

**Task interdependence as a mediator of the relationship between shared leadership and
performance**

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PSB3E-BT15: Bachelor

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Juli 1, 2024

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Abstract

This thesis examines the mediating role of task interdependence in the relationship between shared leadership and organizational performance. Shared leadership, characterized by distributed responsibility and influence within teams, has gained attention for its potential to enhance collaboration, innovation, and responsiveness within dynamic environments. Task interdependence, defined as the extent to which team members rely on each other to complete tasks, is posited to be a critical factor in achieving effective team performance. Through a comprehensive review of the literature and empirical analysis, this study investigates the interconnectedness of these constructs. However, results indicate that task interdependence does not significantly mediate the impact of shared leadership on performance outcomes. Despite the lack of significant mediation, the study provides insights into the complex dynamics of shared leadership and task interdependence, contributing to the theoretical understanding of leadership effectiveness. These findings suggest the need for further research to explore other potential mediators and moderators in the relationship between shared leadership and organizational performance.

Keywords: Shared Leadership, Task Interdependence, Organizational Performance,

Task interdependence as a mediator of the relationship between shared leadership and performance

Shared leadership has been a focal point in the news for the past decades and its effectiveness is widely researched. We define shared leadership (also known as distributed or collective leadership) as a form of management in which leadership responsibility and influence are distributed within a group (Wu et al., 2023). In this way shared leadership promotes collaboration, applies collective expertise and creates a culture of innovation and responsiveness. This allows organizations to swiftly adapt to changes in dynamic environments (M, Sanfilippo, 2024). A recent significant shift towards shared leadership signals a persistently increasing interest from organizations, leading to articles bringing attention to the need for competent leaders that possess qualities like organizational effectiveness, innovative thinking, and empathetic communication (N, Velumyan, 2024). Shared leadership has also shown to be popular amongst other organizational variables as a theoretical framework was dedicated to it, involving numerous antecedent, moderation and outcome variables. The emergence of shared leadership, for instance, was found to be correlated to internal team environment and team heterogeneity, while the outcomes of shared leadership are moderated by intragroup trust and task interdependence (Wu et al., 2023). Task interdependence is defined as the degree to which team members rely on teamwork and interaction in order to complete tasks (Bishop and Scott, 2000). Task interdependence presents itself as a critical determinant in the workplace as it encourages motivation and work efficiency, which in turn relate to effectiveness of team performance (Campion et al., 1993). Job performance is paramount for the overall success of a business (K. Leonard, 2019). Therefore, the influence of shared leadership and task interdependence are often measured by the effect they have on job performance. We define performance as the expression of

employee behaviors that positively impact the organization, colleagues and task execution (Williams and Anderson, 1991).

Seeing that numerous interacting variables are involved, ties into Fiedler's contingency theory of leadership, which posit that the effectiveness of leadership styles is contingent on various situational factors (Fiedler, 1967). This means that, besides influencing variables with positive outcomes, like the ones mentioned above, there could also be variables that negatively influence desired outcomes. One such variable is the bystander effect, where the presence of others can cause a diffusion of responsibility, leading to organizational inefficiencies (Tiwari, 2023). The bystander effect could especially be of negative influence in a shared leadership environment as responsibility is already distributed here. As this particular effect, and the effects of many other potentially influencing variables, have yet to be scientifically researched, their possible influence on research models should be taken into account. This could be seen as a sign that our understanding of this complex network of (possibly) interacting variables is not fully clear and more research should be done. Therefore, this study intends to contribute to our understanding of the interplay between influential variables in a shared leadership environment, more precisely through the exploring of the specific influence of task interdependence has on outcomes in these environments. The influence of task interdependence on performance in a shared leadership environment has been researched before. In 2023 researchers Wu, Cormican and Chen performed a meta-analysis wherein task interdependence was found to be a significant moderator of the relationship between shared leadership and performance. Measuring task interdependence as a mediating variable has been postulated in a research on shared leadership by Carson, Tesla and Marrone in 2007, yet has not been researched until now. A mediating effect of task interdependence on the relationship between shared leadership and performance suggests that task interdependence constitutes a fundamental component in facilitating performance in a

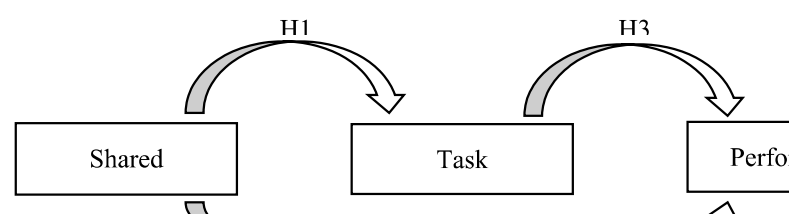
shared leadership environment. This proposition is drawn from the idea that a certain level of task interdependence places colleagues in a position where working together and sufficient communication is required to complete tasks. In a shared leadership environment, where colleagues share responsibilities and influence, working together and sufficient communication can be seen as determining factors for fulfilling responsibilities and positively exercising influence, which can subsequently result in better job performance.

Following the premise of task interdependence being of significant influence on the performance in a shared leadership environment, this research paper will measure task interdependence as an explaining variable for the relation between shared leadership and performance. This will be done by measuring if: shared leadership is positively related to task interdependence (H1), Shared leadership is positively related to performance (H2) and Task interdependence is positively related with performance (H3). To secondly measure this against: Task interdependence mediates the effect of shared leadership on performance (H4). If this mediation effect is significantly higher than the relation between shared leadership and task interdependence, the direct relation between shared leadership and performance and the relation between task interdependence and performance, then we can conclude that task interdependence is necessary for good performance in a company with shared leadership.

Figure 1: A visual representation of the research model

Theory development and hypotheses

Shared leadership and task interdependence



Shared leadership is defined as a form of management wherein leadership responsibilities and influence of leaders are shared within a group (Wu et al., 2023). As this is a broad definition, it is appropriate to look at exhibitions and common characteristics of shared leadership to gain a comprehensive understanding of the concept of shared leadership. In their investigation of shared leadership in higher education, Kezar and Holcombe (2017) delineated the following common characteristics: There is a greater number of individuals in leadership than traditional models, leaders and followers are seen as interchangeable, leadership is not based on position or authority, multiple perspectives and expertise are capitalized on for problem solving, innovation, and change and there is typically emphasis on collaboration and interactions across the organization. The latter two common characteristics further exemplify the perceived advantages associated with the implementation of a shared leadership approach. These advantages align with the observation that shared leadership consistently emerges as a pivotal factor for organizations, by facilitating enhanced capabilities in learning, innovation, performance, and adaptive responsiveness to external challenges.

Task interdependence is defined as the degree to which team members rely on teamwork and interaction in order to complete tasks (Bishop and Scott, 2000). To provide a better understanding of the functioning of task interdependence in the workplace, research was conducted delving into task interdependence within work environments. The study clarified the distinction between two psychological states: experienced responsibility for one's own work and personal outcomes, and experienced responsibility for the work and personal outcomes of others (dependents) with whom one collaborates. The research concluded that autonomy, representing an individual's sense of control over their work, is primarily associated with experienced responsibility for one's own work outcomes (Kiggundu, 1983). However, when individuals actively engage in collaborative tasks, initiating task interdependence, they tend to assume responsibility for the outcomes of their collaborators.

As one characteristic of shared leadership involves, the capitalization of multiple perspectives and expertise in order to ensure outcomes like problem solving, innovation, and change, and a characteristic of task interdependence is, the tendency to assume responsibility for the outcomes of their collaborators, shows that involvement of team member is an important concept in both shared leadership and task interdependence. Additionally, shared leadership is characterized by emphasizing collaboration and interactions, while task interdependence is defined as the degree to which team members rely on teamwork and interaction. These overlapping characteristics could allude to shared leadership being positively related to task interdependence. A study on the relationship between task interdependence and shared leadership has shown promising results for this prediction. The study included a multiple regression approach to identify if a significant relationship between initiated and received task interdependence and shared leadership exists, and found a weak positive statistical significance (E. Cruz, 2019). The following hypothesis is proposed to find a stronger positive significance.

Hypothesis 1: Shared leadership is positively related to task interdependence.

Shared leadership and performance

Shared leadership involves distributed influence within a group. This fosters collaboration and diverse perspectives for problem-solving and innovation (Kezar & Holcombe, 2017). This approach aligns with the broader definition of performance, encompassing behaviors that positively impact organizational outcomes. By leveraging collective expertise and fostering collaboration, shared leadership is expected to enhance organizational performance through improved learning, innovation, and adaptability.

Performance, as defined by Williams and Anderson (1991), includes the manifestation of employee behaviors that have a positive impact on the organization, colleagues, and the execution of tasks. This definition highlights the broader scope of performance beyond mere

task completion. Delving deeper into the concept of performance, it is commonly understood as the output or results, necessary for achieving predetermined goals. This includes not only what tasks have been completed but also how they have been accomplished and the outcomes achieved. In the context of employee performance, it refers to the ability of employees to effectively contribute to the attainment of organizational objectives. Employee performance plays a crucial role in organizational performance, as it directly influences the achievement of goals and overall success. This encompasses various aspects such as the quantity of output, the timeliness of production, attendance, and cooperativeness among employees (Gungor, 2011). Thus, employee performance is a multifaceted concept that goes beyond mere task completion to encompass the broader impact of employees' actions and behaviors on organizational success. The meta-analysis by Wu, Cormican, and Chen (2023) serves as a notable example of performance being more than just task completion, and supports the notion of a positive relationship between shared leadership and team outcomes. They stated that shared leadership positively influences team satisfaction, social integration, and team trust and that it enhances team efficacy and potency, as well as team creative processes. Their research indicates that, regardless of the method used to measure shared leadership, there is a consistently positive correlation with team performance. This finding suggests that teams with shared leadership structures tend to perform better overall. The following hypothesis is formulated to validate the finding of this positive influence.

Hypothesis 2: Shared leadership is positively related to performance.

Task interdependence and performance

Task interdependence, which reflects the reliance on teamwork for task completion (Bishop & Scott, 2000), provides a collaborative approach of sharing responsibility and encouraging collaboration among team members (Kiggundu, 1983). This collaborative approach fosters behaviors such as cooperation, communication, and coordination, enhancing

task execution and contributing to organizational success (Williams & Anderson, 1991). Employees in successful organizational environments are more likely to exhibit behaviors that positively impact performance, such as timely completion of tasks, increased productivity, and improved teamwork (Gungor, 2011). Therefore, it is expected that task interdependence is positively related to performance, as it facilitates effective contribution to organizational goals through enhanced teamwork and cooperation. The following hypothesis was formulated with the intention to validate this expectation.

Hypothesis 3: Task interdependence is positively related to performance

The mediating effect of task interdependence

Overall, a strong foundation of scientific literature supports the hypothesis that task interdependence mediates the relationship between shared leadership and performance. It has been deemed a critical determinant in the workplace, as its characteristics of reliance on teamwork and interaction have been confirmed to encourage motivation and work efficiency, leading to improved team performance (Campion et al., 1993). The importance of task interdependence in a shared leadership environment is highlighted by the finding that the characteristics of shared leadership, distribution of responsibilities and influence, promote collaboration to significantly increase several determinants of organizational performance (Wu et al., 2023). This also demonstrates that these variables exercise similar means in order to significantly impact performance, potentially establishing task interdependence as a moderating factor in a shared leadership context. This use of similar means is also in line with a weak positive statistical significance found between task interdependence and shared leadership (Cruz, 2019). A potentially significant central role of task interdependence in a shared leadership environment, is also supported by the finding of a moderating effect of task interdependence on the relationship between shared leadership and performance (Wu et al., 2023). The display of aforementioned interactions involving task interdependence indicate its

potential to influence numerous positive and negative outcomes, supported by Fiedler's contingency theory of leadership (Fiedler, 1967). The bystander effect was mentioned before for its increased threat to shared leadership environments, as the already distributed responsibility would be diffused even more due to the presence of others, thereby negatively affecting performance (Tiwari, 2023). It now serves as an example of the potential mediating effect of task interdependence, acting as a mechanism where colleagues must rely on each other. Which enhances collaboration and shared responsibility (Kiggundu, 1983).

Implementation of this, arguably essential, structure for collaboration and responsibility that task interdependence provides, could diminish the threat of the bystander effect by preventing further diminishing of responsibility and subsequently decreasing performance. In this way, the implementation of task interdependence would be of significant influence on the performance of an organization with a shared leadership environment. The following hypothesis was formulated to confirm this proposition.

Hypothesis 4: Task interdependence mediates the effect of shared leadership on performance.

Method

Participants

Recruitment targeted leaders and affiliated employees within Dutch companies. Initially, 135 pairs of leaders and employees participated in the questionnaire. After the exclusion of dyads not suitable for data analysis, 90 dyads remained. Participants were excluded by reasons of not fully completing the questionnaire, inability to match the codes necessary for coupling leaders to their employees and indication of a participant working less than 17 hours a week. The matching of the codes was presented with the most problems, as close to 70% of the exclusion of dyads was due to the inability to match their codes. The 90 remaining dyads indicated an average education level of MBO to HBO level ($M = 5.57$, $SD =$

1.04), an average organizational size between a small and middle sized organization ($M = 1.91$, $SD = .84$), and an average time of an employee working with their leader in their current position between 1 to 2 years and 2 to 5 years ($M = 6.42$, $SD = 1.16$).

Design and procedure

The design of this study is as a multi-source cross-sectional field study. separate questionnaires were used for leaders and employees of Dutch companies. Participants were prompted to complete the questionnaire pertaining to the role of their counterpart. The questionnaire was provided in Dutch, aimed to facilitate cross-national studies on leader-employee dynamics for potential meta-analyses. Three thesis groups, consisting of Six bachelor students of the University of Groningen, employed the questionnaires to form a combined dataset used in every personal thesis. Each student aimed to gather data from at least 15 leader-employee dyads, totaling a minimum of 90 pairs. Participants were mainly approached through personal connections and by emailing or visiting organizations. Leaders and employees willing to participate received a QR-code or link directing them Qualtrics to fill out a questionnaire specified for leaders or employees. Before answering the questions, participants were informed that participation in the study was voluntary and anonymously. The questionnaires encompassed inquiries into 14 variables. Task interdependence, trust, psychological safety, reflexivity and coordination problems were measured by the same questions being asked to leaders and employees. Shared leadership, legitimacy, destructive leadership, despotic leadership, job satisfaction and team potency were measured only in the employee questionnaire and performance and creativity were measured only in the leader questionnaire. Demographic information was subsequently measured consisting of age, sex, working hours, industry, education level, organizational size, experience, time knowing each other, frequency of meeting each other, how many team members they cooperate with and for

leaders questions on how many employees they were in charge of and if they were under supervision themselves. Each questionnaire required approximately 15 minutes to complete.

Measures

Shared leadership (Independent Variable)

This measurement encompasses 18 items evaluating employees' perceptions of shared leadership behaviors exhibited by their leader. The questionnaire items were derived from Hoch's work on shared leadership and innovation, specifically focusing on vertical leadership and employee integrity (2013). The questions were translated into Dutch and adapted to fit our dyadic approach, so employees reflected on the leadership they shared with their leader. Employees are tasked with rating statements such as "My supervisor encourages me to collaborate with other team members" and "My supervisor advises me to coordinate my work with others who are part of the team" on a 7-point Likert scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). The Dutch translation of these items can be found under variable 1 in the appendix. A higher score indicates a greater perceived presence of shared leadership. The scale was reliable with a Cronbach Alpha score of .75.

Performance (Dependent Variable)

This section of the questionnaire comprises 21 items soliciting leaders' evaluations of their employees' performance, created by Williams & Anderson (1991). The questions were translated into Dutch and fitted to our dyadic approach, where leaders were provided statements such as "The employee goes out of his way to help new employees" and asked to rate their employee on a 7-point Likert scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). For the other questions, see figure 2 of the appendix. The Dutch translation of these items can be found under variable 2 in the appendix. Higher scores indicating a heightened perceived performance level of the employee. The scale was reliable with a Cronbach Alpha score of .85.

Task Interdependence (Mediating Variable)

Task interdependence is assessed through a questionnaire comprising 5 items, designed by Van der Vegt, Emans, and Van de Vliert (2001). These items, adapted from research on interdependence in work teams, capture both employee and leader perspectives on task interdependence. The questions were translated into Dutch and participants were asked to rate statements such as "I need to seek information and advice from my co-worker to complete my work" on a 7-point Likert scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). The Dutch translation of these items can be found under variable 3 in the appendix. The average score, considering both employee and leader perceived task interdependence, reflects the degree of task interdependence within the context studied. The scale was reliable with a Cronbach Alpha score of .65.

Results

Descriptive statistics

After data collection, the results of the questionnaires for leaders and employees were combined into dyads. Allowing for descriptive statistics, the testing of the model and supplementary analysis. Upon examining the descriptive statistics of the variables within the model, the data shows that the means for shared leadership and performance exceeds 5, which is better than average on a 1 to 7 point scale (Table 1). Instead, tasks interdependence displays a remarkably average mean of almost 4. When looking at the size and difference in standard deviations of every variable, nothing significant pops up. The same can be said about the correlations between the model variables, as shared leadership insignificantly correlates with task interdependence ($r = .02$) and performance ($r = .02$), and a slightly positive, nevertheless insignificant correlation is observed between task interdependence and performance ($r = .18$)

Table 1

Means, Standard Deviations, and Correlations Between Model Study Variables

Variable	Mean	SD	1.	2.	3.
1. Shared leadership	5.50	.75	–		
2. Task interdependence	3.94	.77	.02	–	
3. Performance	5.05	.60	.02	.18	–

Note. $N = 90$. * $p < .05$.

Regression assumptions

Before using the data to test the model, important assumptions for linear regression were tested. The assumption of linearity was tested by generating a standardized predicted residual plot, showing, when ignoring one unruly plausible outlier, no deviation from linearity, as can be seen in figure 1 of the appendix. Testing for normality resulted in no clear skewness, as can be seen in the histogram in figure 2 of the appendix. To further test for normality, a Shapiro-Wilk test was performed to present significant p-values for shared leadership ($p = <.001$) and task interdependence ($p = .001$) resulting in a violation of normality that possibly influences the outcome of the testing of the model. To test for the assumption of homoscedasticity, the scatter plot in figure 3 of the appendix was formed. Showing no clear signs of residuals bowing outwards or creating a cone-shape, implying no violation of the assumption of homoscedasticity. To test for homogeneity of the standard deviations, Durbin-Watson's test was performed to present acceptable uncorrelatedness of the residuals (Durbin-Watson = 2.19). Lastly, a check for multicollinearity presented a VIF-value (Variance Inflation Factor) of 1 for shared leadership and task interdependence, indicating the absence of collinearity. As almost all assumptions of linearity were met, continuing the linear regression analysis is deemed acceptable.

Hypothesis testing

By performing the Hayes Process Macro Model 4 analysis for simple mediation the overall model was found to explain 4% of the variance in performance ($F = .175, p = .18, R^2 = .04$). Hypothesis 1, stating shared leadership is positively related to task interdependence, shows insignificant results when performing linear regression analysis ($b = .02, t = .20, p = .845$). Indicated as well by the 95% bootstrap confidence interval lying within the margin of 0 (-.19; .24). Hypothesis 2, stating Shared leadership is positively related to performance, is again not met by the results as the data shows an insignificant relationship ($b = .02, t = .25, p = .805$). Again, indicated as well by the 95% bootstrap confidence interval lying within the margin of 0 (-.13; .17). Hypothesis 3, Task interdependence is positively related with performance, likewise, is not supported by the data as the analysis shows a, slightly less, insignificant relationship ($b = .14, t = 1.85, p = .068$). Indicated as well by the 95% bootstrap confidence interval lying within the margin of 0 (-.01; .29). Hypothesis 4, Task interdependence mediates the effect of shared leadership on performance, was tested by the performance of a Hayes Process Macro Model 4 analysis for mediation, The results of this analysis showed no significant mediation effect as the bootstrapped confidence interval of 95% lies within the margin of 0 (-.02; .05). Concluding that task interdependence does not significantly mediate the effect of shared leadership on performance.

Discussion

This study aimed to examine whether task interdependence mediates the effect of shared leadership on performance. Prior to data collection, several relationships were hypothesized: first, that shared leadership is positively related to task interdependence (H1); second, that shared leadership is positively related to performance (H2); and third, that task interdependence is positively related to performance (H3). It was also hypothesized that task interdependence mediates the relationship between shared leadership and performance (H4). The data analysis showed no significant relationships between shared leadership, task

interdependence, and performance, nor did it demonstrate a mediating effect of task interdependence on the relationship between shared leadership and performance.

Theoretical Implications

The insignificant mediation effect of task interdependence diverges from meta-analytic findings, which indicate that task interdependence significantly influences the effectiveness of shared leadership and moderates the relationship between shared leadership and team outcomes (Wu et al., 2023). The insignificant mediation effect of task interdependence found in data analysis does not align with these meta-analytic findings. Similarly, the absence of a significant relationship between task interdependence and performance is not supported by literature suggesting that task interdependence is crucial for enhancing motivation and work efficiency, thereby contributing to team performance effectiveness (Campion et al., 1993). Furthermore, the finding of an insignificant relationship between shared leadership and performance seems to contradict with meta-analytic findings indicating a positive association between shared leadership and team outcomes (Wu et al., 2023).

On the other hand, the hypothesis of task interdependence as a mediating variable in this relationship was built on the premise that task interdependence is vital for mitigating adverse operational outcomes, which remains to be empirically validated. The finding of an average score on task interdependence with narrow standard deviations in the companies of this sample, could suggest that task interdependence is present at such a level here that it prevents negative effects like the bystander effect from significantly impacting performance. In this case, measuring the potentially significant adverse effect of insufficient task interdependence would be unachievable in this sample. Conversely, measuring the effect of a high level of task interdependence on performance could also not be measured in a sample of companies with average task interdependence. However the average score on task

interdependence in combination with the insignificant mediating effect, could also indicate the presence of other variables mediating or moderating the relationship between shared leadership and performance in this dataset, such as team trust, psychological safety, or individual member competencies. Research on the influence of trust has shown it to be a mediator of the relationship between shared leadership and performance by means of monitoring and team understanding, proving trust to be of significant influence on performance outcomes and a variable to keep in mind when conducting research. Similarly, psychological safety was found to mediate the relationship by creating an environment where team members feel safe to share ideas and take risks without fear of negative consequences, thereby enhancing collaboration and innovation, which leads to improved performance. Furthermore, individual member competencies was determined as a mediator by ensuring that team members have the necessary skills and knowledge to contribute to collective leadership efforts and thereby enhance performance (De Jong & Elfring, 2010). Likewise, the presence of mediating or moderating variables affecting the relationship between task interdependence and performance could be an explanation for the insignificant direct effect found in the data analysis. Possible mediating or moderating variables are collaboration, coordination, and synergy within teams as research suggests them to be positively influenced by task interdependence (Kiggundu, 1983). The potential of numerous variables being of influencing on the model is supplemented by Fiedler's contingency theory of leadership, which posit that the effectiveness of leadership styles is contingent on various situational factors (Fiedler, 1967). As the data results are in line with this theory, it highlights the need for more specialized extensive research to determine the risk of specific potentially aversive influences of concepts like the bystander effect.

This need was emphasized by the following thought experiment. The very first notion leading to hypothesizing task interdependence as a mediator, was actually the question: "What

would happen if there was no implementation of task interdependence in a shared leadership company?”. The following answer to this question resulted in the mediating hypothesis of this study: responsibility and influence are already distributed, a lack of perceived responsibility and induced influence in employees could substantially elevate the likelihood of the bystander effect manifesting. Without the implementation of task interdependence, managers and stakeholders of this company may justifiably fear that employees will solely focus on tasks specifically assigned to them. Primarily the negligence of challenging, interdisciplinary tasks or their proper execution could lead them to concern themselves with the company's performance. Contingently, an intervention involving the implementation of task interdependence could improve performance, as proactive measures to encourage personal responsibility can mitigate the bystander effect (S. Tiwari, 2023).

Practical Implications

The average scores on shared leadership and task interdependence, while not significantly correlated with performance, offer a baseline understanding of how these constructs are perceived within organizations. The findings of a notably average score on task interdependence in Dutch companies could be an indication for Dutch companies, who sense a below average level of task interdependence in their company, that they are falling behind and possibly have to reevaluate their strategy. The same goes for companies with an average level of shared leadership or performance, as the results of this study indicate that the mean scores of shared leadership and performance are rated as above average in Dutch companies. These foundational measurements can be utilized in future studies to evaluate trends in shared leadership, task interdependence, and performance across companies of similar sizes and employee demographics. Organizational leaders could also utilize these averages to gain insights into the prevalence of shared leadership, task interdependence, and employee performance within organizations. A perceived trend, for example, the significant shift

towards shared leadership, could be monitored to possibly predict the extent companies are transitioning to a shared leadership style and assess the outcomes of this, for leaders of companies to determine if they should follow suit or stay their ground.

The insignificant mediation effect of task interdependence suggests that, while its role could be crucial in organizations where task interdependence is markedly insufficient, its individual impact to enhance performance may not be substantial in organizations that already exhibit task interdependence to some degree. This suggests that, for these organizations, emphasizing other variables might be more advantageous to enhance performance, or interventions for other influential factors may be necessary for task interdependence to have an optimal effect and thereby a more notable impact on enhancing performance.

Moreover, the absence of significant relationships among any of the variables, despite literature suggesting their interdependence, emphasizes the complexity of the network of interacting factors that influence organizational performance. For organizations, this complexity can serve as a reminder of the numerous interrelated factors affecting workplace dynamics. It implies the importance of a holistic perspective on intervention strategies, considering that interventions targeting a single factor can have cascading effects on multiple other aspects within the organization. Organizations could for instance, Design customized training modules that address specific organizational needs, such as enhancing task interdependence and leadership skills, can lead to more effective outcomes. Additionally, Promoting a collaborative work environment through policies and practices that encourage teamwork and shared responsibility can mitigate the potential negative effects of isolated interventions. Plus, establishing robust feedback mechanisms to continuously monitor and evaluate the impact of interventions can help organizations adapt strategies to evolving workplace dynamics.

Strengths and limitations

One strength of this study lies in the high reliability of the validated questionnaires, as indicated by their Cronbach's alpha scores. This indicates that the items within each questionnaire consistently measure the same underlying construct. The reliability of these measures ensures that the collected data are stable and dependable over time, thereby inducing confidence in the findings. Additionally, the study employs rigorous data analysis techniques, including tests for linearity, normality, homoscedasticity, and multicollinearity, which enhances the robustness of the statistical models used. This meticulous approach validates the credibility of the study's findings.

A weakness of the study is the small sample size, primarily resulting from a high dropout rate of more than 50% of dyads being excluded from analysis. Numerous dyads were excluded due to discrepancies in the codes entered by leaders and employees within each dyad, thereby impeding data linkage. Other reasons for exclusion included insufficient working hours or incomplete questionnaire responses, potentially influenced by perceived survey length. Consequently, the low sample size of 90 dyads limits statistical power and generalizability. Moreover, the absence of significant interactions in the model may also be attributed to the sample's heterogeneity across included companies. In the context of a model with variables influenced by numerous factors, such as performance, and variables potentially affecting highly specific outcomes, like task interaction, a small and diverse sample may not sufficiently account for influential variables, thereby hindering the detection of specific effects.

Future Direction

To address these limitations, future research should focus on several key areas. Improving data collection to achieve a sufficient sample size is essential for increasing statistical power and generalizability. Clearer instructions on the code participants need to enter in Qualtrics, reinforced with verbal instructions or reminder messages, could help

reduce data discrepancies. Additionally, including participants with less working hours would increase the sample size, as workers with less than 17 working hours per week would then also be able to participate in the study and provide valuable insights into the experiences and perspectives of workers with varying working hours. Using a validated questionnaire as a foundation while incorporating additional, shorter questionnaires for specific variables can help achieve a larger sample size. This approach would not only shorten the overall questionnaire but also enable the measurement of potentially influential variables affecting leader and employee working dynamics. Future research could extend the current model by incorporating additional variables suggested by the literature. For example, including the bystander effect as a moderating variable in the relationship between task interdependence and performance could provide new insights. Studies have shown that the bystander effect can significantly impact team dynamics and performance (Tiwari, 2023). Exploring the influence of collaboration, coordination, and synergy within teams on the relationship between task interdependence and performance could also yield valuable insights, as these factors are positively influenced by task interdependence (Wu et al., 2023). Future studies should assess these interactions in a shared leadership environment while considering Fiedler's contingency theory of leadership (Fiedler, 1967). Additionally, the mediating and moderating effects of team trust, psychological safety, or individual member competencies on the relationship between shared leadership and performance should be explored. Research has indicated that these factors significantly impact team performance and leadership effectiveness (De Jong & Elfring, 2010; Kezar & Holcombe, 2017). By addressing these limitations and extending the model, future research can provide a more refined understanding of the dynamics of task interdependence and the complex network of interacting factors that influence organizational performance. This comprehensive approach will help inform more effective intervention strategies and enhance organizational outcomes.

Conclusion

This study found no significant mediation effect of task interdependence on the relationship between shared leadership and organizational performance, nor significant relationships among shared leadership, task interdependence, and performance. These results contrast with meta-analytic evidence and literature suggesting positive associations among these variables and performance, yet align with literature highlighting the intricate network of factors influencing organizational outcomes. Future research using the validated questionnaire could explore additional variables such as the bystander effect, collaboration, coordination, and team synergy. A more nuanced understanding of these variables could inform assessments of their interactions within a shared leadership context.

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Appendix

Variable 1. Items shared leadership questionnaire

Geef alstublieft aan in hoeverre u het eens bent met de stellingen.

[1 Helemaal mee oneens; 7 Helemaal mee eens; 4 niet mee eens, niet mee oneens]

1. Mijn leidinggevende geeft een duidelijk beeld van waar ons team voor staat.

2. Mijn leidinggevende is gedreven door hogere doelen of idealen.
3. Mijn leidinggevende laat waardering zien voor mijn inspanningen.
4. Mijn leidinggevende moedigt mij aan om ideeën te heroverwegen die nooit eerder in twijfel getrokken zijn.
5. Mijn leidinggevende maakt gebruik van veel verschillende perspectieven om problemen op te lossen .
6. Mijn leidinggevende moedigt mij aan om meer te doen dan alleen dat wat van mij verwacht wordt (bijv. extra inspanning).
7. Mijn leidinggevende moedigt mij aan om zelf oplossingen te zoeken voor mijn problemen in het werk.
8. Mijn leidinggevende dringt aan om zelf verantwoordelijkheid voor het werk te nemen.
9. Mijn leidinggevende moedigt mij aan om nieuwe dingen te leren.
10. Mijn leidinggevende moedigt mij aan om mezelf een schouderklopje te geven wanneer ik een nieuwe uitdaging heb behaald.
11. Mijn leidinggevende moedigt mij aan om samen te werken met andere teamleden.
12. Mijn leidinggevende adviseert mij om mijn werk af te stemmen met anderen, die onderdeel uitmaken van het team.
13. Mijn leidinggevende dringt erop aan om als een team samen te werken met anderen, die deel uitmaken van het team.
14. Mijn leidinggevende verwacht dat de samenwerking met de andere teamleden goed verloopt.
15. Mijn leidinggevende besluit samen met mij wat mijn prestatiedoelen zijn.
16. Mijn leidinggevende en ik werken samen om te kiezen wat mijn prestatiedoelen moeten zijn.
17. Mijn leidinggevende en ik gaan samen om de tafel om overeenstemming te krijgen over mijn prestatiedoelen.
18. Mijn leidinggevende werkt met mij samen om mijn prestatiedoelen te ontwikkelen.

Variable 2. Items performance questionnaire

Geef alstublieft aan in hoeverre u het eens bent met de stellingen.

[1 Helemaal mee oneens; 7 Helemaal mee eens; 4 niet mee eens, niet mee oneens]

Mijn medewerker:.....

1. Voert de opgedragen taken naar behoren uit
2. Voldoet aan de verantwoordelijkheden vermeld in de functiebeschrijving
3. Voert de taken uit die van hem/haar verwacht worden
4. Voldoet aan de formele prestatie-eisen van de functie
5. Houdt zich/haar bezig met activiteiten die rechtstreeks van invloed zijn op zijn/haar prestatiebeoordeling
6. Verwaarloost aspecten van het werk dat hij/zij verplicht is uit te voeren
7. Faalt in het uitvoeren van essentiële taken
8. Helpt anderen die afwezig zijn geweest
9. Helpt anderen die een zware werklast hebben
10. Assisteert mij bij mijn werkzaamheden (wanneer niet gevraagd)
11. Neemt de tijd om te luisteren naar problemen en zorgen van collega's

12. Doet zijn/haar uiterste best om nieuwe medewerkers te helpen
13. Heeft persoonlijke belangstelling voor andere werknemers
14. Geeft informatie door aan collega's
15. Aanwezigheid op werk is boven de norm
16. Geeft van te voren aan wanneer hij/zij niet kan komen werken
17. Neemt te veel werkpauses
18. Besteed veel tijd aan persoonlijke telefoongesprekken
19. Klaagt over onbelangrijke dingen op het werk
20. Bewaart en beschermt eigendommen van de organisatie
21. Houdt zich aan informele regels die zijn opgesteld om de orde te handhaven

Variable 3. Items task interdependence questionnaire

Geef alstublieft aan in hoeverre u het eens bent met de stellingen.

[1 Helemaal mee oneens; 7 Helemaal mee eens; 4 niet mee eens, niet mee oneens]

1. Ik moet informatie en advies van mijn medewerker vragen om mijn werk te kunnen voltooien.
2. Ik ben afhankelijk van mijn medewerker voor de voltooiing van mijn werk.
3. Ik werk alleen; ik hoef zelden mijn werk te laten controleren of met mijn medewerker samen te werken.
4. Ik moet nauw samenwerken met mijn medewerker om mijn werk goed te kunnen doen.
5. Om zijn/haar werk te kunnen doen, moet mijn medewerker informatie en advies bij mij inwinnen.

Figure 1. standardized predicted residual plot

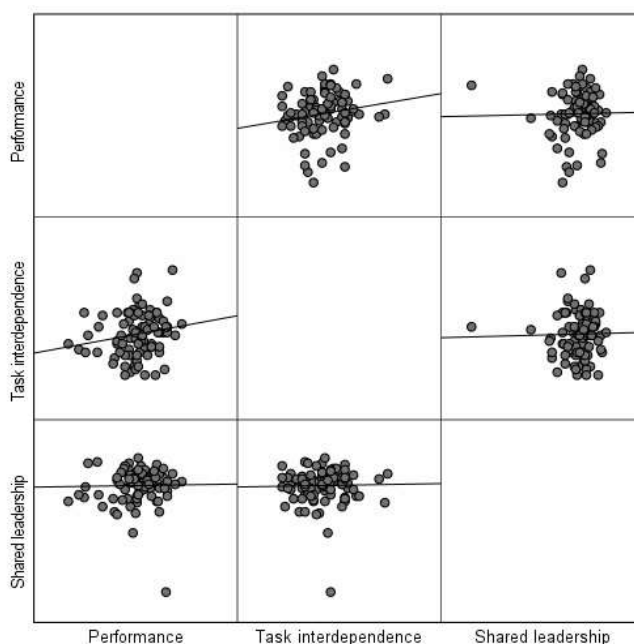
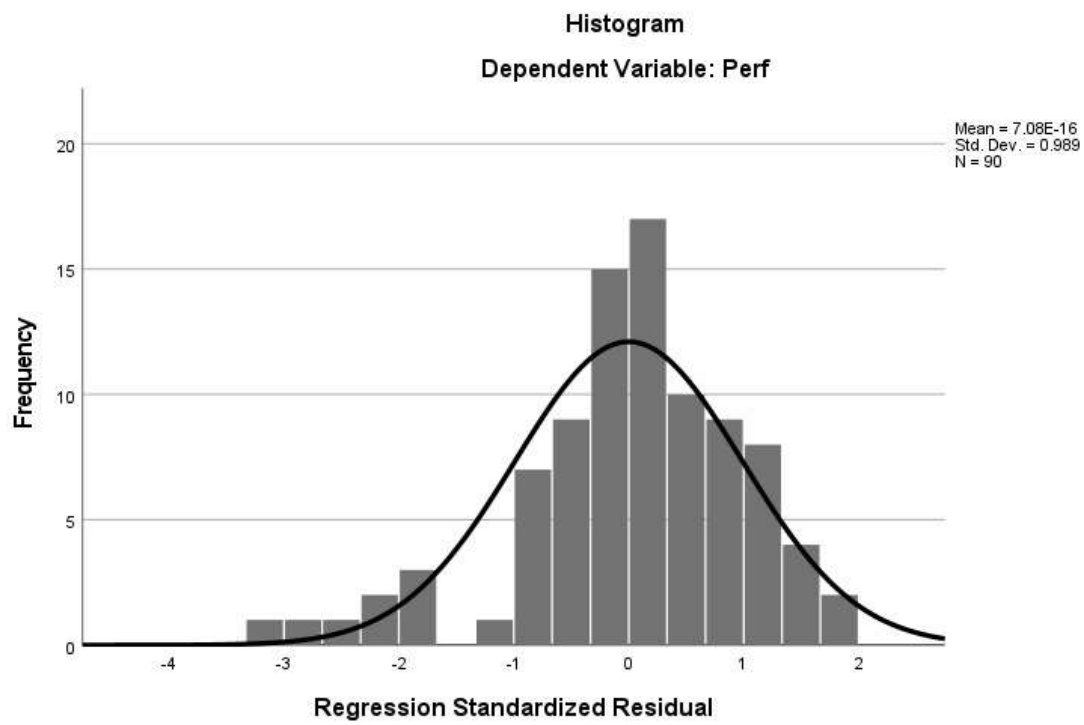


Figure 2. Histogram for normality**Figure 3.** Scatter plot for homoscedasticity