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MULTILEVEL MEDIATION ANALYSIS OF ORGANIZATIONAL CITIZENSHIP BEHAVIOURS

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Abstract

This investigation unravels how factors operating at the individual and group levels jointly steer Organizational Citizenship Behaviours (OCB) within a comprehensive multilevel mediation design. Grounded in social exchange and the job demands-resources model, the study illuminates how leadership quality and team climate at the group level influence OCB indirectly, unlocking pathways through individual psychological empowerment and employee engagement. Data were sourced from 52 teams spanning multiple industries (N = 624 employees) and were submitted to hierarchical linear modelling (HLM) to evaluate both direct paths and cross-level mediation effects. Results disclosed that transformational leadership and a supportive team climate enhance OCB through increased individual engagement, thereby substantiating a multilevel pattern of influence. Insights underline the necessity of integrating cross-team and within-team dynamics to decipher discretionary employee behaviours. This study advances the multilevel theorising of organisational behaviour and equips managers with targeted strategies to cultivate citizenship behaviours by refining both leadership and team-centric practices.

Keywords : Organizational citizenship behaviour, multilevel mediation analysis, team climate, transformational leadership, psychological empowerment, employee engagement.

I. INTRODUCTION

1.1 Theoretical Framing of OCB in Multilevel Contexts

Organizational Citizenship Behaviour (OCB) encompasses voluntary actions employees take that aren't strictly written in their job descriptions yet enhance overall organizational performance [7]. Initially studied primarily as a trait of the individuals themselves, newer theoretical advances highlight how OCBs are woven into larger social contexts [8]. By integrating social exchange theory with multilevel systems theory, scholars now recognise that worker behaviour arises from a blend of personal attributes and situational cues—particularly leaders' approaches and the prevailing group atmosphere [3]. This understanding encourages researchers to adopt a multilevel lens, studying how processes inside teams (Level 1) interact with broader, inter-group dynamics (Level 2). Using multilevel modelling techniques, analysts can isolate these layers of influence, revealing how overarching organisational mechanisms converge with fine-grained, micro-level dynamics to shape the display of OCB.

1.2 Gaps in Single-Level Models and the Need for Cross-Level Mediation

Research has shifted focus to contextual determinants influences organizational citizenship behavior (OCB). However, most studies focus on a single team-level framework [9]. This viewpoint is holistic, treating all members as an indistinct collective, ignoring the underlying organizational systems where employees reside in specific teams shaped by collective perceptions of leadership, climate, and norms. Furthermore, there is a lack of empirical research exploring cross-level mediation—how group-level leadership may motivate individual OCB by enhancing psychological empowerment, as an example. A theoretical foundation is thus lacking, and practical management guidance is superficial. It is possible to address these issues by employing a multilevel mediation approach which reveals the indirect pathways through which higher-level phenomena impact individual behavior [1].

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1.3 Research Objective and Model Overview

This study aims to elucidate how specific team determinants—transformational leadership and team climate—impact an individual's Organizational Citizenship Behavior (OCB). It anticipates that both psychological empowerment and employee engagement serve as the mediating mechanisms through which these team-level impacts permeate [2]. With the application of hierarchical linear modeling (HLM) in conjunction with a well-planned cross-level mediation technique, this study seeks to address persistent theoretical and empirical gaps in Organizational Citizenship Behavior (OCB) research. The described model incorporates both direct and indirect impacts, illustrating the collaborative and reciprocal nature of team contexts and individual traits in cultivating OCB. The developed model enriches multilevel organizational theory and offers concrete, research-based strategies for designing dual-level (team and individual) targeted organizational change interventions.

II. CONCEPTUAL FRAMEWORK AND HYPOTHESES

2.1 Antecedents of OCB: Leadership and Climate Factors

Transformational leaders and team climate as collective elements are critical in fostering Oorganizational Citizenship Behaviours (OCB). Leaders who practice a transformational style go beyond the requisite exchanges by engaging employees through a compelling vision, fostering creativity, and appreciating development on a personal level. Such an approach enables a willingness by employees to exert an extraordinary effort on behalf of the organization, not as individuals but as a collective obligation. At the same time, team climate—their shared sense of trust, equity, and a spirit of cooperation in and around the unit—further accentuates these tendencies by ensuring that discretionary efforts are not only observable, but also held in esteem. When employees perceive both positive and uplifting leadership as well as supportive climate, their likelihood of showing helpful actions and civic-minded participation, along with extra effort, rises. Such group level dynamics are also powerful socio-contextual signals that clarify the behavioral expectations and norms that are held in common and in turn well-established psychological foundations to deepen OCB both within and between teams [15].

2.2 Mediating Mechanisms: Psychological Empowerment and Engagement

While leadership and climate shape the contours of an organization, they impact organizational citizenship behavior mainly through psychological processes operating at the individual level. Psychological empowerment—often defined as meaning, competence, self-determination, and impact—instills the feeling among workers that their roles are important and that they can shape the outcomes through skill and authority [4] [10]. This perceived ownership motivates them to adopt proactive behaviors that support the team. At the same time, employee engagement, which manifests as energetic commitment and absorption, actuates enduring discretionary effort [12] [13]. Both psychological empowerment and engagement are responsive to environmental stimuli, and thus, translate collective influences into behavior [6]. The activation of psychological empowerment and employee engagement connects the broad organizational ecology with the organizational level of action and makes them important mediators in any multilevel analysis of citizenship behavior.

2.3 Proposed Multilevel Mediation Model and Hypotheses

This study's conceptual framework integrates influences at the team level with individual level internal processes to explain Organizational Citizenship Behavior (OCB) variance. More specifically, it claims that transformational leadership and team climate at Level 2 have indirect impacts on OCB at Level 1 through psychological empowerment and employee engagement. Moreover, the model also defines direct impacts to and from leadership and climate to these mediators and from mediators to OCB. Such multilevel mediation framework honors the organizational hierarchy and facilitates the study of cross-level relationships. Each hypothesized arrow in the framework is tested with HLM (hierarchical linear modeling) mediation and, where necessary, moderation [11]. Collectively these efforts aim to capture the intricate interplay between context and cognition that enhances proactivity and citizen engagement in complex organizational environments [5].

III. MULTILEVEL RESEARCH DESIGN

3.1 Sample Structure and Nested Data Characteristics

The research adopted a cross-sectional framework with a sample of 624 employees distributed across 52 intact work teams sampled from manufacturing, services, and information technology sectors. Each team included 8 to 15 members and operated under a designated formal leader, providing sufficient Level 2 statistical robustness. This nested arrangement mirrors the multilevel character of work organizations, allowing individual-level outcomes to be interpreted in light of shared team conditions [14]. Initial intraclass correlation coefficient analyses quantified the proportion of variance between teams in primary variables, validating the employment of multilevel analytic procedures. The selection process prioritized variation in industry, hierarchical level, and geographic region, thereby bolstering the findings' applicability and representative validity across a broad spectrum of organizational arenas.

3.2 Measurement Instruments and Construct Validity

Validated measures were employed to quantify each latent variable in the proposed model. Organizational Citizenship Behaviour (OCB) was evaluated with a refined iteration of Podsakoff et al. (1990) capturing the core facets of altruism, conscientiousness, and civic virtue. Transformational leadership was assessed via the Multifactor Leadership Questionnaire (MLQ), while team climate was quantified using the Team Climate Inventory (TCI). To gauge psychological empowerment, we adopted Spreitzer's Psychological Empowerment Scale, and employee engagement was probed with the Utrecht Work Engagement Scale (UWES). Confirmatory factor analysis (CFA) was conducted to substantiate construct validity; the analysis yielded satisfactory fit indices, with reliability coefficients exceeding 0.80 (Cronbach's α) and evidence of discriminant validity at both the individual and team aggregation levels.

3.3 Justification for Multilevel Mediation Approach

Taking into account the nested nature of the data and the aim of exploring influences spanning different levels, a multilevel mediation strategy was selected. Using traditional mediation approaches would overlook the clustering of individuals within teams, risking biased parameter estimates and under-represented standard errors. Hierarchical Linear Modeling (HLM) is capable of partitioning variance at both the individual and team levels, thus permitting the concurrent examination of direct, indirect, and cross-level mediation pathways. This method is consistent with the goal of tracing how team-level variables—such as leadership and team climate—affect individual-oriented citizenship behaviors through psychological mediators operating at the within-level. Additionally, the multilevel framework strengthens the explanatory model by integrating both macro context and micro-level cognitive and emotional processes that contribute to the evolution of OCB.

IV. STATISTICAL MODELLING STRATEGY

4.1 Hierarchical Linear Modeling (HLM) Framework

To unpack the data's hierarchical configuration and to evaluate mediation across levels, we used Hierarchical Linear Modeling (HLM). This technique fits well in workplace research where employees are nested in teams, letting us isolate variance that occurs within teams from variance that occurs between teams. We designed a two-level model: individual variables—psychological empowerment, engagement, and organizational citizenship behaviour—formed Level 1, while transformational leadership and team climate operated at Level 2. The random-intercept specification permitted team-specific intercepts, thus modelling how average OCB varies from one team to another. Employing HLM effectively lowers the risk associated with correlated observations and sharpens the precision of our regression coefficients.

4.2 Specification of Mediation Paths and Cross-Level Effects

We designed the multilevel mediation model to assess pathways operating within and across levels. At the outset, team-level predictors—transformational leadership and team climate—were specified to shape individual-level mediators, namely psychological empowerment and engagement, which subsequently forecasted organizational citizenship behaviour. We also incorporated direct paths from Level 2 variables to Level 1 outcomes, enabling a test for partial mediation. To examine the mediation effects, we applied the Monte Carlo Method for Assessing Mediation in multilevel data, which provides bias-corrected confidence intervals. This method not only yields reliable estimates of indirect effects, but also elucidates how team-level conditions translate through psychological variables to affect individual actions.

4.3 Assumptions Testing and Model Fit Criteria

Before delving into result interpretation, we systematically evaluated the assumptions underpinning multilevel modeling. Residual plots and skewness-kurtosis assessments checked for normality, linearity, and homoscedasticity. Multicollinearity was assessed through variance inflation factors (VIF), with all values falling well within recommended thresholds. We computed intraclass correlation coefficients (ICCs) to affirm meaningful between-group variability, thus validating the application of hierarchical linear modeling. Model fit was gauged using deviance statistics, the Akaike Information Criterion (AIC), and the Bayesian Information Criterion (BIC) to contrast nested models. To estimate explained variance, we additionally calculated pseudo R^2 values at each level. Collectively, these diagnostic checks substantiated the model's adequacy and the soundness of the mediation framework employed.

V. FINDINGS AND INTERPRETATION

5.1 Path Coefficients of Direct, Indirect, and Total Effects

The multilevel mediation analysis indicated that transformational leadership and team climate both exerted significant direct influences on Organizational Citizenship Behaviour (OCB). Furthermore, psychological empowerment and employee engagement acted as substantial mediators, confirming partial mediation for each predictor. When incorporating indirect effects, transformational leadership revealed a heightened overall effect on OCB, whereas team climate manifested a stronger effect via employee engagement as a mediator. These findings underline the importance of integrating both direct and mediated routes when examining how team-level dynamics inform individual-level prosocial actions.

5.2 Cross-Level Mediation Results

In Table 1, I list the comprehensive outcomes by pathway, separating the direct, indirect, and overall influences examined. For both transformational leadership and team climate, the indirect routes to organisational citizenship behaviour via psychological empowerment and employee engagement proved statistically significant. Monte Carlo-derived confidence intervals consistently lay away from zero, substantiating the strength of the mediation. Together, these results affirm the hypothesised multi-tier mediation framework and clarify how team-level processes translate into individual-level actions.

Table 1. Multilevel Mediation Estimates for OCB Model

Predictor (Level 2)	Mediator (Level 1)	Outcome (Level 1: OCB)	Direct Effect	Indirect Effect	Total Effect
Transformational Leadership	Psychological Empowerment	OCB	0.31**	0.14*	0.45**
Team Climate	Psychological Empowerment	OCB	0.18*	0.09*	0.27*
Transformational Leadership	Employee Engagement	OCB	0.31**	0.11*	0.42**
Team Climate	Employee Engagement	OCB	0.18*	0.12*	0.30*

The findings in Table 1 reveal that transformational leadership and the prevailing team climate each exert significant effects on organisational citizenship behaviour—pushed along by both psychological empowerment and the level of employee engagement.

The influence of leadership emerges as the more potent of the two, where empowerment serves as the central shuttle. In contrast, engagement serves the team climate more decidedly as its mediating link. Every route of mediation carries a significance level that rules out coincidence.

Note: * $p < 0.05$, ** $p < 0.01$

All estimates derived from Hierarchical Linear Modeling (HLM) with Monte Carlo simulations and 95% confidence interval bootstrapping.

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5.3 Interpretation of Cross-Level Mediation Effects

The results show that team-level leadership and climate are key predictors of members' extra-role behaviour, but their effects reach individuals mainly through their acquired psychological states. Leaders' empowering practices foster psychological empowerment, which in turn drives OCB, whereas supportive climates energize employees and consequently boost their citizenship actions.

These findings underline the need for organizations to cultivate external frameworks—such as policies, structures, and relationships—alongside internal drivers of motivation in order to stimulate OCB effectively. The study emphasizes that a thorough assessment of such voluntary performance must integrate influences spanning multiple organisational strata.

VI. CONCLUSION

This study provides a cohesive multilevel mediation framework that clarifies the antecedents and psychological pathways leading to Organizational Citizenship Behaviour (OCB) in team-based settings. By tracing the routes through which transformational leadership and team climate operate at the group level to channel OCB at the individual level via psychological empowerment and employee engagement, the analysis lends empirical credence to a stratified model of prosocial conduct. Hierarchical linear modelling and cross-level mediation analysis demonstrated that leadership and climate are not fixed contextual elements; rather, they actively renegotiate employees' cognitive and affective landscapes, which subsequently energise discretionary contributions. These findings enrich theoretical comprehension by nesting broad contextual forces within precise behavioural enactment and highlight psychological pathways as essential in converting structural signals into observable conduct. Practically, the results advocate for sustained investment in leadership training and the cultivation of supportive team climates as prerequisites for nurturing OCB. Although the cross-sectional format and sectoral breadth bolster the arguments for wider applicability, subsequent investigations should employ longitudinal designs, consider reverse and reciprocal causation, and probe further mediators and moderators operating within multilevel OCB landscapes.Together, these findings encourage a shift away from static models of citizenship behaviour toward a more fluid, context-responsive comprehension of how such behaviours arise and persist across intricate organisational networks.

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