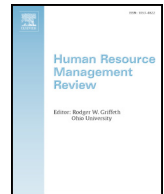


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Collective assessment of the human resources management field: Meta-analytic needs and theory development prospects for the future☆

Shanna R. Daniels, Gang Wang, Diane Lawong, Gerald R. Ferris*

Florida State University, United States

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ABSTRACT

The other articles in this special issue of *Human Resource Management Review* present meta-analyses of specific topic areas, or articles on methodological issues associated with meta-analyses, within the human resources management field. Ours is a bit different in that we do not present actual meta-analytic results, but instead conduct a thorough review of the field in order to identify areas where meta-analyses have not been conducted. Then, we discuss why such analyses have not been provided, suggestions for how we might like to see research proceed in such areas, and also implications for theory development in these areas of the field. We conclude our paper with some additional thoughts on issues to keep in mind as we seek to utilize meta-analysis to its fullest potential, and thus yield the best results possible.

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Meta-analysis is a formal procedure for cumulating research results across studies, thus providing a more accurate picture of the true relationships among scientific phenomena. This technique has been around for nearly 40 years, it has weathered criticisms and controversies during that time, and through all of that, meta-analysis not only has survived but also thrived across numerous scholarly disciplines. Meta-analysis is used in fields including medicine and biological sciences, as well as fields of education, psychology, sociology, to name a few.

Our interest in this special issue of *Human Resource Management Review* is the application and results of meta-analysis in the Human Resources Management (HRM) field, as we see in the articles published in this special issue. Our article has a slightly different focus and set of objectives. We seek to identify areas of the HRM field where meta-analyses have been conducted sparingly if at all, and as we identify those areas, we also attempt to provide reasons for such lack of use, as well as what might have been the consequences of this lack of meta-analytic application. Finally, embedded in our analysis and conclusions are the implications of our meta-analytic findings for theory development in both well-represented and under-represented areas of the HRM field. However, we first begin with a brief historical development of the meta-analysis technique and its intended contributions.

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* Corresponding author at: Department of Management, College of Business, Florida State University, 821 Academic Way, P.O. Box 3061110, Tallahassee, FL 32306-1110, United States.

E-mail address: gferris@fsu.edu (G.R. Ferris).

1. History and background of meta-analysis

The set of research techniques we know as “meta-analysis” has its origins in the 1970s, and is credited to the significant work of both Glass (1976) and Schmidt and Hunter (1977), who sought to cumulate results across a large body of research studies. In the four and a half decades since its inception, meta-analysis has grown into a very popular method of treating data in a wide variety of fields from the social sciences to the physical sciences (e.g., Baur, Ellen, DeOrtentis, Buckley, & Ferris, 2013). The term “meta-analysis” was coined by Gene V. Glass in an article where he referred to meta-analysis as the “analysis of analyses,” which he described as “the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings” (Glass, 1976, p. 3). Glass argued that there was a “complex and methodological problem” in research then that precluded scholars from deriving a clear understanding from a large group of studies (Glass, 1976, p. 8), and he came up with this realization through his examination of another scholar's review of psychotherapy studies (Smith & Glass, 1977). Taking serious issue with the methods employed by that other scholar, Glass believed there was a need for a more formalized method to review prior research, stimulating his development of meta-analysis.

John E. Hunter and Frank L. Schmidt also were dissatisfied with the statistical tools used to review prior research. Working independently from Glass in the 1970s, Hunter and Schmidt developed their own methods of meta-analysis. Their objective was to create a method of data analysis that could be applied across a sample of studies, and produce results that would “permit validity generalization to new settings without carrying out a validation study of any kind” (Schmidt & Hunter, 1977, p. 529).

Prior to the development of meta-analysis, most reviews were conducted in a narrative and subjective manner, and typically represented one individual's views on what past research had proven and where future research should be directed, with rarely any empirical support. Thus, the first meta-analysis served the major purpose of formulating and synthesizing a generalizable statement about past research. Meta-analysis has enabled the “cleaning up and making sense” of research literature through a large-scale empirical evaluation (Hunter & Schmidt, 2004, p. 21). Meta-analysis provided the ability to make generalized statements about prior research that were supported by true statistical testing, thus creating a greater comprehension of accumulated knowledge, and a good sense of what we know and do not know.

Although by no means a principal driving force behind the development of meta-analysis, there has been debate concerning whether meta-analysis can be used for the development of new theory. There is no doubt that the generalizable statements resulting from a meta-analysis can represent a good starting point for new theory development. However, neither Smith and Glass (1977) nor Schmidt and Hunter (1977) used their meta-analysis techniques to develop new theory. Hunter and Schmidt discussed meta-analysis and its role in theory development by stating that “the results of meta-analysis are indispensable for theory construction; but theory construction itself is a creative process distinct from meta-analysis” (Hunter & Schmidt, 2004, p. 22).

2. Review and meta-analytic needs for human resources management research

Significant advances in the field of human resources management research have been documented by way of several meta-analyses that have been conducted (e.g., Gonzalez-Mulé, Mount, & Oh, 2014; Van Iddekinge, Roth, Raymark, & Odle-Dusseau, 2012; Heidemeier & Moser, 2009; Byron & Khazanchi, 2012). Although, scientific knowledge has increased in the topic areas of staffing, human resource development, and performance evaluation, there are fewer meta-analyses on topics that include compensation and rewards, withdrawal, and strategic human resource management. A goal of this discussion is to highlight HRM topic areas where there has been and continues to be a substantial number of meta-analyses conducted, and identify areas where there has been little movement on a topic. Bringing to the forefront those topic areas that continue to receive much attention, and those that have received much less treatment, will guide HRM researchers on future directions for the field. The end goal of any research program is to advance knowledge and to acknowledge where research should be going for the future.

In light of this concern, it seems reasonable to address questions such as the following: What are the reasons where few if any meta-analyses have been done in such areas? Are there too few studies published to accurately interpret the meta-analysis? Is there declining research interest in the topic over time and currently? Are there topic areas where a single meta-analysis might have been done many years ago, and the effect of that meta-analysis was to effectively shut down research on that topic, as Humphrey (2011) argued happened to the job design area after the publication of the Fried and Ferris (1987) meta-analysis, or the Iaffaldano and Muchinsky (1985) meta-analysis did for the performance-satisfaction area?

Our purposes for reviewing the topic areas are to: (a) provide a description of topical areas that have received the most and least, as well as increased and decreased, attention over the past forty years; (b) describe these results in light of current HRM trends; (c) discuss implications for the field of HRM research and theory development, and propose directions for future research.

Table 1
Human Resource Management (HRM)

HRM topic area	Number of studies
Strategic HRM	11
Staffing (both internal and external, and including topics such as promotions, succession, recruitment, and selection)	78
Performance evaluation	24
Compensation and rewards	9
Development of human resources (including training, socialization, and mentoring)	34
Organizational withdrawal (including turnover and absenteeism)	11

Table 2
Meta analyses by topic.

<i>Staffing (78)</i>	
1. Arthur et al. (2006)	40. Meriac et al. (2008)
2. Arthur et al. (2003)	41. Morris et al. (2015)
3. Barrick et al. (2009)	42. Nathan & Alexander (1988)
4. Berry et al. (2007)	43. Ng and Feldman (2009)
5. Berry et al. (2010)	44. Nye et al. (2012)
6. Bertua et al. (2005)	45. O'Boyle et al. (2011)
7. Bliesener (1996)	46. Ones & Viswesvaran (1998)
8. Brannick (2001)	47. Ones et al. (1996)
9. Chapman et al. (2005)	48. Ones et al. (1993)
10. Chen et al. (2001)	49. Ones et al. (2003)
11. Christian et al. (2010)	50. Phillips (1998)
12. Conway et al. (1995)	51. Premack & Wanous (1985)
13. Cortina et al. (2000)	52. Quiñones et al. (1995)
14. Courtright et al. (2013)	53. Robertson & Downs (1989)
15. De Corte et al. (2007)	54. Roth et al. (2001)
16. Dean et al. (2008)	55. Roth et al. (2005)
17. Dudley et al. (2006)	56. Roth et al. (2003)
18. Earnest et al. (2011)	57. Roth et al. (2014)
19. Gaugler et al. (1987)	58. Roth et al. (2008)
20. Gonzalez-Mulé et al. (2014)	59. Rothstein et al. (1990)
21. Hausknecht et al. (2004)	60. Rottinghaus et al. (2003)
22. Hoffman et al. (in press)	61. Russell et al. (1994)
23. Huffcutt and Arthur (1994)	62. Sackett & Schmitt (2012)
24. Huffcutt & Roth (1998)	63. Salgado et al. (2003)
25. Huffcutt et al. (1996)	64. Schmidt & Rader (1999)
26. Huffcutt et al. (2001)	65. Schmitt et al. (1984)
27. Hurtz and Donovan (2000)	66. Shaffer & Postlethwaite (2012)
28. Joseph & Newman (2010)	67. Sheu et al. (2010)
29. Joseph et al. (2015)	68. Staggs et al. (2007)
30. Kanfer et al. (2001)	69. Su et al. (2009)
31. Kuncel et al. (2013)	70. Tsabari et al. (2005)
32. Lang et al. (2010)	71. Uggerslev et al. (2012)
33. Larson et al. (2002)	72. Van Iddekinge et al. (2011)
34. Levashina et al. (2014)	73. Van Iddekinge et al. (2012)
35. Liu et al. (2014)	74. Wanberg et al. (in press)
<i>Staffing (78, continued)</i>	
36. Mabe & West (1982)	75. Whetzel et al. (2008)
37. McDaniel et al. (2007)	76. Wiesner & Cronshaw (1988)
38. McDaniel et al. (2001)	77. Woehr & Arthur (2003)
39. McDaniel et al. (1994)	78. Wright et al. (1989)
<i>Development of Human Resources (34)</i>	
1. Allen et al. (2004)	18. Mesmer-Magnus & Viswesvaran (2010)
2. Alliger et al. (1997)	19. Morrow et al. (1997)
3. Arthur et al. (1998)	20. Ng et al. (2005)
4. Arthur et al. (2003)	21. Ng & Feldman (2010a)
5. Bauer et al. (2007)	22. Ng & Feldman (2010b)
6. Blume et al. (2010)	23. Roch et al. (2012)
7. Burke & Day (1986)	24. Saks et al. (2007)
8. Callahan et al. (2003)	25. Salas et al. (2008)
9. Carlson & Schmidt (1999)	26. Salas et al. (2007)
10. Collins and Holton (2004)	27. Sitzmann et al. (2008)
11. Colquitt et al. (2000)	28. Sitzmann et al. (2008)
12. Deshpande & Viswesvaran (1992)	29. Sitzmann et al. (2006)
13. Goertz et al. (2014)	30. Taylor et al. (2005)
14. Hartnell et al. (2011)	31. Taylor et al. (2009)
15. Jones et al. (in press)	32. Tharenou et al. (2007)
16. Kalinoski et al. (2013)	33. Theeboom et al. (2014)
17. Keith & Frese (2008)	34. Wanous et al. (1992)
<i>Performance Evaluation (24)</i>	
1. Bommer et al. (1995)	13. Murphy & Balzer (1989)
2. Cawley et al. (1998)	14. Murphy et al. (1986)
3. Conway & Huffcutt (1997)	15. Pichler (2012)
4. Conway et al. (2001)	16. Sackett & DuBois (1991)
5. Harari et al. (2015)	17. Smither et al. (2005)
6. Harris & Schaubroeck (1988)	18. Stajkovic & Luthans (1997)
7. Heidemeier and Moser (2009)	19. Stajkovic & Luthans (2003)

(continued on next page)

Table 2 (continued)

<i>Performance Evaluation (24)</i>	
8. Heneman (1986)	20. Sutton et al. (2013)
9. Jawahar & Willams (1997)	21. Viswesvaran et al. (1996)
10. Kluger & DeNisi (1996)	22. Viswesvaran et al. (2002)
11. Kraiger & Ford (1985)	23. Viswesvaran et al. (2005)
12. McDaniel et al. (1988)	24. Woehr & Huffcutt (1994)
<i>Compensation and Benefits (9)</i>	
1. Byron and Khazanchi (2012)	6. Tosi et al. (2000)
2. Cohen and Gattiker (1994)	7. Wiersma (1992)
3. Deci et al. (1999)	8. Williams et al. (2007)
4. Garbers and Konradt (2014)	9. Williams et al. (2006)
5. Jenkins et al. (1998)	
<i>Organizational Withdrawal (11)</i>	
1. Berry et al. (2012)	7. Martocchio et al. (2000)
2. Cotton and Tuttle (1986)	8. McEvoy and Cascio (1985)
3. Griffeth et al. (2000)	9. Mitra et al. (1992)
4. Heavey et al. (2013)	10. Steel & Griffeth (1989)
5. Hom et al. (1992)	11. Zimmerman and Darnold (2009)
6. Koslowsky et al. (1997)	
<i>Strategic Human Resource Management (11)</i>	
1. Butts et al. (2013)	7. Park & Shaw (2013)
2. Combs et al. (2006)	8. Rabl et al. (2014)
3. Crook et al. (2011)	9. Rodgers & Hunter (1991)
4. DeGroot and Kiker (2003)	10. Rodgers et al. (1993)
5. Hancock et al. (2013)	11. Subramony (2009)
6. Jiang et al. (2012)	

Note. References of the studies in this table are reported in the Appendix. To identify the above meta-analyses, we searched databases of PsycINFO, EBSCO, ABI/Inform, and Google Scholar using the combination of the key constructs in Table 1 and meta-analysis, synthesis, systematic, and review. In addition, we also manually searched eighteen top journals in management and applied psychology: *Journal of Management*, *Journal of Applied Psychology*, *Personnel Psychology*, *Academy of Management Journal*, *Organization Science*, *Administrative Science Quarterly*, *Academy of Management Review*, *Organizational Behavior and Human Decision Processes*, *Psychological Bulletin*, *Leadership Quarterly*, *Journal of Organizational Behavior*, *Journal of Occupational and Organizational Psychology*, *Human Performance*, *Human Resource Management*, *Human Resource Development Quarterly*, *Journal of Vocational Behavior*, *Work & Stress*, and *Small Group Research*.

By doing so, we hope to encourage researchers to conduct additional primary studies, and better quality studies on neglected HRM topics areas, conduct more meta-analyses on HRM topics, and conduct second-order meta-analyses on HRM topic areas that have been studied the most.

To answer the questions included above, we conducted an extensive review of the major topic areas in the HRM field to assess areas where meta-analysis had been neglected or absent from the literature, as well as contrasting that with areas where meta-analysis had been used to an appropriate degree. When categorizing the major HRM topic areas, we developed broad, but representative categories, knowing that there would be found sub-topic areas within each of the broad headings. Those broad, and generally agreed upon, headings we came up with are as follows (see Table 1): Strategic HRM, Staffing (both internal and external, and including topics like promotions, succession, recruitment, and selection), Performance Evaluation, Compensation and Rewards, Development of Human Resources (including training, socialization, and mentoring), and Organizational Withdrawal (including turnover and absenteeism).

In addition, as Table 2 indicates, we identified 186 meta-analyses that span the HRM topic areas. To locate the meta-analyses, we searched the databases of PsycINFO, EBSCO, ABI/Inform, and Google Scholar using the combination of keywords and constructs in Table 1, and meta-analysis, synthesis, systematic, and review. Further, we also manually searched 18 top journals in management and applied psychology (please see the Appendix for the list of journals).

The findings from our review of the topic areas suggest that there is variability in the number of publications in each area (see Table 2). As we know, a meta-analysis is only feasible when there are a sufficient number of primary studies, thus it is plausible that the information in Table 2 reflects the lack of primary studies that have been conducted in a topic area. We organized the results of our review providing an overview of the trends regarding the six topic areas, including areas for which there is an upward trend, a downward trend, or no recognizable change. Table 2 highlights the results for a 40-year period for each topic area. Table 2 indicates the number of meta-analyses that have been conducted on topic areas published over the last 40 years (the number in parentheses indicates the number of articles for each topic).

2.1. Strategic HRM (11)

There have been a limited number of meta-analyses conducted on strategic human resources management over the past 40 years. Many articles on this topic are non-empirical, making a review in this case more appropriate than a meta-analysis

(DeGroot & Kiker, 2003). There has been a trend in this area such that researchers are examining a shift in how HR functions more as a strategic partner in organizations. Scholars have conducted research on services HR provides to employees, such as day care and elderly care to aid with employee work-life balance. As a result, there have not been sufficient primary studies done for an increase in meta-analyses (Butts, Casper, & Yang, 2013). There is also a time lag that makes it difficult to collect data on investment in human capital or changes in performance over time (Crook, Todd, Combs, Woehr, & Ketchen, 2011). Another consideration for the few meta-analyses in strategic HRM deals with the lack of access to specific information, such as salary, as well as knowledge, skills, abilities and other characteristics of tenure (Hancock, Allen, Bosco, McDaniel, & Pierce, 2013).

Future research on strategic HRM should investigate relationships among high performance work practices (HPWPs) and organizational performance (Combs, Yongmei, Hall, & Ketchen, 2006). Studies should include more moderating effects of environmental factors such as munificence and dynamism (Subramony, 2009). Furthermore, future meta-analyses on this topic should explore how the use of HPWPs and systems within organizations enhance human capital (Crook et al., 2011).

2.2. *Withdrawal* (11)

Most of the primary studies in the withdrawal topical area have focused primarily on turnover. There are very few meta-analyses on other withdrawal constructs such as absenteeism and lateness. There appear to be some definitional issues regarding what constitutes withdrawal. For example, some perceive lateness as having no organizational benefits like turnover, while others consider lateness the mildest form of turnover (Griffeth, Hom, & Gaertner, 2000). When discussed in the literature, lateness and absenteeism often are discussed as antecedents to turnover such as in the progression model (Berry, Lelchook, & Clark, 2012; Zimmerman & Darnold, 2009; Martocchio, Harrison, & Berkson, 2000).

With respect to other forms of withdrawal, there is a lack of attention to, or rather insufficient primary studies on, involuntary forms of organizational withdrawal. This suggests that it is potentially difficult to locate usable data (Berry et al., 2012). Many of the primary studies are conceptual in content, or are review articles, which is an obvious limitation for researchers who want to conduct meta-analyses on the topic (Zimmerman & Darnold, 2009). On the one hand, primary studies have not given as much attention to the other constructs (absenteeism and lateness) of organizational withdrawal. Yet, turnover is a topic with over 1000 studies completed in the last century (Hom, Caranikas-Walker, Prussia, & Griffeth, 1992; McEvoy & Cascio, 1985).

With respect to future directions on organizational withdrawal research, studies need to report more information on withdrawal and its relation to the following: (a) percentage difference between males and females (Cotton & Tuttle, 1986); (b) one's access to job availability (use of internet and social media in job search) (Griffeth et al., 2000); (c) characteristics of the environment such as unemployment rates (Zimmerman & Darnold, 2009; and (d) collective withdrawal at the unit and organizational level (Heavey, Holwerda, & Hausknecht, 2013; Hancock et al., 2013).

2.3. *Compensation and rewards* (9)

There have been less than 10 meta-analyses conducted on compensation and rewards in the HRM area. Several researchers argue that there are not enough primary research studies (Wiersma, 1992; Cohen & Gattiker, 1994; Garbers & Konradt, 2014) on the topic. Issues related to data collected from non-academic resources (Tosi, Werner, Katz, & Gomez-Mejia, 2000) to the complexity of pay structures and financial incentives (Jenkins, Gupta, Gupta, & Shaw, 1998) have been offered as to why there are so few primary studies in compensation.

Future research should consider using non-monetary forms of compensation, such as health care plans, vacations, and verbal recognitions (Williams, McDaniel, & Nguyen, 2006; Deci, Koestner, & Ryan, 1999), when conducting meta-analyses on compensation. Further, researchers should consider the incorporation of organizational justice and justice theories for perceived fairness (Williams, McDaniel, & Ford, 2007; Garbers & Konradt, 2014), and to consider why and to what extent financial incentives might affect individuals (Garbers & Konradt, 2014). Additional primary studies on the wage gap between genders and between other demographics such as race (Williams et al., 2006) will help give rise to meta-analyses in this area of compensation. Lastly, future meta-analyses should explore the relationship between dispositional traits and pay (Williams et al., 2006, 2007).

2.4. *Staffing* (78)

We can conclude that staffing is a topic that interests many researchers because of the vast number of primary studies conducted in the U.S. and abroad (Huffcutt & Arthur, 1994; Bliesener, 1996; Salgado, Anderson, Moscoso, Bertua, & De Fruyt, 2003; Bertua, Anderson, & Salgado, 2005). Constructs that are typically examined in staffing are hypothesized to correlate with other popular organizational outcomes such as: performance (Barrick, Shaffer, & DeGrassi, 2009), organizational withdrawal (Berry, Sackett, & Tobares, 2010; Ng & Feldman, 2010; Ones, Viswesvaran, & Schmidt, 2003; Van Iddekinge, Roth, Putka, & Lanivich, 2011), organizational culture (Uggerslev, Fassina, & Kraichy, 2012), and counterproductive work behaviors (Berry et al., 2010; Gonzalez-Mulé et al., 2014; Ng & Feldman, 2009). We offer two reasons for why there are numerous meta-analyses on the same topic in staffing. First, enough time has passed to where researchers have the need to update previous findings by conducting additional meta-analyses (Hurtz & Donovan, 2000; Berry, Sackett, & Landers, 2007). Second, there have been improvements in meta-analytic methodologies over the years, and perhaps since initial meta-analyses on staffing were conducted (Berry et al., 2007).

Researchers looking to advance knowledge in the staffing domain should consider future directions that examine race-by-sex differences and race-by-age-by-sex differences in physical abilities during selection for physically demanding occupations (Courtright, McCormick, Postlethwaite, Reeves, & Mount, 2013). Another future direction in the staffing area is to examine the degree of bias that self-presentation tactics introduce when interviewers rate specific constructs (Barrick et al., 2009). Lastly, additional research on probing and its impact on structured interview outcomes (Levashina, Hartwell, Morgeson, & Campion, 2014) will advance this area of staffing research.

2.5. Safety and employment legal issues (19)

Despite the critical importance of this topic area to organizations and the society at large, due to factors such as fatalities resulting from work place injuries, harassment law suits, unwanted publicity, negative effects on recruitment and retention of employees (Willness, Steel, & Lee, 2007; Christian, Wallace, Bradley, & Burke, 2009; Beus, Payne, Bergman, & Arthur, 2010; Clarke, 2010; Uehli et al., 2014), there are very few research studies about safety and employment legal issues. The bulk of the meta-analyses in this topic area were conducted between 2008 and 2015. Few meta-analyses were conducted before 2008, because research interest in this topic area did not emerge until two decades ago (Finkelstein, Burke, & Raju, 1995). Not enough primary research had been conducted for a meta-analytical review of the topic area, and the lack of a sizeable amount of empirical data from primary studies remains a roadblock for the production of meta-analyses in this topic area (Cantisano, Domínguez, & Depolo, 2008; Beus et al., 2010; Burke et al., 2011).

Future research should determine how person and situation factors interact to influence safety (Christian et al., 2009; Clarke, 2010). Much of the safety research lacks theory and clarity in conceptualizations of constructs. For example, safety performance sometimes refers to a metric for safety outcomes such as injuries per year, and at other times it refers to a metric for safety-related behaviors of employees (Christian et al., 2009). Most experimental work has focused on sexism probably due to the convenient access to women participants at universities, but more research should be done on the other forms of discrimination for which attributions to personal deservingness are not possible, such as hate crimes (Schmitt, Branscombe, Postmes, & Garcia, 2014). Furthermore, future research should explore the role of age, sex and race in weight discrimination (Vanhove & Gordon, 2014).

2.6. Development of human resources (34)

Much of the hindrances with conducting meta-analyses in this topic area include: (1) Difficulty in evaluating training (Alliger, Tannenbaum, Bennett, Traver, & Shotland, 1997), (2) not enough primary studies and small sample sizes (Colquitt, LePine, & Noe, 2000; Collins & Holton, 2004; Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007; Kalinoski et al., 2013), (3) research in some topics such as mentoring and socialization are still relatively new (Allen, Eby, Poteet, Lentz, & Lima, 2004; Ng & Feldman, 2009), and (4) organizations have just recently started to recognize the development of human resources as a strategic weapon in the battle for competitive advantage (Blume, Ford, Baldwin, & Huang, 2010).

The role of human resources in training and development has been explored a lot more than in other areas such as mentoring, coaching, and socialization. Given that there is a correlation between these topics and organizational outcomes, such as job performance, satisfaction, and organizational commitment (Allen et al., 2004; Bauer et al., 2007; Ng & Feldman, 2010), more research should be conducted in these areas. There is a need for longitudinal primary studies in order to track the usefulness of these training and socialization initiatives (Alliger et al., 1997). Future research should examine the role of technology in the socialization process (e.g., computer based versus face-to-face orientations; Bauer et al., 2007). The perceived barriers to implementing training in organizations should be investigated, followed by a focus on how to eliminate these barriers (Roch, Woehr, Mishra, & Kieszczyńska, 2012).

3. Why so few meta-analyses?

Meta-analyses require numerous methodological choices and judgment calls at each stage, from the research question to the interpretation of results. These choices and judgment calls are widely thought to affect the results and conclusions of meta-analyses (Aguinis, Dalton, Bosco, Pierce, & Dalton, 2011). It is possible that many primary studies do not provide adequate information such that they cannot be included in the meta-analyses conducted.

According to Murphy (2015), the best meta-analyses share three characteristics. First, they define the population they are designed to draw inferences about correctly, and they sample from that population carefully. Second, they include as many well-designed studies with reasonably large sample sizes as possible. Third, they will include sufficient numbers of studies (i.e., at least 25, and substantially more if there are good reasons to expect systematic moderators of the effect of the treatment) to provide a credible estimate of the variability in effect sizes. Although these are great recommendations for the best meta-analyses, the absence of this information can prevent scholars from extending research in certain domains. That is, without data that is credible and has the potential to be coded, this presents a limitation of existing research.

Our research for this paper revealed that there were topic areas where a single meta-analysis had been conducted many years ago, and essentially shut down research on the topic. According to Humphrey (2011) this was the case in the job design area after the publications of the Fried and Ferris (1987) meta-analysis. The results that emerged from the meta-analysis conducted by Fried and Ferris (1987) suggested Hackman and Oldham's (1980) job characteristics model (JCM) received modest support. This well

Table 3
Summary of meta-analyses published in strategic HRM area.

Article	Focal strategic HRM constructs	Consequences	Moderators	Theoretical frameworks
Butts et al. (2013)	Work-family support policy availability and use	Employee family-supportive organization perceptions; work-to-family conflict; work attitudes	Number of policies; % women; % married-cohabiting; % with dependents	Signaling theory; self-interest theory
Combs et al. (2006)	High performance work practices (HPWP) systems; individual HPWP practices	Organizational performance	Type of organizational performance (operational vs. financial); type of industries (manufacturing vs. service industries)	Strategic HRM theory
Crook et al. (2011)	Human capital	Organizational performance	Study characteristics (cross-sectional design vs. time-lagged design); type of human capital (specific human capital vs. general human capital); type of organizational performance (operational performance vs. global organizational performance)	Resource-based view
DeGroot (2003)	Employee health management programs	Employee job performance; absenteeism; job satisfaction; turnover	NA	NA
Hancock et al. (2013)	Collective employee turnover	Labor productivity; customer service; quality/safety; financial performance	Turnover rate; location; industry; organization size; job level; type of dependent variable	Cost-based perspective; human capital perspective; social capital perspective; optimal turnover perspective
Jiang et al. (2012)	Skills-enhancing, motivation-enhancing, and opportunity-enhancing HR systems	Human capital; employee motivation; voluntary turnover; firm operational outcomes; firm financial outcomes	NA	The behavioral perspective of HRM; human capital theory; the resource-based view of the firm
Park & Shaw (2013)	Turnover rates	Organizational performance	Turnover rate type; dimensions of organizational performance; employment systems; industry; region; unit of analysis; data structure; source of turnover rate information; role of turnover rate; hypothesized; journal quality; entity size	Human and social capital theories; organizational learning and control theories; cost–benefit theories
Rabl et al. (2014)	High performance work systems	Business performance	National culture; managerial discretion	National culture perspective
Rodgers and Hunter (1991)	Management by objectives (MBO)	Organizational productivity	Level of top-management commitment to MBO	Goal setting theory; participation in decision making perspective; objective feedback perspective
Rodgers et al. (1993)	Management by objectives (MBO)	Job satisfaction	Level of top-management commitment to MBO	Goal setting theory; participation in decision making perspective; objective feedback perspective
Subramony (2009)	Empowerment enhancing, motivation enhancing, and skill-enhancing HRM bundles	Firm performance	Type of firm performance; industry type; source of ratings	Systems theory

Table 4

Summary of meta-analyses published in organizational withdrawal area.

Article	Focal withdrawal constructs	Antecedents/correlates	Consequences	Moderators	Theoretical frameworks
Berry et al. (2012)	Voluntary lateness, absenteeism, and turnover	NA	NA	Inclusion in previous meta-analysis; type of measure (frequency, time lost, subjective, objective); voluntariness; industry	Independent forms; compensatory forms; alternate forms; spillover model; the progression of withdrawal model
Cotton and Tuttle (1986)	Turnover	External correlates (employment perceptions, unemployment rate, accession rate, and union presence); work-related correlates (pay, job performance, role clarity, task repetitiveness, overall job satisfaction, satisfaction with pay, satisfaction with work itself, satisfaction with co-workers, satisfaction with promotional opportunities, organizational commitment); personal correlates (age, tenure, gender, biographical information, education, marital status, number of dependents, aptitude and ability, intelligence, behavioral intentions, and met expectations)	NA	Year a study was published; white-collar employees; blue-collar employees; professional employees; nonprofessional employees; location (US vs. non-U.S.); manager samples; nonmanager samples; aggregate measures of turnover; nonservice industry; service industry	Not specifically mentioned
Griffeth et al. (2000)	Turnover	Demographic predictors (cognitive ability; education; training; marital status; kinship responsibilities; children; weighted application blank; race; sex; age; tenure); overall job satisfaction; met expectations; compensation (pay; pay satisfaction; distributive justice); leadership (supervisory satisfaction; leader-member-exchange); co-worker (work group cohesion; co-worker satisfaction); stress (role clarity; role overload; role conflict; overall stress); promotional chances; participation; instrumental communication; job content (job scope; routinization; work satisfaction; job involvement); external environment (alternative job opportunities; comparison of alternatives with present job); behavioral predictors (lateness; absenteeism; performance); organizational commitment; job search (search intentions; general job search scales; job search behaviors; job search methods); withdrawal	NA	Sample size; age; base rate deviation from 50%; turnover lag; gender (percent male); tenure; executives; military; nurses; lack of reward contingency	Not specifically mentioned

Heavey et al. (2013)	Collective turnover	cognitions (intention to quit; thinking of quitting; withdrawal cognitions; expected utility of withdrawal) HRM inducements and investments (benefits; dispute resolution; full-time %; high-commitment HR systems; internal mobility; participation-enhancing work design; relative pay; straight pay; variable pay; selection sophistication; skill requirements; staffing levels; staffing selectivity; training); HRM expectation-enhancing practices (downsizing %; electronic monitoring %; managerial oversight; routinization); shared attitudes toward the job and organization (commitment; job satisfaction; justice/fairness; turnover intentions); quality of work group and supervisory relations (climate; cohesiveness; supervisory relations; organizational citizenship behaviors; workforce diversity; age; workforce diversity; tenure); job alternative signals (alternative availability; average employee education; establishment age; size; site quality; unemployment rate); job embeddedness signals (average employee age; average employee tenure; experience concentration; female %; unionization %; union presence).		Proximal outcomes (absenteeism; counterproductivity; customer satisfaction; error/loss rates; production efficiency); distal outcomes (financial performance): operating profit, profit margin, return on assets, and return on equity; sales; sales efficiency; sales growth	For relationships with antecedents: general training vs. firm-specific training; perceptual internal mobility vs. actual mobility; multi-industry vs. single industry; group/subunit size vs. firm size; For relationships with consequences: proximal/distal outcome; within/between organization; job complexity; industry (median wage)	Not specifically mentioned
Hom et al. (1992)	Turnover	Job satisfaction; thoughts of quitting; search intentions; quit intentions; probability of alternatives	NA	Turnover base rate; measurement lag; military vs. civilian samples; national unemployment; nursing vs. nonnursing samples	Mobley, Horner, and Hollingsworth's (1978) model; Dalessio, Silverman, and Schuck's (1986) model; Bannister and Griffeth's (1986) model; Hom, Griffeth, and Sellaro's (1984) model	
Koslowsky et al. (1997)	Employee lateness	General job satisfaction; satisfaction with pay; satisfaction with promotion; satisfaction with coworkers; organizational commitment; sex; age; marital status; tenure	Absenteeism; performance; turnover intent; turnover	NA	The independence model; the compensation model; the spillover model; the progression model	
Martocchio et al. (2000)	Sickness absence	Lower back pain; lower back pain intervention	NA	Absence frequency vs. time lost measures; aggregation time; correspondence of aggregation period to the type of lower back pain being treated	Not applicable	
McEvoy and Cascio (1985)	Turnover	Job enrichment; realistic job preview	NA	Task complexity	Job design	
Steel and Griffeth (1989)	Turnover	Perceived alternatives	NA	National, regional, industry, and occupational unemployment rates	Perceptual estimates of labor-market prospects	
Zimmerman and Darnold (2009)	Voluntary turnover	Job performance; job satisfaction; intent to quit		Performance type; source of primary studies; nationality of sample; job type;	Mobley's (1977) model; Lee & Mitchell's (1994) unfolding model of turnover	

executed meta-analysis may in fact have had a quieting or chilling effect on the research in this topic. This also can be seen in the performance-satisfaction area regarding the meta-analysis conducted by Iaffaldano and Muchinsky (1985), which is consistent with 30 years of research on this topic, revealed that satisfaction and performance are only slightly related to each other. As such, the finding that these two variables are not highly correlated questioned the assumptions and future research endeavors of organizational scholars. Chapman and Chapman (1969) argued that performance – satisfaction relationship is an illusory correlation between two variables that most believe to be intuitively linked, but the meta-analysis by Iaffaldano and Muchinsky (1985) further confirmed decades of research on the topic and that the two variables are not related. In this way, there was a “chilling effect” in this topic area.

In the previous section, we identified three areas (i.e., strategic HRM, organizational withdrawal, and compensation and rewards) where only a few meta-analyses have been published, discussed potential causes of the lack of meta-analysis in these areas, and briefly alluded to some future research directions. In this section, we detail future research needs in each of the meta-analytically-deficient areas in hopes of stimulating more research endeavors and, thus, contributing to the flourishing of these important HRM areas.

3.1. Strategic HRM

Research on Strategic HRM concerns influences of HRM practices and policies and human capital resources on organizational outcomes (Ferris, Hochwarter, Buckley, Harrell-Cook, & Frink, 1999). As summarized in Table 3, researchers have meta-analyzed the relationships of high performance work practices (HPWP; e.g., management by objective, incentive compensation, training, information sharing, selective hiring and so on), collective turnover rates, human capital, employee health management programs, and work-family support policies with organizational- and individual level outcomes. Most of the published meta-analyses in this area examined organizational performance as the key outcome. Findings across the meta-analyses generally support the argument that HPWP, human capital, and supportive HRM policies are positively related to various indicators of firm performance or employee attitudes and job performance, and that collective turnover rates are negatively associated with firm performance.

Although the few published meta-analyses greatly contribute to our understanding of the impact of effective HRM practices and policies in organizations, we see the following future research needs in this area. First, while most research attention is paid to the degree to which different HPWP are used in organizations, the strategic alignment between strategic HRM and organizational strategy and among different HRM practices has been barely studied (Delery & Doty, 1996). A general assumption in strategic management is that lower-level strategies such as HRM strategies need to support higher-level strategies such as organizational-level competitive strategy, and that within the same level, different strategies need to support each other (Delery, 1998). Thus, to uncover the true impact of strategic HRM, we encourage future strategic HRM researchers to examine the strategic values of HRM in organizations.

More specifically, we think it is important to advance knowledge on to what extent and how strategic alignments between HRM practices and policies and organizational competitive strategy and among different HRM practices and policies may contribute to organizational success. Moreover, we think attention also should be paid to the alignment between HRM policies and practices and employees' needs, values, and preferences. For example, extensive use of training programs for mostly highly educated employees may not align with these employees' needs. In some cultures, employees may prefer seniority-based pay raises to merit-based pay raises (Rabl, Jayasinghe, Gerhart, & Kühlmann, 2014). Because strategic HRM is about ways of managing employees in organizations, it is necessary and important to bring employees into the equation.

Second, future research is needed to examine understudied and new strategic HRM practices and policies, and to theoretically link specific HRM practices and policies to specific organizational and individual outcomes. As shown in Table 3, HPWPs have received the most research attention in this area. To reveal the breadth of impact of strategic HRM practices and policies, it is important to know the effects of HRM practices and policies other than HPWPs on relevant organizational and individual outcomes. In fact, as legal and competitive environments change, organizations need to adapt existing HRM practices and policies or create new ones. For instance, as same-sex marriage becomes legal in most states in the U.S., it is necessary to study whether and how companies' HRM practices and policies on offering or extending benefits to same-sex domestic partners may affect various stakeholders, including homosexual employees, heterosexual employees, customers, and investors, and are ultimately reflected in firm financial performance.

Additionally, this area will benefit from future research that relies on theory to identify proximal outcomes associated with different strategic HRM practices and policies. Currently, almost all strategic HRM practices and policies are believed to directly contribute to organizational performance. Although this could be the case for some strategic HRM practices and policies (e.g., HPWP), other strategic HRM practices and policies (e.g., work-family supportive policies) may be more effective in influencing other organizational outcomes such as employee attitude and retention.

Last but not least, we suggest that researchers need to pay special attention to causality in this area of research. Even though meta-analytic evidence generally supports that strategic HRM practices and policies are positively associated with desirable organizational outcomes, we cannot rule out reverse causality. For example, although selective hiring could lead to better firm performance by securing scarce and unique human capital resources, it is also likely that more successful firms are better able to attract more highly qualified applicants than less successful firms and are, therefore, more selective. To better assess causality, we encourage future researchers to use of longitudinal research designs.

Table 5

Summary of meta-analyses published in compensation and rewards area.

Article	Focal compensation constructs	Antecedents/correlates	Consequences	Moderators	Theoretical frameworks
Byron and Khazanchi (2012)	Rewards	NA	Creative performance	Reward contingencies; performance feedback; choice-control; engagement information; task complexity	A new theoretical framework developed in the current study
Cohen and Gattiker (1994)	Income; pay satisfaction	NA	Organizational commitment	Industry sector; organization size; type of occupation; level in organizational hierarchy	Exchange theory; distributive justice
Deci et al. (1999)	Extrinsic rewards	NA	Intrinsic motivation	Reward contingencies; verbal rewards vs. tangible rewards; expected vs. unexpected tangible rewards; published vs. unpublished studies; time of assessment; interesting vs. boring tasks; informational vs. controlling verbal rewards	Cognitive evaluation theory
Garbers and Konradt (2014)	Individual financial incentives; team-based financial incentives	NA	Individual performance; team performance	Outcome type; task complexity; study setting; sample type; gender heterogeneity; team size	Expectancy theory; agency theory; goal setting theory; self-regulation theory; equity theory
Jenkins et al. (1998)	(Individual) financial incentives	NA	(Individual) performance	Performance type; study setting; task type; theoretical framework	Goal-setting theory, expectancy/reinforcement theory; cognitive evaluation theory
Tosi et al. (2000)	CEO pay	Firm performance; firm size	NA	NA	Agency theory; managerist perspective
Wiersma (1992) Williams et al. (2007)	Extrinsic rewards Compensation satisfaction dimensions (i.e., satisfaction with pay level, pay raises, benefit level, and pay structure and administration)	NA Amount of raise; employee performance; perceived pay-for-performance contingency; negative affectivity; employee cost for benefits; security satisfaction; promotion satisfaction; satisfaction with the company; age; gender; organizational tenure; education; salary grade; job tenure; job classification; wage or salary;	Intrinsic motivation Organizational commitment; turnover intentions	Measure of intrinsic motivation NA	Cognitive evaluation theory Equity theory
Williams et al. (2006)	Pay level satisfaction	Pay discrepancy; performance-reward contingency; age; marital status; gender; ethnicity; education; experience; job level; job tenure; organizational tenure; job autonomy; skill variety; task feedback; task identify; task significance; job scope; internal comparisons; external comparisons; general comparisons, pay level; pay raise percentage; distributive justice; procedural justice	Turnover intentions; absenteeism; voluntary turnover; performance	Type of performance measure; type of pay level satisfaction measure	Equity theory; discrepancy theory

3.2. Organizational withdrawal

Organizational withdrawal refers to employees' physical removal from the workplace, such as lateness, absenteeism, and turnover. There has been considerable research on various organizational withdrawal behaviors, perhaps because such behaviors are costly to organizations (Berry et al., 2012; Griffeth et al., 2000). Only a few meta-analyses have been published in this important field of research. As shown in Table 4, prior meta-analyses have examined numerous potential predictors of individual employee turnover behavior including job satisfaction, compensation, withdrawal cognition, stress, perceived alternatives, job performance, demographics, and so on. In a recent review, Heavey et al. (2013) meta-analyzed antecedents (e.g., HRM practices, quality of work group and supervisor relations, and share attitude toward the job and organization) of unit-level turnover rates. Moreover, meta-analysts have tested the potential moderating effects of various study characteristics such as sample nationality, job types, types of measure, national and regional unemployment rates, industry, sample size, and gender.

Nevertheless, we believe the following future research may further advance our understanding of organizational withdrawal. First, knowledge regarding the relative importance of various predictors of organizational withdrawal behaviors has theoretical and practical implications. As such, we think an important future research direction is to use meta-analytic structural equation modeling (MASEM) to simultaneously examine the relative sizes of effects of different predictors of organizational withdrawal behaviors, and test competing theoretical models (Bergh et al., 2014). Results of MASEM will help clarify theoretical debates and offer insight into where and how organizations should invest their limited and valuable resources to reduce costs related to organizational withdrawal behaviors (Zimmerman & Darnold, 2009).

Second, extending prior almost exclusive attention to predictors of individual employee withdrawal behaviors, particularly turnover behaviors, we argue that the literature might benefit from looking at “who” engages in organizational withdrawal behaviors, and the potential impact of such behaviors on co-workers and team morale. Given that employees contribute differently to organizational success and play different roles in organizational social networks, it stands to reason that some employees' withdrawal behaviors could be more detrimental than some other employees'. For example, a star employee's voluntary turnover may be more destructive or costly than an average employee's (Aguinis & O'Boyle, 2014). An employee who holds a central position in a social network at work may influence fellow co-workers to engage in the same withdrawal behaviors. Thus, breaking the common practice of treating withdrawal behaviors as default dependent variables, we suggest future research examine potential consequences of withdrawal behaviors by employees who play different roles in organizations.

Third, one general conclusion across the published meta-analyses is that the magnitude of the meta-analytic correlations of withdrawal behaviors, especially turnover, with hypothesized antecedents and correlates is relatively small. It is widely agreed that the relatively small effect sizes are partly due to dichotomization of withdrawal behaviors (e.g., turnover), and the relatively low base rate of withdrawal behaviors in organizations (e.g., Griffeth et al., 2000; Hom et al., 1992). As a potential remedy and theoretical extension, we suggest future research focus on the flip side of withdrawal behaviors. For example, future researchers may turn their attention to employee retention rather than turnover. In this way, a shift in theory development is to understand why employees decide to stay with their employers. Also, measures of retention such as organizational tenure tend to be continuous rather than dichotomous. We believe the change of focus raises new questions and offers practical implications on how organizations could proactively retain their employees.

3.3. Compensation and rewards

Compensation includes monetary and non-monetary (e.g., praise, recognition) rewards employees receive from their employers. Monetary rewards generally include base pay, benefits, and at-risk pay (e.g., individual-based incentives, team-based incentives, and organization-based incentives) (Gerhart & Rynes, 2003). Since employee compensation accounts for a substantial percentage of total costs for employers, the effects of employee compensation on employee motivation and performance have garnered attention from researchers and practitioners for a long time (e.g., Deci et al., 1999; Garbers & Konradt, 2014; Gupta & Shaw, 1998; Kohn, 1993; Pfeffer, 1998). There have been debates over the effects of extrinsic rewards (e.g., monetary rewards) on intrinsic motivation (e.g., Deci et al., 1999; Garbers & Konradt, 2014; Wiersma, 1992). Meta-analytic evidence based on lab experiments generally suggests that extrinsic rewards are detrimental for intrinsic motivation (Deci et al., 1999). However, some researchers questioned the generalizability of these findings and argued that financial incentives are effective in increasing employee motivation and performance in field settings (e.g., Garbers & Konradt, 2014; Gupta & Shaw, 1998). Largely reflecting the focus of research attention in this area, the published meta-analyses summarized in Table 5 have been focused on extrinsic rewards or financial incentives on intrinsic motivation, individual performance, and team performance as well as boundary conditions of these relationships. Two meta-analyses were focused on antecedents, correlates, and consequences of compensation satisfaction (Williams et al., 2007, 2006).

Looking ahead, we propose the following future research directions. To begin, we think it is important to understand whether and how compensation other than pay (e.g., benefits and non-monetary rewards) may affect employee work motivation, attitudes, and behaviors including but not limited to job performance, citizenship behavior, counterproductive behavior, and withdrawal behavior. With increased emphasis of psychological success and balance between work and family responsibilities, the role of employee benefits deserves special attention in organizational compensation practices (Heneman & Judge, 2000). As pressures for and costs of providing competitive benefits mount, there is a strong need for more research on what, when, and how benefits may or may not contribute to individual and team effectiveness (Williams, Malos, & Palmer, 2002). Similarly, we call for more research on understudied compensation practices such as organization-based incentives. For example, as an organization-based incentive, stock options have been widely used to compensate employees across the organizational hierarchy.

Although stock options have been extensively studied in the executive compensation literature, we have little knowledge of the incentive effects of this form of organization-based incentive on first-line employees and managers. In addition, we think future research is needed to study the total effects of a compensation package including base pay, benefits, and individual-based, team-based, and organization-based incentives. We suspect that the different components may have additive or even interactive effects on employee motivation, attitudes, and behaviors.

Next, as suggested by the meta-analyses in [Table 5](#), prior research on compensation and rewards has been mainly conducted at the individual and team levels of analysis and, thus, offers little insights into whether and how organizational compensation practices may strategically help organizations to achieve competitive advantage and organizational success (Gerhart & Rynes, 2003). Case examples of pay practices in successful companies (e.g., Wal-Mart, Lincoln Electric, SAS, and Microsoft) suggest that fit between pay level and organizational competitive strategy is the key as these companies pay their employees with either minimum or lead-the-market wages. One potential way through which pay level contributes to organizational success is by attracting, selecting, and retaining different types of employees (e.g., individuals with different cognitive abilities, personalities, and values). However, with most research attention being paid to the incentive effects of compensation, there is little research on the recruiting, selecting, and retaining effects of compensation. Thus, consistent with compensation researchers (e.g., Gerhart & Rynes, 2003), we encourage future research that examines the effects of compensation and intervening mechanisms at the between-organization level of analysis.

In the above section, we suggest needed future research in each of the meta-analytically deficient areas of research. Moreover, a common and low-hanging-fruit research opportunity across the three areas of research is to replicate the published meta-analyses with more primary studies ([Schmidt & Hunter, 2015](#)). As new research has accumulated in these areas, it is necessary to replicate and extend prior meta-analyses. A larger number of primary studies allow meta-analysts to more accurately estimate effect sizes and test moderators. For instance, given that the last large-scale meta-analysis on turnover (Griffeth et al., 2000) was published fifteen years ago, we think it is time to replicate and extend this meta-analysis to gain new insights into the magnitude and boundary conditions of the relationships between turnover and its antecedents and correlates.

To generate more research in these meta-analytically deficient areas, theory validation, refinement, extensions, and development are imperative. In this regard, the published meta-analyses have already provided numerous theoretical implications. Further, with the increased availability of rigorous primary studies and refined meta-analytic techniques for theory testing (MASEM; Bergh et al., 2014), meta-analysis is becoming a more and more important and useful tool for theory advancement in the HRM field in general and the three meta-analytically deficient areas in particular (Aguinis et al., 2011). Specifically, as [Tables 3, 4, and 5](#) suggest, the published meta-analyses in each of the three areas have offered initial evidence regarding the validity of the key theoretical frameworks. For example, in the strategic HRM area, meta-analytic findings generally support the premises of the corner stone theories such as strategic HRM theory and the resource-based view; in the organizational withdrawal area, the progression of withdrawal model ([Johns, 2001](#); Harrison & Martocchio, 1998) has received support in several meta-analyses (e.g., Berry et al., 2012; Hom et al., 1992); and in the compensation and reward area, meta-analytic evidence attests to the core tenets of cognitive evaluation theory, equity theory, expectancy theory, agency theory, and self-regulation theory.

Moreover, moderator analyses in these meta-analyses have already revealed important boundary conditions of the relevant theoretical frameworks in each area. As an example, findings across the meta-analyses in these three areas suggest that industry sectors or more specifically jobs and culture usually limit the validity of relevant theories, whereas different types of measures of the same constructs generally don't moderate hypothesized effects based on theories of interest (e.g., Combs et al., 2006; Cohen & Gattiker, 1994; Cotton & Tuttle, 1986). In this regard, [Schmidt and Hunter \(2015\)](#) argued that meta-analysis is more pertinent than any primary study in terms of testing moderating effects of study characteristics such as research design (e.g., longitudinal vs. cross-sectional) and study setting (e.g., field vs. laboratory) in that a primary study typically is conducted under a research design in a study setting.

Nevertheless, in addition to validating and refining theories, meta-analysis also could be used to develop new theories and/or compare competing theories (see Bergh et al., 2014 for specific procedures and examples on how to use MASEM to test competing theories). In fact, meta-analysis already has been used to develop new theoretical frameworks in the compensation area (Byron & Khazanchi, 2012). In studying the relationship between rewards and creative performance, Byron and Khazanchi (2012) developed their own theoretical framework and proposed five mechanisms through which rewards may affect creative performance. The authors used meta-analysis to test their theoretical model, and meta-analytic findings support four of their five proposed mechanisms. There are several advantages of relying on meta-analysis to develop new theories. In our view, the most salient one is that new theory testing results are less subject to the influence of sample error because the inputs used to test a new theory have been corrected for sample error.

In summary, we believe meta-analysis is a useful and effective method for theory development and advancement in these three areas of research. In fact, the current underuse of meta-analysis in these areas suggests numerous future research opportunities with respect to meta-analytically developing new theory and advancing existing theory.

4. Discussion, thoughts, and future directions for meta-analysis

As noted by Humphrey (2011), meta-analysis has increased tremendously over the past several decades. However, critics of meta-analysis have not focused so much on the increased use of this technique, but rather they have aimed at the misuses of meta-analysis. Like any tool, when it is used properly, meta-analysis can be very effective. Thus, we appeal to scholars to make sure that when they do employ meta-analysis, they do so appropriately, as we note in the following sections.

5. What has meta-analysis done for the field?

In knowledge creation in our field, we know that “received wisdom often becomes unquestioned assumptions which guide the interpretation of the world and decisions made about the world” (Mahoney & Svyantek, 2013, p. 2). This has been a serious problem with meta-analyses, because their results quickly come to be regarded as the “gospel” truth, and so they tend to serve as accepted guidelines for research decisions. A good example is the negative effect the Iaffaldano and Muchinsky (1985) meta-analysis had on research conducted on the job performance – job satisfaction relationship, as noted by Judge, Bono, Thoresen, and Patton (2001). Judge et al. cited the extreme drop off in job satisfaction-job performance studies following that meta-analysis, noting that questionable judgment calls by Iaffaldano and Muchinsky led to results that had a “chilling effect” on this area of research (Judge et al., p. 393), causing over ten years of research to be adversely affected.

Even when meta-analysis is applied and reported correctly, the results produced can influence scholarship in a particular area of the field. Humphrey (2011) used job design research, which began in the 1970s, as a useful example of how even supportive findings from a meta-analysis can halt research. The dominant theoretical perspective in that era of job design research was the Hackman and Oldham (1980) job characteristics model, which had been frequently tested. In the late 1980s, Fried and Ferris (1987) published a comprehensive meta-analysis which provided pretty strong support for the Hackman and Oldham work. Although Humphrey detected no serious problems or questionable judgment with the Fried and Ferris meta-analysis, he noted that these results still seemed to produce an adverse effect on future job design research in the following decades.

So, there appears to be absolutely no doubt that meta-analysis has made significant contributions to theory and research in the field since its development in the 1970s. Meta-analysis provides scholars with the capacity to quantitatively review huge literature areas, some with conflicting and previously irreconcilable differences, thus giving researchers the ability to deepen and broaden understanding of research areas in a manner not previously possible.

6. Issues in the proper execution and reporting of meta-analysis

There seems to be clear evidence that the application of meta-analysis is increasing more rapidly now than it did in its earlier years (Aguinis et al., 2011). Because meta-analysis has become entrenched in the field, combined with the fact that incorrect and correct applications can both lead to potentially adverse effects on research in the field, scholars need to ask how we can appropriately use the technique to add to what we know, while at the same time circumventing potential problems encountered by others in the past.

First, scholars have argued that the specific rationale for meta-analyses always should be given to ensure that the study is theory driven (e.g., in how the variables are selected), and not just a summary of what is readily available (Rosenthal, 1996). Just because some relationships among constructs can be meta-analyzed, doesn't mean they should or need to be. The resolution of important and relevant theoretical questions should be the motivation behind conducting meta-analyses.

Second, the same level of rigor that we impose on primary studies also should be applied to meta-analyses (Glass, McGaw, & Smith, 1981), and adjustments should be made as needed. In the future, scholars need to engage in more rigorous reviews of the judgments made and the methods employed in meta-analyses. Discussions about decision rules for judgments of what studies to include and exclude are appropriate. Evolving discussion and improvements to meta-analytic procedures should help guard against automatic acceptance of results.

Finally, a good meta-analysis should tell a story, appearing more like a literature review than a statistical piece (Humphrey, 2011), and it should indicate that this area is a work in progress, and that there is more to come. Meta-analyses should not be regarded as final end points, with any further discussion closed. Of all the ills that could be linked to meta-analyses, the worst is that the answer has been found, and that the work in that area is completed.

7. Replications and meta-analysis

Scholars have acknowledged for quite some time that when comprehensive patterns of results emerge, more accurate generalizations emerge. On the other hand, when researchers are limited in terms of variables and findings to base resulting arguments, theoretical progress is thwarted (Cronbach, 1957). Eden (2002) argued that “Such generalizations are best based on meta-analyses, and meta-analyses are enriched by encompassing a large number of high-quality replication studies” (p. 841). Therefore, in order for meta-analytic studies to prosper, investigators conducting primary research must supply data that is adequate in both composition and amount. “Otherwise, once the supply of data to be mined is depleted, the meta-analysts may be out of business” (Eden, 2002, pp. 843–844).

Mostly because they both serve as mechanisms to evaluate a collection of single-study investigations, replication and meta-analysis remain inextricably intertwined. Furthermore, and by extension, without dedicated replication research (e.g., evaluation of primary research), meta-analyses could not occur (Aguinis et al., 2011; Leavitt, Mitchell, & Peterson, 2010). Allen and Priess (1993) have strongly argued for the importance of replication, because without the contributions of primary research, meta-analyses would be incapable of substantiating their own existence (Eden, 2002). Stated another way, when few commonalities across investigations exist, meta-analysis is not a viable tool to assess consistency across studies.

So, it appears to be the case that, particularly in cases when protocol is strictly required to demonstrate comparability, meta-analysis mainly relies on replication research (Leavitt et al., 2010). Also, a strongly argued case has been made for the replication of meta-analyses (Allen & Priess, 1993). In situations where rapid growth offers discrepant evidence from initial findings, such an

approach is especially needed. For example, the Fried and Ferris (1987) meta-analysis of the job design literature was replicated by Humphrey, Nahrgang, and Morgeson (2007), focusing particularly on the motivational characteristics in the job design model.

Aguinis et al. (2011) suggested that meta-analysis is the ideal conduit for discovery and confirmation (i.e., replication), with related scientific and practical benefits. In this respect, Schmidt (1992) argued that meta-analysis can determine when further replication research is not warranted, thereby limiting the inappropriate use of scholarly effort. Besides saving resources, these findings can direct new theory development, which consequently can cultivate the need for additional replication research. Collectively, such information tends to confirm Eden's (2002, p. 844) perspective that meta-analysis and replication reside in a constant state of "symbiosis."

8. Conclusion

Meta-analytic results have shed important light on the nature of relationships in the HRM field, as we have seen in the articles in this special issue, and the research literature beyond. However, we felt that there might be areas of the field where meta-analysis had been under used for various reasons, and we sought to identify those areas and try to provide reasons for the lack of application. Furthermore, we tried to assess what the impact on these meta-analytic-deficient areas has been with respect to the status of theory, and we provided some directions for future research. Finally, we left the reader with some ideas for the effective application of meta-analysis in the future.

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