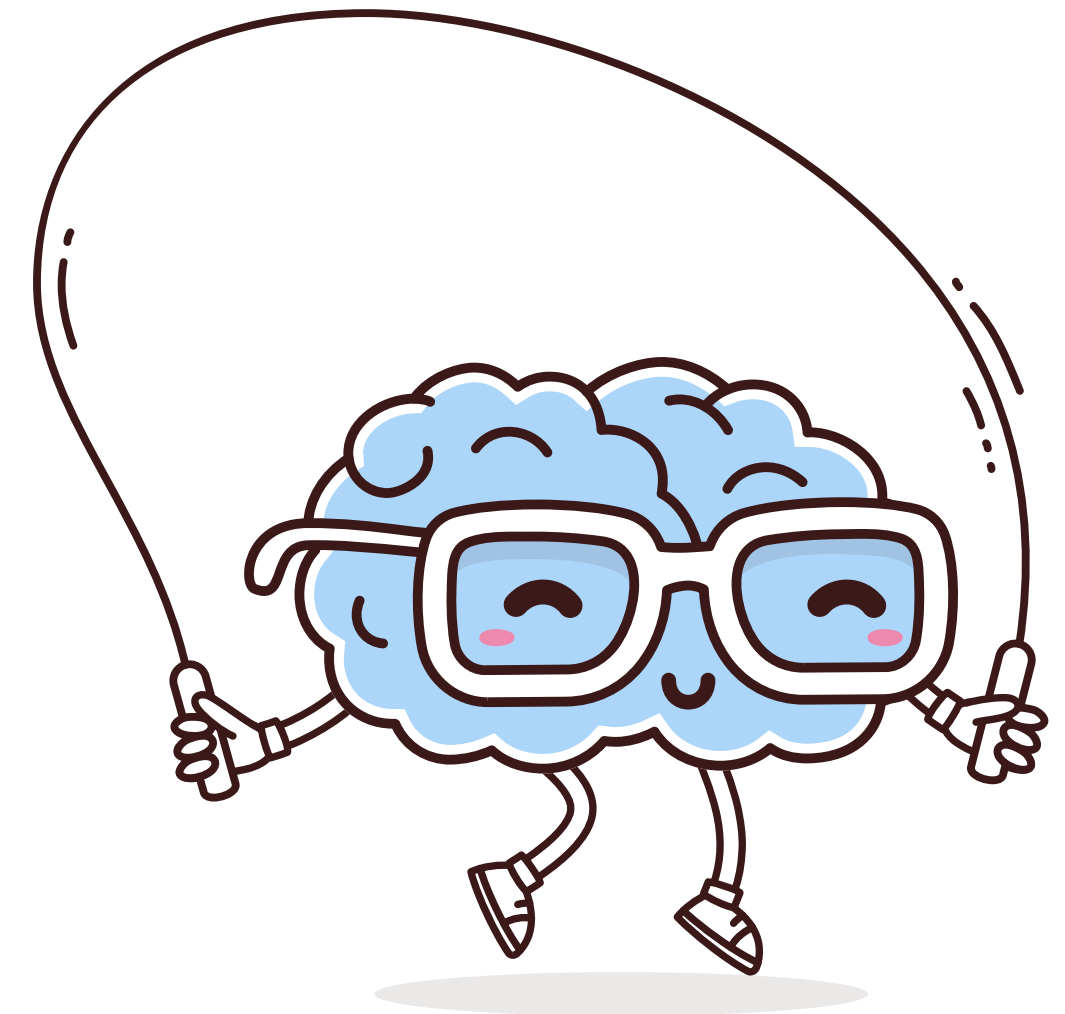
But, even with the involvement of both assessment technologies and the tests that accompany it, the results derivative is only as good as its quality. In the content piece – *Knowing Your Psychometric Tests*, we talked about the basics – everything you'd need to know behind blending the solution into your organizational ecosystem. It was only natural to follow this with a piece that covered the nuances of measuring quality in a psychometric test – *Quality Metrics of a Psychometric Test*.



With both of them down, it's time to move onto what really matters.

Key business leaders often wonder about the Returns on Investment (ROI) – be it innovation in talent acquisition or the development of learning initiatives within the organization. On a more granular level, they also wonder about the use cases – the depth to which a tool can be used within a particular process.

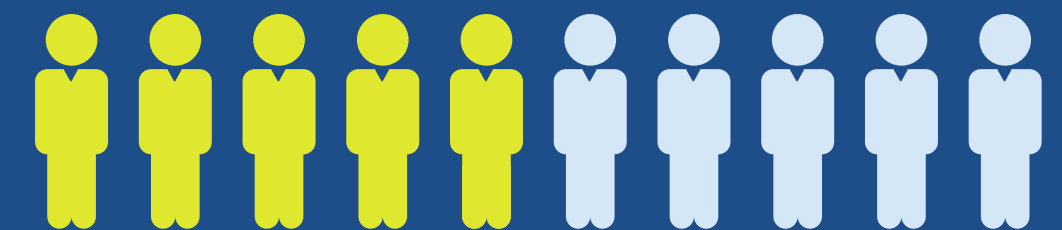
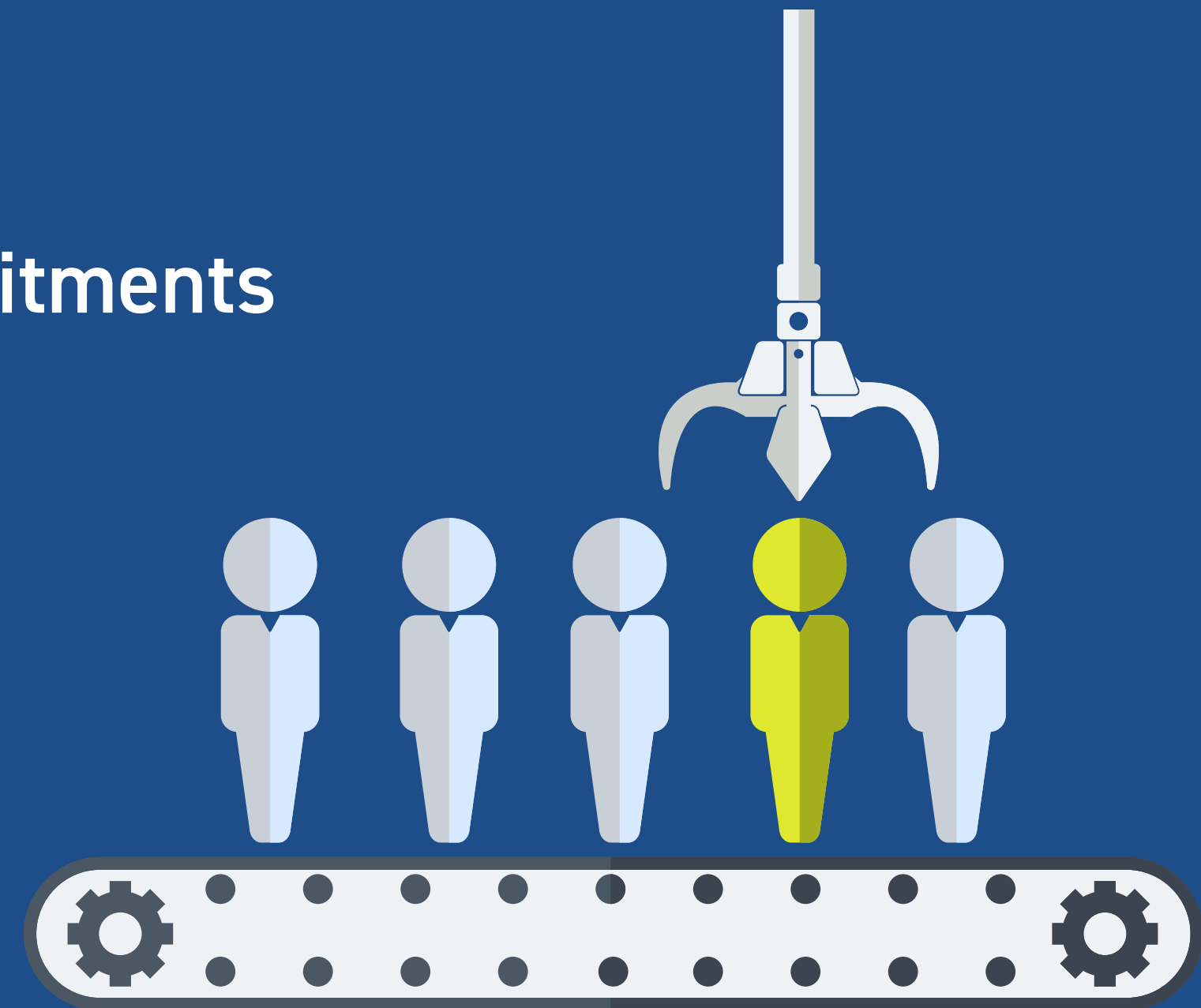
This is why we'll be pushing into it right away.



[2] Utilizing Psychometric Tests in Recruitments

In 2002, Sara Rynes, Kenneth Brown and Amy Colbert conducted a study that should've raised red flags and eyebrows in the business world. It determined whether the ideologies of HR professionals remained consistent with established research findings on the effectiveness of various HR practices.^[1] The survey consisted of 1,000 Society for Human Resource Management (SHRM) members - Managers, VPs, and Directors with an average of 14 years in experience.

The results identified staffing as an area of great disconnect, an HR lynchpin. It was particularly prevalent in the area of hiring tests where more than



50%

cited unfamiliarity with prevailing research findings.

WHAT HR MANAGERS GET WRONG ABOUT HIRING RESEARCH (TRUE/FALSE)

Cited below are the most common items answered incorrectly as part of the mentioned survey.

PERCENTAGE ANSWERING INCORRECTLY OR INDICATING UNCERTAINTY
(CORRECT ANSWER IS “FALSE”)

84%	Companies screening for values have better performance than those measuring intelligence.
82%	Conscientiousness is a more accurate predictor of job performance than intelligence.
69%	Integrity tests are ineffective because people lie on them.
58%	Intelligence is a disadvantage in low-skilled jobs.
51%	Like in MBTI, there are 4 basic personality dimensions.

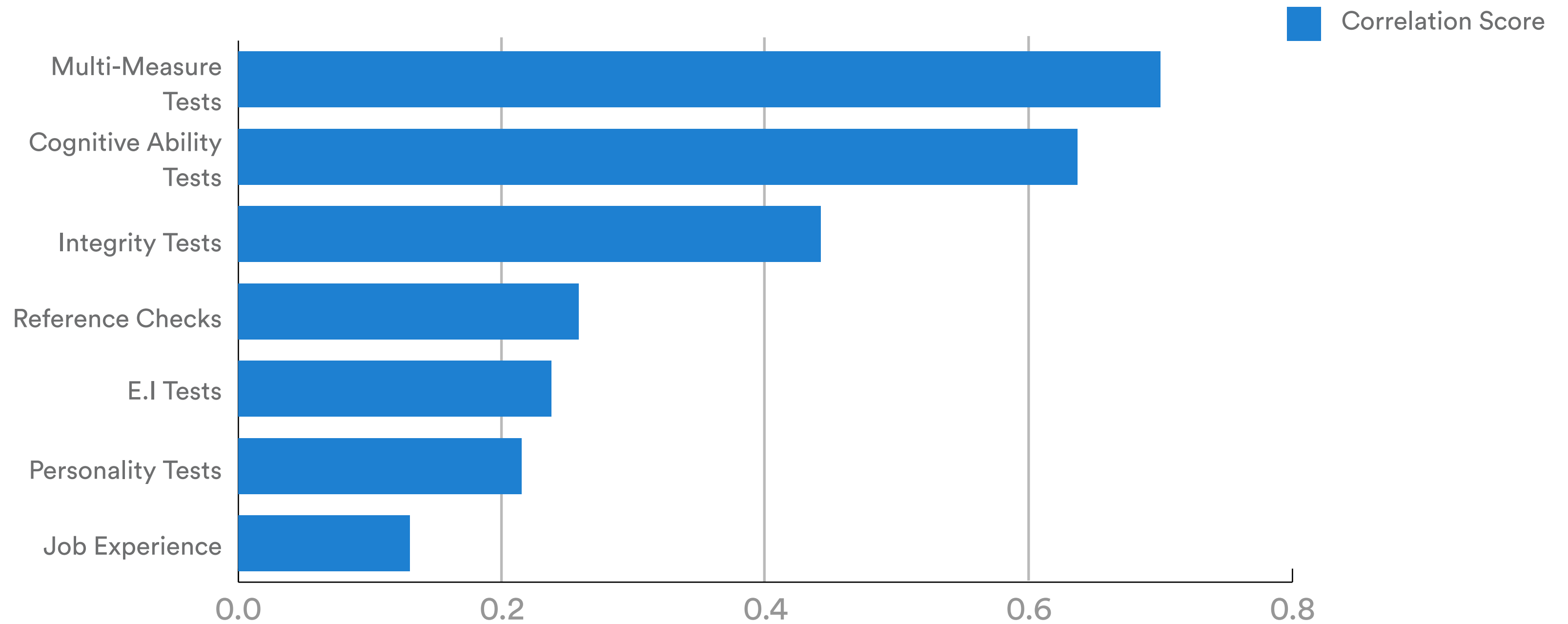
Be aware that all the statements mentioned are wrong via both statistical studies and hard research. And yet, HR practitioners seem to believe otherwise - a majority of them nonetheless.

SOURCE: Sara Rynes, Kenneth Brown and Amy Colbert

For anyone who's ever been responsible for hiring, you must know that there's wide variation in workforce performance across jobs. This makes it important to understand the differences among individuals that systematically affect job performance, ensuring candidates with the greatest probability for success be hired.

The table below covers the predictive validity of some commonly used selection practices, sorted from most effective to least effective according to research shared at the Personnel Testing Council Metropolitan Washington Chapter in 2014.

MOST EFFECTIVE HIRING SELECTION PRACTICES



The above chart is based on validity coefficients ranging from 0 to 1. The higher the number, the higher the correlation between test scores and predicted job performance.

SOURCE: Data shared by Frank L. Schmidt ^[2]

For your reference, multi-measure tests are psychometric tests - a combination of cognitive ability, personality and interest tests. In the table from Frank L. Schmidt's data, research indicates **0.71+** correlation, identifying it as the greatest predictor for job performance in the hiring scenario. It also cites the insignificance of relying primarily on interviews, reference checks and personality tests alone.

In fact, the data solidifies that despite popular belief personality constructs are not the most predictive measures available with a correlation score of **not more than 0.22**. They are most effective in combination with other measures with higher predictive validity such as cognitive ability or integrity tests.

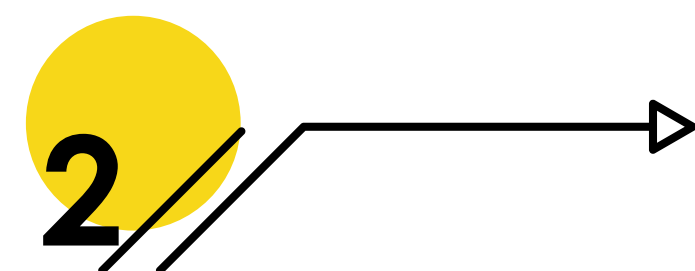


What's important to note is that psychometric testing doesn't necessarily restrict its use to larger organizations. SMEs can use the method as part of their recruitment strategies also. Here are some inherent benefits to including the same in your organization:



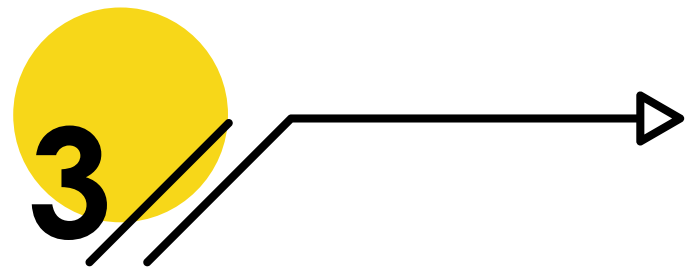
1 Interview Independence

Recruitment agendas are most commonly associated with filling your vacancies with the right people for the job; by itself, interviews do not measure capability. Psychometric tests stand to give you a benchmark - a comparative view of results against other applicants, and also previous hires currently thriving in your organization.



2 Cost & Time Efficient

Using psychometric tests at the beginning for the application process eliminates the need to sift through a mountain of application forms. In a highly competitive talent market, it's easier to work with the filtered best as candidates than finding them from scratch.



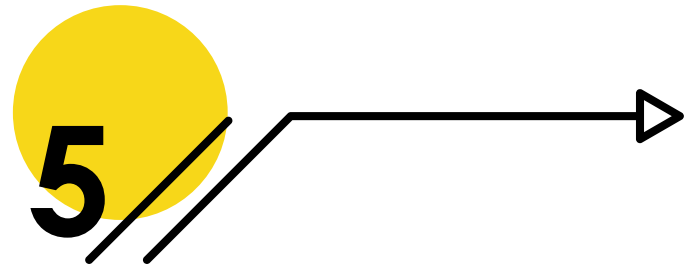
Inherent Traits

Contrary to popular belief, a strongly constructed psychometric test is difficult to game. In most cases, the results mirror the candidates in question. These results are likely an inside view into how he or she is going to interact with, engage or improve your workplace. This would include behavioural traits in addition to the important technical aspect.



Standardized Testing

It's a fair form of testing in the simplest of terms. While larger organizations do tailor tests to their specificity, candidates interacting with the test go through exactly the same process and without bias. It's a strong alternative to interviews, which heavily relies on the interviewer's frame of mind - often prone to fluctuation.



Cultural Fitment

Recruitments aren't all about hiring strong talent with the demonstrative ability to fit into a job role. Whilst a critical requirement, it's ideal to identify if said candidate fits in well with the rest of the team already working with you, or better yet - how well they fit into a company's culture. This benefit has also been known to affect employee attrition.

To elaborate the last point, **cultural fitment** has by large become a critical component in personifying your ideal employee in terms of organizational, job role, or management suitability. It echoes the ideology that a stellar employee in one company may not necessarily stand strong in another.

A small example would lie in Marissa Mayer, and her failure in transitioning into the role of Yahoo's CEO. Regardless of her demise at the helm of Yahoo, Marissa - a former Google VP - was a stellar candidate, having been part of the three-person team to launch AdWords followed by her strong involvement in Google Search.

One could say that her failure at Yahoo boiled down to an intelligent person not being part of the organizational synergy - someone with little to no turnaround experience, leadership experience in running large enterprises, and management experience.^[3] This was correlation mismanagement. Another issue psychometrics attempts to address.

On the cultural compatibility front, Marissa forced an end to Yahoo's popular work from home policy in an attempt to improve work productivity. It ended with increased stress, lowered productivity, and higher real estate costs.^[4]

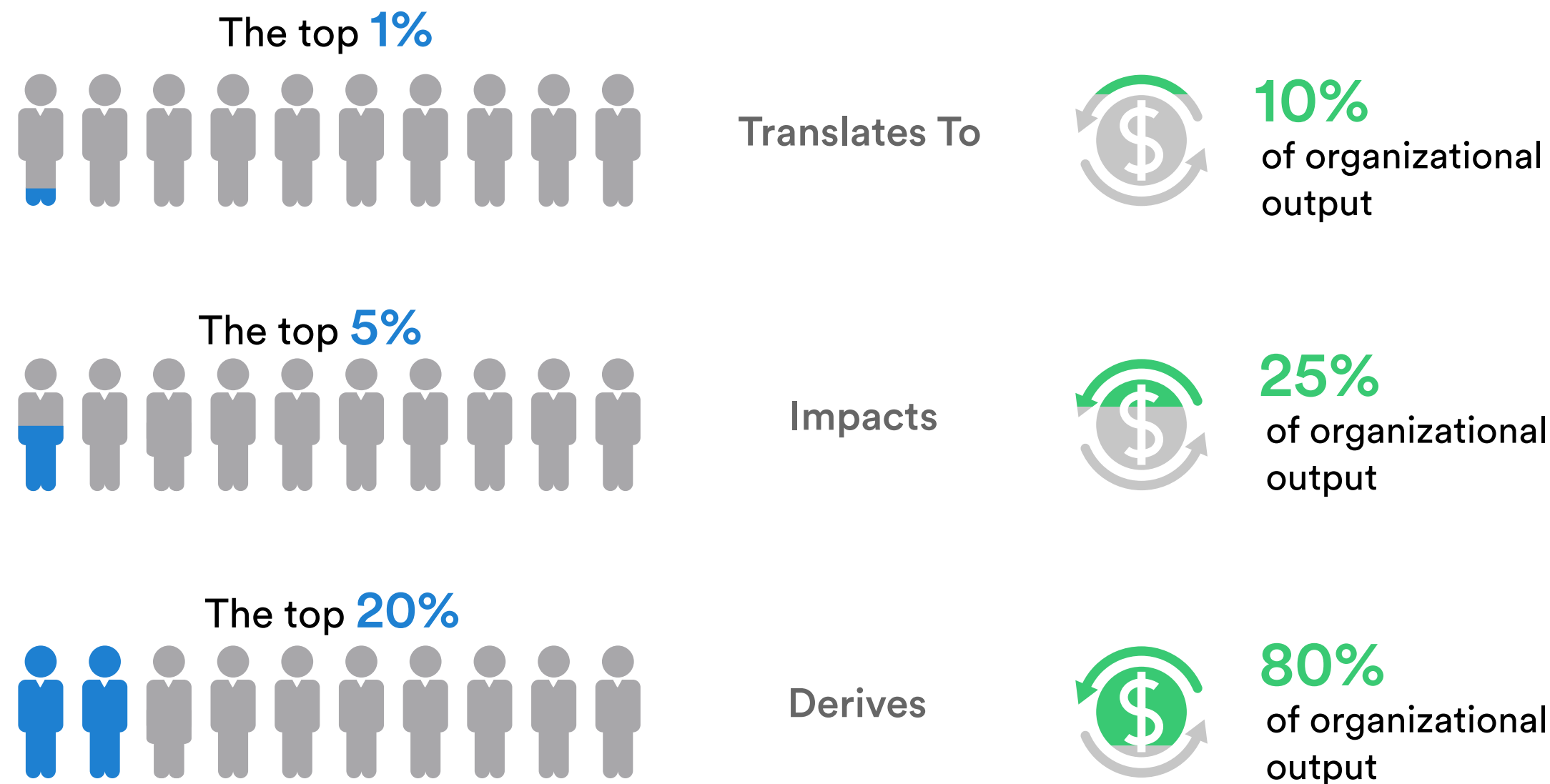
[3] Utilizing Psychometric Tests in High Potential Identification

In the business world today, there is a growing interest in high potential (HiPo) identification. An employee's potential evaluates the upper limit of his or her development range. Suffice to say, the more potential they have, the cheaper and quicker it is to develop them.

Studies indicate that investment in the right people maximizes organizational returns, largely derivative of Pareto's Principle or the 80/20 Rule. It roughly identifies that about 80% of the effect arise from merely 20% of the causes.^[5]



This is further validated by deeper research - across a broad range of industries, organizations, and tasks, a minute portion of the workforce drive large proportions of organizational results.^[6]



This pattern visibly grows with the complexity of the job itself. For jobs of low complexity, top employees outperform average employees by a rough median of 50%. You could take manufacturing as an example here. This difference rises to about 85-100% for jobs of medium complexity; trainers or sales managers.

Highly complex jobs, especially senior leadership roles contribute more than double of the average margin, with a contribution output over 100%.^[7] There's also added benefit to having these star performers in a team environment, boosting effectiveness of other members to around 15%.

In fact, study shows stronger fiscal performance in companies dedicated to identifying and developing top talent.^[8] But if an organization is to invest in the right employees, the question raises of who they actually are. Differently put, what are the key indicators that signal this high potential? Psychometrics, however, reveal that regardless of industry, job, or complexity, such individuals tend to possess a range of measurable qualities - qualities that can be identified early in the process.

Comparisons between qualities of strongest demand in the 21st century to scientific research or psychometric use on the predictors of job performance identified a couple of markers of high potential.^[9] These ingredients are key to making the psychometric test suited to high potential identification.

1 ABILITY

Forecasting potential in a bigger, more complex job environment shifts focus to how likely an individual is to learn and master skill along with requisite knowledge. Cognitive ability or IQ is the single-best predictor of the same.^[10] Learning ability includes a heavy cognitive component, aided by motivation to pick up new skills in a flexible and speedy manner.



2 SOCIAL SKILLS

Research reveal that the primary reason for management derailment is relationship problems.^[11] Employees steadiest to succeed in more complex environments are able to first manage themselves, and establish strong cooperative working relationships. Sophisticated political skills are also much desired for senior roles, and much of these functions linger as core elements of emotional intelligence.^[12] While the traits are revealed via assessment, it could be further refined through training and development.



3 DRIVE

Standardized tests that are known to measure conscientiousness - a part of the Five Factor Model, ambition and achievement motivation are often readied as part of tailored psychometric tests. These traits are also identified behaviourally with indicators around hard work, willingness to extra duties, responsibility, and readiness to sacrifice.



Not many employees possess these traits, which is why they often linger in the 1%. Should a company bet on who they are with smart, scientific tests, it is more likely to end up with a stronger proportion of high potential employees that disproportionately contribute to an organization. This is key to the highest levels of ROI.

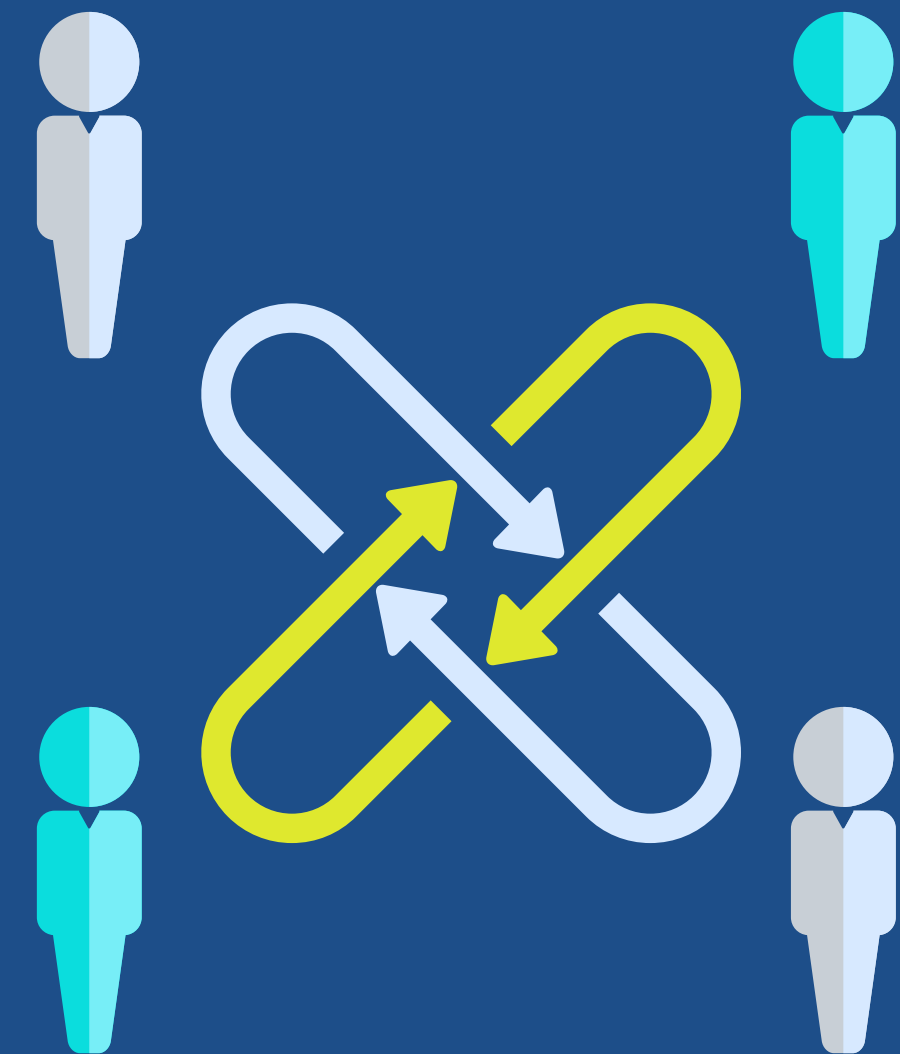
NOTE: In 2008, Howard Schultz reassumed the role of CEO at Starbucks. He has since achieved market capitalization of \$33 billion, over \$11 billion in annual sales, and net annual profits of more than \$1.7 billion. This is all the more impressive when you consider that in a struggling US economy, where average growth of S&P 500 companies lingered at 0.4% in 2011, Starbucks' share price increased by more than 40%.^[13] In one sentence - high performance to disproportionate gains for one company by one employee. HiPo.



[4] Utilizing Psychometric Tests in Employee Engagement

In an organizational context, there is often the case of employee burnout - a situation of emotional exhaustion, lack of personal attribution or accomplishment, and depersonalization. Around the early 1980s, psychometric research led to the development of the Maslach-Burnout Inventory (MBI) designed to measure burnout.

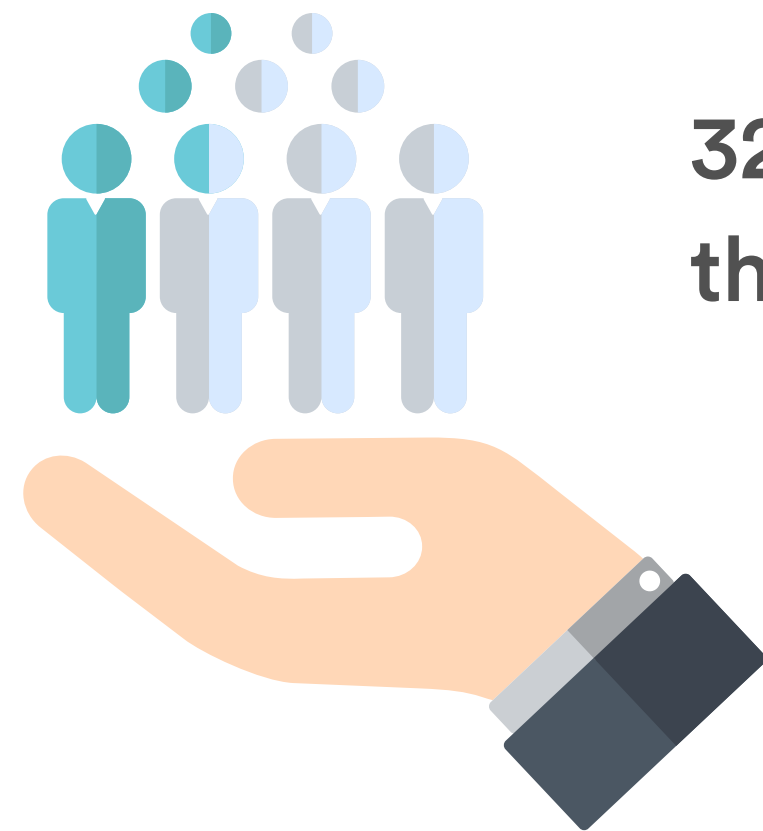
Typically restrained to the evaluation of human services, research later led to the making of the MBI-General Survey (MBI-GS), a newer version to include all employees and not merely those in industries of people work. ^[14]



Relatively little attention has been directed toward concepts considered antipodes of burnout; an exception being psychological presence or to be invested fully. The thought emerged from role theory and is often defined as an experiential state that channels energies into cognitive, physical, and emotional labours using *personally engaging behaviours*. [15]

Now why does this require intervention by test technology?

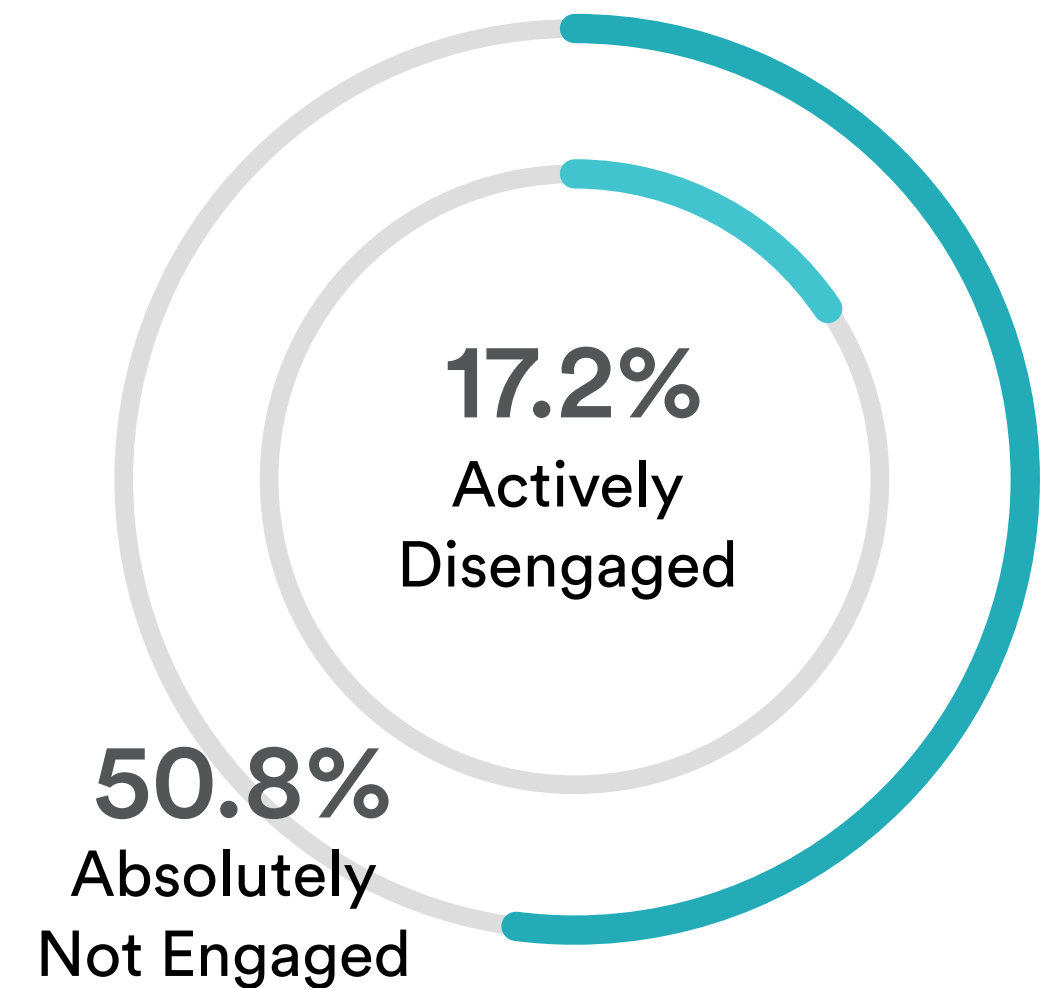
In January 2016, Gallup released the results of its annual employee engagement survey polling more than 80,000 working adults in the U.S.A. It accounted for a workforce across industries, of which Gallup identified merely



32% as engaged at the workplace.

Interestingly, 17.2% fell into the category of being actively disengaged and 50.8% into the classification of absolutely not engaged.^[16] It mirrored the results of 2015, marking little to no improvement in avenues of employee engagement. To remain firm in the matter, let's take a look at some more research on the matter:

1. Organizations report that engaged employees outperform their counterparts by 202%^[17]
2. Highly engaged employees boost a company's net profit margin by about 6%^[18]
3. Employee Disengagement costs U.S. business roughly \$450 - \$550 billion a year^[19]



Contrarily, engaged employees possess a sense of effective and energetic connection with work related activities, going as far as to see themselves as able to deal perfectly with the demands of the job. In psychometric tests designed to assess the matter - such as the MBI or MBI-GS - it would be wise to review the opposite pattern of scores on the three MBI dimensions.

1. Low scores on **exhaustion** and **cynicism**
2. High scores on **efficacy**

A logical next step to everything that's been discussed thus far, employee engagement aside, is further research. While simple in statement, there are a lot of facets or scales and their relationship to job-related variables matter. ^[20] ^[21]

For example, burnout research reveals different types of variables related to different dimensions of burnout - emotional exhaustion correlating to job demands such as time pressure and workload, whereas cynicism or disengagement from work is more a function of poor job resources, poor job control, lack of feedback, lack of participation in decision making, and lack of social support. ^[22]

Both engagement and burnout hold easily measured metrics, and while the metrics itself are opposites, the concept of the two are not. This is something that's being constantly researched into improvement. Psychometric qualities of the two inventories, and the tests that yield it face considerable favour due to two immediate benefits to organizations:

1. Effective Measurement of Engagement based on Cultural Fitment Pre-Hire
2. Process Improvement via Regular Assessment through an Employee's Lifecycle

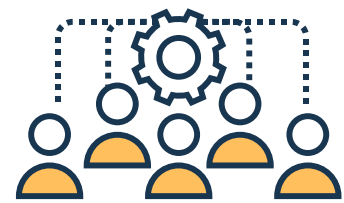
[5] Utilizing Psychometric Tests in Performance Evaluation

It is important to note that in the matter of performance evaluation, job performance is subject to social and organizational influences. This is indicative of something known as effective job behaviour, but what constitutes good from poor performance relies entirely on organizational context.

For example, the armed forces place a ton of importance on performance metrics such as military bearings. Likewise, a mechanic would be evaluated a little differently than military personnel by a car dealership. It's why experts suggest the inclusion of descriptions based on job complexity for the purposes of appraisal ^[23] - namely situational factors that interact or influence behaviour, job outcomes, and job behaviour.



In 1980s, the Office of Personnel Management (OPM) was reported to use the Management Excellence Inventory. ^[24] The MEI described management functions and the skills required of said functions. It suggested that at three levels of management, different layers of knowledge and skills are required to reach a measurable level of success.



3. Top Level Manager:

Required all the skills of a mid-tier manager including a long-term view, a strategic view, and sensitivity to the environment.



2. Mid-Level Managers:

Needed less technical competence, but significant skill in areas such as communication, flexibility, risk-taking, leadership and concern with goal achievement.



1. Lower Level Managers:

Required technical competence and interpersonal communication skills.



Via review, research on these areas of skill indicates that all are general, some are task-oriented, and some such as flexibility and leadership are personal traits.

Now in private-sector organizations with easily measurable bottom lines, it is simpler to develop individual or quantitative work goals than it is in bureaucracies or governments where bottom lines are difficult to define. But the easy availability of quantitative goals might actually prove to hinder the valid measurement of employee effectiveness, especially since these goals shift focus to short-term results.

Further evidence highlights that the incorporation of countable, objective measures of performance into an overall appraisal could lead to an issue of overemphasis on fairly concrete aspects of performance and an underemphasise on those less easily quantified - aspects that yield concrete outcomes only in the long term.

[23]

When in application for performance evaluation, psychometric testing involves two prime functions - the use of appropriate instruments, and the evaluation in the wake of applying such tests. The reason testing rose to prominence for segments such as performance evaluations is better explained with a weighted example.

META-ANALYSES OF RESEARCH: RACE & GENDER EFFECTS

In a survey that encompasses 74 studies, results report that the race of both the ratee and rater held influence on performance ratings; 14 of those studies analysed both white and black raters. Results reveal that black raters rated the average black ratee higher than 67% of white ratees; 64% in case of white raters for white ratees.

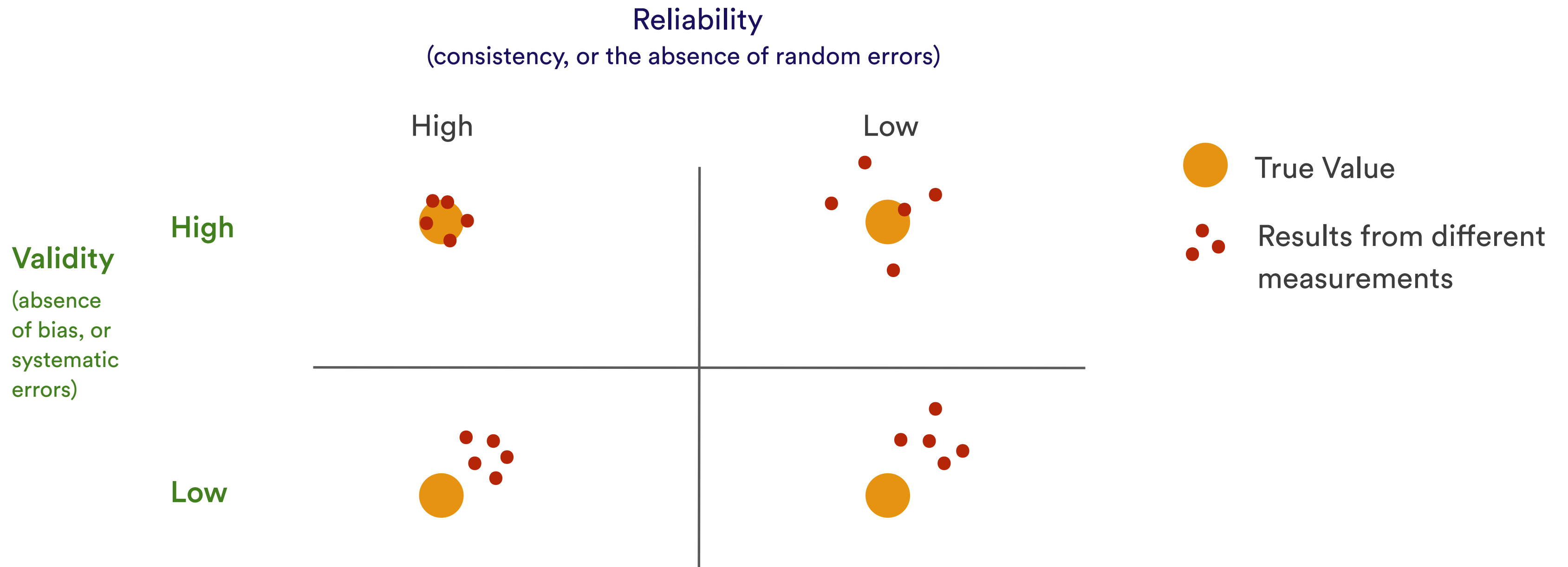
Through this analysis, ratee race accounted for 4.8% and 3.3% in variance of the ratings by black and white raters respectively. 53 studies possessed at least one judgment-based and one independent measure of performance. ^[26]

Researchers identified that the size of effects attributable to race were identical for ratings and independent measures. It led to the conclusion that race effects found in judgment-based rating couldn't be attributed solely to rater bias; there were also real performance differences.

The example but shows that traditional methods of performance evaluation carry a high-risk of individual bias, race aside there are also matters of favouritism and gender bias among others. They are not comprehensive and undermine the effectiveness of people performance. ^[27]

Psychometric tests move beyond decisions made on the basis of a chance to make a real impact on the success and talent quotient of any business.

We have discussed a little about validity and reliability of a psychometric test; suffice to say, they need to remain high on both accounts for performance evaluation also. To jog memory, you could take a look at the chart below. It covers the metaphor of a shooting target: a wide dispersion of bullets indicates unreliability, whereas off-centre shooting points to poor validity or bias.



SOURCE: <https://www.socialresearchmethods.net/kb/relandval.php>

A 2006 research revealed that in order to make psychometric tests valid, an organization is required to supervise changes in criteria in order to keep balance of skills and personalities in need of evaluation. If good communication skills are a mandate for a role, a baseline must be established normatively for the test in question before the evaluation process. Again, it is wise to modify if factors of emotional stability - for example - is required in addition to base communication.

Therefore, to maintain the validity of the performance evaluation process, the psychometric tests deployed require a certain amount of flexibility in accordance with the situation. In other words, if you are considering these tests, it is only helpful in case of well-established metrics of job performance.^[28]

Let us take a look at some of the criteria required of this validity:

1. Objective and removed of impact by the values of the tester
2. Managed in standardized or controlled scenarios
3. Basic certainty of quantifying and minimizing intrinsic errors
4. Predict and evaluate performance of employees accurately
5. Provide a status of being non-discriminatory

Of course, this is only established when an organization makes use of combined psychometric and traditional techniques. But, choosing the right test criteria mostly depends on the role or position for which the employee or candidate is being assessed.

[6] Conclusion

Around 4 years ago, the world claimed that data is the new superstar of the HR world. It's an essential that assessments provide as a business tool.^[29] Big Data has become the most recent trend to merge with assessment technologies – we saw this in the presidential election with Trump taking it home with scientific strategy.

An increasing number of companies have caught onto the trend by building internal analytics and data centers within their HR department. They stand ahead much of their competition. Now the question is,

“Where do you stand?”

Well, you have the information to make an education decision now. The rest? It's in your hands.

Godspeed.



- 1 <http://www.cebma.org/wp-content/uploads/Rynes-et-al-HR-Professionals-belief-about-effective-human-resource-practices-HRM-2002.pdf>
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- 11 <http://onlinelibrary.wiley.com/doi/10.1111/1468-2389.00162/abstract>
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What is Mettl?

Mettl is a SaaS based assessment platform that enables organizations to create customized assessments for use across the entire employee lifecycle, beginning with pre-hiring screening and candidate skills assessment, training and development programs for employees/students, certification exams, contests and more.

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