Mechanisms linking leadership styles to turnover intention: meta-analytic SEM and subgroup analysis

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ABSTRACT

Research into the connection between leadership styles and employees' turnover intentions has produced varied conclusions. To clarify the relationship and explore its mediators and moderators, this study analyzed 230 studies (N = 86,550) with meta-analytic structural equation modeling (MASEM) and subgroup analyses. According to the results, turnover intention (TI) is more strongly affected by negative leadership (NL) than by positive leadership (PL). Employee engagement mediates PL-TI and NL-TI relationships. Subgroup analyses reveal that PL's impact on TI is stronger in professional/managerial jobs and low-power-distance cultures, while NL's impact on TI is stronger in high-power-distance cultures. To lower employees' turnover intentions, managers need to decrease negative leadership, boost positive leadership by improving employee engagement (such as participation, feedback, and collaboration), and adapt their leadership styles to suit the job and organizational culture. This study is the first to apply MASEM and subgroup analysis to explore the mechanisms between leadership styles and turnover intention.

Keywords: Meta-analysis; Structural equation modeling; MASEM; Subgroup analysis; Leadership; Turnover intention; Employee engagement

INTRODUCTION

According to the Job Openings and Labor Turnover Survey (U.S. Bureau of Labor Statistics, 2022), employee resignations rose steadily, from 1.6% in April 2020 to 2.9% in April 2022. An alarming 43% plan to resign soon, creating big problems for companies already struggling with high staff turnover.

Compensation and job satisfaction play a role in employees' turnover intentions, but research highlights leadership as a crucial factor impacting turnover intention (Chen et al., 2010; Harvey et al., 2007; Hughes et al., 2010; Yücel, 2021). Several meta-analyses have highlighted the negative association between turnover intention and supervisor satisfaction as well as leader-member exchanges (Cotton & Tuttle, 1986; Griffeth et al., 2000). However, Schyns and Schilling's (2013) research revealed a positive correlation between destructive leadership and turnover intention. Recent meta-analyses have broadened the scope of this discussion to include how different leadership styles (such as ethical, authentic, and transformational leadership) affect turnover intention (Fuller et al., 2022; Hoch et al., 2018). In addition, former research, while valuable, presents certain limitations. Limitations include small sample sizes, ambiguity between turnover intention and behavior, and insufficient adjustments for correlations factoring in reliability and sample size. Despite the emergence of several meta-analyses on voluntary turnover, many have either downplayed the significance of leadership by showing results in tables without analysis, merging leadership styles with other outcomes, or neglecting the specific leadership impacts on turnover intention. To address these insufficiencies, this study categorized leadership styles as positive, transactional, and negative constructs, enabling a holistic comparison of their impacts on turnover intention—a topic has not been explored in the former research.

The purpose of this study is to clarify the mechanisms between leadership styles and turnover intention, and to explore the moderators and mediators affecting these relationships. There are three research questions: (1) Which leadership style has a greater impact on employee turnover intention? (2) Does employee engagement mediate the relationship between leadership styles and turnover intention? (3) What situational factors, such as culture and job characteristics, modulate the relationships between leadership styles and turnover intention? Figure 1 presents the conceptual model.

This study categorized positive, transactional, and negative leadership styles as high-order constructs, allowing for a comprehensive comparison between leadership styles. Moreover, meta-analytic structural equation modeling (MASEM) tested the mediator of employee engagement between leadership styles and turnover intention. The subgroup analyses explored the moderators by examining correlations' heterogeneity. This study pioneers in its application of the two approaches to explore the mechanisms between leadership styles and turnover intention. The findings not only addressed the limitations of former research but also provided a comprehensive understanding of leadership's impacts on employee turnover intention.

LITERATURE REVIEW

Leadership styles

Regardless of the complexity of leadership, several research considers transformational, authentic, ethical, and servant leaderships as positive styles (e.g., Adams et al., 2020; Hannah et

al., 2009). Positive leadership refers to behaviors that enhance well-being, positive affectivity, and foster follower development (Hannah et al., 2009). Following this concept, this study examines transformational, servant, authentic, empowering, and ethical leadership styles as positive leadership (PL). These styles are associated with positive organizational outcomes, such as supervisor trust, high employee engagement, and low turnover (Fuller et al., 2022; Hoch et al., 2018).

Alternatively, several research (e.g., Schyns & Schilling, 2013) argues that certain leadership styles, including abusive supervision, destructive leadership, negative leadership and supervision, foster a hostile and toxic work atmosphere, resulting in adverse organizational outcomes, such as stress, diminished job satisfaction, and increased turnover. This research categorized those leadership styles together as negative leadership (NL).

This study does not intend to deny that each leadership stye is unique and independent from one another (Hoch et al., 2018; Rodriguez, et al., 2017). However, Hoch et al.'s (2018) and Fuller et al.'s (2022) meta-analysis revealed some overlaps between transformational and other leaderships, justifying the decision to combine certain leadership styles that share a common core effect on turnover intention.

Transactional leadership (TL) was classified into a separate category because of mixed findings in the literature. Transactional leadership emphasizes an exchange between leaders and subordinates, where efforts are traded for rewards (Burns, 1978). Although the effectiveness of transactional leadership is debated, some aspects, like contingent rewards, prove effective in specific contexts, such as routine tasks (Judge & Piccolo, 2004). However, it is crucial to distinguish between various aspects, since some styles (e.g., passive management-by-exception) might increase employee turnover and reduce job satisfaction (Bass, 1999). The balance of reward and punishment in transactional leadership is crucial. While contingent rewards linked to performance boost motivation (Podsakoff et al., 1990), punitive measures reduce satisfaction and induce stress (Arvey & Ivancevich, 1980; Spector, 1975). Therefore, transactional leadership isn't inherently positive or negative, but context sensitive (Yammarino & Bass, 1990). Its influence on organizational outcomes (e.g., turnover intention) varies with situations.

Leadership styles and employee turnover intention (TI)

Previous research has shown that PL has a negative impact on employee turnover intention (TI). However, Raghuram et al. (2017) found that employees may leave effective leaders as likely as they depart from unsatisfactory ones. This indicates that an outstanding leader unintentionally enables their subordinates, consequently increasing their desirability to other jobs (Raghuram et al., 2017). This surprising insight challenges the belief that positive leadership results in high employee retention.

Schyns and Schilling (2013) proposed a stronger correlation between destructive leadership (NL) and turnover intention compared to that between constructive leadership (PL) and similar outcomes. Their research is insufficient because they did not directly compare the influences of destructive and constructive leaderships on turnover intention. Psychological research shows that negative experiences affect people more strongly than positive ones (Baumeister et al., 2001). These frame the first research question: Which leadership style has a greater impact on employee turnover intention?

Employee engagement (EE) as a mediator

The Job Demand-Resource (JD-R) model suggests that the work environment, comprising job demands and resources, influences employee well-being and job outcomes through employee engagement and exhaustion (Bakker & Demerouti, 2007). Demerouti and Bakker (2011) highlighted that these demands/resources can be rooted either organizationally or interpersonally, such as supervisor support. Following the JD-R model, PL amplifies job resources like support and empowerment, boosting employee engagement and reducing turnover likelihood. In contrast, NL exacerbates job demands, depletes resources, and lowers engagement, resulting in higher turnover intention. Thus, it leads to the second research question: Does employee engagement mediate the relationship between leadership styles and turnover intention?

Empirical studies show that different leadership styles have distinct effects on employee engagement and turnover intention. For instance, Lee et al. (2019) found that transformational leadership (PL) predicted positive employee engagement, but transactional leadership (TL) did not. Also, Azanza et al. (2015) showed that authentic leadership (PL) negatively affects the turnover intention and employee engagement. They also found that employee engagement partially mediated the relationship between authentic leadership and turnover intention.

Therefore, this study suggests that leadership styles have various effects on employee turnover intention due to different leaderships' impact on job demands and resources. Specifically, this research predicts that PL will decrease job demands and increase job resources, leading to high employee engagement and low turnover intention. In contrast, NL increases job demands and decreases job resources, resulting in low employee engagement and high turnover intentions. Finally, this study expects TL to have little or no effect on employee engagement and turnover intention.

Moderators

Based on leadership contingency theory (Fiedler, 2006) and situational theory (Hersey & Blanchard, 1969), this study examined various moderators that may affect the relationship between leadership styles and turnover intention. This leads to the third research question: What situational factors, such as culture and job characteristics, modulate the relationships between leadership styles and turnover intention? Specifically, this research focused on the potential modulating effects of culture difference (power distance and individualism) and job characteristic (job type) alone with publication status, study design, and sample industry.

Cultural difference. Research has consistently indicated that leadership is influenced by culture, with a culture's values and norms significantly shaping employees' beliefs, attitudes, and behaviors (House et al., 2004). However, the effects of culture on the relationship between leadership styles and employee work outcomes have mixed findings in former research (Li et al., 2020; Mackey et al., 2021; Rockstuhl et al., 2012). This study analyzed the cultural effects through Hofstede's (1980) national culture dimensions, specifically power distance and individualism, which are particularly relevant to leadership and turnover intention. This study identified the country for each study and then employed Hofstede's (1980) culture index to categorize this culture variable.

Job characteristic. Hackman & Oldham's (1976) Job Characteristics Model (JCM) posits that job characteristics modulate the link between leadership styles and employee outcomes, such as turnover intention. According to the JCM, five job characteristics (skill variety, task identity,

task significance, autonomy, and feedback) influence employees' work outcomes via psychological states (Oldham & Hackman, 2010). Former empirical studies (Abdel-Halim, 1978; Lips-Wiersma et al., 2016) found that job characteristics modulate employees' work outcomes in both low- and high-enriched jobs.

According to the samples, this study categorized the jobs into six distinct groups: professional and managerial, non-managerial, service-oriented, nursing, military, and mixed roles. These categories are expected to show variations in the five job characteristics. For example, professional and managerial positions, such as lawyers, engineers, and computer scientists, typically require a high degree of skill in their tasks. Furthermore, individuals in these roles often experience a notable sense of autonomy, task identity and significance. In contrast, nursing and military occupations offer relatively lower levels of autonomy but higher levels of task significance because employees understand their profound impact on the well-being of individuals and the community. Service-oriented roles frequently provide employees with clear and direct feedback regarding their performance. Given the diverse job characteristics across various occupational categories, it's clear that employees in different roles may depend on their leaders in unique ways. This interaction will affect employees' psychological well-being and subsequently influence their turnover intention.

Moreover, this study also analyzed the modulating effect of publication status (high-impact journals, dissertations, and smaller journals) to address the "file drawer problem" (Rosenthal, 1979); study design (time-lagged vs. cross-sectional) that may impact the effect size of the correlation (Christian et al., 2011) or common method variance (Podsakoff et al., 2003); and sample industries because employees in risky industries may disassociate from their organization to maintain self-esteem and avoid social criticism. High turnover rates are often a consequence of a high level of misidentification within an organization. In this study, researchers coded industry using the five sectors of the economy (Rosenberg, 2020), including primary, secondary, tertiary, quaternary, quinary, and others.

METHOD

Literature collection. First, researchers examined the articles included in previous meta-analyses of turnover, such as Cotton and Tuttle (1986), Griffeth et al. (2000), and Hughes et al. (2010). Step 2, after identifying the major journals in step 1, researchers searched the twelve major journals, such as The Leadership Quarterly, Journal of Applied Psychology, Journal of Business and Psychology, Journal of Leadership and Organizational Studies, etc. Step 3, researchers searched the five databases: Business Source Complete, PsycINFO, Web of Science, ProQuest, and Google Scholar. If the full papers were not available, researchers contacted authors to obtain them.

Articles with the three categories of paired terms were collected: (1) leadership and turnover, (2) leadership and engagement, and (3) engagement and turnover. Key words related to leadership included: leadership, leader, transformational, servant, authentic, empowering, transactional leadership, abusive supervision, bossing, destructive leadership, negative leadership, and negative supervision. For turnover intention, researchers used terms: turnover intention, quit intention, quit behavior, turnover behavior, withdrawal, turnover, retention, and quit. Search for employee engagement involves terms: engagement and employee engagement.

Inclusion criteria and coding procedures. The criteria are that each study must (1) use an empirical method; (2) include at least one pair of terms denoted in the search categories; (3)

contain correlation measurements of those paired terms; and (4) report sample size. Following those criteria, 425 articles were included in the coding process.

In the coding stage, studies measuring team or organizational engagement were excluded. Second, this study only included Pearson or bivariate correlations and excluded partial correlation or regression coefficients. Third, for studies that included correlations among subdimensions of a construct, researchers calculated the average correlation of the dimensions. Fourth, this study only included employee-rated leadership styles because employees' perceptions of leader behaviors influence employees' attitudes and behavior (Schyns & Schilling, 2013). Last, when an article contained multiple studies with different samples, each sample was coded as an individual study. This resulted in 252 articles. A few articles containing ambiguous information were removed, leaving us with 230 studies with a total sample size of 86,550 and a total effect size of 330.

Meta-analysis procedures. The study followed the procedures of Harrer et al. (2021) to calculate Q statistics, test fixed/random effects models, as well as estimate the mean of weighted correlation, mean of corrected correlation, standard error of corrected correlation, confidence interval, and prediction interval.

Bivariate meta-analysis. To exam the homogeneity of each relationship in various studies, this study used Q statistics under the chi-square (χ^2) test (k-1 degree of freedom, where k presenting the number of effect sizes). A random effects model should be adopted if Q statistics are significant (the variances between studies are not equal). If the Q statistic is non-significant, the variances between studies are equal, and a fixed effects model should be adopted.

The mean weighted correlation (r) of each relationship was calculated by adjusting the original effect size on the sample size. Furthermore, following the procedure of Hunter and Schmidt (2004), the mean corrected correlation (ρ) was estimated based on the sample size and measurement reliability (e.g., Cronbach alpha). Confidence intervals in a meta-analysis estimate the range of true correlation and test whether the relationship between two variables is significant. In addition, while the confidence interval only reflects the sampling error, the prediction interval shows the sampling error and between-study variances. To test relationships, 95% confidence and prediction intervals were employed.

Meta-analytic structural equation modeling (MASEM). To assess the proposed path model's relationships, this study used a meta-analytic structural equation modeling with the R package developed by Cheung (2021) and Jak and Cheung (2020). The full correlation matrix was generated by the data collection, which allowed us to have larger sample sizes than those of previous studies.

To access the path model, this study employed MASEM, combining meta-analysis and structural equation modeling. This study followed the two-stage structural equation modeling procedure based on Cheung and Chan (2005) and Jak and Cheung (2020). First, researchers used a random-effects model to estimate a pooled correlation matrix from the collected studies' correlation coefficients. This model estimates the mean of the true effect distribution and accounts for variance in effect sizes from heterogeneous populations (Harrer et al., 2021; Hedges & Vevea, 1998). The R "metaSEM" package, employing full-information maximum likelihood-based, was utilized for this purpose. Second, a structural equation model was fitted using the pooled correlation matrix with weighted least squares estimation (Cheung & Jak, 2021).

Subgroup Analysis. Moderator analysis was conducted using subgroup analysis with the R "metafor" package (Harrer et al., 2021). This analysis contains two steps: pooling the effects in each subgroup and comparing the effects of the subgroups using an omnibus test with Cochran's

Q (Cochran, 1954) that assumes a χ^2 distribution (Borenstein & Higgins, 2013).

RESULTS

Bivariate meta-analysis

Following Harrer's et al. (2021) and Hunter and Schmidt's (2004) procedures with the R packages and MS Excel, this study estimated mean of weighted correlation, mean of corrected correlation, standard error of corrected correlation, Q statistic, I^2, T^2 (tau square), confidence interval, and prediction interval.

In Table 1, the means of sample weighted correlations (r) range from -.12 for TL-TI to .53 for PL-TL, and the means of the corrected correlations (ρ) range from -.72 for TL-NL to .64 for PL-TL. There is no specific rule for the number of effect sizes (k). A minimum of ten effect sizes per relationship has been suggested in some meta-analyses (e.g., Witter et al., 1984), while some have used a minimum of five (e.g., Arthur et al., 2003; Carrillat et al., 2009). Others used at least three (e.g., Berry et al., 2007; Lau et al., 2003) for relatively small samples due to limited sources or difficult data collections. The number of effect sizes (k) ranged from 4 TL-NL to 69 for PL-TI in the 10 relationships. Thus, this number is enough for the meta-analysis estimations. The sample size (N) ranged from 2,065 (TL-NL) to 26,859 (EE-TI).

Table 2 presents a random-effects meta-analysis of leadership styles' impact on turnover intention. The mean of the weighted correlation of PL and TI (r) is -.35, the mean of the corrected correlation (ρ) is -.36, and both are significant under the 95% confidence interval of -.39 to -.30. The 95% prediction interval is -.65 to -.04. Regarding the correlation between NL and TI, the mean of the weighted correlation (r) is .40, the mean of the corrected correlation (ρ) is .43, and both are significant under the 95% confidence interval of .36 to .45. The prediction interval is .03 to .68. As to the relationship between TL and TI, the mean of weighted correlation (r) is -.12, and the mean of corrected correlation (ρ) is -.10. Both are not significant. The 95% confidence interval is -.26 to .03, and the prediction interval is -.70 to .56.

The square of the mean of weighted correlations (r) and mean of corrected correlations (ρ) were applied to address the variance (Churchill et al., 1985). The squares of mean weighted correlations (r) are .12 (PL-TI), .01 (TL-TI), and .16 (NL-TI). The squares of the mean of corrected correlations (ρ) are .13 (PL-TI), .01 (TL-TI), and .18 (NL-TI). The results show that NL contributes more to TI than PL does. TL has an almost negligible effect on TI. Hence, NL discloses more variance in TI than the other leadership styles.

Meta-analytic structural equation modeling

Figure 2 presents the results of the MASEM for the basic model with the parameter estimates. The overall model revealed a modulate fit index, χ^2 (4) = 83.23 and $p < .01$. The comparative fit index (CFI) = .94 and root mean square residual (RMSEA) = .015, all indicate a close approximate fit. Except the correlation between transactional leadership (TL) and employee engagement (EE), all other parameter estimates are significant. Specifically, PL (β = .46) was the most influential antecedent of EE, followed by NL (β = -.37). Moreover, employee engagement had a strong negative impact on TI (β = -.62).

Besides the direct effects, the MASEM calculates the indirect effects by multiplying the direct effects. Although the model is a saturated model (the model fit cannot be evaluated),

evaluate the significance of the parameters can be evaluated (Figure 3). Table 3 shows the results of the direct and indirect effects. The direct effect of PL on TI is β = -.14 and the indirect effect (PL-EE-TI) is -.29 (.49×-.33). Both direct and indirect effects are significant, so the effect of PL on TI is partially mediated by EE. The direct effect of NL on TI is β = .31 and the indirect effect (NL-EE-TI) is .23 (-.14×-.33). Both direct and indirect effects are significant, so the effect of NL on TI is partially mediated by EE. However, the effect of TL on TI is not mediated by EE because both the direct and indirect effects of TL on TI are not significant. These results support the conclusion that EE mediates the effects of PL and NL on TI but not the effect of TL on TI.

Subgroup analysis

The results of the homogeneity test (Cochran's Q) reveal the existence of substantial heterogeneity in pairwise relationships (Table 2). In Table 4, the effect sizes of the relationships were divided into six treatments: publication status, study design, power distance, individualism, job type, and industry. Studies lacking relevant moderator information were excluded from the subgroup analysis. Therefore, there are discrepancies in the number of effect size (k) between Tables 2 and 4.

The results show that the PL-TI correlation was significantly influenced by two moderators, job type ($Q_{between}$ = 35.26, p < .0001) and power distance ($Q_{between}$ = 2.57, p < .5). In job type, the result implies that the negative relationship (PL-TI) in professional and managerial jobs (ρ = -.46, 95% CI -.58~-.31) is stronger than in other types of job, followed by the mixed subgroup (ρ = -.42, 95% CI -.49~-.35), service (ρ = -.41, 95% CI -.66~-.07), and non-managerial jobs (ρ = -.40, 95% CI -.51~-.27). In power distance, the negative relationship (PL-TI) in low power distance (ρ = -.38, 95% CI -.45~-.29) is stronger than in high power distance (ρ = -.31, 95% CI -.37~-.25).

As to TL-TI, the between-subgroup Q statistics are significant in study design ($Q_{between}$ = 5.73, p < .05), job type ($Q_{between}$ = 25.08, p < .01), and industry ($Q_{between}$ = 15.89, p < .01). The cross-sectional study design has ρ= -.17 (95% CI -.36~.04) while the time-lagged study design has ρ = .19 (95% CI -.85~.93). In job type, there are positive TL-TI correlations in nurse (ρ = .12) and in the army (ρ = .09), while there are negative TL-TI correlations in other job types. However, the confidence intervals in job categories include zeroes in their 95% CIs, indicating non-significant correlations. In the industry treatment, the secondary subgroup (ρ = .21, 95% CI .09~.25) has a positive and significant TL-TI correlation with one effect size. Thus, the modulating effects of study design, job type, and industry are mixed.

For the NL-TI correlation, significant differences were found in publication status ($Q_{between}$ = 14.16, p < .0001) and power distance ($Q_{between}$ = 4.70, p < .05). In publication status, NL-TI correlations of the selected journal, dissertations, and others are .40 (95% CI .32~.47), .21 (95% CI .11~.37), and .52 (95% CI .44~.58), respectively. This implies that the positive NL-TI relationship in dissertations is weaker than that in other sources. The NL-TI correlation of high-power distances is .54 (95% CI .43~.62) and of low power distances is.41 (95% CI .35~.47), respectively. Thus, negative leadership's effect on turnover intention is amplified by higher power distance.

DISCUSSION

This study's bivariate meta-analysis revealed significant effects of PL and NL on turnover intention. However, the results were not significant for the relationship between TL and TI. In a few studies, the correlations between TL and TI were non-significant or positive. The majority transactional leadership (TL) studies adopted Bass and Avolio's (1995) Multifactor Leadership Questionnaire or Podsakoff et al.'s (1990) scale. Podsakoff et al.'s (1990) scale focuses on contingent rewards, assessing the interplay between transactional leadership and non-monetary incentives. Instead, Bass and Avolio's (1995) measure seeks to capture the three subdimensions of transactional leadership: contingent reward, active management, and passive management by exception. In a few studies, the correlations between TL sub-dimensions (active management and passive management by exception) and TI were non-significant or positive. However, the correlations between contingent reward and turnover intention were negative. The studies that adopted Podsakoff et al.'s (1990) scale also found negative correlations. Thus, future research should differentiate the characteristics of TL's subdimensions.

For the first research question, the bivariate analysis results show that NL has a stronger effect on TI than PL does. The finding aligns with the positivity ratio concept proposed by Fredrickson (2009), which suggests that a 3 (positive):1 (negative) positivity ratio enhances employees' psychological well-being. In other words, negative emotion is more powerful because more positive emotion is needed to counterbalance negative emotion. NL leads to higher negative emotion and results in higher TI. Thus, NL causes employees to lose resources, prompting them to protect themselves from further loss by considering leaving their jobs (Grandey & Cropanzano, 1999; Swider & Zimmerman, 2010). Moreover, according to the JD-R model, NL increases job demands and reduces job resources, leading to stress and exhaustion, which amplify the intent to leave. In contrast, PL fosters a healthier work environment, which alleviates stress and exhaustion, and then reduces turnover intention.

As to the second research question, the path analysis results indicate that employee engagement partially mediated the relationships of PL- TI and NL-TI. The findings from the indirect and direct path models align with the research on the contribution of employee engagement to reduce turnover intention (Bakker & Schaufeli, 2008; Schaufeli & Bakker, 2004). This study found that NL has a strong "direct" impact on TI while PL has a strong "indirect" impact on TI through employee engagement. This suggests that NL triggers an immediate reaction from employees, leading to a stronger intention to quit than PL does (the first research question). In contrast, PL gradually and indirectly reduces TI by increasing employee engagement. Besides Fredrickson's (2009) positivity ratio, NL leads to employees' negative reactions through bad experiences (e.g., criticism), emotional responses (e.g., anxiety), perceived betrayal, and so on. Thus, it is crucial to mitigate NL by fostering employee engagement, such as psychological well-being.

The third research question's subgroup analyses on moderators had mixed findings. Job type modulated two pairs of relationships (PL-TI and TL-TI). The result indicates that PL has a stronger negative impact on TI in professional and managerial jobs than in other jobs. Besides the limited number of effect size, there are some possible explanations. First, professional and managerial jobs tend to involve more complex tasks and require a higher level of skills. Therefore, those individuals prefer support, empowerment, and recognition from their upper leadership. Mauno et al. (2015) showed a positive correlation between transformational leadership and manager engagement, but not for blue-collar workers. This implies that managers

enjoy greater control over their workspace and thus derive more motivational benefits from PL. Second, professional and managerial jobs often involve working with other professional employees. Thus, those managerial people must communicate effectively with the subordinates and motivate them to achieve the goals. This requires building trusting and respectful relationships with team members as well as promoting fair and ethical behaviors in the workspace, which reduces turnover intention.

Power distance modulates PL-TI and NL-TI relationships. The negative correlation between PL and TI is more intense in low-power-distance cultures compared to high-power-distance ones. These results confirm Farh et al.'s (1998) conclusion that participative or transformational leadership (PL) is more effective in low-power-distance cultures due to employees' egalitarian expectations regarding decision-making and responsibility sharing. The interesting finding is that NL has a stronger influence on TI in high-power-distance cultures. Zhang and Liao (2015) argued that employees in low-power-distance cultures are more likely to directly respond to the abusive supervision (NL), but employees in high-power-distance cultures are more likely to avoid standing against leaders. This study indicates that in high-power-distance cultures, employees may be less likely to challenge negative leadership (NL) with active or constructive actions. Instead, they choose more passive behaviors, such as leaving their jobs. As to individualism moderator, the results are similar to Li et al.'s (2020) study, which did not find a moderating effect of individualism on the correlation between positive leadership and employee engagement.

Publication status modulates the NL-TI relationship and there are significant differences among the three subgroups. NL has a stronger impact on TI in selected journal and others. However, there is only one effect size in the subgroup of dissertation, so the result might be biased. Anyway, the non-significant modulating effects of publication status in PL-TI and TL-TI support the inclusion of different data sources.

Study design only modulated the TL-TI relationship, but the correlations of cross sectional and time lagged subgroups are not significant. The bias stems from just two effect sizes within the time lagged subgroup. Similarly in the subgroup analysis of industry, the results show that industry type modulates the TL-TI relationship. Among the six subgroups, the only significant correlation is in the secondary subgroup with only one effect size. The results are biased due to the limited number of effect size.

Theoretical and managerial implications

In former research, leadership styles have been considered the primary antecedents of employee turnover intention, but only a few studies focus on the mediators and moderators between leadership styles and turnover intention. This research explored the mechanisms between leadership styles and turnover intention by synthesizing the findings from diverse studies. The major theoretical contributions include: (1) Conduct a meta-analysis that includes a larger number of studies than former research; (2) incorporate and analyze positive, transactional, and negative leadership styles in the same study; (3) use MASEM to examine the mediator (employee engagement) between leadership styles and turnover intention; and (4) identify moderators by subgroup analysis and exam the situational factors modulating the relationship of leadership styles and turnover intention.

In managerial implications, while a few studies claim that employees leave good and bad bosses at equal rates, this study's results suggest that NL has a stronger and more direct impact

on TI than PL does. Therefore, to keep valuable personnel, organizations should first identify and mitigate negative leadership, such as lack of trust, support, and communication, rather than totally focus on positive leadership. While PL has a weaker direct impact on TI than NL does, it has a stronger indirect impact on TI through EE. In other words, employees see bad leadership more easily than good. To make PL effective, organizations should first create a positive workspace, such as decision participation, constructive feedback, and collaboration among employees, resulting in higher commitment to organizational success. Therefore, employee engagement with PL will likely improve outcomes like retention.

Due to the limited number of effect size, the most important moderators are job type and power distance. PL has a stronger impact on TI in professional and managerial jobs as well as in low-power-distance cultures. Therefore, leaders in the two categories should use PL (e.g., respect, equity, and authorization) to increase employ engagement and reduce employee turnover. NL has a stronger impact on TI in high-power-distance cultures. It may be difficult to change a high-power-distance culture in a short time because of strict hierarchy and unequally distributed power. Therefore, leaders should stop NL behaviors first, promote employees' commitment to the organization (employee engagement), and then gradually adopt PL behaviors, such as recognition, transparent decision-making, regular feedback or suggestion boxes, and so on.

Limitations and future research

There are some limitations in the study. First, although it includes larger samples than the former meta-analyses in the field, some pairs of correlations have small sample sizes, particularly in the moderator subgroup analysis. This results in non-significant correlations within individual subgroups, despite the significant differences observed between subgroups. Second, this study focuses on the impacts of leadership styles on TI rather than turnover behavior because of limited studies including correlations between leadership styles and turnover behaviors. Although TI has been strongly related to turnover behaviors, investigating the actual behaviors would contribute to research in organization behavior. Future research could benefit from large and diverse samples to address the limitations. This would allow for the exploration of additional moderators and a deeper understanding of the relationship between leadership styles, employee engagement, turnover intention and behavior.

Third, the meta-analytic path analysis relies on correlation coefficients that may be influenced by confounding variables, which are not discussed in this study. For example, in subgroup analysis, there are significant differences in TL-TI correlations between job-type subgroups (four negative estimates and two positive ones). This suggests the presence of confounding variables requiring further investigation. Future studies should consider other possible variables, such as gender, age, race, education, ethnicity, research context, and so on. Investigating the effects of various leadership styles on employees' outcomes across diverse jobs will significantly contribute to the field of leadership analytics.

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Table 1
Meta-analytic Correlation Matrix Used to do the Path Analysis

Constructs	1	2	3	4	5
1. Positive leadership (PL)	1	32[c] (10,119[d])	14 (6,730)	24 (7,733)	69 (24,627)
2. Transactional leadership (TL)	0.53*[a](.64*[b])	1	4 (2,065)	5 (2,421)	27 (9,975)
3. Negative leadership (NL)	-.45*(-.58*)	-.32 (-.72*)	1	30 (9,401)	68 (24,683)
4. Employee engagement (EE)	.44*(.50*)	.34 (.38)	-.30*(-.28*)	1	57 (26,859)
5. Turnover intention (TI)	-.35*(-.36*)	-.12 (-.10)	.40*(.43*)	-.44*(-.44*)	1

Note. *p < .05. Values below the diagonal denote: [a]: mean of sample-size weighted correlation; [b]: mean of correlation corrected for attenuation (number in parentheses). Values above the diagonal present: [c]: the total number of effect sizes; [d]: the total sample size (numbers in parentheses).

Table 2
Meta-analysis Results for Leadership and Turnover Intention

	k	N	r	ρ	SE_ρ	Q Statistic	I^2 (%)	T^2	95% Confidence Interval		95% Prediction Interval	
									Low	High	Low	High
Positive leadership (PL)	69	24,627	-.35*	-.36 *	.16	967.27	93.0	.041	-.39	-.30	-.65	.04
Transactional leadership (TL)	27	9,975	-.12	-.10	.32	935.65	97.2	.129	-.26	.03	-.70	.56
Negative Leadership (NL)	68	24,683	.40*	.43*	.19	1095.15	93.9	.038	.36	.45	.03	.68

Note. *p < .05. k=number of effect sizes; N=sample size; r=mean of sample-size weighted correlation; ρ=mean of correlation corrected for attenuation; SEρ=standard error of corrected correlations; Q statistic=information for heterogeneity; I^2=the index of heterogeneity, the percentage of variability in effect sizes; T^2=the estimate of between-study variance.

Table 3
Results of Path Model with Both Indirect and Direct Effects

Path	Lower bound*	Estimate	Upper bound*
PL-EE-TI	-0.36	-0.16 (-.29[a])	-0.08
TL-EE-TI	-0.12	.05 (.10)	.37
NL-EE-TI	0	0.05 (.23)	0.11
PL-TI	-.35	-.14	-.07
TL-TI	-.08	.10	.47
NL-TI	.17	.31	.43

Note. *95% Confidence intervals; [a]:numbers in the parentheses are the products of the direct effects that constitute the indirect effect in the model; PL=positive leadership; TL=transactional leadership; NL=negative leadership; EE=employee engagement; TI=turnover intention.

Table 4
Results of Subgroup Analysis

Moderators	Subgroup	Positive Leadership and Turnover Intention (PL-TI)				Transactional leadership and Turnover Intention (TL-TI)				Negative Leadership and Turnover Intention (NL-TI)			
		$Q_{between}$	K	ρ	95% CI	$Q_{between}$	K	ρ	95%CI	$Q_{between}$	K	ρ	95%CI
Job Type	Army	**35.26*****	1	-.23	-.28~-.18	**25.08*****	2	**0.09**	**0~.18**	4.46	0	0	0
	Service		3	**-.41**	**-.66~-.07**		1	-.17	-.29~.05		6	0.43	.25~.58
	Nurse		9	-.24	-.30~-.17		3	**.12**	**-.92~.95**		4	.38	-.20~.77
	Professional and Managerial		18	**-.46**	**-.58~-.31**		11	-.17	-.48~.18		14	.57	.36~.72
	Non-managerial		18	**-.40**	**-.51~-.27**		8	-.29	-.64~.15		20	.51	.39~.62
	Mixed		20	**-.42**	**-.49~-.35**		2	-.01	-.99~.99		24	.42	.37~.48
Power distance	High	**2.57***	33	**-.31**	**-.37~-.25**	0.09	12	-.08	-.32~.16	**4.70****	34	**.54**	**. 43~.62**
	Low		33	**-.38**	**-.45~-.31**		14	-.13	-.33~.09		31	**.41**	**.35~.47**
Individualism	High	0.75	32	-.32	-.38~-.26	0.11	10	-.09	-.23~.07	.90	32	.45	.34~.54
	Low		34	-.36	-.43~-.29		16	-.13	-.36~.12		33	.51	.43~.58
Publication Status	Selected Journal	0.31	19	-.38	-.44~-.32	2.83	4	0.05	-.41~.49	**14.6*****	19	**.40**	**.32~.47**
	Dissertation		9	-.39	-.52~-.23		6	-.36	-.71~.14		1	**.25**	**.11~.37**
	Others		41	-.41	-.49~-.33		17	-.11	-.36~.16		48	**.52**	**.44~.58**
Study Design	Cross Sectional	0.47	62	-.40	-.46~-.34	**5.73****	25	**-.17**	**-.36~.04**	.25	44	.47	.40~.53
	Time Lagged		7	-.37	-.46~-.27		2	**.19**	**-.85~.93**		24	.50	.38~.60
Industry	Primary	2.39	0	0	0	**15.89*****	0	0	0	1.77	0	0	0
	Secondary		5	-.46	-.67~-.17		1	**.21**	**.13~.28**		4	.52	-.06~.83
	Tertiary		26	-.35	-.44~-.25		9	-.13	-.55~.34		20	.51	.39~.61
	Quaternary		13	-.48	-.64~-.27		8	-.20	-.60~.27		7	.43	.36~.50
	Quinary		4	-.40	-.61~-.14		4	-.17	-.57~.30		1	.45	.34~.54
	Mixed		21	-.39	-.45~-.33		5	-.10	-.41~.22		36	.47	.38~.55

Note. *p < .1, **p < .05, ***p < .01; K=number of correlations; ρ=mean of correlation corrected for attenuation; CI=confidence interval; $Q_{between}$=Cochran's Q test for different subgroups.

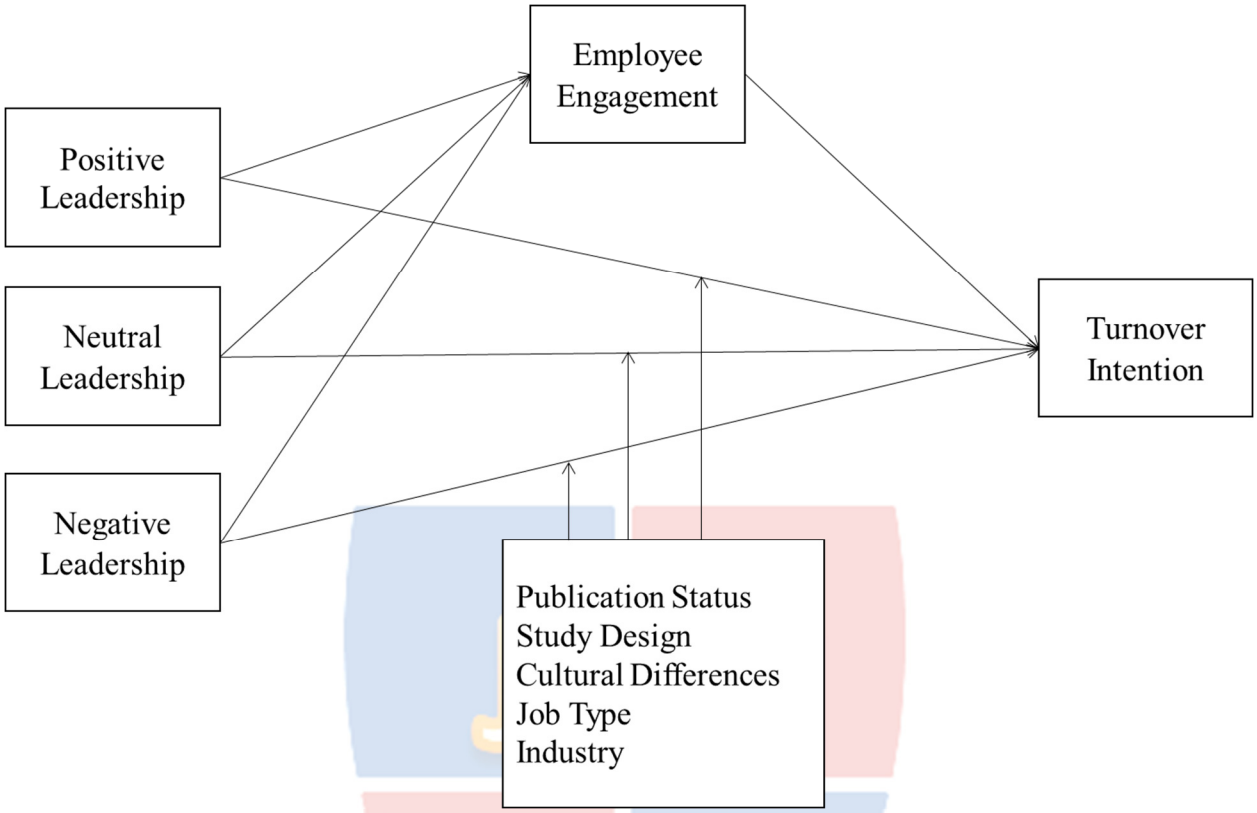

Figure 1 Conceptual Model

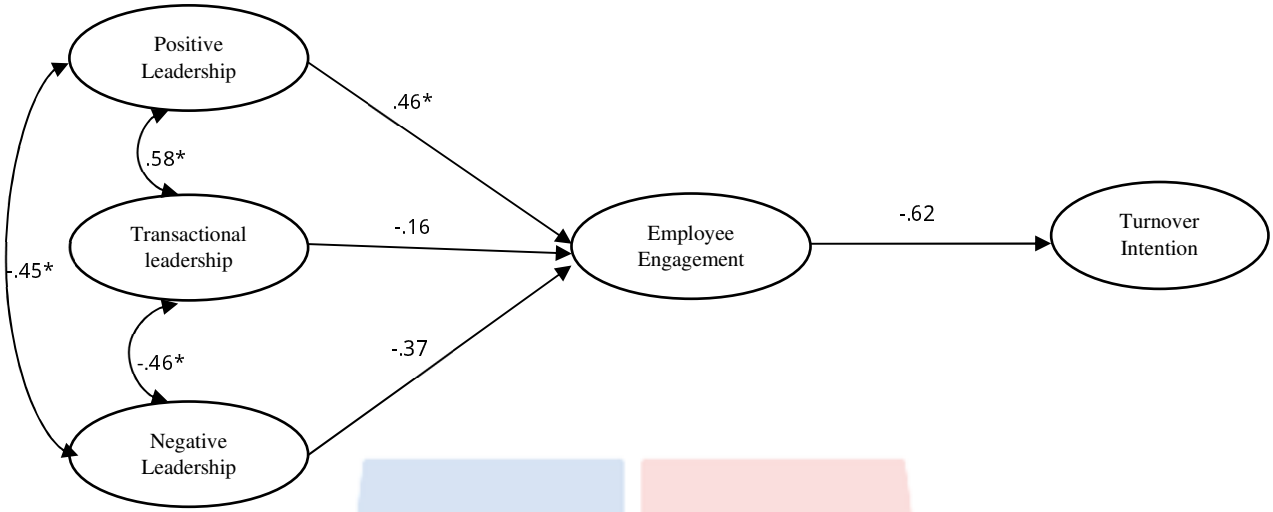

Figure 2 Parameter Estimates for the Fully Mediated Path Model
Note. *p < .05. χ^2=83.23, p < .01; CFI=0.94; RMSEA=0.015

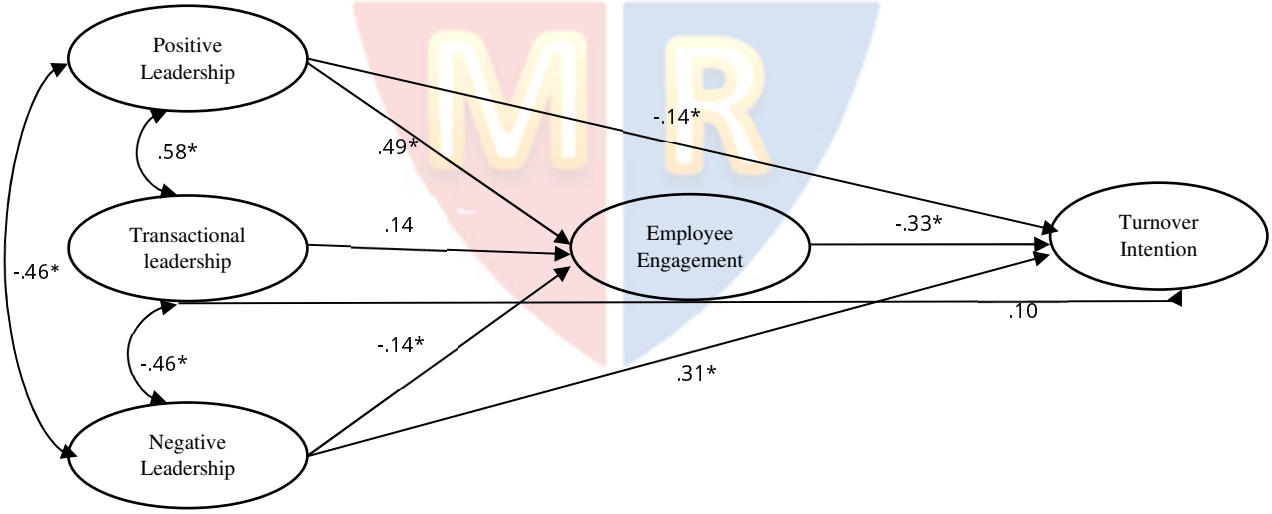

Figure 3 Parameter Estimates for the Partially Mediated Path Model
Note. *p < .05.