

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/351593819>

Emotional intelligence and job performance: a meta-analysis

Article in *International Journal of Work Organisation and Emotion* · June 2021

DOI: 10.1504/IJWOE.2021.10037977

CITATIONS

0

READS

152

3 authors, including:



Jaroslaw Grobelny

Adam Mickiewicz University

17 PUBLICATIONS 29 CITATIONS

[SEE PROFILE](#)



Daria Paniotova-Maczka Дарья Паниотова

Adam Mickiewicz University

12 PUBLICATIONS 2 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Emotional Intelligence and Job Performance. Systematic review across different occupational groups [View project](#)



Comprehensive model of the psychological predictors of individual job performance [View project](#)

Emotional intelligence and job performance: a meta-analysis

Jaroslaw Grobelny*, Patrycja Radke and
Daria Paniotova-Maczka

Adam Mickiewicz University,
61-712 Poznan, Poland

Email: jaroslaw.grobelny@amu.edu.pl

Email: patsze1@st.amu.edu.pl

Email: daria.paniotova@amu.edu.pl

*Corresponding author

Abstract: This study employed Hunter and Schmidt meta-analytic method to investigate the relationship between emotional intelligence (EI) and job performance. It contributes to the existing literature on five counts: we include more than twice as many studies that have more than triple the sample size than previous meta-analyses, we employed a more suited methodology, we followed the criterion driven-strategy, we imposed rigorous inclusion criteria, and we investigated a series of moderators of EI and job performance relationships not studied before. Results showed that EI had operational predictive validity of 0.45 ($k = 99$, $N = 17,889$) and self-reported ability EI measures proved to be the most valid. In addition, we found that the job context and the job performance measures types moderates this correlation and job position of incumbents proved to partially moderate the EI validity. The results support the overall validity of both ability and trait models of EI.

Keywords: emotional intelligence; job performance; validity generalisation.

Reference to this paper should be made as follows: Grobelny, J., Radke, P. and Paniotova-Maczka, D. (2021) 'Emotional intelligence and job performance: a meta-analysis', *Int. J. Work Organisation and Emotion*, Vol. 12, No. 1, pp.1–47.

Biographical notes: Jaroslaw Grobelny holds a PhD in Psychology and works at Adam Mickiewicz University in Poznan, Poland. He specialises in industrial and organisational psychology and his research interests are job performance and personnel decision making. He has a broad professional experience as HR advisor and develops psychological tools for businesses.

Patrycja Radke is a graduate of Adam Mickiewicz University in Poznan, Poland, at Faculty of Psychology. She completed clinical and organisational psychology specialisations.

Daria Paniotova-Maczka is a PhD candidate at Adam Mickiewicz University in Poznan, Poland at Faculty of Psychology and Cognitive Science. She is a psychologist, art therapist, occupational therapist, and member of the European Association of Social Psychology. Her scientific and research interests are in the field of social psychology, especially on pro-environmental psychology. She works in occupational therapy workshops and as a psychologist with migrants from Eastern Europe.

1 Introduction

One of the major aims of research in industrial and organisational (I/O) psychology is to support the prediction of substantial work outcomes (Kaplan et al., 2010). On this basis, numerous constructs are investigated as the possible valid predictors of job performance. Within these predictors, emotional intelligence (EI) is perhaps one of the most thought-provoking ones. The main purpose of the paper is to investigate the actual validity of EI as a job performance predictor via the meta-analytic method. Our study contributes to the existing literature on five counts: we gather and compile more than twice as many studies that have more than triple the sample size than previous EI validity meta-analyses, we employed a better and more suited methodology which allows us to avoid the omissions of our antecedents, we followed the criterion-driven strategy and put emphasis on the predicted variable to clarify some concerns around it, we imposed more rigorous principles to include studies into our analysis to improve our findings reliability, and finally we investigated a series of moderators of EI and job performance relationships not studied before. We would like to build upon the previous studies to extend the current knowledge and address a discrepancy between earlier findings in various research. Our study presents up-to-date validity coefficients' estimates for EI that differ significantly from previously reported ones. Furthermore, as this was a matter of arguments, we establish the relative validity for varied EI models.

EI has a substantial research record, and there have already been numerous studies on its relationship with job performance. Therefore, apart from some specific areas, providing further evidence from a single, primary study may have limited contribution. In the history of EI studies, there were ones that proposed exaggerated, or regrettably, not even data-based claims about the significance of EI in the workplace. Also, some of the primary studies were conducted on limited samples, due to the specific nature of research on employees. Consequently, there has been a harsh criticism of EI as an important factor impacting job performance. After Hunter and Schmidt (2004) introduced their meta-analytic approach, it has become the benchmark in I/O psychology for research on employees' characteristics and their performance. It is in fact meta-analysis that is referred to as a method that allows to judge the strength of evidence behind a certain claim and to limit contradictory or conflicting primary research results (Borestein et al., 2009; Hunter and Schmidt, 2004). Thus, given the history of EI research to date, the existing contradictory claims and the consequent low contribution of further primary studies, and finally the trends in I/O psychology, it is our view that only through meta-analyses, will it be possible to further develop knowledge in this field and provide a context for future studies.

1.1 *Job performance*

Validity studies tend to pay far too little attention to the job performance side, as compared to the predictors being investigated (Austin and Villanova, 1992; Rojon et al., 2015). Little emphasis is placed on comparing different job performance criteria in the prediction context. Consequently, meta-analysts' predictive validity results diverge seriously and too little is known about the performance-criterion linkage (Joseph et al., 2015; Kaplan et al., 2010; Rojon et al., 2015; Van Rooy and Viswesvaran, 2004). To address this, we employed a criterion-driven strategy described by Kaplan et al. (2010) and Rojon et al. (2015). This approach emphasises the importance of the variable being

predicted as a central construct, its operationalisation and consequently leads to a better understanding of the question being investigated.

1.1.1 Job performance structure

Job performance is a latent, multidimensional phenomenon that cannot be measured directly (Campbell et al., 1993; Koopmans et al., 2011; Viswesvaran, 2001) and has to be treated as such in validity studies. There are two opposing views concerning the constitution of job performance. According to the first perspective, only what an employee actually does in job-related situations could be considered as his or her performance (Sonnentag and Frese, 2002). Therefore, job performance could be composed only of behaviour episodes in the performance domain (Motowidlo, 2003). The assumption here is that the performance construct cannot include what is beyond the individual's control (see Viswesvaran, 2001). The second perspective assumes that job performance is a consequence of an employee's behaviour (Sonnentag and Frese, 2002). Indeed, many of the early models of job performance (e.g., Bernardin and Russell, 1998; Toops, 1944; Wherry, 1957) include such components as the number of units produced or the sales volume.

While some researchers insist on a division between behaviours and results (e.g., Campbell, 1990; Motowidlo et al., 1997), others have not seen the difference as a clear-cut one. Viswesvaran (2001) argues that the control the employee has over the results of his or her actions and therefore the differentiation between performance as behaviour and a result is a matter of degree. On this basis, many researchers (Sinha and Jain, 2004; Viswesvaran and Ones, 2002) claim that performance must be understood in terms of both behaviours and outcomes. Empirical evidence indeed suggests that although these two aspects do not fully overlap, there is substantial convergence between them (Aguinis et al., 2013; Demerouti et al., 2014), which implies that these two factors should not be analysed separately.

1.1.2 Models of job performance

Borman and Motowidlo (1993) distinguished between task performance, employee proficiency with actions contributing to organisation's goals, and contextual performance, or actions contributing to the social context of organisations. Some recent models include a third dimension, namely counterproductive or adaptive performance (Koopmans et al., 2011; Viswesvaran and Ones, 2002). Still, studies fail to support these claims as factor analyses tend to show a two-factor structure of job performance (Demerouti et al., 2014; Motowidlo and Van Scotter, 1994; Viswesvaran, 2001). Task performance is one of the most heavily studied constructs in I/O psychology (Austin and Villanova, 1992; Welbourne and Johnson, 1998) and as a result its conceptualisation is quite clear. Directly (e.g., by transforming raw materials into goods) or indirectly (e.g., by maintenance services), task performance is always connected to economic indicators of the organisation's prosperity. On the other hand, there is no general agreement as to the contextual performance structure and what constitutes this dimension (Griffin et al., 2007; Motowidlo, 2003; Van Dyne et al., 1995; Welbourne and Johnson, 1998). It is also the principal reason for us to focus on task performance solely in this meta-analysis.

1.1.3 Measures of job performance

Many researchers failed to include varied measures of performance variable and compared them or tended to employ too general measures (Austin and Villanova, 1992; Demerouti et al., 2014; Nathan and Alexander, 1988). The use of different measuring criteria in validity studies becomes an important guideline that should lead to better understanding of prediction (Rojon et al., 2015; Van Rooy and Viswesvaran, 2004).

There are two general types of job performance measures: objective and subjective (ratings and outcomes) (Sonnentag and Frese, 2002; Viswesvaran, 2001). This division accurately reflects the twofold structure of performance (behaviours and results). As different measures include appraisals from a variety of perspectives (see Demerouti et al., 2014; Griffin et al., 2007; Lopes, 2016) and tend to be contaminated by errors from different sources, the combined use of both objective and subjective multiple measures of performance in validity studies should lead to increasing the quality of the results of these studies (Nunnally, 1978). This is additionally justified by factor analysis studies, which imply that different types of measures are loaded by a common factor (Viswesvaran et al., 2005). Finally, as Koopmans et al. (2011) suggested, the job performance construct is composed of diverse components and is made up of a range of indicators that in turn could be measured directly. Consequently, employing a mixture of measures could help to obtain a full job performance appraisal. Therefore, we decided to focus on the types job performance measures and systematically compare how they are predicted by EI.

1.2 Emotional intelligence

EI is perhaps one of the most popular constructs in I/O psychology and the foundation for numerous tools used in business practice, with multi-million dollar business behind it (Ashkanasy and Daus, 2005; Motowidlo et al., 1997; Walter et al., 2012). It is perhaps also one of the most controversial topics. Among other things, sceptics argue that EI models lack a theoretical background, that the construct itself is too broadly and ambiguously defined, that there are serious issues with measurements, that research on the role of EI in the workplace suffers from major methodological issues, and that there is an enormous gap between advocates' claims and research findings about EI utility (Antonakis, 2004; Antonakis et al., 2009; Harms and Credé, 2010b; Knopp, 2014; Landy, 2005; Locke, 2005; Nafukho, 2009; Roberts et al., 2010b; Zeidner et al., 2004). Furthermore, even studies proving EI validity towards job performance are criticised for poor sampling and many argued that the relation between these two constructs might be an artefact caused by the phenomena related to EI, such as positive affectivity or impression management (Antonakis et al., 2009; Roberts et al., 2010a; Zeidner et al., 2004).

1.2.1 Models of EI

In general, there are two major EI models. The first one, called an ability model, describes EI as a narrow, theoretically specified set of capacities related to the recognition and management of emotions (Joseph and Newman, 2010). Salovey and Mayer (1990) laid the groundwork for this model when they reintroduced EI to the scientific community. They later developed a four-branch model (Mayer et al., 2000) and recently clarified EI as an ability to use emotions to enhance reasoning [Mayer et al.,

(2008), p.511]. The second, so-called mixed model (or, more recently, the trait model), serves as an umbrella term for a broad perspective of different conceptualisations. The first major perspective within this model is Goleman's (1995) conceptualisation operationalising this construct via emotional competencies. While there is no doubt that Goleman (1995) contributed a great deal to the popularisation of EI, many criticised him for, generally speaking, doing more harm than good to the field (Antonakis et al., 2009; Ashkanasy and Daus, 2005; Petrides, 2010; Sinha and Jain, 2004; Van Rooy et al., 2005; Van Rooy and Viswesvaran, 2004; Zeidner et al., 2004). Based on Goleman's (1995) work, Bar-On (1997) developed a five-branch model of EI. Bar-On (1997, p.14) defined EI as "an array of noncognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures." Both of these conceptualisations are particularly criticised for including characteristics of almost every individual difference except general mental ability (GMA) (Antonakis, 2004; Knopp, 2014; Locke, 2005; Van Rooy et al., 2005). Finally, the last widely accepted conceptualisation within this perspective is the trait theory put forward by Petrides (2010), who sees EI as a group of emotional self-perceptions located at the lower levels of personality. While this is the only operational definition of EI that meets the psychometric standards, it has also faced some criticism (see Côté, 2010). Recently, all of these theories have been referred to as trait models (see Antonakis et al., 2009; Artech et al., 2008).

As Roberts et al. (2010a) concluded, removing ambiguity around definitions, models and measurements of EI present in the performance prediction context, is crucial for progress in this fledgling field of research. To address this question, we decided to employ the traditional division together with detailed distinctions, that is method-model pairings (Cherniss, 2010a, 2010b; Joseph and Newman, 2010), to identify patterns of validity and limitations of distinguished settings. Therefore, while presenting the meta-analytic results, we will present the predictive validity of performance-based ability, self-reported ability, and self-reported trait EI next to the general results. This distinction is based on Ashkanasy and Daus (2005) 'research steams' idea and was employed in the previous reviews (Joseph and Newman, 2010; O'Boyle et al., 2011). The use of this approach will therefore help to compare results and build upon previous meta-analyses.

There are however other approaches to this subject. For example, some authors proposed that the only thing that distinguishes EI models is the measurement method used (see Petrides and Furnham, 2006). However, the method-model pairing has strong justifications, both theoretical as well as empirical ones. This approach implies the separation of self-reported ability EI and trait EI, even though they are measured in the same way. The distinction of self-reported ability EI is a questionable assumption, as there are serious doubts whether one can validly assess one's own abilities (Cherniss, 2010b; Roberts et al., 2010b). However, apart from the construct validity issue, many authors emphasise that due to considerable differences in definitions behind these two perspectives, they cannot be analysed as one (Antonakis and Dietz, 2010; Roberts et al., 2010a). It is all the more important, as many claim that only the ability EI definition meets scientific standards, while the mixed or the trait ones seem severely flawed and plagued with serious theoretical and empirical issues (Ashkanasy and Daus, 2005; Conte, 2005; Knopp, 2014; Landy, 2005; Roberts et al., 2010a, 2010b; Van Rooy et al., 2005; Van Rooy and Viswesvaran, 2004). What is more, measures of both ability models seem to correlate more strongly with each other than with the trait measures (Mao et al., 2016; Webb et al., 2013). Also, all of the trait models are analysed conjointly. The

differences between the above-mentioned authors' propositions cannot be called into question, however all of the trait models are strongly convergent, as empirical evidence suggests (Di Fabio, 2015; Freudenthaler et al., 2008; Van Rooy et al., 2005). Furthermore, the trait models seem to diverge more than converge and to present different patterns of relationship with other variables when compared to both self-reported (Austin et al., 2014; Mitogawa, 2014; Palmer, 2003; Van Rooy et al., 2005) and performance-based (Livingstone and Day, 2005; Webb et al., 2013; Zeidner et al., 2004) ability EI. Based on the analysis of their definition, Cherniss (2010a) included all of these models into his emotional and social competence concept. There is indeed a discrepancy between measurements based on the different theories, however this is not such a major issue when only general results (not, e.g., facets) are considered (Freudenthaler et al., 2008; Siegling et al., 2015). Also, a weak relation between measures of all three conceptualisations is reported (Newman et al., 2010) as well as a lack of shared variance (Palmer, 2003). All of this implies that the three model-method pairings describe (theoretically and empirically) related, but not identical constructs.

1.3 Previous research and study assumptions

1.3.1 Previous meta-analysis studies

There are four available studies that employ the meta-analysis method to estimate the predictive validity of EI toward job performance. Their authors have contributed substantially to the scientific progress in this field, however, the meta-analyses in question were not error-free. We would like to briefly discuss these studies and present their inadvertent missteps. We aim to legitimise the contribution of our study by addressing these limitations.

The first analysis by Van Rooy and Viswesvaran (2004) investigated the predictive validity and nomological network of EI. They had summed up only 19 studies ($N = 2,652$) in which job performance was predicted and found the validity of EI to be moderately low ($\rho = 0.24$) but slightly higher for ability EI. Out of these 19 studies, as Landy (2005) observed, as many as 13 were unpublished, which could have lowered the reliability of the findings. Others noticed that they had included studies that measured job performance inaccurately (Joseph and Newman, 2010; O'Boyle et al., 2011). It should be noted that the authors themselves were aware of the limitations in this research field at the time and for example drew attention to underdeveloped criteria in primary studies and the fact that many of the EI measures were just being developed.

Later, Joseph and Newman (2010) estimated the predictive validity of EI and the moderating roles of the emotional labour of the job. They had found 22 studies ($N = 2,593$) and in turn determined the trait model EI to be more valid than the ability one (with ρ values 0.42 to 0.17–0.22, respectively). They also proved that the emotional labour moderates this validity. Unfortunately, they had only included one job performance measure type (supervisory ratings). They also proposed a model of EI impact on job performance – the cascading model. These authors drew a conclusion that the causal relationship runs from emotion perception to job performance through emotion understanding and emotion regulation, with the mediating role of conscientiousness, emotional stability and a GMA. However convincing, this model has issues with the basic assumption concerning the tripartite structure of EI, supported by neither theory (Mayer et al., 2000, 2008) nor empirical evidence (see Cherniss, 2010b; Ciarrochi et al.,

2000; Conte, 2005). For these reasons, and as we investigate validity of both ability and trait models of EI while the cascading model focus only on the first one, we decided not to use this model for our research.

O'Boyle et al. (2011) conducted another study. They employed method-model pairing and better statistical methods than their predecessors (e.g., significance tests for coefficients differences, publication bias tests). They also gathered the biggest database with respect to the previous meta-analyses with 43 studies ($N = 5,795$). 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 (e.g., cultural intelligence) and a broad scope of measures distinct from individual job performance (e.g., team performance, job role perception, emotional performance, well-being, coping strategy, and performance during simulations as well).

Finally, the last study was conducted by Joseph et al. (2015) but it somehow differed from those previously described, as its main aim was to investigate the content-domain of EI. This time, 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 analysed dataset was quite small, with the number of studies ranging from only 3 to 15 (and the sample size from 209 to 2,168).

All of these analyses suffer from some issues. As we discussed above, the criterion side should be a matter of utmost importance in validity studies. However, as others also pointed out (see Landy, 2005), none of these authors paid enough attention to this proceeding, which resulted in some inaccuracy, e.g., by including invalid measures or not sufficiently distinguishing the performance domain. Among other reasons, this might have led to the differences in the results. Moreover, none of the authors decided to systematically compare the predictive validity of EI against a variety of job performance measures, which was recommended by many (see Rojon et al., 2015). What is more, the total sample sizes and numbers of studies included in the analyses left a lot to be desired. While it is not the only determinant of the quality of the meta-analyses, one surely cannot ignore this quantitative issue. Field (2001) proved that Hunter and Schmidt's meta-analysis results should be interpreted with caution if less than 30 studies were included into the analysis. Only O'Boyle et al. (2011) general result (without EI stream division) meets this criterion. Further, Field (2001) provided evidence that meta-analyses performed on 15 studies and less need to be interpreted with even greater caution, as they lack reliability to some extent. This was the case in numerous detailed analyses in discussed studies. Finally, the used methodology is a matter of dispute. All of the authors used Hunter and Schmidt (2004) methodology, the gold standard in the field. However, a few issues have to be noted. Except Van Rooy and Viswesvaran (2004), all authors performed correction for the predictor reliability, which is explicitly advised against by Hunter and Schmidt (2004) themselves. In each of these studies, a correction for direct range restriction was employed, whereas Hunter et al. (2006) and Le and Schmidt (2006) proved that in the personnel selection context, range restriction is always indirect. Therefore, correction for indirect range restriction is the only adequate and suitable procedure in the personnel selection and organisational context according to the current guidelines of Hunter et al. (2006) and Le and Schmidt (2006). As a result, the outcomes of the studies discussed may be under or over-corrected and therefore may lack reliability to some extent. That is the question of great importance, as Hunter et al. (2006) and Le

and Schmidt (2006) have provided evidence that even a single misapplication of the mentioned procedure leads to a significant misestimation of meta-analytic results. Furthermore, as majority of meta-analysis studies, these discussed here used the artefact-distribution method during the correction process, which is heavily criticised (see Burke and Landis, 2003; Landis, 2013; Murphy and Newman, 2003; Richardson and Norgate, 2015). Finally, only O'Boyle et al. (2011) employed statistical tests to systematically compare estimated validity coefficients.

In conclusion, we have identified a series of points in question about previous meta-analyses, that is: insufficient focus on criterion domain, unsatisfactory sample sizes and some methodological missteps. Previous meta-analysis results are certainly valuable but based on described issues, we believe there is a room for improvement that justifies the purposefulness of our study. Therefore, we decided to address the presented issues and adopt adequate methodology, which should result in more reliable estimations.

1.3.2 Incremental validity of EI

Even if a predictor proves to have proper predictive validity, but it does not present a significant incremental validity, many refuse to consider such a predictor as a useful one. The issue of EI incremental validity above other well establish job performance predictors generate vigorous debates. There is compelling evidence that EI has incremental validity in predicting important outcomes. They are however limited to a single measure, and regrettably, they do not concern job performance itself (see Andrei et al., 2016). Nevertheless, a growing number of researchers find the incremental validity analysis approach to be wrong and criticise it for the unreliableness of its results, an issue with initial predictors included in the regression analysis and finally for the improper theoretical background of such analyses (Krumm et al., 2014; Lang et al., 2010; Reeve, 2004). They moreover emphasise the value of better quality methods such as the relative importance analysis (see Stanhope and Surface, 2014). Furthermore, incremental analyses in meta-analytic studies are performed mostly on the meta-matrixes of correlation coefficients (taken from a variety of meta-analytics studies). This approach is burdened with numerous, severe issues (e.g., disregard of second-order sampling errors, dissimilarity of sample sizes and the number of studies included, and inconsistency of range restriction correctness) and therefore criticised and unrecommended (Cheung and Chan, 2005; Landis, 2013). Hardly any study has systematically examined incremental validity of EI in a way that Andrei et al. (2016) has presented, and we consider this a suitable subject for a separate review. For this reason, we have decided to focus on the estimation of validity generalisation and to drop incremental validity estimation, as the latter should be a subject of primary studies and well-designed systematic reviews.

1.4 Recent study assumptions

Based on the literature discussed above, we defined a few assumptions for the following analysis. First, we decided to follow the criterion-driven strategy and for that reason we identified the job performance domain according to the general and specific type of measurement and systematically compare validity coefficients for a variety of job performance criteria. Furthermore, because of the issue with the contextual domain and clear conceptualisation of the task domain (see above), we included only the studies with explicit measurements of task performance into our analysis. We excluded studies with

indirect or improper measures, such as simulations or training performance, and performance appraisals based on traits or behaviours leading to performance (e.g., not being task performance itself, such as transformational leadership, communication proficiency, etc.).

Many critics pointed out that a low-quality research may be responsible for the presence and prosperity of the exaggerated claims about EI predictive validity (Antonakis, 2004; Landy, 2005; Zeidner et al., 2004). Therefore, we decided to include only reviewed papers as this is one of the proposed solutions: focus on the reviewed papers may help with separation of unsupported claims about EI from evidence-based ones (Antonakis, 2004; Ashkanasy and Daus, 2005). The review process itself does not undeniably guarantee study compliance with all standards. It does, however, contribute to this matter and therefore there is justification in the case of EI to include only reviewed studies in the meta-analysis. As this is at the same time precarious, a publication bias analysis would be the question of utmost importance. As other issues are covered by statistical operations and meta-analysis procedure, they are described in the methodology section.

1.5 Impact of EI on job performance and hypothesis development

We chose a well-established and widely accepted theory of individual differences in job performance developed by Motowidlo et al. (1997) as the general framework of our study. The key assumption of this theory is that basic tendencies (individual differences in both traits and abilities) lead to variability in characteristic adaptations. These skills and patterns of behaviour, in turn, result in variability in job performance. Motowidlo et al. (1997) identified three characteristic adaptations that formed task performance: task knowledge, task skills and task habits. The first includes the knowledge of job-related facts and rules for making decisions about substantial matters linked to the job. The second involves performing required behaviours easily and faultlessly. Finally, the third comprises patterns of responses to job situations that could facilitate job performance. According to this theory, ability variables affect all the characteristic adaptations, while personality is presumed to impact only task habits. Based on this framework, EI should be recognised as basic tendency. We identified certain components and outcomes of EI, both the ability and the trait ones, applied to the workplace, which lead to a higher level of characteristic adaptations and consequently better job performance. We will first discuss the ability EI model elements from the perspective of this framework. As Mayer et al. (2008, p.511) stated, EI is the ability to use emotions to enhance reasoning. As a result, an emotionally intelligent employee should gain better task knowledge from emotion-related situations. The emotion understanding element from the four branches model will play a key role here. Next, the managing emotions element from the revised four branches model (Mayer et al., 2016) should strengthen task skills by facilitating judgments and decision making and performing efficiently through such types of actions as evaluating behaviour strategies to maintaining emotional responses and engaging with emotions when they are helpful (or disengaging if they are not). We further assert that both of the mentioned branches should help build up task habits. As regards trait models, we identified common elements within main models that according to the adopted framework would impact task habits. Task habits could be built more effectively thanks to such aspects from the self-control domain as emotional and impulse control (Petrides et al., 2016), since they help individuals to react more reflectively and control their

job-related behaviours. A similar mechanism could be identified within other trait EI models, e.g., motivational responses and mood control aspects from Goleman (1995) conceptualisation would benefit task habits in the same way. Therefore, we expect that:

H1 EI is positively related to job performance.

Next, we expected the ability EI to have stronger relation with job performance than the trait one. It is a matter of great importance, as the findings of meta-analysis are ambiguous in this regard. Many argue that because the trait model is rooted in business practice and covers a broad scope of emotion-related competencies, it should have greater value in the workplace (Ashkanasy and Daus, 2005; Cherniss, 2010b; Druskat et al., 2006; Van Rooy et al., 2005). However, the extensive criticism of EI, which mainly addresses just the trait model, cannot be ignored (see Antonakis, 2004; Knopp, 2014; Landy, 2005; Locke, 2005). Scientific foundation and conceptual consistency also benefit the ability model (see Lopes, 2016). The superior predictive validity of the ability model might be also concluded from Motowidlo et al. (1997) theory, as they clearly stated that ability variables have a stronger relation to job performance. Our analysis of EI aspects also shows that ability EI elements are connected to a wider range of characteristic adaptations, which should result in a better validity of this conceptualisation.

H2 The ability model of EI has a stronger relationship with job performance than the trait one.

According to the theory of Motowidlo et al. (1997), the characteristic adaptations that cause the variation in job performance are products of interaction between basic tendencies and external influences from the work environment. On this basis, even with the same level of basic tendencies among individuals, characteristic adaptations and therefore job performance level would vary if the work environments were different. Tett and Burnett (2003) provided further explanations for this mechanism with their activation principle. According to their theory, basic tendencies would be expressed as responses to relevant situations. The situation should be recognised as relevant by this theory if it is 'thematically connected' [Tett and Burnett, (2003), p.502] to the basic tendency considered, meaning that the situation provides certain tendency-related cues. The recognition and proper response (or its lack) to the cues is determined by the level of employee's basic tendency and results in a better and more frequent expression or usage of characteristic adaptations and consequently in a better job performance. Different situations provide cues relevant to different tendencies, therefore only some tendencies would be important in a given job context. This, together with the fact that different jobs demand different task knowledge as well as skills and habits, led us to predict that the job context would moderate the relation between EI and job performance.

Tett and Burnett (2003), as well as Kaplan et al. (2010) and Walter et al. (2012), stated that job type is a suitable and convenient indicator for the differentiation of job context features. However, it is noteworthy that previous meta-analyses employed a different approach. Joseph and Newman (2010) divided the analysed jobs by demands for emotional labour. Our approach, compared to Joseph and Newman (2010), is based more on task than competency, as we chose the job type and industry as moderators. We believe this is a more comprehensive approach, as based on job types or industry one could better conclude about the job context for a validity analysis. We considered Joseph and Newman (2010) approach too indefinite, as it covers only a part of one of the context features and precludes a more detailed inference about the job context (which, in turn,

the job type and industry approach allows). To sum up, we expected the job type (occupation) and industry to be sufficient indicators for job context; therefore:

H3a The job type (employee's occupation) moderates the relationship between EI and job performance.

H3b The industry (the sector in which an organisation operates) moderates the relationship between EI and job performance.

As we discussed above, the job performance domain might be split into behaviour and outcome aspects. This distinction is reflected in the measurement process by two types of criteria measures: subjective and objective. As Kaplan et al. (2010) suggested, the aim of the criterion-driven strategy is to identify the differences in predictive magnitude for varied criteria. Based on the early evidence provided by Van Rooy and Viswesvaran (2004) and the heterogeneous nature of the two aspects, we expected that the objective and subjective job performance measures will be predicted by EI differently.

H4 Job performance measure type moderates the relationship between EI and job performance.

Finally, the job status (manager or employee) is a matter of great importance in the discussion of the value of EI in the workplace, as some argue that there is no valid evidence for any role of EI in leadership effectiveness (see Antonakis et al., 2009). The leadership and management are strongly emotion-laden by nature as they require deep understanding and control of interpersonal relations (see Daus and Ashkanasy, 2005; Harms and Credé, 2010a). From Motowidlo et al. (1997) theory perspective, it means that characteristic adaptations accountable for job performance would also be more emotion-related. Depending on one's job status, the task knowledge must include better understanding of emotions and task skills such as emotion management or social competence would also be often required. The empirical evidence for that mechanism can be found in the literature. Humphrey et al. (2008) claimed that the regulation of managers' emotions is crucial for the process of motivating employees (and therefore leads to better performance). Ashkanasy and Humphrey (2011) emphasised the role of the ability to manage and express emotions properly in effective leadership, whereas Lopes (2016) paid attention to the role of EI in the leader-employee interaction, which is emotional in essence and leads to improved performance. Based on this, we expected that:

H5 Job status moderates the relationship between EI and job performance.

2 Methodology

2.1 Search for primary data

To gather all possible primary studies on the topic, we conducted a multilevel search with a variety of tools. First, we started with the Multisearch Tool provided by our university, which indexes the majority of scientific databases at once (*Academic Search Complete, Business Source Complete, ERIC, JCR, JSTOR, PsycARTICLES, PsycINFO, ScienceDirect, SCOPUS, Web of Science* and over 100 more). Additionally, our search included *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). We searched the listed databases with two query strings. Each represented one of the two constructs under scrutiny. A variety of phrases related to them were connected with the Boolean operator *OR* (when this was not possible, we conducted the search manually). The strings were the following:

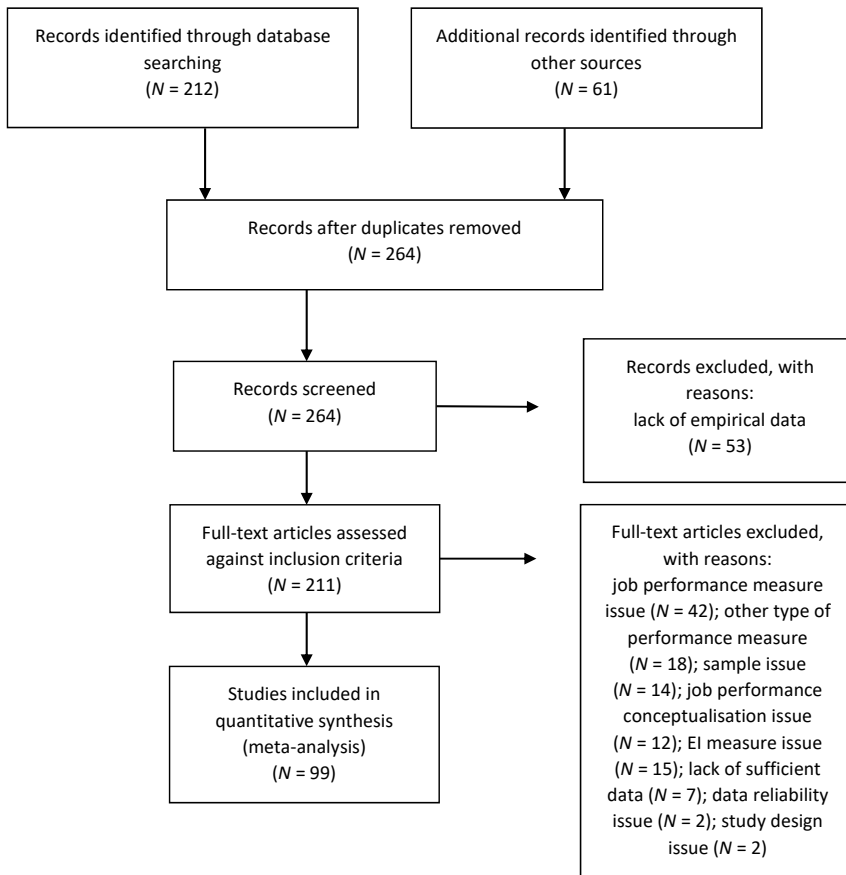
- 1 emotional intelligence *OR* EI *OR* EQ
- 2 performance *OR* efficiency *OR* proficiency *OR* productivity *OR* task *OR* work outcome *OR* salary *OR* sale.

We conducted the above searches in English, Polish, German, Russian and Ukrainian (as some of them are inflected languages, we also applied the asterisk operator, enabling the search on truncated word forms). We contacted local professional associations and carried out a manual search within reviewed journals in I/O psychology, which could not be indexed in the covered databases (mainly national and local) and we setup a question topic on *ResearchGate* to find more studies. Finally, we conducted a cross-reference check within already found papers, and checked the Consortium for Research on Emotional Intelligence in Organisations' references list as well. During these searches, we performed a title and abstract screening; if these two indicated that a given paper met the preliminary criteria (presented empirical data, included direct EI measures and individual job performance measures as well), it was included into the initial database. This resulted in the inclusion of 264 papers (after the removal of the duplicates). Figure 1 presents flowchart of study selection process.

2.2 *Inclusion criteria*

We proceeded the screening process by examining every paper found in detail. We applied a set of criteria and if all of them were met, the paper was included into the final database. These criteria were as follows:

- 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 (measurements listed in the paper were assessed to determine this)
- job performance must not be measured by simulation, training or academic performance or appraisal of traits or behaviours that only determine effective performance
- EI must be measured explicitly.

Figure 1 Flowchart of study selection process

In case of any doubts, a paper was discussed by all the authors. This screening resulted in the compilation of the final database composed of 99 papers with 116 studies (or independent samples) described ($N = 17,889$). One hundred sixty-five papers were rejected, in 53 the main reason for the rejection was the lack of empirical data or study design issues (e.g., reviews, case studies or theoretical articles), in 42 it was a job performance measure issues (e.g., training performance or simulation outcomes were the criterion), in 18 only contextual performance was measured, in 14 there were sample issues (e.g., non-worker samples), in 15 there were EI measurement issues (e.g., lack of actual EI measure), in 12 it was a job performance conceptualisation issue (e.g., competence or management styles were used) and in 7 data were missing (and the contacted authors did not reply to the request for data). All of the included papers were coded with a double check procedure by another author which did not show inconsistencies. The authors who performed the coding were all qualified in the field of psychology, research methodology and personnel selection and followed a written set of guidelines discussed before the coding. If a study used a variety of measures (e.g., overall and task performance), only the relevant one was included and coded. Table 1 presents characteristics of included studies.

Table 1 Primary studies included in the meta-analysis

<i>Authors and publication year</i>	<i>N</i>	<i>Predictor measure</i>	<i>Criterion measure</i>	<i>r_{xx}</i>	<i>rho_{XP_a}</i>
Afolabi et al. (2010)	119	Self-report trait	Self-evaluation	0.23	0.29
Ahmetoglu et al. (2011)	505	Self-report trait	Financial outcomes	0.12	0.15
AlDosiry et al. (2016)	218	Self-report ability	Work outcomes	0.06	0.12
AlDosiry et al. (2016)	218	Self-report ability	Supervisory rating	0.12	0.20
AlDosiry et al. (2016)	218	Self-report trait	Work outcomes	0.12	0.16
AlDosiry et al. (2016)	218	Self-report trait	Supervisory rating	0.02	0.02
Ali et al. (2012)	310	Self-report ability	Supervisory rating	0.43	0.58
Altındağ and Köseadağı (2015)	303	Self-report trait	Self-evaluation	0.63	0.66
Ayiro (2009)	100	Performance-based ability	Supervisory rating	0.37	0.53
Bachman et al. (2000)	36	Self-report trait	Work outcomes	0.29	0.38
Baczyńska and Górniak (2013)	71	Self-report ability	Work outcomes	0.85	0.80
Baczyńska and Górniak (2013)	71	Self-report ability	Work outcomes	0.57	0.72
Baczyńska and Górniak (2013)	71	Self-report ability	Work outcomes	0.68	0.76
Bahmanabadi and Jafari (2014)	300	Self-report trait	Self-evaluation	0.80	0.83
Bar-On et al. (2006)	228	Self-report trait	Complex measures	0.53	0.59
Behbahani (2011)	160	Performance-based ability	Self-evaluation	0.34	0.52
Birol et al. (2009)	253	Self-report trait	Self-evaluation	0.19	0.22
Blickle et al. (2009)	83	Self-report ability	Supervisory rating	0.15	0.27
Blickle et al. (2009)	110	Self-report ability	Other ratings	0.31	0.49
Blickle et al. (2009)	32	Self-report ability	Other ratings	0.36	0.55
Blickle et al. (2011)	71	Self-report ability	Financial outcomes	0.01	0.02
Blickle et al. (2011)	71	Self-report ability	Financial outcomes	0.01	0.02
Boyatzis et al. (2012)	60	Self-report trait	Work outcomes	0.33	0.41
Bozonelos and Singh (2017)	188	Self-report ability	Supervisory rating	0.19	0.34
Byron et al. (2007)	109	Performance-based ability	Work outcomes	0.21	0.40
Byron et al. (2007)	109	Performance-based ability	Self-evaluation	0.12	0.23
Byron et al. (2007)	51	Performance-based ability	Work outcomes	0.07	0.15
Byron et al. (2007)	51	Performance-based ability	Self-evaluation	0.23	0.41
Carmeli and Josman (2006)	165	Self-report ability	Supervisory rating	0.47	0.63
Carmeli (2003)	98	Self-report ability	Self-evaluation	0.32	0.48
Carmeli (2003)	98	Self-report ability	Financial outcomes	0.14	0.26
Castillo and Del Valle (2017)	397	Self-report trait	Supervisory rating	0.26	0.30
Cavazotte et al. (2012)	134	Self-report ability	Other ratings	0.22	0.36
Cavazotte et al. (2012)	134	Self-report ability	Complex measures	0.29	0.47

Table 1 Primary studies included in the meta-analysis (continued)

<i>Authors and publication year</i>	<i>N</i>	<i>Predictor measure</i>	<i>Criterion measure</i>	<i>r_{xx}</i>	<i>rho_{XP_a}</i>
Farh et al. (2012)	212	Performance-based ability	Supervisory rating	0.08	0.14
Christiansen et al. (2010)	69	Performance-based ability	Supervisory rating	0.21	0.33
Christiansen et al. (2010)	69	Self-report ability	Supervisory rating	0.07	0.12
Christiansen et al. (2010)	69	Self-report ability	Supervisory rating	0.12	0.20
Cobêro et al. (2006)	119	Performance-based ability	Supervisory rating	0.18	0.31
Cobêro et al. (2006)	119	Performance-based ability	Other ratings	0.08	0.14
Corcoran and Tormey (2013)	346	Performance-based ability	Work outcomes	0.04	0.07
Côté and Miners (2006)	175	Performance-based ability	Supervisory rating	0.32	0.49
Davar and Singh (2014)	41	Self-report trait	Self-evaluation	0.72	0.76
Davar and Singh (2014)	125	Self-report trait	Self-evaluation	0.65	0.70
Davar and Singh (2014)	48	Self-report trait	Self-evaluation	0.56	0.62
Davar and Singh (2014)	36	Self-report trait	Self-evaluation	0.66	0.71
de Haro Garcia and Costa (2014)	130	Self-report ability	Financial outcomes	0.12	0.23
De La Cruz et al. (2014)	103	Self-report trait	Work outcomes	0.42	0.51
Devonish and Greenidge (2010)	211	Self-report ability	Supervisory rating	0.36	0.51
Downey et al. (2011)	100	Self-report ability	Work outcomes	0.27	0.48
Drew (2006)	40	Self-report trait	Work outcomes	0.31	0.39
Dulewicz et al. (2003)	53	Self-report trait	Supervisory rating	0.32	0.39
Elfenbein and Ambady (2002)	69	Performance-based ability	Supervisory rating	0.39	0.58
Elfenbein and Ambady (2002)	69	Performance-based ability	Other ratings	0.16	0.30
Elfenbein and Ambady (2002)	69	Performance-based ability	Other ratings	0.34	0.56
Giorgi et al. (2014)	106	Self-report trait	Work outcomes	0.19	0.25
Gondal and Husain (2013)	284	Self-report ability	Self-evaluation	0.30	0.48
Gooty et al. (2014)	29	Performance-based ability	Self-evaluation	0.18	0.32
Gunavathy and Ayswarya (2011)	150	Self-report ability	Self-evaluation	0.57	0.68
Hanzaee and Mirvaisi (2013)	225	Self-report trait	Self-evaluation	0.32	0.37
Hawkins and Dulewicz (2007)	51	Self-report trait	Complex measures	0.39	0.45
Hawkins and Dulewicz (2007)	35	Self-report trait	Complex measures	0.59	0.65
Hawkins and Dulewicz (2007)	34	Self-report trait	Complex measures	0.50	0.56
Heffernan et al. (2008)	92	Performance-based ability	Work outcomes	0.29	0.49

Table 1 Primary studies included in the meta-analysis (continued)

<i>Authors and publication year</i>	<i>N</i>	<i>Predictor measure</i>	<i>Criterion measure</i>	<i>r_{xx}</i>	<i>rho_{XP_a}</i>
Higgs (2004)	289	Self-report trait	Work outcomes	0.22	0.28
Hopkins and Bilimoria (2008)	105	Self-report trait	Supervisory rating	0.24	0.28
Howe et al. (2014)	55	Performance-based ability	Financial outcomes	0.24	0.41
Huang et al. (2010)	493	Self-report ability	supervisory rating	0.04	0.08
Igbinovia and Popoola (2016)	163	Self-report ability	Supervisory rating	0.16	0.28
Iliescu et al. (2012)	141	Performance-based ability	Work outcomes	0.31	0.51
Iliescu et al. (2012)	223	Performance-based ability	Supervisory rating	0.18	0.30
Iliescu et al. (2012)	61	Performance-based ability	Complex measures	0.31	0.48
Ismail et al. (2009)	104	Self-report ability	Self-evaluation	0.26	0.40
Kerr et al. (2006)	38	Performance-based ability	Other ratings	0.39	0.57
Khokhar and Kush (2009)	20	Self-report ability	Self-evaluation	0.72	0.75
Kim et al. (2009)	196	Self-report ability	Supervisory rating	0.15	0.25
Kluemper et al. (2013)	102	Performance-based ability	Supervisory rating	0.22	0.35
Kluemper et al. (2013)	85	Performance-based ability	Supervisory rating	0.22	0.37
Kushwaha (2012)	160	Self-report ability	Self-evaluation	0.39	0.55
Lam and O'Higgins (2012)	50	Self-report ability	Other ratings	0.16	0.31
Langhorn (2004)	161	Self-report trait	Work outcomes	0.30	0.38
Langhorn (2004)	161	Self-report trait	Complex measures	0.45	0.51
Langhorn (2004)	161	Self-report trait	Other ratings	0.33	0.39
Lassk and Shepherd (2013)	460	Self-report ability	Self-evaluation	0.28	0.45
Law et al. (2004)	165	Self-report ability	Supervisory rating	0.18	0.31
Law et al. (2004)	165	Self-report ability	Other ratings	0.15	0.26
Law et al. (2004)	165	Self-report ability	Self-evaluation	0.54	0.68
Law et al. (2004)	165	Self-report ability	Supervisory rating	0.32	0.49
Law et al. (2004)	165	Self-report ability	Other ratings	0.49	0.64
Law et al. (2004)	165	Self-report ability	Self-evaluation	0.25	0.41
Law et al. (2004)	165	Self-report ability	Supervisory rating	0.51	0.66
Law et al. (2004)	165	Self-report ability	Other ratings	0.24	0.39
Law et al. (2004)	165	Self-report ability	Self-evaluation	0.32	0.49
Law et al. (2008)	102	Self-report ability	Work outcomes	0.12	0.23
Lindebaum and Jordan (2012)	55	Self-report ability	Self-evaluation	0.33	0.49
Lindebaum (2013)	57	Self-report ability	Supervisory rating	0.09	0.17
Lopes et al. (2006)	44	Performance-based ability	Financial outcome	0.18	0.32

Table 1 Primary studies included in the meta-analysis (continued)

<i>Authors and publication year</i>	<i>N</i>	<i>Predictor measure</i>	<i>Criterion measure</i>	<i>r_{xx}</i>	<i>rho_{XP_a}</i>
Lopes et al. (2006)	44	Performance-based ability	Financial outcomes	0.36	0.55
Mafuzah and Juraifa (2016)	212	Self-report trait	Self-evaluation	0.48	0.53
Mishra and Mohapatra (2010)	90	Self-report ability	Complex measures	0.61	0.71
Momm et al. (2015)	142	Performance-based ability	Financial outcomes	0.05	0.11
Muniz and Primi (2007)	60	Performance-based ability	Supervisory rating	0.12	0.24
Nekrestjanova and Miasnikova (2013)	50	Self-report ability	Other ratings	0.30	0.48
Nekrestjanova and Miasnikova (2013)	50	Self-report ability	Self-evaluation	0.42	0.60
Nel and De Villiers (2004)	44	Self-report trait	Complex measures	0.56	0.65
Nel and De Villiers (2004)	47	Self-report trait	Complex measures	0.42	0.51
Nel and De Villiers (2004)	44	Self-report trait	Complex measures	0.64	0.72
Ngah et al. (2009)	127	Self-report ability	Self-evaluation	0.36	0.56
Olaajo and Oyeboade (2016)	186	Self-report trait	Self-evaluation	0.08	0.11
Ono et al. (2011)	38	Self-report trait	Supervisory rating	0.45	0.49
Osipova and Fedotov (2015)	34	Self-report trait	Supervisory rating	0.45	0.51
Prentice and King (2011)	152	Self-report ability	Self-evaluation	0.42	0.60
Rafiee et al. (2013)	130	Self-report ability	Self-evaluation	0.26	0.40
Rode et al. (2008)	59	Performance-based ability	Financial outcomes	0.04	0.08
Rode et al. (2008)	59	Performance-based ability	Self-evaluation	0.01	0.02
Rojell et al. (2006)	68	Self-report ability	Self-evaluation	0.23	0.38
Rosete and Ciarrochi (2005)	41	Performance-based ability	Supervisory rating	0.02	0.04
Rosete and Ciarrochi (2005)	41	Performance-based ability	Supervisory rating	0.38	0.55
Rosete and Ciarrochi (2005)	41	Performance-based ability	Complex measures	0.22	0.36
Samad (2011)	349	Self-report ability	Self-evaluation	0.29	0.46
Schumacher et al. (2009)	34	Self-report trait	Self-evaluation	0.09	0.11
Schumacher et al. (2009)	34	Self-report trait	Other ratings	0.35	0.41
Semadar et al. (2006)	117	Self-report ability	Self-evaluation	0.42	0.56
Semadar et al. (2006)	117	Self-report ability	Supervisory rating	0.25	0.39
Shaffer and Shaffer (2005)	116	Performance-based ability	Self-evaluation	0.52	0.68
Shahhosseini et al. (2013)	192	Self-report ability	Supervisory rating	0.55	0.68
Shahzad et al. (2011)	100	Self-report trait	Self-evaluation	0.30	0.37

Table 1 Primary studies included in the meta-analysis (continued)

<i>Authors and publication year</i>	<i>N</i>	<i>Predictor measure</i>	<i>Criterion measure</i>	<i>r_{xx}</i>	<i>rho_{XP_a}</i>
Shamsuddin and Rahman (2014)	118	Self-report ability	Self-evaluation	0.65	0.74
Shih and Susanto (2010)	228	Self-report ability	Self-evaluation	0.55	0.67
Shooshtarian et al. (2013)	289	Self-report ability	Self-evaluation	0.28	0.46
Sinha and Jain (2004)	250	Self-report trait	Self-evaluation	0.11	0.14
Sjöberg et al. (2005)	45	Performance-based ability	Self-evaluation	0.25	0.44
Sosik and Megerian (1999)	63	Self-report trait	Other ratings	0.13	0.16
Sosik and Megerian (1999)	63	Self-report trait	Supervisory rating	0.11	0.13
Sy et al. (2006)	187	Self-report ability	Supervisory rating	0.28	0.43
Sy et al. (2006)	62	Self-report ability	Self-evaluation	0.18	0.30
Talarico et al. (2008)	26	Self-report trait	Supervisory rating	0.10	0.12
Thelwell et al. (2008)	99	Self-report ability	Self-evaluation	0.38	0.57
Vahidi et al. (2016)	338	Self-report trait	Self-evaluation	0.12	0.13
Vratskikh et al. (2016)	354	Self-report ability	Self-evaluation	0.44	0.62
Wilderom et al. (2015)	253	Self-report ability	Work outcomes	0.07	0.13
Wong and Law (2002)	149	Self-report ability	Supervisory rating	0.21	0.36
Wong and Law (2002)	146	Self-report ability	Other ratings	0.13	0.24
Wu (2011)	571	Self-report ability	Self-evaluation	0.44	0.60
Yao et al. (2009)	335	Self-report trait	Self-evaluation	0.45	0.53
Yoke and Panatik (2015)	384	Self-report ability	Self-evaluation	0.40	0.57
Yozgat et al. (2013)	389	Self-report ability	Self-evaluation	0.45	0.64
Yu and Yuan (2008)	640	Self-report ability	Supervisory rating	0.62	0.71
Yu and Yuan (2008)	218	Self-report ability	Self-evaluation	0.30	0.47

2.3 *Meta-analysis procedure*

We conducted the meta-analysis procedure according to Hunter and Schmidt (2004) methodology (which means that the random effects model was used), using R (R Core Team, 2018). Before any computation, the effect size coefficients were transformed into Z using the Fisher transformation and later transformed back into r before final presentations. The effect sizes reported in the primary studies that were different from r were converted by means of appropriate computations (Rosenthal, 1994) in order to include them into the analysis. Only one effect size from a single study or sample was included in the analysis. If a study consisted of multiple coefficients, they were averaged unless a single study reported multiple measures used in a comparison that was performed, e.g., if predictive validity was reported for both objective and subjective measures of job performance in a single study, they were averaged to report general results, but they were both used separately when comparing the two types of performance measures.

According to the Hunter and Schmidt (2004) methodology, we employed a series of corrections for artefacts that attenuated the observed relationship: correction for sample size, criterion measures reliability and range restriction. As we had decided to avoid the artefact-distribution method, every effect size in our database was corrected individually and then we computed mean predictive validities. We followed Hunter et al.'s. (2006) guidelines for the order of the employed corrections (the opposite to the one in which correlation is attenuated). We used reliability coefficients reported in the primary studies to perform correction for performance measures reliability. If this value was unavailable, we used an averaged reliability estimation based on the most similar measures identified in our database. We avoided using reliability coefficients described in tools manuals (if this was the case), as such a procedure resulted in mixing values for incumbent and applicant populations (Hunter et al., 2006). For objective measures, we estimated the reliability coefficient at the level of 0.71, on the basis of a series of computations based on the previously reported objective measures reliability and studies on the stability of these coefficients (Hackett and Guion, 1985; Hofmann et al., 1992; Rothe, 1978) and general guidelines on interpreting the reliability magnitude (Kline, 2000). Further, we decided to use reported reliability coefficients from primary studies for rating measures instead of the meta-analytic inter-rater agreement estimation (Viswesvaran et al., 1996). Not only is the use of this estimation heavily criticised (see LeBreton et al., 2014), but also no study from our database reported the reliability estimation close to the one from Viswesvaran et al. (1996) review and therefore we were afraid to overcorrect our results. There is also a theoretical reason for dropping the value from the Viswesvaran et al. (1996) review in our meta-analysis – as Rotundo and Sackett (2002) and Demerouti et al. (2014) proved, the source of inter-rater disagreement comes from the entanglement of different performance dimension weights during the appraisal process and raters can agree when they are rating a single dimension of performance. As we included the measures of single performance dimension into our analysis, we believed that the inter-rater agreement would not be a proper estimation. In addition, to perform the indirect range restriction correction we used the formula described by Hunter et al. (2006) and Le and Schmidt (2006). When there was no primary data about the range restriction ratio, we used the computed values. We based this estimation on our database and data from over a dozen meta-analytic studies to compute the most suitable range restriction ratios for every predictors measure type used. This allowed us to estimate the operational predictive validity (ρ_{XPa}) of EI measures. Afterwards, we performed a series of comparisons between the estimated coefficients (using tests for difference significance) and publication bias tests, using *Metafor* package for R (Viechtbauer, 2017).

3 Results

Table 2 presents the meta-analytic results of EI predictive validity. Table 2 (and the next after it) presents so-called bare-bone meta-analytic results (the sample size-weighted average correlation coefficients, ρ) with the standard deviation computed in a traditional way (SD_{ρ}) and according to the Hunter et al. (2006) formula (SD'_{ρ}). Table 2 also presents confidence intervals for the computed results (low and upper 90% intervals respectively, *LCI* and *UCI*, computed indirectly with Fisher transformations). It is

important to point out that these confidence intervals effectively served as a combined significance tests. As stated and argued by Hunter and Schmidt (2004, pp.9–13), whom method we employed, significance testing is burden with some circularity and fails to determine the exact value of error or its type in context of integrating correlation coefficients. More informative and suited, and therefore recommended, is the usage of confidence intervals. Both techniques ultimately share the same goal – to verify whether the tested null hypothesis is true or not (Hedges et al., 1992), thus it is justified to choose the one that is suggested and widely used in validity generalisation studies. Therefore, estimated coefficients whose confidence interval intersects the zero point should not be interpreted. Next, Table 2 presents EI predictive validity corrected for criterion measures reliability and sample size in the incumbent population (ρ_{XPI}) and in the applicant population (that is after performing the indirect range restriction correction, ρ_{XPa}). For operational validity, Hunter et al. (2006) standard deviation ($SD'_{\rho_{XPa}}$) and confidence intervals were computed and presented as well. During the interpretation of the results, we referred to the range of meta-analytic results established in the review by Lipsey and Wilson (2001). According to them, a correlation of 0.10 could be considered low, 0.25 moderate and 0.40 large. The statistical power computed based on Valentine et al. (2010) for general, models, measures and pairings results was near 1, which is sufficient for detected effect sizes.

The data presented in Table 2 support Hypothesis 1, as the general relationship between EI and job performance should be considered significant and strong. What is more, correlations of both EI models could be considered strong, however, the ability model is significantly more strongly related to job performance ($z = 4.61, p < 0.001$). On the other hand, the validity of performance-based EI measures was far weaker than self-reported ones (and statistically significant, $z = 8.46, p < 0.001$). That is why only the analysis employing the method-model pairing gives a complete view of the situation. The self-reported ability EI measures have the highest validity, significantly higher than the self-reported trait ones ($z = 7.88, p < 0.001$), while the performance-based ability EI measures have the lowest validity, significantly lower than the self-reported trait ones ($z = 4.15, p < 0.001$). Consequently, Hypothesis 2 finds support in data in the case of self-reported measures.

Subsequently, we investigated the EI predictive validity in different occupations and industries (distinction based on the database structure) and these data are presented in Tables 3 and 4. The occupations in which EI predicted job performance most validly are bankers and debt collectors, production workers and technicians as well as policemen and investigators. On the other hand, EI predicted job performance the least validly in occupations such as physicians and nurses, researchers and team leaders. EI was most valid in industries such as call centres, entertainment and manufacturing and the worst in healthcare, telecommunications and retail. We believe that the noteworthy differences of EI validity between these categories with a relatively small dispersion within them support Hypotheses 3a and 3b.

Next, we examined if the relationship between EI and job performance changed if varied criterion measures were employed. Table 2 presents general validity results (for the two overall measurement types), while Tables 5 and 6 present the data in greater detail. In general, job performance measured subjectively is predicted better by EI than that measured objectively ($z = 15.18, p < 0.001$). Indeed, regardless of the conditions considered (EI models, measures or pairings), this remains true. Furthermore, all the

specific subjective types (ratings) were in general predicted better by EI than the two objective measures identified in the primary studies. Within the subjective job performance measures, the complex ratings (assessment made by a variety of raters) were predicted best, while the second-best validity result was obtained by self-reported performance measures. The objective work and financial outcomes measures were related to EI moderately and moderately-low, respectively. Because of the small sample size, especially in the objective measures cases, caution is needed when interpreting the analysis within detailed types of criterion measures. However, interestingly, the overall subjective measures of job performance were predicted best by self-reported ability EI and worst by performance-based ability EI ($z = 8.48, p < 0.001$), while there was no significant difference in the predictive validity coefficients of these different EI pairings in the case of overall objective measures ($z = 1.49, p = 0.14$). This is also true when detailed types are being considered. Different ratings were predicted best by self-reported ability EI (with the exception of complex ratings, which were predicted just as well by self-reported mixed EI) with a noticeable dispersion between different validity coefficients. By contrast, in the case of the objective measures types, there were no significant differences between predictive validity of EI conceptualisations and the validity coefficients were generally consistent. Nonetheless, this data support Hypothesis 4.

Figure 2 Funnel plots

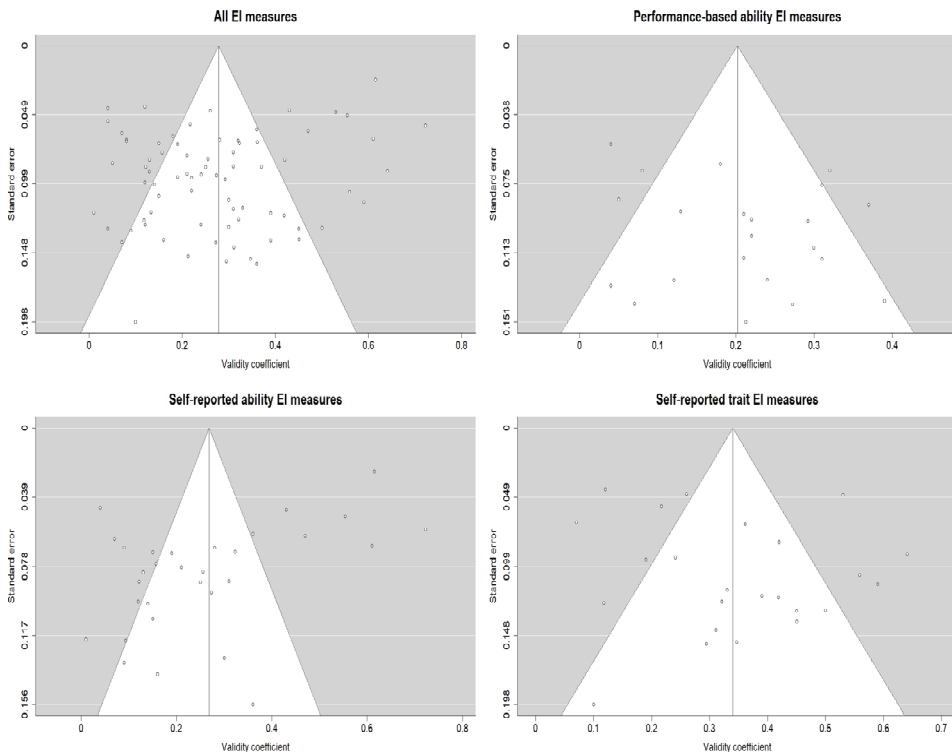


Table 2 Overall meta-analytic results for EI predictive validity towards job performance

	N	k	rho	SD _{rho}	rho 90% CI		rho _{X_Y_{Pa}}	SD _{rho_{X_Y_{Pa}}}	rho _{X_Y_{Pa}}	rho _{X_Y_{Pa}} 90% CI		
					LCI	UCI				LCI	UCI	
General results	17,889	116	0.33	0.22	0.05	0.32	0.34	0.36	0.45	0.08	0.44	0.46
EI models	12,485	78	0.32	0.19	0.04	0.30	0.33	0.34	0.46	0.06	0.45	0.48
	5,622	39	0.35	0.27	0.07	0.33	0.38	0.39	0.41	0.09	0.38	0.43
EI measures	2,743	26	0.21	0.14	0.02	0.17	0.25	0.23	0.34	0.05	0.31	0.38
	15,215	91	0.35	0.22	0.05	0.34	0.36	0.38	0.46	0.08	0.45	0.48
EI measures and models	2,743	26	0.21	0.14	0.02	0.17	0.25	0.23	0.34	0.05	0.31	0.38
	9,811	53	0.34	0.20	0.04	0.33	0.36	0.37	0.49	0.06	0.48	0.51
JP measures	5,622	39	0.35	0.27	0.07	0.33	0.38	0.39	0.41	0.09	0.38	0.43
	15,068	94	0.35	0.22	0.05	0.34	0.37	0.38	0.48	0.07	0.46	0.49
JP measures type	3,517	28	0.19	0.18	0.03	0.16	0.23	0.23	0.28	0.05	0.25	0.31
	8,675	49	0.39	0.22	0.05	0.37	0.41	0.42	0.52	0.07	0.50	0.53
JP measures	5,505	34	0.29	0.21	0.04	0.27	0.32	0.32	0.41	0.07	0.39	0.43
	1,171	13	0.24	0.10	0.01	0.19	0.30	0.26	0.37	0.03	0.32	0.42
	970	12	0.47	0.16	0.02	0.42	0.51	0.51	0.56	0.03	0.52	0.60
	2,278	17	0.21	0.18	0.03	0.17	0.25	0.25	0.30	0.05	0.26	0.34
	1,104	8	0.11	0.07	0.01	0.06	0.17	0.14	0.18	0.02	0.12	0.24

Note: N = sample size, k = number of samples, rho = EI mean predictive validity corrected for sampling error (Hunter and Schmidt's bare bones meta-analysis), SD_{rho} = standard deviation for rho, SD_{rho} = standard deviation for rho by Hunter et al. (2006) method, rho_{X_Y_{Pa}} = EI mean predictive validity corrected for sampling error and predictor unreliability, rho_{X_Y_{Pa}} = EI mean predictive validity corrected for sampling error, predictor unreliability and indirect range restriction (operational or 'true' validity), and SD_{rho_{X_Y_{Pa}}} = standard deviation for rho_{X_Y_{Pa}} by Hunter et al. (2006) method.

Table 3 Meta-analytic results for EI predictive validity towards job performance (broken down by incumbent occupational groups)

Incumbent occupational groups	N	k	rho	SD _{rho}	rho 90% CI		rho _{YPa}	SD _{rhoYPa}	rho _{YPa} 90% CI		
					LCI	UCI			LCI	UCI	
Managers	3,433	32	0.30	0.18	0.03	0.26	0.33	0.32	0.06	0.39	0.45
Staff	12,790	72	0.32	0.22	0.05	0.30	0.33	0.35	0.08	0.42	0.45
Both	1,666	12	0.48	0.21	0.03	0.44	0.51	0.51	0.04	0.54	0.60
Administrative personnel	2,099	11	0.34	0.18	0.04	0.31	0.38	0.38	0.07	0.47	0.53
Bankers and debt collectors	593	7	0.57	0.23	0.06	0.52	0.62	0.62	0.04	0.62	0.71
Customer service	2,155	10	0.22	0.14	0.02	0.18	0.26	0.24	0.05	0.28	0.36
Executives	596	5	0.26	0.20	0.04	0.18	0.33	0.27	0.07	0.27	0.41
Financiers	306	4	0.22	0.05	0.00	0.11	0.32	0.25	0.00	0.27	0.47
Physicians and nurses	449	3	0.13	0.07	0.02	0.04	0.22	0.14	0.03	0.09	0.27
Policemen and investigators	938	10	0.42	0.17	0.03	0.36	0.47	0.45	0.04	0.47	0.56
Production workers and technicians	1,978	7	0.42	0.23	0.06	0.38	0.46	0.45	0.07	0.51	0.57
Researchers	102	1	0.12			-0.08	0.31	0.14		0.04	0.41
Salespeople	2,323	17	0.34	0.17	0.03	0.30	0.37	0.37	0.05	0.44	0.51
Teachers	1,665	9	0.29	0.18	0.04	0.25	0.34	0.31	0.07	0.37	0.45
Team leaders	519	4	0.22	0.19	0.04	0.14	0.30	0.24	0.07	0.23	0.39
Varied	4,166	28	0.34	0.28	0.08	0.32	0.37	0.38	0.12	0.42	0.47

Note: N = sample size, k = number of samples, rho = EI mean predictive validity corrected for sampling error (Hunter and Schmidt's bare bones meta-analysis), SD_{rho} = standard deviation for rho, SD_{rhoYPa} = standard deviation for rhoYPa by Hunter et al. (2006) method, rho_{YPa} = EI mean predictive validity corrected for sampling error and predictor unreliability, rho_{YPa} = EI mean predictive validity corrected for sampling error, predictor unreliability and indirect range restriction (operational or 'true' validity), and SD_{rhoYPa} = standard deviation for rho_{YPa} by Hunter et al. (2006) method.

Table 4 Meta-analytic results for EI predictive validity towards job performance (broken down by industries)

Incumbent industry	N	k	rho	SD _{rho}	rho 90% CI		rho _{Y_{Pa}}	SD _{rho_{Y_{Pa}}}	rho _{Y_{Pa}} 90% CI		
					LCI	UCI			LCI	UCI	
Call centre	253	4	0.60	0.15	0.04	0.51	0.67	0.66	0.03	0.61	0.75
Education and universities	2,604	13	0.29	0.17	0.04	0.26	0.33	0.32	0.07	0.39	0.45
Financial services	1,765	14	0.44	0.22	0.05	0.40	0.47	0.48	0.07	0.52	0.58
Forces and uniforms services	938	10	0.42	0.17	0.03	0.36	0.47	0.45	0.04	0.47	0.56
Government and public services	1,673	9	0.33	0.17	0.03	0.29	0.37	0.36	0.05	0.46	0.53
Healthcare	578	5	0.16	0.09	0.02	0.08	0.24	0.17	0.04	0.16	0.31
Hotels and restaurants	831	5	0.27	0.10	0.01	0.21	0.33	0.29	0.02	0.30	0.42
HR and recruitment	100	1	0.27			0.08	0.45	0.32	0.48	0.32	0.62
It	365	4	0.36	0.28	0.09	0.26	0.44	0.37	0.12	0.39	0.55
Manufacturing	2,678	15	0.44	0.31	0.11	0.40	0.47	0.48	0.12	0.53	0.58
Retail	1,141	6	0.18	0.12	0.02	0.13	0.24	0.21	0.29	0.24	0.35
Entertainment	251	2	0.40	0.03	0.00	0.30	0.50	0.44	0.00	0.50	0.66
Telecommunication	922	4	0.16	0.17	0.03	0.10	0.22	0.18	0.26	0.20	0.32
Varied	3,790	24	0.30	0.22	0.04	0.27	0.33	0.32	0.07	0.37	0.42

Note: N = sample size, k = number of samples, rho = EI mean predictive validity corrected for sampling error (Hunter and Schmidt's bare bones meta-analysis), SD_{rho} = standard deviation for rho, SD_{rho_{Y_{Pa}}} = standard deviation for rho_{Y_{Pa}} by Hunter et al. (2006) method, rho_{Y_{Pa}} = EI mean predictive validity corrected for sampling error and predictor unreliability, rho_{Y_{Pa}} = EI mean predictive validity corrected for sampling error, predictor unreliability and indirect range restriction (operational or 'true' validity), and SD_{rho_{Y_{Pa}}} = standard deviation for rho_{Y_{Pa}} by Hunter et al. (2006) method.

Table 5 Meta-analytic results for EI predictive validity towards job performance (broken down by job performance measures general type)

Job performance measures	N	k	rho	SD _{rho}	rho 90% CI		rho _{XPI}	rho _{XPa}	SD _{rhoXPa}	rho _{XPa} 90% CI	
					LCI	UCI				LCI	UCI
Subjective	10,938	66	0.34	0.18	0.03	0.32	0.35	0.36	0.05	0.47	0.50
IE model: ability	4,348	29	0.38	0.29	0.09	0.36	0.41	0.42	0.10	0.41	0.45
IE model: trait	1,923	20	0.24	0.14	0.02	0.19	0.28	0.26	0.04	0.34	0.42
IE measure: performance-based	13,214	75	0.37	0.22	0.05	0.36	0.38	0.40	0.08	0.48	0.50
IE measure: self-report	1,923	20	0.24	0.14	0.02	0.19	0.28	0.26	0.04	0.34	0.42
Performance-based ability measure	9,084	47	0.36	0.19	0.03	0.34	0.38	0.38	0.05	0.49	0.52
Self-report ability measure	4,348	29	0.38	0.29	0.09	0.36	0.41	0.42	0.10	0.41	0.45
Self-report trait measure	2,082	17	0.15	0.18	0.02	0.11	0.19	0.18	0.05	0.21	0.29
Objective	1,653	12	0.23	0.16	0.03	0.19	0.28	0.28	0.04	0.25	0.34
IE model: ability	1,039	9	0.14	0.13	0.02	0.08	0.20	0.17	0.05	0.20	0.31
IE model: trait	2,478	19	0.21	0.19	0.03	0.18	0.25	0.25	0.06	0.25	0.33
IE measure: performance-based	1,039	9	0.14	0.13	0.02	0.08	0.20	0.17	0.05	0.20	0.31
IE measure: self-report	1,043	8	0.16	0.23	0.03	0.10	0.22	0.19	0.07	0.19	0.31
Performance-based ability measure	1,653	12	0.23	0.16	0.03	0.19	0.28	0.28	0.04	0.25	0.34
Self-report ability measure											
Self-report trait measure											

Note: N = sample size, k = number of samples, rho = EI mean predictive validity corrected for sampling error (Hunter and Schmidt's bare bones meta-analysis), SD_{rho} = standard deviation for rho, SD_{rho} = standard deviation for rho by Hunter et al. (2006) method, rho_{XPI} = EI mean predictive validity corrected for sampling error and predictor unreliability, rho_{XPa} = EI mean predictive validity corrected for sampling error, predictor unreliability and indirect range restriction (operational or 'true' validity), and SD_{rhoXPa} = standard deviation for rho_{XPa} by Hunter et al. (2006) method.

Table 6 Meta-analytic results for EI predictive validity towards job performance (broken down by job performance measures detailed type)

JP measures	EI measures	N	k	rho	SD _{rho}	rho 90% CI		rho _{XPa}	SD' _{rhoXPa}	rho _{XPa} 90% CI			
						LCI	UCI			LCI	UCI		
Self-evaluations	Performance-based ability	569	7	0.28	0.20	0.04	0.20	0.36	0.31	0.44	0.08	0.37	0.50
	Self-report ability	5,201	26	0.39	0.12	0.01	0.36	0.41	0.41	0.55	0.02	0.53	0.57
Supervisory ratings	Self-report trait	2,905	16	0.41	0.32	0.11	0.38	0.44	0.46	0.46	0.13	0.43	0.49
	Performance-based ability	1,255	11	0.22	0.11	0.01	0.16	0.27	0.23	0.35	0.03	0.30	0.40
	Self-report ability	3,603	17	0.33	0.24	0.06	0.30	0.36	0.35	0.45	0.08	0.43	0.48
	Self-report trait	934	8	0.21	0.15	0.02	0.15	0.27	0.22	0.24	0.03	0.18	0.30
Other ratings	Performance-based ability	226	3	0.19	0.16	0.03	0.06	0.31	0.21	0.32	0.07	0.19	0.43
	Self-report ability	687	7	0.24	0.09	0.01	0.17	0.31	0.26	0.40	0.02	0.34	0.46
	Self-report trait	258	3	0.28	0.13	0.02	0.17	0.39	0.31	0.34	0.02	0.22	0.44
Complex measures	Performance-based ability	102	2	0.27	0.07	0.01	0.08	0.44	0.30	0.43	0.01	0.26	0.58
	Self-report ability	224	2	0.43	0.28	0.06	0.32	0.53	0.46	0.58	0.06	0.48	0.66
	Self-report trait	644	8	0.51	0.10	0.01	0.45	0.56	0.55	0.57	0.02	0.52	0.62
Work outcomes	Performance-based ability	739	5	0.15	0.15	0.02	0.08	0.22	0.18	0.27	0.07	0.21	0.34
	Self-report ability	744	5	0.18	0.28	0.05	0.11	0.25	0.21	0.27	0.10	0.20	0.34
	Self-report trait	1,013	8	0.24	0.11	0.01	0.18	0.30	0.29	0.31	0.02	0.25	0.36
Financial outcomes	Performance-based ability	300	4	0.12	0.12	0.01	0.00	0.23	0.14	0.21	0.04	0.10	0.32
	Self-report ability	299	3	0.10	0.06	0.00	-0.01	0.21	0.12	0.19	0.01	0.08	0.30
	Self-report trait	505	1	0.12			0.03	0.21	0.14	0.15		0.07	0.24

Note: N = sample size, k = number of samples, rho = EI mean predictive validity corrected for sampling error (Hunter and Schmidt's bare bones meta-analysis), SD_{rho} = standard deviation for rho, SD'_{rho} = standard deviation for rho by Hunter et al. (2006) method, rho_{XPa} = EI mean predictive validity corrected for sampling error and predictor unreliability, rho_{XPa}' = EI mean predictive validity corrected for sampling error, predictor unreliability and indirect range restriction (operational or 'true' validity), and SD'_{rhoXPa} = standard deviation for rhoXPa by Hunter et al. (2006) method.

Table 7 Meta-analytic results for EI predictive validity towards job performance (broken down by job status)

Job status	N	k	rho	SD _{rho}	rho 90% CI		rho _{YPa}	SD _{rhoYPa}	rho _{YPa} 90% CI		
					LCI	UCI			LCI	UCI	
Managers	2,621	23	0.30	0.18	0.03	0.27	0.34	0.33	0.05	0.42	0.48
	IE model: ability										
	IE model: trait	812	9	0.27	0.17	0.03	0.20	0.33	0.04	0.26	0.38
	IE measure: performance-based	660	7	0.29	0.19	0.05	0.21	0.35	0.08	0.37	0.49
	IE measure: self-report	2,773	25	0.30	0.18	0.03	0.26	0.33	0.05	0.39	0.45
	Performance-based ability measure	660	7	0.29	0.19	0.05	0.21	0.35	0.08	0.37	0.49
Employees	1,961	16	0.31	0.19	0.03	0.27	0.35	0.33	0.05	0.42	0.49
	Self-report ability measure	812	9	0.27	0.17	0.03	0.20	0.33	0.04	0.26	0.38
	Self-report trait measure	9,186	50	0.32	0.20	0.04	0.30	0.33	0.06	0.45	0.48
	IE model: ability	3,822	23	0.31	0.28	0.08	0.28	0.34	0.10	0.34	0.39
	IE model: trait	1,748	17	0.16	0.10	0.01	0.11	0.20	0.18	0.23	0.32
	IE measure: performance-based	11,111	56	0.34	0.23	0.06	0.33	0.36	0.09	0.45	0.48
Performance-based ability measure	1,748	17	0.16	0.10	0.01	0.11	0.20	0.18	0.28	0.23	0.32
	Self-report ability measure	7,507	34	0.35	0.20	0.04	0.33	0.37	0.06	0.48	0.52
	Self-report trait measure	3,822	23	0.31	0.28	0.08	0.28	0.34	0.10	0.34	0.39
	Self-report trait measure										

Note: N = sample size, k = number of samples, rho = EI mean predictive validity corrected for sampling error (Hunter and Schmidt's bare bones meta-analysis), SD_{rho} = standard deviation for rho, SD_{rhoYPa} = standard deviation for rho by Hunter et al. (2006) method, rho_{YPa} = EI mean predictive validity corrected for sampling error and predictor unreliability, rho_{YPa} = EI mean predictive validity corrected for sampling error, predictor unreliability and indirect range restriction (operational or 'true' validity), and SD_{rhoYPa} = standard deviation for rho_{YPa} by Hunter et al. (2006) method.

Finally, the role of job status was investigated. The predictive validity of general EI for both managers and staff are presented in Table 3, while Table 7 presents the detailed analysis. This analysis resulted in non-obvious outcomes. In general, there were no differences in EI predictive validity for managers and employees ($z = 1.62, p = 0.11$). There were also no differences between the predictive validity coefficients for various EI models in comparisons of managers and staff ($z = 0.76, p = .45$ for the ability model and $z = 1.34, p = 0.18$ for the trait one). However, the performance-based EI measures predicted the managers performance better than the employees performance ($z = 4.39, p < 0.001$) and vice versa, the self-reported EI measures predicted the employees performance better than the managers one ($z = 3.01, p < 0.001$). As the only source of difference was the type of employed EI measures employed, we presume this partially supports Hypothesis 5, as job status moderates certain aspect of EI and job performance relation.

In addition to that, we have conducted a series of tests to investigate publication bias. These analyses were of utmost importance, as we decided to include only reviewed studies and therefore publication bias might have an effect on the results. To preliminary assess the heterogeneity of the findings, we performed the Q test and calculated Higgins' I^2 coefficient (see Table 8). Both of these indicate the heterogeneity of the meta-analytic results, both in general and when EI method-model pairings are considered. This should, however, be expected, as one should not suppose EI to be the only determinant of job performance. Next, we calculated the Rosenthal's safe N , which addresses 'the file-drawer' problem. This value reflects the number of null studies that need to be added to existing research to reduce the significance of meta-analytic results. As Table 8 presents, the number of these studies is enormous, and it is safe to assume that the findings are secure. Finally, we created a funnel plot and examined the publication bias further (see Figure 2). To statistically examine the asymmetry of these plots, we performed both rank-correlation and regression tests. We chose Begg's test, and because of a mild heterogeneity of the results, the Harbord's test (Jin et al., 2015). The outcomes of these tests, presented in Table 8, indicate that the results were not contaminated by publication bias. The mild heterogeneity together with funnel plots symmetry and considerably high Rosenthal's safe N values indicate no bias.

Table 8 Publication bias analysis

	<i>EI's measures</i>			
	<i>All</i>	<i>Performance-based ability</i>	<i>Self-report ability</i>	<i>Self-report trait</i>
<i>Q</i> test	1,224.86***	56.31***	440.53***	611.30***
Higgins' I^2	86.16	53.22	86.92	89.36
Rosenthal's safe N	112 668	1 375	28 554	17 095
Kendall's τ for Begg's test	-0.04	-0.01	-0.12	0.03
z for Harbord's test	-0.19	-1.72	0.82	-1.59

Note: * $p < 0.05$, ** $p < 0.01$ and *** $p < 0.001$.

4 Discussion

We found that EI positively correlates with job performance. The ability EI model proved to be more valid 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 measures types moderate this correlation and the job position of incumbents proved to partially moderate the EI validity. Based on Motowidlo et al. (1997) theory and our results, it appears justified to consider EI, both ability and trait ones, to be one of the employee's basic tendencies that decide on characteristic adaptation and in turn play a major role in determining job performance level. Furthermore, fairly different validity coefficients and patterns of relations with job performance for all of the three EI conceptualisations (method-model pairings), together with the theoretical discrepancy described above, provide further evidence that the conceptualisations describe connected, but divergent constructs.

Our findings are not in line with some of the earlier meta-analytic results, but some of them, on the other hand, proved to be partly correct. In general, the majority of meta-analytic EI validity coefficients turned out to be underestimated. The overall coefficient delivered in this study has been found to be nearly half as high as the ones calculated by Van Rooy and Viswesvaran (2004) and O'Boyle et al. (2011). However, both of these studies demonstrate ability EI to have stronger predictive magnitude than the trait one, and since recent findings further prove this, it seems to be the matter. The validity coefficients of ability EI in Joseph and Newman (2010) and Joseph et al. (2015) studies appear to be underestimated and for that reason the relative validity of ability and trait EI seems to be misstated. Interestingly, both Joseph and Newman (2010) and O'Boyle et al. (2011) reported self-reported ability EI to be a superior predictor of job performance than performance-based one. This important and striking observation is also consistent with our findings. As regards the above presented inconsistencies between recent and previous findings, we believe that due to a more appropriate methodology, stricter inclusion criteria and more considerable database, the results of this study could be considered more reliable. In addition, compared to Schmidt and Hunter (1998) fundamental meta-analysis, EI should be considered a far better predictor than any of the five factor model personality traits, which is consistent with Van Rooy et al. (2005) observations, but a weaker one than GMA. However, regardless of the compelling role of this study in I/O psychology, Schmidt and Hunter (1998) results are being criticised (Krumm et al., 2014; Lang et al., 2010; Richardson and Norgate, 2015; Stanhope and Surface, 2014). Rojon et al. (2015) conducted a meta-analysis with rigorous inclusion criteria and just like in our study they distinguished the task performance dimension. In comparison to their results, EI proved to be a superior job performance predictor, even stronger than GMA (whose ρ was estimated at 0.23 in their study). Still, reasonable caution is needed while different meta-analytic results are compared. Nevertheless, this indicates that further validity studies with multiple predictors and the criterion-driven approach are still needed to address this query.

Despite being severely criticised, the trait EI proved to be a valid and strong job performance predictor. However, in contrast to many claims (see Ashkanasy and Daus, 2005; Cherniss, 2010b; Druskat et al., 2006; Jordan et al., 2010), trait EI was not found to be a superior predictor over the ability one. The proponents of this assertion argue that trait EI should be more predictive, as it includes the components of many other

well-established predictors and because of the broad scope, it will capture more variance of the criterion. The results do not support this claim. On the contrary, the extensive range of components included in this model might encompass factors irrelevant to job performance, which do not constitute basic tendencies of employees. This, in turn, results in a lower validity. Next, the results regarding EI measures (performance-based and self-reported ones) might be considered startling, as the self-reported measures proved to be an exceptional performance predictor. It is all the more unanticipated, as the use of self-reported measures in personnel selection is so much criticised that many I/O psychologists consider these measures to be ineffectual in the workplace (Morgeson et al., 2007). Above other reasons, questionnaire measures are believed to be particularly vulnerable to faking and distortion due to impression management. However, while Roberts et al. (2010b) claim that the faking problem in the EI self-reported measures is a fact, Whitman et al. (2008), based on their experimental study, have pointed out that this issue is not quite obvious. It is noteworthy that the majority of studies addressing the faking problem investigate the questionnaire-takers and situational conditions that lead to distortion (Dalen et al., 2001; Morgeson et al., 2007) instead of identifying when questionnaires could be resistant to faking attempts. We believe this would be a serviceable research topic, and as self-report EI measures seem to be more valid than, e.g., five factor model measures, perhaps the construct being investigated by a questionnaire is one of a such conditions. All in all, these findings have a number of further possible explanations. First of all, a majority of self-reported EI measures were developed specifically for the organisational context usage. Zeidner et al. (2004) emphasised the importance of occupational relevance of the EI measures and Shaffer and Postlethwaite (2012) conducted a meta-analysis which proved that contextualised measures predict job performance strongly. Possibly, because these measures are more congruent, they relate firmly to job performance, especially when specific criteria are being considered. Secondly, as many authors pointed out (see Antonakis, 2004; Conte, 2005; Daus and Ashkanasy, 2005; Van Rooy et al., 2005; Zeidner et al., 2004), the performance-based measurement of EI suffers from some major psychometric issues. This may result in a serious limitation of validity of performance-based measures. Next, it is possible that performance-based measures are actually not matched to the construct they are supposed to estimate, and therefore, they lack validity. This would support Petrides (2010) conceptualisation who defined EI exclusively as a personality trait. Finally, according to Motowidlo et al. (1997) theory, one should expect ability construct to be superior in predicting job performance above the trait one. Nevertheless, this assumption is not fully supported by our findings. It may suggest that traits in general have a greater impact on job performance than Motowidlo et al. (1997) assumed. However, based on our results, previous meta-analytic findings and above indications, we suppose that ability EI components in fact substitute basic tendencies leading to job performance well, but their validity is diminished by psychometric issues regarding performance-based measures.

The presented results are a valuable contribution to the ongoing discussion about EI significance. Above all, a vast part of EI criticism concerns lack of actual significance in the workplace (Antonakis et al., 2009; Harms and Credé, 2010b; Landy, 2005; Roberts et al., 2010a). The predictive coefficients of EI measures that we presented are strong empirical arguments that EI on its own has significant meaning in the workplace. There is of course the issue of incremental validity, but as we have argued, this is perhaps not the point to be solved by meta-analytic computation. Moreover, we have demonstrated the

significant relation between EI and objective job performance criteria. As many researchers argued that the predictive validity of EI is distorted because of contamination by confounding factors, it is all the more important that we have delivered the evidence for a link between EI and solid, quantitative criteria. What is more, a great number of critics have pointed out that the claims about EI role in job performance prediction are unfounded as they came from poor quality studies and non-worker samples (Antonakis et al., 2009; Harms and Credé, 2010b; Landy, 2005). Again, thanks to the methodology and the inclusion criteria that we employed, we can refute this objection. In conclusion, it is worth mentioning that Zeidner et al. (2009) and Kaplan et al. (2010) have said that the scientific value of EI would depend, along with other factors, on its ability to explain important phenomena and its applicability. On this basis, our results definitely contribute to the matter, as they support the suitability of EI in predicting job performance.

In addition, some argue that the relation between EI and job performance is independent of the occupation under consideration (see Nafukho, 2009). Our findings clearly deny this claim. Although this relation was significant within every distinguished occupation and industry, its magnitude varied remarkably. As EI is a broad-scope construct, some of its facets are not specifically fitted to predict job performance in certain occupations, while others are well suited to determine performance in other occupational groups. However, thorough analysis of these results leaves doubts since it is difficult to point out a common factor for the most and the least predicted occupations or industries. We have concluded that this requires further analysis, yet to do so it is necessary to report more detailed information in the future primary studies. However, there is a model that could potentially help understand this relation, which is the compensation model by Côté and Miners (2006). They found that the EI predictive validity grows stronger when the GMA of employees is lower. On this basis, it can be assumed that the EI predicts job performance better in the occupations in which GMA does not. For example, there are some low complexity-level professions (production workers, administrative personnel), bankers, and salespeople within the groups highly predicted by EI yet GMA is not the best job performance predictor in these cases (see Barros et al., 2014; Hunter and Hunter, 1984; Verbeke et al., 2008), while there are such occupations as researchers within the groups that are poorly predicted by EI. Antonakis et al. (2009) also suggested that the importance of EI in the workplace could be related to the employees' cognitive resources. To conclude, our evidence supports the assumption that EI, as a basic tendency, leads to job performance in interaction with the job type and industry. It might be assumed that some jobs, particularly the ones in which cognitive abilities are valuable, provide more thematically connected clues that highly emotionally intelligent employees are able to resolve. This emphasises the accurateness of our moderators' choice, as Joseph and Newman (2010) approach would not have allowed for such conclusions.

We found both job performance measure types to be validly predicted by EI, which is exceptionally important in the objective measures case, as other well-established predictors often failed to predict this sort of criteria (Richardson and Norgate, 2015; Rojon et al., 2015). It might be assumed that EI predicts job performance behaviours directly (which is reflected in higher EI predictive validity for ratings) and predicts job performance outcomes indirectly (which explains lower validity for the objective measures) by impacting employee behaviour. Nevertheless, the differentiation of EI validity for a variety of job performance measures is of particular importance. As Nathan and Alexander (1988) noted, such a variation could undermine the reliability of validity

studies that have not employed the comprehensive criterion measurement process. Our findings lead us to believe that such a criterion-driven strategy should become a standard. Interestingly, even for the same type of criteria, that is ratings, the validity varied slightly. It supports Conway and Huffcut (1997) and Demerouti et al. (2014) observation that ratings from different sources include various perspective on employees' performance. Consequently, the validity results for self-evaluation ratings are of particular importance. Self-reported job performance measures are frequently criticised, however as Demerouti et al. (2014) pointed out, regardless of psychometric issues, only they take into account the full perspective on employees' efforts and performance. Therefore, the interesting thing is that validity coefficients for self-evaluation and complex ratings are convergent, and the latter also include the broad perspective of information. Importantly, although validity coefficients for self-valuation were somewhat higher, they reflect similar pattern of relation with EI as other ratings. This gives further evidence, next to the factor analysis and meta-analysis studies (Campbell and Wiernik, 2015; Heidemeier, 2005), that varied ratings, including self-reported ones, assess the same construct (job performance). Once again, such postulates are possible only thanks to systematic comparisons of varied job performance measure, which were not presented in previous meta-analyses.

Finally, we found job status to partially moderate the EI predictive validity. Namely, only when the EI measurement type is being considered. Based on these findings, it can be concluded that in the case of managers, the EI potential (assessed by the performance-based measures) is more important to perform well, while in the case of staff habits, learned behaviours and competencies might be more influential. Based on these results, it may also be supposed that EI (measured by performance-based tools), according to Motowidlo et al. (1997) theory, constitutes an important part of basic tendencies accounted for the job performance of managers, while in the case of staff, constructs measured by self-described questionnaires play a more prominent role than it was assumed in this theory.

5 Limitations of the study and future research suggestions

Although the studies included into our database consisted of samples of sufficient sizes (average sample size was over 150), the number of studies themselves left a lot to be desired, mainly as to the use of objective job performance criteria. The limited number of research in the few distinguished categories does not allow us to conduct a further analysis. As Rojon et al. (2015) observed, some researchers may be reluctant to use objective criteria, as they tend to produce weaker results. As such a strategy might seem justified to some extent, it results in a serious limitation of the scientific understanding of the examined field. On this basis, a common use of the criterion-driven strategy and the use of multiple job performance criteria (including objective ones) should be viewed as important guidelines for future research. The same applies to the extent of information reported in primary studies. The meta-analysis could only compile as much information as researchers report in their papers. Therefore, authors of future validity studies should put emphasis on reporting varied and comprehensive results of their works.

One question still unanswered is the relative importance and the connections of EI and other well-established performance predictors. Although there were attempts to address this issue (Joseph et al., 2015; Van Rooy and Viswesvaran, 2004), they relied on the use of meta-matrix correlations and because of numerous doubts surrounding this approach we deliberately did not conduct such an analysis. Therefore, we believe that this issue should be addressed in future primary validity studies with better statistical methods than the employed incremental validity analysis, primarily with relative importance methods such as relative weight analysis (see Lang et al., 2010; Stanhope and Surface, 2014).

Finally, our meta-analysis (as well as nearly all validity generalisation studies performed to this day) does not enable us to determine whether EI genuinely predicts job performance. As one could not simply extrapolate the criterion validity results into predictive ones (Nunnally, 1978), this still remains a matter of debate. Sadly, very few primary studies were conducted as longitudinal ones with a postponed criterion measurement. As the actual relation between EI and job performance has been confirmed, future validity studies should focus on the genuine predictive magnitude of EI (and a range of further predictors). This would allow us to address this issue as well as a few others, like the EI development along with growing professional experience (see Knopp, 2014) or the dynamic criterion problem (see Sonnentag and Frese, 2002; Viswesvaran and Ones, 2002).

6 Conclusions and implications

The above meta-analytic study provides increased evidence on the validity of EI and makes a robust contribution to the field. The results are also a matter of importance for human resources management practitioners as they present straightforward guidelines whether to apply EI in personnel selection. As some suggested (see Antonakis, 2004), it is unethical to use empirically unsupported measures in applied settings. Our results provide reliable evidence that the use of EI measures in the work context is advantageous, valid, and therefore ethical.

By conducting this meta-analysis, we estimated a more accurate EI validity and demonstrated that self-reported ability-based EI has the strongest relationship with job performance. However, if we were to highlight the single most important contribution of our research to the field, it seems that it should be sought elsewhere. Nearly a quarter of research on the relationship between EI and job performance is carried out on varied samples – that is, with participants representing diverse occupational groups, levels and types of work. The moderation analysis we carried out and the theoretical model we proposed show that such an approach can have serious drawbacks, severely limiting the ability to draw conclusions from studies. Therefore, it seems that the most important implication of the presented meta-analysis is a strong recommendation and guidance for future researchers to develop their theoretical models and conduct empirical research within a certain, well-defined occupational context. By doing so, as well as considering the type of job performance criteria used, we hope that it will be possible to bring about greater agreement on the findings of EI research.

References

- Afolabi, O.A., Awosola, R.K. and Omole, S.O. (2010) 'Influence of emotional intelligence and gender on job performance and job satisfaction among Nigerian policemen', *Current Research Journal of Social Sciences*, Vol. 2, No. 3, pp.147–154 [online] <https://doi.org/10.12691/rpbs-2-4-2>.
- Aguinis, H., Joo, H. and Gottfredson, R.K. (2013) 'What monetary rewards can and cannot do: how to show employees the money', *Business Horizons*, Vol. 56, No. 2, pp.241–249 [online] <https://doi.org/10.1016/j.bushor.2012.11.007>.
- Ahmetoglu, G., Leutner, F. and Chamorro-Premuzic, T. (2011) 'EQ-nomics: understanding the relationship between individual differences in trait emotional intelligence and entrepreneurship', *Personality and Individual Differences*, Vol. 51, No. 8, pp.1028–1033 [online] <https://doi.org/10.1016/j.paid.2011.08.016>.
- AlDosiry, K.S., Alkhadher, O.H., AlAqraa, E.M. and Anderson, N. (2016) 'Relationships between emotional intelligence and sales performance in Kuwait', *Revista de Psicología Del Trabajo y de Las Organizaciones*, Vol. 32, No. 1, pp.39–45 [online] <https://doi.org/10.1016/j.rpto.2015.09.002>.
- Ali, O.E., Garner, I. and Magadley, W. (2012) 'An exploration of the relationship between emotional intelligence and job performance in police organizations', *Journal of Police and Criminal Psychology*, Vol. 27, No. 1, pp.1–8 [online] <https://doi.org/10.1007/s11896-011-9088-9>.
- Altındağ, E. and Köseadağı, Y. (2015) 'The relationship between emotional intelligence of managers, innovative corporate culture and employee performance', *Procedia – Social and Behavioral Sciences*, Vol. 210, pp.270–282 [online] <https://doi.org/10.1016/j.sbspro.2015.11.367>.
- Andrei, F., Siegling, A.B., Aloe, A.M., Baldaro, B. and Petrides, K.V. (2016) 'The incremental validity of the trait emotional intelligence questionnaire (TEIQue): a systematic review and meta-analysis', *Journal of Personality Assessment*, Vol. 98, No. 3, pp.261–276 [online] <https://doi.org/10.1080/00223891.2015.1084630>.
- Antonakis, J. (2004) 'On why “emotional intelligence” will not predict leadership effectiveness beyond IQ or the “big five”': an extension and rejoinder', *Organizational Analysis*, Vol. 12, No. 2, pp.171–182 [online] <https://doi.org/10.1108/eb028991>.
- Antonakis, J. and Dietz, J. (2010) 'Emotional intelligence: on definitions, neuroscience, and marshmallows', *Industrial and Organizational Psychology*, Vol. 3, No. 2, pp.165–170 [online] <https://doi.org/10.1111/j.1754-9434.2010.01219.x>.
- Antonakis, J., Ashkanasy, N.M. and Dasborough, M.T. (2009) 'Does leadership need emotional intelligence?', *The Leadership Quarterly*, Vol. 20, pp.247–261 [online] <https://doi.org/10.1016/j.leaqua.2009.01.006>.
- Arteche, A., Chamorro-Premuzic, T., Furnham, A. and Crump, J. (2008) 'The relationship of trait EI with personality, IQ and sex in a UK sample of employees', *International Journal of Selection and Assessment*, Vol. 16, No. 4, pp.421–426 [online] <https://doi.org/10.1111/j.1468-2389.2008.00446.x>.
- Ashkanasy, N.M. and Daus, C.S. (2005) 'Rumors of the death of emotional intelligence in organizational behavior are vastly exaggerated', *Journal of Organizational Behavior*, Vol. 26, No. 4, pp.441–452 [online] <https://doi.org/10.1002/job.320>.
- Ashkanasy, N.M. and Humphrey, R.H. (2011) 'A multi-level view of leadership and emotion: leading with emotional labor', in Bryman, A., Collinson, D., Grint, K., Jackson, B. and Uhl-Bien, M. (Eds.): *The SAGE Handbook of Leadership*, pp.365–379, Sage Publications, London.
- Austin, E.J., Saklofske, D.H., Smith, M. and Tohver, G. (2014) 'Associations of the managing the emotions of others (MEOS) scale with personality, the dark triad and trait EI', *Personality and Individual Differences*, Vol. 65, pp.8–13 [online] <https://doi.org/10.1016/j.paid.2014.01.060>.

- Austin, J.T. and Villanova, P. (1992) 'The criterion problem: 1917–1992', *Journal of Applied Psychology*, Vol. 77, No. 6, pp.836–874.
- Ayiro, L.P. (2009) 'An analysis of emotional intelligence and the performance of principals in selected schools in Kenya', *Advances in Developing Human Resources*, Vol. 11, No. 6, pp.719–746 [online] <https://doi.org/10.1177/1523422309360958>.
- Bachman, J., Stein, S., Campbell, K. and Sitarenios, G. (2000) 'Emotional intelligence in the collection of debt', *International Journal of Selection and Assessment*, Vol. 8, No. 3, pp.176–182 [online] <https://doi.org/10.1111/1468-2389.00145>.
- Baczyńska, A. and Górnjak, M. (2013) 'Wpływ inteligencji emocjonalnej i kompetencji społecznych na wyniki pracy w zawodzie windykatorka. Raport z badań', *Zarządzanie Zasobami Ludzkimi*, Vol. 1, No. 90, pp.87–97.
- Bahmanabadi, M. and Jafari, M. (2014) 'Emotional intelligence and job performance: evidence from railroad industry', *Management Science Letters*, Vol. 4, No. 8, pp.1693–1698 [online] <https://doi.org/10.5267/j.msl.2014.7.015>.
- Bar-On, R. (1997) *The Emotional Intelligence Inventory (EQ-i): Technical Manual*, Multi-Health Systems.
- Bar-On, R., Handley, R. and Fund, S. (2006) 'The impact of emotional intelligence on performance', in Druskat, V.U., Sala, F. and Mount, G. (Eds.): *Linking Emotional Intelligence and Performance at Work. Current Research Evidence with Individuals and Groups*, pp.3–20, Lawrence Erlbaum Associates, New Jersey.
- Barros, E., Kausel, E.E., Cuadra, F. and Díaz, D.A. (2014) 'Using general mental ability and personality traits to predict job performance in three Chilean organizations', *International Journal of Selection and Assessment*, Vol. 22, No. 4, pp.432–438.
- Behbahani, A.A. (2011) 'A comparative study of the relation between emotional intelligence and employee's performance', *Procedia – Social and Behavioral Sciences*, Vol. 30, pp.386–389 [online] <https://doi.org/10.1016/j.sbspro.2011.10.076>.
- Bernardin, H.J. and Russell, J.E.A. (1998) *Human Resource Management: An Experiential Approach*, 2nd ed., McGraw-Hill, Boston.
- Birol, C., Atamtürk, H., Silman, F., Atamtürk, A.N. and Şensoy, Ş. (2009) 'A comparative analysis of teachers' perceptions of emotional intelligence and performance management in the secondary schools of the TRNC', *Procedia – Social and Behavioral Sciences*, Vol. 1, No. 1, pp.2600–2605 [online] <https://doi.org/10.1016/j.sbspro.2009.01.459>.
- Blickle, G., Momm, T., Liu, Y., Witzki, A. and Steinmayr, R. (2011) 'Construct validation of the test of emotional intelligence (TEMINT). A two-study investigation', *European Journal of Psychological Assessment*, Vol. 27, No. 4, pp.282–289 [online] <https://doi.org/10.1027/1015-5759/a000075>.
- Blickle, G., Momm, T.S., Kramer, J., Mierke, J., Liu, Y. and Ferris, G.R. (2009) 'Construct and criterion-related validation of a measure of emotional reasoning skills: a two-study investigation', *International Journal of Selection and Assessment*, Vol. 17, No. 1, pp.101–118 [online] <https://doi.org/10.1111/j.1468-2389.2009.00455.x>.
- Borestein, M., Hedges, L.V., Higgins, J.P.T. and Rothstein, H.R. (2009) *Introduction to Meta-analysis*, Wiley, Chichester [online] https://doi.org/10.1007/978-3-319-14908-0_2.
- Borman, W.C. and Motowidlo, S.J. (1993) 'Expanding the criterion domain to include elements of contextual performance', in Schmitt, N. and Borman, W. (Eds.): *Personnel Selection in Organizations*, pp.71–78, Jossey-Bass, San Francisco.
- Boyatzis, R.E., Good, D. and Massa, R. (2012) 'Emotional, social, and cognitive intelligence and personality as predictors of sales leadership performance', *Journal of Leadership & Organizational Studies*, Vol. 19, No. 2, pp.191–201 [online] <https://doi.org/10.1177/15480518111435793>.
- Bozionelos, N. and Singh, S.K. (2017) 'The relationship of emotional intelligence with task and contextual performance: more than it meets the linear eye', *Personality and Individual Differences*, Vol. 116, pp.206–211 [online] <https://doi.org/10.1016/j.paid.2017.04.059>.

- Burke, M.J. and Landis, R.S. (2003) 'Methodological and conceptual challenges in conducting and interpreting meta-analyses', in Murphy, K.R. (Ed.): *Validity Generalization: A Critical Review*, pp.287–310, Erlbaum, Hove.
- Byron, K., Terranova, S. and Nowicki, S. (2007) 'Nonverbal emotion recognition and salespersons: linking ability to perceived and actual success', *Journal of Applied Social Psychology*, Vol. 37, No. 11, pp.2600–2619 [online] <https://doi.org/10.1111/j.1559-1816.2007.00272.x>.
- Campbell, J.P. (1990) 'Modeling the performance prediction problem in industrial and organizational psychology', in Dunette, M.D. and Hough, L.M. (Eds.): *Handbook of Industrial and Organizational Psychology*, pp.688–732, Consulting Psychologists Press, Palo Alto.
- Campbell, J.P. and Wiernik, B.M. (2015) 'The modeling and assessment of work performance', *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 2, No. 1, pp.47–74 [online] <https://doi.org/10.1146/annurev-orgpsych-032414-111427>.
- Campbell, J.P., McCloy, R.A., Oppler, S.H. and Sager, C.E. (1993) 'A theory of performance', in Schmitt, E. and Borman, W.C. (Eds.): *Personnel Selection in Organizations*, pp.35–70, Jossey-Bass, San Francisco.
- Carmeli, A. (2003) 'The relationship between emotional intelligence and work attitudes, behavior and outcomes', *Journal of Managerial Psychology*, Vol. 18, No. 8, pp.788–813 [online] <https://doi.org/10.1108/02683940310511881>.
- Carmeli, A. and Josman, Z.E. (2006) 'The relationship among emotional intelligence, task performance, and the relationship among emotional intelligence, task performance, and organizational citizenship behaviors', *Human Performance*, Vol. 19, No. 4, pp.403–419 [online] <https://doi.org/10.1207/s15327043hup1904>.
- Castillo, M.Á.S. and Del Valle, I.D. (2017) 'Is emotional intelligence the panacea for a better job performance? A study on low-skilled back office jobs', *Employee Relations*, Vol. 39, No. 5, pp.683–698 [online] <https://doi.org/10.1108/MBE-09-2016-0047>.
- Cavazotte, F., Moreno, V. and Hickmann, M. (2012) 'Effects of leader intelligence, personality and emotional intelligence on transformational leadership and managerial performance', *Leadership Quarterly*, Vol. 23, No. 3, pp.443–455 [online] <https://doi.org/10.1016/j.leaqua.2011.10.003>.
- Cherniss, C. (2010a) 'Emotional intelligence: new insights and further clarifications', *Industrial and Organizational Psychology*, Vol. 3, pp.183–191 [online] <https://doi.org/10.1111/j.1754-9434.2010.01222.x>.
- Cherniss, C. (2010b) 'Emotional intelligence: toward clarification of a concept', *Industrial and Organizational Psychology*, Vol. 3, No. 2, pp.110–126 [online] <https://doi.org/10.1111/j.1754-9434.2010.01231.x>.
- Cheung, M.W-L. and Chan, W. (2005) 'Meta-analytic structural equation modeling: a two-stage approach', *Psychological Methods*, Vol. 10, No. 1, pp.40–64 [online] <https://doi.org/10.1037/1082-989X.10.1.40>.
- Christiansen, N.D., Janovics, J.E. and Siers, B.P. (2010) 'Emotional intelligence in selection contexts: measurement method, criterion-related validity, and vulnerability to response distortion', *International Journal of Selection and Assessment*, Vol. 18, No. 1, pp.87–101 [online] <https://doi.org/10.1111/j.1468-2389.2010.00491.x>.
- Ciarrochi, J.V., Chan, A.Y. and Caputi, P. (2000) 'A critical evaluation of the emotional intelligence construct', *Personality and Individual Differences*, Vol. 28, No. 3, pp.539–561 [online] [https://doi.org/10.1016/S0191-8869\(99\)00119-1](https://doi.org/10.1016/S0191-8869(99)00119-1).
- Cobêro, C., Primi, R. and Muniz, M. (2006) 'Inteligência emocional e desempenho no trabalho: um estudo com MSCEIT, BPR-5 e 16PF', *Paidéia*, Vol. 16, No. 35, pp.337–348 [online] <https://doi.org/10.1590/S0103-863X2006000300005>.
- Conte, J.M. (2005) 'A review and critique of emotional intelligence measures', *Journal of Organizational Behavior*, Vol. 26, pp.433–440 [online] <https://doi.org/10.1002/job.319>.

- Conway, J.M. and Huffcutt, A.I. (1997) 'Psychometric properties of multisource performance ratings: a meta-analysis of subordinate, supervisor, peer, and self-ratings', *Human Performance*, Vol. 10, No. 4, pp.331–360 [online] https://doi.org/10.1207/s15327043hup1004_2.
- Corcoran, R.P. and Tormey, R. (2013) 'Does emotional intelligence predict student teachers' performance?', *Teaching and Teacher Education*, Vol. 35, pp.34–42 [online] <https://doi.org/10.1016/j.tate.2013.04.008>.
- Côté, S. (2010) 'Taking the "intelligence" in emotional intelligence seriously', *Industrial and Organizational Psychology*, Vol. 3, No. 2, pp.127–130 [online] <https://doi.org/10.1111/j.1754-9434.2010.01211.x>.
- Côté, S. and Miners, C.T.H. (2006) 'Emotional intelligence, cognitive intelligence, and job performance', *Administrative Science Quarterly*, Vol. 51, No. 1, pp.1–28.
- Dalen, L.H., Stanton, N.A. and Roberts, A.D. (2001) 'Faking personality questionnaires in personnel selection', *Journal of Management Development*, Vol. 20, No. 8, pp.729–742 [online] <https://doi.org/10.1108/02621710110401428>.
- Daus, C.S. and Ashkanasy, N.M. (2005) 'The case for an ability-based model of emotional intelligence in organizational behavior', *Journal of Organizational Behavior*, Vol. 26, No. 4, pp.453–466.
- Davar, S.C. and Singh, N. (2014) 'Emotional intelligence & job performance in banking & insurance sector in India', *Indian Journal of Industrial Relations*, Vol. 49, No. 4, pp.722–733.
- de Haro Garcia, J.M. and Costa, J.L.C. (2014) 'Does trait emotional intelligence predict unique variance in early career success beyond IQ and personality?', *Journal of Career Assessment*, Vol. 22, No. 4, pp.715–725 [online] <https://doi.org/10.1177/1069072713515971>.
- De La Cruz, H., D'Urso, P.A. and Ellison, A. (2014) 'The relationship between emotional intelligence and successful sales performance in the Puerto Rico market', *Journal of Psychological Issues in Organizational Culture*, Vol. 5, No. 3, pp.6–39 [online] <https://doi.org/10.1002/jpoc.21153>.
- Demerouti, E., Xanthopoulou, D., Tsaousis, I. and Bakker, A.B. (2014) 'Disentangling task and contextual performance: a multitrait-multimethod approach', *Journal of Personnel Psychology*, Vol. 13, No. 2, pp.59–69 [online] <https://doi.org/10.1027/1866-5888/a000104>.
- Devonish, D. and Greenidge, D. (2010) 'The effect of organizational justice on contextual performance, counterproductive work behaviors, and task performance: investigating the moderating role of ability-based emotional intelligence', *International Journal of Selection and Assessment*, Vol. 18, No. 1, pp.75–86 [online] <https://doi.org/10.1111/j.1468-2389.2010.00490.x>.
- Di Fabio, A. (2015) 'Beyond fluid intelligence and personality traits in social support: the role of ability based emotional intelligence', *Frontiers in Psychology*, Vol. 6, p.395 [online] <https://doi.org/10.3389/fpsyg.2015.00395>.
- Downey, L.A., Lee, B. and Stough, C. (2011) 'Recruitment consultant revenue: relationships with IQ, personality, and emotional intelligence', *International Journal of Selection and Assessment*, Vol. 19, No. 3, pp.280–286 [online] <https://doi.org/10.1111/j.1468-2389.2011.00557.x>.
- Drew, T.L. (2006) *The Relationship Between Emotional Intelligence and Student Teacher Performance*, University of Nebraska.
- Druskat, V.U., Sala, F. and Mount, G. (2006) *Linking Emotional Intelligence and Performance at Work. Current Research Evidence with Individuals and Groups*, Lawrence Erlbaum Associates, New Jersey.
- Dulewicz, V., Higgs, M. and Slaski, M. (2003) 'Measuring emotional intelligence: content, construct and criterion-related validity', *Journal of Managerial Psychology*, Vol. 18, No. 5, pp.405–420 [online] <https://doi.org/10.1108/02683940310484017>.

- Elfenbein, H.A. and Ambady, N. (2002) 'Predicting workplace outcomes from the ability to eavesdrop on feelings', *The Journal of Applied Psychology*, Vol. 87, No. 5, pp.963–971 [online] <https://doi.org/10.1037/0021-9010.87.5.963>.
- Farh, C.I.C., Seo, M-G. and Tesluk, P.E. (2012) 'Emotional intelligence, teamwork effectiveness, and job performance: the moderating role of job context', *Journal of Applied Psychology*, Vol. 97, No. 4, pp.890–900 [online] <https://doi.org/10.1037/a0027377>.
- Field, A.P. (2001) 'Meta-analysis of correlation coefficients: a Monte Carlo comparison of fixed- and random-effects methods', *Psychological Methods*, Vol. 6, No. 2, pp.161–180 [online] <https://doi.org/10.1037/1082-989X.6.2.161>.
- Freudenthaler, H.H., Neubauer, A.C., Gabler, P., Scherl, W.G. and Rindermann, H. (2008) 'Testing and validating the trait emotional intelligence questionnaire (TEIQue) in a German-speaking sample', *Personality and Individual Differences*, Vol. 45, pp.673–678 [online] <https://doi.org/10.1016/j.paid.2008.07.014>.
- Giorgi, G., Mancuso, S. and Perez, F.J.F. (2014) 'Organizational emotional intelligence and top selling', *Europe's Journal of Psychology*, Vol. 10, No. 4, pp.712–725 [online] <https://doi.org/10.5964/ejop.v10i4.755>.
- Goleman, D. (1995) *Emotional Intelligence*, Bantam Books, New York.
- Gondal, U.H. and Husain, T. (2013) 'A comparative study of intelligence quotient and emotional intelligence: effect on employees' performance', *Asian Journal of Business Management*, Vol. 5, No. 1, pp.153–162.
- Gooty, J., Gavin, M.B., Ashkanasy, N.M. and Thomas, J.S. (2014) 'The wisdom of letting go and performance: the moderating role of emotional intelligence and discrete emotions', *Journal of Occupational and Organizational Psychology*, Vol. 87, No. 2, pp.392–413 [online] <https://doi.org/10.1111/joop.12053>.
- Griffin, M.A., Neal, A. and Parker, S.K. (2007) 'A new model of work role performance: positive behavior in uncertain and interdependent contexts', *Academy of Management Journal*, Vol. 50, No. 2, pp.327–347 [online] <https://doi.org/10.5465/AMJ.2007.24634438>.
- Gunavathy, J.S. and Ayswarya, R. (2011) 'Emotional intelligence and job satisfaction as correlates of job performance. A study among women employed in the Indian software industry', *Paradigm*, Vol. 15, Nos. 1/2, pp.58–65 [online] <https://doi.org/10.1177/0971890720110109>.
- Hackett, R.D. and Guion, R.M. (1985) 'A re-evaluation of the absenteeism-job satisfaction relationship', *Organizational Behavior and Human Decision Processes*, Vol. 35, No. 3, pp.340–381.
- Hanzaee, K.H. and Mirvaisi, M. (2013) 'A survey on impact of emotional intelligence, organizational citizenship behaviors and job satisfaction on employees' performance in Iranian hotel industry', *Management Science Letters*, Vol. 3, pp.1395–1402 [online] <https://doi.org/10.5267/j.msl.2013.04.010>.
- Harms, P.D. and Credé, M. (2010a) 'Emotional intelligence and transformational and transactional leadership: a meta-analysis', *Journal of Leadership and Organizational Studies*, Vol. 17, pp.5–17 [online] <https://doi.org/10.1177/1548051809350894>.
- Harms, P.D. and Credé, M. (2010b) 'Remaining issues in emotional intelligence research: construct overlap, method artifacts, and lack of incremental validity', *Industrial and Organizational Psychology*, Vol. 3, No. 2, pp.154–158 [online] <https://doi.org/10.1111/j.1754-9434.2010.01217.x>.
- Hawkins, J. and Dulewicz, V. (2007) 'The relationship between performance as a leader and emotional intelligence, intellectual and managerial competences', *Journal of General Management*, Vol. 33, No. 2, pp.57–78 [online] <https://doi.org/10.1177/030630700703300205>.
- Hedges, L.V., Cooper, H. and Bushman, B.J. (1992) 'Testing the null hypothesis in meta-analysis: a comparison of combined probability and confidence interval procedures', *Psychological Bulletin*, Vol. 111, No. 1, pp.188–194 [online] <https://doi.org/10.1037/0033-2909.111.1.188>.

- Heffernan, T., O'Neill, G., Travaglione, T. and Droulers, M. (2008) 'Relationship marketing', *International Journal of Bank Marketing*, Vol. 26, No. 3, pp.183–199 [online] <https://doi.org/10.1108/02652320810864652>.
- Heidemeier, H. (2005) *Self and Supervisor Ratings of Job-performance: Meta-analyses and a Process Model of Rater Convergence*, Friedrich-Alexander-Universität, Nürnberg, Germany.
- Higgs, M. (2004) 'A study of the relationship between emotional intelligence and performance in UK call centres', *Journal of Managerial Psychology*, Vol. 19, No. 4, pp.442–454 [online] <https://doi.org/10.1108/02683940410537972>.
- Hofmann, D.A., Jacobs, R. and Gerras, S.J. (1992) 'Mapping individual performance over time', *Journal of Applied Psychology*, Vol. 77, No. 2, pp.185–195.
- Hopkins, M.M. and Bilimoria, D. (2008) 'Social and emotional competencies predicting success for male and female executives', *Journal of Management Development*, Vol. 27, No. 1, pp.13–35 [online] <https://doi.org/10.1108/02621710810840749>.
- Howe, J., Falkenbach, D. and Massey, C. (2014) 'The relationship among psychopathy, emotional intelligence, and professional success in finance', *International Journal of Forensic Mental Health*, Vol. 13, No. 4, pp.337–347 [online] <https://doi.org/10.1080/14999013.2014.951103>.
- Huang, X., Chan, S.C.H., Lam, W. and Nan, X. (2010) 'The joint effect of leader-member exchange and emotional intelligence on burnout and work performance in call centers in China', *The International Journal of Human Resource Management*, Vol. 21, No. 7, pp.1124–1144 [online] <https://doi.org/10.1080/09585191003783553>.
- Humphrey, R.H., Pollack, J.M. and Hawver, T.H. (2008) 'Leading with emotional labor', *Journal of Managerial Psychology*, Vol. 23, pp.151–168 [online] <https://doi.org/10.1108/02683940810850790>.
- Hunter, J.E. and Hunter, R.F. (1984) 'Validity and utility of alternative predictors of job performance', *Psychological Bulletin*, Vol. 96, No. 1, pp.72–98 [online] <https://doi.org/10.1037/0033-2909.96.1.72>.
- Hunter, J.E. and Schmidt, F.L. (2004) *Methods of Meta-analysis. Correcting Error and Bias in Research Findings*, 2nd ed., Sage Publications, Thousand Oaks, CA.
- Hunter, J.E., Schmidt, F.L. and Le, H. (2006) 'Implications of direct and indirect range restriction for meta-analysis methods and findings', *Journal of Applied Psychology*, Vol. 91, No. 3, pp.594–612 [online] <https://doi.org/10.1037/0021-9010.91.3.594>.
- Igbinoia, M.O. and Popoola, S.O. (2016) 'Organizational culture and emotional intelligence as predictors of job performance among library personnel in academic libraries in Edo State, Nigeria', *Journal of Information Science Theory and Practice*, Vol. 4, No. 2, pp.34–52 [online] <https://doi.org/10.1633/JISTaP.2016.4.2.3>.
- Iliescu, D., Ilie, A., Ispas, D. and Ion, A. (2012) 'Emotional intelligence in personnel selection: applicant reactions, criterion, and incremental validity', *International Journal of Selection and Assessment*, Vol. 20, No. 3, pp.347–358 [online] <https://doi.org/10.1111/j.1468-2389.2012.00605.x>.
- Ismail, A., Yao, A. and Yunus, N.K.Y. (2009) 'Relationship between occupational stress and job satisfaction: an empirical study in Malaysia', *Romanian Economic Journal*, Vol. 34, No. 4, pp.3–29.
- Jin, Z., Zhou, X. and He, J. (2015) 'Statistical methods for dealing with publication bias in meta-analysis', *Statistics in Medicine*, Vol. 34, No. 2, pp.343–360 [online] <https://doi.org/10.1002/sim.6342>.
- Jordan, P.J., Dasborough, M.T., Daus, C.S. and Ashkanasy, N.M. (2010) 'A call to context: comments on emotional intelligence and emotional social competencies', *Industrial and Organizational Psychology: Perspectives on Science and Practice*, Vol. 3, No. 2, pp.145–148 [online] <https://doi.org/10.1111/j.1754-9434.2010.01215.x>.
- Joseph, D.L. and Newman, D.A. (2010) 'Emotional intelligence: an integrative meta-analysis and cascading model', *Journal of Applied Psychology*, Vol. 95, No. 1, pp.54–78 [online] <https://doi.org/10.1037/a0017286>.

- Joseph, D.L., Jin, J., Newman, D.A. and O'Boyle, E.H. (2015) 'Why does self-reported emotional intelligence predict job performance? A meta-analytic investigation of mixed EI', *Journal of Applied Psychology*, Vol. 100, No. 2, pp.298–342 [online] <https://doi.org/10.1037/a0037681>.
- Kaplan, S., Cortina, J. and Ruark, G.A. (2010) 'Oops.... we did it again: industrial-organizational's focus on emotional intelligence instead of on its relationships to work outcomes', *Industrial and Organizational Psychology*, Vol. 3, pp.171–177 [online] <https://doi.org/10.1111/j.1754-9434.2010.01220.x>.
- Kerr, R., Garvin, J., Heaton, N. and Boyle, E. (2006) 'Emotional intelligence and leadership effectiveness', *Leadership & Organization Development Journal*, Vol. 27, No. 4, pp.265–279 [online] <https://doi.org/10.1108/01437730610666028>.
- Khokhar, C.P. and Kush, T. (2009) 'Emotional intelligence and work performance among executives', *Europe's Journal of Psychology*, pp.1–12 [online] <https://doi.org/10.1037/e676842011-004>.
- Kim, T-Y., Cable, D.M., Kim, S-P. and Wang, J. (2009) 'Emotional competence and work performance: the mediating effect of proactivity and the moderating effect of job autonomy', *Journal of Organizational Behavior*, Vol. 30, No. 7, pp.983–1000 [online] <https://doi.org/10.1002/job.610>.
- Kline, P. (2000) *The Handbook of Psychological Testing*, 2nd ed., Routledge, London.
- Kluemper, D.H., DeGroot, T. and Choi, S. (2013) 'Emotion management ability', *Journal of Management*, Vol. 39, No. 4, pp.878–905 [online] <https://doi.org/10.1177/0149206311407326>.
- Knopp, K.A. (2014) 'Gdzies między wielkimi oczekiwaniami a rozczarowaniem... kilka refleksji nad konstruktem inteligencji emocjonalnej', *Forum Oświatowe*, Vol. 2, No. 52, pp.29–46.
- Koopmans, L., Bernaards, C.M., Hildebrandt, V.H., Schaufeli, W.B., de Vet Henrica, C.W. and van der Beek, A.J. (2011) 'Conceptual frameworks of individual work performance', *Journal of Occupational and Environmental Medicine*, Vol. 53, No. 8, pp.856–866 [online] <https://doi.org/10.1097/JOM.0b013e318226a763>.
- Krumm, S., Schmidt-Atzert, L. and Lipnevich, A.A. (2014) 'Specific cognitive abilities at work', *Journal of Personnel Psychology*, Vol. 13, No. 3, pp.117–122 [online] <https://doi.org/10.1027/1866-5888/a000117>.
- Kushwaha, G.S. (2012) 'Emotional intelligence and work performance of executives', *Organizational Psychology*, Vol. 2, No. 4, pp.23–27 [online] <https://doi.org/10.1037/e676842011-004>.
- Lam, S.C. and O'Higgins, E.R.E. (2012) 'Enhancing employee outcomes', *Leadership & Organization Development Journal*, Vol. 33, No. 2, pp.149–174 [online] <https://doi.org/10.1108/01437731211203465>.
- Landis, R.S. (2013) 'Successfully combining meta-analysis and structural equation modeling: recommendations and strategies', *Journal of Business and Psychology*, Vol. 28, No. 3, pp.251–261 [online] <https://doi.org/10.1007/s10869-013-9285-x>.
- Landy, F.J. (2005) 'Some historical and scientific issues related to research on emotional intelligence', *Journal of Organizational Behavior*, Vol. 26, No. 4, pp.411–424 [online] <https://doi.org/10.1002/job.317>.
- Lang, J.W.B., Kersting, M., Hülshager, U.R. and Lang, J. (2010) 'General mental ability, narrower cognitive abilities, and job performance: the perspective of the nested-factors model of cognitive abilities', *Personnel Psychology*, Vol. 63, No. 3, pp.595–640 [online] <https://doi.org/10.1111/j.1744-6570.2010.01182.x>.
- Langhorn, S. (2004) 'How emotional intelligence can improve management performance', *International Journal of Contemporary Hospitality Management*, Vol. 16, No. 4, pp.220–230 [online] <https://doi.org/10.1108/09596110410537379>.
- Lassk, F.G. and Shepherd, C.D. (2013) 'Exploring the relationship between emotional intelligence and salesperson creativity', *Journal of Personal Selling & Sales Management*, Vol. 33, No. 1, pp.25–37 [online] <https://doi.org/10.2753/PSS0885-3134330103>.

- Law, K.S., Wong, C.S., Huang, G.H. and Li, X. (2008) 'The effects of emotional intelligence on job performance and life satisfaction for the research and development scientists in China', *Asia Pacific Journal of Management*, Vol. 25, No. 1, pp.51–69 [online] <https://doi.org/10.1007/s10490-007-9062-3>.
- Law, K.S., Wong, C.S. and Song, L.J. (2004) 'The construct and criterion validity of emotional intelligence and its potential utility for management studies', *Journal of Applied Psychology*, Vol. 89, No. 3, pp.483–496 [online] <https://doi.org/10.1037/0021-9010.89.3.483>.
- Le, H. and Schmidt, F.L. (2006) 'Correcting for indirect range restriction in meta-analysis: testing a new meta-analytic procedure', *Psychological Methods*, Vol. 11, No. 4, pp.416–438 [online] <https://doi.org/10.1037/1082-989X.11.4.416>.
- LeBreton, J.M., Scherer, K.T. and James, L.R. (2014) 'Corrections for criterion reliability in validity generalization: a false prophet in a land of suspended judgment', *Industrial and Organizational Psychology*, Vol. 7, No. 4, pp.478–500 [online] <https://doi.org/10.1111/iops.12184>.
- Lindebaum, D. (2013) 'Does emotional intelligence moderate the relationship between mental health and job performance? An exploratory study', *European Management Journal*, Vol. 31, No. 6, pp.538–548 [online] <https://doi.org/10.1016/j.emj.2012.08.002>.
- Lindebaum, D. and Jordan, P.J. (2012) 'Relevant but exaggerated: the effects of emotional intelligence on project manager performance in construction', *Construction Management and Economics*, Vol. 30, No. 7, pp.575–583 [online] <https://doi.org/10.1080/01446193.2011.593184>.
- Lipsey, M. and Wilson, D. (2001) *Practical Meta-analysis*, Sage Publications, Thousand Oaks, CA.
- Livingstone, H.A. and Day, A.L. (2005) 'Comparing the construct and criterion-related validity of ability-based and mixed-model measures of emotional intelligence', *Educational and Psychological Measurement*, Vol. 65, No. 5, pp.757–779 [online] <https://doi.org/10.1177/0013164405275663>.
- Locke, E.A. (2005) 'Why emotional intelligence is an invalid concept', *Journal of Organizational Behavior*, Vol. 26, No. 4, pp.425–431 [online] <https://doi.org/10.1002/job.318>.
- Lopes, P.N. (2016) 'Emotional intelligence in organizations: bridging research and practice', *Emotion Review*, Vol. 8, No. 4, pp.1–6 [online] <https://doi.org/10.1177/1754073916650496>.
- Lopes, P.N., Grewal, D., Kadis, J., Gall, M. and Salovey, P. (2006) 'Evidence that emotional intelligence is related to job performance and affect and attitudes at work', *Psicothema*, Vol. 18, No. 1, pp.132–138.
- Mafuzah, M. and Juraifa, J. (2016) 'Emotional intelligence and job performance: a study among Malaysian teachers', *Procedia Economics and Finance*, Vol. 35, pp.674–682 [online] [https://doi.org/10.1016/S2212-5671\(16\)00083-6](https://doi.org/10.1016/S2212-5671(16)00083-6).
- Mao, W.C., Chen, L.F., Chi, C.H., Lin, C.H., Kao, Y.C., Hsu, W.Y., Lane, H.Y. and Hsieh, J.C. (2016) 'Traditional Chinese version of the Mayer Salovey Caruso emotional intelligence test (MSCEIT-TC): its validation and application to schizophrenic individuals', *Psychiatry Research*, Vol. 243, pp.61–70 [online] <https://doi.org/10.1016/j.psychres.2016.04.107>.
- Mayer, J.D., Caruso, D.R. and Salovey, P. (2000) 'Selecting a measure of emotional intelligence: the case for ability scales', in Bar-On, R. and Parker, J.D.A. (Eds.): *The Handbook of Emotional Intelligence*, pp.320–324, Jossey-Bass, New York.
- Mayer, J.D., Caruso, D.R. and Salovey, P. (2016) 'The ability model of emotional intelligence: principles and updates', *Emotion Review*, Vol. 8, No. 4, pp.290–300 [online] <https://doi.org/10.1177/1754073916639667>.
- Mayer, J.D., Roberts, R.D. and Barsade, S.G. (2008) 'Human abilities: emotional intelligence', *Annual Review of Psychology*, Vol. 59, No. 1, pp.507–536 [online] <https://doi.org/10.1146/annurev.psych.59.103006.093646>.
- Mishra, P. and Mohapatra, A. (2010) 'Relevance of emotional intelligence for effective job performance: an empirical study', *Vikalpa*, Vol. 35, No. 1, pp.53–61.

- Mitogawa, T. (2014) *Comparing two EI measures: TEIQue and WLEIS*, The University of Edinburgh, Edinburgh, UK.
- Momm, T., Blickle, G., Liu, Y., Wihler, A., Kholin, M. and Menges, J.I. (2015) 'It pays to have an eye for emotions: emotion recognition ability indirectly predicts annual income', *Journal of Organizational Behavior*, Vol. 36, No. 1, pp.147–163 [online] <https://doi.org/10.1002/job.1975>.
- Morgeson, F.P., Campion, M.A., Dipboye, R.L., Hollenbeck, J.R., Murphy, K.R. and Schmitt, N. (2007) 'Reconsidering the use of personality tests in personnel selection contexts', *Personnel Psychology*, Vol. 60, No. 3, pp.683–729.
- Motowidlo, S.J. (2003) 'Job performance', in Borman, W.C., Ilgen, D.R. and Klimowski, R.J. (Eds.): *Handbook of Psychology. Volume 12. Industrial and Organizational Psychology*, pp.39–54, John Wiley & Sons, Ltd., New Jersey.
- Motowidlo, S.J. and Van Scotter, J.R. (1994) 'Evidence that task performance should be distinguished from contextual performance', *Journal of Applied Psychology*, Vol. 79, No. 4, pp.475–480 [online] <https://doi.org/10.1037/0021-9010.79.4.475>.
- Motowidlo, S.J., Borman, W.C. and Schmit, M.J. (1997) 'A theory of individual differences in task and contextual performance', *Human Performance*, Vol. 10, No. 2, pp.71–83 [online] https://doi.org/10.1207/s15327043hup1002_1.
- Muniz, M. and Primi, R. (2007) 'Inteligência emocional e desempenho em policiais militares: validade de critério do MSCEIT', *Aletheia*, Vol. 25, No. 1, pp.66–81.
- Murphy, K.R. and Newman, D.A. (2003) 'The past, present and future of validity generalization', in Murphy, K.R. (Ed.): *Validity Generalization: A Critical Review*, pp.403–424, Erlbaum, Hove.
- Nafukho, F.M. (2009) 'Emotional intelligence and performance: need for additional empirical evidence', *Advances in Developing Human Resources*, Vol. 11, No. 6, pp.671–689 [online] <https://doi.org/10.1177/1523422309360838>.
- Nathan, B.R. and Alexander, R.A. (1988) 'A comparison of criteria for test validation: a meta-analytic investigation', *Personnel Psychology*, Vol. 41, No. 3, pp.517–535 [online] <https://doi.org/10.1111/j.1744-6570.1988.tb00642.x>.
- Nekrestjanova, M.S. and Miasnikova, S.V. (2013) *Emocionalny Intellekt kak Faktor Uspeshnosti Rukovoditela v Sfere Informacionnykh Tehnologij*, Nauchnyje Issledovanija Vypusnikov Fakulteta Psihologii SpbGU, pp.172–179.
- Nel, H. and De Villiers, W.S. (2004) 'The relationship between emotional intelligence and job performance in a call centre environment', *Journal of Industrial Psychology*, Vol. 30, No. 3, pp.75–81.
- Newman, D.A., Joseph, D.L. and MacCann, C. (2010) 'Emotional intelligence and job performance: the importance of emotion regulation and emotional labor context', *Industrial and Organizational Psychology*, Vol. 3, No. 2, pp.159–164 [online] <https://doi.org/10.1111/j.1754-9434.2010.01218.x>.
- Ngah, R., Jusoff, K. and Rahman, Z.A. (2009) 'Emotional intelligence of Malaysian academia towards work performance', *International Education Studies*, Vol. 2, No. 2, pp.103–112.
- Nunnally, J. (1978) *Psychometric Theory*, McGraw-Hill, New York.
- O'Boyle, E.H., Humphrey, R.H., Pollack, J.M., Hawver, T.H. and Story, P.A. (2011) 'The relation between emotional intelligence and job performance: a meta-analysis', *Journal of Organizational Behavior*, Vol. 32, No. 5, pp.788–818 [online] <https://doi.org/10.1002/job.714>.
- Olaajo, P.O. and Oyeboade, J.A. (2016) 'Emotional intelligence of library personnel and library work productivity in selected academic libraries in Oyo State, Nigeria', *Library Philosophy and Practice*, Vol. 1421, No. 6, pp.1–19.
- Ono, M., Sachau, D.A., Deal, W.P., Englert, D.R. and Taylor, M.D. (2011) 'Cognitive ability, emotional intelligence, and the big five personality dimensions as predictors of criminal investigator performance', *Criminal Justice and Behavior*, Vol. 38, No. 5, pp.471–491 [online] <https://doi.org/10.1177/0093854811399406>.

- Osipova, A.S. and Fedotov, S.N. (2015) 'Vlijanie Emocionalnogo Intellekta na Lichnostnuju Nadezhnost' Sotrudnikov OVD – Vypusknikov Obrazovatelnyh Organizacij MVD Rossii', *Psihopedagogika v Provoohranitelnyh Organah*, Vol. 1, No. 60, pp.7–12.
- Palmer, B.R. (2003) *An Analysis of the Relationships Between Various Models and Measures of Emotional Intelligence*, Swinburne University of Technology, Melbourne, Australia.
- Petrides, K.V. (2010) 'Trait emotional intelligence theory', *Industrial and Organizational Psychology*, Vol. 3, No. 2, pp.136–139 [online] <https://doi.org/10.1111/j.1754-9434.2010.01213.x>.
- Petrides, K.V. and Furnham, A. (2006) 'The role of trait emotional intelligence in a gender-specific model of organizational variables', *Journal of Applied Social Psychology*, Vol. 36, No. 2, pp.552–569 [online] <https://doi.org/10.1111/j.0021-9029.2006.00019.x>.
- Petrides, K.V., Mikolajczak, M., Mavroveli, S., Sanchez-Ruiz, M-J., Furnham, A. and Pérez-González, J-C. (2016) 'Developments in trait emotional intelligence research', *Emotion Review*, Vol. 8, No. 4, pp.335–341 [online] <https://doi.org/10.1177/1754073916650493>.
- Prentice, C. and King, B. (2011) 'The influence of emotional intelligence on the service performance of casino frontline employees', *Tourism and Hospitality Research*, Vol. 11, No. 1, pp.49–66 [online] <https://doi.org/10.1057/thr.2010.21>.
- R Core Team (2018) *R: A Language and Environment for Statistical Computing* [online] <http://www.r-project.org/> (accessed 8 August 2019).
- Rafiee, M., Kazemi, H. and Alimiri, M. (2013) 'Investigating the effect of job stress and emotional intelligence on job performance', *Management Science Letters*, Vol. 3, pp.2417–2424 [online] <https://doi.org/10.5267/j.msl.2013.08.025>.
- Reeve, C.L. (2004) 'Differential ability antecedents of general and specific dimensions of declarative knowledge: more than g', *Intelligence*, Vol. 32, No. 6, pp.621–652 [online] <https://doi.org/10.1016/j.intell.2004.07.006>.
- Richardson, K. and Norgate, S.H. (2015) 'Does IQ really predict job performance?', *Applied Developmental Science*, Vol. 19, No. 3, pp.153–169 [online] <https://doi.org/10.1080/10888691.2014.983635>.
- Roberts, R.D., MacCann, C., Matthews, G. and Zeidner, M. (2010a) 'Emotional intelligence: toward a consensus of models and measures', *Social and Personality Psychology Compass*, Vol. 4, No. 10, pp.821–840 [online] <https://doi.org/10.1111/j.1751-9004.2010.00277.x>.
- Roberts, R.D., Matthews, G. and Zeidner, M. (2010b) 'Emotional intelligence: muddling through theory and measurement', *Industrial and Organizational Psychology*, Vol. 3, No. 2, pp.140–144 [online] <https://doi.org/10.1111/j.1754-9434.2010.01214.x>.
- Rode, J.C., Arthaud-Day, M.L., Mooney, C.H., Near, J.P. and Baldwin, T.T. (2008) 'Ability and personality predictors of salary, perceived job success, and perceived career success in the initial career stage', *International Journal of Selection and Assessment*, Vol. 16, No. 3, pp.292–299 [online] <https://doi.org/10.1111/j.1468-2389.2008.00435.x>.
- Rojell, E., Pettijohn, C. and Parker, R. (2006) 'Emotional intelligence and dispositional affectivity as predictors of performance in salespeople', *The Journal of Marketing Theory and Practice*, Vol. 14, No. 2, pp.113–124 [online] <https://doi.org/10.2753/MTP1069-6679140202>.
- Rojon, C., McDowall, A. and Saunders, M.N.K. (2015) 'The relationships between traditional selection assessments and workplace performance criteria specificity: a comparative meta-analysis', *Human Performance*, Vol. 28, No. 1, pp.1–25 [online] <https://doi.org/10.1080/08959285.2014.974757>.
- Rosenthal, R. (1994) 'Parametric measures of effect size', in Cooper, H. and Hedges, L.V. (Eds.): *The Handbook of Research Synthesis*, pp.231–244, Russell Sage Foundation, New York.
- Rosete, D. and Ciarrochi, J. (2005) 'Emotional intelligence and its relationship to workplace performance outcomes of leadership effectiveness', *Leadership & Organization Development Journal*, Vol. 26, No. 5, pp.388–399 [online] <https://doi.org/10.1108/01437730510607871>.

- Rothe, H. (1978) 'Output rates among industrial employees', *Journal of Applied Psychology*, Vol. 63, No. 1, pp.40–46.
- Rotundo, M. and Sackett, P.R. (2002) 'The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: a policy-capturing approach', *Journal of Applied Psychology*, Vol. 87, No. 1, pp.66–80 [online] <https://doi.org/10.1037//0021-9010.87.1.66>.
- Salovey, P. and Mayer, J.D. (1990) 'Emotional intelligence', *Imagination, Cognition and Personality*, Vol. 9, No. 3, pp.185–211 [online] <https://doi.org/10.2190/DUGG-P24E-52WK-6CDG>.
- Samad, S. (2011) 'Examining the effects of emotional intelligence on the relationship between organizational politics and job performance', *International Journal of Business and Social Science*, Vol. 2, No. 6, pp.119–126.
- Schmidt, F.L. and Hunter, J.E. (1998) 'The validity and utility of selection methods in personnel psychology: practical and theoretical implications of 85 years of research findings', *Psychological Bulletin*, Vol. 124, No. 2, pp.262–274 [online] <https://doi.org/10.1037/0033-2909.124.2.262>.
- Schumacher, L., Wheeler, J.V. and Carr, A.S. (2009) 'The relationship between emotional intelligence and buyer's performance', *Journal of Business & Industrial Marketing*, Vol. 24, Nos. 3/4, pp.269–277 [online] <https://doi.org/10.1108/08858620910939813>.
- Semadar, A., Robins, C. and Ferris, G.R. (2006) 'Comparing the validity of multiple social effectiveness constructs in the prediction of managerial job performance', *Journal of Organizational Behavior*, Vol. 27, No. 4, pp.443–461 [online] <https://doi.org/10.1002/job.385>.
- Shaffer, J.A. and Postlethwaite, B.E. (2012) 'A matter of context: a meta-analytic investigation of the relative validity of contextualized and noncontextualized personality measures', *Personnel Psychology*, Vol. 65, No. 3, pp.445–494 [online] <https://doi.org/10.1111/j.1744-6570.2012.01250.x>.
- Shaffer, R.D. and Shaffer, M.A. (2005) 'Emotional intelligence abilities, personality and workplace performance', *Academy of Management Annual Meeting Proceedings*, Vol. 2005, No. 1, pp.1–6 [online] <https://doi.org/10.5465/AMBPP.2005.18778994>.
- Shahhosseini, M., Silong, A.D. and Ismail, I.A. (2013) 'Relationship between transactional, transformational leadership styles, emotional intelligence and job performance', *International Refereed Research Journal*, Vol. 4, No. 1, pp.15–22.
- Shahzad, K., Sarmad, M., Abbas, M. and Khan, M.A. (2011) 'Impact of emotional intelligence (EI) on employee's performance in telecom sector of Pakistan', *African Journal of Business Management*, Vol. 5, No. 4, pp.1225–1231 [online] <https://doi.org/10.5897/AJBM10.592>.
- Shamsuddin, N. and Rahman, R.A. (2014) 'The relationship between emotional intelligence and job performance of call centre agents', *Procedia – Social and Behavioral Sciences*, Vol. 129, pp.75–81 [online] <https://doi.org/10.1016/j.sbspro.2014.03.650>.
- Shih, H. and Susanto, E. (2010) 'Conflict management styles, emotional intelligence, and job performance in public organizations', *International Journal of Conflict Management*, Vol. 21, No. 2, pp.147–168 [online] <https://doi.org/10.1108/10444061011037387>.
- Shooshtarian, Z., Ameli, F. and Lari, M.A. (2013) 'The effect of labor's emotional intelligence on their job satisfaction, job performance and commitment', *Iranian Journal of Management Studies (IJMS)*, Vol. 66, No. 11, pp.27–43.
- Siegling, A.B., Petrides, K.V. and Martskvishvili, K. (2015) 'An examination of a new psychometric method for optimizing multi-faceted assessment instruments in the context of trait emotional intelligence', *European Journal of Personality*, Vol. 29, No. 1, pp.42–54 [online] <https://doi.org/10.1002/per.1976>.
- Sinha, A.K. and Jain, A.K. (2004) 'Emotional intelligence: imperative for the organizationally relevant outcomes', *Psychological Studies*, Vol. 49, Nos. 2–3, pp.81–96.

- Sjöberg, L., Littorin, P. and Engelberg, E. (2005) 'Personality and emotional intelligence as factors in sales performance', *Scandinavian Journal of Organizational Theory and Practice*, Vol. 15, No. 1, pp.21–37.
- Sonnentag, S. and Frese, M. (2002) 'Performance concepts and performance theory', in Sonnentag, S. (Ed.): *Psychological Management of Individual Performance*, pp.1–25, John Wiley & Sons, Ltd., New Jersey.
- Sosik, J.J. and Megerian, L.E. (1999) 'Understanding leader emotional intelligence and performance: the role of self-other agreement on transformational leadership perceptions', *Group & Organization Management*, Vol. 24, No. 3, pp.367–390 [online] <https://doi.org/10.1177/1059601199243006>.
- Stanhope, D.S. and Surface, E.A. (2014) 'Examining the incremental validity and relative importance of specific cognitive abilities in a training context', *Journal of Personnel Psychology*, Vol. 13, No. 3, pp.146–156 [online] <https://doi.org/10.1027/1866-5888/a000116>.
- Sy, T., Tram, S. and O'Hara, L.A. (2006) 'Relation of employee and manager emotional intelligence to job satisfaction and performance', *Journal of Vocational Behavior*, Vol. 68, No. 3, pp.461–473 [online] <https://doi.org/10.1016/j.jvb.2005.10.003>.
- Talarico, J.F., Metro, D.G., Patel, R.M., Carney, P. and Wetmore, A.L. (2008) 'Emotional intelligence and its correlation to performance as a resident: a preliminary study', *Journal of Clinical Anesthesia*, Vol. 20, No. 2, pp.84–89 [online] <https://doi.org/10.1016/j.jclinane.2007.12.008>.
- Tett, R.P. and Burnett, D.D. (2003) 'A personality trait-based interactionist model of job performance', *Journal of Applied Psychology*, Vol. 88, No. 3, pp.500–517 [online] <https://doi.org/10.1037/0021-9010.88.3.500>.
- Thelwell, R.C., Lane, A.M., Weston, N.J.V. and Greenlees, I.A. (2008) 'Examining relationships between emotional intelligence and coaching efficacy', *International Journal of Sport and Exercise Psychology*, Vol. 6, No. 2, pp.224–235 [online] <https://doi.org/10.1080/1612197X.2008.9671863>.
- Toops, H.A. (1944) 'The criterion', *Educational and Psychological Measurement*, Vol. 4, No. 1, pp.271–297.
- Vahidi, M., Namdar, H. and Bostanabad, M.A. (2016) 'The relationship between emotional intelligence and job satisfaction among nurses in Accra', *Scientifica*, pp.1–5 [online] <https://doi.org/10.1155/2016/9547038>.
- Valentine, J.C., Pigott, T.D. and Rothstein, H.R. (2010) 'How many studies do you need?', *Journal of Educational and Behavioral Statistics*, Vol. 35, No. 2, pp.215–247 [online] <https://doi.org/10.3102/1076998609346961>.
- Van Dyne, L., Cummings, L.L. and McLean Parks, J. (1995) 'Extra-role behaviors: in pursuit of construct and definitional clarity (a bridge over muddied waters)', *Research in Organizational Behavior*, Vol. 17, No. 1, pp.215–285.
- Van Rooy, D.L. and Viswesvaran, C. (2004) 'Emotional intelligence: a meta-analytic investigation of predictive validity and nomological net', *Journal of Vocational Behavior*, Vol. 65, No. 1, pp.71–95 [online] [https://doi.org/10.1016/S0001-8791\(03\)00076-9](https://doi.org/10.1016/S0001-8791(03)00076-9).
- Van Rooy, D.L., Viswesvaran, C. and Pluta, P. (2005) 'An evaluation of construct validity: what is this thing called emotional intelligence?', *Human Performance*, Vol. 18, No. 4, pp.445–462 [online] https://doi.org/10.1207/s15327043hup1804_9.
- Verbeke, W.J., Belschak, F.D., Bakker, A.B. and Dietz, B. (2008) 'When intelligence is (dys)functional for achieving sales performance', *Journal of Marketing*, Vol. 72, No. 4, pp.44–57 [online] <https://doi.org/10.1509/jmkg.72.4.44>.
- Viechtbauer, W. (2017) *Package "metafor"* [online] <https://cran.r-project.org/web/packages/metafor/metafor.pdf> (accessed 8 August 2019).

- Viswesvaran, C. (2001) 'Assessment of individual job performance: a review of the past century and a look ahead', in Neil, A., Ones, D.S., Sinangil, H.K. and Viswesvaran, C. (Eds.): *Handbook of Industrial, Work and Organizational Psychology. Volume 1. Personnel Psychology*, pp.110–126, Sage Publications, London.
- Viswesvaran, C. and Ones, D.S. (2002) 'Perspectives on models of job performance', *International Journal of Selection and Assessment*, Vol. 8, No. 4, pp.216–226 [online] <https://doi.org/10.1111/1468-2389.00151>.
- Viswesvaran, C., Ones, D.S. and Schmidt, F.L. (1996) 'Comparative analysis of the reliability of job performance ratings', *Journal of Applied Psychology*, Vol. 81, No. 5, pp.557–574 [online] <https://doi.org/10.1037/0021-9010.81.5.557>.
- Viswesvaran, C., Schmidt, F.L. and Ones, D.S. (2005) 'Is there a general factor in ratings of job performance? A metaanalytic framework for disentangling substantive and error influences', *Journal of Applied Psychology*, Vol. 90, pp.108–131 [online] <https://doi.org/10.1037/0021-9010.90.1.108>.
- Vratskikh, I., Al-Lozi, M. and Maqableh, M. (2016) 'The impact of emotional intelligence on job performance via the mediating role of job satisfaction', *International Journal of Business and Management*, Vol. 11, No. 2, p.69 [online] <https://doi.org/10.5539/ijbm.v11n2p69>.
- Walter, F., Humphrey, R.H. and Cole, M.S. (2012) 'Unleashing leadership potential: toward an evidence-based management of emotional intelligence', *Organizational Dynamics*, Vol. 41, No. 3, pp.212–219 [online] <https://doi.org/10.1016/j.orgdyn.2012.03.002>.
- Webb, C.A., Schwab, Z.J., Weber, M., DelDonno, S., Kipman, M., Weiner, M.R. and Killgore, W.D.S. (2013) 'Convergent and divergent validity of integrative versus mixed model measures of emotional intelligence', *Intelligence*, Vol. 41, No. 3, pp.149–156 [online] <https://doi.org/10.1016/j.intell.2013.01.004>.
- Welbourne, T.M. and Johnson, D.E. (1998) 'The role-based performance scale: validity analysis of a theory-based measure', *Academy of Management Journal*, Vol. 41, No. 5, pp.540–555 [online] <https://doi.org/10.5465/256941>.
- Wherry, R.J. (1957) 'The past and future of criterion evaluation', *Personnel Psychology*, Vol. 10, No. 1, pp.1–5.
- Whitman, D.S., Van Rooy, D.L., Viswesvaran, C. and Alonso, A. (2008) 'The susceptibility of a mixed model measure of emotional intelligence to faking: a Solomon four-group design', *Psychology Science Quarterly*, Vol. 50, No. 1, pp.44–63.
- Wilderom, C.P.M., Hur, Y., Wiersma, U.J., Van Den Brg, P.T. and Lee, J. (2015) 'From manager's emotional intelligence to objective store performance: through store cohesiveness and sales-directed employee behavior', *Journal of Organizational Behavior*, Vol. 36, pp.825–844 [online] <https://doi.org/10.1002/job.2006>.
- Wong, C.S. and Law, K.S. (2002) 'The effects of leader and follower emotional intelligence on performance and attitude: an exploratory study', *Leadership Quarterly*, Vol. 13, No. 3, pp.243–274 [online] [https://doi.org/10.1016/S1048-9843\(02\)00099-1](https://doi.org/10.1016/S1048-9843(02)00099-1).
- Wu, Y-C. (2011) 'Job stress and job performance among employees in the Taiwanese finance sector: the role of emotional intelligence', *Social Behavior and Personality: An International Journal*, Vol. 39, No. 1, pp.21–31 [online] <https://doi.org/10.2224/sbp.2011.39.1.21>.
- Yao, Y., Wang, R. and Wang, K.Y. (2009) 'The influence of emotional intelligence on job performance: moderating effects of leadership', *2009 International Conference on Management Science & Engineering (16th)*, Vol. 16, pp.1155–1160.
- Yoke, L.B. and Panatik, S.A. (2015) 'Emotional intelligence and job performance among school teachers', *Asian Social Science*, Vol. 11, No. 13, pp.227–234 [online] <https://doi.org/10.5539/ass.v11n13p227>.
- Yozgat, U., Yurtkoru, S. and Bilginoğlu, E. (2013) 'Job stress and job performance among employees in public sector in istanbul: examining the moderating role of emotional intelligence', *Procedia – Social and Behavioral Sciences*, Vol. 75, pp.518–524 [online] <https://doi.org/10.1016/j.sbspro.2013.04.056>.

- Yu, Q. and Yuan, D-H. (2008) 'The impact of the emotional intelligence of employees and their manager on the job performance of employees', *Acta Psychologica Sinica*, Vol. 40, No. 1, pp.74–83.
- Zeidner, M., Matthews, G. and Roberts, R.D. (2004) 'Emotional intelligence in the workplace: a critical review', *Applied Psychology*, Vol. 53, No. 3, pp.371–399 [online] <https://doi.org/10.1111/j.1464-0597.2004.00176.x>.
- Zeidner, M., Roberts, R.D. and Matthews, G. (2009) *What We Know About Emotional Intelligence: How it Affects Learning, Work, Relationships and Our Mental Health*, MIT Press, Cambridge.