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Transformational Leadership and Service Performance in Elderly Care: The Mediating Roles of Psychological Empowerment and Emotional Labor, and the Effect of Perceived Organizational Support in Guangxi, China

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Abstract

This study develops and tests an integrated framework that explains how transformational leadership relates to service performance in elderly care settings, with a focus on the serial mediating roles of psychological empowerment and emotional labor, as well as the moderating role of perceived organizational support. Drawing on survey data from 312 employees in elderly care institutions in Guangxi, China, we employed structural equation modeling (SEM) with bootstrapping procedures to examine both direct and indirect pathways.

The results indicate that transformational leadership is positively associated with service performance through a dual-pathway mechanism. Specifically, transformational leadership enhances employees' psychological empowerment, which not only directly predicts performance but also shapes emotional labor strategies, thereby facilitating more effective service delivery. More importantly, we found a significant serial mediation effect, suggesting that leadership influences performance through interconnected psychological and emotional processes. Additionally, perceived organizational support emerged as a significant contextual factor that reinforces employee performance.

By integrating psychological empowerment and emotional labor into a unified sequential model, this study advances theoretical understanding of leadership effectiveness in high-contact service environments. It also extends transformational leadership research to the underexplored context of elderly care in developing regions of China, where demographic pressures and service demands are rapidly intensifying. Practically, our findings highlight the necessity for elderly care institutions to simultaneously foster empowering leadership, support employees" emotional regulation, and strengthen organizational support systems to improve service quality.

Introduction

China is undergoing a profound demographic transition toward an aging society, creating unprecedented demand for high-quality elderly care services. According to the World Health Organization (2022), the proportion of adults aged 60 and above in China is projected to reach 28% by 2040, placing considerable pressure on healthcare and social service systems. This challenge is particularly pronounced in less-developed regions such as Guangxi, an ethnically diverse and economically developing autonomous region in southern China, where disparities in economic development and healthcare resources make it difficult to meet the growing needs of elderly populations (National Bureau of Statistics of China, 2023).

Guangxi faces unique constraints in building an effective elderly care system. Compared with more developed coastal provinces, elderly care institutions in Guangxi often experience limitations in professional workforce availability, service capacity, and management practices. These constraints highlight the critical importance of improving organizational effectiveness, particularly through leadership and human resource management, to enhance service performance in elderly care settings.

Leadership has been widely recognized as a pivotal factor influencing organizational outcomes in service-oriented industries (Bass & Avolio, 1994). In particular, transformational leadership, characterized by vision articulation, intellectual stimulation, and individualized consideration, has been shown to positively shape employees' attitudes and behaviors (Judge & Piccolo, 2004). In elderly care contexts, where service delivery relies heavily on interpersonal interaction and emotional engagement, leadership plays an even more significant role in shaping employees' psychological states and service behaviors.

However, existing research on leadership in service settings has primarily focused on cognitive and knowledge-based mechanisms, such as knowledge sharing and organizational learning, while paying relatively limited attention to psychological and emotional processes (García-Morales et al., 2012; Lin, 2017). In elderly care environments, employees are frequently exposed to emotionally demanding situations, including caring for vulnerable individuals, managing family expectations, and coping with end-of-life issues. Therefore, understanding how leadership influences service performance through psychological and emotional mechanisms is theoretically and practically essential.

Drawing on self-determination theory (SDT; Deci & Ryan, 2000) and conservation of resources theory (COR; Hobfoll, 2001), this study proposes that transformational leadership affects service performance by shaping employees' sense of empowerment and their capacity to regulate emotions during service interactions. Psychological empowerment, defined as employees' perceived meaning, competence, autonomy, and impact in their work (Spreitzer, 1995), reflects an intrinsic motivational state that energizes proactive work behaviors. Emotional labor, the process of managing emotions during service encounters (Grandey, 2000), captures the behavioral manifestation of emotional regulation that is critical for high-quality relational services. These mechanisms are particularly relevant in elderly care, where both technical competence and emotional sensitivity are essential for delivering compassionate and responsive services.

In addition, this study incorporates perceived organizational support (POS) as an important contextual factor. Rooted in social exchange theory (Blau, 1964), employees who perceive higher organizational support are more likely to reciprocate with positive work attitudes and behaviors (Eisenberger et al., 1986). In elderly care organizations, perceived organizational support can provide necessary resources, both material and emotional, thereby enhancing employees' capacity to deliver superior service performance.

Therefore, this study aims to examine how transformational leadership influences service performance through psychological empowerment and emotional labor, while also considering the role of perceived organizational support in elderly care organizations in Guangxi, China. Specifically, we address the following research questions:

RQ1: How does transformational leadership relate to service performance in elderly care contexts?

RQ2: Do psychological empowerment and emotional labor serially mediate the relationship between transformational leadership and service performance?

RQ3: What role does perceived organizational support play in enhancing service performance?

By addressing these questions, this study makes several theoretical contributions. First, it extends the transformational leadership literature to the under-researched context of elderly care in developing Chinese regions, providing empirical evidence from a culturally and economically distinct setting. Second, it advances understanding of the serial mediation mechanism linking leadership to performance, moving beyond single-mediator models to capture the interconnected psychological and emotional pathways. Third, it enriches social exchange theory by examining how organizational support interacts with leadership to shape service outcomes.

Literature Review and Hypotheses Development

2.1 Theoretical Foundations: Self-Determination and Conservation of Resources Perspectives

This study is grounded in two complementary theoretical frameworks that explain the motivational and resource-based mechanisms underlying the proposed relationships.

Self-determination theory (SDT; Deci & Ryan, 2000) posits that individuals have innate psychological needs for autonomy, competence, and relatedness, and that contextual factors, such as leadership behaviors, can either facilitate or thwart the satisfaction of these needs. When employees experience need satisfaction, they are more likely to internalize extrinsic motivations and engage in volitional, high-quality work behaviors (Gagné & Deci, 2005). Transformational leaders, by articulating a compelling vision and providing individualized support, are well-positioned to satisfy these psychological needs, thereby fostering employees' intrinsic motivation and psychological empowerment (Spreitzer, 1995).

Conservation of resources theory (COR; Hobfoll, 2001) complements SDT by emphasizing the role of resource gain and loss in shaping employees' coping behaviors. According to COR theory, individuals strive to protect their existing resources and acquire new ones. Psychological empowerment represents an important personal resource that enables employees to navigate stressful and emotionally demanding work situations. Employees with higher psychological empowerment are better equipped to regulate their emotional expressions authentically (i.e., engage in deep acting) rather than superficially (surface acting), thereby preserving their emotional resources and enhancing service performance (Brotheridge & Grandey, 2002). Thus, SDT and COR together provide a comprehensive framework for understanding how transformational leadership influences employees' psychological states and emotional behaviors.

2.2 Transformational Leadership and Psychological Empowerment

Transformational leadership has long been associated with employees' psychological development and intrinsic motivation. By articulating a compelling vision, promoting intellectual stimulation, and providing

individualized consideration, transformational leaders create a work environment that enhances employees' sense of meaning, competence, and autonomy (Bass & Avolio, 1994; Judge & Piccolo, 2004).

Recent empirical evidence reinforces this relationship. A meta-analysis by Seibert et al. (2011) demonstrated that leadership behaviors characterized by empowerment and support significantly strengthen employees' perceived control over their work and their confidence in handling complex tasks. More recently, Ilyas et al. (2021) found that transformational leadership positively influenced psychological empowerment among healthcare professionals, while Cheng et al. (2023) reported similar effects in service sector samples. In elderly care settings, where employees frequently face demanding and unpredictable situations, the role of leadership in fostering psychological empowerment is particularly salient. Accordingly, we propose:

H1: Transformational leadership has a positive effect on psychological empowerment.

2.3 Psychological Empowerment and Emotional Labor

Emotional labor refers to the process by which employees manage their emotions to align with organizational expectations during service interactions (Hochschild, 1983; Grandey, 2000). This process encompasses two primary strategies: deep acting, modifying internal feelings to express genuine emotions, and surface acting, suppressing or faking emotional expressions without changing inner feelings. Research consistently shows that deep acting is associated with positive outcomes (e.g., service quality, customer satisfaction), whereas surface acting leads to emotional exhaustion and diminished performance (Lee & Chelladurai, 2018).

Psychological empowerment has been theoretically and empirically linked to emotional labor strategies. From an SDT perspective, empowered employees experience higher autonomy and competence, which facilitates the internalization of organizational display rules and promotes authentic emotional expression (i.e., deep acting) (Rupp et al., 2008). Conversely, employees lacking empowerment are more likely to resort to surface acting as a defensive coping mechanism, depleting their emotional resources (Cheng et al., 2023). In elderly care, where emotional authenticity and empathy are essential for building trust with care recipients, the link between empowerment and effective emotional labor is critical.

H2: Psychological empowerment has a positive effect on emotional labor (deep acting).

2.4 Emotional Labor and Service Performance

Emotional labor is a central component of service work and has direct implications for performance outcomes. Grandey (2000) conceptualized emotional labor as the regulation of emotions to align with organizational expectations, highlighting its role in shaping service interactions. Empirical studies consistently demonstrate that effective emotional labor, especially deep acting, contributes to higher levels of service performance and customer satisfaction (Lee & Chelladurai, 2018; Wang et al., 2020).

In elderly care settings, employees" ability to manage emotional demands, such as showing compassion, patience, and empathy, not only affects service quality but also profoundly influences the overall well-being of care recipients (Brotheridge & Grandey, 2002). Drawing on COR theory, employees who engage in deep acting preserve their emotional resources while generating positive relational outcomes, thereby enhancing their service performance.

H3: Emotional labor has a positive effect on service performance.

2.5 Psychological Empowerment and Service Performance

Beyond its influence on emotional regulation, psychological empowerment has been widely linked to improved job performance. Empowered employees tend to demonstrate greater initiative, persistence, and accountability, which are critical for delivering high-quality services (Spreitzer, 1995). The SDT perspective suggests that when employees" needs for autonomy and competence are satisfied, they are intrinsically motivated to perform effectively, even in challenging circumstances.

Recent studies confirm that psychological empowerment enhances performance in healthcare and public service contexts by enabling employees to respond effectively to complex and dynamic situations (Seibert et al., 2011; Kim & Beehr, 2017). In elderly care, where service delivery often requires both technical competence and emotional sensitivity, empowerment is particularly valuable. We thus hypothesize:

H4: Psychological empowerment has a positive effect on service performance.

2.6 Perceived Organizational Support and Service Performance

Perceived organizational support (POS) reflects the extent to which employees believe that their organization values their contributions and cares about their well-being (Eisenberger et al., 1986). Rooted in social exchange theory, POS suggests that employees reciprocate organizational support with positive attitudes and behaviors (Blau, 1964; Cropanzano & Mitchell, 2005).

A growing body of research has demonstrated that POS is positively associated with employee performance, engagement, and commitment (Kurtessis et al., 2017; Caesens et al., 2020). In service contexts, organizational support not only provides necessary resources, such as training, equipment, and emotional backing, but also strengthens employees' emotional attachment and identification with the organization, enabling them to deliver better service outcomes. In elderly care institutions, where resource constraints are common, POS may be especially critical for buffering the negative effects of job demands and sustaining performance.

H5: Perceived organizational support has a positive effect on service performance.

2.7 The Mediating Role of Psychological Empowerment

The role of psychological empowerment as a mediator between leadership and performance has been well established in prior research. Transformational leadership enhances employees' psychological states, specifically their sense of meaning, competence, autonomy, and impact, which in turn influence their behavior and performance (Seibert et al., 2011). This mediation mechanism has received robust empirical support across various occupational contexts (Ilyas et al., 2021; Kim & Beehr, 2017).

However, few studies have examined this mediating pathway in elderly care settings, where the nature of work is both technically demanding and emotionally intense. In this context, psychological empowerment may serve as a critical psychological resource that translates leadership behaviors into tangible performance gains.

H6: Psychological empowerment mediates the relationship between transformational leadership and service performance.

2.8 The Serial Mediation of Psychological Empowerment and Emotional Labor

While previous studies have primarily focused on single mediators, recent research highlights the importance of sequential mediation mechanisms that capture how leadership influences outcomes through multiple interconnected processes (Cheng et al., 2023). We argue that transformational leadership first enhances psychological empowerment, which subsequently shapes employees" emotional labor strategies, ultimately affecting performance outcomes. This "psychological–emotional" pathway provides a more comprehensive explanation of how leadership operates in service contexts.

Theoretically, this serial mediation is supported by both SDT and COR. Transformational leadership satisfies employees' psychological needs, fostering empowerment (SDT); empowered employees possess greater personal resources and are better equipped to regulate their emotions authentically (deep acting); and authentic emotional regulation enhances service performance (COR). To our knowledge, no prior study has empirically tested this serial mediation model in the elderly care context.

H7: Psychological empowerment and emotional labor jointly mediate the relationship between transformational leadership and service performance.

Based on the above theoretical support and related assumptions, the research framework is shown in Figure 1.

Methodology

3.1 Sample and Data Collection

This study targeted employees working in elderly care institutions in Guangxi, China, including frontline caregivers, administrative staff, and supervisors. A convenience sampling approach was adopted due to accessibility considerations.

Of the 350 questionnaire packets distributed, 312 were returned with complete and usable responses, translating to an effective response percentage of 89.1%. The sample size exceeds the recommended threshold of 200 for structural equation modeling (Hair et al., 2010) and satisfies the minimum sample size requirements for detecting moderate effect sizes (Fritz & MacKinnon, 2007).

Data gathering occurred through a dual-channel administration approach. Specifically, questionnaires were delivered either through an online platform integrated with China's widely used WeChat ecosystem, or via traditional paper-based distribution during on-site visits to participating institutions. The fieldwork spanned the period from October 2024 through January 2025. All individuals who agreed to participate were explicitly informed that their involvement was entirely voluntary, and they were given firm assurances that their individual responses would be treated with strict anonymity and confidentiality. To minimize common method bias, we employed procedural remedies recommended by Podsakoff et al. (2003), including protecting respondent anonymity, reducing evaluation apprehension, and using clear and concise item wording.

3.2 Measures

Each theoretical construct in our model was operationalized using existing, previously validated measurement instruments drawn from the established literature. We applied only minor contextual adaptations to ensure that the wording of each item resonated appropriately with the specific realities of the elderly care work environment. A conventional five-point Likert-type response format was employed for all items, with anchors ranging from 1 (representing strong disagreement) to 5 (representing strong agreement).

Transformational Leadership (TL): Measured using 3 items adapted from Bass and Avolio (1994) and validated by Judge and Piccolo (2004). Sample item: “My supervisor articulates a compelling vision of the future for our institution.”

Psychological Empowerment (PE): Assessed using 3 items from Spreitzer (1995) scale, capturing employees perceptions of meaning, competence, autonomy, and impact. Sample item: “My work is meaningful to me.”

Emotional Labor (EL): Measured using 3 items adapted from Grandey (2000) and Brotheridge and Grandey (2002), focusing on deep acting, the regulation of emotions during service interactions. Sample item: “I try to actually experience the emotions I must show to residents.”

Perceived Organizational Support (POS): Measured using 3 items from Eisenberger et al. (1986), reflecting employees” beliefs about organizational care and support. Sample item: “My organization values my contributions.”

Service Performance (SP): Measured using 3 items adapted from established service quality measures (Parasuraman et al., 1988; Wang et al., 2020). Sample item: “I provide high-quality services to residents and their families.”

All items were translated and back-translated to ensure linguistic equivalence (Brislin, 1980).

3.3 Control Variables

Following prior research (Seibert et al., 2011; Kim & Beehr, 2017), we included four demographic variables as control variables in our structural model to account for alternative explanations: gender (0 = male, 1 = female), age (in years, categorized as 1 = <30, 2 = 30–39, 3 = 40–49, 4 = ≥50), work experience (in years, categorized as 1 = <1, 2 = 1–3, 3 = 4–6, 4 = >6), and education (1 = high school or below, 2 = college, 3 = bachelor's degree or above). These variables were included as covariates directly predicting service performance and emotional labor to isolate the effects of the focal constructs.

3.4 Data Analysis Strategy

The testing of our hypotheses was conducted via Structural Equation Modeling (SEM), implemented using the AMOS 26.0 software package. We adhered to the two-stage analytical protocol advocated by Anderson and Gerbing (1988), which proceeds as follows.

Stage 1: Measurement Model Evaluation. In the first stage, we performed a confirmatory factor analysis (CFA) to assess the adequacy of our measurement model. This involved an examination of several psychometric properties, including individual item factor loadings, composite reliability (CR), and the average variance extracted (AVE) for each latent construct. Model-data fit was evaluated against a set of commonly accepted fit statistics: the ratio of chi-square to degrees of freedom (χ^2/df), the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). We interpreted fit as acceptable when the following criteria were simultaneously satisfied: χ^2/df below 3, CFI and TLI exceeding 0.90, RMSEA below 0.08, and SRMR below 0.08 (Hair et al., 2010; Hu & Bentler, 1999).

Stage 2: Structural Model Testing. Following confirmation of an acceptable measurement model, we proceeded to estimate the structural model to test our hypothesized direct relationships (H1 through H5). The assessment of each hypothesis was based on the magnitude and statistical significance of the estimated standardized path coefficients (β).

Stage 3: Mediation Effect Examination. To evaluate the proposed mediating and serial mediating effects (H6 and H7), we employed a bootstrapping approach with 5,000 resampled datasets. This non-parametric resampling technique is widely endorsed for mediation testing because it does not rely on the assumption of multivariate normality and provides robust estimates of confidence intervals for indirect effects (Preacher & Hayes, 2008). An indirect effect was deemed statistically significant if the resulting 95% bias-corrected confidence interval excluded zero.

3.5 Common Method Bias Assessment

Given that our data were derived exclusively from self-report questionnaires completed by single-source respondents, we undertook two complementary diagnostic procedures to evaluate the potential

influence of common method bias (CMB). First, we executed Harman's single-factor test, wherein we loaded all measured items onto a single latent factor within an unrotated exploratory factor analysis framework. The resulting single factor accounted for 26.8% of the total variance, which falls considerably below the conventional 40% threshold that would signal a serious CMB concern (Podsakoff et al., 2003).

Second, we performed a marker variable test using a theoretically unrelated construct (i.e., “organizational tenure intention”) as a marker. The average correlation between the marker and the five focal constructs was 0.06, indicating negligible method variance (Lindell & Whitney, 2001).

3.6 Ethical Considerations

All participants in this study took part on a strictly voluntary basis. Prior to their participation, individuals were provided with a clear explanation of the research objectives and were explicitly informed that their responses would remain anonymous and would be treated with the utmost confidentiality. Written informed consent was secured from every participant prior to data collection. All gathered data have been used exclusively for academic research purposes. This investigation was carried out in full compliance with the ethical review standards established by the institutional review board at the authors' affiliated institution.

3.7 Ethical Approval

This study was performed in accordance with the ethical standards of the Declaration of Helsinki. The research protocol was reviewed and approved by the Institutional Ethics Committee of Guangxi Normal University (Approval No.: 20250815002). All participants were informed of the purpose of the study and provided written informed consent prior to their participation. Participants were assured of their right to withdraw at any time without penalty, and all data were anonymized to ensure confidentiality.

Results

4.1 Descriptive Statistics and Demographic Profile

A total of 312 valid responses were included in the analysis. The demographic breakdown of this sample is displayed in Table 1. The responding participants represented a cross-section of roles within the elderly care sector in Guangxi, with direct care staff constituting 58% of the sample, administrative personnel accounting for 22%, and supervisory-level employees representing the remaining 20%. This distribution affords a reasonably comprehensive perspective on the workforce across different organizational tiers within these institutions.

[Table 1. Demographic Profile of Respondents (N = 312)]

4.2 Measurement Model

We evaluated the quality of our measurement model using confirmatory factor analysis. The CFA results demonstrated that the hypothesized factor structure achieved a satisfactory level of fit with the observed data: the obtained fit indices were $\chi^2/df = 2.31$, CFI = 0.94, TLI = 0.93, RMSEA = 0.065, and SRMR = 0.041. With all indices meeting or surpassing the generally accepted benchmarks, we concluded that the proposed measurement model was appropriately specified for subsequent structural analysis.

All standardized factor loadings for individual items proved to be statistically significant ($p < 0.001$ for each) and exceeded the minimum recommended value of 0.70 (Hair et al., 2010). As detailed in Table 2, composite reliability coefficients were uniformly high, spanning from 0.88 to 0.91, thereby surpassing the 0.70 cut-off and attesting to strong internal consistency among items for each construct. In parallel, the average variance extracted values ranged between 0.64 and 0.73, all exceeding the 0.50 benchmark required to establish adequate convergent validity (Fornell & Larcker, 1981).

[Table 2. Reliability and Convergent Validity]

We evaluated the distinctiveness of our constructs using the Fornell-Larcker criterion. According to this standard, evidence of discriminant validity is obtained when the square root of the AVE for any given construct is larger than that construct's correlations with all other constructs in the model. As shown in Table 3, this condition was met for every construct, with the diagonal entries (representing the square roots of AVE values) consistently exceeding the off-diagonal correlation coefficients.

[Table 3. Correlation Matrix and Discriminant Validity]

Note: *Diagonal values represent the square root of AVE.*

4.3 Structural Model

We next proceeded to test the hypothesized structural relationships. Figure 2 and Table 4 summarize the direct path estimates for all proposed hypotheses. In each case, the hypothesized relationship was statistically significant and aligned with our predicted directional expectations. The estimated structural model again yielded a good fit to the data, as evidenced by the following fit indices: $\chi^2/df = 2.28$, CFI = 0.95, TLI = 0.94, RMSEA = 0.062, and SRMR = 0.039. These results collectively indicate that our theoretical framework is well-supported empirically.

[Figure 2. Presents the Structural Model with Standardized Path Coefficients(N=312)]

[Table 4. Structural Path Results]

As predicted in H1, the path linking transformational leadership to psychological empowerment was positive and strong ($\beta = 0.62$, $p < 0.001$). This indicates that leaders who exhibit inspirational and individually considerate behaviors tend to foster higher levels of perceived autonomy and competence among their subordinates. The pathway from psychological empowerment to emotional labor (H2) was likewise positive and significant ($\beta = 0.55$, $p < 0.001$), implying that employees with greater psychological

resources are better positioned to regulate their emotional expressions authentically during resident interactions.

In support of H3, we observed a significant positive influence of emotional labor on service performance ($\beta = 0.41$, $p < 0.001$), reaffirming the critical function of genuine emotional engagement in achieving high-quality care delivery. Psychological empowerment also exerted a direct positive effect on service performance ($\beta = 0.38$, $p < 0.001$), as hypothesized in H4, indicating that feelings of empowerment translate into more proactive and effective work behaviors. Finally, perceived organizational support demonstrated a significant positive association with service performance ($\beta = 0.33$, $p < 0.001$), thereby supporting H5 and underscoring the importance of the broader organizational context.

Regarding the control variables incorporated into the model, only work experience emerged as a significant predictor of service performance ($\beta = 0.15$, $p = 0.02$). Gender ($\beta = 0.06$, $p = 0.28$), age ($\beta = 0.09$, $p = 0.14$), and education ($\beta = 0.05$, $p = 0.34$) showed no statistically discernible effects on the outcome variable. Overall, these findings provide strong support for H1–H5 and confirm the proposed direct relationships in the model.

4.4 Mediation Analysis

To formally investigate the indirect pathways through which transformational leadership may affect service performance, we conducted bootstrapped mediation analyses with 5,000 resamples. The results of these analyses are compiled in Table 5.

[Table 5. Mediation Effects]

The mediating role of psychological empowerment in the connection between transformational leadership and service performance (H6) received empirical support. The estimated indirect effect via this single mediator was 0.24, with a 95% bias-corrected confidence interval ranging from 0.18 to 0.31. Since this confidence band did not encompass zero, we interpret this as confirmation that psychological empowerment represents a meaningful transmission mechanism for the influence of leadership on performance.

More critically for our theoretical model, the proposed sequential mediation pathway traversing both psychological empowerment and emotional labor (H7) also proved statistically significant. The magnitude of this serial indirect effect was 0.14, with a 95% confidence interval of [0.09, 0.20]. Again, the exclusion of zero from this interval provides support for the idea that leadership effects on performance operate through an interconnected psychological-emotional sequence.

To further evaluate the nature of this mediation, we also examined the residual direct path from transformational leadership to service performance after accounting for the mediators. This direct effect diminished to non-significance ($\beta = 0.08$, $p = 0.21$), a pattern consistent with full mediation through the proposed serial pathway.

Discussion

5.1 Interpretation of Findings

The central aim of this investigation was to unpack the mechanisms that connect transformational leadership to service performance outcomes within the elderly care sector. Our findings offer compelling evidence that leadership matters not only through direct influence but, more importantly, through its capacity to shape the psychological and behavioral processes that underpin effective service delivery.

Our first notable observation is that transformational leadership emerged as a robust positive antecedent of psychological empowerment. This finding converges with a substantial body of prior evidence (Seibert et al., 2011; Ilyas et al., 2021) and extends its applicability to the elderly care domain. Within this sector, where care staff routinely contend with emotionally taxing and cognitively demanding situations, the psychological resources conferred by empowerment are indispensable for maintaining high standards of service. Viewed through the lens of self-determination theory, this result suggests that leaders who communicate an inspiring vision and attend to individual needs contribute meaningfully to satisfying employees' fundamental psychological needs for autonomy and competence.

Second, psychological empowerment was found to positively influence emotional labor, specifically deep acting. This is a noteworthy contribution, as most prior studies have focused on the direct effects of empowerment on performance without examining its role in shaping emotional regulation strategies (Cheng et al., 2023). Our finding suggests that empowered employees are more capable of managing emotional demands authentically during service interactions, which is consistent with COR theory’s proposition that resource-rich individuals engage in more adaptive coping behaviors.

Third, both emotional labor and psychological empowerment independently and jointly contributed to service performance. Notably, the path from emotional labor to service performance ($\beta = 0.41$) was slightly stronger than the path from psychological empowerment to service performance ($\beta = 0.38$), suggesting that authentic emotional regulation may be an even more proximal driver of service quality in high-contact elderly care settings. This finding aligns with the relational nature of elderly care, where emotional connection with residents is a primary determinant of perceived service quality (Lee & Chelladurai, 2018).

Fourth, and most importantly, the significant serial mediation effect (TL → PE → EL → SP) reveals that the influence of transformational leadership on service performance operates through an interconnected “psychological–emotional” pathway. This extends previous single-mediator models and provides a more comprehensive explanation of how leadership translates into performance. Specifically, transformational leadership first builds employees’ psychological resources, which in turn facilitate adaptive emotional regulation, ultimately enhancing service delivery. This sequential process underscores the importance of addressing both psychological and emotional mechanisms in leadership research.

Finally, our data reveal a meaningful positive relationship between perceived organizational support and service performance, thereby reinforcing social exchange theory by demonstrating that employees reciprocate perceived organizational care through elevated performance (Blau, 1964). In elderly care settings, where work demands are both physically and emotionally intensive, such support is particularly critical (Liu et al., 2017; Liden et al., 2014; Cameron & Quinn, 2011). Notably, POS functioned as an independent predictor of performance, suggesting that organizational support complements leadership effects rather than substituting for them.

5.2 Theoretical Contributions

This study makes several important theoretical contributions.

First, it extends transformational leadership research into the under-explored context of elderly care services in developing regions of China. Most prior leadership studies in healthcare have focused on acute care hospitals in Western or metropolitan settings (e.g., Ilyas et al., 2021). By situating our research in Guangxi, a region characterized by rapid population aging, economic disparities, and limited healthcare infrastructure, we provide evidence that leadership effectiveness is context-dependent and that the mechanisms we identified are robust even in resource-constrained environments.

Second, this study advances understanding of leadership mechanisms by identifying and empirically testing a serial mediation process involving psychological empowerment and emotional labor. While prior research has examined psychological empowerment and emotional labor as separate mediators (Seibert et al., 2011; Lee & Chelladurai, 2018), few studies have integrated them into a unified sequential model (for an exception, see Cheng et al., 2023). Our findings demonstrate that the effect of leadership on performance is not simply additive but operates through an interconnected “psychological–emotional” chain. This contributes to the growing literature on process-oriented models of leadership effectiveness (Hoch et al., 2018).

Third, by drawing on self-determination theory and conservation of resources theory as complementary frameworks, this study offers a more nuanced theoretical explanation for why leadership influences performance. SDT explains the motivational “why,” leadership satisfies psychological needs, fostering empowerment, while COR explains the resource-based “how,” empowerment provides resources for adaptive emotional regulation. This theoretical integration enriches both theories and provides a model that can be applied across other high-contact service contexts.

Fourth, the inclusion of perceived organizational support as an independent predictor highlights the importance of multi-level contextual factors in shaping employee performance. This finding complements leadership-based explanations and reinforces the relevance of social exchange theory in service settings. By simultaneously examining leadership and organizational support, we provide a more complete picture of the organizational drivers of service performance.

5.3 Practical Implications for Elderly Care Management

The findings of this study offer several actionable implications for improving service performance in elderly care institutions, particularly in developing regions like Guangxi.

For managers and supervisors: Organizations should prioritize the development of transformational leadership capabilities among supervisors. Leadership training programs should emphasize behaviors such as articulating a compelling vision, providing individualized consideration, and intellectually stimulating employees (Bass & Avolio, 1994). Given that transformational leadership directly predicts psychological empowerment, investments in leadership development can yield substantial returns in employee performance.

For human resource management: Enhancing psychological empowerment should be a key strategic priority. Organizations can do this by providing employees with greater autonomy in decision-making, offering meaningful work assignments, and creating opportunities for participation and input. Job redesign efforts that increase role clarity and task significance can also strengthen empowerment (Spreitzer, 1995). Additionally, recognition programs that validate employees' contributions can further reinforce their sense of impact.

For training and development: Given the crucial role of emotional labor, organizations should implement emotional regulation training programs to help employees manage emotional demands effectively. These programs should focus on deep acting strategies, such as reappraisal and empathy development, rather than surface acting, which is associated with emotional exhaustion. Workshops on resilience and mindfulness could also help employees maintain emotional resources (Brotheridge & Grandey, 2002).

For organizational policy: Improving perceived organizational support is essential. Creating a supportive work environment through fair policies, adequate resources, supervisory support, and employee recognition can enhance employees' sense of belonging and commitment. In resource-constrained regions like Guangxi, even small improvements in support, such as regular feedback sessions, emotional support hotlines, or flexible scheduling, can have significant performance benefits.

For policymakers: These findings suggest that improving elderly care quality requires not only financial investment but also attention to organizational and managerial factors. Policy initiatives should encourage leadership development, employee empowerment, and supportive work climates in elderly care institutions. This is particularly urgent in developing regions where service demands are rapidly increasing but institutional capacity remains limited.

5.4 Limitations and Future Research

Several limitations of this study should be acknowledged. First, the cross-sectional design precludes causal inferences regarding the relationships among transformational leadership, psychological empowerment, emotional labor, and service performance. Future longitudinal or experimental studies are needed to establish causal directions. Second, the data were collected solely from elderly care institutions in Guangxi, China, which may limit the generalizability of our findings to other regions or

cultural contexts. Third, the reliance on self-reported measures may introduce common method bias, although we employed statistical remedies such as Harman's single-factor test. Fourth, the sample was limited to 312 employees, and future research with larger and more diverse samples would strengthen the robustness of our conclusions. Despite these limitations, we believe our findings offer meaningful theoretical and practical contributions to the literature on leadership and service performance in elderly care settings.

Conclusion

The overarching objective of this investigation was to illuminate the pathways through which transformational leadership relates to service performance within elderly care institutions, paying particular attention to the sequential mediating functions of psychological empowerment and emotional labor, alongside the contextual role of perceived organizational support. Our empirical results demonstrate that transformational leadership exhibits a positive association with service performance, operating through both immediate and mediated routes. This underscores the critical importance of leadership in shaping not only the overt behaviors of employees but also the deeper psychological and emotional processes that drive those behaviors.

Of greatest theoretical significance is our identification of a sequential mediation mechanism: transformational leadership enhances employees' psychological empowerment, which in turn promotes more adaptive emotional labor (specifically deep acting), and this sequence ultimately elevates service performance. This integrated "psychological-emotional" pathway provides a more process-oriented and comprehensive explanation of leadership transmission than has been offered by simpler single-mediator models. In doing so, our study responds to recent calls in the literature for greater attention to the interconnected mechanisms through which contextual factors influence employee outcomes.

As population aging continues to intensify, particularly in rapidly aging developing regions such as Guangxi, improving the quality of elderly care services becomes increasingly urgent. The insights provided by this study offer a useful framework for understanding and enhancing service performance in such contexts and may serve as a reference for researchers, practitioners, and policymakers seeking to address the challenges of aging societies.

Declarations

Funding

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Author Contribution

Conceptualization: J.L. and Y.Y.; Methodology: J.L.; Software: J.L.; Validation: Y.Y., and C.C.; Formal Analysis: J.L.; Investigation: F.W.; Data Curation: J.L.; Writing – Original Draft Preparation: Y.Y. and F.W.; Writing – Review & Editing: Y.Y. and C.C.; Visualization: J.L.; Supervision: Y.Y.; Project Administration: Y.Y. All authors have read and agreed to the published version of the manuscript.

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Data Availability

Data Availability Statement: The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request. The data are not publicly available because they contain information that could compromise the privacy of research participants, but de-identified data can be shared for academic purposes after approval from the institutional review board.This study was performed in accordance with the ethical standards of the Declaration of Helsinki. The research protocol was reviewed and approved by the Institutional Ethics Committee of Guangxi Normal University (Approval No.: 20250815002). All participants provided written informed consent prior to participation.

Tables

Table 1

Demographic Profile of Respondents (N = 312)

Variable	Category	Frequency	Percentage (%)
Gender	Male	138	44.2
	Female	174	55.8
Age	< 30 years	82	26.3
	30–39 years	104	33.3
	40–49 years	80	25.6
	≥ 50 years	46	14.7
Work Experience	< 1 year	38	12.2
	1–3 years	102	32.7
	4–6 years	92	29.5
	> 6 years	80	25.6

Table 2
Reliability and Convergent Validity

Construct	Item	Loading (λ)	λ²	Error (1 − λ²)	CR	AVE
TL	TL1	0.82	0.672	0.328		
	TL2	0.85	0.723	0.277		
	TL3	0.78	0.608	0.392	0.88	0.67
PE	PE1	0.84	0.706	0.294		
	PE2	0.86	0.740	0.260		
	PE3	0.79	0.624	0.376	0.89	0.69
EL	EL1	0.80	0.640	0.360		
	EL2	0.83	0.689	0.311		
	EL3	0.77	0.593	0.407	0.88	0.64
POS	POS1	0.85	0.723	0.277		
	POS2	0.87	0.757	0.243		
	POS3	0.81	0.656	0.344	0.90	0.71
SP	SP1	0.86	0.740	0.260		
	SP2	0.88	0.774	0.226		
	SP3	0.82	0.672	0.328	0.91	0.73

Table 3
Correlation Matrix and Discriminant Validity

Variable	TL	PE	EL	POS	SP
TL	0.81				
PE	0.61	0.82			
EL	0.48	0.58	0.80		
POS	0.36	0.42	0.40	0.82	
SP	0.52	0.65	0.62	0.55	0.83

Table 4
Structural Path Results

Hypothesis	Path	β	p-value	Result
H1	TL → PE	0.62	< 0.001	Supported
H2	PE → EL	0.55	< 0.001	Supported
H3	EL → SP	0.41	< 0.001	Supported
H4	PE → SP	0.38	< 0.001	Supported
H5	POS → SP	0.33	< 0.001	Supported

Table 5
Mediation Effects

Path	Indirect Effect	95% CI	Result
TL → PE → SP	0.24	[0.18, 0.31]	Supported
TL → PE → EL → SP	0.14	[0.09, 0.20]	Supported

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Figures

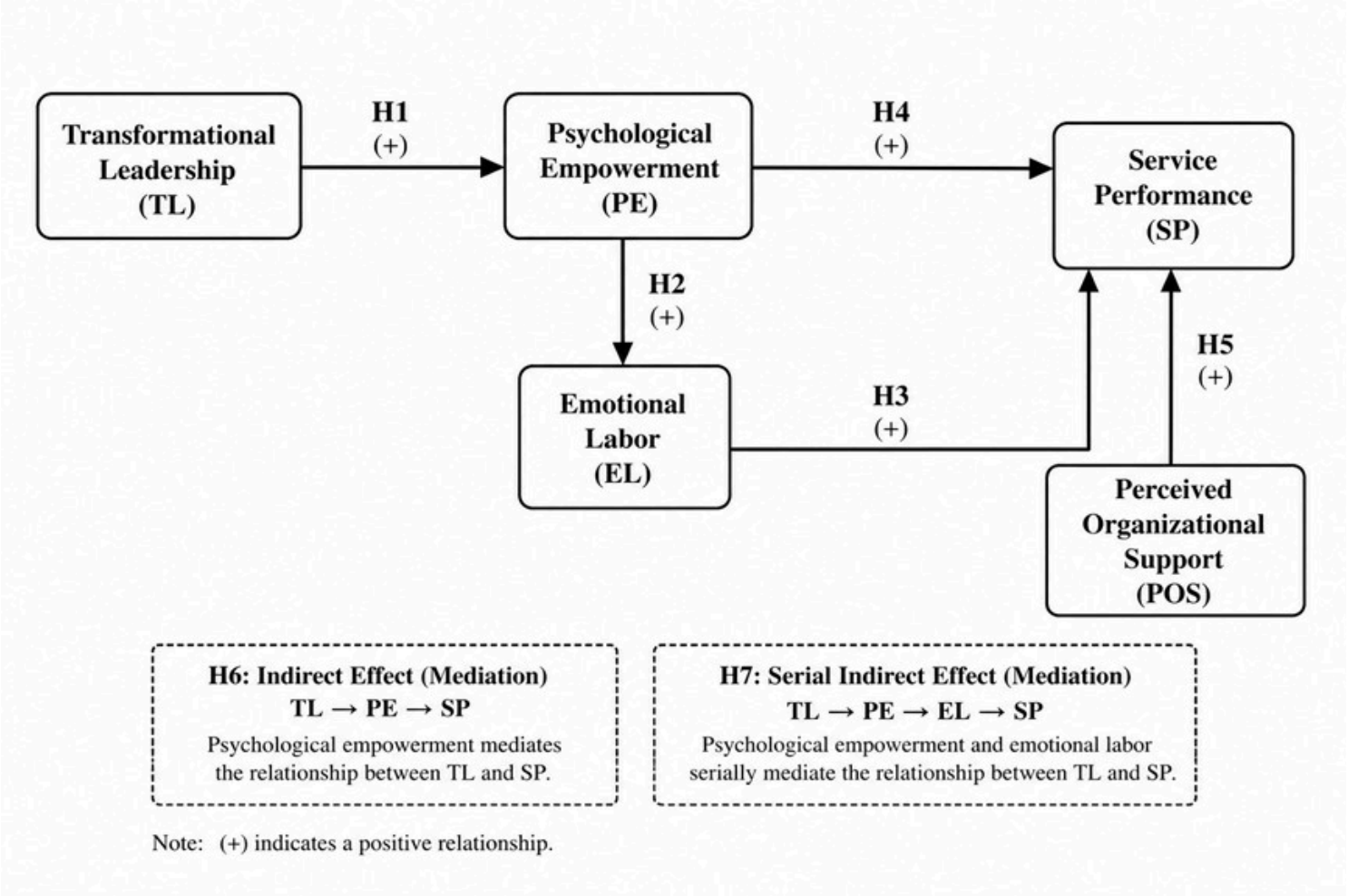


Figure 1

Conceptual Framework

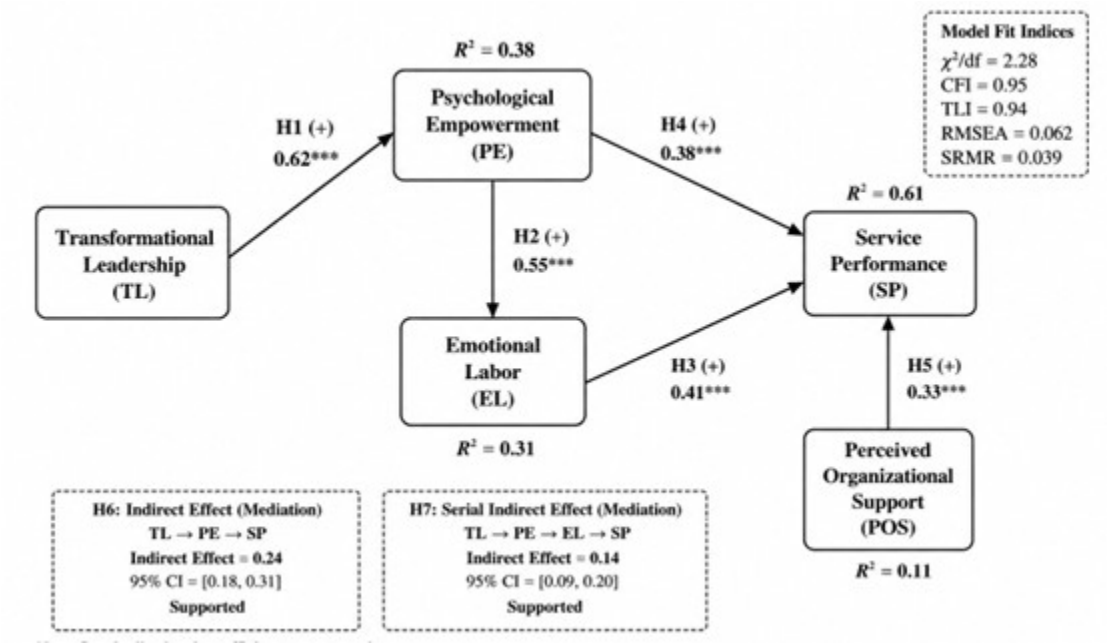


Figure 2

Presents the Structural Model with Standardized Path Coefficients (N=312)