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Organizational Culture and Leadership Interaction in Shaping Science Sustainable Results-Based Management

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Abstract

Background and Aim: Organizational culture plays a vital role in effective management and is central to the success of Results-Based Management (RBM), especially in promoting quality and sustainability. This study examines how organizational culture and leadership interact to influence science sustainable results-based management (RBM) at Chiang Rai Rajabhat University, Thailand. The guiding research question is: *How do cultural and leadership dimensions affect RBM effectiveness in a higher education context?*.

Materials and Methods: The research employed A mixed-method approach was employed, combining literature review, in-depth interviews, and a structured questionnaire survey targeting administrators, instructors, and support staff. The study focused on four cultural dimensions: involvement, consistency, adaptability, and mission, and four leadership dimensions: strategic direction, results-based planning, linking strategy to action, and creating change-enabling conditions.

Results: The research findings showed that organizational culture and leadership significantly influence science sustainable RBM ($p < .05$). Key predictors included the implementation of vision and mission through participatory leadership, as well as strong involvement culture and strategic alignment. These results support the Denison Organizational Culture Model and Transformational Leadership Theory, emphasizing shared values, strategic clarity, and performance-driven practices aligned with the UNDP/UNESCO RBM framework.

Conclusion: This study contributes new empirical insights into how culture and leadership jointly shape effective RBM in science-focused academic settings. The findings offer practical implications for institutional leaders aiming to foster sustainability and performance. Future research should explore longitudinal impacts and apply the model in diverse higher education environments.

Keywords: Organizational Culture; Leadership; Science Sustainable; Results-based Management; Transformational Leadership

Introduction

Organizations have increasingly struggled to respond effectively to rapid and disruptive changes, compelling them to critically reassess and re-engineer internal structures to adapt to dynamic environments and maintain their relevance. These contextual pressures are especially critical in higher education institutions, where performance, innovation, and stakeholder accountability must be continually balanced. This need aligns with the Results-Based Management (RBM) framework, which emphasizes outcomes, accountability, and performance-based planning in organizational systems (UNDP, 2009). Educational management, as a key mechanism of societal advancement, is an important and ongoing process. Every educational organization must formulate strategies aimed at improving the quality of education, expanding equitable access, and developing human potential comprehensively and sustainably.

Educational management clearly defines the objectives and functions of education and should be considered a national priority, requiring the collaboration of all stakeholders (Jedaman, P., 2021). Operational success depends upon the leadership of educational administrators and the cooperative

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engagement of personnel toward collective goals. Educational management is thus integrally linked to the enhancement of educational quality, which depends on effective leadership.

Leadership is defined as both a process and a capability through which leaders influence personnel to understand shared objectives, commit to collaborative action, and agree on methods and strategies to achieve organizational goals. According to Bass and Avolio's (1994) Transformational Leadership Theory, effective leaders demonstrate inspirational motivation, idealized influence, individualized consideration, and intellectual stimulation, which are critical for guiding educational institutions through change. Fundamental leadership competencies include vision articulation, passion, integrity, self-awareness, openness, maturity, curiosity, and the courage to challenge the status quo, all of which contribute to organizational effectiveness (Cook, J. D., and Wall, T. D., 2016).

Organizational administrators play a pivotal role in aligning operations with institutional goals. As the central figures in educational leadership, they are responsible for mobilizing internal cooperation and cross-functional collaboration to drive performance (Delahaye, B.L., 2005). Strategic leadership, as described by Denison (1990), also emphasizes the importance of adaptability, mission, involvement, and consistency as cultural traits that impact organizational performance. Successful educational leaders must not only be strategic thinkers and visionaries but also be respected and trusted by their teams (Mekto, B., 2017).

Despite the growing body of literature on leadership and organizational culture, there remains a limited understanding of how specific dimensions of organizational culture, as perceived by university personnel, interact with leadership styles to influence the effective implementation of science, sustainable results-based management in Thai Rajabhat Universities. Accordingly, this study addresses this gap by investigating the following focused research question:

"How do specific dimensions of organizational culture, as perceived by university personnel, interact with transformational leadership to influence the effective implementation of science-oriented Results-Based Management in a Thai Rajabhat University context?"

This question allows for a targeted exploration of theoretical integration and practical implications.

Therefore, educational administrators with transformational leadership qualities require not only knowledge and technical expertise but also a strong ethical foundation and moral compass, enabling the organization to build competitive advantage and long-term success (Hersey, P., and Blanchard, K.H., 2001). The development of educational organizations must aim to maximize benefits for the institution, its personnel, and stakeholders by aligning with the mission of future-ready education. This includes a systematic management approach to knowledge and competency development, skill enhancement, performance monitoring, and evaluation, consistent with the RBM framework's emphasis on results, transparency, and feedback loops (UNESCO, 2015; Ivancevich, J.M., 2007).

To achieve policy objectives, leaders must integrate strategic planning with personnel development and organizational learning. Leaders increasingly face complex challenges that require strategic leadership capacities, such as advanced decision-making, visionary thinking, and a commitment to moral and ethical standards (Wang FJ, et al., 2010). The personal characteristics and behavioral adjustments of executives are thus essential for effective change management. These adjustments support adaptive roles and innovative approaches, facilitating the achievement of organizational effectiveness.

Leadership strongly influences organizational performance, and organizational culture lies at the heart of successful operations. Organizational culture represents the shared beliefs, values, and assumptions that bind members together and shape behavior (Chams N, García-Blandón J., 2019). Even with clear policies and systems in place, organizations may fail if the cultural foundation is weak, marked by a lack of motivation, mistrust, or fragmentation. In such cases, productivity and collaboration suffer. The Denison Model (2000) identifies four key traits of high-performing cultures: involvement, consistency, adaptability, and mission, all of which must be cultivated by educational leaders to ensure alignment and accountability (Moungkonvanit, J., 2012).

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Organizational culture embodies the collective lifestyle, traditions, and social norms of a community that is passed on through generations. These elements evolve into shared practices, beliefs, and values that guide decision-making and behavior (Flynn, E. A., and Herrington, V., 2015). The ethical dimensions of culture become embedded in the organization's value system and directly influence its credibility and societal trust (Ancona, D., et al., 2007). Consequently, educational organizations must apply ethical leadership practices to resolve internal and external challenges effectively, thereby earning credibility and sustaining their reputation over the long term.

Leadership in educational organizations must, therefore, involve goal-setting, mobilization of stakeholder support, and a sustained commitment to achieving results under 21st-century disruptions and complexities (Sukkamat, A., Jadaman, P., et al., 2017). Organizational management and development, when approached as a strategic and cultural art form, can guide institutions toward excellence.

This research proposes an integrated conceptual framework that synthesizes Denison's Organizational Culture Model (1990, 2000) and Bass & Avolio's Transformational Leadership Theory (1994) to examine their interactive effect on the implementation of science-based Results-Based Management (RBM) in educational institutions. Rather than treating these theories as separate lenses, the framework posits that transformational leadership actively shapes organizational culture, which in turn moderates the operationalization of RBM, establishing a dynamic feedback loop that enhances institutional sustainability and performance. This integrated model offers actionable guidelines for developing organizational effectiveness through leadership and cultural alignment, thereby fostering a strategic pathway to sustainable educational transformation.

Objectives

To analyze of organizational culture within leadership affecting science sustainable results-based management at Chiang Rai Rajabhat University.

Literature review

1) Significance of Leadership Affecting Science Sustainable Results-Based Management

Leadership is a key factor affecting the performance of teams and organizations. Organizations require leaders to initiate, coordinate, direct, and control the performance of personnel to achieve the goals and objectives set by the organization. Leaders refer to individuals who are recognized or honored as capable of leading others toward shared objectives (Sanders, J.E., et al., 2019). The transformational leadership theory, as conceptualized by Bass and Avolio (1994), emphasizes that leaders influence followers through inspirational motivation, idealized influence, individualized consideration, and intellectual stimulation, thus creating the capacity for performance beyond expectations.

Beyond the foundational traits of transformational leadership, this study critically analyzes how such leadership through vision articulation, motivation, and individualized support interacts with organizational culture to operationalize science-oriented Results-Based Management (RBM). The integration of leadership with culture is particularly vital in higher education institutions navigating sustainability demands. This study draws on concepts from organizational behavior and public administration to link leadership influence with institutional accountability and change management, which RBM emphasizes.

This includes determining the organization's direction, formulating a strategy aligned with measurable outcomes (as emphasized in the RBM framework), linking strategy to operational action, and fostering enablers of change (Jedaman, P., et al., 2021). Therefore, a leader is an influential person who empowers others to collaboratively achieve goals and drive results, embodying the essence of effective leadership (Pearson-Goff, M., and Herrington, V., 2013).

Leadership is defined as the ability of leaders to use their influence to motivate and enable cooperation among subordinates in order to accomplish organizational objectives. Effective leadership in organizational management entails having a vision, developing strategies, setting clear goals, and fostering

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a sustainable corporate mission. This also involves shaping a culture and climate that supports proactive learning, embraces innovation, and utilizes communication technologies.

Creating a shared vision, as emphasized by transformational leadership, entails guiding the organization through a collective understanding of its goals, mission, and values. A compelling vision must resonate with personal and organizational values to inspire commitment and innovation (Liu CH., 2007). This concept parallels Denison's "Mission" dimension, where vision and goals guide members' actions and establish strategic direction.

The theoretical integration of Bass and Avolio's leadership dimensions with Denison's organizational culture model suggests that effective implementation of RBM requires leadership behaviors that shape a culture of adaptability, clarity of mission, and involvement. This integration addresses a key literature gap by connecting leadership influence directly to the cultural conditions necessary for sustained RBM performance in educational settings.

Co-vision, or mutual goal-setting through shared understanding and active participation, is crucial for mobilizing organizational members toward future-oriented objectives (Rooncharoen, T., 2016). Inspirational leadership empowers personnel to realize their full potential, rather than merely motivating them. Transformational leadership fosters an environment where human capital is developed through competency-building, innovation, and continuous learning.

Organizational leaders play a central role in translating vision into action by coordinating policies, strategies, and practices, ultimately leading to organizational effectiveness. This aligns with RBM principles, where leadership ensures accountability, defines measurable outcomes, and fosters continual improvement toward policy objectives (Yukl, G. A., 2018).

Key qualities such as competency, human resource development, organizational culture, ethics, and creative thinking are foundational attributes for all organizational members (Ulrich David, Dulebohn James H., 2015). These qualities must be developed and aligned with the strategic direction and vision of the leadership. Human resource development, therefore, seeks to equip personnel with the necessary skills and organizational understanding (Boudreau JW, Ramstad PM, 2015). Leadership encompasses the ability to determine organizational direction, develop strategies based on results, link strategy to action, and foster conditions that support transformational change. RBM integrates these aspects by emphasizing strategic alignment, accountability, and the measurement of results. Effective leadership fosters a performance-based culture that continually improves organizational capabilities (Jedaman, P., et al., 2017).

Additionally, the concept of situational leadership recognizes that leadership behaviors must be adaptable to context, reinforcing the need for leaders to inspire motivation across diverse environments (Jackson, S.E., et al., 2009). Leaders must exhibit self-reliance, emotional intelligence, and communication skills to instill trust and cooperation, thus enabling successful mission execution.

In summary, this study explores how transformational leadership, when combined with cultural values such as adaptability and mission clarity, enables the operationalization of science-based sustainable RBM. This theoretical synthesis contributes new insights into how leadership and culture interact not separately but dynamically to shape sustainable institutional performance.

2) Organizational Culture Affecting Science Sustainable Results-Based Management

Organizational culture significantly influences organizational effectiveness, often becoming a source of competitive advantage (Schafer, J. A., 2016). The Denison Organizational Culture Model identifies four key cultural traits—involvement, consistency, adaptability, and mission—that collectively enhance organizational performance.

Culture reflects the shared assumptions, values, and beliefs that guide behavior within the organization. It is shaped by the organization's response to both internal and external challenges and transmitted to its members (Jedaman P., 2018). Cultural dimensions such as involvement, consistency, adaptability, and mission are central to supporting RBM by aligning people, processes, and goals.

Building on existing research on the influence of organizational culture (Dhiravegin, 2017; Kaneko & Yimruan, 2017), this study seeks to explore the nuanced interactions between organizational culture,

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leadership, and sustainable results-based management in the context of a Thai university. While prior research often analyzes culture or leadership in isolation, this study integrates them to assess how specific cultural dimensions amplify or constrain the influence of transformational leadership within RBM implementation.

To survive and grow in a dynamic environment, organizations must foster a culture rooted in shared values, which enhances coordination, innovation, and resilience (Sims, R.R., 2007). Cultural adaptation to external pressures, such as competition and economic volatility, is essential.

Two major dimensions influence organizational culture: (1) Internal Environment led by leadership and personnel who model and reinforce cultural values; and (2) External Environment influenced by stakeholders, technology, societal norms, and economic conditions. Effective leadership must align organizational culture with these external forces to foster RBM success.

The integration of Denison's cultural dimensions into science, sustainable results-based management can be detailed as follows:

Involvement Culture: Emphasizes empowerment, information access, teamwork, and continuous competency development. This fosters engagement and aligns with RBM's participatory management focus.

Consistency Culture: Supports strong core values, coordination, and agreement among teams, enabling coherent implementation of strategies.

Adaptability Culture: Reflects responsiveness to change, customer focus, and organizational learning. It complements the RBM goal of continuous improvement through feedback loops.

Mission Culture: Provides clarity of purpose, strategic intent, and long-term direction, aligning people and activities with the organization's vision.

These dimensions, when fostered by transformational leadership, become mechanisms for embedding RBM principles within institutional practice.

3) Science Sustainable Results-Based Management

Results-Based Management (RBM) is a management approach focused on achieving tangible outcomes aligned with policy and strategic goals. According to the UNDP and UNESCO RBM frameworks, RBM encompasses the identification of clear objectives, performance indicators, and measurement systems to monitor progress and allocate resources effectively (Decenzo et al., 2005).

RBM emphasizes outputs and results rather than activities, ensuring that all operations contribute meaningfully to organizational missions. The approach includes strategic planning, performance monitoring, stakeholder alignment, and resource optimization, ensuring efficiency and effectiveness.

The essential components of RBM include: (1) Clear policies, missions, and measurable goals; (2) Output- and outcome-oriented focus; (3) Integration of planning, implementation, and evaluation; (4) Decentralized decision-making and accountability; and (5) Alignment between culture, human capital, and performance systems. RBM fosters a results-driven culture that is supported by leadership and organizational culture, ensuring continuous improvement and sustained impact. When integrated with transformational leadership and a supportive organizational culture (per Denison), science-based, sustainable, results-based management becomes a strategic enabler of organizational success.

While previous studies have examined the individual effects of leadership and organizational culture on organizational performance, this study investigates the synergistic effects of these factors on the implementation of science sustainable results-based management in a specific higher education setting in Thailand. This study extends the work of Mitprasat et al. (2024) by focusing on the specific context of a Thai Rajabhat University and examining the role of sustainable results-based management. It also builds upon Yadav's (2024) findings on the importance of organizational culture by exploring its specific dimensions in relation to leadership and sustainable practices.

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Conceptual Framework

In this regard, the organizational culture within leadership affecting science sustainable results-based management, along with guidelines for developing effectiveness, is critical to achieving the strategic objectives and long-term organizational goals. These essential characteristics reflect an organization that possesses a clear mission, a long-term direction, and a shared understanding among personnel. The mission and strategic intent serve as practical frameworks to guide operational practices.

The organization sets goals that are both challenging and realistic, with clearly defined performance-oriented targets aligned to its vision. All stakeholders must contribute collaboratively to achieving these targets with shared responsibility for enhancing performance, efficiency, and measurable results, which is central to the Results-Based Management (RBM) Framework advocated by UNDP and UNESCO.

According to Denison (1990, 2000), a high-performing organization culture integrates involvement, consistency, adaptability, and mission, which collectively contribute to sustained effectiveness. These cultural dimensions enhance internal integration, adaptability to external environments, and clarity in mission execution, each a foundation for aligning culture with performance outcomes.

Additionally, Transformational Leadership Theory (Bass & Avolio, 1994) emphasizes that leaders must possess the ability to articulate a compelling vision, stimulate intellectual engagement, provide individualized consideration, and demonstrate idealized influence. These leadership behaviors empower personnel, foster trust, and motivate shared commitment toward collective goals.

Therefore, the constructed model incorporates the dynamic interaction between transformational leadership behaviors and the cultural dimensions of the organization, working synergistically to influence science sustainable results-based management. The model also integrates the principles of the RBM framework, including clarity of objectives, participatory planning, performance monitoring, and outcome-based evaluation.

This conceptual integration is illustrated in Figure 1, which represents the theoretical framework guiding the study:

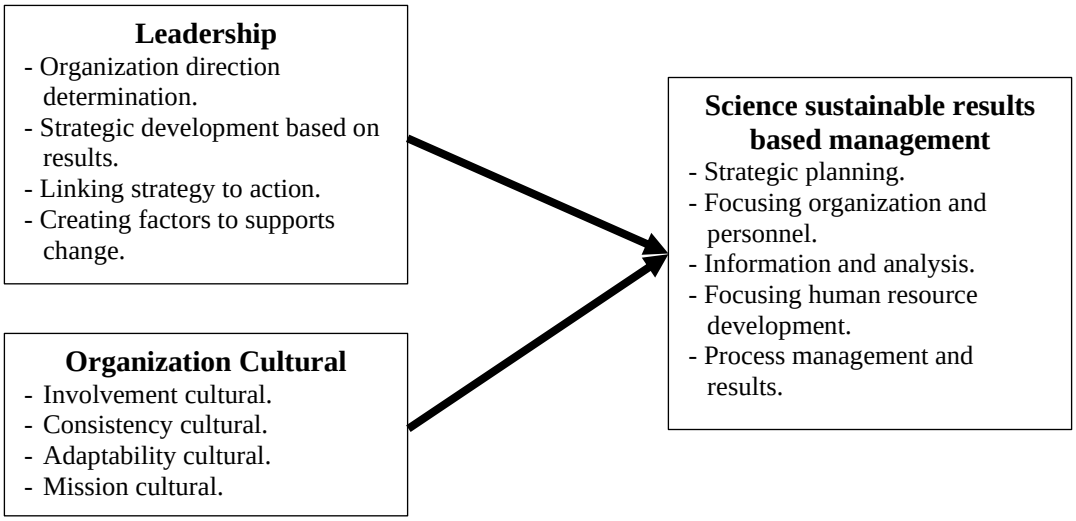

Figure 1 Theoretical Framework of Organizational Culture within Leadership Affecting Science Sustainable Results-Based Management.

Methodology

1. Research Methods:

This study employed a mixed-methods research design, integrating both qualitative and quantitative approaches through participatory action learning, to analyze the organizational culture within leadership

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affecting science sustainable results-based management at Chiang Rai Rajabhat University, Thailand. The research focused particularly on administrators, instructors, and support personnel, aiming to explore the contextual and organizational landscape underpinning the subject under investigation.

A mixed-methods approach was chosen to allow for both depth and breadth in understanding complex organizational dynamics. The qualitative interviews were used to explore the underlying mechanisms through which organizational culture and leadership influence sustainable results-based management. The quantitative survey was then used to test the generalizability of these findings to a larger sample. This design enabled triangulation of data and a comprehensive understanding of both subjective experiences and statistically significant patterns.

The qualitative component involved synthesizing documentary analysis and conducting in-depth interviews, reflecting multi-contextual and cross-cultural perspectives, with 20 key informants selected through purposive sampling. The qualitative analysis explored dimensions of organizational culture, namely involvement culture, consistency culture, adaptability culture, and mission culture (Denison, 1990, 2000), as well as leadership functions including organization direction determination, strategic development based on results, linking strategy to action, and creating factors that support change, all within the context of science-based, sustainable, results-based management.

The quantitative component utilized a structured questionnaire survey administered to a sample of 270 participants, comprising administrators, instructors, and support staff.

The sample was selected through a multi-stage random sampling process consisting of three stages:(1) First stage – Stratified the university's population into three main groups: administrators, instructors, and support staff. (2) Second stage – Randomly select faculties and departments proportionately from each stratum. (3) Third stage – Within each selected unit, respondents were chosen using simple random sampling based on employee lists. The sample size of 270 participants was determined using the Taro Yamane formula (with a 95% confidence level and 5% margin of error), ensuring statistical adequacy for multiple regression analysis and inferential statistics.

2. Research Instruments:

The research employed two primary instruments: the structured interview protocol and the quantitative questionnaire, both developed to examine organizational culture within leadership affecting science, sustainable results-based management.

The interview instrument consisted of open-ended questions, designed to align with the study's objectives and ensure content validity through expert review for objective congruence. The interview items focused on exploring the lived experiences and perceptions of administrators regarding leadership and cultural dimensions.

All interviews were recorded (with participant consent), transcribed verbatim, and subjected to a content validation process conducted by three experts in public administration and organizational development.

The questionnaire instrument was developed as a semi-structured tool utilizing a 5-point Likert rating scale, divided into five distinct parts as follows:

Part 1: Demographic characteristics of respondents

Part 2: Items measuring factors of leadership affecting science, sustainable results-based management

Part 3: Items measuring factors of organizational culture affecting science, sustainable results-based management

Part 4: Items assessing the overall effectiveness of science, sustainable results-based management

Part 5: Open-ended items for recommendations and guidelines aimed at developing management effectiveness

All questionnaire items were validated for content congruence and subjected to pre-testing. The Cronbach's alpha coefficient obtained from the pilot test yielded a reliability score of 0.89, indicating a high level of internal consistency for the research instrument.

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3. Data Collections:

The data collection process was carried out in three sequential stages:

a) Analysis Stage: This stage involved a comprehensive documentary review, including relevant concepts and theoretical frameworks, to construct and refine the conceptual framework for analyzing the organizational culture within leadership affecting science, sustainable results-based management.

In-depth interviews were conducted with 20 purposively selected key informants using a structured interview guide. The interviews explored their perceptions and experiences within multicultural and organizational contexts. Interview sessions were conducted face-to-face, and the interviews were audio-recorded, transcribed, and reviewed for accuracy.

b) Synthesis Stage: This phase involved further literature review and synthesis of empirical studies related to transformational leadership, the Denison Culture Model, and sustainable results-based management. The data-informed refinement of both the interview guide and questionnaire items.

Themes and indicators from this stage were used to construct the measurement framework and align it with the theoretical constructs of the study.

c) Assessment Stage: This stage involved the quantitative data collection through the structured questionnaire survey with 270 respondents. The survey was conducted both online and in-person, depending on participant availability. The data provided empirical support for the conceptual relationships identified in the qualitative phase.

4. Inquiries Method: The data analysis of organizational culture within leadership affecting science sustainable results-based management, and the guidelines for enhancing effectiveness, were carried out using both qualitative and quantitative methods, as follows:

Qualitative Data Analysis: The qualitative data were analyzed using the three-phase model by Miles and Huberman (1994): (1) Data Reduction – Raw transcripts were reviewed and segmented into meaning units. Codes were assigned to significant phrases reflecting leadership and cultural constructs. (2) Data Organization – Codes were grouped into categories and then aggregated into broader themes aligned with the Denison Culture Model and Transformational Leadership Theory. (3) Data Interpretation – A thematic analysis approach was used to identify underlying mechanisms and causal patterns linking leadership and organizational culture with RBM implementation. Triangulation with documentary analysis enhanced the credibility of the findings.

Quantitative Data Analysis: Quantitative data were analyzed using both descriptive and inferential statistics as follows:(1) Descriptive Statistics: Mean and standard deviation were used to summarize perceptions of leadership, culture, and management effectiveness. (2) Inferential Statistics: Pearson's product-moment correlation coefficient assessed relationships between key variables. Multiple regression analysis examined the extent to which leadership and organizational culture predicted science sustainable results-based management.

These techniques were selected to address the research objectives, test hypotheses, and determine the strength and significance of predictive relationships. All statistical analyses were performed using SPSS software, with a significance level set at 0.05.

This mixed-methods inquiry design enabled validation across qualitative insights and quantitative generalizability, offering a holistic understanding of organizational mechanisms influencing science-based RBM in a Thai higher education context.

Results

Research results on organizational culture within leadership affecting science, sustainable results-based management were followed:

1. Organizational culture within leadership affecting science, sustainable results-based management.

The organizational culture, comprising dimensions of involvement culture, consistency culture, adaptability culture, and mission culture, interacts with leadership dimensions, including organization direction determination, strategic development based on results, linking strategy to action, and creating factors to support change in shaping science sustainable results-based management. These components, along with their corresponding sub-factors and indicators, are presented in Table 1.

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Table 1 Factors, sub-factors, and indicators of organizational culture within leadership affecting science-based, sustainable, results-based management.

Factors	Sub-factors	Indicators
1. Organizational culture affecting science, sustainable results-based management.	***1.1 Involvement cultural.***	1) Emphasis on the delegation of operational authority to personnel and operators at all levels 2) Encouraging operational personnel to choose a course of action within the legal frameworks 3) Enhancement of accessibility and knowledge of information necessary for a wide range of operations 4) Emphasis on teamwork 5) Personnel competency development at all levels
	1.2Consistency cultural.	1) Having clearly shared values 2) Jointly establishing a clear agreement on the right course of action 3) Seeking cooperation and coordination among various sectors 4) Resource management aligned in the same direction 5) Integration of collaborative operations
	1.3 Cultural adaptability.	1) Adapting to internal and external environmental changes 2) Applying environmental analysis to improve operations 3) Incorporating stakeholder inputs to align operations with evolving needs 4) Promoting learning exchange across personnel 5) Utilizing mistakes as learning opportunities to develop new practices
	1.4 Mission cultural.	1) Establishing clear goals and a strategic direction 2) Demonstrating commitment to achieving objectives 3) Ability to work toward a shared future vision 4) Organizational adherence to mission, vision, and strategic goals as operating frameworks
2. Leadership affecting science, sustainable results-based management.	***2.1 Organization direction determination.***	1) Defining the organizational vision and mission through contextual analysis 2) Operationalizing the vision and mission to guide the organization 3) Utilizing external environmental analysis to determine direction 4) Utilizing internal environmental analysis to shape strategy 5) Involving stakeholders in setting directions for projects and activities 6) Effectively communicating the vision and mission to personnel for practical implementation
	2.2 Strategic development based on results.	1) Conducting a SWOT analysis to inform strategic planning 2) Utilizing internal and external resources effectively in strategic formulation 3) Involving administrators, personnel, and stakeholders in strategic formulation 4) Jointly setting operational standards that reflect

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Factors	Sub-factors	Indicators
		service user needs 5) Establishing cost-effective and efficient resource usage guidelines collaboratively
	2.3 Linking strategy to action.	1) Translating strategies and policies into actionable plans 2) Planning and allocating resources to support implementation 3) Aligning strategic execution with organizational culture and structure 4) Aligning strategy with human resource capabilities 5) Ensuring practical implementation of the strategy.
	2.4 Creating factors to support change.	1) Delegating decision-making authority appropriately 2) Defining criteria for resource allocation 3) Implementing plans, projects, and activities ethically 4) Developing human resources to adapt to changing environments 5) Involving communities and local stakeholders in the change process 6) Supporting the use of modern technologies to enhance operations.

Table 1 highlights the interrelated elements of organizational culture and leadership functions that contribute to science-based, results-based management. Within the involvement culture, the emphasis lies in the delegation of operational authority, empowerment of personnel, access to information, collaborative teamwork, and competency development at all levels, which align with Denison's (1990, 2000) model that emphasizes participation and capability-building as keys to performance improvement.

The consistency culture stresses the importance of shared values, coordinated decision-making, sectoral cooperation, and integrated operations, which foster internal alignment and organizational coherence necessary for successful strategy execution (Denison, 2000).

The adaptability culture reflects an organization's capacity to adjust to internal and external changes, utilize environmental scanning for improvement, incorporate stakeholder input, and create a learning-oriented environment, consistent with continuous improvement principles found in Results-Based Management (RBM) frameworks by UNDP and UNESCO.

The mission culture ensures clarity of purpose through goal-setting, vision alignment, and commitment to long-term objectives, guiding organizational members towards a shared vision, which is a central element of transformational leadership theory (Bass & Avolio, 1994).

In terms of leadership, the function of organization direction determination involves a comprehensive situational analysis and vision formulation by leveraging both internal and external contexts, followed by effective dissemination of that vision throughout the organization. Strategic development based on results requires collaborative strategic formulation that incorporates SWOT analysis and resource optimization, directly supporting RBM's emphasis on accountability and outcome-based planning. Linking strategy to action ensures that plans are not only well-conceived but effectively translated into concrete operations, with attention to resource planning, structural alignment, and HR capabilities, ensuring implementation fidelity.

Finally, creating factors that support change involves delegated empowerment, ethical practices, technology adoption, and community participation, thus cultivating an organizational ecosystem ready to sustain innovation and respond dynamically to change. This integrated model of organizational culture within leadership emphasizes the multidimensional interdependence required to achieve science-based sustainable results, particularly within academic institutions.

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2. Relationship of factors to organizational culture within leadership affecting science, sustainable results-based management.

1) Levels to leadership of organization direction determination, strategic development based on results, linking strategic to action, creating factors to supports of the change to shown as table 2, organization cultural of involvement cultural, consistency cultural, adaptability cultural, mission cultural to shown as table 3, and effecting of science sustainable results based management of strategic planning, focusing organization, personnel, information and analysis, focusing human resource development, process management and results to shown as table 4.

Table 2 Mean, standard deviation, and levels of leadership affecting science sustainable results-based management.

No.	Leadership Affecting Science Sustainable Results-Based Management.	Mean	Std.	Levels
1.	Organization direction determination.	3.85	0.68	High
2.	Strategic development based on results.	3.77	0.71	High
3.	Linking strategy to action.	4.03	0.65	High
4.	Creating factors to support change.	4.08	0.66	High
	Totals	**3.93**	**0.58**	**High**

On Table 2. Levels of leadership affecting science sustainable results based management of organization direction determination, strategic development based on results, linking strategic to action, creating factors to support the change at level of high levels (Mean of 3.93, Std. of 0.58). This reflects a generally strong perception among respondents regarding the role of leadership in supporting sustainable, results-oriented practices within the organization. When considering each aspect, the aspect with the highest mean is creating factors to support the change (Mean of 4.08, Std. of 0.66). This implies that respondents perceive leaders as highly capable in fostering conditions for organizational change, such as empowering personnel, promoting ethical practices, encouraging community engagement, and integrating modern technologies. Followed by linking strategy to action (Mean of 4.03, Std. of 0.65), this reflects the leadership's competence in effectively transforming policy into practice through appropriate resource planning, human resource alignment, and structural adaptation. Organization direction determination (Mean of 3.85, Std. of 0.68). This suggests that leaders are recognized for providing strategic direction based on contextual analysis, stakeholder participation, and vision communication, though with slightly more variation in respondent views. And strategic development based on results (Mean of 3.77, Std. of 0.71), respectively. It signals that aspects such as evidence-based planning, stakeholder inclusion in strategy development, and resource optimization may require further enhancement.

The findings underscore that leadership in this context is perceived as particularly strong in enabling change and translating strategy into action. However, strategic development processes may benefit from greater consistency and alignment across departments.

Table 3 Mean, standard deviation, and levels of organizational culture affecting science-based, sustainable results-based management.

No.	Organization Cultural Affecting Science Sustainable Results-Based Management.	Mean	Std.	Levels
1.	Involvement cultural.	4.10	0.62	High
2.	Consistent cultural.	4.06	0.66	High
3.	Adaptability cultural.	3.94	0.70	High
4.	Mission cultural.	4.02	0.65	High
	Totals	**4.03**	**0.60**	**High**

On Table 3. Levels of organizational culture affecting science, sustainable results, based management of involvement, cultural consistency, adaptability, and mission culture at level of high levels (Mean of 4.03, Std. of 0.60). This indicates that respondents perceived a generally strong and supportive organizational culture as a key enabler of sustainable, results-oriented practices. When considering each aspect, the aspect with the highest mean is involvement cultural (Mean of 4.10, Std. of 0.62), suggesting that participants perceived their organization as fostering empowerment, promoting decentralized decision-making, and emphasizing team-based operations and professional development. Followed by consistent

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cultural (Mean of 4.06, Std. of 0.66), implying that organizational members value shared norms and cooperation. The moderately high mean suggests strong alignment in principles and practices, including resource coordination and collective decision-making. Mission cultural (Mean of 4.02, Std. of 0.65), indicating clear communication of strategic intent and shared vision. Respondents appear to recognize the importance of working toward common goals. And adaptability cultural (Mean of 3.94, Std. of 0.70), respectively. This highlights a relatively weaker perception of the organization's responsiveness to change and stakeholder input.

Overall, the findings underscore the critical role of organizational culture in shaping science's sustainable results-based management. In particular, involvement and consistency cultures appear to be especially well-established, while adaptability culture may benefit from further strengthening to enhance organizational learning and responsiveness in dynamic environments.

Table 4 Mean, standard deviation, and levels of effect of science sustainable results-based management.

No.	Effect of Science Sustainable Results-Based Management	Mean	Std.	Levels
1.	Strategic planning.	4.28	0.51	High
2.	Focusing on organization and personnel.	4.35	0.48	Highest
3.	Information and analysis.	4.12	0.54	High
4.	Focusing on human resource development.	4.33	0.49	Highest
5.	Process management and results.	3.89	0.60	High
	Totals	**4.19**	**0.52**	**High**

On Table 4. Levels of effectiveness of science, sustainable results-based management of strategic planning, focusing on organization, personnel, information, and analysis, focusing on human resource development, process management, and results at of high level (Mean of 4.19, Std. of 0.52). This indicates that respondents generally perceive the implementation of results-based management in scientific and academic contexts as highly effective. When considering each aspect, the aspect with the highest mean is focusing on organization and personnel. (Mean of 4.35, Std. of 0.48), This suggests that the organization places strong emphasis on aligning people and operations with strategic goals and cultivating an institutional culture that supports engagement and empowerment. Followed by focusing on human resource development (Mean of 4.33, Std. of 0.49), highlighting that ongoing staff capacity building, professional learning, and adaptability are key priorities within the RBM framework. This reflects the organization's commitment to equipping personnel with skills and competencies necessary for sustainable development and innovation. Strategic planning (Mean of 4.28, Std. of 0.51), which demonstrates the effective formulation and implementation of forward-looking strategies that are grounded in contextual analysis, resource optimization, and performance alignment. This finding emphasizes the centrality of strategic clarity in fostering results-driven management. Information and analysis (Mean of 4.12, Std. of 0.54) shows that the organization recognizes the value of evidence-based decision-making. Process management and results (Mean of 3.89, Std. of 0.60) received the lowest mean score, indicating that while the outcomes are satisfactory, there may be gaps in operational efficiency, workflow integration, or performance tracking mechanisms. Respectively.

These findings underscore that while strategic alignment, people-focused development, and planning are organizational strengths, there is a clear opportunity for improvement in the areas of process execution and data-driven evaluation to ensure a fully integrated results-based management system.

2) Relationship between leadership and organizational culture affecting science sustainable results-based management, as shown in Table 5.

* Symbols.

Leadership (LDS), organization direction determination (LDS_1), strategic development based on results (LDS_2), linking strategy to action (LDS_3), creating factors to support change (LDS_4).

Organization culture (OC), involvement cultural (OC_1), consistency cultural (OC_2), adaptability cultural (OC_3), mission cultural (OC_4).

Effecting science sustainable results-based management (ERB), strategic planning (ERB_1), focusing organization and personnel (ERB_2), information and analysis (ERB_3), focusing human resource development (ERB_4), process management and results (ERB_5).

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Table 5 Correlation Matrix between Leadership (LDS), Organizational Culture (OC), and Effectiveness of Science Sustainable Results-Based Management (ERB).

Variable	LDS_1	LDS_2	LDS_3	LDS_4	LDS	OC_1	OC_2	OC_3	OC_4	OC	ERB_1	ERB_2	ERB_3	ERB_4	ERB_5	ERB
LDS_1	1	.74**	.63**	.55**	.60**	.42*	.55**	.60**	.59**	.53**	.22	.33*	.18	.35*	.48**	.42*
LDS_2		1	.66**	.58**	.64**	.46**	.50**	.48**	.47**	.51**	.29*	.36*	.21	.42*	.40*	.43*
LDS_3			1	.69**	.66**	.59**	.53**	.52**	.50**	.55**	.31*	.38*	.24	.40*	.36*	.45**
LDS_4				1	.68**	.58**	.55**	.61**	.63**	.60**	.30*	.41*	.29*	.44**	.39*	.47**
LDS					1	.61**	.63**	.65**	.64**	.68**	.35*	.42*	.30*	.47**	.43*	.52**
OC_1						1	.62**	.66**	.61**	.70**	.33*	.39*	.26*	.41*	.38*	.49**
OC_2							1	.58**	.56**	.64**	.30*	.36*	.23	.38*	.35*	.44**
OC_3								1	.65**	.68**	.28*	.32*	.21	.35*	.33*	.41*
OC_4									1	.66**	.27*	.34*	.25*	.39*	.37*	.43*
OC										1	.40*	.48**	.33*	.52**	.49**	.57**
ERB_1											1	.46**	.32*	.48**	.36*	.55**
ERB_2												1	.38*	.45**	.41*	.52**
ERB_3													1	.35*	.39*	.44**
ERB_4														1	.43*	.50**
ERB_5															1	.45**
ERB																1

On Table 5, the total score for Leadership (LDS) showed a moderate positive correlation with the effectiveness of science sustainable results-based management (ERB) at a statistically significant level of 0.01 ($r = .52$, $p < .01$). This suggests that strong leadership practices such as setting strategic direction, ensuring implementation linkage, and creating supportive conditions for change are moderately associated with improved outcomes in sustainable, results-based management. Among the leadership dimensions, Creating factors to support change (LDS_4) showed the strongest correlation with ERB ($r = .47$, $p < .01$), highlighting the importance of leadership in fostering supportive conditions that facilitate sustainable and effective results-based practices. The total score for Organizational Culture (OC) demonstrated a strong positive correlation with ERB at the 0.01 significance level ($r = .57$, $p < .01$). This implies that a cohesive, adaptive, and participatory organizational culture significantly contributes to the success of results-based management. Among all cultural dimensions, Involvement Culture (OC1) had the highest individual correlation ($r = .49$, $p < .01$), emphasizing the importance of employee empowerment, teamwork, and inclusive decision-making in driving effective management outcomes.

All correlation coefficients fall below the multicollinearity threshold ($r < .80$), confirming that there is no problematic interdependence among the variables and they are suitable for inclusion in the regression analysis.

3) Multiple regression analysis of the influences of leadership and organizational culture affecting science sustainable results-based management to shown in Table 6.

Table 6 Multiple regression analysis on the influence of leadership and organizational culture on science, sustainable results-based management.

Variable	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	b	S.E.	β			Tolerance	VIF
Constant.	1.183	0.053		2.232	0.027*		
Leadership (LDS)	0.164	0.048	0.391	3.417	0.001*	0.872	1.15
Organizational culture (OC)	0.524	0.079	0.629	6.633	0.000**	0.872	1.15

Adjusted R^2 of 0.689, F-Value of 68.415, Sig of .000**

In Table 6, the multiple regression analysis examined the influence of leadership (LDS) and organizational culture (OC) on science sustainable results-based management (ERB). The adjusted R^2 value of 0.689 indicates that 68.9% of the variance in ERB can be explained by the combined influence of leadership and organizational culture. This model is statistically significant ($F = 68.415$, $p < .001$), demonstrating strong explanatory power.

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The standardized regression coefficient for organizational culture ($\beta = 0.629$, $p < .001$) was higher than that for leadership ($\beta = 0.391$, $p = .001$), suggesting that organizational culture has a greater relative influence on ERB compared to leadership. The unstandardized coefficient for OC ($b = 0.524$) indicates that a one-unit increase in perceived organizational culture results in a 0.524-unit increase in ERB, assuming leadership is held constant. Likewise, a one-unit increase in leadership predicts a 0.164-unit increase in ERB, holding organizational culture constant. Collinearity statistics (Tolerance = 0.872; VIF = 1.15) confirm that there is no multicollinearity between the predictors, supporting the robustness of the model.

In summary, these findings affirm the critical roles of both leadership and organizational culture in driving the effectiveness of science, sustainable results-based management. However, organizational culture exerts a stronger predictive impact, highlighting the importance for institutions to not only strengthen leadership capacity but also foster cultural elements—such as empowerment, coherence, adaptability, and mission alignment—that support long-term effectiveness.

3. Guidelines for developing the effectiveness of affecting science-based sustainable results management.

The guidelines for enhancing the effectiveness of science, sustainable results-based management are as follows:

1) Strategic Planning: Leadership should drive the formulation and implementation of clear, coherent, and forward-looking strategic plans that align with the organizational mission in science and sustainability. These plans must integrate long-term vision, stakeholder needs, and measurable goals, as emphasized in the RBM framework. Strategic planning should encourage cross-functional collaboration and anticipate future scientific and societal challenges (UNESCO, 2017).

2) Focusing Organization and Personnel: An effective organizational culture must promote alignment between institutional goals and individual roles. Leadership should cultivate shared values and a unified direction among personnel. This includes assigning responsibilities based on competencies, ensuring role clarity, and fostering collective commitment. A culture of inclusion, equity, and participation strengthens organizational identity and performance.

3) Information and Analysis: Data-driven decision-making is central to sustainable RBM. Leaders must establish robust systems for collecting, analyzing, and using performance data, scientific indicators, and feedback mechanisms. This facilitates evidence-based planning, risk assessment, and continual improvement, enabling proactive responses to internal and external changes (OECD, 2015).

4) Focusing on Human Resource Development: Human capital is a foundational pillar. Leadership should apply good governance principles in HR management—ensuring transparency, merit-based recruitment, and ethical practices (UNDP, 2009). Furthermore, fostering a learning organization culture by investing in training, mentoring, and intellectual stimulation empowers personnel to innovate and adapt to scientific advancement (Bass & Riggio, 2006).

5) Process Management and Results: Effective process management involves designing internal systems that are flexible, streamlined, and performance-oriented. This includes implementing decentralized decision-making, continuous feedback loops, and adaptive strategies. Leadership should ensure that organizational processes support accountability, eliminate redundancies, and drive measurable results aligned with sustainability goals (Denison, 2000).

Discussion

The organizational culture, comprising involvement culture, consistency culture, adaptability culture, and mission culture, within the framework of leadership dimensions, including organization direction determination, strategic development based on results, linking strategy to action, and creating factors to support change, demonstrated a statistically significant influence ($p < 0.05$) on science sustainable results-based management.

This significance reflects how organizational culture emphasizes key behaviors such as the delegation of operational authority to personnel and operators at all levels, encouraging personnel to operate within legal frameworks, enhancing access to necessary information for operations, promoting teamwork, and developing personnel competencies across all organizational levels. The findings align with the Denison Organizational Culture Model (1990, 2000), which underscores the importance of involvement and adaptability as dimensions contributing to high-performing, innovative organizations.

The presence of shared values, coordinated agreements on appropriate actions, interdepartmental cooperation, consistent resource alignment, and operational integration are all indicators of a strong

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consistency culture, which enhances organizational stability and coherence. These elements contribute to a results-driven mindset, a principle central to the Results-Based Management (RBM) framework of UNDP/UNESCO, which advocates for clear objective-setting, performance tracking, and continuous feedback mechanisms.

Moreover, the culture of adaptability observed in this study—such as the ability to adjust to internal and external environments, utilize stakeholder feedback, apply environmental analyses for operational improvements, and convert errors into learning opportunities—is a key enabler of organizational agility, which is vital in volatile and complex contexts. Denison (2000) posits that adaptability is necessary for long-term effectiveness and supports innovation.

Mission culture, characterized by clear goals and strategic direction, organizational commitment to objectives, and alignment with long-term vision, was also a critical factor. This reflects the necessity for a shared purpose and organizational coherence, ensuring that all activities contribute toward desired outcomes.

The integration of transformational leadership practices, as proposed by Bass and Avolio (1994), is evident in the leadership traits explored in this study. These include vision articulation, mission implementation, stakeholder engagement in planning, and the effective communication of strategic goals. Leaders who demonstrate the capacity to inspire and mobilize their teams toward a shared goal play a pivotal role in enabling science to achieve sustainable results-based management.

In terms of strategic leadership, the ability to utilize internal and external resources effectively and formulate strategies through collaborative involvement of administrators, personnel, and stakeholders supports the transformational leadership theory, which views leadership as a process of enhancing individual and group motivation to achieve more than originally expected (Bass & Avolio, 1994). These leadership behaviors also mirror the RBM emphasis on participatory planning and stakeholder engagement (UNDP, 2009).

The operational practices, such as jointly setting operational standards, co-developing resource-efficient rules, transforming strategies into actionable plans, and aligning resources with execution frameworks, are essential components in linking strategy to action—a core principle in the RBM approach, which demands the transformation of strategic plans into performance-driven operations (UNESCO, 2017).

Additionally, the creation of factors that support change, including empowering personnel through delegated authority, defining ethical frameworks for operations, human resource development, and the adoption of modern technology, reflects a leadership philosophy rooted in adaptability, learning, and innovation—all consistent with transformational leadership and results-based management theory.

These findings are consistent with previous research highlighting the importance of employee participation, strategic clarity, and supportive leadership in driving organizational performance. For instance, the strong positive correlation found between involvement culture and science sustainable results-based management supports Denison's theory that empowerment and team orientation drive success in complex environments (Denison, 2000), and aligns with the RBM framework's focus on participation and transparency (UNDP, 2009).

However, the study is not without limitations. First, the research was conducted within a single institutional context—Chiang Rai Rajabhat University—limiting the generalizability of the findings to other universities or sectors. Second, the use of a cross-sectional survey design may introduce common method bias and does not allow for inference of causality between variables. Future studies could mitigate these issues by employing mixed-methods designs or longitudinal approaches.

In light of the findings, several practical recommendations can be offered to university administrators: (1) develop a comprehensive strategy to enhance organizational culture, particularly in the areas of adaptability and mission alignment; (2) invest in leadership development programs that foster transformational leadership capabilities; and (3) implement structured RBM training to strengthen performance-based planning and monitoring.

For future research, it is recommended to explore the specific leadership behaviors or cultural elements that most significantly predict long-term sustainability outcomes in science education. Additionally, longitudinal studies are needed to examine how leadership and organizational culture interact over time to influence RBM effectiveness.

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Conclusion

The organizational culture, including involvement culture emphasizing the delegation of operational authority, decision-making within legal frameworks, access to operational information, and teamwork, plays a critical role in shaping effective outcomes. Consistency culture, characterized by shared values, coordination across departments, and integrated collaboration, fosters operational alignment. Likewise, adaptability culture, through responsiveness to internal and external changes and engagement with stakeholders' inputs, enhances innovation and flexibility. Additionally, mission culture, with clearly defined goals and commitment to shared objectives, aligns efforts toward sustainable results.

Leadership dimensions significantly influencing science sustainable results-based management include: Organization direction determination, with an emphasis on defining vision and mission based on contextual understanding. Strategic development based on results, including SWOT analysis and utilization of organizational resources. Linking strategy to action, involving effective policy implementation, resource allocation, and organizational alignment. Creating supportive factors for change, such as delegating authority, ethical practices, human resource development, and the use of modern technologies.

These components were statistically significant at the 0.05 level, affirming that both organizational culture and leadership jointly support science, sustainable results-based management, consistent with the Denison Organizational Culture Model (Denison, 1990), Transformational Leadership Theory (Bass & Avolio, 1994), and the UNDP/UNESCO RBM framework.

This study contributes to the growing body of literature on organizational culture and leadership by examining their synergistic effects on the implementation of science, sustainable results-based management in the context of a Thai Rajabhat University. By integrating Denison's Organizational Culture Model and Transformational Leadership Theory, the study provides a nuanced understanding of the internal mechanisms that drive sustainable practices in higher education. The findings underscore the importance of promoting a culture of involvement, fostering transformational leadership, and aligning institutional missions with sustainable development goals. These findings extend previous research and offer empirical support for the relevance of culture-leadership integration in education-based RBM implementation.

Practical Applications.

A successful leader must act as a coordinator who guides the organization toward achieving its vision and strategic goals. However, to lead effectively in complex and dynamic contexts, leaders must develop strategic leadership capabilities, including decision-making under uncertainty, ethical judgment, and the creation of a shared vision (Bass & Riggio, 2006). In parallel, organizational culture serves as the backbone of sustainable success, as it embodies the collective beliefs, values, and behaviors of the personnel. A strong culture, supported by a structured management system and clear operational procedures, naturally leads to greater organizational efficiency and effectiveness. Therefore, cultivating a culture of participation, learning, ethical leadership, and innovation is essential for sustainable management outcomes. University administrators are encouraged to integrate results-based management with culture-led and leadership-led development strategies by strengthening collaborative planning systems, enhancing stakeholder engagement, and promoting leadership development programs that align with long-term sustainability goals.

Future Research Directions.

This study acknowledges certain limitations, such as its single-institutional context (Chiang Rai Rajabhat University), which may limit the generalizability of findings. Additionally, the use of cross-sectional data poses challenges in establishing causality. Future studies should consider longitudinal designs to explore how leadership and organizational culture evolve and influence long-term RBM success. Moreover, comparative studies across universities or sectors could offer deeper insights into contextual differences and similarities in applying RBM through cultural and leadership mechanisms.

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