

## Human-Centered Leadership in the Digital Era: Examining the Role of Psychological Capital in Managerial Coaching Outcomes

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### Abstract

The rapid transformation brought by Industry 4.0 has elevated the strategic value of managerial coaching as a human-centered leadership practice that reinforces adaptability, resilience, and performance in dynamic work environments. This study addresses a key research gap by examining the psychological mechanism through which managerial coaching enhances employee performance. Drawing upon Organizational Support Theory (OST), Conservation of Resources Theory (COR), and Positive Organizational Behavior (POB), this research investigates the mediating role of psychological capital (PsyCap)—comprising hope, efficacy, optimism, and resilience—in digitally intensive workplaces. A quantitative survey involving 224 employees from a manufacturing company in Indonesia was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings demonstrate that managerial coaching has a positive and significant direct effect on employee performance, and an indirect effect through PsyCap, which emerges as a robust mediator. These results extend existing coaching literature by integrating contemporary psychological frameworks and highlighting how developmental leadership fosters critical psychological resources that drive high performance in the digital era. The study offers practical implications for institutionalizing coaching cultures and designing psychological resource-building programs to enhance employee readiness for Industry 4.0 challenges.

### Keywords:

Managerial coaching; psychological capital; employee performance; Industry 4.0; developmental leadership; positive organizational behavior; digital-era workforce.



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## INTRODUCTION

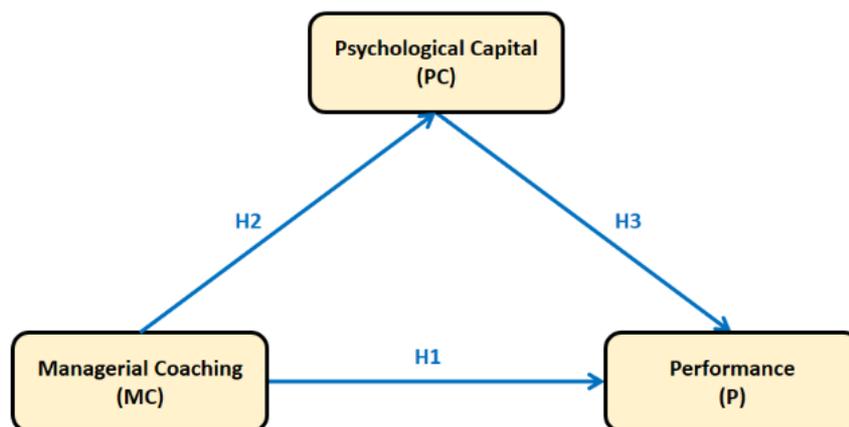
The emergence of Industry 4.0 has fundamentally reshaped organizational landscapes, demanding higher levels of adaptability, digital competence, and psychological resilience from employees. Within this context, managerial coaching has evolved into a vital human-centered leadership approach that surpasses traditional supervisory functions. Managerial coaching focuses on developmental dialogue, continuous feedback, and supportive guidance—practices shown to enhance employee well-being, performance, and engagement across industries (Palmucci & Santoro, 2024; Obeng et al., 2021).

Despite the growing interest in coaching, a significant theoretical gap remains regarding the psychological mechanisms that link coaching behaviors to employee performance, particularly in digital-intensive work environments. As workplaces become increasingly turbulent due to technological acceleration, employees must cultivate strong psychological capital (PsyCap)—optimism, resilience, hope, and self-efficacy—to maintain performance and cope with pressure (Nowack & Zak, 2020).

Organizational Support Theory (OST) suggests that developmental coaching signals managerial support, which employees reciprocate through improved performance (Tabassum et al., 2024).

Conservation of Resources Theory (COR) further posits that supportive work climates protect and enhance psychological resources, enabling employees to manage demands effectively (Teng-Calleja et al., 2023). While prior studies have linked coaching and performance, the mediating role of PsyCap within Industry 4.0 contexts remains underexplored, representing the core gap addressed by this research.

Accordingly, this study aims to extend theoretical understanding by empirically examining how managerial coaching influences employee performance and how PsyCap functions as a mediating mechanism. By focusing on employees in a manufacturing company undergoing digital transformation, the findings provide both theoretical enrichment and practical guidance for organizations seeking to strengthen their human capital capabilities.



**Figure 1. Research Model**

## METHOD

In this study, a quantitative research approach was employed to investigate the relationships among managerial coaching, psychological capital (PsyCap), and employee performance within the context of a manufacturing company located in Tangerang, Indonesia. A sample of 297 employees was selected through simple random sampling, ensuring broad representation across different employee categories, which is essential to the external validity of the study. From this pool, 224 valid responses were gathered, yielding a response rate that supports the robustness of the findings and meets the minimum sample size requirements for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis.

To measure managerial coaching, eight indicators derived from the work of Lubis et al. (2023) were utilized. These indicators encompass various coaching behaviors, including goal-setting, effective communication, constructive feedback, and developmental guidance. This framework aligns with established measurement practices, thereby supporting the reliability of the managerial coaching assessment. In assessing PsyCap, the study drew upon four indicators proposed by (Udin & Yuniawan, 2020), which encapsulate the constructs of hope, resilience, optimism, and self-efficacy—each of which has been substantiated within broader psychological research as critical to enhancing employee outcomes. Furthermore, employee performance was quantified through seven indicators adapted from Williams & Anderson (1991), emphasizing in-role performance in alignment with job responsibilities, thereby capturing the essential dimensions of employee effectiveness.

All constructs were assessed using a five-point Likert scale, allowing for nuanced responses concerning the intensity of attitudes among participants. This method enhances the richness of the data and supports comprehensive statistical analysis to assess relationships among latent variables. SmartPLS 4.0 was employed to facilitate the PLS-SEM analytical procedures, a choice motivated by the need to accommodate complex predictive models and facilitate exploratory research that builds theoretical frameworks in management studies.

In terms of evaluation methods, the study implemented validity and reliability checks through multiple avenues: convergent validity was established, alongside discriminant validity, utilizing the Fornell-Larcker criterion. Reliability was assessed via Cronbach's alpha and composite reliability

measures. The structural model's efficacy was analyzed through R<sup>2</sup> values and path coefficients, with bootstrapping procedures used to ascertain the significance of both direct and indirect effects among the constructs. This multi-faceted analytical approach, incorporating consistency checks and robust modeling practices, enhances the credibility of the study's findings regarding the interplay between managerial coaching, psychological capital, and employee performance.

## RESULTS AND DISCUSSION

The results of the current study provide critical insights into the interplay between managerial coaching, psychological capital (PsyCap), and employee performance. The demographic analysis reveals that the overwhelming majority of participants were male, with a significant distribution in the age range of 30 to 40 years. Most respondents reported having between five and ten years of work experience, indicating a stable workforce with considerable exposure to organizational norms and culture.

In line with the rigorous measurement standards stipulated for this research, the measurement model results confirm that all constructs met the established benchmarks for convergent validity and reliability. Specifically, loading values for the observed constructs mostly surpassed the threshold of 0.70, while average variance extracted (AVE) values exceeded the 0.50 minimum criterion. Additionally, both Cronbach's alpha and composite reliability coefficients were above the acceptable level of 0.70. These results underscore the strong internal consistency of the constructs utilized in the study. Discriminant validity was established through the Fornell–Larcker criterion and cross-loading analysis, affirming the empirical distinction among constructs within the theoretical framework (Dubey et al., 2020; David et al., 2024; Muhammad, 2022).

**Table 1.** Hypotheses Testing Result

| Hypotheses | Relationship  | Beta  | T Statistics |       |       |           |
|------------|---------------|-------|--------------|-------|-------|-----------|
| H1         | MC -> P       | 0.253 | 0.098        | 2.588 | 0.010 | Supported |
| H2         | MC -> PC      | 0.408 | 0.101        | 4.047 | 0.000 | Supported |
| H3         | PC -> P       | 0.632 | 0.069        | 9.163 | 0.000 | Supported |
| H4         | MC -> PC -> P | 0.258 | 0.076        | 3.386 | 0.001 | Supported |

**Table 2.** R Square Value

| Variables                  | R Square | R Square Adjusted |
|----------------------------|----------|-------------------|
| Performance (P)            | 0.593    | 0.579             |
| Psychological Capital (PC) | 0.167    | 0.153             |

The structural model analysis indicates that managerial coaching explains 16.7% of the variance in PsyCap, while both managerial coaching and PsyCap collectively account for 59.3% of the variance in employee performance. Such findings highlight the substantial explanatory power of the model, indicating that managerial coaching practices directly and indirectly influence employee performance through the enhancement of psychological capital.

Hypothesis testing confirmed that managerial coaching positively impacts employee performance, with specific coaching strategies—such as task clarification, consistent feedback, and supportive communication—identified as significant drivers of performance. This aligns with prior research suggesting that supportive leadership behaviors can cultivate a conducive environment for enhanced employee output and satisfaction (Wu, 2023; Muhammad, 2022). Furthermore, managerial coaching is shown to significantly influence PsyCap, bolstering employee confidence, resilience, and hope. The established link between PsyCap and performance resonates with findings from prior studies, indicating that employees endowed with higher levels of positive psychological resources are generally better equipped to perform adeptly amid challenging circumstances (David et al., 2024; Han et al., 2021; Kvasić et al., 2021).

A pivotal discovery of this research is the significant mediating effect of PsyCap, which elucidates that the benefits of managerial coaching extend beyond direct behavioral changes and encapsulate the nurturing of psychological strengths within employees. This mediation effect is consistent with Conservation of Resources (COR) theory, which posits that individuals with rich psychological resources are more adept at navigating workplace stressors and achieving superior performance outcomes compared to their less resilient counterparts (Chen et al., 2021; Zeid et al., 2022). The present findings affirm that employees who perceive supportive coaching are likely to tap into and amplify their psychological capital, thereby strengthening their overall workplace outcomes.

Overall, this study significantly contributes to the theoretical literature by framing managerial coaching as a critical behavioral antecedent that engenders positive psychological development among employees. This supports the positive organizational behavior (POB) paradigm, which argues for the transformative potential of positive psychology in occupational settings (Castillo & López-Zafra, 2021; Bin et al., 2020). Moreover, the relevance of these findings in the context of Industry 4.0 is underscored, particularly as organizations adapt to rapid technological advancements and shifting job demands. The research highlights the necessity of fostering psychological adaptability and human resilience as integral components of effective workplace strategies in the evolving economic landscape.

## CONCLUSION

This study reinforces and expands previous findings by demonstrating that managerial coaching significantly enhances employee performance, both directly and indirectly, through the strengthening of psychological capital (PsyCap). It underlines the concept of coaching as not merely a supervisory action but as a pivotal developmental intervention that cultivates psychological resilience amongst employees. By engaging in supportive leadership practices, employees gain essential psychological attributes such as hope, self-efficacy, resilience, and optimism, which empower them to navigate the complexities of contemporary work environments effectively.

The implications of these findings for organizational leaders are significant. They suggest that structured managerial coaching programs should be systematically incorporated into human resource development strategies. Organizations are encouraged to foster a coaching culture that prioritizes essential elements such as effective communication, constructive feedback, and employee empowerment. This focus not only supports the development of individual employee capabilities but also aligns with the organization's broader goals of adaptability and resilience in a rapidly evolving economic landscape.

Future research avenues could delve deeper into additional mediating variables that may influence this relationship. For instance, exploring variables such as psychological climate or digital readiness could provide more nuanced insights into how these factors interact with managerial coaching to affect employee performance. Furthermore, extending the examination of this model beyond the manufacturing industry into diverse sectors could enhance our understanding of its generalizability across different cultural contexts and organizational dynamics.

In conclusion, this study not only reinforces the critical role of managerial coaching but also highlights its value in cultivating a psychologically empowered workforce that is better equipped to meet organizational challenges. By investing in coaching practices, organizations can promote a proactive and engaged employee culture that drives both individual and collective success.

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