



The Effects of Ethnicity and Culture on Personality and Competency Potential

How Lumina Spark can support non-oppressive and anti-racist initiatives

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Overview

This paper examines how Lumina Spark reduces bias and adverse impact, allowing for its use in supporting non-oppressive and anti-racist initiatives. Firstly, it explains how Lumina Spark reduces Evaluative Bias and captures the dynamics of personality. Its use of language and norms, and the implications of these factors as they relate to diversity are then laid out. Next, research conducted in South Africa is presented, showing that Spark does not present adverse impact on the basis of ethnicity. Finally, a case study on how Lumina Learning supports diversity initiatives is presented, in which an award-winning program demonstrates the use of Lumina Spark in interventions with young people of colour, improving academic outcomes.

Lumina Spark Reduces Evaluative Bias

The primary way through which Lumina Spark aims to reduce bias is through the reduction of evaluative bias prevalent in most personality psychometrics.

The term "Evaluative Bias" refers to the differential valuation of personality characteristics, valuing some more favourably than others; this is most commonly observed in the Extraversion-Introversion spectrum, whereby other psychometrics often regard Extraversion as a positive trait, and Introversion as negative, sometimes failing to assess Introversion directly, extrapolating a lack of Extraversion to mean the presence of Introversion; this issue was first presented and researched by Peabody (1967).

Through directly assessing both polarities of each spectrum of the Big Five, and including items assessing both adaptive (effective) and maladaptive (less effective) traits, this bias can be reduced, valuing all personality traits equally. This method of reducing evaluative bias is seen below.

Extraversion

I make new friends easily

Introversion

Sometimes I listen too much and
don't give my view

How typical personality psychometrics assess Extraversion-Introversion

The above shows how Extraversion and Introversion are typically assessed in personality psychometrics, with Extraversion phrased positively, and Introversion phrased more negatively. The below shows how in Lumina Spark, both are assessed equally, adaptively and maladaptively.

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| | |
|------------------------------------|--|
| Extraversion Adaptive | I make new friends easily |
| Introversion Adaptive | I choose my words carefully before I speak |
| Extraversion Maladaptive | Sometimes I talk too much |
| Introversion Maladaptive | Sometimes I listen too much and don't give my view |

How Lumina Spark measures Extraversion-Introversion

The table below shows the level of evaluative bias in the IPIP-NEO, an industry standard personality psychometric, as compared to Lumina Spark, showing a significant reduction of evaluative bias, providing evidence of a more neutral and less biased psychometric.

| Difference between Opposite Polarities | | | |
|--|----------|-------|--------------|
| | IPIP-NEO | Spark | % Difference |
| Openness | 0.7 | 0.6 | -14% |
| Conscientiousness | 2.2 | 0.7 | -68% |
| Extraversion | 1.2 | 0.4 | -67% |
| Agreeableness | 1.8 | 0.2 | -89% |

Lumina Spark Captures a Dynamic View of Personality

A feature of Lumina Spark, rarely found in other personality psychometrics, is the use of the three personas to capture how personality can change depending on context. In many other psychometrics, a static view is taken, whereby the differences between preferences, everyday behaviour, and behaviour under pressure are not taken into account. These psychometrics tend to make the assumption that individuals would act the same way under different contexts, and thus place a label on them; this is especially prevalent in type-ing models. Such an approach tends to overemphasize the individual and their innate nature and minimizes the role of context and environment.

Labelling can have detrimental effects on individuals looking to change and grow, as labelling can cause reification, a fixation on a theoretical concept, treating it as a concrete object. This can lead to a reduced capacity for change and growth, due to over-identification with the assigned label, which reduces perceptions of autonomy for growth.

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Lumina Spark Mitigates Adverse Impact by Valuing All the Different Ways of Being Equally

Any instrument that suffers from evaluative bias will likely have an adverse impact on people whose personalities are more Introverted, more Inspiration Driven, more Neurotic, more Outcome Focused, and more Down to Earth. For example, people who have had early life traumatic experiences are more likely to be anxious and appear less confident; they would therefore suffer from adverse impact with any instrument that doesn't consider evaluative bias.

By measuring both ends of a scale, adaptively and maladaptively, Lumina Spark values equally all the difference ways of being. For example, it does not overvalue Extraversion at the expense of Introversion.

The Use of Language and Norming in Lumina Spark

There are a few aspects regarding the use of language and norming in Lumina Spark that contribute to it being a culturally responsive psychometric.

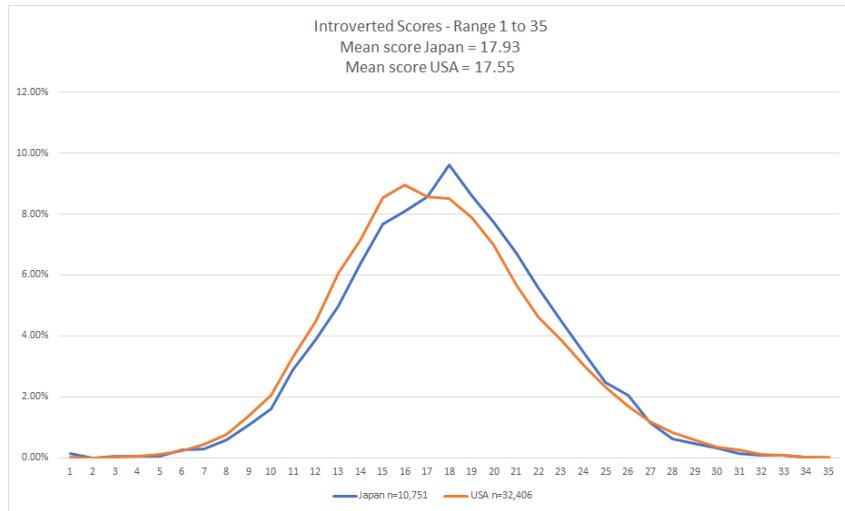
Firstly, in the original English version, steps have been taken to ensure that the questionnaire items are easily understood by individuals from a wide range of diverse backgrounds. This includes the use of simple words and short, concise sentences, which contributes to an estimated reading age of around 13-14 years old (Flesch-Kincaid Readability Test). Furthermore, the omission of any local sayings or colloquialisms means lessened ambiguity for individuals from differing cultural backgrounds, ensuring cultural responsiveness. Finally, the translation process for the Lumina Spark questionnaire is a rigorous one which involves close scrutiny of the translated versions, ensuring that the original meaning and content of the items are maintained, and thus its robust psychometric properties.

With regards to norming, the use of a global norm group means that individuals completing the assessment would be compared against individuals from a diverse range of cultures and backgrounds, avoiding range restriction effects that might occur from using more homogenous norm groups.

Lumina Spark Measures and Values the Small Differences in Personality by Nationality

In addition to valuing all ways of being equally, minimizing evaluative bias also has the effect of reducing bias and adverse impact as it relates to nationality and ethnicity. Research on the relationship between ethnicity and personality has often found that many personality traits do not vary by ethnicity at all. However, there are some traits that show small patterns of difference between respondents of different nationalities and ethnicities.

For example, people from Japan are on average slightly higher on Introversion, compared to people from the USA. Research findings from Lumina Spark have found such differences, highlighting the effect of culture on personality traits. Nevertheless, the impact of individual differences at a personal level far exceeds any average differences due to ethnicity. i.e. knowing somebody's ethnicity tells you almost nothing about their personality, for example, there are many Americans who are Introverted and many Japanese who are Extraverted. This is shown in the graph below, which show the spread of Japanese and American respondents' scores on Introversion, showing a similar spread and average score between the two groups.



| Country | N | Discipline Driven | People Focused | Extraverted | Big Picture Thinking | Inspiration Driven | Outcome Focused | Introverted | Down To Earth |
|----------------|-------|-------------------|----------------|-------------|----------------------|--------------------|-----------------|-------------|---------------|
| United Kingdom | 16853 | 62.28 | 60.84 | 58.90 | 56.02 | 52.26 | 55.07 | 49.59 | 53.50 |
| United States | 15294 | 63.44 | 60.78 | 60.08 | 57.32 | 52.52 | 57.69 | 50.92 | 55.39 |
| Canada | 15721 | 63.27 | 62.53 | 59.16 | 56.87 | 53.38 | 55.21 | 52.07 | 55.57 |
| Australia | 2460 | 62.40 | 61.31 | 59.44 | 56.72 | 53.19 | 54.97 | 50.06 | 53.63 |
| Japan | 6502 | 60.96 | 61.68 | 57.48 | 55.97 | 56.44 | 55.26 | 52.21 | 54.22 |
| China | 2067 | 63.22 | 63.63 | 59.16 | 59.13 | 54.86 | 55.75 | 56.05 | 57.33 |
| Indonesia | 1233 | 67.55 | 64.54 | 62.08 | 57.93 | 57.37 | 57.79 | 52.4 | 59.58 |
| France | 2278 | 59.22 | 60.30 | 62.83 | 55.10 | 54.39 | 57.82 | 49.93 | 51.49 |
| Spain | 520 | 63.55 | 60.50 | 61.56 | 55.67 | 51.53 | 56.46 | 49.05 | 54.37 |
| Portugal | 771 | 64.88 | 59.88 | 61.32 | 57.04 | 51.51 | 58.64 | 49.30 | 55.05 |
| Germany | 4447 | 64.19 | 59.50 | 58.80 | 55.70 | 51.87 | 54.76 | 49.06 | 54.39 |
| Netherlands | 1743 | 60.99 | 58.70 | 60.03 | 55.48 | 52.85 | 55.73 | 49.85 | 55.63 |
| Denmark | 683 | 64.69 | 60.34 | 63.09 | 57.07 | 53.59 | 56.39 | 48.57 | 53.11 |
| Sweden | 742 | 62.55 | 57.71 | 61.51 | 57.08 | 52.32 | 56.08 | 46.00 | 50.55 |
| Poland | 500 | 63.96 | 60.19 | 60.67 | 57.57 | 55.21 | 57.44 | 51.40 | 55.20 |
| Slovakia | 1432 | 62.77 | 59.20 | 59.79 | 56.86 | 55.28 | 58.46 | 52.20 | 56.11 |
| Israel | 1265 | 65.06 | 57.56 | 60.07 | 55.53 | 48.61 | 55.45 | 50.61 | 53.87 |

Findings shown in the table above demonstrate small differences in the response patterns of respondents from different countries. These differences, having been replicated across multiple research studies both internally and in the wider field, do exist. This, in itself, is not a cause for concern in terms of bias and adverse impact. However, when certain traits found more prevalently in specific cultures are valued more highly than those found in other cultures, this can present as a form of bias, with potential implications of adverse impact.

However, when the method of valuing all traits equally, adaptively and maladaptively, is applied, this means that although respondents of different ethnic backgrounds might respond differently, all behaviours and traits are valued equally, presenting a neutral baseline whereby all ways of being are celebrated and their unique value brought to light.



Research in South Africa

Research on the effect of ethnicity on competency potential among a sample of individuals from South Africa was undertaken in order to assess the differential response patterns of White South Africans and Black South Africans. Given the history of psychometrics, and in particular the potential bias against non-white respondents, this analysis is a requirement of the Health Professionals Council of South Africa, in order to demonstrate psychometric rigour and to establish the absence of bias and adverse impact against minority ethnic groups.

We tested the hypothesis that White South Africans would score higher on average than Black South Africans. This hypothesis was rejected.

Competency potential refers to an individual's disposition and affinity towards a specific competency, reflecting their congruence between their personality traits and the specific behaviours required to be successful at that competency. This is assessed in Lumina Spark through weighted composites of personality traits, which, when aggregated, provided a competency potential score for 16 competencies.

| | t | df | p | Cohen's d |
|--------------------------------------|------|--------|--------|-----------|
| Adapting to Change | 2.91 | 102.45 | .00 | .43 |
| Agile Learning | 2.69 | 111.24 | .01 | .38 |
| Conceptualising Strategies | 2.90 | 116.36 | .00 | .41 |
| Fostering Creativity | 2.72 | 115.08 | .01 | .38 |
| Working under Pressure | 2.95 | 106.79 | .00 | .43 |
| Engaging and Energising | 3.28 | 114.49 | .00 | .46 |
| Providing Direction | 2.27 | 104.75 | .03 | .33 |
| Purposeful Argumentation | 3.02 | 105.99 | .00 | .44 |
| Pursuing and Achieving Goals | 1.47 | 113.70 | .14 | .21 |
| Planning and Organising | .62 | 112.28 | .54 | .09 |
| Ensuring Accountability | .38 | 111.95 | .70 | .05 |
| Gathering and Analysing Information | 1.76 | 117.78 | .08 | .25 |
| Supporting Others (Demonstrating EA) | 2.73 | 117.87 | .01 | .38 |
| Coaching & Developing Others | 3.44 | 120.20 | < .001 | .48 |
| Working Together | 3.33 | 116.66 | .00 | .47 |
| Being Interpersonally Astute | 2.50 | 113.27 | .01 | .35 |
| AVERAGE | 3.65 | 94.35 | < .001 | .55 |

The results from the research in South Africa (n = 260) are shown above, using the industry standard Cohen's D statistic to establish the significance and magnitude of differences. It was found that there were statistically significant differences between the two ethnic groups in 12 competencies, with small to moderate effect sizes for each, and an average difference of 7.90%.



the **AMOS BURSARY**

Realising the ambitions of young men

The Amos Bursary is a charity in the UK assisting young men and women (aged 16-24) of African and Caribbean heritage from inner city schools in the UK to realize their career ambitions, providing support to students of high academic attainment, but constrained by financial limitations, lack of understanding of the system, and a lack of knowledge regarding degree-level education.

In the UK, 11.2% of black students leave university before completing their degree, compared to 6.9% of white students. The initiative supported by Lumina Learning aimed to provide students with a better understanding of themselves, developing their confidence, social skills, and personal effectiveness, with the aim of reducing the dropout rate.

Throughout the program, students were provided with Lumina Spark portraits, facilitating an improved understanding of their personalities and behaviours, and thus the development of personal action plans. One-to-one coaching and group workshops were provided on the back of their Lumina Spark portraits in order to apply psychological models to solve problems relating to relationships, roles, leadership, and performance. The bursary also provided mentorship to students, as well as talks from black role models, who have attained successful positions in large organizations.

The Bursary, through application of Lumina Learning's psychometrics and workshops, has seen 100% of their students completing their degrees with a 91% employment rate, with students reporting an improved ability to manage their emotions and relationships, and learned skills to prepare them for university and employment.

The Amos Bursary has won the annual award for the application of best practice in the category of diversity from the British Association of Business Psychology.

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