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Designing a Predictive Model of Spiritual Leadership Based on Behavioral Variables Among Managers of the National Construction Engineering Organization

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Abstract

The purpose of the present study was to design a predictive model of spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization. In terms of purpose, this research was developmental, and in terms of approach, it employed a mixed-methods design (quantitative–qualitative). The qualitative phase was conducted using thematic analysis, while the quantitative phase utilized a correlational design with a structural equation modeling (SEM) approach. The statistical population in the qualitative phase consisted of experts, public administration faculty members, and managers of the National Construction Engineering Organization. Participants were selected through purposive sampling, and sampling continued until theoretical saturation was achieved (15 participants). In the quantitative phase, the statistical population included all managers and employees of the National Construction Engineering Organization, from whom 250 individuals were selected using convenience sampling. In the qualitative phase, data were collected through semi-structured interviews, whereas in the quantitative phase, a researcher-developed questionnaire derived from the qualitative interviews was utilized. The instrument employed in this study was a researcher-developed questionnaire consisting of six dimensions and twenty-four components. The questionnaire was designed based on interview data and corresponded to the themes identified during the qualitative analysis. Data analysis in the qualitative phase was conducted using the thematic analysis approach proposed by Brown and Clarke (2006). In the quantitative phase, structural equation modeling was performed using PLS software. Based on the results of the thematic analysis, the organizing themes were classified into six final themes: “Transcendent Spiritual Leadership,” “Wise Leadership,” “Leader’s Intrapersonal Integrity,” “Organizational Spiritual Foundation,” “Leadership, Spiritual Decision-Making and Educational Processes,” and “Social Agency and Behavioral Outcomes.” These themes were identified and developed as the core dimensions of spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization. Furthermore, the results of the structural equation modeling indicated that the proposed research model demonstrated satisfactory validity and goodness-of-fit indices. The findings of the confirmatory factor analysis also supported the model of factors influencing the prediction of spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization at the level of the principal components.

Keywords: *Spiritual Leadership, Behavioral Variables, Managers, Engineering Organization*

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1. Introduction

Contemporary organizations operate in environments characterized by rapid technological change, increasing stakeholder expectations, ethical complexities, and growing demands for sustainable organizational performance. Under such conditions, leadership has emerged as a critical determinant of organizational effectiveness, employee well-being, and long-term sustainability. Traditional leadership paradigms, while valuable, have often emphasized economic

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performance and managerial efficiency without adequately addressing employees' deeper psychological, moral, and spiritual needs. Consequently, scholars and practitioners have increasingly turned their attention to leadership approaches that integrate meaning, purpose, values, and human flourishing into organizational life. Among these approaches, spiritual leadership has gained significant recognition as a framework capable of fostering individual development, organizational commitment, ethical behavior, and sustainable performance [1, 2].

Spiritual leadership is generally conceptualized as a values-based leadership approach that motivates individuals through a compelling vision, altruistic love, hope, faith, and a sense of meaningful purpose. Rather than focusing solely on organizational outcomes, spiritual leadership seeks to create environments where employees experience a sense of calling and membership, enabling them to align personal values with organizational goals. This perspective has evolved substantially over the past two decades and is increasingly viewed as an important mechanism for enhancing organizational resilience and sustainability in complex environments [2-4]. Recent discussions further emphasize that spiritual leadership contributes not only to organizational success but also to social responsibility, public value creation, and human-centered management practices [1].

The growing scholarly interest in spiritual leadership stems from accumulating evidence demonstrating its positive influence on employee attitudes and organizational outcomes. Research has shown that spiritually oriented leaders can enhance employee engagement, job satisfaction, organizational commitment, and overall performance while simultaneously reducing negative workplace behaviors and turnover intentions [5-7]. In service-oriented and knowledge-intensive organizations, spiritual leadership has been associated with improved organizational effectiveness because it creates a work environment grounded in trust, shared values, and collective purpose [8, 9].

One of the most important foundations of spiritual leadership is spirituality itself. Workplace spirituality refers to employees' experiences of meaning, connectedness, transcendence, and value congruence within organizational settings. Human resource professionals and organizational scholars have increasingly recognized workplace spirituality as a critical factor influencing employee motivation, interpersonal relationships, and organizational culture [10]. Studies have demonstrated that spiritual climates promote positive emotional states, strengthen organizational identification, and encourage employees to engage in behaviors that contribute to both personal and organizational development [11, 12]. Consequently, workplace spirituality provides a fertile context within which spiritual leadership can emerge and flourish.

A closely related concept is spiritual intelligence, which represents an individual's capacity to apply spiritual values, insights, and meaning-making processes to everyday decision-making and problem-solving. Spiritual intelligence has been identified as an important antecedent of effective spiritual leadership because leaders with higher levels of spiritual intelligence are better equipped to manage uncertainty, inspire followers, and navigate ethical dilemmas [13, 14]. Furthermore, spiritual intelligence has been linked to organizational service quality, leadership effectiveness, and employee well-being, highlighting its significance as a behavioral and psychological resource for leaders [15].

Behavioral variables constitute another critical domain in understanding spiritual leadership. Leadership is ultimately manifested through observable behaviors that shape employee perceptions, organizational culture, and workplace outcomes. Behavioral factors such as ethical conduct, communication patterns, decision-making styles, emotional regulation, collaboration, and value-oriented actions play a central role in determining whether spiritual leadership principles are effectively translated into organizational practice. Research suggests that leadership behaviors grounded in spirituality promote trust, cooperation, creativity, and organizational citizenship behaviors while reducing workplace conflict and deviant conduct [16-18].

Ethical decision-making is particularly important in the context of spiritual leadership. Leaders frequently face situations requiring the balancing of competing interests, organizational objectives, and moral responsibilities. The integration of spirituality into leadership practices can provide a framework for making decisions that are not only effective but also ethically sound and socially responsible. Ethical decision-making models emphasize the importance of self-awareness, moral reasoning, and value-based judgment, all of which align closely with the principles of spiritual leadership [19]. As organizations increasingly confront ethical challenges and stakeholder scrutiny, the need for spiritually grounded leadership behaviors becomes even more evident.

The relationship between spiritual leadership and employee well-being has also attracted substantial scholarly

attention. Studies have shown that spiritual leadership can reduce stress, burnout, and emotional exhaustion while enhancing resilience, hope, and psychological well-being [20, 21]. By fostering a sense of purpose and connectedness, spiritual leaders help employees cope with workplace pressures and maintain motivation during periods of uncertainty and change. These outcomes are particularly relevant in contemporary organizations, where employee mental health and well-being have become strategic concerns.

In addition to individual-level outcomes, spiritual leadership contributes significantly to organizational performance. Research has demonstrated positive associations between spiritual leadership and organizational effectiveness, service quality, innovation, and performance indicators across various sectors [5, 6, 8]. Furthermore, psychological capital has been identified as an important mediating mechanism through which spiritual leadership influences performance outcomes, suggesting that spiritual leadership enhances employees' confidence, optimism, resilience, and hope, which subsequently improve organizational results [22].

Recent systematic reviews indicate that the field of spiritual leadership has expanded considerably, encompassing a wide range of antecedents, mediators, moderators, and outcomes. Nevertheless, scholars continue to emphasize the need for further research examining the contextual and behavioral factors that shape spiritual leadership across different organizational settings [4, 23]. In particular, there remains a need to develop comprehensive models that explain how behavioral variables contribute to the emergence and effectiveness of spiritual leadership. Existing studies often focus on isolated dimensions of leadership behavior, making it difficult to understand the complex interactions among personal, organizational, social, and developmental factors.

Several recent investigations have attempted to identify the critical factors associated with spirituality-based leadership development. For example, studies have highlighted the importance of organizational culture, value systems, leadership competencies, emotional capabilities, and spiritual awareness in shaping leadership effectiveness [24, 25]. These findings suggest that spiritual leadership is a multidimensional construct influenced by both internal characteristics and external organizational conditions. Consequently, a comprehensive understanding of spiritual leadership requires the integration of behavioral, organizational, and spiritual perspectives.

Within the Iranian context, research on spiritual leadership has grown steadily in recent years. Studies have identified various dimensions and indicators of spiritual leadership in educational and organizational environments, emphasizing the role of ethical values, meaning-making processes, and interpersonal relationships in effective leadership [26, 27]. More recently, researchers have developed conceptual models for spiritual leadership development among educational leaders, highlighting the significance of behavioral competencies, organizational culture, and spiritual values in leadership formation [28]. These studies provide valuable insights but also reveal the need for further investigation in professional and technical organizations where leadership responsibilities involve complex stakeholder interactions and regulatory demands.

The National Construction Engineering Organization represents a particularly important context for examining spiritual leadership. Managers in this sector must balance technical expertise, ethical responsibilities, organizational performance, public trust, and professional standards. Their leadership behaviors influence not only organizational effectiveness but also the quality and safety of engineering services provided to society. Given the multifaceted nature of managerial responsibilities within engineering organizations, understanding the behavioral variables that contribute to spiritual leadership is essential for leadership development and organizational improvement. Moreover, behavioral indicators have been increasingly recognized as useful tools for evaluating organizational effectiveness and managerial performance across different sectors [29].

Despite the growing body of literature on spiritual leadership, several gaps remain. First, limited research has focused specifically on identifying behavioral variables that predict spiritual leadership within engineering organizations. Second, existing studies have frequently examined spiritual leadership outcomes rather than its antecedents. Third, the multidimensional relationships among organizational foundations, decision-making processes, leader characteristics, social engagement, and behavioral outcomes remain insufficiently understood. Addressing these gaps can contribute to both theoretical advancement and practical leadership development initiatives.

Therefore, the present study aimed to design and validate a model for predicting spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization.

2. Methodology

The present study was an applied-developmental research in terms of purpose and employed a mixed-methods approach with a sequential exploratory design. In the first phase, thematic analysis was used to develop the model, while in the second phase, a quantitative descriptive-analytical method and structural equation modeling (SEM) were employed to test the model. In the qualitative phase, indicators and codes related to spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization were identified using the six-stage thematic analysis approach proposed by Braun and Clarke (2006), including data familiarization, generation of initial codes, searching for themes, reviewing and organizing themes, defining and naming overarching themes, and model development.

The statistical population in the qualitative phase consisted of experts, public administration faculty members, and managers of the National Construction Engineering Organization. The criteria for selecting academic experts and managers included having published books, articles, scholarly works, or professional opinions in executive management, leadership, management, and spirituality; possessing extensive teaching experience in public administration; engaging in educational and research activities related to engineering organizations; and holding managerial positions within the engineering organization system.

Accordingly, interviews were initiated using purposive and snowball sampling techniques with individuals who possessed expertise and knowledge relevant to the research topic. During a two-month period, the researcher conducted interviews and reached theoretical saturation after interviewing 13 participants. To ensure saturation, two additional interviews were conducted. At this stage, no new information emerged, and a substantial proportion of the data collected in the final interviews was repetitive. Therefore, the qualitative phase concluded after 15 interviews.

Data collection was conducted through documentary studies, online information portals, and in-depth semi-structured interviews with experts. Since semi-structured interviews were used instead of structured interviews, the interview protocol consisted of predetermined open-ended questions that allowed the interviewer to probe and clarify issues during discussions with participants.

To assess validity in the qualitative phase, triangulation was employed. Furthermore, data obtained from documentary sources were organized into semi-structured interview formats, and interviews were conducted with ten professors and senior experts. In addition to achieving agreement among the researcher, supervisor, and advisor regarding coding, themes, and the conceptual model, all stages of coding, thematic development, and process-model construction were reviewed through interviews with ten academic experts. Following each interview, the codes, themes, and process model were refined and revised.

Reliability was assessed using Holsti's coefficient, one of the methods recommended by Neuendorf (2002), and yielded a reliability coefficient of 0.91. Data analysis was conducted through open, axial, and selective coding based on the six-stage thematic analysis procedure proposed by Braun and Clarke (2006).

In the quantitative phase, the study employed a descriptive survey design with a correlational approach based on structural equation modeling. The statistical population included all managers and employees of the National Construction Engineering Organization. Based on sample size determination principles for regression analysis and structural equation modeling and considering the identification of 24 factors (with 10 respondents allocated per factor), the minimum required sample size was calculated as 240 participants. To compensate for potential questionnaire attrition, 300 questionnaires were distributed. After collection and elimination of incomplete questionnaires, 250 valid responses remained and were selected through convenience sampling.

To collect quantitative data, a researcher-developed questionnaire was designed based on the codes derived from the qualitative interviews. Ultimately, a questionnaire containing 110 items was developed. The items were closed-ended and measured on a five-point Likert scale ranging from 5 (Strongly Agree) to 1 (Strongly Disagree).

Face validity was assessed, and the final questionnaire was refined with the assistance of the researcher, ten members of the target population, and the research supervisor and advisor to eliminate editorial, structural, and spelling issues. Content validity was evaluated using the Content Validity Ratio (CVR). Based on expert evaluations, 12 items failed to achieve the required content validity threshold and were removed, leaving 98 items in the final questionnaire.

The reliability of the instrument was confirmed through a Cronbach's alpha coefficient of 0.836 and a composite

reliability coefficient of 0.814. Data analysis was performed using descriptive statistics (mean and standard deviation) and inferential statistics (Pearson correlation and structural equation modeling) with SPSS and SmartPLS version 23 software.

3. Findings and Results

In the first and qualitative phase of the study, the primary objective was to explore and identify the factors and indicators associated with predicting spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization. The main qualitative research question was: What are the categories and hierarchical levels of factors influencing the prediction of spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization?

The study employed Braun and Clarke's six-stage thematic analysis approach. After identifying and categorizing the axial codes, a conceptual framework was developed based on theoretical literature, field notes, interview findings, and their relationships with the conceptual framework.

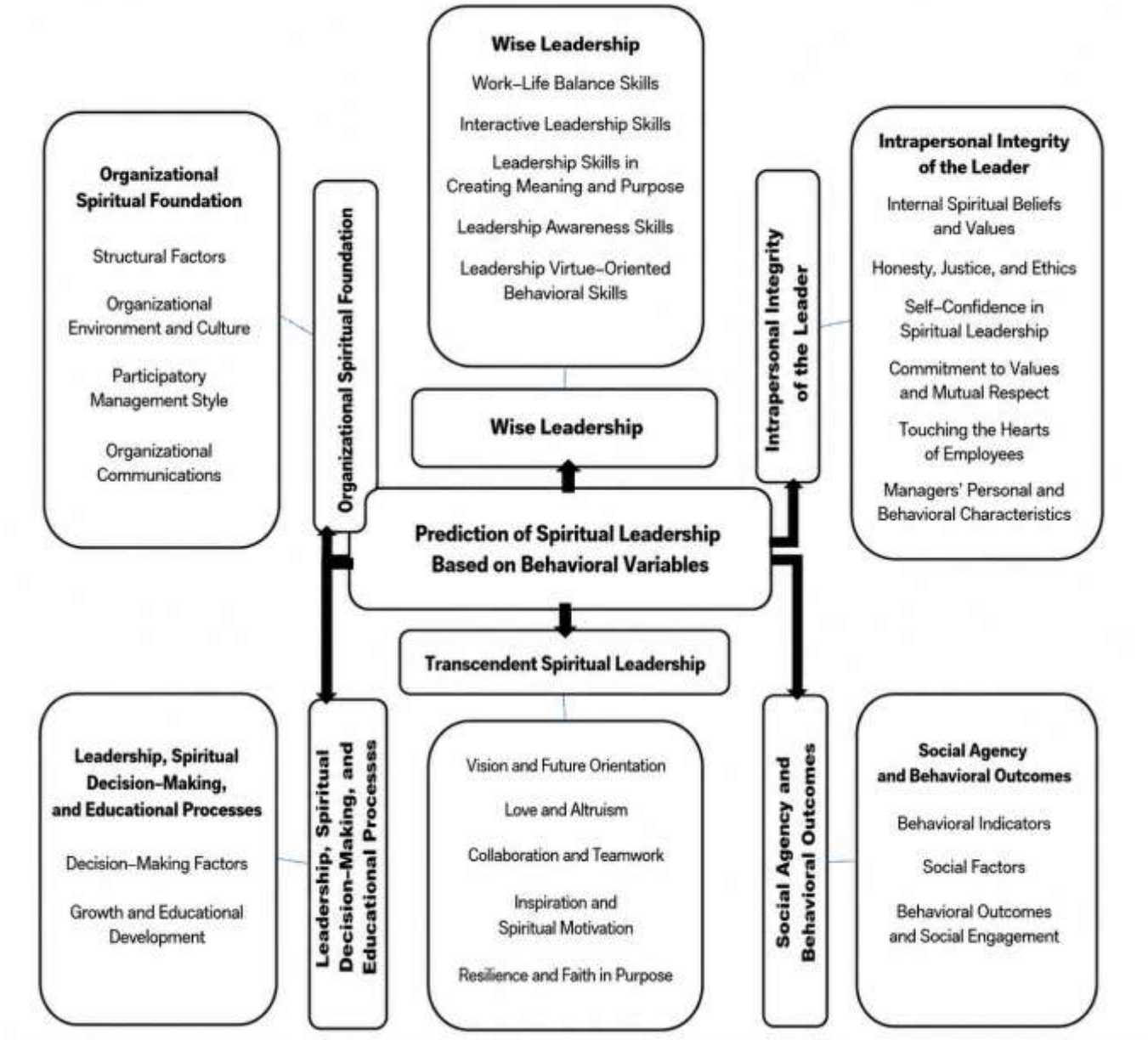

Figure 1. Conceptual Framework

Subsequently, the quantitative phase of the study was analyzed. Among the 250 participants, 185 respondents (74%) were male and 65 respondents (26%) were female. Regarding age distribution, 100 participants (40%) were between 35 and 45 years old, 74 participants (30%) were between 25 and 35 years old, 48 participants (19%) were older than 45 years, and 28 participants (11%) were younger than 25 years.

Structural equation modeling was then employed to evaluate model fit. In the first stage, confirmatory factor analysis (CFA) was conducted to assess the fit of the qualitative model at the item level. The results indicated that all factor loadings associated with the principal behavioral variables in the spiritual leadership prediction model exceeded 0.60, demonstrating strong explanatory power for all indicators.

Table 1. Cronbach's Alpha, Composite Reliability, and AVE

Variable	Cronbach's Alpha	Composite Reliability	AVE
Wise Leadership	0.840	0.837	0.514
Transcendent Spiritual Leadership	0.845	0.844	0.522
Social Processes and Behavioral Indicators	0.763	0.763	0.617
Value-Oriented and Personality-Based Processes	0.874	0.879	0.539
Decision-Making and Development Processes	0.875	0.876	0.781
Organizational and Structural Processes	0.797	0.798	0.501

The results of the measurement model assessment using SmartPLS indicated that Cronbach's alpha values for all themes and variables were greater than 0.70 and less than 0.95. Therefore, the internal consistency reliability of all constructs was satisfactory. Furthermore, the Average Variance Extracted (AVE) criterion demonstrated acceptable convergent validity for all research constructs and components.

Table 2. Discriminant Validity (Fornell–Larcker Criterion)

Variable	1	2	3	4	5	6
1	0.717					
2	0.357	0.723				
3	0.242	0.291	0.785			
4	0.300	0.530	0.427	0.735		
5	0.121	0.256	0.329	0.257	0.884	
6	0.211	0.323	0.246	0.369	0.423	0.708

The Fornell–Larcker criterion presented in Table 2 demonstrates that the square root of the AVE for each latent variable exceeds its highest correlation with any other latent variable. Accordingly, discriminant validity was established for all constructs.

Construct validity and overall model fit were further evaluated using goodness-of-fit indices.

Table 3. Goodness-of-Fit Indices

Index	Value	Acceptable Threshold	Interpretation
Chi-Square	$p = 0.004$; $\chi^2 = 0.200$	$p > 0.05$	No significant difference between the observed covariance matrix and the estimated model covariance matrix; indicates acceptable model fit
χ^2/df	1.26	Between 1 and 3	Excellent fit
RMSEA	0.033	< 0.08	Excellent fit
NFI	0.90	> 0.90	Excellent fit
CFI	0.97	> 0.90	Excellent fit
GFI	0.91	> 0.90	Excellent fit
TLI	0.97	> 0.90	Excellent fit
SRMR	0.044	< 0.08	Excellent fit

Table 3 presents the goodness-of-fit indices, including RMSEA, Chi-square, NFI, CFI, and SRMR. The model-fit results indicate that the Goodness-of-Fit Index (GFI) and Comparative Fit Index (CFI) exceeded 0.90, confirming

satisfactory model fit. Moreover, other fit indices (SRMR, NFI, and TLI) also demonstrated acceptable values.

As observed, most fit indices fall within acceptable ranges. Therefore, the confirmatory factor analysis supports the model of factors influencing the prediction of spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization at the level of the principal components.

Subsequently, after confirming the measurement models and overall model fit, the final structural model of the study was estimated and tested within the software environment, as illustrated in Figures 2 and 3.

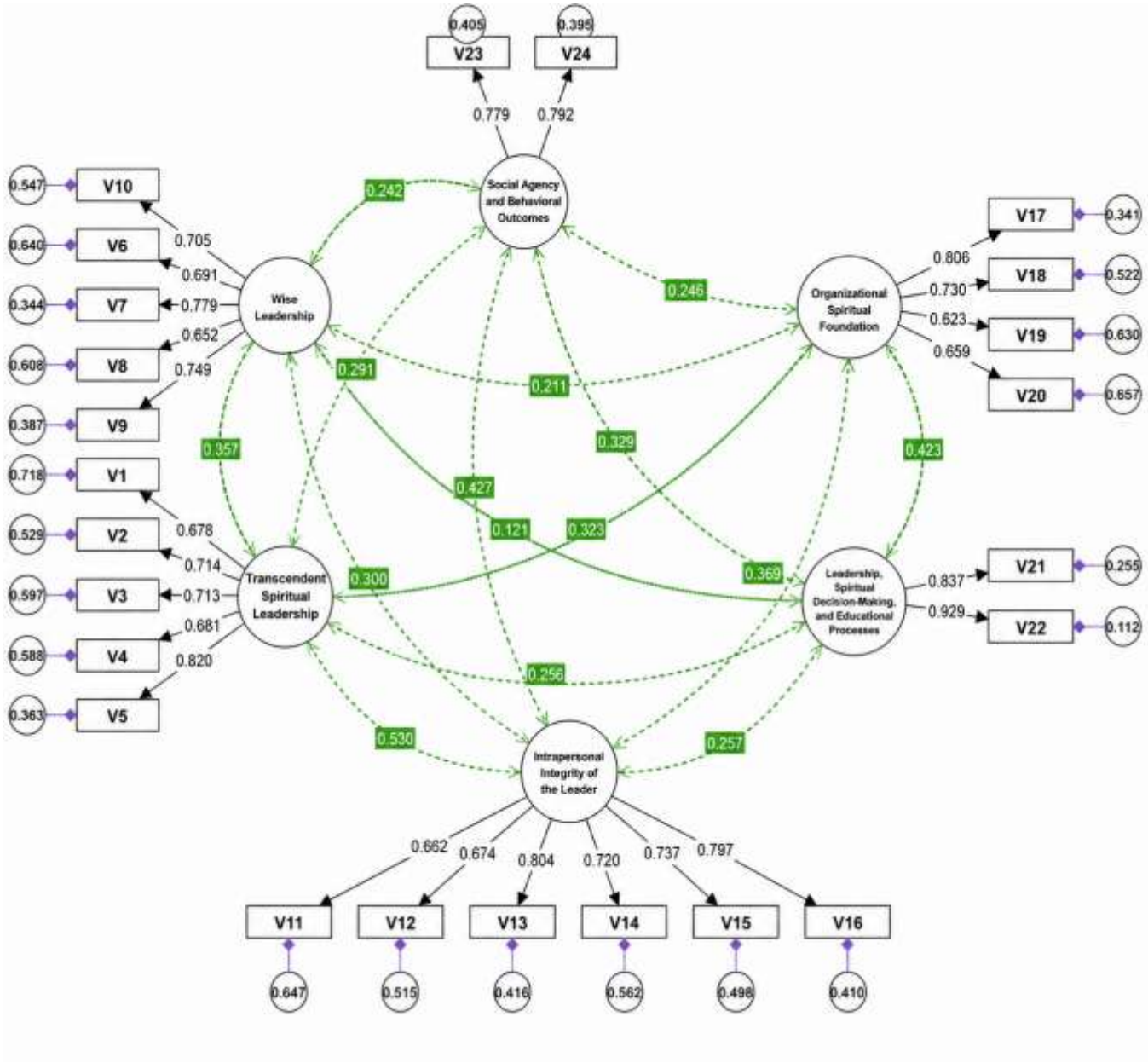

Figure 2. Final Model Based on Confirmatory Factor Analysis at the Component Level (Standardized Coefficients)

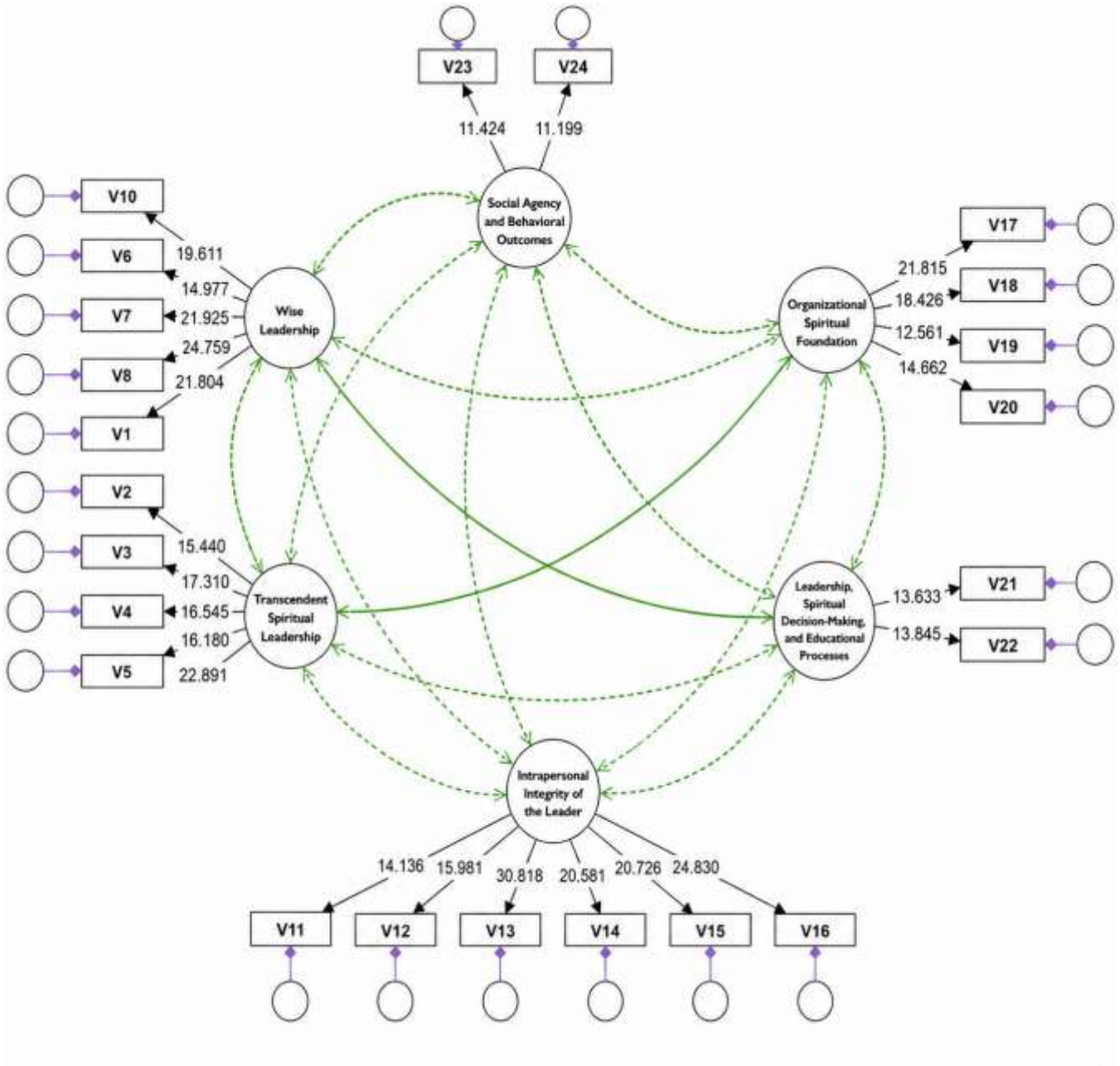

Figure 3. Final Model Based on Confirmatory Factor Analysis at the Component Level (t-values)

As illustrated in the figures, the t-values for all factors and their relationships with the main categories exceeded 1.96 and were statistically significant at the 95% confidence level. Therefore, all factors exert significant effects on the principal research categories, and the hypothesized relationships among the constructs are supported by the findings of the present study.

4. Discussion and Conclusion

The present study aimed to design and validate a model for predicting spiritual leadership based on behavioral variables among managers of the National Construction Engineering Organization. The qualitative findings identified six major dimensions of the proposed model, including Wise Leadership, Transcendent Spiritual Leadership, Intrapersonal Integrity of the Leader, Organizational Spiritual Foundation, Leadership, Spiritual

Decision-Making and Educational Processes, and Social Agency and Behavioral Outcomes. The quantitative findings further demonstrated that the proposed model possessed satisfactory psychometric properties, including acceptable reliability, convergent validity, discriminant validity, and overall goodness-of-fit indices. Moreover, the confirmatory factor analysis supported the significance of all major components and their relationships within the model, indicating that behavioral variables play a substantial role in explaining and predicting spiritual leadership among organizational managers.

One of the most important findings of the study was the identification of Wise Leadership as a major component of spiritual leadership. The qualitative results revealed that work–life balance skills, interactive leadership capabilities, meaning-making competencies, leadership awareness, and virtue-oriented leadership behaviors collectively form the foundation of wise leadership. This finding supports contemporary perspectives that regard spiritual leadership as a leadership approach that transcends technical managerial competence and incorporates ethical judgment, self-awareness, and purposeful action. Spiritual leadership scholars have consistently argued that leaders who possess a strong sense of purpose and meaning are more capable of inspiring followers and creating sustainable organizational environments [1, 2]. Similarly, research has demonstrated that spiritual leadership is closely associated with values-based leadership behaviors that encourage trust, engagement, and commitment among organizational members [3, 4]. The prominence of wise leadership in the present model suggests that effective spiritual leadership in engineering organizations requires managers not only to possess technical expertise but also to demonstrate judgment, moral reasoning, and a commitment to human-centered leadership practices.

Another significant finding was the role of Transcendent Spiritual Leadership, which included vision and future orientation, love and altruism, teamwork, spiritual inspiration, and faith in purpose. The significance of this dimension aligns with the theoretical foundations of spiritual leadership proposed by Fry, who emphasized vision, altruistic love, and hope-faith as the central mechanisms through which spiritual leadership influences organizational outcomes [1]. Previous empirical studies have also found that transcendent leadership qualities strengthen employees' sense of calling and membership, thereby enhancing organizational commitment and performance [5, 6]. The findings further correspond with evidence indicating that spiritual leadership reduces employee burnout and enhances resilience by providing a meaningful framework through which employees interpret organizational challenges [20]. Within the context of the National Construction Engineering Organization, where managers often operate in environments characterized by complexity, uncertainty, and public accountability, the ability to communicate a meaningful vision and foster collective purpose appears particularly important.

The findings also highlighted the importance of Intrapersonal Integrity of the Leader. Components such as internal spiritual beliefs and values, honesty, justice, ethics, self-confidence in spiritual leadership, commitment to mutual respect, emotional connection with employees, and personal characteristics emerged as central predictors of spiritual leadership. This result reinforces the argument that spiritual leadership begins with the leader's internal value system and personal development. Previous studies have shown that leaders' spiritual intelligence significantly influences leadership effectiveness because it shapes ethical behavior, self-regulation, and interpersonal relationships [13, 14]. Likewise, research on spiritual intelligence suggests that leaders who possess deeper spiritual awareness demonstrate greater authenticity and ethical consistency in organizational settings [15]. The emphasis on integrity in the present study further supports findings indicating that employee trust and organizational commitment are strengthened when leaders demonstrate ethical consistency and genuine concern for employee well-being [8, 16].

The Organizational Spiritual Foundation dimension also emerged as a significant predictor of spiritual leadership. Structural factors, organizational culture, participatory management styles, and organizational communication were identified as important contextual variables influencing spiritual leadership development. This finding suggests that spiritual leadership is not merely an individual phenomenon but is also shaped by organizational systems and environmental conditions. Previous studies have emphasized that workplace spirituality flourishes when organizations create supportive cultures characterized by trust, collaboration, openness, and shared values [10, 11]. Similarly, organizational structures that encourage employee participation and transparent communication have been associated with stronger spiritual climates and higher levels of organizational commitment [9, 12]. The results therefore indicate that engineering organizations seeking to strengthen spiritual leadership should focus not only on individual leadership development but also on cultivating

organizational environments that reinforce spiritual and ethical values.

The dimension of Leadership, Spiritual Decision-Making and Educational Processes was another important finding of the study. Decision-making factors and growth-oriented educational development emerged as significant components within the model. This result underscores the central role of leadership learning and ethical decision-making in fostering spiritual leadership competencies. Ethical decision-making models emphasize that leaders must integrate moral principles, stakeholder considerations, and long-term consequences into their judgments [19]. Spiritual leadership provides a framework through which decision-making becomes guided by purpose, values, and collective well-being rather than solely by economic or operational concerns. Previous investigations have similarly identified leadership development and continuous learning as important antecedents of spirituality-based leadership effectiveness [24, 25]. The present findings extend this literature by demonstrating that decision-making and educational development processes are particularly relevant in technically oriented organizations where leaders must frequently balance professional, ethical, and organizational responsibilities.

The significance of Social Agency and Behavioral Outcomes represents another notable contribution of the study. Behavioral indicators and social factors were found to be integral components of the spiritual leadership model. This finding supports the view that spiritual leadership ultimately manifests itself through observable behaviors that influence organizational and societal outcomes. Researchers have increasingly emphasized that spiritual leadership should not be evaluated solely in terms of leader characteristics but also through its behavioral consequences, including cooperation, citizenship behavior, social responsibility, and ethical conduct [17, 18]. The finding is particularly important because it demonstrates that spiritual leadership extends beyond individual spirituality and influences broader organizational and social interactions. Consistent with prior research, the results suggest that spiritually oriented leaders foster environments in which employees are more likely to engage in constructive, prosocial, and ethically responsible behaviors [6, 9].

The quantitative findings further demonstrated that all dimensions of the model possessed satisfactory reliability and validity. Cronbach's alpha values, composite reliability indices, and AVE values exceeded recommended thresholds, indicating acceptable measurement quality. These results are consistent with previous studies that have successfully operationalized spiritual leadership as a multidimensional construct encompassing behavioral, organizational, and personal dimensions [8, 27]. The establishment of discriminant validity further confirms that the identified dimensions represent distinct but related aspects of spiritual leadership.

The structural model also demonstrated strong goodness-of-fit indicators, supporting the theoretical coherence of the proposed framework. The acceptable values of RMSEA, CFI, GFI, NFI, TLI, and SRMR indicate that the proposed relationships among the dimensions provide an accurate representation of spiritual leadership within the studied context. This finding supports recent systematic reviews emphasizing the multidimensional nature of spiritual leadership and the need for integrated models that simultaneously consider personal, organizational, and behavioral factors [4, 23]. The significance of all structural paths further suggests that spiritual leadership emerges from a dynamic interaction among leader characteristics, organizational conditions, developmental processes, and behavioral outcomes.

Another important implication of the findings concerns the relationship between spirituality and organizational sustainability. Recent scholarship has increasingly linked spiritual leadership with sustainable organizational performance because it encourages ethical behavior, social responsibility, and long-term value creation [1, 2]. The present study supports this perspective by demonstrating that spiritual leadership is influenced by variables associated with organizational culture, decision-making quality, social engagement, and behavioral outcomes. Such findings indicate that spiritual leadership may serve as a strategic resource for engineering organizations seeking to balance technical excellence with ethical responsibility and stakeholder trust.

The findings are also consistent with research highlighting the role of spiritual leadership in enhancing employee attitudes and reducing negative workplace behaviors. Spiritual leadership has been associated with increased job satisfaction, stronger organizational commitment, higher performance, lower turnover intentions, and reduced workplace deviance [7, 18, 22]. The emphasis on behavioral variables in the present study contributes to this literature by identifying the specific personal, organizational, and social mechanisms through which spiritual leadership may be cultivated among managers.

Overall, the findings suggest that spiritual leadership is a multifaceted construct shaped by individual characteristics, organizational foundations, decision-making processes, developmental experiences, and behavioral outcomes. The integration of these dimensions into a comprehensive predictive model provides a valuable framework for understanding and developing spiritual leadership among managers of the National Construction Engineering Organization. By emphasizing both internal values and external behaviors, the model offers a holistic perspective that aligns with contemporary theories of leadership, workplace spirituality, and organizational sustainability.

Several limitations should be considered when interpreting the findings of this study. First, the study was conducted within the National Construction Engineering Organization, which may limit the generalizability of the findings to other organizational contexts. Second, the quantitative phase relied on self-report questionnaires, making the results susceptible to social desirability and common-method biases. Third, although the mixed-methods design strengthened the comprehensiveness of the findings, the qualitative sample size was relatively limited and reflected the perspectives of a specific group of experts and managers. Finally, the cross-sectional nature of the quantitative phase prevented the examination of causal relationships and changes in spiritual leadership over time.

Future studies should examine the proposed model across different industries, organizational sectors, and cultural contexts to evaluate its generalizability. Longitudinal research designs would provide a deeper understanding of how spiritual leadership develops over time and how behavioral variables influence this process. Researchers may also investigate potential mediating and moderating variables such as organizational trust, psychological capital, organizational justice, and employee engagement. Comparative studies between public and private organizations could further reveal contextual differences in the formation and expression of spiritual leadership. Additionally, future investigations may employ mixed quantitative and qualitative longitudinal approaches to capture the dynamic and evolving nature of spiritual leadership.

Organizations should design leadership development programs that integrate ethical awareness, spirituality, emotional intelligence, and value-based decision-making competencies. Senior managers should cultivate organizational cultures characterized by trust, participation, transparency, and respect in order to strengthen the foundations of spiritual leadership. Leadership training initiatives should emphasize meaning-making, vision development, interpersonal communication, and social responsibility alongside technical and managerial skills. Engineering organizations should also establish systems that support employee growth, collaborative learning, and ethical reflection. Finally, organizational policies should encourage leaders to align professional objectives with human values and social responsibilities, thereby fostering sustainable organizational effectiveness and long-term stakeholder trust.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

All procedures performed in this study were under the ethical standards.

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