EMOTIONAL INTELLIGENCE AND JOB PERFORMANCE: A META-ANALYSIS

A study summary

Created by Jaroslaw Grobelny, PhD – 2021

STUDY PRESENTATION: AGENDA

- Authors and paper
- Summary
- Job performance and emotional intelligence
- Previous studies
- Meta-analytic method
- Results
- Conclusions

STUDY: AUTHORS

Grobelny, J., Radke, P., Paniotova-Maczka, D. (2021). Emotional intelligence and job performance: A meta-analysis. *International Journal of Work Organisation and Emotion*, *12*(1), 1-47. DOI: 10.1504/IJWOE.2021.10037977.

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STUDY AND FINDINGS: SUMMARY

How the study was conducted and what are the results?

EI CORRELATES WITH PERFORMANCE

With the use of the Hunter & Schmidt's meta-analytic method we investigated a relationship between emotional intelligence (EI) and job performance. The **ability EI model proved to be more valid predicotr than the trait one**, however when the measurement method was considered, the **self-reported measures were found to have the strongest relation to job performance**, and the performance-based ability ones – the weakest.

In addition, we found that the job context and the job performance measure types moderate this correlation.

Presented study contributes to the existing literature by resolving the ambiguities existing in the results reported so far and by overcoming methodological difficulties and flaws found in previous meta-analyses. We managed to achieve this through several practices and procedures, including, but not limited to:

- summarizing twice as many studies as previous meta-analyses (with a three-time larger sample size);
- employing a more suited methodology and imposing rigorous inclusion criteria;
- following the criterion-driven approach.

> Our results provide reliable evidence that the use of EI measures in the work context is advantageous, valid, and therefore ethical.

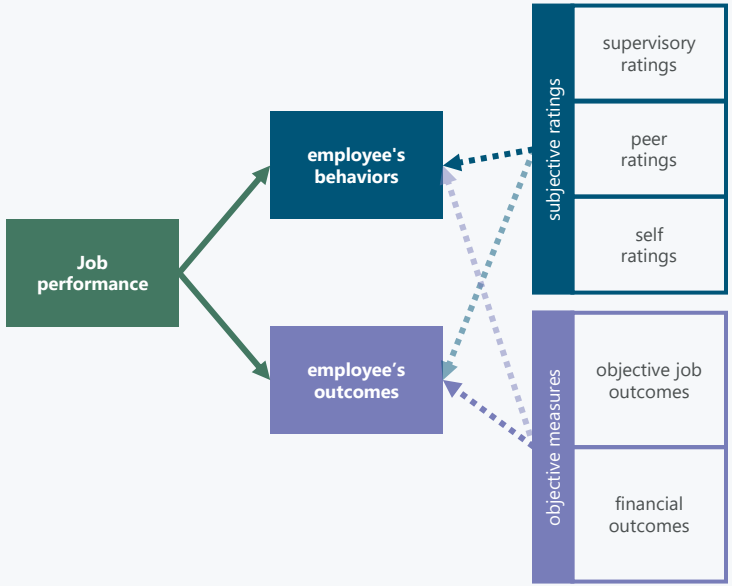
JOB PERFORMANCE: DESCRIPTION AND MEASUREMENT

What is job performance exactly and how can one measure it?

Job performance is defined as an employee's proficiency, an employee's contribution to organization's goals, an employee's value, or an evaluation of that person's behavior. It is one of the most important phenomena studied in I/O psychology as a criterion. Job performance is multidimensional and there is no single indicator that one can point to and say that it accounts for a person's performance. (Koopmans et al., 2011).

Grobelny's integrative definition (2020) assumes that job performance is the tendency of an employee to achieve a certain percentage of individual job goals assigned to that person, a tendency that is constituted by both the employee's behaviors and the tangible results of those behaviors.

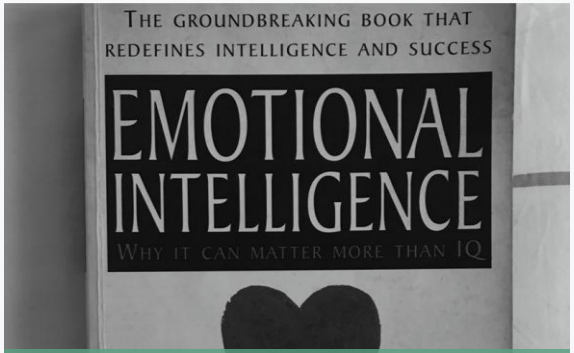
Job performance can only be measured indirectly, by evaluating employee behavior and its outcomes using subjective and objective indicators. Each of the indicator is prone to error (but from the varied sources) and cannot alone account for performance assessment (e.g., supervisor ratings are comprehensive, but subject to bias and lack reliability; objective measures allow differentiation among employees but have a measurement deficiency and are not widely-accepted). To understand the relationship between psychological characteristics and performance, it is necessary to systematically compare the correlation coefficients between this characteristic measure and a series of performance indicators.



GROBELNY ET AL. (2021)

EMOTIONAL INTELLIGENCE: DESCRIPTION

What is so-called ‘‘emotional intelligence” and what is its scientific status?



While Goleman's 1995 book undeniably contributed to the tremendous growth in popularity of EI in management, unsupported and exaggerated claims about EI have negatively impacted EI's reputation as a valid and meaningful human characteristic.

DEFINITIONS

Emotional intelligence (EI) is not a homogeneous construct. Today there are at least two main models of it: the ability and the trait one. The four-branch **ability model** describes EI as the capacity to reason about emotions (and of emotions) to enhance thinking and cognitive performance. **Trait model** states that EI is a person's own opinions about their emotional abilities as well as emotions-related behaviors. Whether the two models describe different aspects of the same human characteristic or separate constructs is still a matter of debate.

EI can be measured through performance tests (in which the employee solves an actual task) or self-report questionnaires. Therefore, one can speak of the relationship between job performance and three separate approaches to understanding and studying EI (so-called model-method pairings or sometimes *research streams*).

1 **PERFORMANCE-BASED ABILITY EI**

2 **SELF-REPORTED ABILITY EI**

3 **SELF-REPORTED TRAIT EI**

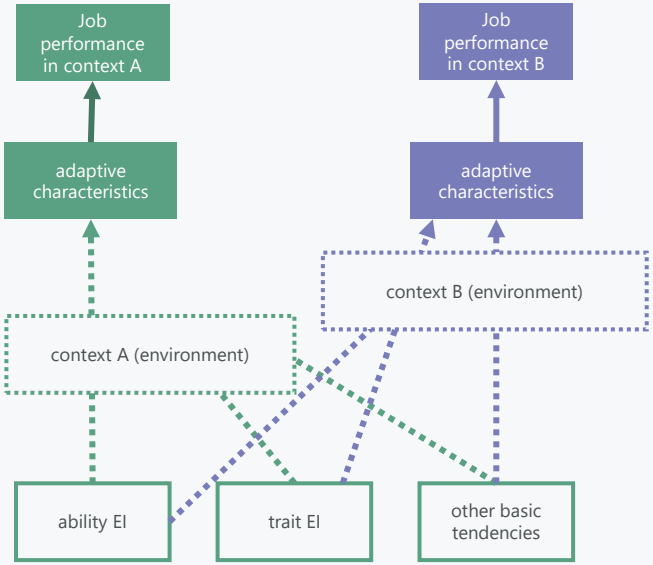
JOB PERFORMANCE AND EI: THEORY

What are the theoretical bases for the job performance-EI relationship?

Personality traits and cognitive abilities, namely, employees' **basic tendencies** (with emotional intelligence being one of them), contribute to job performance because they help employees to develop **adaptive characteristics** - that is, specific knowledge, skills, and habits that are directly responsible for performance.

These adaptive characteristics (knowledge, skills, and habits) only emerge through learning when employees' personality traits and cognitive abilities interact with their work environment. Different environments will lead to the development of different adaptive characteristics. In each work context, an individual needs a different set of knowledge, skills and habits to perform well.

Based on this model (i.e., Motowidlo and Borman's dimensional model), it can be predicted not only that EI (being one of the basic tendencies) will be related to job performance, but also that this relationship will vary for different work contexts (defined, for example, by the occupational group or industry in which someone works).



META-ANALYSIS: SUMMARY AND RATIONALE FOR CHOICE

What is meta-analysis and why did we choose it as a method to investigate the job performance and emotional intelligence relationship?

STATE OF THE FIELD

There are hundreds of studies on EI and its role in work environment. Yet still scholars raise concerns with the utility of EI measures in work context and the theoretical basis of the construct itself.

META-ANALYSIS

We chose the meta-analysis to address some of these concerns. Meta-analysis involves searching available scientific databases in a systematic manner and then applying standardized statistical procedures to summarize the results of all studies conducted to date that have met the inclusion criteria.

RATIONALE

With hundreds of studies carried out so far and a large number of controversies or ambiguities in these studies, a further development in the field of EI-related knowledge is only possible through systematic summaries - such as a meta-analysis.

BENEFITS

In addition to summarizing existing knowledge, a meta-analysis also allows one to build on it, by, for example, highlighting further possible research directions or providing guidelines for researchers. Moreover, the results of meta-analyses are widely considered to be the most reliable form of scientific knowledge.

META-ANALYSIS: INTRODUCTION

How is Hunter & Schmidt's meta-analysis conducted?

SEARCH

First, all available databases are searched for studies that address specific topic (e.g., impact of X on Y or correlation between X and Y). All papers are included based on their title and/or abstract. An initial database is created.

WEIGHTED MEAN

The results of all studies that met the inclusion criteria are systematically compared by calculating a weighted mean (weights are based on sample sizes) of their main coefficients (e.g., X and Y's correlations). A series of additional means might be calculated, corresponding to detailed splits (e.g., X and Y's correlation in each occupational group or gender).

CORRECTION: UNRELIABILITY

The measurement of variables in study is always subject to an error, resulting in the unreliability. It reduces the obtained coefficients of the correlation between X and Y. Another procedure is employed to account for this.

INCLUSION

Researcher defines a number of requirements which describe the quality standards (e.g., whether the study had a correct methodology, or a proper test was used to measure the variable). Each study is then compared against these criteria and only those studies that meet them are included in the final database and their results are summarized.

CORRECTION: RANGE RESTRICTION

In studies conducted on employees, participants are more likely to be high performers (because those performing poorly are fired) and to have high scores on a relevant psychological characteristic test (because they have passed the hiring process). This reduces the correlation coefficients obtained, so a statistical procedure is employed to account for this.

ESTIMATED COEFFICIENTS

The final correlation coefficient (called rho_{XPa}) between X and Y is a more reliable estimate of the actual relationship between two psychological characteristics or other phenomena than the results of a single study.

JOB PERFORMANCE AND EI: PREVIOUS META-ANALYSES

What are the results of previous meta-analyses on job performance and EI?

Van Rooy & Viswesvaran (2004)

They had summed up only 19 studies (*N* = 2652) and found the validity of EI to be moderately low (*rho* = 0.24) but slightly **higher for ability EI**.

Many of these studies were unpublished or measured job performance inaccurately, which could have lowered the reliability of the findings. Authors themselves were aware of the limitations in this research field at the time of writing.

Joseph & Newman (2010)

They had found 22 studies (*N* = 2593) and in turn determined the **trait model EI to be more valid** than the ability one (with *rho* values from 0.42 to 0.17-0.22, respectively). They also proved that the emotional labor moderates this validity.

Unfortunately, they had only included one job performance measure type (supervisory ratings) and proposed theoretical model supported by neither theory nor empirical evidence.

O'Boyle et al. (2011)

They employed method-model pairing and better statistical methods than their predecessors and gathered the biggest database at the time with 43 studies (*N* = 5795). They estimated the predictive validity of EI to be 0.28 for all results, 0.24 for performance-based ability EI, **0.30 for self-reported ability EI**, and finally 0.28 for self-reported trait EI.

Regrettably, they had included a variety of measures different from EI as predictors and a broad scope of measures distinct from individual job performance.

Joseph et al. (2015)

Main aim of this study was to investigate the content-domain of EI. The authors included self-evaluation of job performance as well as supervisory ratings and found the predictive validity of the **mixed EI to be modest**, while the ability EI showed low or none predictive validity at all.

However, the analyzed dataset was quite small, with the number of studies ranging from only 3 to 15 (and the sample size from 209 to 2168).

PREVIOUS META-ANALYSES: ISSUES

Why are the results of previous studies inconclusive and why there was a need for another meta-analysis?

LITTLE ATTENTION TO THE CRITERION

Some authors included invalid job performance measures (e.g., management style), not sufficiently distinguished the performance domain, or limited the scope of review only to a single criterion (the supervisory rating).

FEW STUDIES INCLUDED & LOW SAMPLE SIZES

According to Field (2001) a Hunter & Schmidt's meta-analysis results should be interpreted with caution when less than 30 studies were included into the analysis. This was the case for the majority of previous reviews.

METHODOLOGICAL MISSTEPS

Previous authors performed correction for the predictor's reliability and applied correction for direct range restriction – which is explicitly advised against by Schmidt in a described context.

THE USE OF CRITICIZED TECHNIQUES

The previous meta-analyses used an artefact-distribution method during the correction process. This practice is much easier to use but results in lesser reliability of the estimated coefficients.

BROAD INCLUSION CRITERIA

Some of the studies included in the previous analyses were not conducted on employees' samples or used other measures than EI (e.g., cultural intelligence, social competence).

IMPROVEMENT OPTIONS

These issues together may have limited the reliability of the coefficients estimated by previous authors. Therefore, we noted an opportunity for an improvement by conducting the meta-analysis with a revised methodology.

RECENT STUDY: SEARCH PROCEDURE

Where did we look for studies and what were our inclusion criteria?

THE SEARCH FOR PRIMARY DATA

We employed The Multisearch Tool provided by Adam Mickiewicz University (among other search-engines) and conducted a search in English, Polish, German, Russian, and Ukrainian. From the 264 studies found initially, the 99 were included into the final databases after tested for inclusion criteria.

Databases indexed by search procedure: Academic Search Complete, Business Source Complete, ERIC, JCR, JSTOR, PsycARTICLES, PsycINFO, ScienceDirect, SCOPUS, Web of Science and over 100 more.

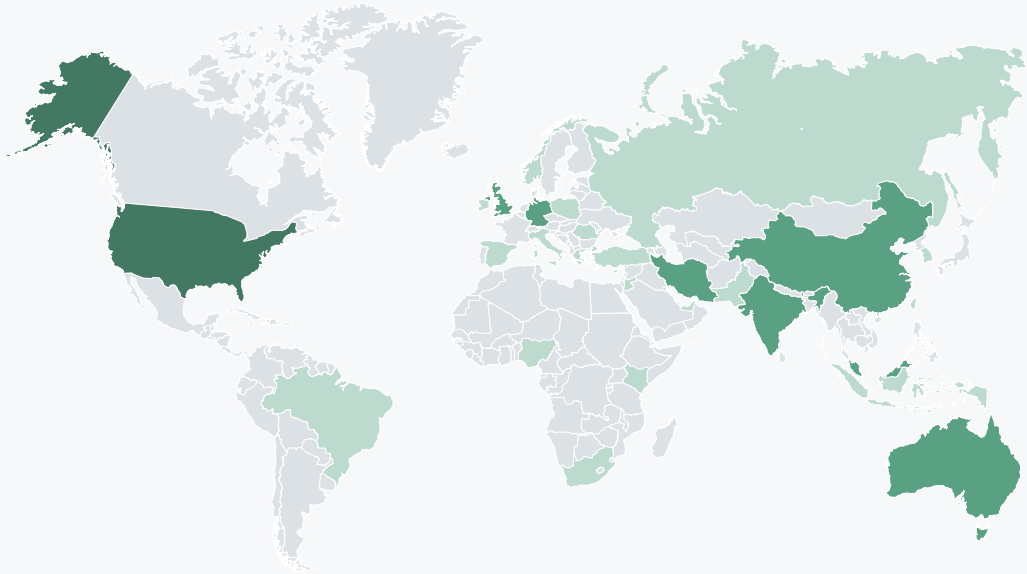
Other sources: ResearchGate and Google Scholar and a wide range of national and local databases (elibrary.ru, Cyberleninka, Vernadsky National Library of Ukrainian, eNTUKhPIIR, Central UKTU Repository, Primus-HU Berlin, and many others) as well as direct contact with local professional associations concerns with I/O psychology and manual search in journals covering related topics.

INCLUSION CRITERIA

- the paper must present empirical data and list all the required information (or else the authors must provide us with such data),
- the paper must be published in a reviewed source,
- the sample must consist of actual employees,
- job performance measures must assess individual task performance,
- job performance must not be measured by simulation, training or academic performance; or appraisal of traits or behaviors that only determine effective performance,
- EI must be measured explicitly.

RECENT STUDY: SEARCH RESULTS BY COUNTRY

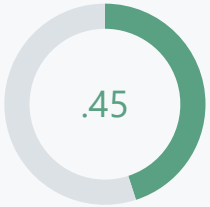
Which countries are the studies included in the meta-analysis from?



1	United States	24
2	India	9
3	United Kingdom	9
4	Iran	7
5	China (without Hong Kong or Taiwan)	7
6	Malaysia	6
7	Australia	5
8	Germany	5

MAIN RESULTS: PREVIEW

What were the main results of the meta-analysis?

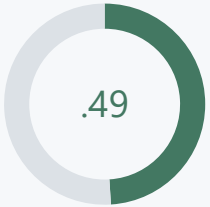


OVERALL

Estimated correlation coefficient between job performance and any measure of EI.

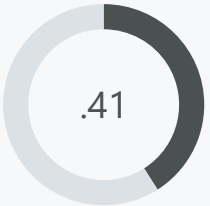
PERFORMANCE-BASED ABILITY

Estimated correlation coefficient between job performance and ability-based EI measured by a test.



SELF-REPORTED ABILITY

Estimated correlation coefficient between job performance and ability-based EI measured by a self-reported questionnaire.



SELF-REPORTED TRAIT

Estimated correlation coefficient between job performance and trait-based EI measured by a self-reported questionnaire.

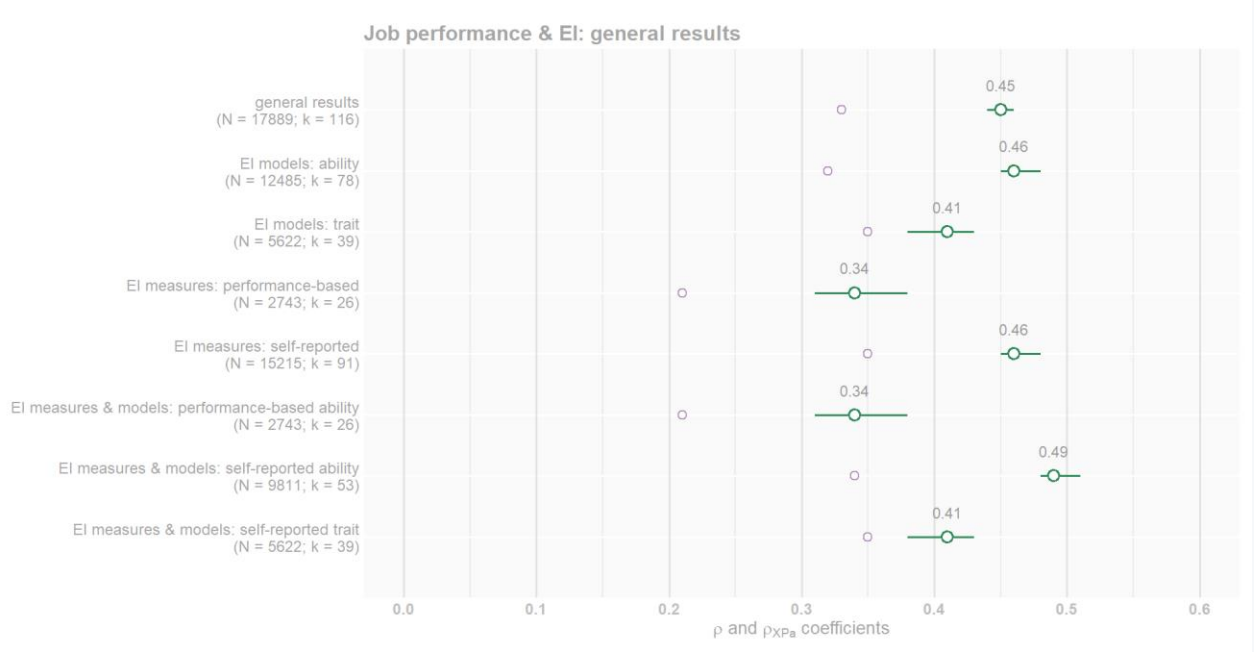
> .45 Based on the Lipsey & Wilson (2001) references values, the overall and sell-reported EI results should be considered as a large coefficient, while the performance-based as moderate.

JOB PERFORMANCE AND EI: GENERAL RESULTS

What is shown in the charts on the following slides?

HOW TO READ THE CHART

- a violet circle indicates an observed/raw correlation coefficient between EI and job performance in given context/split (described in a row label);
- a green circle indicates an actual/estimated strength of relation between EI and job performance (the actual results of meta-analysis);
- a green error bars indicate 90% confidence intervals for this relation (i.e., the true coefficient is within this range with 90% confidence);
- k is a number of studies included and N is a total sample size in these studies.

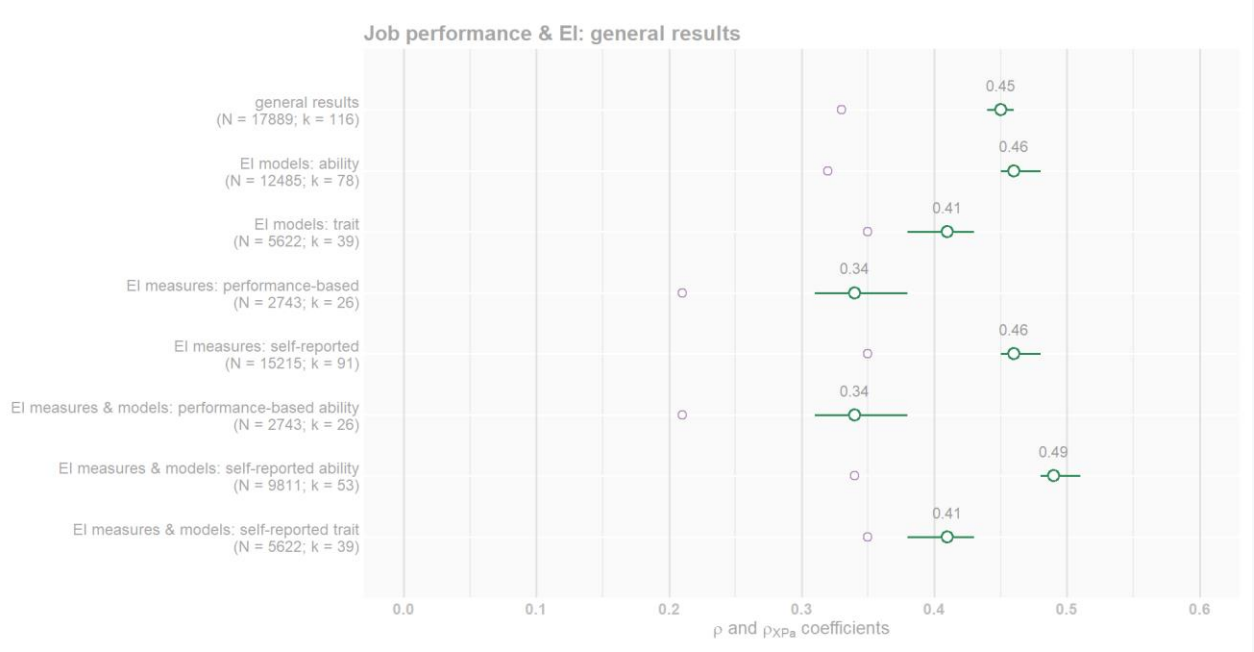


JOB PERFORMANCE AND EI: GENERAL RESULTS

What are the job-performance and EI correlation coefficients when EI models and measurements are compared?

The ability EI model correlates more strongly with job performance than the trait EI. However, this is not the case for EI results from the performance-based methods.

When method-measure pairing is being considered, the self-reported ability-based EI measures outperforms all others in terms of their validity.

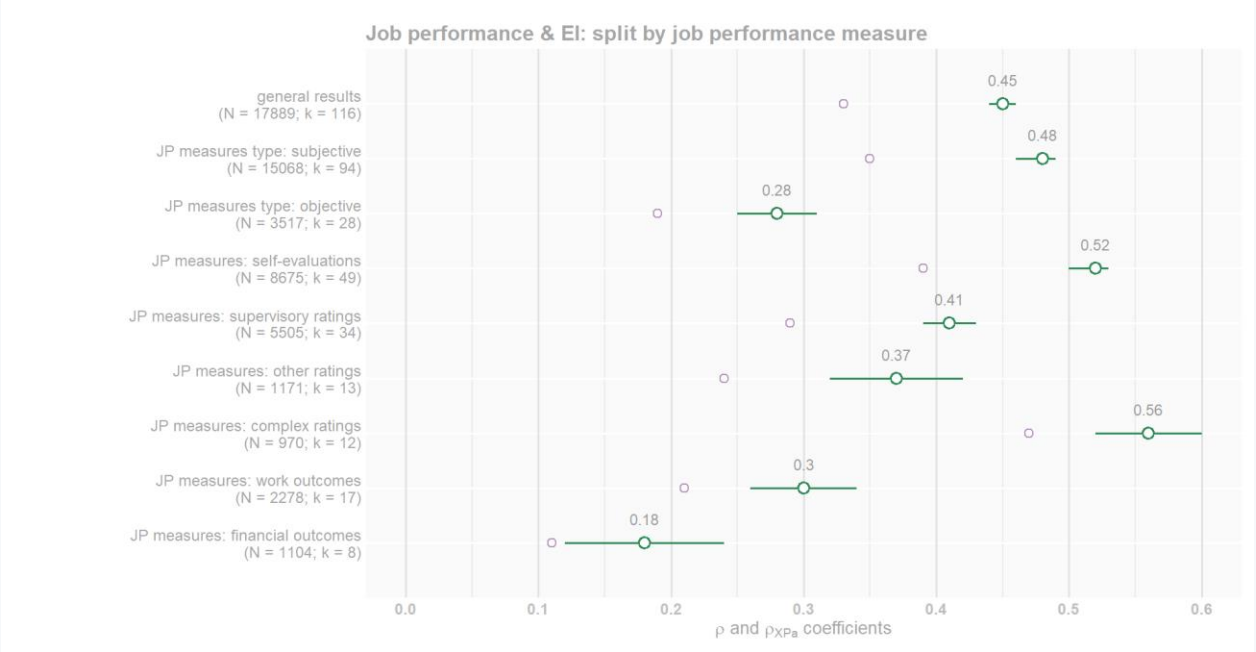


JOB PERFORMANCE AND EI: BY PERFORMANCE MEASURES

What are the job-performance and EI correlation coefficients when job performance indicators are compared?

EI measures seem to capture better the aspects of job performance measured by the subjective ratings (compared to the job performance aspects measured by the objective indicators).

EI correlates most strongly with job performance measured by the complex ratings (i.e., summary of several detailed ratings from multiple sources). This suggests that EI is indeed associated with a wide range of behaviors and outcomes that build employee performance (because they are captured by the complex performance ratings).

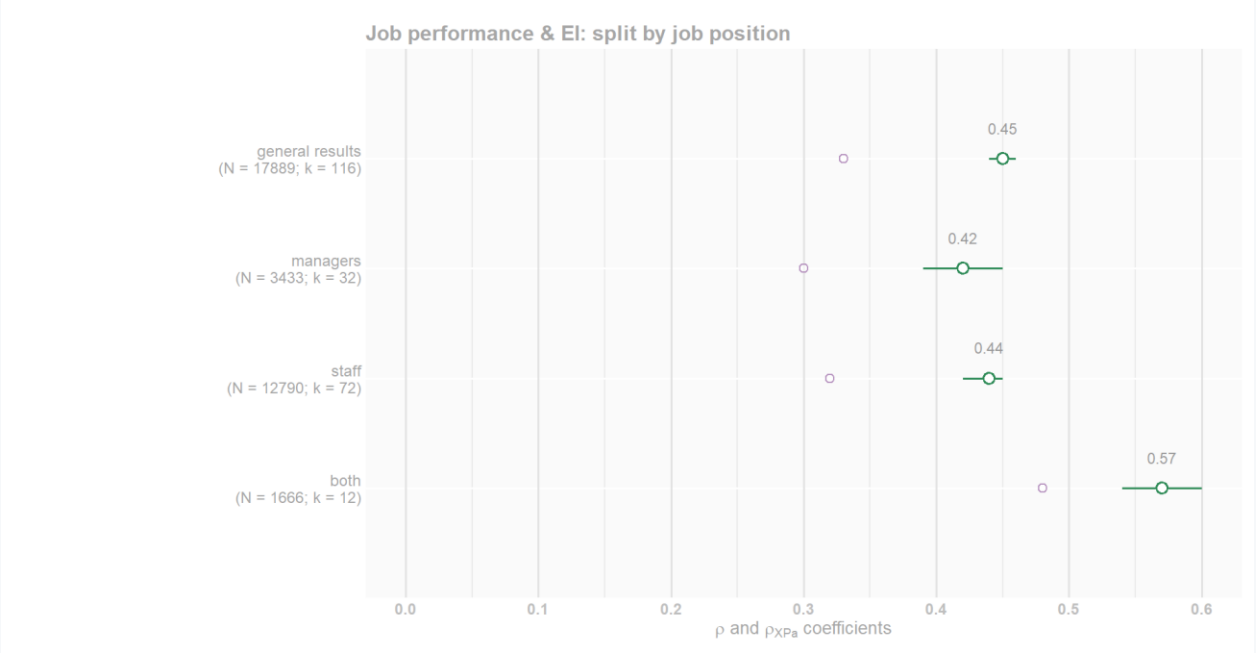


JOB PERFORMANCE AND EI: BY POSITION

What are the job-performance and EI correlation coefficients when peoples position in organization is being considered?

Job performance and EI relation is nearly the same for managers and employees on non-managerial positions.

The relationship is at the level of the overall average result (that is, the one that takes all the studies in the database into account).

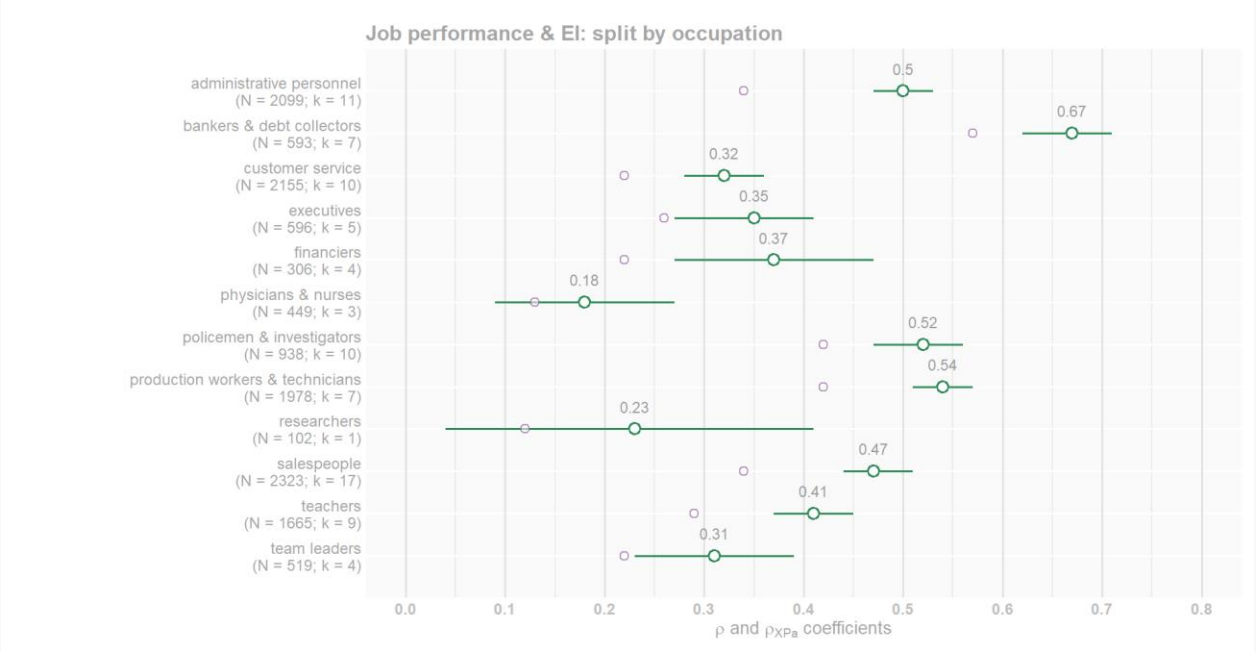


JOB PERFORMANCE AND EI: BY OCCUPATION

What are the job-performance and EI correlation coefficients when occupational groups are compared?

Bankers and debt collectors, policemen and production workers are among groups in which the relation between EI and job performance is the strongest.

Interestingly, the weakest relationship between EI and performance is found among physicians and nurses. It is possible that EI makes the job more difficult for these individuals by increasing their vulnerability to burnout and susceptibility to emotional labor load.

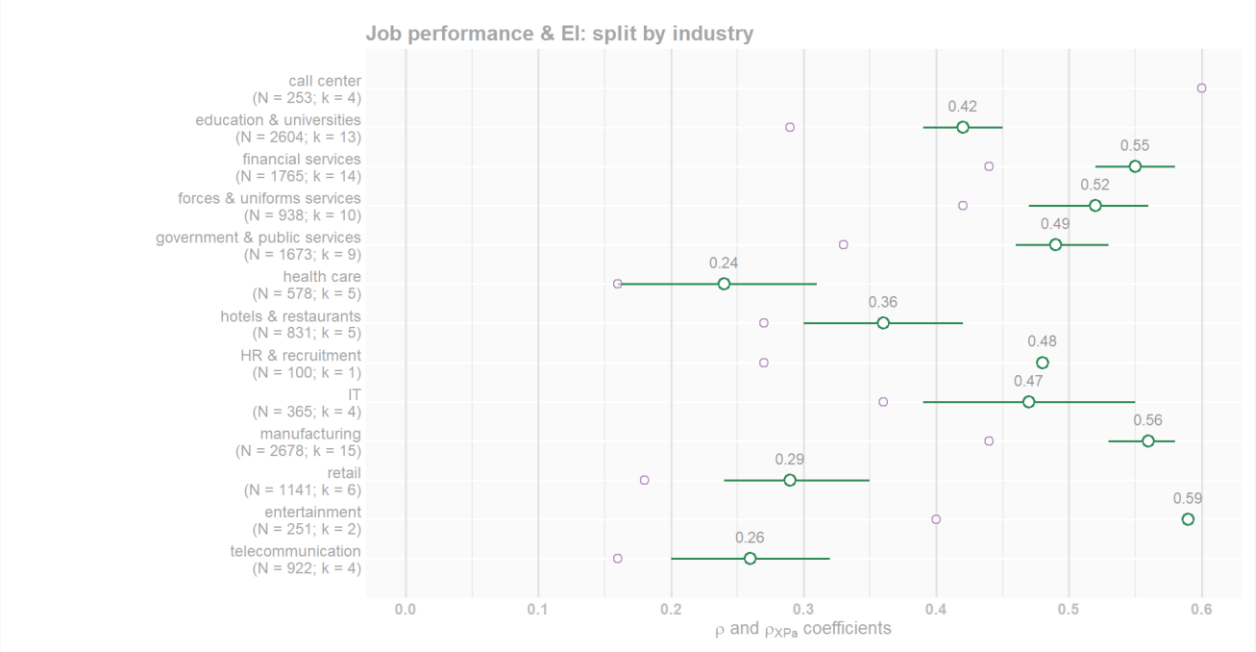


JOB PERFORMANCE AND EI: BY INDUSTRY

What are the job-performance and EI correlation coefficients when industries in which individuals work are compared?

Similar patters are found when an industry is taken into account.

However, some of these results are only preliminary due to the low sample sizes and studies numbers.

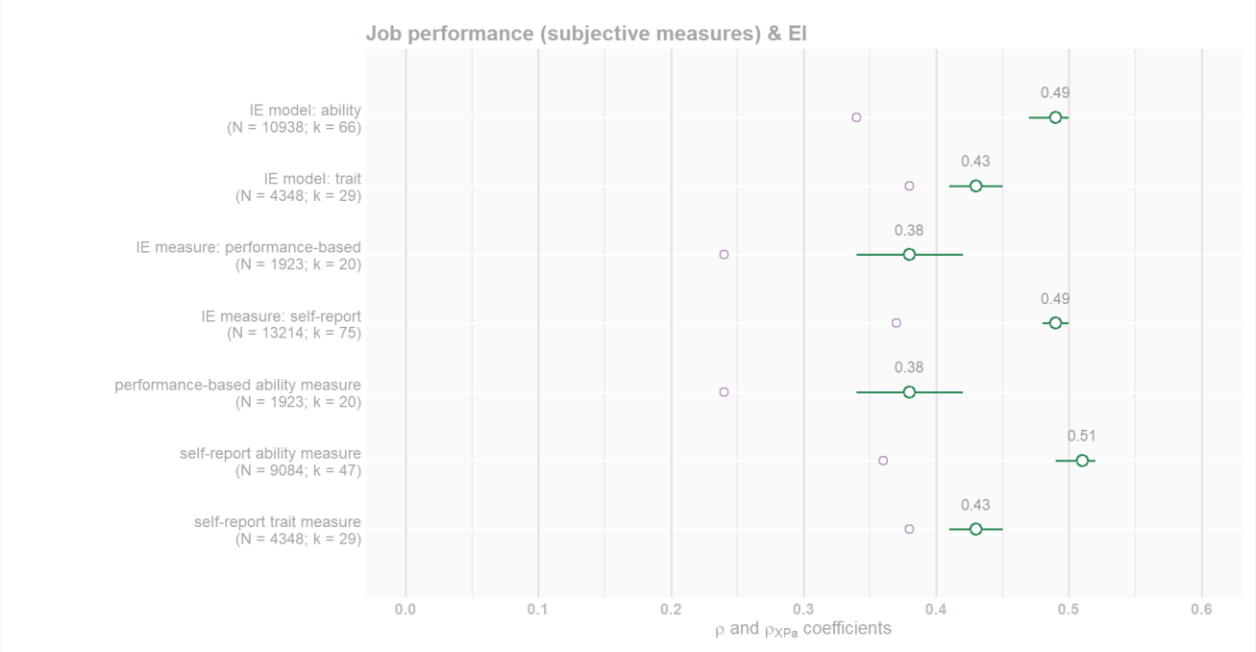


JOB PERFORMANCE (SUBJECTIVE) AND EI: BY EI MEASURE

What are the job-performance and EI correlation coefficients when only subjective job performance indicators are included?

When job performance is measured only by the subjective ratings, the same patterns are identified as for the general results.

Self-reported EI measures have superior validity, with self-reported ability-based EI measures having the highest correlation with job performance.

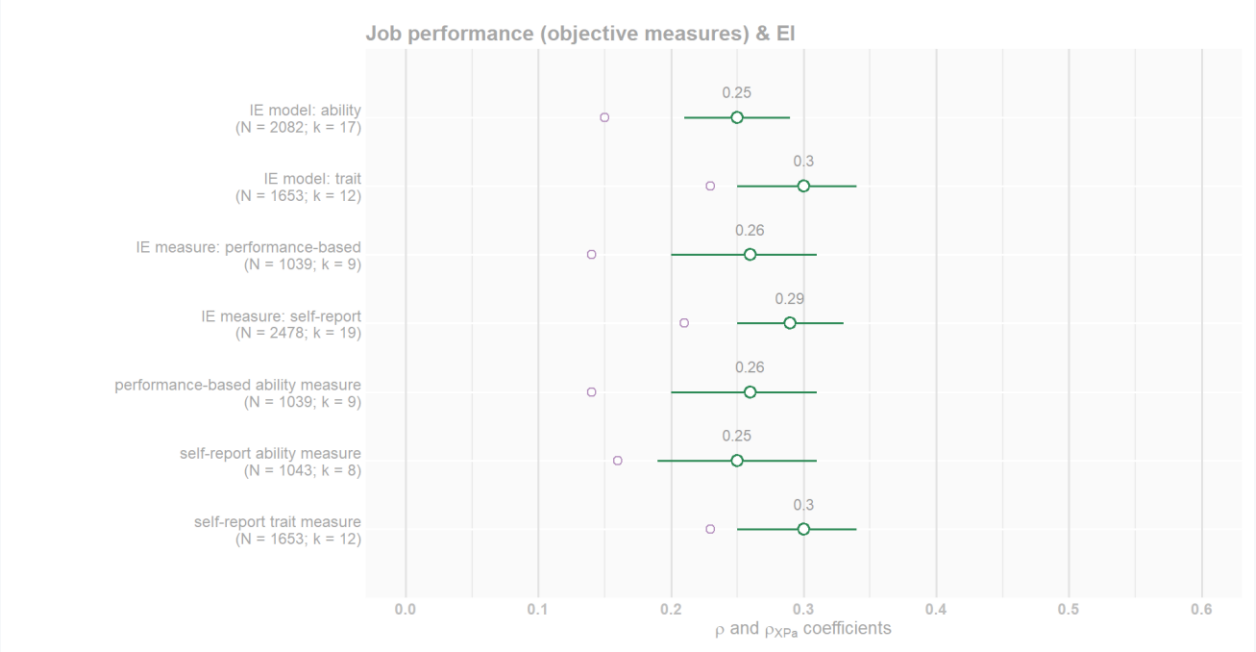


JOB PERFORMANCE (OBJECTIVE) AND EI: BY EI MEASURE

What are the job-performance and EI correlation coefficients when only objective job performance indicators are included?

However, the correlation coefficients for job performance measured by the objective indicators are very consistent for every operationalization of EI – there is not as much variability among them as for the overall results.

This suggests, perhaps, that any measure of EI predicts some of the same aspects of an employee's performance that are expressed in their results (which are in turn described by the objective job performance indicators).

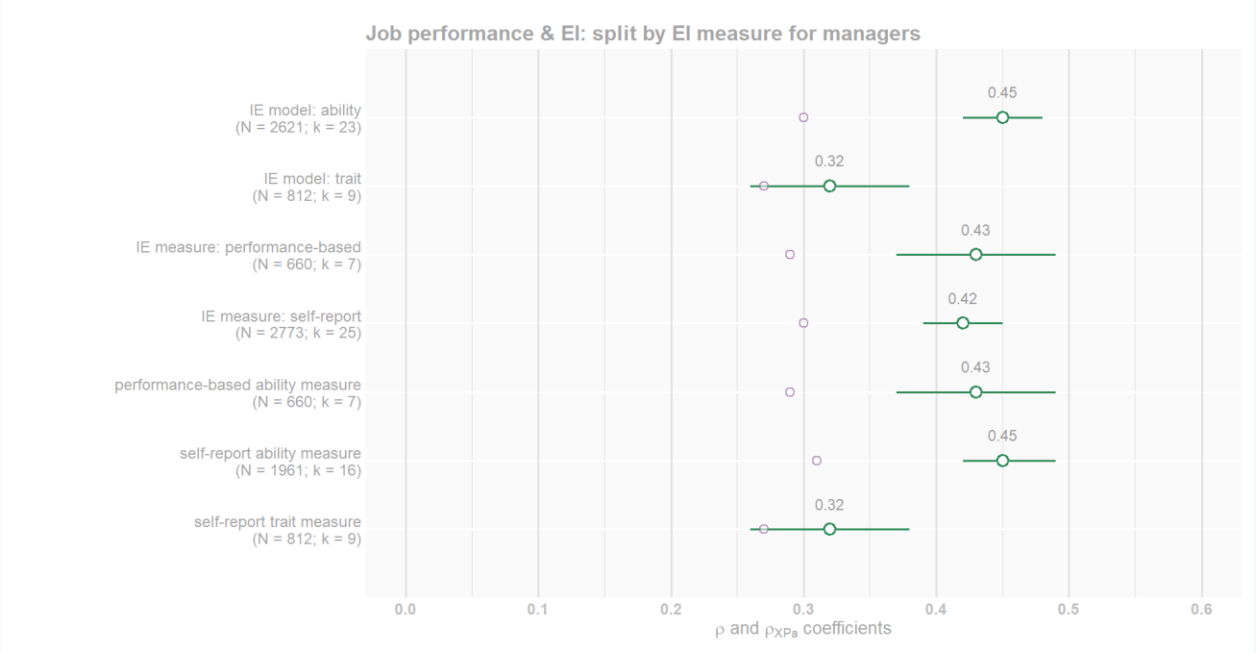


JOB PERFORMANCE AND EI: FOR MANAGERS

What are the job-performance and EI correlation coefficients when only managers results are considered?

When the results for managers are analyzed, performance-based ability EI measures are found to be valid and strongly related to performance. This suggests that managers' job requires proficiency in the actual processing and use of emotional information.

Since the correlation of self-reported measures with managers' job performance is similar to that in the overall sample, it is possible that the above requirement is an additional aspect of managers' performance. That is, manager performance may involve the same aspects as employee performance, plus an additional requirement related to emotional information processing.

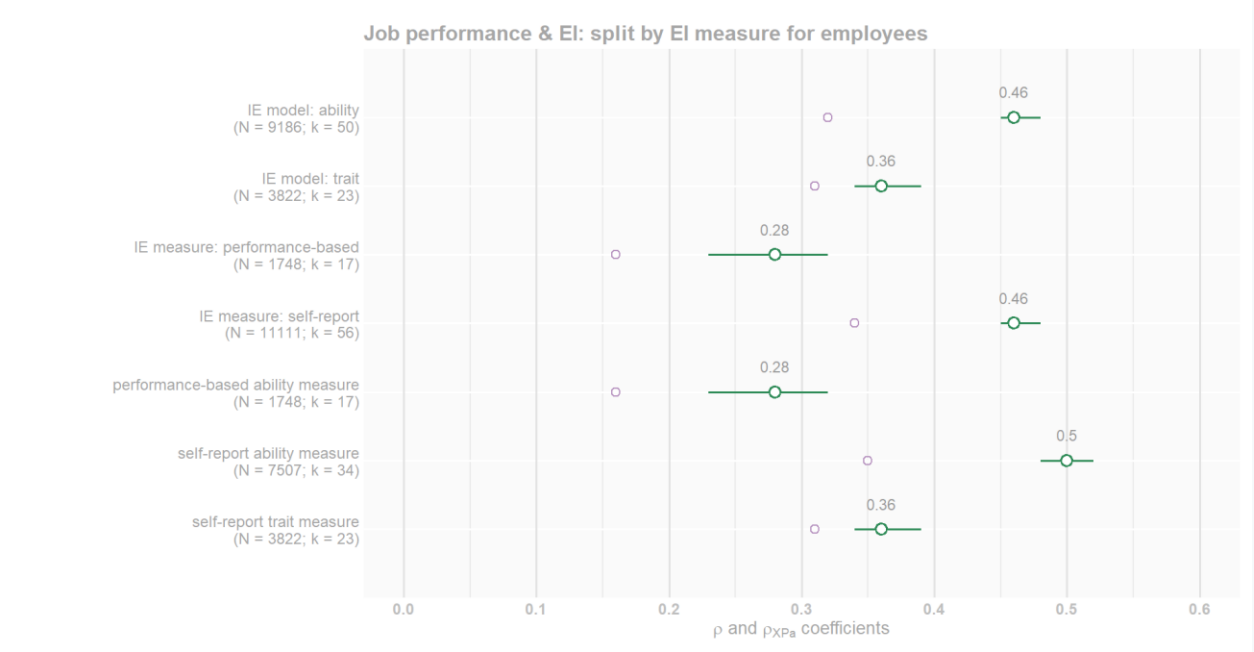


EI AND JOB PERFORMANCE: FOR EMPLOYEES

What are the job-performance and EI correlation coefficients when only staff results are considered?

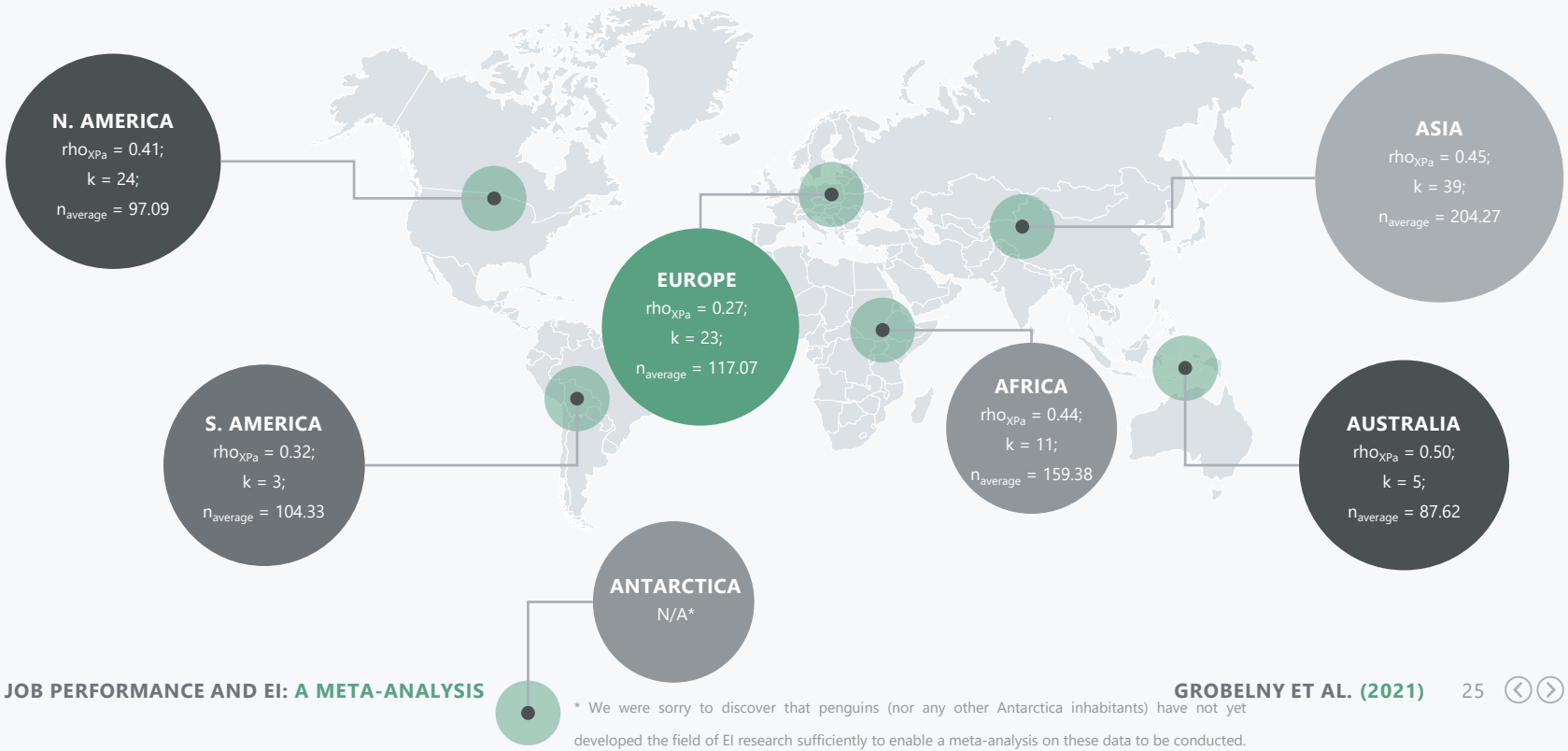
EI as measured by the ability model and through the self-report methods correlates even more strongly with performance of regular employees than in the overall sample.

This relationship should be considered particularly strong given the typical magnitudes of correlation coefficients identified in primary studies and meta-analyses devoted to the validity of psychological characteristics toward job performance.



ADDITIONAL ANALYSIS: CULTURAL BIAS?

Are there differences between EI and job performance correlation coefficients between studies conducted on each continent?



* We were sorry to discover that penguins (nor any other Antarctica inhabitants) have not yet developed the field of EI research sufficiently to enable a meta-analysis on these data to be conducted.

JOB PERFORMANCE AND EI: CONCLUSIONS

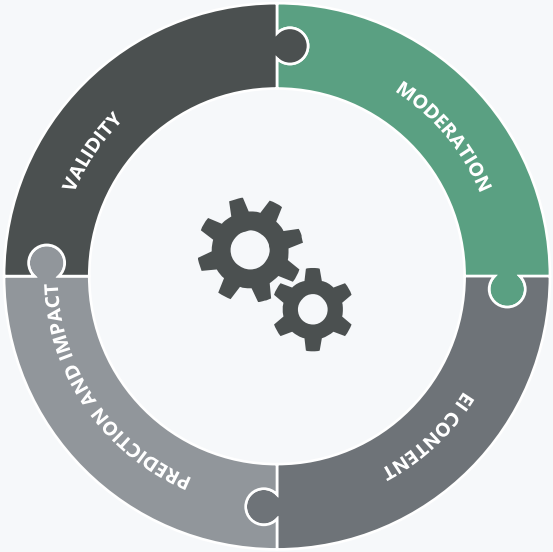
What does our study suggest?

VALIDITY

EI positively correlates with job performance. The strong correlation of a single measure of EI with performance justifies its use in recruitment (e.g., as a substitute for a number of measures of personality traits and cognitive abilities).

PREDICTION AND IMPACT

It appears justified to consider EI, both ability and trait ones, to be one of the employee's basic tendencies that drive the characteristic adaptation and in turn play a major role in determining job performance level.



MODERATION

The job context and the job performance indicator type moderate this correlation and the job position of incumbents proved to partially moderate the EI validity. All of these factors should be considered and precisely reported in the future studies.

EI CONTENT

Fairly different validity coefficients and patterns of relations with job performance for all of the three EI conceptualizations (method-model pairings), together with the theoretical discrepancy described above, provide further evidence that the conceptualizations describe connected, but divergent constructs

THANKS FOR READING!

For further information, please check the full paper or contact the authors.

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