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## **Collective turnover: An expanded meta-analytic exploration and comparison.**

### **ABSTRACT**

As evidenced by the publication of three meta-analyses in 2013, the importance of collective turnover is garnering increasing attention. While each of these meta-analyses delivers a unique and significant impact to the HR literature, there remain opportunities to expand and build upon their contributions. In a comparison of the three extant meta-analyses, we found over 90 unique papers that were included in only one of each of the three studies, and more than 10 new studies published since 2013. We combined and expanded the existing meta-analyses, offering a comparison of results, as well as contributing to a greater understanding of the role of collective turnover. In the most comprehensive analysis to date, analyzing 2,149 effect sizes from 159 studies across 150 articles, we find both support for and divergence from several previously examined relationships, as well as evidence of a curvilinear turnover-performance relationship and of the contagious influence of turnover.

#### **Keywords:**

Collective Turnover; Meta-analysis; Organizational Performance; HR Practices; Collective Attitudes

**THIS SUBMISSION IS FOR THE SPECIAL ISSUE ON META-ANALYSIS**

Research and theory on strategic Human Resource Management (HRM) emphasizes that the nature of a firm's human capital is a key factor in understanding organizational performance (e.g. Becker, 1980; Dess & Shaw, 2011). An organization's ability to retain this human capital is, then, both a key indicator of the results of myriad HR practices and a key factor influencing firm performance. Studies of collective turnover have provided important insights into how unit-level turnover rates influence performance outcomes such as customer service (e.g. Koys, 2001), financial performance (e.g., Batt, 2002; Huselid, 1995; Kacmar, Andrews, Van Rooy, Steilberg, & Cerrone, 2006), and labor productivity (e.g., Guthrie, 2001; Siebert & Zubanov, 2009). Furthermore, studies have examined how macro-level turnover is influenced by important human resource systems and practices, such as high performance or high commitment work systems (e.g., Guthrie, 2001; Huselid 1995), benefits and training (e.g., Shaw, Delery, Jenkins, & Gupta, 1998; Shaw, Dineen, Fang, & Vellella, 2009), as well as autonomy-reducing HR practices (e.g., Batt, Colvin, & Keefe, 2002; Detert, Trevino, Burris, & Andiappan, 2007; Shaw et al., 1998).

Consequent to the growing popularity and importance of this topic for HR and general management, several cumulative studies have explored how collective turnover fits into the overall HR picture (Hancock, Allen, Bosco, McDaniel, & Pierce, 2013; Heavey, Holwerda, & Hausknecht, 2013; Park & Shaw, 2013). While each of these meta-analyses delivers a unique and significant impact to the HR literature, there remain opportunities to expand and build upon their contributions. Thus, we combine and expand the existing meta-analyses, contributing to a better understanding of HR in five important ways.

First, we expand and update existing meta-analyses, including 2,149 effect sizes across 159 studies, providing the most comprehensive analysis to date. Second, in addition to exploring the influences of HR practices and systems and collective attitudes and perceptions (CAP) on

collective turnover, we examine two previously unexplored antecedents to collective turnover: the influence of prior firm performance on collective turnover and the influence of personnel changes on collective turnover, suggesting that turnover contagion effects may be present at an aggregate level. Third, we expand the consideration of boundary conditions by providing a more comprehensive treatment of moderators. The inclusion of both contextual and methodological moderators highlights the importance of human capital and collective turnover as a conduit to the successful performance of firms, as well as how various methodological approaches influence these relationships. Fourth, we build upon the tests for curvilinearity outlined in Hancock et al. (2013), providing an important theoretical test of the influence of collective turnover on organizational performance and HR outcomes. This curvilinear test continues a line of research addressing the theoretically interesting but empirically elusive search for an optimal turnover rate. Finally, we highlight findings of variables that are unique to this study, as well as provide an overview of finding differentiations across all four meta-analyses.

### **THE ROLE OF COLLECTIVE TURNOVER**

It has been suggested that a dominant analytical mindset (DAM) has developed among turnover researchers (Allen, Hancock, Vardaman, and McKee, 2014), leading to a somewhat stifled progression towards understanding turnover at the multiple levels at which it occurs. Traditionally, employee turnover has been examined at the individual level; however, unit and organizational level examinations of the phenomenon have increased over the last few decades (Allen et al., 2014). Recent years have seen an increased interest in better understanding the role that collective turnover plays in organizations. More specifically, scholars are interested in exploring how turnover is influenced at a collective level and, subsequently, the consequences of collective turnover on organizational performance.

Hausknecht and Trevor's (2011) collective turnover framework offers an overview of and theoretical rationale for the antecedents to and consequences of collective turnover, along with potential moderators of these relationships. Their review of 115 articles led to five major considerations of collective turnover research. First, turnover rates at a collective level are often measured using a variety of different formulas, typically separation rates, instability rates, or retention rates (e.g. Van Iddekinge, Ferris, Perrewé, Perryman, Blass, & Heetderks, 1999). Turnover rates also differ based on a number of leaver characteristics, such as what type of leaver the data reflect (voluntary, involuntary, or total turnover), as well as the quality of leaver (functional vs. dysfunctional turnover). Furthermore, the data for collective studies tends to come from either company records (from which the turnover rate is calculated) or from data provided by an HR manager or other key respondent. Second, based in human and social capital theories, the consequences of collective turnover have often been expected to be negative, with distal outcomes exhibiting weaker a weaker relationship than proximal outcomes.

Third, while the relationship between turnover and performance has often been considered linear and negative, the evidence is varied and assertions surrounding the idea that the relationship may be curvilinear have been made. Turnover has also been suggested to have beneficial consequences under certain circumstances. For example, as suggested through a cost-based lens, compensation or other organizational costs in the form of benefits may be decreased when hiring newer, less tenured employees (Alexander, Nuchols, Bloom, & Lee, 1994). Additionally, via human and social capital lenses, poor performers who leave may ultimately offer an opportunity for the organization to replace those individuals with higher performing ones, allowing for opportunities for innovation (Abelson & Baysinger, 1984; Dalton & Todor, 1979) and to decrease homogeneity in the organization (Schneider, Goldstein, & Smith, 1995).

Thus, it has been suggested that curvilinearity exists in the turnover-performance relationship and that this may indicate an optimal level of turnover (Hancock et al., 2013). Additionally, Hausknecht and Trevor's (2011) third consideration also suggests several within-study moderators of both the antecedent-turnover relationship, such as the presence of various HR practices, and of the turnover-performance relationship, such as unit size (Hausknecht, Trevor, & Howard, 2009).

Fourth, Hausknecht and Trevor (2011) suggest that methodological and conceptual differences, such as specifics of the job, may influence the degree to which antecedents influence collective turnover and, in turn, the degree to which collective turnover influences performance. Finally, their review highlighted the importance of antecedents to collective turnover, leading them to suggest that the use of high-commitment systems tend to lower collective turnover rates, as do higher levels of some CAP, such as commitment and satisfaction. Antecedents such as HR Systems and Practices, as well as CAP, contribute to collective turnover which then contributes to consequences, such as productivity, firm performance, and customer outcomes.

To date, three previously conducted meta-analyses have examined various combinations of relationships outlined in the Hausknecht and Trevor (2011) framework. In the present study, we compare these extant works, identifying areas for expansion. We then address the considerations outlined in Hausknecht and Trevor's model beyond the previous studies by examining the influence of two additional collective turnover antecedents on collective turnover, as well as how methodological and contextual differences influence these relationships, and expanding upon the Hancock et al.' (2013) test for a curvilinear turnover-performance relationship.

A comparison of the three extant meta-analyses yielded several interesting insights with regards to the work that has been conducted on collective turnover to date. Table 1 provides an overview of the primary characteristics among the three prior meta-analyses, along with those of current study. First, we found that, across the three studies, there were over 90 unique papers which were included in only one of the studies, but not the other two. In other words, though the turnover-performance relationship was examined in all three meta-analyses, there was a unanimous overlap of only 29 studies. For example, while all three meta-analyses included Koys (2001), Park and Shaw (2013) included Messersmith and Guthrie (2010) in their examination of the turnover-performance relationship, while neither Hancock et al. (2013) nor Heavey et al. (2013) did. Furthermore, 25 studies were included in only two of the extant meta-analyses. For example, both Hancock et al. (2013) and Park and Shaw (2013) included Hatch and Dyer (2004) in their examination of the turnover-performance relationship, whereas Heavey et al. (2013) did not include it in their examination of the same relationship. Next, while Heavey et al. (2013) provided the only examination of the relationship between various antecedents and collective turnover, their study included 28 fewer studies than did Park and Shaw's study, which only examined the turnover-performance relationship

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While each of these works contributes to our overarching understanding of the role of collective turnover, each study takes a unique approach in examining it. In addition to sampling differences, the actual types of relationships examined also differed. Heavey et al. (2013) explored both the antecedent-turnover and turnover-performance relationships, whereas Hancock et al. (2013) and Park and Shaw (2013) focused their efforts solely on the turnover-performance relationship, examining the relationship of turnover and various performance outcomes, as well

as moderators of those relationships. All three studies suggested the importance of human capital theory (e.g. Osterman, 1987; Shaw, Gupta, & Delery, 2005) and the cost-based perspective (e.g. Dalton & Todor, 1979) in predicting a negative relationship among turnover and performance outcomes. However, Hancock et al. (2013) and Park and Shaw (2013) also grounded their predictions in social capital theory (Leana & Van Buren, 1999), whereas Heavey et al.'s (2013) third grounding perspective was that of operational disruption (e.g. Staw, 1980). The analyses of the turnover-performance relationships were similar across all three studies, with differences primarily reflected in the moderation analyses. Hancock et al. (2013) and Heavey et al. (2013) focused more on contextual moderators, whereas Park and Shaw (2013) also examined methodological moderators, as suggested by Hausknecht and Trevor (2011).

The greatest disparity among the three prior meta-analyses is the inclusion of the antecedent-turnover relationship by Heavey et al. (2013). As outlined in Hausknecht and Trevor (2011) and grounded in previous theory, Heavey et al. (2013) suggest that the relationship among HR/Systems and Practices and turnover is explained by practices that signal commitment to employee relationships over the long-term. Specifically, they suggest that, along with other individual HR Practices such as those that enhance participation (e.g. Batt et al., 2002), the presence of high-commitment and high-performance work systems (e.g., Guthrie, 2001; Huselid, 1995) leads to lower rates of turnover.

### **Antecedents and Collective Turnover**

HR Systems and Practices have often been examined as a means by which to influence turnover. Studies have shown that various systems approaches lead to increased rates of turnover (control systems; e.g. Arthur, 1994) while others (commitment systems, high performance work practices; e.g., Batt, 2002; Guthrie, 2001; Huselid, 1995; Way, 2002) have led to decreases in

turnover. Additionally, scores of studies have examined the influence of various individual HR practices (e.g., pay, incentives, training, staffing, etc.) on turnover; however, findings have been mixed. For example, while some studies have found that performance-linked rewards lead to increases in turnover (Batt et al., 2002), others have reported decreases in turnover (Peterson & Luthans, 2006) or no relationship at all (e.g. Riordan, Vandenberg, & Richardson, 2005). Discrepancies in these findings suggest that a meta-analytic examination of these practices is necessary, thus, we examine the influence of HR Systems and Practices, including High Commitment HR Systems and Individual HR Practices, on collective turnover.

Hausknecht and Trevor (2011) suggest that collective attitudes (e.g., commitment and satisfaction) and perceptions (e.g., aggregate perceptions of climate/culture, cohesiveness/teamwork, quality of management/leadership, and justice/fairness) will influence collective turnover behavior. While some studies have found that negative relationships among shared attitudes exist (e.g., Angle & Perry, 1981; Harter, Schmidt, & Hayes, 2002; Ryan, Schmit, & Johnson, 1996; Trevor & Nyberg, 2008), several other studies have found little or mixed support for these relationships (e.g., Koys, 2001; Riordan et al., 2005). Similarly, shared perceptions findings have also been mixed. For example, while some studies have found a negative relationship between management/leadership quality and collective turnover (e.g., George & Bettenhausen, 1990; Nishii & Mayer, 2009; Richardson & Vandenberg, 2005), others have found no support (e.g., Detert et al., 2007; Hausknecht et al., 2009; Ryan et al., 1996). Furthermore, Heavey et al. (2013) found that while satisfaction was significantly negatively related to collective turnover and turnover intentions were significantly positively related to collective turnover, interestingly, commitment, which typically demonstrates a stronger relationship than satisfaction with turnover, exhibited a similar, but not significant relationship.

Thus, we examine the relationships among shared attitudes and perceptions and collective turnover.

In addition to the antecedents outlined in Hausknecht and Trevor (2011) and tested in Heavey et al. (2013), we examined two additional antecedents: prior performance and personnel changes. As there exists a positive relationship between financial performance and slack resources available (Daniel, Lohrke, Fornaciari, & Turner, 2004), prior performance, such as prior ROA (Guthrie & Data, 2008) and prior customer satisfaction (Detert et al., 2007), may lead to an increase or decrease in the resources necessary to maintain and satisfy the workforce. Thus, we expect that a negative relationship exists between a firm's prior performance and their collective turnover.

Furthermore, several studies reported correlations of personnel changes (e.g., Batt & Colvin, 2011; Koys, 2001; Ton & Huckman, 2008; Watrous, Huffman, & Pritchard, 2006). Based on the idea that turnover is contagious (e.g. Krackhardt & Porter, 1986), we grounded our exploration of the relationship between personnel change and collective turnover in turnover contagion theory (Felps, Hekman, Mitchel, Lee, Harman, & Holtman, 2009). The contagion concept applied to turnover suggests that as employees witness their co-workers engaging in job search activities and subsequently accepting alternative employment, they are thus made aware of such alternatives (Krackhardt & Brass, 1994; Kraus, Yaakovovitz, Bizman, & Caspi, 1999). Previous consideration of leaving an organization may have been seen as a risky, uncertain (Steel, 2002) or unavailable option; however, this may change as colleagues successfully seek transfers or new job opportunities. Additionally, the consequences of colleagues leaving, such as depletion of human capital and disruption of social capital, may result in work overload, changes

in work relationships, and an overall change in one's day-to-day activities, thus increasing the luster of seeking a new employment situation.

Subsequently, witnessing the success of colleagues may lead to increased perceived desirability to and ease of leaving the firm (March & Simon, 1958). As individuals observe others participating in job search activities and subsequently securing other employment opportunities they may be encouraged to do the same (Krackhardt & Porter, 1986). As this "contamination" continues to infect others within the organization, its cyclical nature should generate the development of a shift of normative beliefs within the organization regarding turnover. Thus, we expect that turnover begets more turnover and examine the relationship among personnel change and collective turnover.

### **Collective Turnover and Performance**

In line with Hancock et al. (2013), Heavey et al. (2013), and Park and Shaw (2013), we, too, examine the relationship between collective turnover and organizational performance. Similar to our analysis of the antecedent relationships with collective turnover, we first examine the relationship between collective turnover and overall organizational performance, then each of the three categories of consequences (productivity, firm performance, and customer outcomes), as outlined by Hausknecht and Trevor (2011). Finally, in order to better understand the influence of turnover on more specific variables, we examine its relationship with the subgroups within each category (e.g., costs, sales/output, financial performance, customer satisfaction, etc.).

### **Curvilinearity**

While a majority of studies examining the impact of turnover on overall performance have demonstrated the expected negative association, there are several studies that have, in fact, demonstrated a positive relationship (e.g. Seleim et al., 2007). Theory depicts positive

consequences, for example lowered labor costs and increased innovation (Abelson & Baysinger, 1984), and negative consequences, for example decreased customer outcomes (e.g. Hausknecht et al., 2009; Koys, 2001), of turnover on performance. Several previous studies have shown evidence of curvilinearity (e.g., Glebbeek & Bax, 2004; Meier & Hicklin, 2008; Shaw et al., 2005), including the meta-analysis conducted by Hancock et al. (2013) where evidence of a positive relationship was found. Additionally, though not tested directly, Park and Shaw (2013) suggested that their finding of significantly differing strengths among the relationships between different turnover types and performance indicates curvilinearity. Since debate still exists to date, we sought to meta-analytically explore the presence of curvilinearity. As Hancock et al. (2013) did, we examined the existence of a curvilinear relationship. Similar to their finding, yet utilizing a greater sample, we expect to support their evidence of a curvilinear relationship among collective turnover and overall organizational performance, suggesting that there are, in fact, potential positive outcomes stemming from turnover.

### **Moderation**

As suggested by Hausknecht and Trevor (2011), moderators play an important role in both the antecedent-turnover and the turnover-consequence relationship. Several moderators of the latter have been theorized and tested; however, what remains less clear is the influence of such moderators on the former. While all three of the previous studies examined contextual and/or methodological moderators of the turnover-performance relationship, Heavey et al. (2013) provided the only examination of the antecedent-turnover relationship and, subsequently, the only test for moderators of that relationship, testing for the moderating effects for training, internal mobility, high-commitment HR, and size. We build upon this, examining several moderators involving contextual characteristics (e.g., turnover type, location, industry, etc.), as

well as the potential moderating influence of methodological factors (e.g., journal quality, turnover role, data source, etc.), similar to Park and Shaw (2013).

*Contextual Moderators.* Following the categorization of variables outlined in Hausknecht and Trevor (2011), we suggest several contextual moderators of the antecedent-turnover relationship. The type of turnover that occurs in an organization may influence the relationship of certain antecedents and collective turnover. For example, shared attitudes and perceptions, which tend to have a negative relationship with collective turnover, may exhibit a stronger negative relationship when turnover is involuntary, as opposed to voluntary. Those who voluntarily leave may have a lower level of, say, commitment or satisfaction and a higher level of turnover intention than those who wish to stay, but are terminated.

The industry to which an organization belongs may influence the likelihood of collective turnover occurring. Organizations that are smaller in size may experience stronger connections between certain antecedent-turnover relationships due to the close-knit socialization and communication opportunities that exist in smaller settings. Thus, management/leadership quality may be better, commitment and satisfaction higher in smaller settings. Unemployment rates may signal greater or fewer employment opportunities. Thus, when unemployment rates are low, employees may perceive fewer opportunities and, subsequently, be less likely to leave (March & Simon, 1958; Price, 1977), even when they experience negative attitudes and perceptions

*Methodological Moderators.* The importance of methodological considerations lies in the influence that researchers, data characteristics, and even expectations of the field may have on the overall results. Journal quality, for example may, to some degree, dictate the type of findings that tend to be published and, subsequently, influence submissions and publication in the sense that studies finding counter-intuitive results may be more likely to have their study published in a

lower quality journal. Furthermore, the source from which a researcher obtains their data may influence the accuracy of the data in the sense that a key informant may be less likely to divulge information casting their organization into a negative light whereas organizational records might offer more objective data. Exploring how these methodological characteristics is important for better understanding how design characteristics influence the overall antecedent-turnover relationship.

*Turnover-Performance Moderation.* While all three prior studies examined the turnover-performance relationship, each study took a somewhat different approach. All included two or more theoretically grounded moderators (e.g., location, industry, size); however, Park and Shaw (2013) also included several methodological moderators (e.g., journal quality, turnover role, level of analysis). We incorporated the moderators from each of the previous studies to provide a more comprehensive understanding of the turnover-performance relationship (for reviews, see Hancock et al., 2013; Heavey et al, 2013; Park & Shaw, 2013).

## **METHOD**

### **Study Sources**

First, we identified and compiled all studies appearing in the three previously published meta-analyses (Hancock et al., 2013; Heavey et al., 2013; Park & Shaw, 2013) on this topic. We then conducted an additional search using the ISI Web of Knowledge, PsycINFO, EBSCO, JSTOR, Business Source Premier, and PROQUEST databases using keywords such as organizational performance, turnover rates, customer satisfaction, accident rates, productivity, etc. (see Appendix A for a full list of search terms used). Next, we conducted a manual search of each of the following journals for papers in press: *Academy of Management Journal*, *Organizational Behavior and Human Decision Processes*, *Administrative Science Quarterly*,

*Personnel Psychology, Journal of Management, Journal of Vocational Behavior, Journal of Organizational Behavior, Journal of Occupational Psychology, and Human Relations, Strategic Management Journal, Organization Science, American Sociological Review, Quarterly Journal of Economics, The International Journal of Human Resource Management, Human Resource Management, and Human Relations.*

Finally, we searched the resulting studies for citations relating to other similar studies utilizing turnover as a predictor of organizational performance, and, subsequently reviewed additionally identified studies for eligibility and inclusion. Additional studies appearing in computerized searches that were not journal specific, as well as those found via reference searches, were included so long as they met the inclusion criteria. Articles were required to meet the following criteria for inclusion:

- 1) Must assess the relationship between organizational or unit-level employee turnover and any type of organizational performance (correlations must be present), such as quality, productivity, safety, innovation, etc., or must assess the relationship between various antecedents (e.g., HR Systems/Practices, CAP) and organizational or unit-level employee turnover. Theoretical papers and review articles, nor those looking at individuals' turnover rates should be included.
- 2) Must report either voluntary turnover, involuntary or total turnover rates or downsizing or reduction in force rates.
- 3) Must provide a rate or ratio measure for turnover or retention (no dichotomous turnover values).
- 4) Include studies that focused on turnover rates for employee groups (or all employees).

## **Coding**

These search methods resulted in 163 identified articles. In order to address the file-drawer problem, we requested unpublished studies and doctoral dissertations examining these relationships via an online listserv HRDIV\_NET. This request yielded 5 articles. Each of the 168 articles were coded independently by two of the authors. Coders agreed on 98.1% of the initial codes with any discrepancies being resolved via conversations with one another. Discrepancies that were unable to be resolved in that way were discussed and resolved with another author. A small number of studies included in the previous meta-analyses did not report correlations between turnover and organizational performance. In these rare instances, correlations were obtained from the appendices of the meta-analysis in which it appeared. Studies which did not provide correlations or for which we were unable to obtain the necessary information for inclusion from the author(s) were excluded. Additionally, several studies were eliminated due to violations of the assumption of independence. Ultimately, 9 studies were dropped resulting in a final data set of 159 studies within 150 articles with a total of 2,149 effect sizes. Since we analyzed antecedents and consequences separately, the list of total effect sizes and Ns can be found in Appendix B.

Using Hausknecht and Trevor's (2011) framework as a basis for our coding scheme, we recorded the all correlations among turnover and other variables that were included in a study. We identified the variables, following their categorizations in our coding scheme, we grouped the variables into clusters of similar constructs. We grouped antecedents into two clusters, HR Systems and Practices, which included High Commitment HR Systems and Individual HR Practices, and CAP, which included variables associated with Management/Leadership Quality, Climate/Culture, Cohesiveness/Teamwork, Satisfaction/Commitment, and Justice/Fairness. We also included two additional categories of antecedents, beyond those discussed in Hausknecht

and Trevor (2011) and studied in Heavey et al. (2013). Prior performance represented performance that was reported as having previously occurred. For example, Goins and Gruca (2008) reported prior market performance, Guthrie and Datta (2008) reported prior ROA, and Detert et al. (2007) reported prior customer satisfaction. The Personnel Changes variable represented the relationship among turnover and other variables associated with changes in the workforce, for example, other turnover, transfers, and discharge rates. Consequences were grouped into three clusters, as similarly done in the previous three meta-analyses. These included productivity (sales/output, efficiency, costs, innovation), firm performance (financial performance, market performance), and customer outcomes (wait time, customer satisfaction, service quality). Figure 1 depicts our coding scheme.

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Coding of the moderators required categorization of contextual and methodological characteristics. For the contextual moderators, we followed an adaptation of Hancock et al. (2013) and Park and Shaw's (2013) coding scheme. We recorded the type of turnover a study reported (e.g., total, voluntary, involuntary), the industry which best represented the sample (e.g., banking and technology, education, retail/restaurant/service), organizational size, unemployment rate that was reported in the paper or correlation table, and the type of employee group that made up the sample (e.g., non-supervisory employees, managers, or a combination of the two). Location was recorded in three different ways. First we coded the specific country or countries in which a study took place. We then categorized these by location (e.g., North America, Europe, or Asia), whether the country was located in a Liberal Market Economy (LME) or a Coordinated Market Economy (CME), and by whether the country's culture was more individualistic or collectivistic (Hofstede, 1980).

For the methodological moderators, we followed the coding scheme outlined in Park and Shaw (2013). For each study, we coded for journal quality (whether the article appeared in a top versus not top journal), the role of turnover in the paper (control, dependent, independent), the level of analysis at which the study was performed (organizational level, units in one organization or in multiple organizations), whether or not turnover was hypothesized in the study, the source from which the data were obtained (key informant, organizational records, or some other means). The design of the study was also captured whereby cross sectional studies were those that collected all data (turnover and performance) at a single time. Studies coded as lagged performance collected turnover data collected at one time and performance collected at another time. Finally, panel/longitudinal studies were those which collected data over time).

### **Meta-analytic Procedure**

Correlation coefficients ( $\bar{r}$ ) represented the effect size index. Several studies reported retention rates (e.g. Van Iddekinge et al., 2009) which we translated into turnover rate following Park and Shaw (2013). In our examination of moderators, we utilized several methods to test for heterogeneity, including the  $Q$  statistic (Hunter & Schmidt, 2004), 80% credibility intervals, and the  $I^2$  statistic (Huedo-Medina, Sanchez-Meca, Marin-Martinez, & Botella, 2006).

### **Test for Curvilinearity**

In order to test for curvilinearity between collective turnover and organizational performance, we used the process outlined by Williams and Livingstone (1994) and conducted by Hancock et al. (2013). We personally e-mailed the author(s) of studies reporting organizational performance and turnover relationships, requesting the data necessary for calculating the semi-partial correlations between organizational performance measures, turnover, and turnover-squared (Cohen & Cohen, 1983). We received useable data from 35 studies, more

than twice as many studies as reported in Hancock et al. (2013), including 136 turnover-organizational performance effect sizes. Once semi-partial correlations were derived, these were analyzed to provide an overall direct meta-analytic test.

## RESULTS

Results are discussed below and summary results of the meta-analytic tests are found in Tables 2-9.

### **Antecedents to Collective Turnover**

First, while Heavey et al. (2013) examined a multitude of antecedents, they did not explore the overall relationship between antecedents and collective turnover. Much like Hancock et al. (2013) and Park and Shaw (2013) examined the influence of turnover on overall organizational performance, we wanted to examine the overarching influence of a comprehensive approach to collective turnover. Thus, we examined the overall linear relationship among this all-inclusive group of antecedents and collective turnover. We found that, together, HR Systems and Practices and CAP have a significant and negative relationship with turnover ( $\bar{r} = -.03, p < .05, 95\% \text{ CI} = -.06 \text{ to } -.004$ ), suggesting the overall importance of engaging in HR systems and practices that are beneficial to the employee, as well as improving CAP.

Our examination of General HR Systems and Practices, a combination of studies reporting High Commitment HR Systems and Individual HR Practices yielded a negative, yet not statistically significant, relationship with collective turnover. Following Hausknecht and Trevor's (2011) model, we explored two subgroups, High Commitment HR Systems and Individual HR Practices. We, like Heavey et al. (2013), found that High-Commitment HR systems ( $\bar{r} = -.11, p < .05, 95\% \text{ CI} = -.15 \text{ to } -.06$ ) exhibited a significant negative relationship,

suggesting that the use of High-Commitment HR systems may decrease collective turnover behavior. However, while Heavey et al. (2013) examined specific variables of Individual HR Practices, our coding scheme followed Hausknecht and Trevor's model more literally, thus we combined such practices (e.g., pay practices, benefits, etc.) into one subgroup, "Individual HR Practices". We found that this relationship was negative, as expected, though not significantly different from zero.

Next, we examined how CAP relate to turnover. General CAP, a combination of studies and effect sizes examining shared attitudes and perceptions, was significantly and negatively related to collective turnover ( $\bar{r} = -.12, p < .05, 95\% \text{ CI} = -.17 \text{ to } -.08$ ). In alignment with Heavey et al. (2013), we found that Cohesiveness and Teamwork ( $\bar{r} = -.21, p < .05, 95\% \text{ CI} = -.32 \text{ to } -.09$ ) and supervisory relationships in the form of Management and Leadership Quality ( $\bar{r} = -.09, p < .05, 95\% \text{ CI} = -.16 \text{ to } -.03$ ) exhibited negative relationships with turnover. Also similar to Heavey et al., we found that Satisfaction ( $\bar{r} = -.13, p < .05, 95\% \text{ CI} = -.27 \text{ to } -.07$ ) negatively influenced the relationship, whereas Turnover Intentions ( $\bar{r} = 0.31, p < .05, 95\% \text{ CI} = 0.08 \text{ to } 0.52$ ) positively and strongly influenced the relationship. Contrary to Heavey et al. (2013), we found that Climate and Culture ( $\bar{r} = -.05, p < .05, 95\% \text{ CI} = -.10 \text{ to } -.003$ ), Commitment ( $\bar{r} = -.25, p < .05, 95\% \text{ CI} = -.32 \text{ to } -.17$ ), and Justice and Fairness ( $\bar{r} = -.08, p < .05, 95\% \text{ CI} = -.14 \text{ to } -.08$ ) exhibited significant negative relationships with collective turnover.

In addition to these variables set forth by both Hausknecht and Trevor (2011) and Heavey et al. (2013), we also examined two additional antecedent relationships, between prior performance and collective turnover, as well as personnel changes and collective turnover. While prior performance did indeed exhibit a negative relationship as expected, it was not significant.

As anticipated, however, personnel changes ( $\bar{r} = 0.35, p < .05, 95\% \text{ CI} = 0.26 \text{ to } 0.44$ ) exhibited a significant positive relationship with collective turnover.

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Insert Table 2 About Here  
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### **Consequences of Collective Turnover**

Using 788 correlations from 121 studies, we examined the relationship between collective turnover and overall organizational performance. Similar to the three other meta-analyses, we found a negative relationship ( $\bar{r} = -.04, p < .05, 95\% \text{ CI} = -.06 \text{ to } -.02$ ). We then examined the relationships between collective turnover and overall productivity ( $\bar{r} = -.03, p < .05, 95\% \text{ CI} = -.06 \text{ to } -.008$ ), overall firm performance ( $\bar{r} = -.05, p < .05, 95\% \text{ CI} = -.07 \text{ to } -.02$ ), and customer outcomes ( $\bar{r} = -.14, p < .05, 95\% \text{ CI} = -.21 \text{ to } -.08$ ). Customer outcomes exhibited the strongest relationship with turnover, whereas productivity exhibited the weakest relationship.

Next, we examined the relationships between each subcategory of each performance variable. Efficiency ( $\bar{r} = -.11, p < .05, 95\% \text{ CI} = -.15 \text{ to } -.07$ ) and innovation ( $\bar{r} = -.23, p < .05, 95\% \text{ CI} = -.33 \text{ to } -.14$ ) both exhibited negative relationships, whereas sales and output, as well as labor costs, exhibited negative relationships that were not significant. Both financial performance ( $\bar{r} = -.03, p < .05, 95\% \text{ CI} = -.05 \text{ to } -.01$ ) and market performance ( $\bar{r} = -.09, p < .05, 95\% \text{ CI} = -.14 \text{ to } -.04$ ) exhibited negative relationships, with market performance exhibiting a slightly stronger negative relationship. Our examination of customer outcomes found that customer satisfaction ( $\bar{r} = -.15, p < .05, 95\% \text{ CI} = -.22 \text{ to } -.07$ ) and service quality ( $\bar{r} = -.22, p < .05, 95\% \text{ CI} = -.33 \text{ to } -.11$ ) exhibited negative relationships, while wait time, though not significant showed a positive relationship with collective turnover.

### **Curvilinearity**

Following the procedure for testing curvilinearity outlined in Williams and Livingstone's (1994), as was conducted by Hancock et al. (2013), we used derived semi-partial correlations ( $N = 31,449$ ;  $k = 35$ ) to conduct a direct meta-analytic test for curvilinearity. The test for curvilinearity resulted in a positive sample-weighted mean semi-partial ( $\bar{r} = 0.004$ ,  $p < .05$ , 95% CI = 0.0004 to 0.007), accompanied by positive 95% confidence intervals that do not include zero. According to Williams and Livingstone's interpretation of similar results (Williams & Livingstone, 1994, page 285), as well as Hancock et al.'s (2013) interpretation, the positive mean quadratic semi-partial correlation of .01 suggests that there does indeed exist curvilinear relationship between collective turnover and overall organizational performance and that this relationship may resemble an inverted U-shape.

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### **Antecedent Moderators**

***Personnel Changes-Turnover Moderators.*** Given that the antecedent categories Personnel Changes and Overall Collective Attitudes/Perceptions exhibited significant relationships with significant Collective Turnover and exhibited significant Q-values and confidence intervals that did not include zero, we chose to focus our moderator analyses on these two antecedent categories. We first examined contextual moderators of the Personnel Changes-turnover relationship. Turnover type moderates the Personnel Changes-Turnover relationship ( $Q_b = 87.23$ ,  $p < .05$ ), such that Personnel Changes in samples with voluntary turnover ( $\bar{r} = 0.44$ ,  $p < .05$ , 95% CI = .31 to .57) had the strongest positive relationship to Collective Turnover, followed by involuntary turnover ( $\bar{r} = .41$ ,  $p < .05$ , 95% CI = .18 to .638) and then total turnover ( $\bar{r} = .21$ ,  $p < .05$ , 95% CI = .13 to .29).

Location was a significant moderator ( $Qb = 5.14, p < .05$ ), such that turnover in North American samples was more positive ( $\bar{r} = .37, p < .05, 95\% \text{ CI} = .24 \text{ to } .49$ ) than that found in Asia ( $\bar{r} = .28, p < .05, 95\% \text{ CI} = .05 \text{ to } .52$ ). Geographic location defined by type of market economy, LME or CME, was a significant moderator ( $Qb = 6.12, p < .05$ ), such that samples from LME's demonstrated a stronger positive relationship ( $\bar{r} = .39, p < .05, 95\% \text{ CI} = .26 \text{ to } .49$ ) than did those in a CMEs ( $\bar{r} = .28, p < .05, 95\% \text{ CI} = .05 \text{ to } .52$ ). An additional location moderator analyzed national culture, individualistic or collectivistic, and was also a significant moderator ( $Qb = 6.12, p < .05$ ) demonstrating similar results to location based on economy.

Industry was also a significant moderator ( $Qb = 187.42, p < .05$ ), whereby samples that included multiple industries exhibited the strongest relationship ( $\bar{r} = .57, p < .05, 95\% \text{ CI} = 0.41 \text{ to } 0.77$ ). Banking and technology ( $\bar{r} = .39, p < .05, 95\% \text{ CI} = .34 \text{ to } .45$ ) exhibited the next strongest relationship, followed by retail, restaurant service ( $\bar{r} = .26, p < .05, 95\% \text{ CI} = .18 \text{ to } .34$ ) oil/manufacturing/transportation ( $\bar{r} = .23, p < .05, 95\% \text{ CI} = .09 \text{ to } .37$ ). Hospitals/healthcare did not demonstrate a significant relationship. Organization size was a significant moderator ( $Qb = 141.03, p < .05$ ) with medium sized organizations of 100-499 employees demonstrating the only significant relationship ( $\bar{r} = 0.68, p < .05, 95\% \text{ CI} = 0.44 \text{ to } 0.92$ ), suggesting that firms of this size are more like to experience turnover.

Unemployment rate also significantly moderated the Personnel Changes-turnover relationship ( $Qb = 5.14, p < .05$ ), such that samples that reported area unemployment rates to be above 5% ( $\bar{r} = .63, p < .05, 95\% \text{ CI} = .37 \text{ to } .84$ ) exhibited a stronger positive relationship with collective turnover. Turnover group, or the type of employee that made up the sample, was a significant moderator ( $Qb = 64.44, p < .05$ ). Samples that examined non-supervisory employees demonstrated the strongest relationship ( $\bar{r} = .48, p < .05, 95\% \text{ CI} = .34 \text{ to } .61$ ), followed by

samples including all employees ( $\bar{r} = .29, p < .05, 95\% \text{ CI} = .17 \text{ to } .59$ ) and managers ( $\bar{r} = .28, p < .05, 95\% \text{ CI} = .07 \text{ to } .35$ ).

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Next, we examined the methodological moderators of the Personnel Changes-Turnover relationship. Journal quality moderated the Personnel Changes-turnover relationship ( $Qb = 123.44, p < .05$ ) such that papers published in top journals had a less positive relationship ( $\bar{r} = 0.25, p < .05, 95\% \text{ CI} = .14 \text{ to } .36$ ), whereas those not published in top journals had a more positive relationship ( $\bar{r} = .50, p < .05, 95\% \text{ CI} = .40 \text{ to } .61$ ). The role of turnover in a study moderated the Personnel Changes-turnover relationship ( $Qb = 8.80, p < .05$ ), whereby studies with turnover as a control variable exhibited a more positive relationship ( $\bar{r} = .38, p < .05, 95\% \text{ CI} = .25 \text{ to } .52$ ) followed by those with turnover as a dependent variable relationship ( $\bar{r} = .67, p < .05, 95\% \text{ CI} = .24 \text{ to } .50$ ).

The level of analysis of the study was also a moderator of the antecedent-turnover relationship ( $Qb = 14.97, p < .05$ ), such that studies in which the unit of analysis was at the organizational level exhibited the strongest relationship ( $\bar{r} = .78, p < .05, 95\% \text{ CI} = .26 \text{ to } .50$ ). Studies where the unit of analysis was multiple units in one organization also exhibited a significant positive relationship ( $\bar{r} = .28, p < .05, 95\% \text{ CI} = .13 \text{ to } .43$ ). Whether or not the turnover relationship was hypothesized significantly moderated the Personnel Changes-turnover relationship ( $Qb = 54.28, p < .05$ ) although only in studies where turnover was hypothesized was significant ( $\bar{r} = .31, p < .05, 95\% \text{ CI} = .21 \text{ to } .41$ ).

The data source, from which the researchers obtained their data, was not a significant of the Personnel Changes-Turnover relationship. Finally, study design significantly moderated the Personnel-turnover relationship ( $Qb = 51.5, p < .05$ ), such that studies using a lagged

performance design were stronger and positive ( $\bar{r} = .44, p < .05, 95\% \text{ CI} = .32 \text{ to } .56$ ). Studies using cross-sectional design were slightly weaker and positive ( $\bar{r} = .39, p < .05, 95\% \text{ CI} = .25 \text{ to } .51$ ), followed by panel/longitudinal designs ( $\bar{r} = .21, p < .05, 95\% \text{ CI} = .13 \text{ to } .30$ )

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### **Collective Attitudes/Perceptions-Turnover Moderators.**

We examined the same contextual moderators of the Personnel Changes-turnover relationship for the relationship between CAP and Turnover. Turnover type moderates the CAP-Turnover relationship ( $Qb = 13.65, p < .05$ ), such that CAP in samples with involuntary turnover ( $\bar{r} = -.24, p < .05, 95\% \text{ CI} = -.35 \text{ to } -.14$ ) exhibited the strongest negative relationship, followed by voluntary turnover ( $\bar{r} = -.14, p < .05, 95\% \text{ CI} = -.19 \text{ to } -.09$ ). Total turnover, while negative, did not exhibit a significant relationship.

Location was a significant moderator ( $Qb = 56.87, p < .05$ ), such that turnover in Asian samples was more negative ( $\bar{r} = -.28, p < .05, 95\% \text{ CI} = -.51 \text{ to } -.05$ ) than those found in North America ( $\bar{r} = -.14, p < .05, 95\% \text{ CI} = -.19 \text{ to } -.10$ ). Geographic location defined by type of market economy, LME or CME, was not a significant moderator of the CAP-turnover relationship. However, location as defined by national culture, individualistic or collectivistic, was a significant moderator ( $Qb = 25.32, p < .05$ ) whereby samples from collectivistic cultures exhibited a significant negative relationship ( $\bar{r} = -.23, p < .05, 95\% \text{ CI} = -.46 \text{ to } -.06$ ).

Industry was also a significant moderator ( $Qb = 110.74, p < .05$ ). While neither industries representing education or retail, restaurant, and service exhibited significant relationships, samples that included multiple industries exhibited the strongest relationship ( $\bar{r} = -.38, p < .05, 95\% \text{ CI} = -.59 \text{ to } -.18$ ). Oil/manufacturing/transportation ( $\bar{r} = -.28, p < .05, 95\% \text{ CI} = -.36 \text{ to } -$

.17) exhibited the next strongest relationship, followed by Hospitals/healthcare ( $\bar{r} = -.25, p < .05, 95\% \text{ CI} = -.35 \text{ to } -.15$ ) and then Banking and Technology ( $\bar{r} = -.07, p < .05, 95\% \text{ CI} = -.02 \text{ to } -.12$ ). Organization size was a significant moderator ( $Qb = 89.90, p < .05$ ) with medium sized organizations of 100-499 employees demonstrating the only significant relationship ( $\bar{r} = -.37, p < .05, 95\% \text{ CI} = -.45 \text{ to } -.29$ ), suggesting that firms of this size are more like to experience turnover.

Unemployment rate was also a significant moderator of CAP-turnover relationship ( $Qb = 6.63, p < .05$ ), such that samples that reported area unemployment rates to be below 5% ( $\bar{r} = -.21, p < .05, 95\% \text{ CI} = -.37 \text{ to } -.10$ ) exhibited a negative relationship with collective turnover. Unemployment rates above 5% did not exhibit a significant relationship. Turnover group was not a significant moderator.

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Next, we examined the methodological moderators of the CAP-Turnover relationship. While Journal Quality did not significantly moderate the CAP-turnover relationship ( $Qb = 123.44, p < .05$ ). The role of turnover in a study moderated the CAP-turnover relationship ( $Qb = 68.26, p < .05$ ), whereby studies with turnover as a dependent variable exhibited the strongest negative relationship ( $\bar{r} = -.32, p < .05, 95\% \text{ CI} = -.45 \text{ to } -.19$ ) followed by those with turnover as a control variable relationship ( $\bar{r} = -.09, p < .05, 95\% \text{ CI} = -.14 \text{ to } -.04$ ).

The level of analysis of the study was also a moderator of the CAP-turnover relationship ( $Qb = 26.13, p < .05$ ), such that studies in which the unit of analysis was units in multiple organizations exhibited the strongest relationship ( $\bar{r} = -.23, p < .05, 95\% \text{ CI} = -.31 \text{ to } -.16$ ). Studies where the unit of analysis at the organizational level also exhibited a significant relationship ( $\bar{r} = -.14, p < .05, 95\% \text{ CI} = -.22 \text{ to } -.06$ ). Whether or not the turnover relationship

was hypothesized significantly moderated the CAP-turnover relationship ( $Qb = 6.67, p < .05$ ) although only studies where turnover was hypothesized exhibited a significant relationship ( $\bar{r} = -.13, p < .05, 95\% \text{ CI} = -.18 \text{ to } -.08$ ).

The data source from which the researchers obtained their data was a significant of the CAP-Turnover relationship ( $Qb = 22.98, p < .05$ ) such that studies where data was provided by sources other than organizational records or key informants exhibited the strongest relationship ( $\bar{r} = -.40, p < .05, 95\% \text{ CI} = -.42 \text{ to } -.38$ ). Finally, study design significantly moderated the CAP-turnover relationship ( $Qb = 51.5, p < .05$ ), such that studies using a Panel/Longitudinal design exhibited the strongest relationship ( $\bar{r} = -.21, p < .05, 95\% \text{ CI} = -.39 \text{ to } -.04$ ). Studies using cross-sectional design were slightly weaker ( $\bar{r} = -.11, p < .05, 95\% \text{ CI} = -.16 \text{ to } -.06$ ), followed by lagged performance designs ( $\bar{r} = -.03, p < .05, 95\% \text{ CI} = -.09 \text{ to } -.17$ ).

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***Turnover-Consequences Moderators.*** In addition to examining moderators of the antecedent-turnover relationship, we examined the influence of several moderators on the turnover-performance relationship. While we believe that these relationships are important to the overall understanding of the turnover-performance relationship, three other studies have already examined these relationships. Thus, we include the results of all tests of moderation between turnover and performance in Tables 8 and 9, however, we will limit our discussion of these results to interesting differences from those previous studies.

In the same vein as Hancock et al. (2013), we explored location as a moderator in three ways. We first examined, as Park and Shaw (2013) and Hancock et al. (2013) did, the influence of location across three geographic regions (North America, Europe, and Asia). Like Park and Shaw, we found that location moderated ( $Qb = 64.652, p < .05$ ) the turnover-performance

relationship, with North America exhibiting a significant and stronger negative relationship ( $\bar{r} = -.10, p < .05, 95\% \text{ CI} = -.08 \text{ to } -.04$ ) than either Europe or Asia on the turnover-performance relationship. Interestingly, this is counter to the finding of Hancock et al. (2013) where regional location was not a significant moderator and Asia exhibited an unexpectedly stronger relationship than North America or Europe.

Finally, we examined location based on culture (individualistic vs. collectivistic). Contrary to Hancock et al., we did not find this to be a significant moderator, although individualistic culture was significant ( $\bar{r} = -.04, p < .05, 95\% \text{ CI} = -.06 \text{ to } -.02$ ). Also inconsistent with their results, we found that individualistic cultures did exhibit a stronger negative result than did collectivistic cultures. As with the other two location variables, we examined the influence of culture on the antecedent-performance relationship, finding that it was a significant moderator and that individualistic cultures exhibit a significant negative relationship, whereas collectivistic cultures, though not significantly different from zero, exhibit a positive relationship.

Contrary to Heavey et al. (2013) and Park and Shaw (2013), but in alignment with Hancock et al. (2013), we found that industry was a significant moderator of the turnover-performance relationship ( $Qb = 46.784, p < .05$ ) yielding interesting results. By expanding Hancock et al.'s manufacturing and transportation category to include the oil industry, as well as adding additional categories of industries, we found marginally differing results from their study. While they found that manufacturing and transportation industries demonstrated the strongest relationship, followed by those representing financial and technology, we found that studies in hospital/healthcare samples ( $\bar{r} = -.09, p < .05, 95\% \text{ CI} = -.18 \text{ to } -.01$ ) or samples across multiple industries ( $\bar{r} = -.09, p < .05, 95\% \text{ CI} = -.15 \text{ to } -.03$ ) had the strongest relationships, followed by

oil/manufacturing/transportation ( $\bar{r} = -.06, p < .05, 95\% \text{ CI} = -.09 \text{ to } -.03$ ). Interestingly, though they were not significantly different from zero, retail/restaurant/service and education also demonstrated positive relationships.

Contrary to Hancock et al. (2013) and Park and Shaw (2013), organization size was not a significant moderator of the turnover-performance relationship. In fact, though none of the relationships within the subgroups were significant, results suggest that conclusions made by both Hancock et al. (that larger and medium organizations demonstrate stronger negative relationships than smaller organizations) and Park and Shaw (that larger organizations exhibited weaker relationships) may be more complementary than opposing. For example, organizations with 500-999 employees exhibited the strongest negative relationship, while small organizations with fewer than 100 employees exhibited the next strongest relationship and large companies with more than 10,000 people, in fact, demonstrated a positive relationship.

The turnover-performance relationship was not moderated by unemployment rate. This may be due to the lack of studies that provide unemployment information. For example, in our sample of studies examining the turnover-performance relationship, only 16 studies provided codeable information on area unemployment rate. While not significant, the relationship of both subcategories of unemployment rate (0-4.99% and 5-9.99) were negative.

Turnover group was a significant moderator ( $Q_b = 41.388, p < .05$ ) of the turnover-performance relationship. Contrary to the findings of Hancock et al., samples that included all employees ( $\bar{r} = -.03, p < .05, 95\% \text{ CI} = -.05 \text{ to } -.008$ ) exhibited the weakest relationship, whereas samples with only managers ( $\bar{r} = -.14, p < .05, 95\% \text{ CI} = -.19 \text{ to } -.09$ ) demonstrated strongest negative relationships, followed by non-supervisory employees ( $\bar{r} = -.05, p < .05, 95\% \text{ CI} = -.09 \text{ to } -.02$ ).

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Journal quality moderated the antecedent-turnover relationship ( $Qb = 83.301, p < .05$ ) such that papers published in top journals had a more positive relationship ( $\bar{r} = 0.04, p < .05, 95\% CI = .002 \text{ to } .08$ ), whereas those not published in top journals had a more negative relationship ( $\bar{r} = -.02, p < .05, 95\% CI = -.08 \text{ to } -.01$ ). The role of turnover in a study moderated the antecedent-turnover relationship ( $Qb = 395.150, p < .05$ ) whereby studies with turnover acting as an independent variable exhibited a more positive relationship ( $\bar{r} = 0.10, p < .05, 95\% CI = 0.002 \text{ to } .19$ ) and those where turnover acted as a dependent variable exhibited a stronger and negative relationship ( $\bar{r} = -.10, p < .05, 95\% CI = -.13 \text{ to } -.08$ ).

The level of analysis of the study was also a moderator of the antecedent-turnover relationship ( $Qb = 21.384, p < .05$ ), such that studies in which units in multiple organizations were examined were more negative ( $\bar{r} = -.13, p < .05, 95\% CI = -.25 \text{ to } -.02$ ). Studies where the unit of analysis was at the organization level exhibited a weaker negative relationship ( $\bar{r} = -.03, p < .05, 95\% CI = -.06 \text{ to } -.001$ ). Whether or not the turnover relationship was hypothesized significantly moderated the antecedent-turnover relationship ( $Qb = 267.78, p < .05$ ) although only in studies where turnover was not hypothesized was it significant ( $\bar{r} = -.09, p < .05, 95\% CI = -.13 \text{ to } -.007$ ).

The data source, from which the researchers obtained their data, was a significant moderator ( $Qb = 86.924, p < .05$ ), such that the relationship for studies where turnover data was provided by a key informant was negative ( $\bar{r} = -.05, p < .05, 95\% CI = -.09 \text{ to } -.02$ ). Finally, study design significantly moderated the antecedent-turnover relationship ( $Qb = 281.60, p < .05$ ), such that studies using a panel/longitudinal design were stronger and negative ( $\bar{r} = -.08, p < .05,$

95% CI = -.12 to -.06) and studies using cross-sectional design were weaker and positive ( $\bar{r} = 0.04, p < .05, 95\% \text{ CI} = 0.006 \text{ to } 0.08$ ).

We also examined, like Park and Shaw (2013), how these moderators influenced the turnover-performance relationship. Contrary to Park and Shaw (2013), we found journal quality ( $Q_b = 38.227, p < .05$ ) to be a significant moderator of the turnover-performance relationship, whereby studies published in top journals ( $\bar{r} = -.08, p < .05, 95\% \text{ CI} = -.11 \text{ to } -.05$ ) exhibited a stronger negative relationship than those published in other journals ( $\bar{r} = -.07, p < .05, 95\% \text{ CI} = -.05 \text{ to } -.006$ ). Journal quality also moderated the relationship between antecedents and turnover, whereby those studies published in top journals demonstrated a positive relationship, compared to those published in other journals.

The role of turnover in a study moderated the turnover-performance relationship ( $Q_b = 45.731, p < .05$ ) whereby studies with turnover acting as an independent variable exhibited a stronger negative relationship ( $\bar{r} = -0.10, p < .05, 95\% \text{ CI} = -.14 \text{ to } -.06$ ) and those where turnover acted as a dependent variable exhibited a weaker negative relationship ( $\bar{r} = -.04, p < .05, 95\% \text{ CI} = -.01 \text{ to } -.05$ ).

Also unlike Park and Shaw (2013), we found that the role of turnover ( $Q_b = 45.731, p < .05$ ) in a paper acted as a significant moderator of the turnover-performance relationship. Studies wherein turnover was an independent variable exhibited the strongest negative relationship ( $\bar{r} = -0.10, p < .05, 95\% \text{ CI} = -.14 \text{ to } -.06$ ) than those in which turnover was classified as a dependent variable ( $\bar{r} = -.04, p < .05, 95\% \text{ CI} = -.01 \text{ to } -.05$ ). Turnover role also moderated the antecedent-turnover relationship such that studies wherein turnover was a dependent variable exhibited the strongest negative relationship ( $\bar{r} = -0.10, p < .05, 95\% \text{ CI} = -.13 \text{ to } -.08$ ), whereas studies in

which turnover was an independent variable exhibited a positive relationship ( $\bar{r} = 0.10, p < .05, 95\% \text{ CI} = 0.002 \text{ to } 0.19$ ).

Contrary to Park and Shaw (2013), we found that level of analysis significantly moderated the turnover-performance relationship ( $Qb = 7.190, p < .05$ ), such that studies examining units in multiple organizations demonstrated the strongest negative relationship ( $\bar{r} = -.07, p < .05, 95\% \text{ CI} = -.12 \text{ to } -.01$ ) and those examining studies at the organizational level demonstrated the weakest negative relationship ( $\bar{r} = -.03, p < .05, 95\% \text{ CI} = -.05 \text{ to } -.01$ ). These moderation results were similar for the antecedent-turnover relationship.

Furthermore, as opposed to Park and Shaw (2013), we found that whether or not turnover was hypothesized ( $Qb = 46.465, p < .05$ ) was a significant moderator of the turnover-performance relationship, such that studies in which turnover was hypothesized exhibited a negative relationship ( $\bar{r} = -0.06, p < .05, 95\% \text{ CI} = -.09 \text{ to } -.04$ ). We also found this variable to be a significant moderator of the antecedent-turnover relationship, such that studies in which turnover was not hypothesized exhibited a negative relationship ( $\bar{r} = -0.09, p < .05, 95\% \text{ CI} = -.13 \text{ to } -.06$ ).

Counter to Park and Shaw (2013), we found that the data source from which researchers collected their data was a significant moderator of the turnover-performance relationship ( $Qb = 16.998, p < .05$ ). Studies where data collected from a key informant exhibited a stronger and more negative relationship ( $\bar{r} = -.06, p < .05, 95\% \text{ CI} = -.09 \text{ to } -.03$ ) than those where data was collected via organizational records ( $\bar{r} = -.03, p < .05, 95\% \text{ CI} = -.05 \text{ to } -.01$ ). Results were similar for the moderating relationship between the antecedent-turnover relationship.

Finally, similar to Park and Shaw, we found that study design significantly moderated the turnover-performance relationship ( $Qb = 32.039, p < .05$ ), such that lagged-performance designs

demonstrated stronger negative relationships ( $\bar{r} = -.17, p < .05, 95\% \text{ CI} = -.25 \text{ to } -.08$ ) than did cross-sectional designs ( $\bar{r} = -.06, p < .05, 95\% \text{ CI} = -.09 \text{ to } -.03$ ). While not significantly different from zero, panel/longitudinal designs exhibited the weakest relationship. Interestingly, moderating influences were quite different for antecedent-turnover relationship. While panel/longitudinal data was not significant and demonstrated the weakest negative relationship in the turnover-performance relationship, it demonstrated the strongest significant negative relationship. Cross-sectional designs moderated the relationship such that studies with this type of design exhibited a significant positive relationship, and studies taking a lagged performance approach exhibited a weak negative relationship that was not significantly different from zero.

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Insert Table 9 About Here  
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## DISCUSSION

This most recent study, in conjunction with each prior meta-analysis, contributes to the overarching understanding of the collective turnover process: how turnover influences firm performance, what influences turnover, and what strengthens or weakens these relationships. This particular study offers a comparison of three recent meta-analyses, while also contributing additional findings. While many of the results of this study further endorse several of the relationships that have been established in past meta-analyses (e.g., Hancock et al., 2013; Heavey et al., 2013; Park & Shaw, 2013) and which are supported by extant theoretical perspectives, new and differing findings have also emerged, opening the door for further examination of these complex and important relationships.

### **Antecedents and Collective Turnover**

While General HR Systems did not demonstrate a significant relationship with collective turnover, it is of interest to note that the relationship was weaker than that of general CAP which did demonstrate a significant relationship with collective turnover. In support of Hausknecht and Trevor's (2011) suggestion and findings by Gardner, Wright, and Moynihan (2011), this finding lends credence to the idea that the relationship between HR systems and turnover may be mediated by CAP. More importantly, this finding suggests that there are perhaps some HR Systems and Practices that are more salient than others, supporting further investigation of subgroups. This finding also supports the idea that it is not, perhaps, the collective of HR Systems and Practices, but how they are combined together that influences turnover behavior (Wright & Boswell, 2002). Further exploration of these relationships may provide a better understanding of which HR systems and practices may be the most effective for organizations and which combination of practices their HR dollars are best spent cultivating.

In our subgroup analysis, we found that High Commitment HR systems exhibit a significant negative relationship with collective turnover, whereas, interestingly, Individual HR Practices (e.g., training, incentives, staffing, etc.) did not. This partially supports a human capital perspective in that, by integrating commitment-enhancing HR Systems, an organization can signal to employees that they, as human capital, are important and valuable to the firm. However, actual investment in employees by way of enhancing knowledge, skills, and abilities did not significantly influence collective turnover. Though they found a positive relationship with KSA enhancing strategies and collective turnover, Gardner et al.'s (2011) findings are similar in that they suggest a divergence from the traditional thought that these types of HR practices lessen the degree to which individuals leave and organization. The inclusion of other variables (e.g., pay, benefits, and

employee voice) in our Individual HR Practices categorization may have effectively attenuated the relationship, thus parsing these out may aid in better understanding these relationships.

Future examination of these variables and how they influence collective turnover is warranted. First, a test of the mediation hypothesis is necessary to explore the relationship among HR Systems and Practices and Collective Turnover. Gardner et al.'s (2011) findings suggest that collective affective commitment is a primary mediator of the relationship between motivation and empowering HR Practices and voluntary turnover. However, it is important to expand this examination beyond just commitment, to further explore the mediating influence of other CAP, such as collective satisfaction, turnover intentions, justice and fairness, etc. Our findings suggest that many of these attitudes and perceptions do influence collective turnover, however, the mediating possibilities were not explored. Next, further deconstruction of construct may further enhance our understanding of these relationships. While Heavey et al. (2013) also explored Individual HR Practices, they deconstructed the variable, examining each one separately. While this aids in understanding the direct relationships, further exploration of more specific variables in a mediating context is necessary.

In alignment with contagion theory (Felps et al., 2009), we found that personnel changes exhibited a strong positive relationship with collective turnover, supporting the idea that turnover leads to more turnover. This has important consequences for theory, as well as practice. First, while several studies have been conducted examining the concept of turnover contagion (e.g., Bartunek Huang, & Walsh, 2008; Felps et al., 2009; Krackhardt & Porter, 1986), they have all examined this relationship at the individual level. Little has been done to empirically examine this relationship at the aggregate level. Our examination of aggregate personnel changes as an antecedent of collective turnover, as well as the type of turnover as a moderator, enhances our

understanding of how turnover leads to more turnover. Interestingly, involuntary turnover demonstrated the strongest moderating relationship, suggesting that the greater the presence of involuntary turnover, the greater the degree to which collective turnover will occur. Organizations in which terminating employees is the norm may consider the additional collective turnover consequences of losing more employees and balance these with the cost of implementing mechanisms by which to decrease the need to let employees go, lest they develop a turnover culture (Iverson & Deery, 1997).

### **Collective Turnover and Organizational Performance**

The foundation of this study, along with the extant meta-analyses, was examining the swiftly burgeoning literature encompassing the consequences of collective turnover on organizational performance. First and foremost, we scrutinized this relationship as it is the principal underlying factor among the four studies. In alignment with Hancock et al. (2013) and Park and Shaw (2013), we found a significant, negative, though somewhat modest, overall relationship between collective turnover and organizational performance. This modest relationship may be due to the offsetting influence of functional turnover whereby the quality of the workforce is somewhat improved by the depletion of low-quality human capital (Nyberg & Ployart, 2013). Few studies (e.g., Shaw & Gupta, 2007; Call, Nyberg, Ployhart, Weekley, 2015) examine the quality of turnover; however, this distinction is imperative to the understanding of the relationship. Though this finding is seemingly modest, it is still of importance and may have a significant practical impact on a firm's performance, as illustrated by Hancock et al.'s (2013) translation of their modest finding into a rather sizeable financial figure.

In line with the three prior analyses, we found that proximal outcomes (e.g. customer outcomes such as customer satisfaction and service quality) exhibited stronger negative

relationships than did moderately proximal (e.g., productivity, safety) or distal relationships (e.g. financial performance), supporting Hancock et al.'s (2013) observation that proximal relationships lend themselves as a conduit to the overall influence of turnover on financial performance. The relative strength of customer outcomes (service quality, customer satisfaction, and wait time) demonstrates that the greatest consequence of turnover is felt directly and swiftly by consumers, as suggested by Hausknecht and Trevor (2011). High turnover in a fast food establishment, for example, leads directly and quickly to increased wait times (Kacmar et al., 2006), whereas negative financial impact takes more time to evolve as consumers begin to withdrawal their business or change their purchasing behaviors. Thus, while financial performance is certainly influenced, it is more distal and is consequent of the negative influence on customer relationships. The moderating role of industry suggests that the negative influence on performance is most strong in the hospital/healthcare industry. As customer interaction is quite high in healthcare settings, ensuring consistency in staffing is imperative to maintain customer relationships.

Interestingly, innovation exhibited the strongest negative relationship with collective turnover, as compared to other measures of productivity, suggesting that the disruption of social capital resultant of employee departure challenges an organization's ability to innovate. This finding yields both support and opposition to prior work. First, it supports previous research contending that such disruptions may lead to a decrease in performance due to the costly nature of socialization processes (Leana & Van Buren, 1999). Furthermore, the disruption of social capital may repress the normal flow of activity within an organization, leading to fewer avenues of access to resources. Second, it has also been suggested that greater turnover leads to greater innovation and adaptability, as well as lessening stagnation (Abelson & Baysinger, 1984). Additionally, Schneider et al. (1995) suggested that increased rates of employee turnover benefit the

organization by eliminating homogeneity and providing greater opportunities for employees to “think outside the box”. The discrepancies in theoretical arguments, as well as empirical findings, both in this study and others, once again yields support for the possibility of curvilinearity in the turnover-performance relationship.

### **Curvilinearity and an Optimal Turnover Rate**

Using a sample more than twice that of Hancock et al. (2013), we, too, found evidence for a homogenous yet modest curvilinear relationship, providing further support for the potential positive, as well as negative implications of collective turnover on organizational performance. As researchers continue to explore this relationship, we encourage scholars to differentiate among types of individuals who are quitting (i.e., poor performers, low quality employees, etc.), as well as to provide the necessary data (i.e. the correlations among turnover and performance; turnover-squared and performance; and turnover and turnover-squared) as is done in few studies (for an exception, see Messersmith, Lee, Guthrie, & Ji, 2014) so that future comprehensive studies may more thoroughly explore this curvilinear relationship.

### **Moderation**

In addition to examining the direct and curvilinear relationships associated with collective turnover, we also explored several moderators. As we examined the moderating influence of turnover group on the antecedent-turnover relationship and the turnover-performance relationship, we found that studies in which the turnover of managers was explored exhibited stronger negative relationships. This suggests that the human capital losses associated with management are stronger than those associated with core-workforce employees. Our findings interestingly reveal that when managers leave, the relationship between antecedents and turnover becomes more negative, suggesting that, to some degree, management departure can

result in lower turnover perhaps by opening up opportunities for promotion or by eliminating poor managers from the organization and replacing them with higher caliber management (e.g. Abelson & Baysinger, 1984; Dalton & Todor, 1979).

However, while turnover of management has a seemingly beneficial influence on collective turnover, management turnover more negatively influences the turnover-performance relationship. When managers depart, they deplete the organization of knowledge, skills, and abilities which are costly to replace. The organization must then determine whether to promote from within or to conduct an external search. Thus, the expected timeline in combination with the expense of replacement and the potential disruption of social capital make management turnover more problematic than turnover of non-supervisory employees.

Moderator results suggest the importance of additional study and theorizing concerning the role of national context and culture in understanding collective turnover. Relationships between personnel changes-turnover and between turnover-performance tended to be stronger in North American, more individualistic, labor market economies. Somewhat counter-intuitively, however, relationships between attitudes and perceptions – turnover tended to be stronger in Asian, more collectivist, central market economies. Future research is needed to develop more nuanced perspectives as to the role of national context collective turnover.

We also make a possibly troubling methodological observation. In the case of attitudes and predictors explaining collective turnover and in the case of collective turnover explaining performance, relationships were significantly stronger when turnover relationships were hypothesized (and in fact the overall relationships were not significant when turnover relationships were not significantly hypothesized). Given concerns about publication bias towards significant results possibly encouraging hypothesizing after the results are known

(HARKING), future research may need to carefully replicate research findings regarding collective turnover.

## **CONCLUSION**

In summary, these findings provide several implications for theory and practice, as well as confirmation of several previously examined relationships, the consideration of new relationships, and the consideration of previously examined relationships in new ways. First, these findings support the claims made in the most recent comprehensive individual level turnover meta-analysis by Griffeth, Hom, and Gaertner (2000) that involvement of management may be the most effective mechanism to curbing collective turnover. Implementation of strategic HR approaches, such as the use of High Commitment HR Systems, coupled with increasing levels of satisfaction, commitment, and perceptions of fairness and justice are imperative to limiting collective turnover. Similarly, focusing on the quality of management and interpersonal team relationships may help discourage employee departure. The influence of personnel changes on collective turnover supports the notion that turnover does not occur in a void (Bartunek et al., 2008), but is influenced by the departure or arrival of others in the organization. Thus efforts in obtaining and retaining quality at a strategic level may attenuate the negative influences of collective turnover on organizational performance.

Additionally, we confirm that the relationship between collective turnover and overall organizational performance is indeed negative, but that there exists evidence for curvilinearity. In support of the arguments made by human and social capital theories, the potential for positive consequences of turnover is probable yet the availability of data distinguishing among good versus poor performers is limited, thus limiting our ability to empirically validate the situations

in which turnover may be beneficial. We also confirmed several moderating relationships, while also finding differences in results in others.

Finally, while we examined several theoretically grounded moderators, we also followed the example of Park and Shaw (2013) and examined the moderating potential of several methodologically related characteristics. Moderator tests indicate that several methodological differences influence both the antecedent-turnover and turnover-performance relationships. These results provide some insight into the important roles that both researchers (e.g., hypotheses, study design), data collection opportunities (e.g. data source), and even expectations of the field (e.g. journal quality) have on the relationships examined here and beyond. Further investigation of such moderators may lead to better understanding of appropriate research methodologies, as well as, the influence that our choices, as researchers, have on the outcomes of our results.

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## Appendix A

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|------------------------|--------------------------------|-------------------------------------|
| 1. Turnover            | 20. Aggregate Turnover         | 38. Organizational Culture          |
| 2. Quit                | 21. Turnover Rates             | 39. High Performance Work Practices |
| 3. Fire                | 22. Organizational Performance | 40. High Performance Work Systems   |
| 4. Discharge           | 23. Firm Performance           | 41. Performance Appraisal           |
| 5. Layoff              | 24. Financial Performance      | 42. Training                        |
| 6. Slimming            | 25. Customer Service           | 43. Benefits                        |
| 7. Resizing            | 26. Accident Rates             | 44. Promotion rates                 |
| 8. Rightsizing         | 27. Customer Satisfaction      |                                     |
| 9. Retention           | 28. Tardiness                  |                                     |
| 10. Withdrawal         | 29. Innovation                 |                                     |
| 11. Downsizing         | 30. Grievances                 |                                     |
| 12. Performance        | 31. Morale                     |                                     |
| 13. Leaning-up         | 32. Diversity                  |                                     |
| 14. Restructuring      | 33. HR systems                 |                                     |
| 15. Productivity       | 34. Inducements                |                                     |
| 16. Re-engineering     | 35. Involvement                |                                     |
| 17. Reduction-in-force | 36. Business Strategies        |                                     |
| 18. Churning           | 37. Quality                    |                                     |
| 19. Quit Rates         |                                |                                     |

## Appendix B

<u>Relationship</u>	<u>k</u>	<u>Total N</u>	<u># Effect Sizes</u>
<i>Antecedents-Collective Turnover</i>			
Linear Antecedents-Turnover	102	69555	778
General HR Systems/Practices	77	65736.7	561
High Commitment HR Systems	26	10173	67
Individual HR Practices	70	60636.7	500
<i>General Collective Attitudes/Perceptions</i>			
Management/Leadership Quality	46	9414.4	129
Climate/Culture	13	2034	19
Cohesiveness/Teamwork	21	5473.4	48
Satisfaction/Commitment	9	1529	11
Commitment	21	3192	39
Satisfaction	10	1269	16
Turnover Intention	14	2351	18
Justice/Fairness	5	325	5
Prior Performance	6	932	11
Personnel Changes	10	7851	17
	27	7899.3	71
<i>Collective Turnover-Performance</i>			
Linear Turnover-Overall Performance	121	87898.5	502
Curvilinear Turnover-Performance Relationship	35	31449.1	139
<i>Overall Productivity</i>			
Sales/Output	68	58587.3	162
Efficiency	47	49346.3	95
Costs	20	6701.8	37
Innovation	12	7803	22
Overall Firm Performance	4	525	7
Financial Performance	72	42803.9	237
Market Performance	68	64951.6	216
Customer outcomes	4	811	6
Wait Time	30	8327	103
Customer Satisfaction	5	2935	8
Service Quality	16	4220	77
	9	1033	18

