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Meta-Analytic Review of Employee Turnover as a Predictor of Firm Performance

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Previous research has primarily revealed a negative relationship between collective employee turnover and organizational performance. However, this research also suggests underlying complexity in the relationship. To clarify the nature of this relationship, the authors conduct a meta-analytic review in which they test and provide support for a portion of Hausknecht and Trevor's model of collective turnover. The authors' meta-analysis includes 48 independent samples reporting 157 effect size estimates ($N = 24,943$), tests six hypothesized moderator variables, and provides path analyses to test alternative conceptualizations of the turnover-organizational performance relationship. Results indicate that the mean corrected correlation between turnover and organizational performance is $-.03$, but this relationship is moderated by several important variables. For example, the relationship is stronger in manufacturing and transportation industries ($-.07$), for managerial employees ($-.08$), in midsize organizations ($-.07$), in samples from labor market economies ($-.05$), and when organizational performance is operationalized in terms of customer service ($-.10$) or quality and safety ($-.12$) metrics.

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In addition, proximal performance outcomes mediate relationships with financial performance. The authors discuss implications of their results for theory and practice and provide directions for future research.

Keywords: *meta-analysis; turnover; organizational performance*

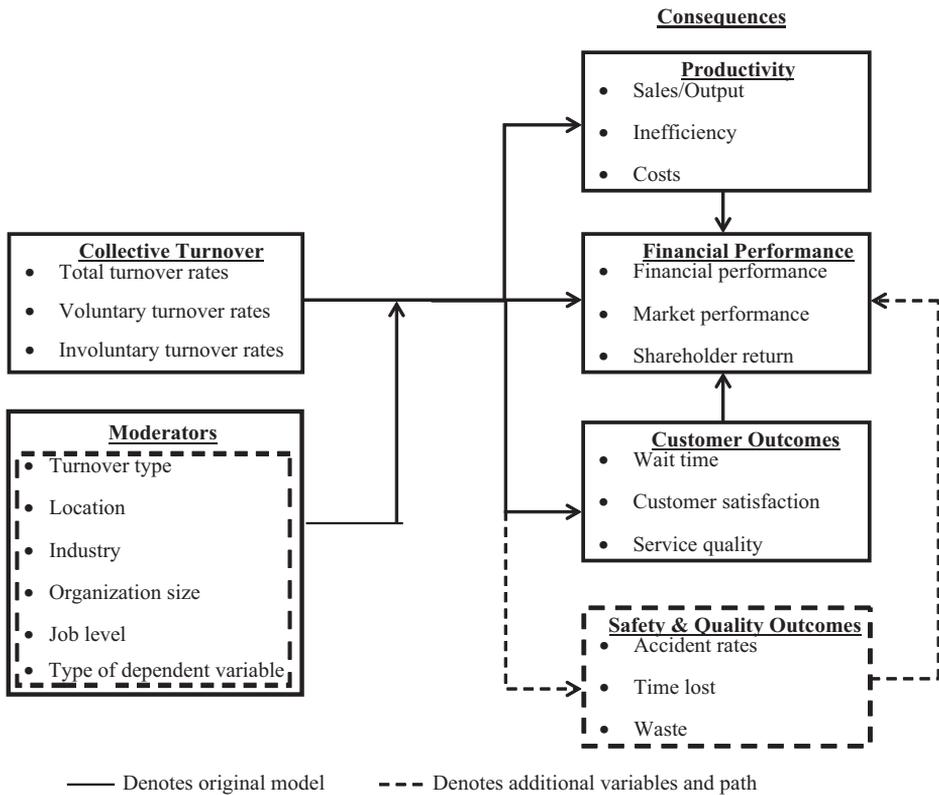
The study of employee turnover has been important for management scholars and practitioners for decades and remains an issue of widespread interest (Allen, Bryant, & Vardaman, 2010). The bulk of the turnover literature consists of examinations of various individual-level predictors of turnover, including employee demographics, job satisfaction, organizational commitment, and embeddedness (for reviews, see Griffeth, Hom, & Gaertner, 2000; Holtom, Mitchell, Lee, & Eberly, 2008). The predominant attention given to antecedents of turnover is likely based on the supposition that turnover results in substantial and meaningful consequences for organizations. While the study of turnover antecedents is important, it is of equal importance to study the potential consequences that turnover may have on organizational performance, such as effects on profits, revenues, customer service, scrap rates, and other firm performance outcomes (Detert, Treviño, Burris, & Andiappan, 2007; Holtom et al., 2008; Kacmar, Andrews, van Rooy, Steilberg, & Cerrone, 2006; Staw, 1980). A growing body of research has begun to address this issue (Hausknecht & Trevor, 2011).

The relationship between collective employee turnover and organizational performance has been viewed from multiple theoretical perspectives incorporating costs, disruptions, and human and social capital. As Hausknecht and Trevor (2011: 360) summarized, "Collective turnover can lead to undesirable outcomes because it entails the loss of firm specific human and social capital, disrupts operations and collective function, saddles remaining members with newcomer socialization and training, and increases recruitment and selection costs." Hausknecht and Trevor provide a narrative review of 115 articles on collective, or aggregate-level, turnover, of which they report 31% focused on collective turnover as an antecedent of various indicators of organizational performance. They conclude that the empirical evidence largely supports the harmful effects of turnover. However, they also acknowledge that these harmful effects are not universally supported, are sometimes contingent on moderators, may sometimes have positive consequences, and may not always be linear.

We think it is too early to conclude that the relationship between turnover and firm performance is straightforwardly negative; there may be underlying complexity in the relationship that warrants additional attention. Indeed, Allen et al. (2010) argued that the assumption that turnover is inherently bad for organizations is a widely held managerial misconception. In the present review, more than 25% of the effect sizes indicated a positive relationship, more than 20% of studies found evidence for moderation, and more than 10% found evidence for curvilinearity. Given this variance in findings, a quantitative review will advance our conceptual and practical understanding of the turnover–firm performance relationship and its boundary conditions as well as provide guidance for future research.

Accordingly, we conduct the first meta-analysis addressing the relationship between turnover rates and organizational performance. In doing so, we respond to Holtom et al.'s (2008) call for further investigation of this relationship in hopes of creating consensus about

Figure 1
Moderators and Consequences of Collective Employee Turnover



Source: Adapted from Hausknecht and Trevor (2011).

the nature of the relationship and identifying key directions for future research. More specifically, we develop and test a conceptual model based on Hausknecht and Trevor’s (2011) framework of collective turnover (see Figure 1). In this model, turnover rates are expected to directly influence several indicators of organizational performance such as customer service. In addition to linear effects on performance, we also conduct a meta-analytic test for evidence of curvilinearity, as some scholars have suggested there may be an optimal level of turnover represented by a curvilinear relationship. Furthermore, we identify and test theoretically important hypothesized moderators of the turnover–performance relationship including characteristics of the sample (i.e., industry, location, job level, and organization size) and measures (i.e., operationalizations of turnover and organizational performance). Finally, we expect some types of performance indicators to be more proximally related to turnover rates and that these more proximal indicators will partially mediate

relationships with more distal indicators. Thus, we conduct meta-analytic path analyses of models of the turnover–performance relationship to assess mediation and help clarify the mechanisms through which turnover is associated with organizational performance.

Theoretical Background and Hypotheses

Dysfunctional Effects of Turnover

Turnover is defined as the departure of an employee from “the formally defined organization” (March & Simon, 1958: 99). The interest in this phenomenon has been prevalent within the management, psychology, sociology, and popular business literatures throughout the past half century. As the business world continues to move toward a knowledge-based economic structure (Adler, 2001), the importance of studying turnover should continue to gain interest. This shift in the economy means that the present consequences of turnover are vastly different from those of yesteryear. Instead of replacing low-skill, easily trainable, inexpensive workers, turnover in a knowledge-based economy translates into specific skill-set needs, more advanced training needs, and increased wages for educated, knowledgeable, skilled employees. Furthermore, turnover may increase the risk of knowledge sharing with competitors as employees move from one organization to another, leading to the disclosure of core processes and information, subsequently resulting in the potential for lost market share and profits.

Thus, the most common assumption regarding the relationship between turnover rates and organizational performance is that increasing turnover rates should be dysfunctional in the sense of being associated with decrements in organizational performance. Hausknecht and Trevor (2011) conclude from their narrative review that the empirical evidence to date tends to support these detrimental effects. Conceptually, researchers have relied primarily on three theoretical perspectives to explain the likely impact of turnover rates on organizational performance: (a) cost-based perspective (e.g., Dalton & Todor, 1979), (b) human capital perspective (e.g., Becker, 1993), and (c) social capital perspective (e.g., Leana & Van Buren, 1999). The cost-based perspective suggests that turnover affects organizational performance because of the direct and indirect costs associated with managing employee exits. For example, Allen et al. (2010) identify several separation and replacement costs associated with turnover, such as owed salary, benefits, accrued vacation time, interviewing, advertising, and training costs. The human capital perspective suggests that turnover affects organizational performance because it leads to the loss of valuable knowledge and skills employees have developed through experience and training as well as a loss of organizational memory (e.g., Becker, 1980, 1993; Dess & Shaw, 2001). Similarly, the social capital perspective suggests that turnover affects organizational performance because employees build up capital and resources embedded in social relationships that cannot be easily replaced when those employees depart (e.g., Shaw, Duffy, Johnson, & Lockhart, 2005).

This view of the negative consequences of turnover on firm performance has been supported by studies finding negative relationships between turnover rates and sales performance (Kacmar et al., 2006), cost-effectiveness (Alexander, Bloom, & Nuchols, 1994), and

productivity (C. Brown & Medoff, 1978). In addition, studies have observed that increases in turnover rates lead to decreases in customer service (e.g., Hausknecht, Trevor, & Howard, 2009; Koys, 2001; McElroy, Morrow, & Rude, 2001) and growth (Batt, 2002), as well as increases in food loss (Detert et al., 2007) and scrap rates (Arthur, 1994). As the majority of evidence to date appears to support a negative relationship (Hausknecht & Trevor, 2011), we suggest it is likely that the separation and replacement costs, human capital losses, and social capital losses of increasing turnover rates will outweigh any possible functional effects. Consistent dysfunctional effects of turnover rates on performance would be consistent with what Delery and Doty (1996) refer to as a universalistic perspective.

Hypothesis 1: The relationship between employee turnover and organizational performance is negative.

Optimal Turnover: Curvilinear Relationships

Despite the evidence supporting the dysfunctional effects of turnover rates, collective turnover may not always be detrimental to organizational performance. There may be potential benefits associated with turnover that mitigate or in some cases outweigh the costs. For example, turnover may decrease compensation rates and other organizational costs to the extent new employees have less experience, vacation and sick-leave pay, and insurance premiums (Alexander et al., 1994; Jeswald, 1974). Abelson and Baysinger (1984) suggested that a certain amount of turnover is useful in reducing stagnation and improving innovation. Similarly, turnover may also prohibit the development of employee homogeneity and “groupthink” (Schneider, Goldstein, & Smith, 1995). Turnover could be functional by depleting the firm of poor performers or those who do not fit within the organizational culture and replacing them with relatively higher performing new employees (Abelson & Baysinger, 1984; Dalton & Todor, 1979). Furthermore, new employees who bring already established relationships with key constituents (e.g., customers or suppliers) may add net social capital to organizations. There is some evidence for these functional effects. For example, Seleim, Ashour, and Bontis (2007), using a sample of software development organizations, observed a positive relationship between the departure of software developers and the level of export intensity, and Siebert and Zubanov (2009) observed a positive relationship between turnover and labor productivity for part-time sales assistants.

These theoretical and empirical inconsistencies have initiated the search for the existence of a curvilinear turnover–performance relationship (e.g., Abelson & Baysinger, 1984; Glebbeek & Bax, 2004; Shaw, Gupta, & Delery, 2005). The logic underlying a curvilinear relationship is that an appropriate balance of costs and human and social capital may result in an optimal level of turnover in some contexts (e.g., Glebbeek & Bax, 2004). Specifically, at one end, turnover is too low, leading to stagnation, unhealthy homogeneity, high benefit costs, and limited exit of poor performers, while at the other end turnover is too high, leading to increased recruiting, training, and separation costs as well as the irreplaceable loss of human and social capital. Several studies have reported a nonlinear relationship. For example, in a sample of temporary job placement agencies, Glebbeek and Bax (2004) observed a

curvilinear relationship. Siebert and Zubanov (2009) reported evidence for an inverted *U*-shaped relationship in a sample of part-time workers, suggesting that moderate levels of turnover are more functional. Other researchers have described the curvilinear relationship in the form of an attenuated negative curvilinear relationship in which the optimal turnover rate is zero. Shaw, Gupta, et al. (2005) observed an attenuated negative relationship between turnover and organizational performance in their study of concrete pipe manufacturing plants and trucking companies.

Although Hausknecht and Trevor (2011) report little empirical evidence in favor of curvilinearity, particularly for an inverted-*U* relationship, they relied on a narrative review and vote-counting process to draw this conclusion. Thus, a meta-analytic review is warranted. The optimal level model suggests that there is an ideal level of turnover that is most advantageous for performance, resulting in a curvilinear turnover–performance relationship. This optimal level may vary by organization, resulting in an ideal level of turnover depending on relative costs and values of human and social capital, which is consistent with Delery and Doty's (1996) idea of strategic fit.

Hypothesis 2: The relationship between employee turnover and organizational performance is curvilinear.

Moderators of the Turnover–Organizational Performance Relationship

Given the observed heterogeneity in results, it seems plausible that contextual differences may play a role in understanding the turnover–firm performance relationship. We examine key moderators of this relationship that help explain under what conditions we should expect a particular turnover–performance relationship. Allen et al. (2010) argued that turnover rates alone are not sufficient indicators of the extent to which turnover is functional or dysfunctional for a particular organization. Instead, the likely impact of turnover rates depends on who is leaving, organizational context, and industry norms. Who is leaving matters because turnover among employees with higher human or social capital or those with higher replacement costs will be more detrimental to firm performance. Organizational context matters because there are factors (e.g., organization size) that may affect the manner in which turnover influences performance and the resources available to the organization to address exits and replacements. Industry norms matter because a turnover rate that may seem relatively high in general could actually be considerably lower than the turnover rates of rivals, providing a relative competitive advantage. Conversely, a seemingly low turnover rate could place a firm at a competitive disadvantage if the rate is high compared to that of rivals. Thus, the effects of turnover rates may depend on patterns of contextual circumstances, which is a configurational perspective in Delery and Doty's (1996) model.

We identify six hypothesized moderators classified into two categories: characteristics of the sample (i.e., industry, location, job level, and organization size) and characteristics of the measures (i.e., operationalizations of turnover and organizational performance). We think characteristics of the sample matter because the types of employees involved and the context in which turnover occurs could influence the impact of turnover on the organization. For

example, industry and job level may be related to the human and social capital invested in employees as well as replacement costs, while organization size may be related to the resources available to manage turnover. Characteristics of the measures may also matter. Studies producing mixed results have used a wide variety of indicators of organizational performance as well as different operationalizations of turnover, such as voluntary or total turnover.

Industry. Considering the relative importance of human and social capital, turnover costs may vary as a function of the types of employees involved. Shaw, Duffy, et al. (2005) suggest that the type of industry in which the organization belongs may have an effect on turnover consequences because human and social capital losses are likely more problematic in settings characterized by high skill levels or knowledge requirements as opposed to settings with standardized systems and technologies. For example, in the food service or retail industries, human capital may provide little competitive advantage. From a cost perspective, certain industries may be prone to higher levels of turnover and thus may have developed mechanisms with which to cope with employee turnover, thus lowering the negative correlation that turnover may have with organizational performance (Shaw, Duffy, et al., 2005). Furthermore, industries with lower levels of knowledge or skill requirements may not require as many resources to recruit employees. In contrast, high-level knowledge or skill requirements will require additional resources to recruit, train, and develop new employees. The high-technology, health care, financial, and various service industries are primarily composed of professionals and are characterized by high knowledge requirements, demanding higher levels of education and training. Alternatively, the food and retail industries often have lower knowledge requirements, lower levels of education, and less skill development. For example, Mohr, Young, and Burgess (2009) and Alexander et al. (1994) observed a negative relationship between turnover and organizational performance among registered nurses. However, Sacco and Schmitt (2005), in a sample of fast food restaurants, observed no relationship between turnover and firm performance.

Hypothesis 3: Industry moderates the relationship between employee turnover and organizational performance such that the relationship is more negative in industries characterized by higher as opposed to lower knowledge and skill requirements.

Location. Prior studies have shown that differences exist across countries in terms of human resource management practices (Ahmad & Schroeder, 2003), culture (e.g., Hofstede, 1980), and governmental policies and regulations (Morishima, 1995). For example, Seleim et al. (2007) observed a positive relationship between turnover and exporting density in an Egyptian software development company, whereas Baron, Hannan, and Burton (2001) used a similar sample (high-technology start-ups) in the United States and observed a negative relationship. The majority of research on the relationship between turnover and organizational performance has been conducted in the United States. Thus, it is possible that the underlying theoretical arguments have been developed from a Western mind-set or that there are key structural differences across countries and cultures that could influence the relative impact of costs and human and social capital losses.

Employment security, hiring practices, compensation scales, and training and development opportunities may differ across countries (Pfeffer, 1998). Countries with more restrictive labor laws such as Germany and France, where termination of employees is difficult, may lengthen the hiring process, resulting in increased costs in recruitment and selection activities, as well as in disadvantages in production and service quality. Furthermore, location may matter due to systematic differences in replacement costs. In an examination of mean hourly compensation costs for manufacturing workers in 2007, the U.S. average hourly compensation was \$25.27; costs in much of Western Europe were comparable (e.g., United Kingdom \$30.18, France \$28.57, Italy \$28.23), and costs in Asia were lower (e.g., South Korea \$16.02, Taiwan \$6.58, China less than \$1; Zamora & Kirchmer, 2010). As replacement costs are a function of annual salary compensation, a cost-based perspective suggests that organizations in higher labor cost contexts may experience more dysfunctional effects of higher turnover rates. We predict that locations with higher labor costs, such as the United States and Europe, will experience greater negative consequences of employee turnover than locations with lower to moderate labor costs. Thus, we hypothesize the following:

Hypothesis 4a: Location moderates the relationship between employee turnover and organizational performance such that the relationship is more negative in regions where labor costs are higher such as in the United States and Europe.

Location may also matter as a result of cultural differences. For example, cultures tend to differ in terms of individualism and collectivism, with more individualistic cultures valuing independent conceptions of the self and collectivist cultures valuing more interdependent conceptions of the self (e.g., Hofstede, 1980). We speculate that turnover may be more disruptive in more individualistic contexts, such as the United States, the United Kingdom, and the Netherlands, because work processes are more likely to be dependent on unique human and social capital resources associated with particular individuals. Because individuals are encouraged to stand out and bring unique skills to the job, their departures may disrupt routines, and it may be more difficult to find replacements and integrate them into the work group. In more collective cultures such as China, Japan, and Korea, where individuals are expected to function in complementary ways within the group, it may be simpler to find and integrate replacements into group functioning. It may also be the case that individuals departing in more collective cultures may tend to be those with weaker organization or work group fit, something potentially less of an issue in more individualistic cultures. We predict that locations with greater individualistic tendencies will experience more negative consequences of employee turnover than locations with greater collectivistic tendencies. Thus, we hypothesize the following:

Hypothesis 4b: Location moderates the relationship between employee turnover and organizational performance such that the relationship is more negative in more individualistic contexts.

In addition to employment and cultural differences, the tendency toward a liberal market economy (LME) or coordinated market economy (CME) may influence the ability to overcome difficulties typically associated with employee turnover (Hall & Soskice, 2001). For

example, organizations in CMEs such as Denmark and Japan attempt to reduce uncertainty with regard to the behavior of others by interacting, coordinating, and cooperating with others, thereby focusing on building collaborative relationships. Alternatively, organizations in LMEs such as the United States and the United Kingdom are dominated by formal contracts, market activities, and hierarchies (Hall & Soskice, 2001). As a result, it may be that the higher levels of cooperation and collaboration of CMEs allow organizations in such economies to better respond to the replacement of knowledge and skills lost through turnover. We suspect that locations that have a tendency toward an LME will experience greater harmful effects of employee turnover than those that have a tendency toward a CME. Thus, we hypothesize the following:

Hypothesis 4c: Location moderates the relationship between employee turnover and organizational performance such that the relationship is more negative in LMEs.

Job level. Using human capital theory and cost-based perspectives, supervisors and managers should have higher levels of human capital in terms of knowledge, skills, abilities, experience, and education than nonmanagerial employees. Managerial employees may also be more difficult and costly to replace in terms of recruitment, training, and development costs than nonmanagerial employees. We identified studies of nonmanagerial employees and mixed studies of managerial and nonmanagerial employees combined. Thus, we identify the following two levels of this moderator: samples of nonmanagerial employees only and samples of managerial and nonmanagerial employees combined. We predict a more negative relationship in samples that include managerial employees, although this is a conservative test, as these samples also include nonmanagerial employees.

Hypothesis 5: Job level moderates the relationship between employee turnover and organizational performance such that the relationship is more negative among samples including managerial employees than solely nonmanagerial employees.

Organization size. While larger companies may have mechanisms in place with which to combat some of the negative consequences of turnover on organizational performance, small- and medium-sized organizations may be less able to cope with turnover. For example, larger organizations may have more resources at their discretion allowing them more flexibility in hiring replacements, as well as managing replacement costs and losses of human and social capital. Smaller organizations may possess fewer resources to manage these costs and the human and social capital losses are more damaging.

Organizational size is the number of employees within an organization. Several of the studies included in this meta-analysis report average number of employees across firms, which we use as the measure of firm size. Other studies examined one firm with several branches, reporting the average number of employees per branch. For these studies, we aggregated the average branch size to arrive at the overall firm size (average number of employees per branch multiplied by the number of branches). To determine how to categorize these numbers into small, medium, and large organizations, we consulted governmental and academic sources. Further searches led us to conclude that considerable variability

exists, and many studies arbitrarily chose their size classifications (Goldschmidt & Chung, 2001). We assigned the number of employees in an organization into one of three categories based on the U.S. Department of Commerce (1999) definition of small organizations as those with fewer than 100 employees, medium organizations as those with 100 to 499 employees, and large organizations as those with more than 500 employees.

Hypothesis 6: Organization size moderates the relationship between employee turnover and organizational performance such that the relationship is more negative in smaller and medium as opposed to larger organizations.

Type of turnover. Some studies of the turnover–organizational performance relationship focus on voluntary turnover, while others do not make the voluntary–involuntary distinction but focus instead on total turnover. While involuntary turnover may be just as costly as voluntary turnover, involuntary turnover would typically be associated with lower human and social capital losses as poor performers typically compose the majority of involuntary departures (Dalton, Todor, & Krackhardt, 1982). Valuable, hard-to-replace employees are less likely to be involuntarily terminated. Thus, the use of total turnover may attenuate the observed relationship between turnover and organizational performance. For example, McElroy et al. (2001) observed a strong negative relationship between voluntary turnover and organizational performance, while Sacco and Schmitt (2005) used total turnover and observed a weak negative relationship between turnover and profitability.

Hypothesis 7: Type of turnover moderates the relationship between employee turnover and organizational performance such that the relationship is more negative when voluntary as opposed to total turnover is measured.

Organizational performance measure. Another key difference among the studies we reviewed is the use of a wide variety of operationalizations of organizational performance. Hausknecht and Trevor (2011) suggest that the magnitude of turnover–performance relationships depends on the operationalization of performance, with stronger observed relationships expected for more proximal performance outcomes. Their model identified three categories of performance measures: financial performance (e.g., profitability), labor productivity (e.g., sales per employee), and customer service (e.g., wait times). Based on Harter, Schmidt, and Hayes's (2002) meta-analysis, we expand the conceptualization of performance outcomes to include safety and quality indicators (e.g., accident rates, scrap rates).

Researchers have used measures of all types, for example, financial measures such as profit, sales, or revenues (e.g., Batt, 2002; Huselid, 1995; Kacmar et al., 2006); customer service such as customer satisfaction or service quality (e.g., Hausknecht et al., 2009; Koys, 2001; Mohr et al., 2009); labor productivity such as sales per employee or profit per worker (e.g., Guthrie, 2001; Shaw, Duffy, et al., 2005; Siebert & Zubanov, 2009); quality or safety such as scrap rates or accident rates (e.g., Arthur, 1994; Shaw, Gupta, et al., 2005); and a composite performance variable composing values from profitability, productivity, and quality (Stavrou, 2005). Our conceptual model suggests that customer service, quality, safety, and labor productivity may be more proximal outcomes that represent mediating mechanisms

explaining relationships with the more distal criterion of financial performance. Human and social capital perspectives suggest that turnover may have the most direct relationships with customer service, quality, and safety, while a cost-based perspective suggests direct relationships with labor productivity. Thus, we expect observed relationships to be stronger with these more proximal outcomes.

Hypothesis 8: Type of organizational performance measure moderates the relationship between employee turnover and organizational performance such that the relationship is more negative with measures of customer service, labor productivity, and quality and safety than with measures of financial performance.

Indirect relationships. Hausknecht and Trevor's (2011) conceptual model depicts productivity and customer outcomes as partial mediators of the relationship between collective turnover and financial performance. Similarly, we predict that productivity, customer service, and quality and safety outcomes partially mediate the turnover–performance relationship. That is, at least part of the relationship between collective turnover and firm financial performance is a function of the direct effects of collective turnover on more proximal indicators such as labor costs, productivity, service quality, and efficiency. There is some evidence for this assertion. For example, Kacmar et al. (2006) reported that customer wait time, a customer service metric, mediated the turnover–financial performance relationship. In addition, Shaw, Gupta, et al. (2005) reported that out-of-service time, a quality metric, mediated this relationship. Thus, we conduct meta-analytic path analyses (Viswesvaran & Ones, 1995) to test the potential mediating effects of customer service, labor productivity, and quality/safety on the relationship between turnover and financial performance.

Method

Sample and Coding

While collective turnover can be defined as the departure of any group of people higher than the individual level (e.g., group, unit, or organization), we examine the effects of organizational and unit-level turnover because so few studies have examined turnover at the group level. We include empirical studies that met the following criteria: studies had to assess the relationship between organizational or unit-level employee turnover and organizational performance, and studies had to report either voluntary turnover or total turnover rates. We did not include articles on downsizing or reduction in force or articles that examined executive or CEO departures as these phenomena differ from voluntary or involuntary turnover of principal employees and managers.

The search for relevant studies included four steps. First, a list of keywords was developed, including *employee turnover*, *quit rate(s)*, *aggregate turnover*, *turnover rate(s)*, *organization performance*, *firm performance*, *productivity*, *financial performance*, *customer service*, *accident rates*, *retention*, and *customer satisfaction*. Computerized database searches included ISI Web of Science, Business Source Premier, and PsycINFO. Second, using the

meta-analysis conducted by Griffeth et al. (2000) as a guide, the following premier journals in organizational sciences were subjected to a manual search: *Journal of Applied Psychology*, *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*. Next, identified studies were searched for citations relating to other similar studies utilizing turnover as a predictor of organizational performance, and, subsequently, these studies were identified and reviewed and eligibility for inclusion was determined. Additional studies appearing in Business Source Premier and PsycINFO, as well as those found via reference searches, were included so long as they met the inclusion criteria. Finally, we utilized HRDIV_NET, an online listserver, to request unpublished studies and doctoral dissertations examining the turnover–organizational performance relationship.

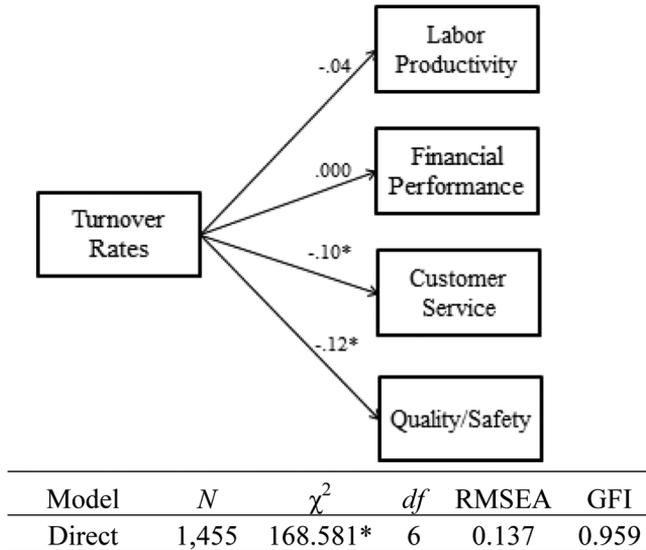
Using these criteria and search methods, we identified 54 studies within 51 articles that reported 146 relationships among turnover rates and organizational performance measures. The 54 studies were independently coded by two of the authors for characteristics of the sample and organization, outcome measurements, and potential moderators. Coders agreed on 81.9% of initial codes. Discrepancies were resolved via discussions among the coders, with additional undecided issues resolved via conversations with the other authors. Five studies failed to report information necessary for calculating effect sizes, and one study was eliminated due to use of the same sample, data, and analyses, thus violating the independence assumption. Our final data set included 48 independent studies reporting 134 effect sizes and a total sample size of 24,943.

Meta-Analytic Procedures

Effect sizes. The effect size index is the correlation coefficient (r). Estimation of the overall relationship (i.e., turnover rate \rightarrow organizational performance) involved 157 effect sizes extracted from 48 independent samples. Several studies, for example, Ryan, Schmit, and Johnson (1996), were conducted over time using the same variable (e.g., profits), which we averaged prior to integration as we did not consider them to be independent effect sizes. To maintain sample independence, we developed a composite effect size for samples with multiple effects (Hunter & Schmidt, 2004).

Moderator analyses. Heterogeneity of effect sizes was assessed via a chi-square-based Q statistic, the 75% rule, the 80% credibility interval, and the I^2 statistic (Huedo-Medina, Sanchez-Meca, Marin-Martinez, & Botella, 2006). The Hunter–Schmidt chi-square test of heterogeneity (Q) statistic was calculated as a test of homogeneity to assess whether sampling error is the primary explanation for variability in effect sizes. Rejection of the null indicates that sampling error does not account for all of the variability, providing evidence to search for moderators. With low power, the Q may not indicate the presence of existing moderator variables, unless the moderating effect is large (Hunter & Schmidt, 2004). The I^2 is more appropriate for meta-analyses with fewer studies. The I^2 is a nonparametric test of heterogeneity and provides an index associated with the degree of variability across a number

Figure 2
Turnover Rates as a Predictor of Labor Productivity, Financial Performance, Customer Service, and Quality/Safety



* $p < .05$

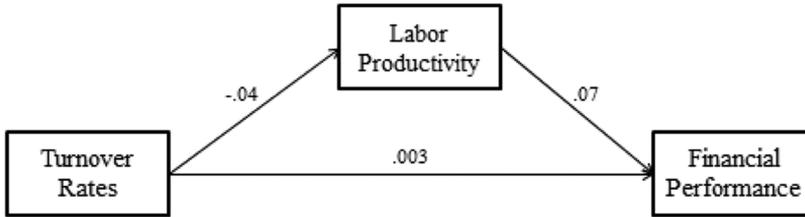
of studies that is not due to chance (Higgins, Thompson, Deeks, & Altman, 2003). Values can be interpreted as follows: 25% indicates low, 50% indicates moderate, and 75% indicates high heterogeneity.

Curvilinearity. We followed Williams and Livingstone's (1994) procedure for conducting a meta-analytic estimation of a curvilinear relationship. To conduct this test without access to the individual data, we used Cohen and Cohen's (1983) method for deriving semipartial correlations among organizational performance measures, turnover, and the quadratic term, turnover squared. We contacted each author via email, requesting zero-order correlations among these three variables. We received usable data from 16 studies, including a total of 39 effect sizes of the turnover–organizational performance relationship within those studies.

Meta-Analytic Path Analysis

A meta-analytic correlation matrix was developed to conduct path-analyses using Viswesvaran and Ones's (1995) method, estimating the following six path models: a direct effect model between turnover and the four measures of organizational performance (Figure 2); three simply mediated models examining the individual effects of labor productivity (Figure 3a),

Figure 3a
Labor Productivity as a Mediator of the Relationship between
Turnover Rates and Financial Performance



Model	<i>N</i>	χ^2	<i>df</i>	RMSEA	GFI
Fully Mediated	1,455	0.012	1	0.000	1.000
Partially Mediated	1,455	0.000	0	0.040	1.000

χ^2 difference = .012, *df* = 1, *p* = .913

customer service (Figure 3b), and quality and safety (Figure 3c) between turnover and financial performance; and, finally, a fully mediated (Figure 4a) and partially mediated model (Figure 4b).

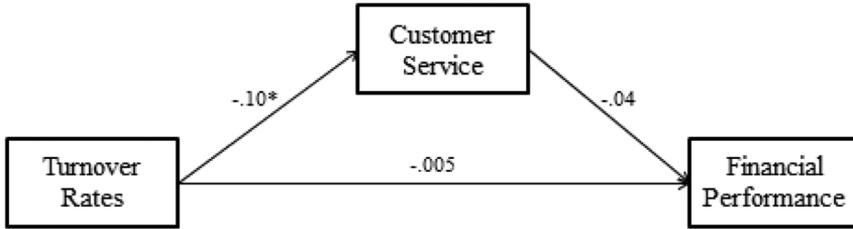
Results

Summary findings of the meta-analysis are reported in Table 1. Because many studies report more than one type of performance measure ($k = 25$), we created a composite effect size in each sample to maintain independence. In support of Hypothesis 1, the overall relationship between employee turnover and organizational performance is negative (corrected $\bar{r} = -.03$, $p < .05$, 95% CI = $-.053$ to $-.014$, $SD_{\bar{r}} = .05$). The 95% confidence interval does not include zero, indicating statistical significance. Our analyses revealed that the fail-safe N (Rosenthal, 1979) for the overall relationship was 982. Using the $5k + 10$ criterion (Hedges & Olkin, 1985), our fail-safe N of 982 exceeds that value of 250. Sampling error explained only 39.5% of the variance, suggesting sufficient heterogeneity to search for moderators (Hunter & Schmidt, 2004). We observed an 80% credibility interval (Whitener, 1990) that included zero, as well as conducted additional tests of homogeneity indicating that moderation is likely (i.e., $Q_1 = 121.55$, $p < .05$; $I^2 = 61.33$).

Curvilinearity

Following Williams and Livingstone's (1994) procedure using derived semipartial correlations ($N = 5,762$, $k = 16$; twice as many studies as included in Williams and Livingstone's

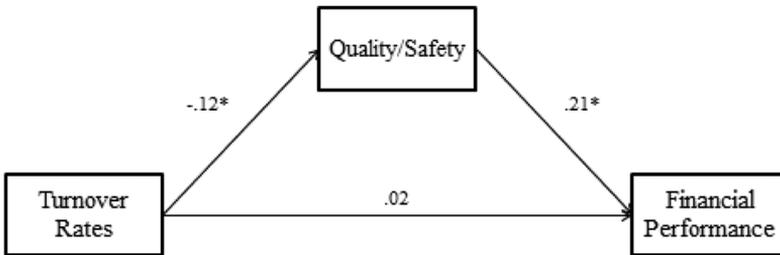
Figure 3b
Customer Service as a Mediator of the Relationship between Turnover Rates and Financial Performance



Model	<i>N</i>	χ^2	<i>df</i>	RMSEA	GFI
Fully Mediated	1,455	0.031	1	0.000	1.000
Partially Mediated	1,455	0.000	0	0.059	1.000

χ^2 difference = .031, *df* = 1, *p* = .860

Figure 3c
Quality/Safety as a Mediator of the Relationship between Turnover Rates and Financial Performance

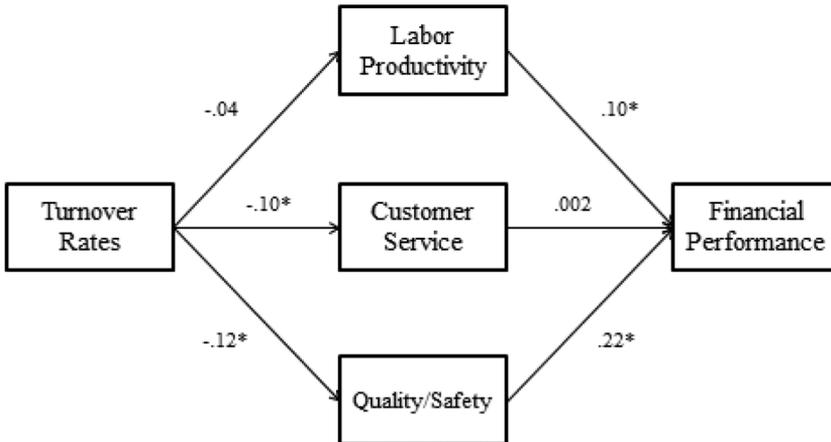


Model	<i>N</i>	χ^2	<i>df</i>	RMSEA	GFI
Fully Mediated	1,455	0.861	1	0.000	1.000
Partially Mediated	1,455	0.000	0	0.136	1.000

χ^2 difference = .861, *df* = 1, *p* = .353

curvilinear analysis), we calculated a sample-weighted mean semipartial \bar{r} of .03, *p* < .05 (95% CI = .008 to .061). Thus, in support of Hypothesis 2, we observe evidence of a positive curvilinear relationship between turnover and organizational performance.

Figure 4a
Fully Mediated Model of Labor Productivity, Customer Service, and Quality/Safety as Mediators of the Relationship between Turnover Rates and Financial Performance



Model	N	χ^2	df	RMSEA	GFI
Fully Mediated	1,455	90.338*	4	0.122	0.978

* $p < .05$

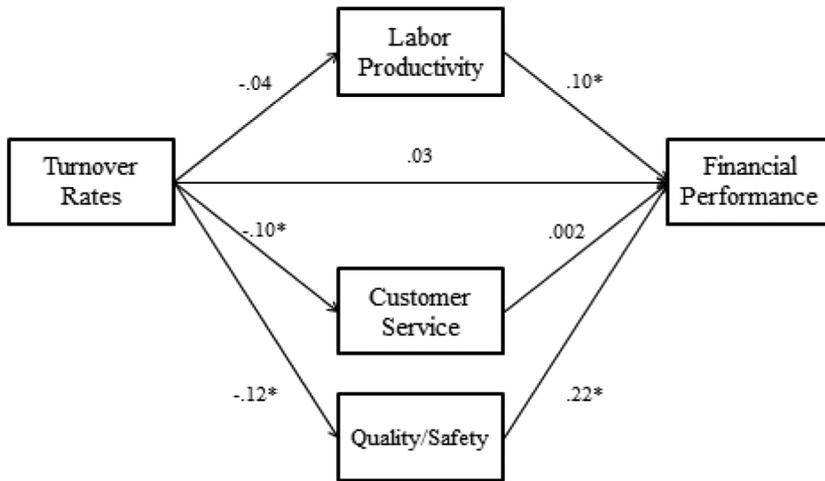
Moderation

Moderator analyses were conducted for the six a priori specified moderator variables, using Q_b to test the significance of the moderating variables. The Q_b tests for differences between categories (e.g., voluntary vs. total turnover), with a significant Q_b indicating significant differences between levels of a moderator (Hedges & Olkin, 1985).

Consistent with Hypothesis 3, industry exhibited a significant moderating effect on the turnover–organizational performance relationship ($Q_b = 5.89, p < .05$). The manufacturing and transportation industries, which have relatively high learned skill requirements, demonstrated the strongest negative relationship ($\bar{r} = -.07, N = 1,400, k = 7$). Furthermore, professional industries (e.g., financial, technology), which have relatively high knowledge requirements, demonstrated the next strongest negative relationship ($\bar{r} = -.05, N = 4,060, k = 14$), while the retail and food service industries, which have relatively low knowledge and skill requirements, and varied industries demonstrated the weakest relationships ($\bar{r} = -.04, N = 4,751, k = 10; \bar{r} = -.02, N = 14,368, k = 16$, respectively).

Geographic location based on labor costs significantly moderated the turnover–organizational performance relationship ($Q_b = 14.31, p < .05$). Hypothesis 4a states that the relationship will

Figure 4b
Partially Mediated Model of Labor Productivity, Customer Service, and Quality/Safety as Mediators of the Relationship between Turnover Rates and Financial Performance



Model	<i>N</i>	χ^2	<i>df</i>	RMSEA	GFI
Partially Mediated	1,455	88.967*	3	0.140	0.978

χ^2 difference = 1.371 *df* = 1, *p* = .242

be more negative in regions with higher labor cost contexts. We observed that the relationship was the most negative in studies using Asian samples ($\bar{r} = -.09$, $N = 1,766$, $k = 6$) compared to U.S. ($\bar{r} = -.06$, $N = 7,245$, $k = 22$) and European ($\bar{r} = -.01$, $N = 11,815$, $k = 8$) samples. The U.S. and European contexts, which have relatively high labor costs, exhibit negative relationships as predicted. However, the Asian context, which has relatively low labor costs, exhibits the strongest negative relationship. Thus, Hypothesis 4a is not supported.

Geographic location based on individualistic versus collectivistic culture also significantly moderated the turnover–organizational performance relationship ($Q_b = 5.70$, $p < .01$). Hypothesis 4b states that the relationship will be more negative in areas with a higher individualistic context. We observed that the relationship was the most negative in collectivistic samples ($\bar{r} = -.09$, $N = 1,766$, $k = 6$) compared to individualistic samples ($\bar{r} = -.03$, $N = 19,060$, $k = 30$). Thus, Hypothesis 4b is not supported.

Finally, geographic location based on market economies (i.e., LME or CME) significantly moderated the turnover performance relationship ($Q_b = 6.97$, $p < .01$). Hypothesis 4c states that the relationship will be more negative in LMEs than in CMEs. We observed that the relationship was the most negative in studies with samples in LMEs ($\bar{r} = -.05$, $N = 10,155$, $k = 27$)

Table 1
Meta-Analysis of Employee Turnover and Organizational Performance

	<i>k</i>	<i>N</i>	Avg $r_{(uw)}$	\bar{r}	95% CI	80% CR	I^2	Q	Q_b
Linear relationship									
Turnover	48	24,943	-.09	-.03	(-.053, -.014)	(-.103, .036)	61.33	121.55*	
Curvilinear relationship turnover ^a	16	5,762	.05	.03	(.008, .061)	(.018, .051)	11.42	16.93	
Moderator variables									
Turnover type									
Voluntary	18	7,646	-.07	-.03	(-.065, .004)			42.33*	0.062
Total	29	16,960	-.10	-.03	(-.059, -.009)			81.75*	
Location (labor costs) ^b									
United States	22	7,245	-.14	-.06	(-.091, -.023)			47.15*	14.31*
Europe	8	11,815	-.07	-.01	(-.045, .019)			25.31*	
Asia	6	1,766	-.07	-.09	(-.184, .005)			25.00*	
Location (culture) ^b									
Individualistic	30	19,060	-.12	-.03	(-.053, -.007)			80.95*	5.70*
Collectivistic	6	1,766	-.07	-.09	(-.221, .043)			25.00*	
Location (economy) ^b									
LME	27	10,155	-.13	-.05	(-.083, -.020)			62.95*	6.97*
CME	9	10,671	-.06	-.02	(-.058, .024)			41.58*	
Industry									
Fin./service/health/tech	14	4,060	-.12	-.05	(-.104, -.005)			35.72*	5.89*
Manuf./transp.	7	1,400	-.04	-.07	(-.100, -.044)			2.08	
Retail/food	10	4,751	-.16	-.04	(-.088, .017)			34.32*	
Multiple	16	14,368	-.05	-.02	(-.049, .005)			44.07*	
Org. size									
1-99 employees	6	10,417	-.03	-.01	(-.024, .007)			5.25	14.27*
100-499 employees	8	1,404	-.08	-.07	(-.114, -.030)			5.25	
> 500 employees	12	5,470	-.14	-.06	(-.112, -.011)			51.90*	
Job level									
Nonsupervisory	10	4,620	-.12	-.02	(-.062, .016)			18.29*	10.40*
Employees and managers	24	7,272	-.13	-.08	(-.119, -.048)			58.31*	
Performance measures									
CS vs. FP									
CS	11	3,888	-.23	-.10	(-.165, -.041)			43.52*	24.43*
FP	23	9,875	-.02	-.01	(-.037, .018)			45.64*	
CS vs. LP									
CS	11	3,888	-.23	-.10	(-.165, -.041)			43.52*	10.12*
LP	23	14,025	-.09	-.04	(-.083, -.008)			119.93*	
CS vs. QS									
CS	10	3,626	-.21	-.09	(-.137, -.033)			25.88*	1.78
QS	8	2,199	-.10	-.09	(-.136, -.043)			10.07	
FP vs. LP									
FP	15	5,697	-.08	-.02	(-.054, .009)			21.78	1.78
LP	27	16,941	-.11	-.04	(-.076, -.009)			131.69*	
FP vs. QS									
FP	27	12,155	-.06	.01	(-.025, .038)			84.07*	32.37*
QS	9	2,650	-.11	-.12	(-.170, -.061)			18.81*	
LP vs. QS									
LP	19	14,786	-.12	-.04	(-.077, .003)			115.92*	13.76*
QS	9	2,650	-.11	-.12	(-.170, -.061)			18.81*	

Note: *k* = number of samples; *N* = number of observations; Avg $r_{(uw)}$ = unweighted mean; \bar{r} = sample-size-weighted mean effect size; 95% CI = 95% confidence interval; 80% CR = 80% credibility interval; I^2 = % of variance across studies due to heterogeneity (Higgins, Thompson, Deeks, & Altman, 2003); Q = chi-square test for homogeneity of effect sizes; Q_b = between-group test of homogeneity; LME = labor market economy; CME = coordinated market economy; CS = customer service; FP = financial performance; LP = labor productivity; QS = quality/safety.

a. Results of a semipartial correlation analysis as described by Cohen and Cohen (1983) and Williams and Livingstone (1994).

b. *k* for studies from Africa and New Zealand were small (*k* = 3), and studies with mixed samples were excluded from the analysis.

**p* < .05.

compared to samples in CMEs ($\bar{r} = -.02$, $N = 10,671$, $k = 9$). Consistent with Hypothesis 4c, LMEs exhibit the strongest negative relationship, while CMEs exhibit a positive relationship. The observation that LMEs have a negative relationship suggests that LMEs may indeed have more difficulty than CMEs in coping with the consequences of employee turnover.

In support of Hypothesis 5, job level was a significant moderator ($Q_b = 10.40$, $p < .05$), such that turnover in samples including nonsupervisory and supervisory employees had a more negative relationship ($\bar{r} = -.08$, $N = 7,272$, $k = 24$) than did turnover including only nonsupervisory employees ($\bar{r} = -.02$, $N = 4,620$, $k = 10$). Results for organization size suggest a more nuanced relationship. Somewhat consistent with Hypothesis 6, size was also a significant moderator ($Q_b = 14.27$, $p < .05$), with medium-sized organizations ($\bar{r} = -.07$, $N = 1,404$, $k = 8$) and large-sized organizations ($\bar{r} = -.06$, $N = 5,470$, $k = 12$) exhibiting a stronger negative relationship compared to small organizations ($\bar{r} = -.01$, $N = 10,417$, $k = 6$). However, only the relationship among large-sized firms was significantly different from zero. Contrary to Hypothesis 7, type of turnover failed to moderate the turnover–performance relationship ($Q_b = 0.062$, *ns*).

We report the corrected r for each type of performance measure. Due to the issue of non-independence, we conducted six planned comparisons representing all possible contrasts between the four categories of the moderator. First, samples ($k = 23$) for which all effect sizes were based on either a single performance measure or multiple performance measures of the same category were assigned to that category for the moderator analysis. Next, for samples with multiple effect sizes from more than one moderator category, we used an iterative procedure involving the random selection of effect sizes. For example, if a single sample provides an effect size with a measure of customer service and an effect size with a measure of financial performance, to compare the turnover–performance relationship across these two categories, we randomly selected one effect size for inclusion to maintain independence. However, both relationships would be used for nonconflicting contrasts. For example, the turnover–customer service relationship would be included in contrasts with labor productivity and quality/safety effects from other studies. Similarly, the turnover–financial performance relationship would be included in contrasts with labor productivity and quality/safety from other studies. This approach serves to maximize the contrast potential while maintaining sample independence. In partial support of Hypothesis 8, type of organization performance measure significantly moderated the turnover–organizational performance relationship in four of six planned comparisons. Specifically, the turnover–performance relationship was stronger with measures of quality/safety ($\bar{r} = -.12$, $N = 2,650$, $k = 9$; $Q_b = 32.37$, $p < .05$) and customer service ($\bar{r} = -.10$, $N = 3,888$, $k = 11$; $Q_b = 24.43$, $p < .05$) than with measures of financial performance ($\bar{r} = -.01$, $N = 9,875$, $k = 23$; $\bar{r} = .01$, $N = 12,155$, $k = 27$, respectively). We also observed that when using measures of labor productivity, the turnover–performance relationship was weaker than when using measures of customer service or quality/safety, and not significantly different than when using measures of financial performance.

Meta-Analytic Path Analyses

The correlations for the meta-analytic path analysis were derived from studies included in the meta-analysis. Sample descriptives and derived meta-analytic correlations are presented

Table 2
Meta-Analytic Path Analysis: Correlation Matrix and Descriptive Statistics

Variable	1	2	3	4	5
1. Turnover rates	—				
2. Labor productivity		—			
<i>r</i>	-.043				
<i>N</i>	16,941				
<i>k</i>	27				
3. Customer service			—		
<i>r</i>	-.103	-.059			
<i>N</i>	3,888	2,916			
<i>k</i>	11	4			
4. Quality/safety				—	
<i>r</i>	-.116	-.142	-.160		
<i>N</i>	2,650	2,152	262		
<i>k</i>	9	8	1		
5. Financial performance					—
<i>r</i>	-.0001	.071	-.043	.206	
<i>N</i>	13,239	7,430	3,360	953	
<i>k</i>	31	15	8	3	

in Table 2. The harmonic mean of the samples ($N = 1,455$) was used in calculating each model (Viswesvaran & Ones, 1995). Figure 2 shows the direct effects model with turnover relating directly to each type of performance outcome. Only the paths between turnover and customer service ($\bar{r} = -.10$) and turnover and quality/safety ($\bar{r} = -.12$) were significant. Figures 3a-c show the individual mediator models intended to assess the possibility that more proximal performance indicators mediate the relationship between turnover and financial performance. These results suggest that (a) turnover is not directly related to financial performance or labor productivity, (b) turnover is directly related to customer service and quality and safety, and (c) only quality and safety mediate the relationship between turnover and financial performance. A Sobel test (Sobel, 1982) confirms that the quality and safety performance indicator is the only significant mediator ($z = -4.01, p < .01$). Figures 4a-b show a fully (4a) and partially (4b) mediated model incorporating all four types of performance outcomes. The root mean square error of approximation for these models is somewhat higher than standards of good fit because of unspecified relationships among labor productivity, customer service, and quality and safety for which we have no theoretical basis for making predictions. However, results confirm the finding that the relationship between employee turnover and financial performance is mediated by quality and safety.

Discussion

Theoretical Implications

The present study's findings have important implications for understanding the relationship between employee turnover and organizational performance. First, we observed evidence for a significant negative relationship between turnover and organizational performance. This

suggests that the costs and human and social capital losses associated with turnover tend to outweigh the potentially functional effects of replacing departing employees with better or less expensive ones, bringing new perspectives into the organization, or preventing human capital stagnation. Moreover, firm-specific human capital losses rather than general human capital losses are particularly costly. Continued attention to the study of why employees leave and how to reduce turnover is warranted. Second, we observed evidence supporting a homogeneous yet weak curvilinear relationship. Our findings suggest that it may be worthwhile to further pursue this line of research. Specifically, keeping in mind that the curvilinear results reported herein are a function of only a subset of studies, the evidence for curvilinearity may easily be altered by including additional studies in the analysis, as evidenced by a low fail-safe N of 29. Given the theoretical importance of the curvilinearity issue to understanding the turnover–performance relationship, we encourage researchers to report the necessary information for future reviews to assess this issue more comprehensively.

Of theoretical and practical importance, significant variance in the turnover–performance relationship is left to be explained by moderators. Identifying these boundary conditions is an important step in advancing theory in this area. We identified four boundary conditions based on the context in which the studies occurred. All four significantly moderated the turnover–performance relationship, supporting a configurational model of the turnover–performance relationship. The type of work being done, including industry type and job level, affected the relationship such that it was more negative for managerial employees and in industries more dependent on learned skills. This finding suggests that the relative costs and human and social capital losses associated with turnover differ depending on the type of work being done. Furthermore, this finding supports Boudreau and Ramstad's (2007) perspective that it may be more effective for organizations to focus their retention efforts on employees in more pivotal jobs. Future research that addresses these issues in finer detail would be valuable.

A structural component of context, organizational size, also moderated the turnover–performance relationship. Somewhat contrary to expectations, the effects of collective turnover were negative for medium firms but not significantly different from zero for large and small firms. This finding suggests an interesting avenue for pursuing the search for curvilinear relationships and the optimal turnover rate. It may be that there are certain structural characteristics, such as organizational size, that influence the conditions under which a curvilinear relationship is more likely. Furthermore, there may be other structural characteristics that warrant future research attention, such as organizational age, ownership structure (publicly vs. privately held), or employment systems.

We also observed that location moderated the turnover–performance relationship. U.S.-based studies reported a more negative relationship than those conducted in European countries, whereas those conducted in Asian countries exhibited the most negative relationships in terms of labor costs. Location also moderated the turnover–performance relationship such that performance in organizations in collectivistic cultures is more negatively affected by employee turnover than organizations in individualistic cultures. Furthermore, the relationship between turnover and performance is affected by the type of economy (LME or CME) in which an organization operates such that organizations in LMEs are more negatively affected by employee turnover than those in CMEs. Operationalizing differences in human

capital replacement costs and culture in terms of broad geographic regions is obviously quite coarse. Given the vast literature on cultural, economic, and structural differences among nations, our findings suggest an important avenue for future research is to identify those factors that differ across countries that affect the impact of turnover. For example, there may be differences in mobility and replacement costs, differences in the importance and transferability of social capital, or differences in cultural norms about turnover. The United States is the dominant setting for the studies in our review, and there are few explicitly comparative cross-national studies. We encourage researchers to conceptually and empirically address these issues, especially given the rise of globalization and large multinational organizations.

We also hypothesized two potential boundary conditions based on measurement practices, with mixed results. Although we expected voluntary turnover to result in stronger performance effects, we observed no significant differences between voluntary and total turnover. This is consistent with recent findings suggesting that the effects of voluntary and involuntary turnover on organizational performance are quite similar (Batt & Colvin, in press). It may be that a greater amount of involuntary turnover is not functional after all, a common assumption that may need to be addressed more directly. We did find evidence that the different types of performance measures used moderated the observed turnover–performance relationship. Results indicated that the relationship was stronger and more negative for customer service and quality and safety measures than for labor productivity or financial performance measures. That turnover relates more strongly to customer service and quality and safety than financial performance supports a mediated conceptual model in which some performance indicators serve as proximal outcomes that translate the effects of turnover into financial performance. In retrospect, it may not be surprising that measures of labor productivity exhibited a weaker relationship because, even if productivity (typically the numerator) declines as a result of turnover, so does labor (typically the denominator). Future research may need to examine the conditions under which the former do or do not outweigh the latter.

We add to the conceptualization of the turnover–performance relationship by considering the possibility that some performance outcomes operate as proximal mechanisms between turnover and the outcomes of ultimate interest to most organizations, that is, financial performance. Our meta-analytic path analyses suggest that turnover may not have direct effects on financial performance, but instead these effects may be mediated, particularly through quality and safety outcomes. These findings highlight the importance of additional research on these possible mechanisms. For example, there may be varying circumstances or contexts where different mechanisms may be more or less important. Also, post hoc examination of modification indices suggests that the best fitting model in this case would add additional mediating paths from customer service and labor productivity to quality and safety. Although potentially capitalizing on chance, this does suggest that future research that assesses more complex mediating models of the turnover–performance relationship may be warranted.

Our findings have several important implications for Hausknecht and Trevor's (2011) conceptual model of collective turnover. First, we quantify their narrative review results, providing a more systematic integration of the current body of evidence. Second, our findings generally support their implicit mediation model, but we expand the conceptualization of performance outcomes to include quality and safety measures, confirm that some performance

measures are more proximal outcomes of collective turnover than others, and provide some evidence in favor of a full, as opposed to partially, mediated model. Third, our findings support their suggestion that the relationship between collective turnover and performance is moderated, and we specify and provide evidence for several theoretically important moderators. We also identify several conceptual extensions to their model that warrant future research, such as the possibility of a more complex mediational chain linking collective turnover and organizational performance, and several potential boundary conditions.

Practical Implications and Financial Impact

We identify several key managerial implications from our results. One is that the overall relationship between turnover rates and organizational performance is negative. Thus, continued investments in reducing turnover may be warranted. Although the observed corrected magnitude of the relationship may appear modest in size, the practical impact on organizations can be important. Because the performance measures used in the studies in our review vary so widely, we examine two studies that report performance as average profits in dollars. Ryan et al. (1996) study a financing organization. Based on our overall meta-analytic result, a one standard deviation decrease in collective turnover rates would be associated with a \$189,111 increase in profits at the unit level and \$24.8 million at the organizational level. In Koys's (2001) sample of chain restaurants, a one standard deviation decrease in turnover rates would be associated with a \$1,515 increase in profits at the unit level and \$42,420 at the organizational level. For very large organizations, the financial impact could be substantially greater. Drawing from publicly available data, we calculated the mean and standard deviation in profits among the top 1,000 *Fortune* companies in 2009. Given our meta-analytic relationship, a one standard deviation decrease in turnover rates would be associated with a \$151 million increase in profits.

A second key managerial implication is that our moderator analyses point to contexts in which the impact of turnover rates is relatively more or less important. For example, the impact of turnover is more negative in skill- and knowledge-intensive industries, with managerial employees, in medium-size firms, and in the United States. Reconsidering the Ryan et al. (1996) example, if this had been a manufacturing sample, the associated increase in profits would be \$441,259 at the unit level (\$57.8 million at the organizational level) as compared to \$189,111 (or \$24.8 million at the organizational level). Armed with knowledge of these boundary conditions, managers can make more strategic decisions about how to invest resources in turnover reduction where they are likely to make the largest impact.

We also find that the impact of involuntary turnover may not be entirely functional because total turnover was just as negatively related to performance as voluntary turnover, consistent with Batt and Colvin's (2011) recent conclusion that the impacts of voluntary and involuntary turnovers on performance are quite similar. As noted by Cascio (2005), managers may need to be more cautious about laying off employees or relying on downsizing to improve financial performance. If downsizing is likely to be associated with decrements in quality or safety, as suggested by our findings, then managers considering downsizing need to be aware of these risks for decision making so they can take steps to

mitigate these risks if downsizing is necessary. While we did not examine the effects of downsizing and reduction in force, the effects that these phenomena may have on firm performance may be of significant importance, and we encourage researchers to examine these effects in future meta-analyses.

Furthermore, managers should consider which performance indicators they are most interested in evaluating because turnover rates have different relationships with performance depending on how performance is defined. Our results suggest that collective turnover is more directly related to conceptually proximal outcomes related to quality and safety and that these outcomes significantly mediate the relationship with ultimate financial performance. Indeed, quality and safety outcomes appear to be a primary mechanism through which turnover is related to financial performance. Thus, managers concerned about turnover may want to focus their attention on these performance indicators.

Limitations

A primary limitation of this meta-analysis is that the literature on collective turnover is relatively new and still growing, resulting in a limited number of available studies examining the relationship between turnover and organizational performance. While our sample compares favorably in size to Aguinis, Dalton, Bosco, Pierce, and Dalton's (2011) review of meta-analyses in management, additional research will enable stronger conclusions and more nuanced moderator analyses. This issue is also evident in our test for curvilinearity, where, after accumulating responses from authors, we were able to use only 16 studies and 39 effect sizes. Given the conceptual importance of this issue, future research that is able to assess the possibility of curvilinearity across a broader range of studies would be valuable. We encourage researchers to report data for tests of curvilinearity to accumulate results. This limitation is perhaps most notable in the moderator analyses. As the number of studies is limited, some of our moderator analyses suffer from modest *ks* resulting in low power. Furthermore, as discussed below, there are a number of other possible boundary conditions that warrant research attention but could not be assessed in this study because of the lack of data in the primary studies.

Some may consider the modest effect sizes as a potential study limitation. However, we provided examples of the practical impact of a one standard deviation decrease in turnover rates resulting in hundreds of thousands to millions of dollars in impact. Also, the effect sizes obtained when considering theoretically hypothesized moderators are comparable to those reported by Aguinis et al. (2011) for meta-analyses of corporate strategy and governance that often use organizational performance measures as outcomes (mean $\bar{r} = .089$, median $\bar{r} = .075$). Future research that addresses configurations of circumstances in which turnover is most likely to affect organizational performance, as well as research considering more nuanced process models of how turnover may impact financial performance through mediating processes, may suggest even stronger relationships.

Another limitation of the present study is that the key differentiation between functional and dysfunctional turnover has been largely ignored. Only one primary study in our review differentiated between functional and dysfunctional turnover. This differentiation is a key

component for further understanding the relationship between turnover and organizational performance. Future research that better defines who is leaving the organization may provide a clearer picture of the likely impact of turnover on organizational performance.

Additional Future Research Directions

We think this body of research is ripe for a more nuanced consideration of collective turnover that goes beyond merely examining the impact of turnover rates (see Table 3 for a summary of future research directions). As noted earlier, Allen et al. (2010) contend that turnover rates by themselves may tell us very little about the likely impact of turnover on the organization. Future research that attends to who is leaving, where they are going, and when they are leaving would provide scholars and managers with a deeper understanding of how collective turnover is likely to affect organizational performance.

In terms of who is leaving, a key conceptual issue underlying the turnover–performance relationship is the extent to which turnover is functional or dysfunctional (Dalton & Todor, 1979). If high performing individuals make up the bulk of leavers, we would expect the negative impact on performance to be much stronger than if low performers were leaving. Yet scholars have rarely made such performance distinctions. We encourage future research that considers the relative performance levels of leavers as a potential moderator of the turnover–performance relationship. Similarly, we were forced to treat issues of labor costs and human capital at a rather coarse level (e.g., industry, job levels) because the primary studies do not typically provide enough information about more specific indicators such as salary, and knowledge, skills, abilities, and other characteristics (KSAOs), or tenure. Also, while we examined studies composed of managerial and employee samples, we did not include studies examining the effects of executive turnover on firm performance. The study of the effects of this different and influential group of individuals may be a fruitful avenue for future meta-analyses examining this relationship. Finally, significant Q_w statistics in the current analyses suggest that heterogeneity exists within some levels of the moderator variables. However, the small number of studies for some of the moderators does not allow for meaningful tests for additional moderation. This reinforces the need for future research to explore further moderation.

Another potential contextual factor involves where leavers go on exiting the organization. We suspect, for example, that a highly skilled software engineer who leaves to join a direct competitor would be more likely to negatively affect performance than if that same engineer leaves to return to school. Some research suggests that market dynamics may contribute to the consequences of employee turnover such that, in narrow markets, departing employees may have few other employment options for their skill set and may be employed by a competitor, resulting in a higher likelihood of disadvantageous outcomes (Somaya, Williamson, & Lorinkova, 2008). Yet research on the turnover–performance relationship has rarely examined where leavers go. We encourage future research to consider these labor market dynamics as another potential moderator.

There are also important unanswered questions concerning when employees leave. The most common metric for operationalizing collective turnover is an annual turnover rate.

Table 3
Directions for Future Research

Conclusion	Directions for Future Research	Study Inclusion Suggestions
The linear relationship is negative	<ul style="list-style-type: none"> • Continued attention to the study of why employees leave and how to manage turnover is warranted 	<ul style="list-style-type: none"> • Report correlations in studies
The curvilinear relationship is positive	<ul style="list-style-type: none"> • Report the necessary data to accumulate knowledge about curvilinearity 	<ul style="list-style-type: none"> • Report turnover squared in correlation table
There are a variety of boundary conditions	<ul style="list-style-type: none"> • Operationalize finer distinctions related to human capital such as industry, job type, and job level • Consider other structural components (besides size) that may be important such as organization age, ownership structure, and employment systems • Study who is leaving in terms of job performance, KSAOs (knowledge, skills, abilities, and other characteristics), salary, executive status, and tenure • Study where leavers go and other labor market dynamics • Study when leavers exit in terms of timing, cycles, and flow • Consider the possibility of additional heterogeneity within currently identified moderators 	<ul style="list-style-type: none"> • A correlational comparison of leaver characteristics versus stayer characteristics • Report overall organizational size, in addition to unit/branch size included in correlation table
There are important temporal considerations remaining to be addressed	<ul style="list-style-type: none"> • Explicitly theorize about the speed with which turnover should affect performance • Explicitly theorize about the effects of changes in turnover rates on performance • Design more longitudinal studies 	<ul style="list-style-type: none"> • Report characteristics separately for each period in longitudinal studies
Organizations are competing in a more volatile and more global environment	<ul style="list-style-type: none"> • Explicitly theorize about cultural, economic, and other factors that may differ around the world • Conduct studies in more varied settings to accumulate results • Design more cross-national comparative studies • Integrate research on voluntary and involuntary turnover rates with downsizing events 	<ul style="list-style-type: none"> • Report individual country data separately, providing correlations for turnover rate and location • Report voluntary, involuntary, and total turnover rates
The operationalization of performance matters	<ul style="list-style-type: none"> • Explicitly theorize about proximal and distal performance outcomes • Explicitly theorize about possible mediating relationships • Design studies capable of assessing mediation 	<ul style="list-style-type: none"> • Report dollar amounts for financial performance measures to further examine the financial effect of turnover

However, this approach ignores the possible impact of turnover timing on performance. For example, the timing of turnover in relation to peak seasons (e.g., before tax season in accounting or the holiday season in retail) or critical deadlines (e.g., before or after a product launch) may affect the turnover–performance relationship. Timing may also matter in relation to the availability of replacements. For example, for jobs that are heavily dependent on recent high school or college graduates, turnover in October may create more difficulty than turnover in May, when new graduates are more plentiful. Operationalizing collective turnover as an annual rate also ignores the possible impact of fluctuations in the flow of human capital. A stable outflow of leavers may be more or less difficult to manage than peaks and valleys. Thus, we encourage scholars to consider these possible temporal moderators of the turnover–performance relationship.

This discussion of temporal issues raises further issues regarding the importance of time in studying the impact of collective turnover. One is how we design such studies. The majority of studies in our review ($k = 41$) assessed turnover rates and organizational performance over the same period (e.g., asking HR managers to provide their annual rate and performance metrics over the past year). Only a few ($k = 5$) explicitly report assessing performance after a time lag. This approach limits our ability to infer causality. For example, Wright, Gardner, Moynihan, and Allen (2005) found evidence that the relationship of HR practices with firm performance was dependent on the timing of measurement. We assessed whether this design characteristic moderated the relationship but observed no evidence of significant moderation. Still, because this approach limits our ability to infer causality and our ability to draw firm conclusions about the mediational chains implied by our analyses, future research that is able to demonstrate temporal precedence is needed.

This also raises the important issue of conceptualizing about temporal issues (Mitchell & James, 2001). For example, scholars rarely discuss the speed with which turnover might affect performance. The impact of turnover on customer service in a retail environment, for example, may occur more quickly than the impact of turnover on product development in an R&D firm. Similarly, even when researchers have collected turnover data at more than one time point, they have not so far assessed the possible impact of changes in turnover rates on performance. Allen et al. (2010) suggest that the extent to which turnover rates are increasing or decreasing may be at least as important as the level of turnover in understanding the likely impact of turnover on the organization. Thus, we encourage scholars to tackle these challenging temporal issues conceptually and methodologically.

Conclusion

Hutchinson, Villalobos, and Beruvides (1997) suggest that it is extraordinary that the primary motivation for turnover research—concern for the consequences such behavior has on organizational performance—has received such relatively scant research attention. Although the body of research is growing, the mixed results lead to a lack of consensus in the field concerning the nature of the employee turnover–organizational performance relationship. This meta-analysis provides an important initial step in developing such a consensus as well as providing a test of the linear, curvilinear, and moderating relationships

associated with the turnover–performance relationship. Furthermore, it offers evidence favoring contextual characteristics as key components of the relationship, provides critical information about these boundary conditions influencing the relationship, and identifies important avenues for future research.

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