The Interplay between Servant Leadership, Psychological Safety, Trust in Leader and Burnout: Assessing Causal Relationships through a Three-Wave Longitudinal Study

Running Head: Leadership, Psychological Safety and Burnout

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Abstract

The COVID-19 pandemic has brought unprecedented psychological challenges for the frontline healthcare workers, especially nurses', causing anxiety and depression leading to burnout. The responsibility of healthcare leaders has increased many folds to curb nurses' burnout which could lead to various unwanted negative consequences at the workplace if left unchecked. To respond to this issue, this study is an attempt to employ the conservation of resources theory to examine the relationship between perceived servant leadership and nurses' burnout, with the mediating role of psychological safety and the moderating role of trust in leaders. A three-wave longitudinal design was used to collect data. Respondents included 1,204 nurses from 27 hospitals across nine provinces in China. The partial least squares structural equation modeling technique was used for data analyses with smartPLS 3.2.8 software. The findings endorse that servant leadership measured at the time1 significantly reduces nurses' burnout measured at the time 3 through mediating role of psychological safety measured at the time2, and that a higher level of trust in the leader enhances the impact of servant leadership in reducing nurses' burnout.

Keywords: burnout; servant leadership; psychological safety; trust in the leader; conservation of resources theory.

1. Introduction

As of May 2022, over 500 million confirmed cases and over six million deaths have been reported due to the COVID-19 pandemic (World Health Organization, 2022). Undoubtedly, the COVID-19 pandemic is a grave cataclysmic event of this century that has posed unprecedented challenges for public health workers causing fear, stress, exhaustion, and burnout. Nurses are the most critical part of the healthcare workforce and are the front-line fighters during this pandemic [1]. The research found that during the COVID-19 pandemic, at least one-third of Chinese nurses experienced anxiety and depression due to increased pressures on their job [2]. Marvaldi, Mallet [3]in their systemic review and meta-analysis found that anxiety and depression increased by 300 percent among healthcare workers during COVID-19. The World Health Organization stressed to all countries that to reach Sustainable Development Goal 3 on health and well-being, the world will need an additional 9 million nurses and midwives by the year 2030[4]. In the context of China, the nurses are in short supply as compared to the demand[5]. Treating a large number of COVID-19 patients, knowing the high risk of exposure to the disease, working extra hours, and seeing colleagues dying while treating patients result in traumatic experiences [6]. These adverse situations lead to burnout [7] which is defined as 'the employees' negative response to chronic work stressors' [8]. Employees' burnout is associated with reduced productivity at work, job dissatisfaction, increased turnover, withdrawal from the job in the shape of absenteeism, or even intention to leave the profession[1,9]. Taking steps to tackle nurses' burnout is one of the core issues for healthcare authorities. Therefore, exploring the antecedents and underlying mechanisms subsiding nurses' burnout during COVID-19 is an exciting avenue to be explored.

Existing research on nurses' burnout has identified several antecedents, including unfair practices by the employer, lack of social support, workplace bullying, and leadership [10-12].On the relationship between leadership and burnout, the majority of the scholars have employed a transformational style [13]. However, the servant leadership style, an others-oriented leadership approach fulfilling the followers' needs and interests, has received less attention[1]. This lack of research on leadership becomes even more visible in the under-researched context of the Chinese healthcare system, especially during the COVID-19 pandemic[14]. Furthermore, longitudinal causal relationships have not been explored in this context. This research aimed to bridge these knowledge gaps by exploring how and under what conditions servant leadership influences nurses' burnout in the Chinese healthcare sector.

Studies have shown that Chinese nurses are emotionally drained and feel a depletion of psychological resources [15]. Being in a position of power and authority, leaders can provide this psychological safety resource to keep them calm and committed [16]. The phenomena through which servant leadership influences employee burnout needs further research as the matter is yet not sufficiently clear. There are scarce studies that discuss how servant leadership suppresses negative outcomes, such as nurses' burnout. To bridge this literature gap, we added psychological safety acts as a mechanism through which servant leadership heals nurses' burnout. Psychological safety refers ‘to the extent to which employees/individuals perceive that they would not be punished for taking well intentional risks such as admitting mistakes, speaking about the concerns, and seeking feedback’[17]. Research on servant leadership establishes that the primary concern of servant leaders is to ensure the well-being and motivation of their staff, where psychological safety is an important aspect[1].

Servant leadership is built on the premise of an others-oriented leadership approach by establishing a one-to-one relationship with followers and prioritizing their needs and interests [18]. Hence, we argue that servant leadership augments nurses' psychological safety which in turn reduces their level of burnout during the COVID-19 pandemic.

Another exciting aspect of this study is to investigate the moderating effect of trust in the leader on the relationship between servant leadership and nurses' burnout. Researchers usually employed trust in the leader as the mediating variable [18] however its influence as a contextual factor (moderator) remained neglected and only a few studies tried to examine it [19]. Trust is one of the vital components of the leader-follower relationship. Researchers have extensively explored the significance of trust in leaders and linked it to a variety of job antecedents and outcomes [20].However, none of the studies has examined the moderating role of trust played in the equation of servant leadership and nurses' burnout. Therefore, this study is an attempt to advance knowledge in this domain.

Churchill once said, ‘never let a good crisis go to waste’. This study contributes to the literature on servant leadership, burnout, psychological safety, and trust in a leader during extraordinary times of COVID-19. Extreme context research is usually based on hypothetical situations needing extensive controlled environments. However, this pandemic has afforded a realistic chance to conduct research in real-life scenarios where the role of leaders can be examined more closely to create knowledge by leveraging different theories.

This paper offers several contributions to extant leadership, psychological safety, burnout, trust in the leader, and COVID-19 literature streams. First, there is no longitudinal study on servant leadership's role in curbing burnout to establish a causal relationship. Secondly, it responds to

the call for research by Newman, Schwarz [21]to explore psychological safety as a mechanism that explains the relationship between servant leadership and burnout. Thirdly, it responds to a call for research in a different cultural setting (i.e., China) because scholars suggest research in cultures other than western cultures characterized by differences in power distance, collectivism, and uncertainty avoidance [22]. The cultural dynamics have significantly influenced different leadership styles, including servant leadership [23]. Hence, highlighting the Chinese servant leadership in healthcare specificities further enriches the extant literature. Fourth, although Chughtai [17] demonstrated that employees' psychological safety mediates between servant leadership and feedback and voice behaviors (positive outcomes), it is also necessary to examine its mediating role between servant leadership and negative outcomes such as burnout. Considering the psychological toll public health emergencies take on healthcare workers [24], emotional exhaustion, psychological distress, and depression can lead to other problems such as turnover intention and worsen the existing supply in the nursing profession. Therefore, it is crucial to explore this mechanism from the conservation of resources perspective. Lastly, this study also examines the moderating effect of trust on the relationship between servant leadership and nurses' burnout. Trust is one of the vital components of the leader-follower relationship. Researchers have extensively explored the significance of trust in leaders and have linked it to various job antecedents and outcomes [20]. Hence, this research is one of the first attempts to specifically highlight the moderating role of trust in the relationship of servant leadership with nurses' burnout.

2. Literature Review and Hypotheses Development

2.1 Servant Leadership and Nurses' Burnout

We primarily build our theoretical framework on the conservation of resources (COR) theory which contended that individuals want to obtain, defend, and gather such resources that have worth to them. According to COR theory, individuals feel stress when (i) their essential resources are threatened with loss, (ii) key resources are lost, and (iii) they fail to obtain the key resources [25]. To deal with this stress, individuals gather and preserve resources like personal strength, social bonding, and energy central to human survival [26].

Burnout is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. Extant research has established various adverse outcomes of job burnout, including job dissatisfaction, higher turnover, increased absenteeism, and reduced productivity [1]. Job burnout comprises three dimensions: emotional exhaustion, cynicism, and professional efficacy.

Conceptualized as the initial stage of burnout, emotional exhaustion is one of the early signs of burnout representing a state where employees feel emotionally drained due to the accumulated stress of work. When the demands of interpersonal interactions exceed what employees can afford, they experience emotional exhaustion [27]. Put differently, when nurses believe that they have sufficient resources to tackle the challenging work, there are very less chances of emotional exhaustion. Employees require positive social interactions to replenish their emotional resources and heal emotional losses [28].Working under the supervision of servant leaders provides an opportunity to nurses to have positive social interaction because servant leaders demonstrate ethical behavior, deal fairly and honestly, follow open-door policy, and listen to them without prejudice [29].Servant leaders also commit themselves to facilitating emotional resolutions that mend their followers' broken spirits and help them deal with the emotional pain of hardship or trauma in the workplace [30]. Such emotional healing may lead followers to recover quickly from emotional frustration, gain an understanding of why they experience hardship, and learn how to prevent emotional pain in the future [31]. Consequently, exposure to servant leadership can help employees avoid emotional exhaustion.

Cynicism, also known as depersonalization, characterizes the loss of engagement. As a result, employees feel callous, disconnected, and negative instead of invested in work assignments, colleagues, customers, and others[11]. Servant leadership can be highly operative in decreasing cynicism among the nurses as it is primarily concerned about the needs, empowerment, and support of followers. Such leaders channel the emotions of followers in such a way that reduces stress and creates an engaging environment at the workplace.

Professional inefficacy describes feelings of ineffectiveness and a deficiency of accomplishment. Employees with professional inefficacy feel their skills deteriorate and worry that they will not succeed in assigned tasks. Servant leaders would invest in the training and development of nurses and offer them opportunities to equip them with skills to not only accomplish assigned tasks but also to advance their careers. Because of their accessibility, servant leaders are readily available to followers for coaching and provide them positive feedback which supplements their self-officious belief.

Servant leaders build a close relationship with followers by instilling motivation, acting as role models, and lifting self-efficacy belief [32]. Such leaders also support the follower's risk-taking behavior and support their initiatives. Therefore, we can posit that nurses would perceive servant leaders as an organizational resource worth capitalizing on at the workplace. Consequently, employees who report to 'servant leaders' perceive them as a resource. They also feel that they can trust their leader as an essential source when faced with burnout. Empirical evidence also supports the argument that servant leaders reduce employees' burnout [1,33]. Therefore, we postulate the following:

Hypothesis 1. Servant leadership has a direct negative relationship with nurses' burnout.

2.2 Psychological Safety as a Mediator between Servant Leadership and Nurses' Burnout

Erkutlu and Chafra [34] describe psychological safety as a perception of an individual about the consequences of taking risks, acknowledging mistakes, and the well-being of others. It represents a situation where individuals feel comfortable reporting their mistakes, sharing ideas, raising their voices, and challenging the status quo [35,36].

Past research shows that levels of psychological safety vary in the field of medicine [22,37] and invites further research on its predictors and consequences. In medicine, leaders should be concerned about adding meaning to work through psychological safety [38]. To help employees in overcoming their concerns about psychological safety, the role, and support of leadership matters. Most of the past literature employed traditional forms of leadership i.e., transformational, ethical, and transactional in enhancing employees' perception of psychological safety [35]. However, a positive leadership philosophy named servant leadership received less attention from scholars even though it can predict employees' behavioral outcomes above and beyond other leadership styles [39].

Servant leaders aid in providing a safe environment in the organization while empowering and standing back to their followers [40]. Such leaders ensure employees' that their mistakes will be tolerated, they are encouraged to come up with ideas and demonstrate proactive behavior. A servant leader is a linchpin in any organization and is always available and accessible in his interaction with the followers [41]. One of the hallmarks of servant leaders is empowering and lifting followers' level of competence [42]. Furthermore, a servant leader always cares for followers' needs and works for their grooming and personal development [43]. Such leaders constitute the following characteristics: empathy, healing, awareness, persuasion, stewardship, and commitment to the growth of the subordinates [44]. So, a servant leader with the characteristics of empathy, emotional healing, openness, and availability gives strong vibes of a psychologically safe work environment to the employees. Servant leaders follow the open communication approach, encourage followers to discuss new ideas, push them to take risks, and convince them that these behaviors do not have repercussions. Their philosophy of leading

from the front and standing back to employees sends a positive message that employees will be safe if anything wrong happens, shaping employees' perception of psychological safety [34].

This study attempts to unravel psychological safety as an influencing mechanism of servant leadership through which it supplements psychological resources among nurses to enable them to cope with the challenges in the workplace, such as burnout. When nurses feel that their leader appreciates them and value their voice, they feel convenient to express themselves. Therefore, this opens up communication, good interpersonal relationship, and empathy of the servant leaders make employees feel self-worth, which helps reduce their burnout at the workplace.

This study posits that servant leaders demonstrate their concern for followers with empathy and standing back during hard times. This creates an environment that develops a sense of psychological safety among the nurses [45]. Furthermore, we postulate that nurses with a higher level of psychological resources, i.e., psychological safety, will be motivated to invest those resources to cope with the challenges and difficulties at the work workplace. This psychological safety will help them to encounter job burnout efficiently. Past studies confirmed the mediating role of psychological safety between different leadership styles and job outcomes such as deviant behavior, innovative work behavior, and proactive workplace behavior [1,17,34]. Given the above-mentioned theoretical underpinnings and empirical findings, we expect psychological safety to mediate between servant leadership and nurses' burnout. Thus, the following is hypothesized:

Hypothesis 2. Psychological safety mediates the influence of servant leadership on nurses' burnout.

2.3 Trust in Leader as a Moderator between Servant Leadership and Nurses' Burnout

An employee's trust in the leader refers to a psychological state that involves positive expectations about the leader's intentions or behaviors in situations that entail risk [46]. Trust has remained an important area of study and has been linked to various employees' related job outcomes like engagement, performance, creativity, and job satisfaction [47].

Carter [48] argues that nurses' motivation, whether vocational or altruistic, is better understood culturally than spiritually. Chinese culture is based on collectivism. It can be safely stated that altruism among Chinese nurses comes naturally during a public health emergency. Employees' trust in their leader indicates their willingness to be vulnerable because employees become confident that their rights and entitlements will not be exploited [49]. Interpersonal trust is a must for effective long-term relationships. Subordinates feel more satisfied with their job when they believe their leader is trustworthy [47]. When nurses believe that their leaders are trustworthy, they share their feelings with the leaders and openly accept mistakes if committed at the workplace. This confidence and trust in the leadership act as a catalyst to reduce nurses' burnout [47].

Servant leadership is in line with the view of serving others, which results in subordinates' trust in leaders. It is emphasized that when employees have a higher level of trust in their leaders, they put extra energy to enhance their performance [50]. In other words, a higher level of trust in leaders boosts employees' self-efficacy, which is inversely related to burnout. A high positive correlation between servant leadership and trust in the leader suggests that servant leaders build an atmosphere of trust where followers are free to experiment and feel safe [51]. Employees' trust in the leadership shapes their attitudes as well as behaviors at the workplace [52]. Followers consider leaders with servant leadership approach as reliable and trustworthy [53]. Hwang, Kang

[19] explored the moderating effect of employees' trust in a leader in the relationship between servant leadership and employees' perception of customers' satisfaction with service. Thus, a high level of trust in a leader would offer an additional boost to the positive relationship expected between servant leadership and job attitudes and reduces any potential cynicism. Therefore, we posit the following:

Hypothesis 3. Trust in the leader moderates the negative influence of servant leadership on nurses' burnout in a way that this relationship will be strengthened at higher levels of trust in the leader as compared to the low level of trust.

Insert Figure 1 about here

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3. Methodology

3.1 Sample and Procedure

The population for this study comprised nurses directly engaged in patient care during the COVID-19 outbreak, including 40,000 nurses from across China deployed to Wuhan to help the overwhelmed local staff at 40 hospitals, including HuoShenshan and Leishenshan instant hospitals built in two weeks[54]. The researchers attempted to reach out to the administration of the hospital during the outbreak; however, data collection could not be possible due to less effective communication channels for non-essential personnel because of the crowded hospitals, busy schedules, and overwhelming concerns of infection. However, as tensions eased in the second half of March 2020, the researchers received approval from the administration to conduct

the survey. Hospital administrations were promised feedback on their leadership and staff's psychological safety and burnout.

As per pre-defined inclusion criteria, all respondents had served in active duty during the COVID-19 pandemic and had been in service for at least one year. The researchers reached out to HR departments of the hospitals explaining the aims of the research and assured privacy and confidentiality to seek approval of authorized personnel to initiate data collection. The nurses were invited to join the group chat on the most popular application in China, i.e., Wechat, through QR group chat codes printed and posted on notice boards and duty stations of the nurses by the head nurses to maximize participation. Nurses were asked to invite their peers who served on active duty during the outbreak directly deal with patients of COVID-19. Two of the authors administered the groups and were available at all times for any clarification needed by respondents. The sequence of questionnaire statements between variables was shuffled, and two statements were reverse coded to identify problems of common method bias if any [55].

Surveys were filled online and were accessible only to researchers, and this was communicated to nurses as well that the administration shall not have access to their responses. The first wave was initiated during the first week of April 2020. The lockdown restrictions were lifted in Wuhan (the epicenter of the outbreak) on April 08,2020, so this was an appropriate time to establish baseline values for the psychological safety and burnout levels of nurses before they started returning home to provinces of their origin. Surveys were conducted in the Chinese language. One of the coauthors is a bilingual Chinese Professor of management who ensured the accuracy and validity of the Chinese version translated from English. The longitudinal design followed a three-wave data collection process to ascertain the causality and mediation effects as

recommended by Cole and Maxwell [56]and used in recent studies by Ahmed, Zhao [16], and Haider, Fatima [57]. This helps ascertain changes in variables over time [58] through the assessment of mediation with time-lagged data even without the possibility of actual manipulation [56]. This study examined a mediating mechanism to ascertain causal relationships of servant leadership (predictor) with burnout (criterion) through psychological safety(mediator variable) (i.e., SL → PS → BO). In such a model, 'a fundamental requirement for one variable to cause another is that the cause must precede the outcome in time'[59].

The intervals between waves of data collection in longitudinal studies can be as short as one month (e.g. Wang, Pan [60]), or 04 waves in 6 months (e.g. Steca, Abela [61]), or once every 6 months (e.g. Haider, Fatima [57]). Following the existing practices and recommendations, we used 6 months intervals. During the first wave (T1), the questionnaire was sent to 1,608 nurses, wherein they were requested to fill in the questionnaire. At the end of T1, 1,496responses were deemed usable after screening for straight-lining (71 cases), selection of multiple options (28), and missing values data (listwise deletion of 13 cases). The respondents (who worked in Wuhan) originated from 27 hospitals across 13 cities of 9 provincial/autonomous regions of China, including Wuhan. During the first week of October 2020, the second wave (T2) was initiated, and 1301 respondents from T1 participated again. 1,293 responses were deemed usable after screening. The third wave (T3)of data collection was conducted during the first three weeks of April 2021, and 1293 respondents from T2 were invited again. Each respondent was assigned a unique code at T1 and was asked to write this code during subsequent data collection stages of T2 and T3, thus matching respondents in all three waves. Only such respondents were included in data analysis who participated in all three waves and the cohort included identical respondents

who worked over different range of working hours alternately and experienced short as well as long working hours (as confirmed by the supervising nurses).The final sample comprised of 1,204 healthcare workers (74.87% effective response rate). See table 1 for the sample profile and table 2 for mean standard deviation and correlation values of the variables

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Insert Table 1 about here

Insert Table 2 about here

3.2 Measures

Servant Leadership was assessed through a global servant leadership scale (seven items) by Liden, Wayne [62]. An example statement is, 'My leader emphasizes the importance of giving back to the community'.

Psychological Safety was measured through the scale adapted by Detert and Burris [63](three items) from the original measure of psychological safety by Edmondson [64]. A typical item includes, 'In this organization, it is safe for me to make suggestions'.

Trust in the Leader was measured through the scale by MacKenzie, Podsakoff [65] with three items. A sample item was, 'I have complete faith in the integrity of my supervising manager'.

For SL (α = .89), PS (α = 0.86) and TL (α =0.82), a seven-point Likert scale was used (where 1 denotes '*strongly disagree'* and 7 as '*strongly agree*').

Burnout was assessed using the Maslach Burnout Inventory-General Survey [66] with 16 items. The scale has been used in assessing burnout through its three dimensions, namely: (i) exhaustion (ii) cynicism, and (iii) professional efficacy. Exhaustion was measured with five items (α = .87). A sample item is 'I feel emotionally drained from my work'. Cynicism was measured with five items (α = .70), including a sample item 'I have become less enthusiastic about my work'. Professional efficacy was measured with six items (α = .78). An item was 'I feel confident that I am effective at getting things done'. All dimensions were measured through a 7-point Likert scale from zero to six (0 = *never*, 6 = *everyday*).

3.3 Control variables

Demographics of the participants have been shown in past research to influence their burnout; therefore, gender (*male* = 1, *female* = 2), age, work hours, and tenure were treated as control variables. However, these were removed from the model after the results of the structural model assessment showed all of these proved non-significant. The study also controlled for T1 psychological safety and burnout.

4. Data Analysis

Data analysis for this study was carried out with the partial least squares structural equation modeling (PLS-SEM) technique with the Smart-PLS software version 3.2.9 (Boenningstedt, Germany). The PLS-SEM technique was preferred for multiple reasons. First, it is better suited for complex models with several constructs, indicators, and paths [67]. Second, scholars have found it to be a superior technique for mediation analysis[68]. Third, it has been suggested as an appropriate method for prediction-oriented studies as well as for explanatory studies[68]. Fourth, it is better equipped in terms of statistical tools, e.g., a more robust assessment of

discriminant validity through heterotrait-monotrait (HTMT) ratio, confidence intervals for hypothesis testing, the auto-generated graph for moderation analysis, the effect size for the relative contribution of each predictor, . Lastly, as compared to covariance-based SEM, it offers better 'statistical power' [69]. PLS-SEM comprises the following two-stage approach for analysis, measurement model, and structural model assessment.

4.1 Data Aggregation Test

Initial assessment of data also included checking if the nurses were nested at the hospital level using SPSS Statistics version 26. The intraclass correlation coefficient (ICC) showed nurses were not nested within their hospital units of origin, and data could not be aggregated at the hospital level. The group-effect (F-value from ANOVA test) was non-significant at p = 0.05.The reliability scores for with-in group ICC (1) were lower than 0.08(less than the benchmark of >0.12) and between-group means ICC(2) were below 0.40 (lower than the benchmark of >0.47). Moreover, the inter-rater reliability (Rwg) was below 0.39, not reaching the minimum value of 0.7for group/hospital-level data[70]. Therefore, this study did not use a multilevel approach for data analysis because data could not be aggregated based on statistical results for ICC and rwg. One reason for this could be that although nursing staff hailed from several cities and regions, they worked during the epidemic in the centralized units (2 large-scale make-shift hospitals in Wuhan) so they worked (in a sense) as part of the same organizational unit temporarily. All constructs are lower-order reflective except Burnout, a higher-order reflective construct with three dimensions. Higher scores of exhaustion and cynicism represent higher levels of burnout while higher scores for professional efficacy mean lower burnout, so the reduced professional efficacy was reverse

coded to ensure all three dimensions were in the same direction with higher scores indicating higher burnout, which is in line with past studies [71].

4.2 PLS-SEM and HRM Theorizing

Prevalent HRM literature identifies four main modes of theorizing i.e., universalistic, contingency, contextual, and configurational. These vary depending upon inherent complexity in a particular resultant model[72]. Under the universalistic mode, HRM models have the least complexity. Such a model infers that a relationship between a given predictor variable and outcome variable is universal for all respondents and is free from any other contextual factor's influence. Ringle, Sarstedt [73] recommend that PLS-SEM is deemed appropriate (in the HRM context) for the assessment of such a universalistic relationship and that 'PLS-SEM allows for estimating models that hypothesize multiple mediating effects, either in isolation, or in combination with moderators in mediated moderation, or moderated mediation models'(p. 4).

4.2Measurement Invariance (MICOM)

APLS-based technique called 'measurement invariance of composite models' (MICOM) was used as suggested by Henseler, Ringle Christian [74].They propose that 'all variance-based SEM techniques model latent variables as composites' (p. 408). Hair Jr, Howard [75] suggests, 'Applying MICOM to longitudinal and/or casual effects ensures that observed changes, if any, are due to substantive relationships of the constructs rather than changes in the nature of the constructs themselves'. Through using the process recommended by Matthews [76] and Henseler, Ringle Christian [74], a three-step method was applied for MICOM.

Insert Table 3 about here

First, the configural invariance was ensured through identical procedures in the treatment of data, indicator/questionnaire statements, and algorithms during each one of the three waves. Second,the authors tested the compositional invariance. It which is ascertained whenthe original correlation proves greater than or equal to the 5% quantile valueswith 5,000 permutations (see table 4).

Insert Table 4 about here

The third step involves demonstrating composite equality. In this study, all values fall within the prescribed 2.5% to 97.5% range, and thus full invariance is established for longitudinal data, which permits that data can be pooled together for different groups.

4.3Measurement Model Assessment

Confirmatory composite analysis (CCA) has been proposed by scholars as a systematic methodology for measurement model assessment in PLS-SEM[75]. The 1st step is to assess the item loadings with their significance. Using two-tailed settings, the value of 0.708 or higher indicates a satisfactory item loading with a t-Value ± 1.96 at a 5% level of significance[75]. The t-statistics and confidence intervals were obtained through the bootstrap procedure in PLS-SEM, and all item loadings were found statistically significant.

4.4Reliability and Validity

During the 2nd step, Cronbach's α and composite reliability (CR) are used to ascertain factor-level reliability. However, the latter has been recommended as a preferred option for the use of a weighed scheme with a minimum acceptable value of 0.70[75]. All the constructs displayed a high CR of above 0.8. The 3rd step involves assessing the convergent validity of the variables indicated by 0.50 or higher values of average variance extracted (AVE) [69]. All constructs displayed satisfactory AVE values (see Table 5), indicating that they explain more than 50 % of the variance of the items constituting that construct.

Insert Table 5 about here

For discriminant validity, the Heterotrait–monotrait (HTMT) ratio of correlations has been recommended as a preferred approach in PLS-SEM[68]. The acceptable range of HTMT value between any two constructs is recommended as 0.85 or lower [69] (see Table 6).

Insert Table 6 about here

4.5Structural Model Assessment (SMA)

Following the latest developments and guidelines on PLS-SEM, the structural model assessment (SMA) was carried out as follows. The magnitude of multicollinearity was assessed through the variance inflation factor (VIF) and was below the recommended threshold of 3.0(table 6).

Insert Table 7 about here

During the second step in SMA the structural paths were assessed for their size and statistical significance of the path coefficient(β) values [75]. The bootstrap was run with the settings of 5000 sub-samples, no sign-change, complete bootstrapping, Bias-Corrected and Accelerated (BCa) Bootstrap (default), 0.05 significance level, and a two-tailed test type. Table 8 displays the results of the structural model assessment with t-values, 95 percentile C.I and β values. All hypothesized relationships were statistically significant.

Insert Table 8 about here

The 3rd step of SMA relates to the assessment of in-sample prediction through the coefficient of determination (R^2), a widely used metric for assessing the predictive/explanatory power of a model indicating the amount of variance explained in the dependent variable by the predictor variables. As a general guideline,R^2 values of 0.19, 0.33, and 0.67 are treated as weak, moderate, and substantial, respectively [77]. In this study, R^2 values for PS=0.650 and BO=0.431 fall in the moderate range for in-sample prediction (see figure 2).

Insert Figure 2 about here

To strengthen the findings on predictive relevance and avoid overfitting during the in-sample prediction method of R2, the out-of-sample prediction is suggested because it uses holdout samples. PLS-Predict was run with 10-folds and stop criterion 10^7^ with 300 iterations. The results show that all of the indicators for the burnout construct had lower PLS-RMSE values as compared to LM-RMSE values and thus establish a high predictive power of the model as per benchmarks devised by scholars [75].

Insert Table 9 about here

4.6Moderation Analysis

We followed the recommended two-stage approach of Becker, Ringle [78] to estimate the moderation effect. The findings presented in Table 5 support the moderation hypothesis showing that though the direct effect of TL on BO is not significant, moderating effect on the relationship between SL and BO is statistically significant. The medium level of the moderator (trust in the leader) can be used to interpret these results as a reference point [79]. At a medium level of trust in the leader, servant leadership at time and burnout at time 3 has a coefficient of -0.569 (simple effect). With a one-point increase in standard deviation in trust in leader, the effect of SL on BO increases according to the coefficient size of the interaction term, a value of -0.560+(-222) = -0.779, meaning that SL becomes more effective. On the contrary, if trust in the leader decreases, SL becomes less important in explaining BO.

5. Discussion and Implications

5.1 Findings

This research intended to examine the influence of servant leadership in reducing nurses' burnout through the mediating channel of psychological safety and moderating role of trust in the leader in Chinese hospitals. Results reinforced earlier studies that servant leadership has a direct negative association with nurses' burnout[1]. This finding is justified by employing the lens of COR theory[80]which states that the protection of resources is vital for employees. Servant leaders invest in nurses' training and development, build individualized relationships, fulfill needs, behave ethically and always stand back to their followers. Servant leaders also offer organizational resources, positional (job clarity), and social resources (participation in decision-making), which reduces burnout among nurses. The findings portray that when Chinese head nurses and other personnel in leadership roles have displayed servant leadership behavior and they have reduced the burnout among nurses. Thus, it can be argued that underlying characteristics of servant leadership can improve self-esteem and foster confidence among subordinates to improve psychological safety among Chinese nurses. Results also indicate that Chinese leadership in the hospitals believes in subordinates' emotional healing. Under the supervision of servant leaders, nurses may have received the essential resources to handle high job demands and cope well with burnout [81].

Then our findings support the postulation that psychological safety mediates the influence of servant leadership on nurses' burnout. Servant leaders shape the positive perception of nurses about their psychologically safe working environment, which in turn curbs their burnout. This finding advances our understanding of this under-researched area. Servant leaders

are characterized by humility, where leaders admit their limitations and acknowledge that they are not perfect[1]. Such leaders never pretend themselves as perfect and expect that mistakes are part of the job. The openness and humility of servant leaders convey a sense of safety among the nurses which reduces their feelings of burnout.

Lastly, results have also confirmed our postulation that trust in the leader acts as a moderator between servant leadership and employee burnout. Trust is one of the vital elements of interpersonal relationships[47]. A higher level of nurses' trust in their leaders acts as a catalyst in reducing burnout. Servant leaders create an environment of high-level trust with their followers where the followers feel free to come up with new ideas and realize that their mistakes will be tolerated[40]. The finding that trust in the leader strengthens the influence of servant leadership in reducing nurses' burnout is consistent with the existing study where trust in the leader was employed as a moderator in the relationship between servant leadership and employees' perceptions of customers' service satisfaction[19].

5.2 Theoretical Implications

Multiple theoretical contributions are offered in this study. First, our research expands the application of conservation of resource theory (COR). In past studies generally, COR theory has been used to elucidate the predictive role of different leadership styles for positive job outcomes such as job satisfaction, employees' innovative work behavior, and employee creativity [39,45]. This study confirms servant leadership's suppressing effects on negative outcomes of burnout. Secondly, the conservation of resources theory was introduced to examine the mediating role of psychological safety, which helps employees cope with emotional exhaustion, cynicism, and self-efficacy. Employees who can access more resources (such as servant leadership support,

psychological safety) are less prone to burnout by avoiding depletion of resources because they are better equipped to attain the key resources they need and to meet targets and demands at their place of work. The third takeaway of this research is that it examines the interaction pattern of servant leadership and trust in a leader in neutralizing burnout, as against previous studies that only seek positive outcomes through moderating the role of trust in a leader. Fourth, according to the authors' knowledge, this pioneering study explored the influence of servant leadership on nurses' burnout in extensive detail by incorporating the mediating role of psychological safety from the perspective of COR theory.

Previous literature suggests that employees tend to engage in disparaging and negative behavior and show burnout because they believe that the organization and its leaders lack integrity. Consequently, the perception of the psychological contract being violated[82], thus leading to stressful conditions and burnout. Our results suggest that if a leader of an organization shows empathy, open communication, and strong interpersonal relationship with the followers, this will create a sense of psychological safety among the followers. Thus, servant leadership serves as an organizational resource that helps improve personal resources of psychological safety in nurses, balancing negative thoughts and avoiding burnout among nurses. It will ensure employees that their leader and organization still exhibit integrity and care for their wellbeing, and employee burnout will be reduced. Hence, this study confirmed the mediating role of psychological safety between servant leadership and employee burnout in the health services sector of China.This study contributes to theoretical development by embedding servant leadership in the conservation of resources theory as a resource. The findings contribute to theoretical development on servant leadership by including factors that should be logically considered as

influencing mechanisms to improve positive outcomes (i.e., psychological safety) and reduce negative employee outcomes (i.e., burnout). It also contributes to theoretical development on informal leadership positions in healthcare in contrast with the plethora of studies that theorize servant leadership in a commercial context and formal leadership roles. These findings are also significant from the theoretical perspectives of collectivism in the Chinese context. It is indicated that servant leadership behavior is an effective measure against burnout in a collectivist society and invites attention to examine and compare cross-cultural contexts.

5.3 Managerial Implications

The first managerial implication of this study is that it offers a roadmap of how and *when* organizational leadership may reduce the potential burnout of nurses. Leadership in critical organizations such as healthcare should build close relationships with followers and lead them with empathy. A leader's behavioral adaptation influences the organizing principles of telos and ethos. Surface behaviors could return when the pandemic ends, but the new teloi and those could be imprinted as permanent changes. Seidl and Whittington [83]also argued along the same lines that these telos and ethos may help rein back possible slippages in behaviors as leaders are nagged back into line by their professional conscience. This pandemic has provided insight into practices and structures that are as effective under regular business routines as under the rapidly changing environment in this crisis.

Research in the aftermath of theCOVID19 pandemic has significant practical implications because it helps leadership design and creates a more conducive work environment to develop psychological safety and optimize its potential benefits for the organization. When employees receive sufficient support from servant leaders, it will enhance their feelings of psychological

safety to speak their mind, present ideas, share knowledge with colleagues, and most importantly, disclose mistakes and faults, believing that this shall help them obtain further resources such as feedback, suggestions and moral support from others, without being humiliated or condemned. This environment facilitates achieving set goals at work and fosters individual as well as team level collaborative sentiment, and improves performance.

Servant leaders with enhanced interpersonal acceptance and empathy cognitively accept others perspectives and offer feelings of compassion, forgiveness, and warmth when confronted with offenses, arguments, and mistakes. In addition, servant leaders are considered good listeners to the opinions of others and also believe in participation in decision-making. Thus, they build a one-on-one relationship with subordinates, encourage them to take risks,and cherish their perception of psychological safety.

Businesses have increasingly polarised in terms of workforce clusters of highly-paid knowledge-workers or leaders working from home, and the workers with lower salaries at the frontline are often faced with requirements to go in for work. Lower paid workers doing the riskiest work and the managing staff with higher remuneration working from home [84] can be a source of frustration for these frontline workers. This study supports the idea that servant leadership can improve subordinates behavior which leads them to perform better. According to Liden, Wayne [85], subordinates gain liberty and emotional strength from servant leaders who recognize their full potential. In our study, we also check the moderating role of trust between servant leadership and job burnout. The result shows that trust plays an important role in reducing the job pressure from nurses, and the proportion of job burnout reduces with the trust in the leaders. It implies that with trust in leadership and managers as servant leaders, the nurses provide better services

to the patients. The job requirements in hospitals, especially during emergency services, need more emotional healing due to work-related pressure as they face negative emotions such as burnout during their work-related activities. This research reconfirms the mediating role of psychological safety between servant leadership and job burnout. The psychological safety of the subordinates improves the work behavior, and it helps reduce the negative emotions, leading to better work performance and less mental exhaustion.

6. Limitations and Future Research

Despite its contribution to the knowledge, this study has few limitations. First, we suggest future research may be carried out in other sectors and industries, e.g., hospitality and tourism, banking sector, manufacturing concerns, and IT firms. Nevertheless, it offers researchers evidence on causal relationships, conditions, and mechanisms through which servant leadership helps reduce employee burnout. Secondly, single-source data could make it susceptible to social desirability issues. However, we ran a full-collinearity check, and no such bias was found. In the future, multisource data collection, e.g., peers and supervisors, is recommended to avoid such biases. Third, this study included psychological safety as a mediator between SL and BO relationship. Upcoming research may contain individual, team, and organizational variables as mediators, e.g., perceptions of politics, institutional support, job security, deviance behaviors, and self-efficacy. Fourth, this study examined the moderating effect of trust in the leader on the relationship between servant leadership and job burnout. Other psychological factors like procedural justice, rewards, and working environment may be introduced as potential moderators on the said relationship. In future research in the healthcare sector (considering that existing literature indicates a positive impact of psychological safety on voice behaviors), the outcome of 'intention

to report adverse events' among nurses may also be studied by future studies. Then, we employed 'burnout' as higher-order construct whereas for future research we suggest modeling this construct as lower order. Finally, cultural context is also crucial. This study was carried out in a collective society i.e., China, and future research may be undertaken with multicultural or cross-cultural comparison.

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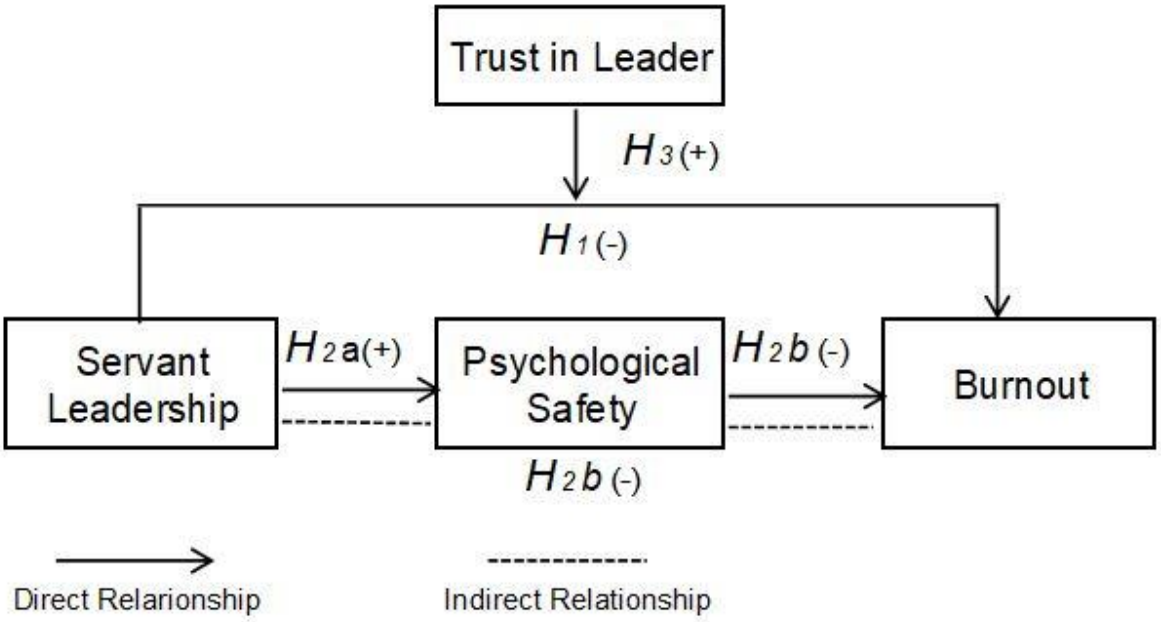

Figure 1. Theoretical Model

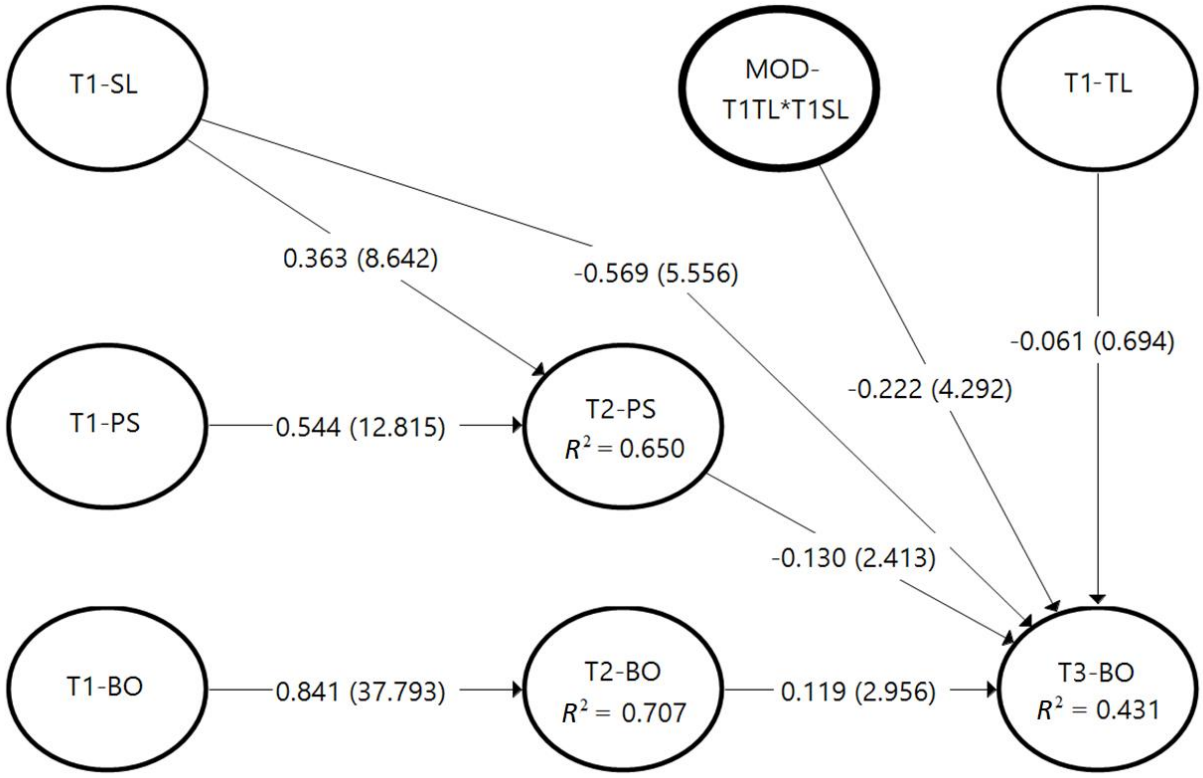

Figure 2. Results of the Structural Model

Note: T1 = Time 1, T2 =Time 2, T3 = Time 3, BO = Burnout, SL = Servant Leadership, PS = Psychological Safety, TL = Trust in Leader, MOD-T1-TL*T1-SL = Moderating Effect of Trust in Leader

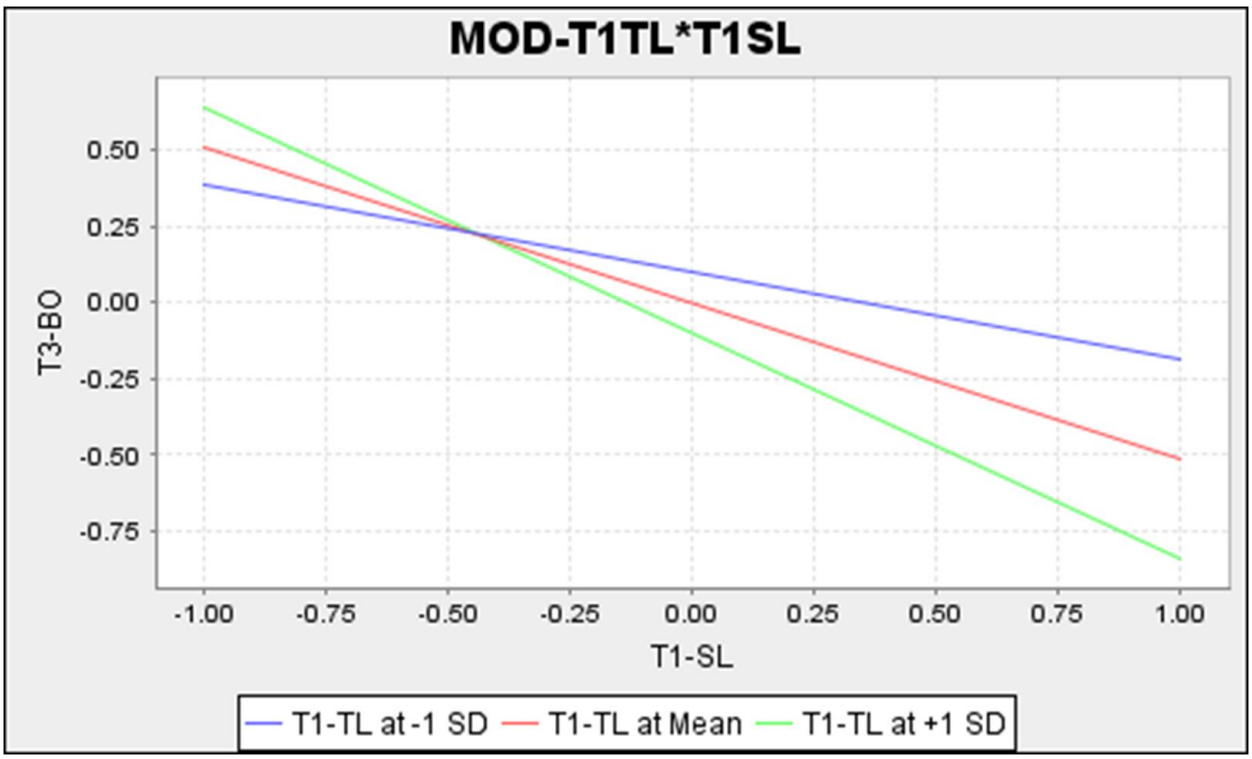

Figure 3. Moderation Effect

Note: The full colour version of this figure is available online.

Table 1 Sample Profile

	Employees (n = 1204)	
Descriptives	**Frequency**	**%age**
Gender		
Male	207	17.19%
Female	997	82.81%
Age (in years)		
18-25	108	8.97%
26-35	374	31.06%
36-45	489	40.61%
45 and above	233	19.35%
Work Hours		
6 to 8 hours	487	40.45%
8 to 10 Hours	483	40.12%
10 to 12 hours	201	16.69%
12 hours or more	33	2.74%
Tenure in healthcare (in years)		
1 to 2 years	479	39.78%
2 to 4 years	327	27.16%
5 to 6 years	189	15.70%
7 years or more	209	17.36%

Table 2 – Means, Standard Deviations and Correlations

	Mean	SD	Age	Gender	Tenure	Work Hours	T1-BO	T1-PS	T1-SL	T1-TL	T2-BO	T2-PS	T3-BO
Age (Years)	38.72	8.730	-										
Gender	-	-	-0.014	-									
Tenure	4.73	3.24	0.88	-0.02	-								
Work Hours	8.14	2.09	-0.09	0.20	-0.10	-							
T1-BO	3.51	1.26	-0.07	0.08	-0.07	0.11	-						
T1-PS	4.71	1.07	0.04	-0.02	0.04	-0.03	-0.51*	-					
T1-SL	5.16	1.16	0.02	0.01	0.05	0.01	-0.04	0.56	-				
T1-TL	4.98	1.04	0.03	-0.01	0.05	0.05	-0.04	0.27	0.69	-			
T2-BO	3.01	0.58	-0.06	0.02	-0.06	-0.15	0.84	-0.02	-0.01	-0.02	-		
T2-PS	5.54	0.39	-0.07	0.03	0.07	0.00	-0.03	0.07	0.67	0.40*	-0.06	-	
T3-BO	2.86	0.37	-0.08	0.00	-0.07	0.04	0.62	-0.35*	-0.58	-0.39*	0.54*	-	-

Note: T1 = time 1, T2 = Time 2, T3 = Time 3. BO = Burnout, PS = Psychological Safety, SL = Servant leadership, TL = Trust in Leader, * = p<0.01

Table 3Micom step 2 - compositional invariance

Construct	Original Correlation	Correlation Permutation Mean	5% Quantile	Permutation p-Values
BO (T1 to T2)	0.983	0.975	0.972	0.871
BO (T2 to T3)	0.981	0.980	0.974	0.536
BO (T1 to T3)	0.973	0.962	0.958	0.299
PS (T1 to T2)	0.982	0.981	0.978	0.922
PS (T2 to T3)	0.983	0.979	0.976	0.532

Table 4Micom step 3

Construct	MOD (VOD)	MPMD (VMPD)	Confidence Intervals 2.50%	97.50%	P-Values
Burnout (T1 -> T2)	0.042 (-0.101)	-0.002 (-0.004)	-0.212 (-0.658)	0.221 (0.049)	0.939 (-0.921)
Burnout (T2 -> T3)	0.029 (-0.417)	0.001 (-0.024)	-0.224 (-0.525)	0.203 (0.049)	0.986 -0.114
Burnout (T1 -> T3)	0.007 (-0.068)	0.001 (-0.003)	-0.228 (-0.317)	0.215 (0.034)	0.965 (-0.936)
Psychological Safety (T1 -> T2)	0.005 (-0.114)	0.001 (-0.004)	-0.219 (-0.383)	0.229 (0.159)	0.916 (-0.739)
Psychological Safety (T2 -> T3)	0.028 (-0.162)	0.001 (-0.009)	-0.203 (-0.198)	0.216 (0.136)	0.996 (-0.55)

Table 5Confirmatory Composite Analysis

Constructs	Indicators	λ	CR	AVE
Time 1 Psychological Safety (T1-PS)	T1-PS1	0.851	0.898	0.747
	T1-PS2	0.904		
	T1-PS3	0.836		
Time 2 Psychological Safety (T2-PS)	T2-PS1	0.792	0.846	0.648
	T2-PS2	0.813		
	T2-PS3	0.809		
Time 3 Psychological Safety (T3-PS)	T3-PS1	0.804	0.849	0.652
	T3-PS2	0.801		
	T3-PS3	0.817		
Time 1 Servant Leadership (T1-SL)	T1-SL1	0.800	0.897	0.556
	T1-SL2	0.755		
	T1-SL3	0.799		
	T1-SL4	0.782		
	T1-SL5	0.701		
	T1-SL6	0.654		
	T1-SL7	0.719		
Time 2 Servant Leadership (T2-SL)	T2-SL1	0.837	0.909	0.589
	T2-SL2	0.786		
	T2-SL3	0.811		
	T2-SL4	0.810		
	T2-SL5	0.690		
	T2-SL6	0.677		
	T2-SL7	0.748		
Time 3 Servant Leadership (T3-SL)	T3-SL1	0.811	0.899	0.561
	T3-SL2	0.741		
	T3-SL3	0.772		
	T3-SL4	0.706		
	T3-SL5	0.729		
	T3-SL6	0.722		
	T3-SL7	0.759		

Constructs	Indicators	λ	CR	AVE
Time 1 Burnout (Higher Order) (T1-BO)	T1-Exhaustion	0.852	0.830	0.621
	T1-Cynicism	0.716		
	T1-Professional Efficacy	0.791		
Time 2 Burnout (Higher Order) (T2-BO)	T2-Exhaustion	0.795	0.837	0.631
	T2-Cynicism	0.827		
	T2-Professional Efficacy	0.759		
Time 3 Burnout (Higher Order) (T3-BO)	T3-Exhaustion	0.890	0.863	0.677
	T3-Cynicism	0.782		
	T3-Professional Efficacy	0.793		
Burnout (Lower Order Dimensions)				
Time 1 Exhaustion (T1-EX)	T1-EX1	0.871	0.903	0.653
	T1-EX2	0.751		
	T1-EX3	0.753		
	T1-EX4	0.760		
	T1-EX5	0.893		
Time 2 Exhaustion (T2-EX)	T2-EX1	0.640	0.844	0.520
	T2-EX2	0.718		
	T2-EX3	0.736		
	T2-EX4	0.788		
	T2-EX5	0.715		
Time 3 Exhaustion (T3-EX)	T3-EX1	0.861	0.928	0.720
	T3-EX2	0.879		
	T3-EX3	0.864		
	T3-EX4	0.825		
	T3-EX5	0.812		
Time 1 Professional Efficacy (T1-EF)	T1-EF1	0.786	0.928	0.683
	T1-EF2	0.759		
	T1-EF3	0.859		
	T1-EF4	0.826		
	T1-EF5	0.859		
	T1-EF6	0.862		

Constructs	Indicators	λ	CR	AVE
Time 2 Professional Efficacy (T2-EF)	T2-EF1	0.687	0.882	0.558
	T2-EF2	0.608		
	T2-EF3	0.685		
	T2-EF4	0.841		
	T2-EF5	0.885		
	T2-EF6	0.740		
Time 3 Professional Efficacy (T3-EF)	T3-EF1	0.864	0.918	0.653
	T3-EF2	0.836		
	T3-EF3	0.821		
	T3-EF4	0.770		
	T3-EF5	0.698		
	T3-EF6	0.849		
Time 1 Cynicism (T1-CY)	T1-CY1	0.796	0.894	0.629
	T1-CY2	0.769		
	T1-CY3	0.683		
	T1-CY4	0.836		
	T1-CY5	0.870		
Time 2 Cynicism (T2-CY)	T2-CY1	0.873	0.893	0.628
	T2-CY2	0.726		
	T2-CY3	0.640		
	T2-CY4	0.798		
	T2-CY5	0.896		
Time 3 Cynicism (T3-CY)	T3-CY1	0.816	0.885	0.609
	T3-CY2	0.739		
	T3-CY3	0.651		
	T3-CY4	0.794		
	T3-CY5	0.884		

Note: **λ**= indicator loadings C.R = composite reliability; AVE = average variance extracted

Table 6Discriminant validity - HTMT approach

Constructs	MOD-TL*SL	T1-BO	T1-PS	T1-SL	T1-TL	T2-PS	T2-BO	T3-BO
MOD-TL*SL								
T1-BO	0.066							
T1-PS	0.261	0.33						
T1-SL	0.109	0.29	0.496					
T1-TL	0.435	0.244	0.528	0.86				
T2-PS	0.086	0.175	0.841	0.827	0.459			
T2-BO	0.021	0.815	0.165	0.186	0.119	0.065		
T3-BO	0.056	0.847	0.476	0.549	0.627	0.401	0.816	

Table 7Variance inflation factor values at Factor-level (Inner VIF)

Constructs	T2-PS	T3-BO
MOD-T1TL*T1SL		1.574
T1-BO		
T1-PS	1.059	
T1-SL	1.455	2.021
T1-TL		2.477
T2-BO		1.039
T2-PS		1.870

Table 8 Structural Model Assessment

Paths	β	Standard Deviation	T Values	P Values	Confidence Intervals	Remarks
T1-SL -> T3-BO	-0.569	0.102	5.556	<0.001	[-0.766, -0.369]	H1 = Supported
T1-SL -> T2-PS	0.363	0.044	8.311	<0.001	[0.276, 0.443]	
T2-PS -> T3-BO	-0.13	0.054	2.413	0.014	[-0.245, -0.035]	
T1-TL -> T3-BO	-0.061	0.087	0.694	0.484	[-0.232, 0.104]	
T1-PS -> T2-PS	0.544	0.042	12.815	<0.001	[0.402, 0.614]	
T1-BO -> T2-BO	0.841	0.022	37.793	<0.001	[0.694, 0.903]	
T2-BO -> T3-BO	0.119	0.040	2.956	0.029	[0.107, 0.128]	
Mediation Results						
T1-SL -> T2-PS -> T3-BO	-0.047	0.021	2.252	0.025	[-0.098, -0.014]	H2 = Supported
Moderation Results						
MOD-T1TL*T1SL -> T3-BO	-0.222	0.052	4.292	<0.001	[-0.333, -0.126]	H3 = Supported

Note: β = Path Coefficient, t-values and confidence interval values obtained through a 5000 Bootstrap run with two-tailed setting at 5% level of significance

Table 9PLSPredict Results

Time 3 Burnout (primary endogenous construct with lower order dimensions)	Indicators	PLS-RMSE	LM-RMSE	Lower RMSE
Exhaustion	T3-EX1	0.300	0.379	PLS
	T3-EX2	0.439	0.444	PLS
	T3-EX3	0.245	0.349	PLS
	T3-EX4	0.239	0.283	PLS
	T3-EX5	0.256	0.346	PLS
Professional Efficacy	T3-EF1	0.885	0.967	PLS
	T3-EF2	0.867	0.954	PLS
	T3-EF3	0.347	0.414	PLS
	T3-EF4	0.858	0.917	PLS
	T3-EF5	0.753	0.808	PLS
Cynicism	T3-EF6	0.723	0.778	PLS
	T3-CY1	0.344	0.355	PLS
	T3-CY2	0.343	0.384	PLS
	T3-CY3	0.312	0.325	PLS
	T3-CY4	0.351	0.397	PLS
	T3-CY5	0.419	0.438	PLS
T3-BO as higher order construct	Exhaustion	0.394	0.422	PLS
	Professional Efficacy	0.319	0.332	PLS
	Cynicism	0.238	0.269	PLS