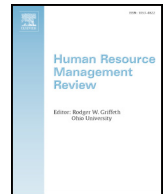


Contents lists available at [ScienceDirect](#)

Human Resource Management Review

journal homepage: www.elsevier.com/locate/humres

The Advantages and Limitations of Using Meta-analysis in Human Resource Management Research

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ARTICLE INFO

Available online xxxx

Keywords:

Meta-analysis
Advantages
Limitations
Selection of studies
Validity
Small sample sizes
Inappropriate inferences

ABSTRACT

This article provides an introduction to the special issue titled “Using meta-analysis to advance research in human resource management.” It begins by defining meta-analysis and considering the advantages and limitations of using this method in HRM research. For instance, we argued that meta-analysis is a valuable tool because (a) it provides a better estimate of the relation that exists in the population than single studies, (b) the estimates are more precise because there is an increased amount of data and statistical power, (c) hypothesis testing and biases associated with publications can be examined, and (d) it helps resolve inconsistencies in research, and identifies potential moderating or mediating variables. However, we also maintained that there are a number of limitations associated with the method. For example, the results of meta-analysis may be limited by the (a) selection of an incomplete set of studies, (b) inclusion of studies that lack internal, external, construct, and statistical conclusion validity, (c) presence of studies with small sample sizes, and (d) heterogeneity of methods used in studies that may lead to erroneous inferences. Finally, the article presents a brief review of the studies included in the special issue.

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1. Introduction

Interest in understanding behavior in organizations can be traced to Aristotle's discussion of leadership in the 4th century BCE, and many of the books written on organizations in the late 1800s (e.g., [Max Weber's book on “The Protestant Ethic and the Spirit of Capitalism”, 1864](#)). However, most of the empirical research in Human Resource Management (HRM) and Organizational Behavior (OB) emerged with Frederick Taylor's Scientific Management Theory in the early 1900s ([Taylor, 1914](#)). Subsequently, we have amassed a considerable amount of research on a wide range of theories and topics (e.g., motivation, job design, compensation, job attitudes, leadership, selection).

Given the large number of empirical studies in our field, researchers have started combining the results of research in order to assess the degree to which research supports our theories, and enhances our understanding of behavior in organizations. For example, researchers are increasingly using meta-analysis to aggregate the results of empirical studies on key organizational

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phenomena (e.g., recruitment, selection, training, job attitudes). Meta-analysis can be defined as a set of statistical procedures designed to accumulate research results across studies in order to estimate the relations between variables in the population as a whole (Glass, 1977). A key assumption of this approach is that each study provides an estimate of the relation between variables in the population, and when results across studies are aggregated, we gain a better estimate of the relation in the population than if we used only a single study (Bobko & Stone-Romero, 1998).

Meta-analyses have been conducted primarily in the social sciences, especially psychology, but are also widely used in biology and medicine. To date, HRM and OB (hereinafter referred to as HRM) researchers published meta-analyses on a number of important topics including (a) recruitment and job choice (e.g., Kristof-Brown, Zimmerman, & Johnson, 2005; McEvoy & Cascio, 1985), (b) selection and assessment (e.g., Barrick & Mount, 1991; Ones, Dilchert, Viswesvaran, & Judge, 2007), (c) training, (e.g., Alliger, Tannenbaum, Bennett, Traver, & Shotland, 1997; Bennett, Edens, & Bell, 2003), (d) performance appraisal (e.g., Harris & Schaubroeck, 1998), and (e) compensation (e.g., Judge, Piccolo, Podsakoff, Shaw, & Rich, 2010; Williams, McDaniel, & Nguyen, 2006). Apart from these topics, articles have also presented results of meta-analyses on HR Strategy, turnover, and other organizational outcomes (e.g., Combs, Liu, Hall, & Ketchen, 2006; Griffeth, Hom, & Gaertner, 2000). Moreover, some recent articles conveyed results of meta-analyses on issues associated with diversity and unfair discrimination in the employment process (e.g., Hosoda, Stone-Romero, & Coats, 2003; Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013). Researchers also published a number of articles on methods issues associated with meta-analysis (e.g., Aguinis, Pierce, Bosco, Dalton, & Dalton, 2014; Bobko & Stone-Romero, 1998; Schmidt & Hunter, 2014; Spector, 2006).

Given the widespread use of meta-analysis in our field, the primary purposes of this special issue are to advance research in the field of HRM by (a) presenting reviews of the existing meta-analyses in our field, and suggesting topics for future meta-analyses, (b) relaying the results of meta-analysis on several key topics (e.g., work-related stress, collective turnover, employee engagement, the relation between HR practices and organizational performance), and (c) considering strategies that can be used to improve the methods for conducting meta-analysis. Thus, in the sections that follow we discuss the advantages and limitations of using meta-analysis to accumulate the results of empirical research, and provide an overview of the articles in the special issue. It merits noting that our review of the advantages and limitations of meta-analysis is not meant to be exhaustive, and includes only a cursory evaluation of the issues. More thorough reviews of the benefits and shortcomings of this method can be found in Bobko and Stone-Romero (1998), Murphy (2017), and Ones, Viswesvaran, & Schmidt (2017).

2. Advantages of Meta-analysis

A number of researchers have argued that meta-analysis is a valuable tool for enhancing our understanding of organizational phenomena, and assessing the degree to which research supports theoretically based hypotheses (Ones et al., 2017; Schmidt & Hunter, 2014). For instance, researchers maintained that, in many cases, the results of meta-analysis can provide better estimates of the relations that exist in the population than single studies (Schmidt & Hunter, 2014). In addition, the precision and accuracy of estimates can be improved because the increased amount of data used in a meta-analysis provides more statistical power to detect effects than separate independent studies. Furthermore, hypothesis testing can be applied on summary estimates, and the presence of publication bias can be assessed. Apart from these benefits, meta-analysis also helps researchers resolve inconsistencies in research findings, and enables them to identify moderating or mediating variables that may explain the reasons for these discrepancies.

For example, researchers in the fields of HRM have conducted numerous studies on the relation between job satisfaction and performance in organizations, and results of much of that research have been contradictory (e.g., Judge, Thoresen, Bono, & Patton, 2001). As a result, researchers typically argued that we need more research to examine this relation, but conducting additional studies does not answer the question about the relation or examine the conditions under which job satisfaction is or is not related to performance. However, a review of this relation by Judge et al. (2001) found that in some studies there were small or no relations between satisfaction and performance, and in other studies there was a reciprocal relation between these two variables. Still other studies indicated that the relation between satisfaction and performance was moderated by other variables including performance-based compensation, job complexity, and individual self-esteem. Thus, there was a great deal of uncertainty in the research literature about the relation between these two important variables.

In order to resolve this uncertainty, Judge et al. (2001) conducted a meta-analysis of 254 studies on the satisfaction-performance relation with an $N = 54,451$. The results of their analysis revealed an uncorrected weighted mean correlation between satisfaction and performance of 0.18, and a corrected mean correlation of 0.30. It merits noting that the uncorrected mean was small, but researchers argued that most effect sizes in organizational research are small (Aguinis, Pierce, Bosco, Dalton, & Dalton, 2014). Apart from the effect size, Judge et al. (2001) also found that job complexity moderated the relation between satisfaction and performance. In particular, the results indicated that when jobs were highly complex, satisfaction was positively related to performance, but when there was low job complexity there was no relation between the variables.

Thus, one advantage of conducting a meta-analysis is that researchers can identify key moderating variables that may influence the nature of a relation between variables. Adding moderating variables is useful because it helps explain the inconsistencies found in previous research. Therefore, based on the results of the Judge et al. (2001) meta-analysis and a qualitative review, the researchers developed a new integrated model of the satisfaction-performance relation that included moderating variables such as performance-reward contingencies, job characteristics, need for achievement, and mediating variables including task success, achievement, task self-efficacy, and positive mood. As a result, one important advantage of meta-analysis is that it can help

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