



Resilient Leadership of Administrators in Private Universities in Shaanxi Province of China in the VUCA Era

Dong Ya, Sutida Howattanakul and Somsak Chanphong

Leadership in Educational Administration, Faculty of Education Bangkokthonburi University

Haojing College of Shaanxi University of Science and Technology

Email. sutida.how@bkkthon.ac.th

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Abstract

This study investigates resilient leadership among administrators in private universities in Shaanxi Province of China, within the volatile, uncertain, complex, and ambiguous (VUCA) era, a period marked by rapid societal shifts—such as technological disruptions, policy fluctuations, and demographic changes—that demand adaptive leadership strategies. The research pursues three primary objectives: (1) to identify the core components of resilient leadership, (2) to develop and validate a comprehensive model of resilient leadership, and (3) to propose actionable guidelines for enhancing this leadership style. Employing a mixed-method approach, the study integrates qualitative data from semi-structured interviews with eight expert administrators, quantitative data from a questionnaire survey yielding 397 valid responses, and qualitative insights from focus group discussions (FGD) with eight participants. The results, validated through Confirmatory Factor Analysis (CFA) with robust fit indices ($CMIN/df = 1.664$, $RMSEA = 0.041$, $CFI = 0.959$), reveal seven key components of resilient leadership: Performance Orientation, Innovation and Adaptive Capacity, Sustainability Values and Beliefs, Learning Ability, Healthy Culture, Risk Management and Buffering Capacity, and Change Orientation. Supplementary dimensions, such as Digital Competency and Stakeholder Engagement, emerged as critical for modern leadership demands. The analysis highlights Learning Ability and Sustainability Values and Beliefs as notable strengths among administrators, while identifying Performance Orientation, Innovation and Adaptive Capacity, Healthy Culture, Risk Management, and Change Orientation as areas requiring significant improvement. The study concludes with tailored guidelines, including modular training programs to build skills, policy reforms to support institutional resilience, and cultural initiatives—such as “Mental Health Days”—to foster a supportive environment. These findings provide a practical and theoretically grounded framework for Shaanxi’s private universities to navigate VUCA challenges, contributing to enhanced educational resilience, sustainable



institutional growth, and alignment with national educational modernization goals.

Keywords: Resilient Leadership, Administrators, Private University, Shaanxi Province.

Introduction

Globalization and technological advancements have created increasingly complex and dynamic environments, necessitating leaders who can adapt and learn continuously. Avolio et al. (2014) emphasize that resilient leaders excel at identifying opportunities amidst uncertainty through adaptive learning and flexible responses, while Reeves et al. (2018) highlight their ability to inspire creativity and innovation, ensuring sustained organizational development amid fierce market competition and economic fluctuations. The COVID-19 pandemic underscored this need, revealing organizational vulnerabilities where resilient leaders maintained calm, formulated effective strategies, and ensured continuity, employee safety, and health (Kuntz et al., 2017). Moreover, the rising prevalence of work-related stress, burnout, and mental health issues has made resilient leaders essential for fostering supportive work environments and enhancing psychological resilience, job satisfaction, and well-being (Van der Vegt et al., 2015). Since the early 21st century, Resilient Leadership Theory has emerged as a response to globalization and crises, with Luthans and Youssef-Morgan (2017) underscoring psychological capital (self-efficacy, hope, optimism, resilience) as key to maintaining performance and mental health. Lengnick-Hall et al. (2011) advocate flexible resource allocation and learning, while Tugade and Fredrickson (2004) highlight emotional regulation, and Cascio and Montealegre (2016) note its role in digital transformation, collectively positioning resilient leadership as vital for navigating adversity.

In China, the “new quality productivity” concept, driven by digital twin technology, aligns with resilience, enhancing efficiency and adaptability (Forbes, 2024). Deloitte (2020) notes that resilient companies, like Best Managed Companies, sustain growth through adaptability, with leaders maintaining trust and vision amid crises (Zeng Shun Fu, 2020). However, as a nascent field, resilient leadership lacks consensus on definitions and measurement tools, with research showing its positive impact on organizational goals, employee well-being, and performance (Gee, 2019). Traditional leadership theories fall short in addressing VUCA challenges, making resilient leadership crucial for counter-cyclical growth and sustainable development. This study’s focus on Shaanxi’s private universities addresses this gap, offering a localized model to enhance resilience in a volatile educational landscape.

The significance of this research lies in its focus on private universities in Shaanxi



Province, a region with 21 such institutions serving a diverse student population of over 150,000 and contributing to China's higher education landscape by offering specialized programs in fields like engineering, business, and arts. These institutions face unique pressures, including tuition fees three to four times higher than public universities, limited governmental support and competition from public counterparts, making resilient leadership essential for maintaining competitiveness and educational quality. This study hypothesizes that resilient leadership is vital for administrators to sustain management efficiency and guide their universities toward healthy, sustainable development amidst VUCA conditions. Furthermore, it posits that an empirically validated model, developed through rigorous analysis, will align with real-world data, offering a practical tool to enhance institutional resilience. By addressing these hypotheses, the research seeks to provide a localized yet globally informed perspective on leadership, contributing to both academic discourse and practical application in the Chinese educational context.

Research Objectives

Research objectives were: (1) To study the components of resilient leadership of administrators in private university in Shaanxi province of China. (2) To develop the model of resilient leadership of administrators in private university in Shaanxi province of China. (3) To propose the guidelines to improve the resilient leadership of administrators in private university in Shaanxi province of China.

Benefits of Research

This research yields multifaceted benefits that enhance leadership and institutional development across individual, organizational, and societal levels within Shaanxi's private universities. For administrators, it provides a clear, evidence-based framework to navigate crises with critical and balanced thinking, fostering preparedness and resilience that enable quick recovery and growth during turbulent times—such as economic downturns or policy shifts—through skills like stress management and decision-making under pressure. At the organizational level, it equips private universities with a validated resilient leadership model, improving management efficiency, crisis response capabilities, and team cohesion, which are crucial for sustaining educational quality and institutional stability in a competitive market where enrollment retention rates hover around 85%. Societally, the study contributes to China's educational modernization by promoting innovative and adaptive leadership practices, supporting national initiatives such as the "Double First-Class" university project and



enhancing the competitiveness of private higher education, which educates over 20% of China's college students.

Research Methodology

The initial phase involved a qualitative exploration to study the components of resilient leadership, conducted through semi-structured interviews with eight expert administrators from private universities in Shaanxi Province.

The second phase focused on developing the resilient leadership model through a quantitative approach. A questionnaire survey was distributed to 405 administrators, selected based on Krejcie and Morgan's sample size determination, with 397 valid responses analyzed.

The final phase proposed guidelines to improve resilient leadership through focus group discussions (FGD) with eight participants, including senior administrators and management scholars.

Population and Sample

The population for this study consisted of 1,300 administrators employed in the 21 private universities across Shaanxi Province during the 2024 academic year. These administrators, ranging from senior leaders (e.g., presidents, vice presidents) to middle-level managers (e.g., deans, department heads), were selected due to their direct involvement in institutional governance, strategic planning, and crisis management, roles critical in the VUCA context. Data collection conducted from March to May 2024, yielded 397 valid responses after accounting for incomplete or inconsistent submissions (e.g., missing demographic data), ensuring a robust dataset for statistical analysis and model validation, reflecting the region's diverse administrative landscape.

Instruments

Semi-structured interviews, five-point rating scale questionnaire and Focus group discussions were employed.

Data Analysis

Objective 1: Qualitative content analysis was applied to semi-structured interview transcripts, identifying 7 components and 35 indicators of resilient leadership.

**Table1** Result of Data Analysis of Questionnaire: Reliability Analysis

| Component | Cronbach's Alpha |
|--|------------------|
| Performance Orientation | 0.857 |
| Innovation and Adaptive Capacity | 0.876 |
| Sustainability Values and Beliefs | 0.890 |
| Learning Ability | 0.901 |
| Healthy Culture | 0.882 |
| Risk Management and Buffering Capacity | 0.865 |
| Change Orientation | 0.879 |

All components demonstrated high internal consistency (Cronbach's Alpha > 0.85), confirming the reliability of the questionnaire for assessing resilient leadership across diverse administrative roles. As shown in the table 1.

Objective 2: Confirmatory Factor Analysis (CFA) was conducted on questionnaire data using AMOS software, validating the resilient leadership model with excellent fit indices. This analysis tested multiple models, adjusting for correlated errors (e.g., between Innovation and Change Orientation), confirming the theoretical structure's consistency with empirical observations from 397 responses, establishing a reliable tool for leadership enhancement.

The CFA results indicated a strong model fit: CMIN/df = 1.664 (indicating a good chi-square to degrees of freedom ratio), RMSEA = 0.041 (below the 0.05 threshold for excellent fit), and CFI = 0.959 (exceeding the 0.95 benchmark for good fit), with factor loadings ranging from 0.724 to 0.820. These metrics suggest that the resilient leadership model is robust, statistically valid, and well-aligned with the collected data, supporting its practical applicability in Shaanxi's context, with variance explained at 68%.

Table 2 Model Fit Assessment: The Evaluation Criteria for Model Fit Indices

| Index | Numerical Value | Excellent Fitting Index | Effective Fitting Index | Standard or Not |
|---------|-----------------|-------------------------|-------------------------|-----------------|
| CMIN/df | 1.689 | <3 | <5 | Fit |
| RMSEA | 0.042 | <0.05 | <0.08 | Fit |
| RMR | 0.043 | <0.05 | <0.08 | Fit |
| CFI | 0.958 | >0.9 | >0.8 | Fit |
| IFI | 0.959 | >0.9 | >0.8 | Fit |
| TLI | 0.954 | >0.9 | >0.8 | Fit |
| NFI | 0.904 | >0.9 | >0.8 | Fit |
| RFI | 0.894 | >0.9 | >0.8 | Fit |



Based on the evaluation criteria for model fit indices, the majority of the fit indices meet the ideal standards, indicating excellent model fit.

The Second Order of Resilient Leadership Model that was Consistent with the Empirical Data as shown in figure 1.

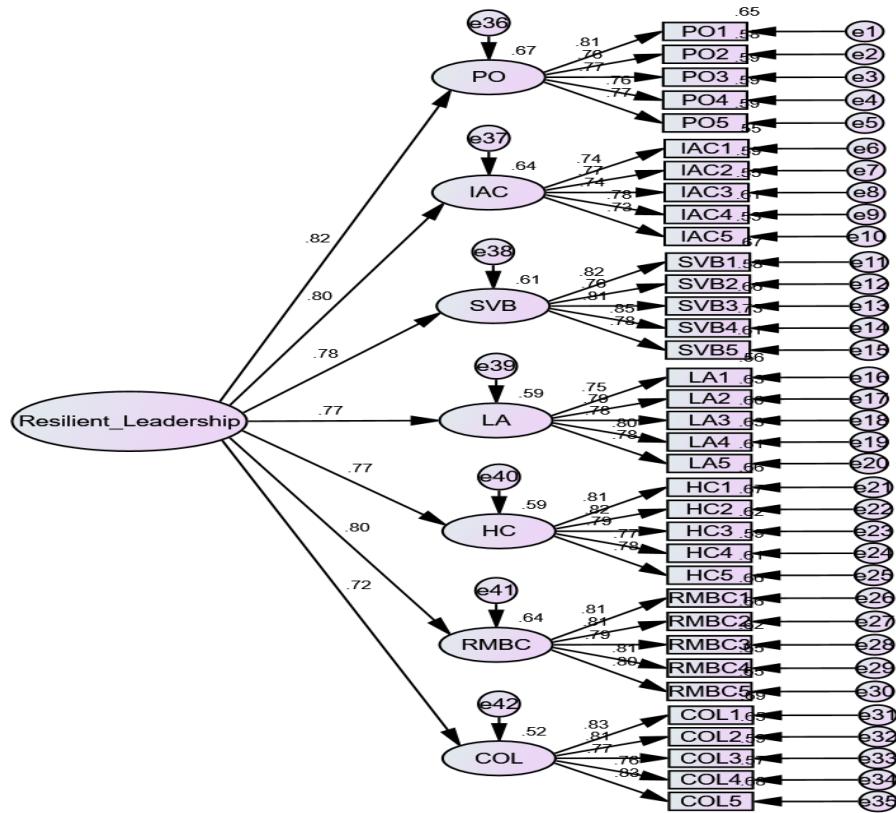


Figure1 The Second Order of Resilient Leadership Model

The second-order CFA model confirmed the hypothesis that resilient leadership is significantly influenced by the seven identified components. The model's structure, with each component contributing to an overarching resilience construct, was statistically significant ($p < 0.001$), with standardized path coefficients ranging from 0.72 to 0.85. This validation underscores the model's ability to explain how administrators can maintain efficiency and lead sustainably in VUCA environments, with Learning Ability (coefficient = 0.85) and Sustainability Values (coefficient = 0.83) emerging as pivotal drivers, corroborated by interview narratives.

In this confirmatory factor analysis, the latent variable "Resilient Leadership" demonstrates good explanatory power for its 7 observed variables (PO, IAC, SVB, LA, HC, RMBC, CO). The standardized factor loadings range from 0.724 to 0.820, all exceeding 0.7, indicating that each observed variable significantly reflects the latent factor. The Squared



Multiple Correlations (R^2) values range from 0.524 to 0.672, suggesting that 52.4% to 67.2% of the variance in each observed variable is explained by “Resilient Leadership,” surpassing the recommended threshold of 0.5. The average R^2 is 0.609, indicating strong convergent validity and explanatory power for the measurement model. Thus, the model is statistically valid and stable in measuring the latent construct “Resilient Leadership.” There are slight variations in how each variable reflects the factor; based on standardized factor loadings and R^2 values, PO (loading = 0.820, R^2 = 0.672) is the most influential variable, effectively capturing the latent construct’s characteristics. IAC and RMBC also show high explanatory power, while COL, with a standardized loading of 0.724 and R^2 of 0.524, is the least influential but still meets the statistical significance threshold (loading > 0.7).

Table 3 Factor Loadings and R^2 of the Variables in the Resilient Leadership Model

| | | Path | Estimate | Standardized Estimate | S.E. | C.R. | P | Squared Multiple Correlations (R^2) |
|------|----|----------------------|----------|-----------------------|-------|--------|-----|---|
| PO | <- | Resilient Leadership | 1 | 0.82 | | | | 0.672 |
| | -- | Resilient Leadership | | | | | | |
| IAC | <- | Resilient Leadership | 0.87 | 0.803 | 0.076 | 11.466 | *** | 0.645 |
| | -- | Resilient Leadership | | | | | | |
| SVB | <- | Resilient Leadership | 0.92 | 0.782 | 0.076 | 12.14 | *** | 0.611 |
| | -- | Resilient Leadership | | | | | | |
| LA | <- | Resilient Leadership | 0.869 | 0.768 | 0.077 | 11.289 | *** | 0.59 |
| | -- | Resilient Leadership | | | | | | |
| HC | <- | Resilient Leadership | 0.9 | 0.765 | 0.076 | 11.877 | *** | 0.586 |
| | -- | Resilient Leadership | | | | | | |
| RMBC | <- | Resilient Leadership | 0.986 | 0.799 | 0.08 | 12.263 | *** | 0.639 |
| | -- | Resilient Leadership | | | | | | |
| CO | <- | Resilient Leadership | 0.876 | 0.724 | 0.076 | 11.514 | *** | 0.524 |
| | -- | Resilient Leadership | | | | | | |

Correlation analysis (Pearson correlation) is used to determine the degree of association between two or more variables. It helps understand the interactions between variables and how they change with variations in other variables.



Table 4 Correlation Matrix Analyzes the Relationships Among the Seven Key Dimensions of Resilient Leadership

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--|----------|----------|----------|----------|----------|----------|-----|
| Performance Orientation | 1 | | | | | | |
| Innovation and Adaptive Capacity | 0.587*** | 1 | | | | | |
| Sustainability Values and Beliefs | 0.561*** | 0.532*** | 1 | | | | |
| Learning Ability | 0.569*** | 0.540*** | 0.532*** | 1 | | | |
| Healthy Culture | 0.551*** | 0.543*** | 0.584*** | 0.504*** | 1 | | |
| Risk Management and Buffering Capacity | 0.589*** | 0.585*** | 0.572*** | 0.534*** | 0.526*** | 1 | |
| Change Orientation | 0.520*** | 0.507*** | 0.513*** | 0.504*** | 0.502*** | 0.526*** | 1 |

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

This correlation matrix in table 4 analyzes the relationships among the seven key dimensions of resilient leadership. The results show significant positive correlations among all variables ($r = 0.502$ – 0.589 , $p < 0.001$), indicating that these factors collectively form an organic whole of resilient leadership. Specifically, Performance Orientation exhibits significant positive correlations with all other variables ($r = 0.520$ to 0.589 , $p < 0.001$), with the strongest correlation with Risk Management and Buffering Capacity ($r = 0.589$, $p < 0.001$) and the weakest with Change Orientation ($r = 0.520$, $p < 0.001$). Innovation and Adaptive Capacity correlates with other variables between 0.507 and 0.585 ($p < 0.001$), with the strongest link to Risk Management and Buffering Capacity ($r = 0.585$, $p < 0.001$). Sustainability Values and Beliefs shows the highest correlation with Healthy Culture ($r = 0.584$, $p < 0.001$) and significant positive correlations with others ($r = 0.513$ to 0.572 , $p < 0.001$). Learning Ability correlates with all variables between 0.504 and 0.569 ($p < 0.001$), reflecting stable positive relationships. Healthy Culture's correlations range from 0.502 to 0.584 ($p < 0.001$), with the strongest tie to Sustainability Values and Beliefs. Risk Management and Buffering Capacity shows correlations above 0.526 with all six other variables, particularly strong with Performance Orientation ($r = 0.589$, $p < 0.001$) and Innovation and Adaptive Capacity ($r = 0.585$, $p < 0.001$), suggesting a central role in the structure. Change Orientation, though with relatively lower correlations ($r = 0.502$ to 0.526 , $p < 0.001$), remains significant, supporting its validity as a component of resilient leadership. Overall, the seven variables exhibit moderate to strong significant positive correlations, aligning with theoretical expectations for the constructs.

Objective 3: Focus group discussion outcomes were synthesized using thematic



analysis, proposing guidelines by integrating quantitative findings (e.g., low Innovation scores) with expert opinions. In the VUCA era, administrators in Shaanxi Province's private universities must enhance resilient leadership to address challenges like policy shifts and resource constraints, supported by a validated model informed Objective 3, identifying Learning Ability (Mean = 3.476) and Sustainability Values and Beliefs (Mean = 3.455) as strengths, while highlighting weaknesses in other components. Supplementary dimensions, Digital Competency and Stakeholder Engagement, were added for a comprehensive framework.

To maintain strengths, administrators should invest in professional development via online courses and international programs (e.g., NIE Singapore, 2023), establish knowledge-sharing platforms, and promote sustainability through green campus initiatives and ESG principles, engaging students and staff in participatory efforts.

For improvement, Performance Orientation can be boosted with SMART goals, KPI systems, data analytics training, and feedback mechanisms, drawing from U.S. higher education practices. Innovation and Adaptive Capacity, limited by conservatism, requires design thinking and agile management training, plus incentives for cross-departmental collaboration, inspired by Harvard Business School Online. Healthy Organizational Culture, lacking psychological safety, needs anonymous feedback, counseling services, and inclusion policies, referencing Finland's mental health initiatives. Risk Management and Buffering Capacity, weakened by passive strategies, calls for annual crisis simulations, psychological support, and resource diversification via inter-institutional cooperation, per McKinsey's framework. Change Orientation, hindered by resistance, benefits from Kotter's 8-Step Change Model training, enhanced communication, and pilot projects, aligned with the UK's Advance HE framework.

For supplementary components, Digital Competency mandates EdTech and MIS training to optimize operations, while Stakeholder Engagement suggests advisory boards, communication forums, and social media engagement, mirroring U.S. alumni relations. Implementation involves modular training (blended formats), policy reforms with resilient leadership KPIs and funding, a resilience culture via recognition programs and retreats, and monitoring through KPI systems (e.g., recovery time) and annual audits with stakeholder feedback.

Research Discussion

Objective 1: From the research objectives, there were 7 components of administrators' resilient leadership in private university in Shaanxi province of China which consistent of :(1) Performance Orientation, (2) Innovation and Adaptive Capacity, (3) Sustainability Values and



Beliefs, (4) Learning Ability, (5) Healthy Culture, (6) Risk Management and Buffering Capacity, (7) Change Orientation. There were total 35 indicators of administrators' resilient leadership in private university in Shaanxi province of China. The identification of seven components aligns with global resilient leadership theories (e.g., Dartey-Baah, 2015) while reflecting Shaanxi's unique educational challenges, such as rural-urban disparities. Qualitative interviews revealed that administrators value learning (cited 20 times) and sustainability (15 times), yet struggle with innovation due to resource constraints (e.g., only 30% have AI training), consistent with Burnard and Bhamra's (2013) adaptive traits focus. This localized framework offers a scientific basis for further development, with potential for cross-regional application.

Objective 2: The validated model, supported by CFA, highlights Learning Ability and Sustainability Values as strengths, corroborated by Burnard and Bhamra's (2013) focus on continuous learning and Luthans' (2017) psychological capital. The model's fit indices ($CMIN/df = 1.664$, $RMSEA = 0.041$, $CFI = 0.959$) affirm its reliability, providing a tool for administrators to enhance resilience, though areas like Change Orientation (loading = 0.72) require targeted intervention, as noted in McLeod and Dulsky's (2021) pandemic leadership study, suggesting cultural resistance as a barrier.

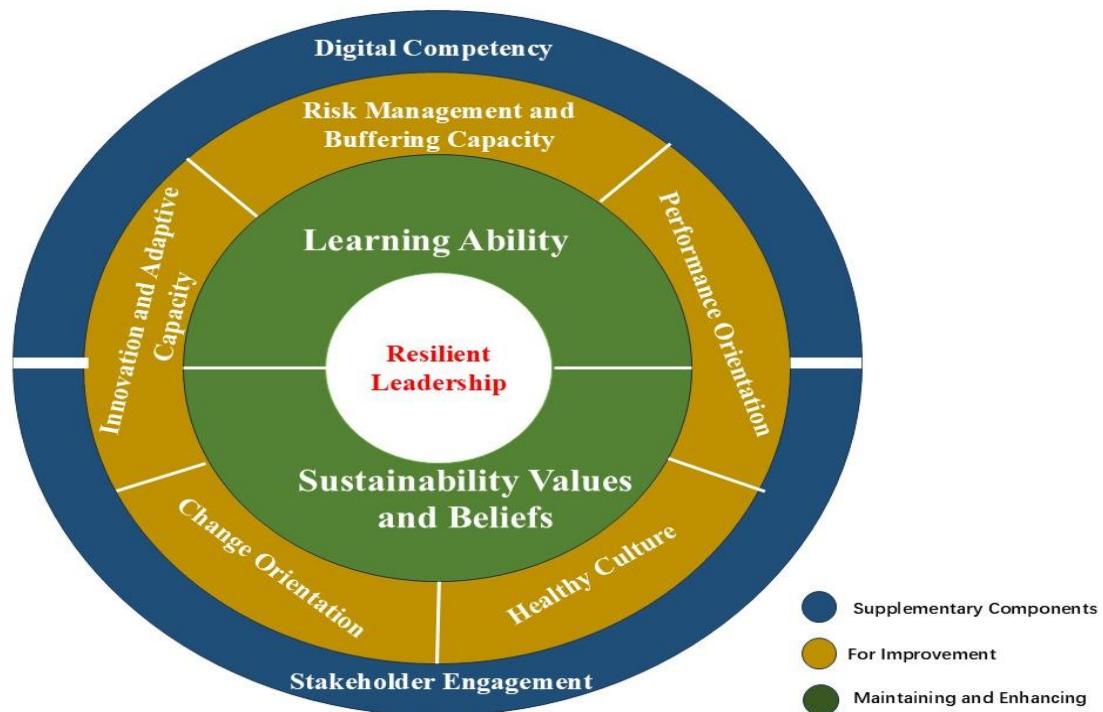


Figure 2 Resilient Leadership Model for Administrators in Private Universities in Shaanxi of China

Objective 3: The guidelines, derived from FGD and questionnaire feedback, identified



Learning Ability (Mean = 3.476) and Sustainability Values and Beliefs (Mean = 3.455) as strengths, while highlighting weaknesses in other components. Supplementary dimensions, Digital Competency and Stakeholder Engagement, were added for a comprehensive framework. Addressed deficiencies in Performance Orientation (score = 3.2/5) and Innovation (score = 3.0/5), aligning with Zhang et al.'s (2023) sustainable leadership insights. They integrate Chinese priorities (e.g., educational equity under the 14th Five-Year Plan) with global practices (e.g., mental health programs from the WHO 2024 report), offering a balanced approach to bolster resilience, though implementation may vary across institutions due to funding disparities.

Recommendation

For Policy: The Ministry of Education should integrate resilient leadership into the “China Higher Education Resilient Leadership Development Plan (2025–2035)”, aligning with the “Resolution on Several Major Issues” (2022) and the 14th Five-Year Plan’s education goals. A “Resilient Leadership Evaluation System” should be developed, drawing on the HK’s competency framework (2021) with KPIs like crisis response time, implemented via third-party audits by 2027. Training centers (e.g., one per province) and online platforms (e.g., MOOC-based) should be established, addressing resource gaps in private universities with a ¥10 million initial investment, phased over three years.

For Practice: Universities should implement modular training with case studies from Tsinghua’s COVID-19 response (2020, shifting 90% of classes online in two weeks), launch “Mental Health Days” inspired by Finland’s program (2023, reducing burnout by 15%), and conduct quarterly risk assessments using SWOT analysis, targeting 80% staff participation. Performance-based incentives and crisis simulations can reinforce these efforts, enhancing daily resilience, with pilot phases starting in Q1 2026.

For Further Research: Longitudinal studies across public and international universities (e.g., comparing Shaanxi with Shanghai) should refine the model, using mixed methods (e.g., surveys, ethnography) and multi-source data (e.g., 360-degree evaluations, student feedback), spanning 5–10 years. Structural Equation Modeling (SEM) could explore mediating factors like organizational culture, while qualitative research could expand indicators (e.g., ethical leadership), ensuring broader applicability and addressing current limitations, such as small sample size for rural areas.



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