

The Influence of Hierarchical Bureaucracy and Bottom-Up Learning on Organizational Performance of Indonesian Territorial Military Institutions: The Mediating Roles of Strategic Change Speed and Organizational Learning

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Abstract

This study examines the effects of hierarchical bureaucracy, bottom-up learning, and the speed of strategic change on organizational performance within the context of the Indonesian military, specifically focusing on the Indonesian Army's territorial commands. Utilizing contingency theory, this research explores how hierarchical structures and bottom-up communication influence organizational performance, with speed of strategic change and organizational learning as mediating variables. Data were collected from 50 high-ranking military officers through structured questionnaires and analyzed using Partial Least Squares (PLS) analysis. The findings indicate that hierarchical bureaucracy positively affects organizational learning but has a mixed effect on the speed of strategic change and organizational performance. Bottom-up learning, on the other hand, has a positive impact on both organizational learning and performance, as well as on the speed of strategic change. The results also confirm that the speed of strategic change and organizational learning mediate the relationship between hierarchical bureaucracy, bottom-up learning, and organizational performance. These insights suggest that while hierarchical structures provide control and discipline, integrating bottom-up learning and adaptability mechanisms enhances organizational performance in military contexts. This research contributes to the understanding of contingency theory in structured organizations and provides practical recommendations for improving strategic decision-making in hierarchical military organizations.

Keywords

Speed of Strategic Change, Organizational Learning, Hierarchical Bureaucracy, Bottom-Up Learning, Organizational Performance, Military Institutions, Indonesian Military

1. Introduction

Organizational performance is a critical aspect of strategic management that influences the success of strategy implementation and the achievement of an organization's objectives. However, maintaining good organizational performance presents its own challenges, especially in the face of change. Change has long been seen as a necessity, and thus, it is crucial to consider. "Nothing is permanent except change itself," stated Heraclitus, a pre-Socratic Greek philosopher.

Over time, the pace of change has accelerated, and its patterns have become more complex. The world is moving forward rapidly, making mechanistic perspectives in change management—where merely installing new components or adding elements to an organization is assumed to improve performance—no longer sufficient. This was evidenced by Gardner and Ash (2003) in their study on change management in corporations. The rapid development of the world forces both business and non-profit organizations to adapt accordingly, making long-term strategic designs without adjustments or changes obsolete. This situation requires organizations to continuously and consistently update and modify their strategies (Tushman & O'Reilly, 1996).

The concept of "emergent change," introduced by Gardner and Ash (2003), which involves change as a response to understanding the dynamics of an organization's internal and external environment, becomes highly relevant. Given the increasing speed of environmental change, the "speed of strategic change" (SSC) becomes a critical aspect to study. SSC, which reflects "the total time taken for a company to achieve the required strategic change" (Li et al., 2018), is said to yield strong performance results (Kim & Intosh, 1996; Kraatz & Zajac, 2001).

This concept finds an interesting context in the actual conditions of the Indonesian National Armed Forces (TNI). This military organization has experienced significant dynamics throughout its history, especially post-Indonesian reformation in 1998. During the early stages of this transition, the TNI was often met with public suspicion and criticism. Public mistrust of TNI's role in politics and security became a major issue, presenting a substantial challenge for the institution to prove itself as a protector of democracy and national stability (Oktavian, 2012). In recent years, however, the TNI has successfully regained public trust through its effective performance in carrying out its duties. Through various humanitarian operations, disaster management efforts, and commitments to maintaining security, the TNI has managed to build a positive image among the public. As a result, it is now one of the most trusted state institutions in Indonesia. This

is a significant achievement considering its controversial history. A recent survey conducted by CSIS Indonesia shows that the TNI ranks at the top as the most trusted public institution in Indonesia, with a trust score of 93.5%, well above the presidential institution, which ranks second with a public trust level of 86.4% (Fernandes et al., 2023). This places great demands on the TNI to maintain and enhance its organizational performance.

Despite these achievements, new challenges have emerged as the Indonesian Army (TNI Angkatan Darat) proposes establishing territorial commands in each province. This proposal has received strong reactions from various sectors of society, including democracy activists, civil society, politicians, and even former President Megawati Soekarnoputri. There is concern that forming or increasing the number of regional military commands could cause the TNI to regress, potentially re-entering the political sphere and undermining the democratic principles fought for so arduously. Some even view this as a betrayal of TNI reform, indicating that the military's organizational structure is rigid in its defense paradigm, and suggesting that Indonesia's defense transformation remains insufficient to meet reform goals.

Some argue that the proposal to increase military commands brings up the dark history of the "Dual Function" doctrine during the New Order era, which, rather than strengthening defense, may reawaken traumatic memories among the public and threaten civil-military relations (Angela, 2023). Looking back, the political transition following Indonesia's 1998 reform wave strengthened the discourse on civil-military relations within a democratic framework. A successful democratic transition and strong leadership have promoted Indonesia as one of the world's prominent democracies. Thus, since 1999, the TNI has developed a new paradigm as a tangible form of internal reform, grounded in analytical and forward-looking perspectives (Oktavian, 2012). Various measures have been taken, including re-defining, repositioning, and re-evaluating its functions and roles to restore the TNI's image among the public (Basuki, 2014). The military, which once played a dual role under the Armed Forces of the Republic of Indonesia (ABRI) during the New Order, has gradually withdrawn from the national political arena.

However, military organizations continue to be influenced by the dynamics of social, political, and security issues. In practice, territorial-based military organizations also play an important role in both national and regional leadership. According to Government Regulation No. 23 of 2022, local military leaders participate in the Regional Leadership Coordination Forum (Forum Koordinasi Pimpinan Daerah, Forkopimda), which directly engages with community life. Territorial commanders in the Army, from District Military Commands (Kodim) to Regional Military Commands (Pangdam), are defined as leaders at city, district, or provincial levels. This puts the military organization directly in touch with the swift dynamics of civilian life, in addition to the rapid advancements in the military sphere itself.

In this context, it is crucial for the TNI not only to maintain its current

performance but also to enhance its organizational quality in responding to changes. Organizational performance is measured not only by outcomes but also by adaptability to social and political dynamics. The TNI must develop transparent strategies and involve the public in every step taken to maintain the trust it has built. Overall, the TNI's success in maintaining public trust and improving its organizational performance depends heavily on its responsiveness to change. By upholding democratic principles and transparency, the TNI can ensure that its actions align with public expectations and aspirations, reinforcing its position as a symbol of stability and progress for the Indonesian nation.

The working climate within the military is also crucial, as it shapes the fundamental spirit in managing relationships and organizing systems. Generally, subordinates in the military show a high level of obedience to their superiors' commands, demanding leaders who can provide guidance, direction, and motivation to achieve collective goals. Max Weber's classic view explains that a bureaucratic hierarchy is the optimal way to achieve organizational goals (Gualmini, 2008). Bureaucratic hierarchy is closely associated with the Indonesian military, which Weber defines by three key points: 1) bureaucracy has a hierarchical structure of power and authority that is formal and unambiguous, 2) bureaucracy involves a rational and systematic division of labor, and 3) it is governed by a set of general, formal, explicit, and stable rules (Wakhid, 2011). However, as discussed earlier, the evolution of society has brought the military and Indonesian society into closer contact. This interaction between two entities with distinct values requires greater flexibility, responsiveness, and adaptability.

Internally, larger organizations tend to have increasingly complex bureaucracies and management structures. The ideal bureaucracy, from a Weberian perspective, is one with an organizational hierarchy where authority is clearly defined within certain areas of activity and all actions adhere to written rules (Gualmini, 2008). In such institutions, behavior and actions are consistently patterned within a strict command structure (Hirst et al., 2011). Although top-down hierarchical organizations can achieve efficiency through coordination and subordinate control, high levels of formalism in daily operations may suppress innovation, hinder the creation of new knowledge, and limit feedback from lower levels that is essential (Rapert & Wren (1998)). A lack of accurate information from lower levels limits a leader's ability to fully understand problems and could lead to strategic policy failures (Gardner & Ash, 2003). Moreover, strict bureaucratic hierarchies can complicate efforts to renew and change strategies, as strategic changes may be hindered by established bureaucratic processes, commonly referred to as hierarchical bureaucracy (HB). Numerous studies continue to question whether bureaucracies can adapt to unpredictable changes (Adler, Goldoftas, & Levine, 1999; Gitell, 2001; Heckscher, 2015; Lee & Edmondson, 2017). Research by Craig (1995), Damanpour (1996), and Dougherty & Corse (1996) found no link between bureaucracy and innovation. This study thus seeks to examine the effect of hierarchical bureaucracy on the speed of strategic change within an environment where

HB remains an ingrained factor, but SSC is also crucial for organizational advancement.

Alongside this bureaucratic complexity, there exists another model for information transfer and transmission that typically operates more informally—namely, bottom-up learning (BUL). Bottom-up learning refers to direct communication between low-level employees and top management. The daily experiences of operational-level workers provide them with detailed insights into external conditions, as they are the organization's frontline, interacting directly with clients, customers, or other relevant parties. By gathering first-hand information from workers, without cumbersome bureaucratic pathways, senior managers can make strategic analyses quickly. Research by [Yi, Gu, and Wei \(2017\)](#) suggests that bottom-up learning positively influences the speed of an organization's strategic change.

Over time, the bottom-up approach has attracted increasing research attention ([Barnes, 2002](#); [Kim et al., 2014](#); [Slack & Lewis, 2011](#); [Swamidass et al., 2001](#); [Wei et al., 2011](#)). Bottom-up learning involves the process by which information from lower-level employees is accumulated and shared with top leaders for consideration in strategic decision-making ([Wei et al., 2011](#)). Studies indicate that bottom-up learning benefits senior managers by providing them with a variety of information necessary for new strategies, including technological advances, customer demands, and market competition ([Alexiev et al., 2010](#); [Beer et al., 2016](#); [Mom et al., 2007](#)).

This study builds on the argument that military organizations, with their rigid, top-down command structures, exemplify a strong hierarchical bureaucracy while also embodying a bottom-up learning model, which is assumed to influence organizational performance. The study focuses on examining the effects of hierarchical bureaucracy and bottom-up learning on military settings, with the mediating factors of speed of strategic change and organizational learning ultimately affecting organizational performance.

The study context is territorial commands under the Indonesian Army, with several supporting arguments: 1) The Indonesian Army is a large, complex organization with a clear hierarchical authority structure and systematic, rationally defined division of labour, guided by formal, explicit, comprehensive, and relatively stable rules; 2) This aligns with current demands for rapid external change, which the Indonesian Army must respond to, particularly in its territorial command units, which interact directly with civilian society; 3) The explicit managerial model and traditions in Army leadership are also noteworthy. Senior leaders, from the Chief of Staff to regional military commanders and territorial command officers at various levels, often conduct "ground visits" and maintain direct communication with field personnel, implementing bottom-up learning practices.

These two paradoxical conditions—rigid hierarchical bureaucracy and the implementation of bottom-up learning—simultaneously exist within the territorial military organization in Indonesia. When linked to organizational performance,

the influence of these two concepts is associated with organizational learning and the speed of strategic change as mediating factors that play essential roles.

This research aims to explore how hierarchical bureaucracy affects organizational performance in military organizations in Indonesia and examines the impact of bottom-up learning on the same. Additionally, the study investigates the mediating role of the speed of strategic change in the relationship between hierarchical bureaucracy, bottom-up learning, and organizational performance. Finally, it assesses how organizational learning serves as a mediator in the interactions between hierarchical bureaucracy, bottom-up learning, and organizational performance within Indonesian military organizations.

This study provides theoretical, practical, and policy-related contributions. Theoretically, this research expands knowledge on the effects of bottom-up learning on organizational performance within organizations characterized by strict and rigid bureaucratic hierarchies. By selecting military organizations as the research subject, this study assumes that such organizations represent the zenith of structural rigidity, where the relationship between variables, mediated by strategic change speed and organizational learning, can offer valuable theoretical insights. Moreover, practically our findings of this study are anticipated to serve as considerations for the development of Indonesian military organizations, particularly the Indonesian Army. These insights could contribute to strategic management, especially in areas related to organizational communication, learning, and strategic change management to enhance performance. Regarding the policy contribution, this research clarifies factors that can influence the speed of strategic change in organizations with hierarchical and bureaucratic management systems. Although the focus is on Indonesia's territorial military organization, the findings could serve as references or considerations for policy formulation in other organizations, regardless of their structure.

2. Literature Review and Hypothesis Development

Organizations today face a rapidly changing environment that demands adaptability in both strategy and operations. Gardner and Ash (2003) highlight the concept of "emergent change," which requires organizations to adjust continuously in response to internal and external shifts, rather than relying on static, long-term planning. Similarly, Tushman and O'Reilly (1996) stress the need for continuous strategic updates to remain relevant.

Contingency theory provides a framework for this adaptability, suggesting that organizational effectiveness is achieved by aligning structure and strategy with changing environmental conditions (Donaldson, 2001). This approach underscores that there is no universal management model; instead, success depends on an organization's fit with situational variables. Studies, such as those by Lawrence and Lorsch (1967), have shown that organizations managing differentiation and integration effectively perform better, particularly in dynamic settings. Empirical evidence also suggests that aligning strategy, structure, and environment improves

efficiency and effectiveness (Miller, 2009). Wopat and Needham (2021) noted that leaders who implement the contingency approach will recognize the situations they find themselves in and adjust their leadership styles and behaviours to maximize their efficiency and effectiveness.

Organizational learning—defined as improving actions through knowledge and experience (Argyris & Schön, 1978)—and the speed of strategic change are essential for long-term success. Rapid adaptation is particularly vital in competitive contexts, where organizations benefit from the continuous interplay between learning and strategic adjustment (Burnes, 2004). For leadership, contingency theory advises that effectiveness depends on situational alignment; leadership approaches must adapt to specific contexts (Fiedler, 1967).

Overall, contingency theory illustrates that organizations which effectively integrate learning, strategic flexibility, and adaptive leadership are better equipped to navigate complexity and sustain high performance in uncertain environments (Volberda, 1996; Tushman & O'Reilly, 1996).

2.1. Organizational Performance

Organizational performance, or effectiveness, encompasses a broad scope, especially in public organizations, where it reflects the success of strategies, goals, and objectives in serving citizens and stakeholders (Cecilio, 2022). In this context, the quality of public service is closely tied to an organization's commitment to its mission. Bureaucracy in public administration also reflects the performance of the state itself. However, performance in bureaucratic models often focuses more on processes than outcomes, a tendency that can undermine true performance evaluation, as shown in the study of Siquiera (2013) cited by Schneider (2021). Ensuring reliable and transparent information in reporting is critical for accurate policy formulation, particularly within state institutions.

Key elements that support accountability in performance reporting include a favorable environment, harmonious internal relationships, an innovation-oriented culture, and stakeholder involvement in evaluations, though these are often limited in bureaucratic, politically fragmented systems (Yang, 2009). Organizational performance also represents the cumulative output resulting from collaborative efforts across all organizational levels, utilizing resources to achieve goals. Surjadi (2009) defines it as the overall success in meeting predefined objectives, where responsible evaluation guides improvements. Sobandi (2006) adds that performance indicators should directly relate to outcomes against organizational plans and objectives.

Governmental performance, influenced by politics and bureaucracy, affects dimensions of effectiveness, efficiency, and equity (Andrews et al., 2017). This study, therefore, adopts these dimensions (Alexander & Lee, 2006; Amirkhanyan et al., 2008). Performance includes organizational development, compensation plans, communication systems, and more (Robbins, 2003), with measures often reflecting modern public management, known as New Public Management (NPM).

Spekle and Verbeeten (2014) categorize performance measurement into operational use (planning and monitoring), incentive use (goal-setting and recognition), and exploratory use (priority setting, strategy management, and decision-making), with exploratory use supporting clarity, reducing ambiguity, and motivating public-sector staff.

In this study, organizational performance is assessed based on Spekle and Verbeeten's (2014) dimensions, including productivity, work quality, innovation, reputation, achievement of service goals, operational efficiency, and teamwork morale.

2.2. Hierarchical Bureaucracy

German sociologist Max Weber theorized the ideal type of organizational structure, which he called bureaucracy. Weber identified bureaucracy as the most rational and efficient organizational form for legal-rational management, typical of modern society (Weber, 2019). This view has had a significant influence on organizational theories and management practices over time. Bureaucratic organizational forms are seen as benchmarks for success and development in the organizational literature, symbolizing the most efficient and successful management structure. Bureaucracy is a formal system of organization and administration designed to ensure efficiency and effectiveness (Gualmini, 2008).

According to Weber, bureaucracy should operate within a strict vertical hierarchy, with limited communication across roles. Like a machine with separate functional parts, the bureaucratic system should be structured based on a division of labor, each with its specific responsibilities. Bureaucracies should also exhibit centralized power flows, which are considered more effective in decision-making processes and specialization among workers. Furthermore, bureaucracy is regarded as a closed system, as external influences are viewed as potentially disruptive to organizational performance. Rules are another key element of bureaucratic systems, where leadership and authority are based on more rational frameworks than older organizational models, which often rely on charisma or traditional authority (Wakhid, 2011).

In charismatic authority, followers obey talented leaders due to loyalty, devotion, and respect, whereas traditional authority exists for historical reasons. For instance, people obey leaders in traditional power positions, such as monarchies or hereditary leadership roles (Gualmini, 2008). Weber argued that authority in the bureaucratic organizational model is more rational, as leaders are recognized and obeyed for their adherence to logic, efficiency, and common sense. Such organisation's function based on laws, rules, and regulations derived from consistent, disciplined, rational, and methodical calculations of optimal ways to achieve specific goals (Wakhid, 2011).

Weber's rational-bureaucratic theory outlines several key organizational characteristics and processes essential for achieving optimal efficiency. These include setting clear goals, which are best attained within a structured environment,

promoting increased efficiency as members adhere to formal rules and policies, and ensuring informed decision-making through the use of relevant data and cost-benefit analysis. For Weber, the primary purpose of bureaucracy and its evolution is to maximize efficiency, as a structured system enables employees to learn and perform tasks optimally within a technically efficient administrative framework (Jain, 2004).

Weber also envisioned an ideal bureaucracy with specific operational principles. Officials should be prohibited from using their positions for personal gain, and roles must be organized hierarchically, with each level having clearly defined duties. Employees are selected based on qualifications and competitive examinations, and each employee is entitled to salary and pension rights according to their rank. Career progression is determined by a merit system, with promotions based on proven performance. Furthermore, employees are restricted from using organizational resources for personal benefit and are subject to a disciplined supervisory system to maintain integrity and focus on organizational goals.

2.3. Speed of Strategic Change

Change is an inevitability. In simple terms, change involves making something different (Robbins, 2001), shifting from a “before” state to an “after” state. Change can occur at the individual or societal level. Sometimes, change flows smoothly and almost unnoticed, but often, it is challenging, disruptive, or even costly, requiring a substantial shift in mindset or approach (Pasmore, 1994: p. 3). Organizational change has become a global phenomenon that cannot be suppressed. Common organizational changes include restructuring, regrouping, and repositioning, each with its own consequences. Conceptually, organizational change refers to a planned or unplanned transformation within an organization’s structure, technology, or personnel (Greenberg & Baron, 2003). Potts and LaMarsh (2004) view change as a shift from an organization’s current state to a desired future state, whether in structure, processes, people, or culture. According to Gibson (1985), organizational change involves managerial efforts to enhance individual, group, and organizational performance by altering structure, behavior, and processes.

Organizational change encompasses both strategic and tactical adjustments. Both types of change can create value, but they differ in impact. Strategic change builds long-term organizational capabilities, while tactical change has an immediate effect on short-term value (Day, 2014). In a dynamic environment, strategic change becomes essential (Pettus et al., 2009), defined as the transformation of form, quality, or state over time (van de Ven & Poole, 2015). This definition includes three dimensions: type of change, magnitude (quantitative or qualitative), and speed. In today’s competitive environment, the speed of strategic change significantly impacts performance, as organizations must learn, innovate, and take action swiftly (Baum & Wally, 2003). Faster implementation of strategic changes allows organizations to seize opportunities ahead of competitors, thus gaining an advantage (Chen, 2011; Xie & Levinson, 2015).

The core role of dynamic capabilities is to facilitate change within an organization (Eisenhardt & Martin, 2000). Some argue that the essence of dynamic capability lies in the ability to identify the need for change, formulate a response, and implement actions accordingly (Helfat et al., 2016). Organizations may face an urgent need to change but lack the capacity, resulting in delayed strategic changes (Zajac & Kraatz, 2013). The speed at which an organization identifies, formulates, and implements change is largely determined by its dynamic capabilities.

Speed of strategic change reflects the time taken to implement a strategy, which includes the speed of decision-making (Eisenhardt, 1989) and the speed of implementing a new strategy (Dooley et al., 2000). Strategic decision-making speed refers to the period from the inception and formulation of a strategic decision until the organization is ready to implement it (Eisenhardt & Martin, 2000). Meanwhile, implementation speed refers to the period between the commitment to implement and the integration of the strategic decision into operations (Köseoğlu et al., 2009). This study conceptualizes speed of strategic change as “the time spent designing, developing, and implementing strategic changes” (Baum & Wally, 2003).

An organization’s ability to quickly change its strategy depends partly on its internal capacity (Di Benedetto et al., 2008). Competitive dynamics research identifies awareness, motivation, and capability as key drivers of an organization’s ability to initiate or respond to competitive actions (Smith et al., 2008). Awareness generates the need for change, motivation provides a reason, and capability drives action (Ndofor et al., 2011). Without the necessary capabilities, an organization that is aware of the need for change and motivated to act may still fail to execute change promptly.

While general capabilities drive organizational actions, dynamic capabilities determine how quickly they can formulate and implement these actions. Dynamic capabilities are defined as organizational routines and strategies for achieving new resource configurations (Fang & Zou, 2009). Nagai (2009) conceptualizes dynamic capabilities as the ability to enable rapid organizational adaptation in a rapidly changing environment. Dynamic capabilities involve not only the flexibility to make strategic adjustments (Li et al., 2018) but also the speed to redesign and reconfigure necessary organizational structures and routines for change (Zott, 2003). Shin (2019) describes five objective time dimensions relevant to strategic change: 1) regularity, 2) occurrence, 3) frequency, 4) acceleration, and 5) polychronism, measured in terms of clock time.

2.4. Organizational Learning

A learning organization is an entity where members continuously develop their competencies and understanding to achieve organizational goals. Frequently, a new mindset emerges by allowing aspirations to flow freely, enabling members to learn continuously and grow together. This type of organization is characterized by flexibility, adaptability, and productivity, enabling it to survive even in rapidly

changing conditions. According to Nurhayani and Sulistio (2018), a learning organization is one that creates a supportive atmosphere and provides extensive opportunities for individuals to learn, both individually and in groups, then apply the results to organizational processes and activities. The learning process extends beyond systems and mechanisms to include actionable steps, which benefit the organization. Sources of learning can be internal or external. In a learning organization, leaders emphasize empowering members and promoting cross-departmental collaboration. Leaders also foster information transparency, encourage critical idea exchange, and cultivate collaboration among all members and stakeholders.

Organizational learning involves developing new knowledge or insights that can influence behaviors within the organization. Marsick (1994) defines it as a process of coordinated systemic change, where mechanisms are in place for individuals and groups to access, build, and use organizational memory, structures, and culture to develop long-term organizational capacity. Learning occurs within a broader institutional context, including inter-organizational relationships, and broadly refers to acquiring understanding, knowledge, techniques, and practices in any form or manner (Argyris & Schon, 1996). Organizational learning theory examines how individual and team learning translates into organizational resources, closely linked to knowledge management processes.

Garvin (2000) describes organizational learning as an organization's expertise in creating, acquiring, interpreting, transferring, and sharing knowledge to modify behavior in line with new insights. The learning process at the individual level significantly impacts the concept and practice of organizational learning (Wang & Ahmed, 2002). Khandekar and Sharma (2006) define organizational learning as the process of acquiring knowledge individually and collectively and applying it to make decisions, ultimately influencing dynamic capabilities as a source of competitive advantage. Organizations willing to experiment and capable of learning from experience tend to succeed more than those that do not.

Ramírez, Morales, & Rojas (2011) argues that organizational learning is a key element for gaining a competitive advantage. Wheelen and Hunger (1012) states that to achieve and sustain competitive advantage in a rapidly changing business environment, organizations must also enhance their learning capacity. Senge (1990) emphasizes that organizational learning is a crucial skill for leaders. In organizational learning, leaders continuously provide opportunities for members to develop skills, knowledge, and creativity, which are applied to improve organizational processes and outcomes.

2.5. Bottom-Up Learning

Bottom-up learning is a model of communication that allows information to flow from lower-level employees directly to top management. The daily experiences of operational-level employees give them detailed knowledge of external conditions, as they often interact directly with clients, customers, or other relevant parties. By accessing first-hand information from these employees, without the obstacles of

complex bureaucratic channels, senior management can quickly conduct strategic analyses. Research by [Yi, Gu, and Wei \(2017\)](#) suggests that bottom-up learning positively influences the speed of strategic change within an organization.

Over time, the bottom-up approach has garnered increased interest from researchers ([Barnes, 2002](#); [Kim et al., 2014](#); [Slack & Lewis, 2011](#); [Swamidass et al., 2001](#); [Wei et al., 2011](#)). Bottom-up learning entails a process where information gathered from lower-level employees is synthesized and presented to top leaders as input for strategic decision-making ([Wei et al., 2011](#)). Studies have shown that bottom-up learning benefits senior management by providing access to a diverse range of necessary information when formulating new strategies, including insights into technological developments, customer demands, and market competition ([Alexiev et al., 2010](#); [Beer et al., 2016](#); [Mom et al., 2007](#)).

2.6. Conceptual Framework

The integration of hierarchical bureaucracy, bottom-up learning, organizational learning, and speed of strategic change is relatively rare in the academic literature, particularly within military organizations. Previous studies tend to focus on one or two of these variables individually or in non-military contexts. For example, studies on hierarchical bureaucracy primarily discuss its impact on efficiency and control within an organization. However, hierarchical structures are often seen as rigid and less adaptive to rapid environmental changes, leading some researchers to question their relevance in highly dynamic settings ([Adler, Goldoftas, & Levine, 1999](#); [Gittell, 2001](#); [Heckscher, 2015](#); [Lee & Edmondson, 2017](#)). Study by [Craig \(1995\)](#), [Damanpour \(1996\)](#), and [Dougherty & Corse \(1996\)](#) found no correlation between bureaucracy and innovation, as hierarchical structures may limit the flow of information and hinder feedback essential for strategic adaptation.

Bottom-up learning, by contrast, is a relatively newer area of research in organizational studies. Studies by [Yi, Gu, and Wei \(2017\)](#) indicate that bottom-up learning significantly influences organizational adaptability and responsiveness to change, as it provides top management with direct insights from frontline employees. However, research on bottom-up learning as a primary factor in military organizations, particularly its interaction with hierarchical structures, remains limited.

Studies on speed of strategic change, particularly its effects on performance, have become more prominent in the strategic management field. Research suggests that faster decision-making and implementation speeds can provide organizations with competitive advantages, as they enable timely responses to external changes ([Baum & Wally, 2003](#); [Chen, 2011](#); [Xie & Levinson, 2015](#)). In military organizations, where hierarchical structures dominate, the speed of strategic change could be critical to maintaining operational effectiveness and adapting to dynamic security challenges.

Organizational learning has been widely studied as an essential element for long-term success. According to [Argyris & Schön \(1978\)](#), organizational learning

involves the process of improving actions based on better knowledge and experience. In a military context, organizational learning could significantly enhance strategic adaptability, especially when coupled with insights from bottom-up learning. However, the literature examining organizational learning in tandem with hierarchical bureaucracy and bottom-up learning remains sparse, particularly within military settings. This study aims to fill these research gaps by exploring how hierarchical bureaucracy and bottom-up learning affect organizational performance, with organizational learning and speed of strategic change as mediating variables. By focusing on military organizations, this research seeks to provide a unique perspective on the complex interactions among these variables.

2.7. Hypothesis Development

2.7.1. Effect of Hierarchical Bureaucracy on Organizational Learning

Hierarchical bureaucracy may influence organizational learning in two contrasting ways. On one hand, strict formalization and control mechanisms within a hierarchy can restrict the flow of knowledge and limit adaptive learning. However, the structured environment can also create a disciplined setting for learning when rules and processes are effectively managed (Wakhid, 2011). Thus, hierarchical bureaucracy is hypothesized to impact organizational learning positively in highly controlled contexts, such as military organizations.

H1: Hierarchical bureaucracy has a significant positive effect on organizational learning.

2.7.2. Effect of Bottom-Up Learning on Organizational Learning

Bottom-up learning, characterized by the upward flow of information from lower levels to top management, provides direct insights into operational challenges and opportunities. This approach is expected to enrich organizational learning by incorporating diverse perspectives from frontline employees, which enhances the organization's ability to adapt to changing environments (Yi, Gu, & Wei, 2017).

H2: Bottom-up learning has a significant positive effect on organizational learning.

2.7.3. Effect of Hierarchical Bureaucracy on Speed of Strategic Change

The rigid structure of hierarchical bureaucracy can hinder the speed of strategic change due to bureaucratic layers and a formalized decision-making process. However, in military contexts, the high level of control may sometimes facilitate swift changes when discipline and strict adherence to directives are prioritized (Gardner & Ash, 2003).

H3: Hierarchical bureaucracy has a significant effect on the speed of strategic change.

2.7.4. Effect of Bottom-Up Learning on Speed of Strategic Change

Bottom-up learning is anticipated to positively influence the speed of strategic change by enabling top management to quickly identify and address operational

issues. The direct feedback mechanism shortens the information processing cycle, which can accelerate strategic decision-making (Yi, Gu, & Wei, 2017).

H4: Bottom-up learning has a significant positive effect on the speed of strategic change.

2.7.5. Effect of Hierarchical Bureaucracy on Organizational Performance

Hierarchical bureaucracy, with its structured and disciplined approach, is traditionally associated with efficiency and effectiveness in goal achievement. However, the rigid structure may also limit flexibility and adaptability, potentially impacting organizational performance in dynamic environments. Therefore, this study hypothesizes that hierarchical bureaucracy has a dual effect on organizational performance in military organizations.

H5: Hierarchical bureaucracy has a significant effect on organizational performance.

2.7.6. Effect of Bottom-Up Learning on Organizational Performance

Bottom-up learning fosters adaptability by providing top management with timely, relevant insights from the front lines. This approach is expected to positively affect organizational performance by promoting more responsive and informed decision-making (Alexiev et al., 2010; Mom et al., 2007).

H6: Bottom-up learning has a significant positive effect on organizational performance.

2.7.7. Effect of Organizational Learning on Organizational Performance

Organizational learning is critical for developing capabilities that enhance organizational performance. Learning enables organizations to better adapt to environmental changes, create new knowledge, and refine strategies to achieve goals (Argyris & Schön, 1978).

H7: Organizational learning has a significant positive effect on organizational performance.

2.7.8. Effect of Speed of Strategic Change on Organizational Performance

A faster rate of strategic change can enhance organizational performance by enabling timely responses to external threats and opportunities. This agility is crucial in military organizations where responsiveness to change is essential for operational effectiveness (Baum & Wally, 2003).

H8: Speed of strategic change has a significant positive effect on organizational performance.

2.7.9. Mediating Effect of Speed of Strategic Change and Organizational Learning on Hierarchical Bureaucracy and Organizational Performance

This study hypothesizes that both speed of strategic change and organizational learning mediate the relationship between hierarchical bureaucracy and organizational performance. Hierarchical bureaucracy's impact on performance may be

optimized when organizations implement changes swiftly and engage in continuous learning.

H9: Speed of strategic change and organizational learning mediate the relationship between hierarchical bureaucracy and organizational performance.

2.7.10. Mediating Effect of Speed of Strategic Change and Organizational Learning on Bottom-Up Learning and Organizational Performance

The relationship between bottom-up learning and organizational performance is also expected to be mediated by speed of strategic change and organizational learning. Bottom-up learning's contributions to performance may be enhanced when organizations can adapt rapidly and integrate knowledge gained from lower levels.

H10: Speed of strategic change and organizational learning mediate the relationship between bottom-up learning and organizational performance.

3. Research Methodology

3.1. Research Design

This study adopts a quantitative research design, aiming to analyse the relationships between hierarchical bureaucracy, bottom-up learning, speed of strategic change, organizational learning, and organizational performance within a military organization context. The approach uses a structural model to examine direct and indirect relationships among variables, with hierarchical bureaucracy and bottom-up learning serving as independent variables, speed of strategic change and organizational learning as mediating variables, and organizational performance as the dependent variable.

The methodology is based on a cross-sectional design, collecting data at a single point in time from the respondents. This research uses the Partial Least Squares (PLS) analysis technique, a powerful method in structural equation modelling that allows for the examination of complex relationships among latent variables.

3.2. Population and Sample

The population for this study includes high-ranking military officers in Indonesia's territorial military institutions, specifically the Indonesian Army's territorial commands. The target respondents are fifty high-ranking officers (all male, aged 47 - 57) who hold leadership positions across all Indonesian Army territorial commands. This includes 15 Regional Military Commanders (Pangdam) and 35 Resort Military Commanders (Danrem) of Type A.

Due to the specific and relatively small target population, the study employs a census approach, wherein all members of the population are included as respondents to ensure comprehensive data collection.

3.3. Research Variables

3.3.1. Independent Variables

These variables include hierarchical bureaucracy and bottom-up learning.

Hierarchical bureaucracy represents the formal, structured approach of a bureaucratic hierarchy within the organization, highlighting its role in maintaining order and consistency. Bottom-up learning, on the other hand, refers to the communication model that allows lower-level employees to share information and insights directly with top management, fostering a more inclusive decision-making process.

3.3.2. Mediating Variables

They are the speed of strategic change and organizational learning. Speed of strategic change reflects the organization's ability to implement necessary changes in a timely manner, which is crucial in dynamic environments. Organizational learning represents the process by which the organization acquires, develops, and applies new knowledge, thus enhancing its adaptability to shifting conditions.

3.3.3. Dependent Variable

The variable is organizational performance, which measures the effectiveness and efficiency of the organization in meeting its strategic goals, serving as an indicator of overall success.

3.4. Operational Definitions of Variables

Operational definitions provide clarity on how each variable will be measured and observed within the research. **Table 1** briefly provide the definitions of our main variables.

Table 1. Coverage of research object.

No	Name	Headquarters	Command
1	Military Regional Command I/Bukit Barisan	Medan	-
2	Military Regional Command II/Sriwijaya	Palembang	-
3	Military Regional Command III/Siliwangi	Bandung	-
4	Military Regional Command IV/Diponegoro	Semarang	-
5	Military Regional Command V/Brawijaya	Surabaya	-
6	Military Regional Command VI/Mulawarman	Balikpapan	-
7	Military Regional Command IX/Udayana	Denpasar	-
8	Military Regional Command XII/Tanjungpura	Kubu Raya	-
9	Military Regional Command XIII/Merdeka	Manado	-
10	Military Regional Command XIV/Hasanuddin	Makassar	-
11	Military Regional Command XVI/Pattimura	Ambon	-
12	Military Regional Command XVII/Cenderawasih	Jayapura	-
13	Military Regional Command XVIII/Kasuari	Manokwari	-
14	Military Regional Command Jayakarta	Kramat Jati	-
15	Military Regional Command Iskandar Muda	Banda Aceh	-

Continued

16	Military Resort Command 031/Wira Bima	Pekanbaru	Kodam I/Bukit Barisan
17	Military Resort Command 032/Wirabraja	Padang	-
18	Military Resort Command 033/Wira Pratama	Tanjung Pinang	-
19	Military Resort Command 041/Garuda Emas	Bengkulu	Kodam II/Sriwijaya
20	Military Resort Command 042/Garuda Putih	Jambi	-
21	Military Resort Command 043/Garuda Hitam	Bandar Lampung	-
22	Military Resort Command 044/Garuda Dempo	Palembang	-
23	Military Resort Command 045/Garuda Jaya	Pangkal Pinang	-
24	Military Resort Command 051/Wijayakarta	Bekasi	Kodam Jaya
25	Military Resort Command 052/Wijayakrama	Tangerang	-
26	Military Resort Command 061/Surya Kencana	Bogor	Kodam III/Siliwangi
27	Military Resort Command 064/Maulana Yusuf	Serang	-
28	Military Resort Command 072/Pamungkas	Yogyakarta	Kodam IV/Diponegoro
29	Military Resort Command 084/Bhaskara Jaya	Surabaya	Kodam V/Brawijaya
30	Military Resort Command 091/Aji Surya Natakesuma	Samarinda	Kodam VI/Mulawarman
31	Military Resort Command 092/Maharajalila	Tanjung Selor	-
32	Military Resort Command 101/Antasari	Banjarmasin	-
33	Military Resort Command 102/Panju Panjung	Palangka Raya	Kodam XII/Tanjungpura
34	Military Resort Command 121/Alambhana Wanawai	Sintang	-
35	Military Resort Command 131/Santiago	Manado	Kodam XIII/Merdeka
36	Military Resort Command 132/Tadulako	Palu	-
37	Military Resort Command 133/Nani Wartabone	Gorontalo	-
38	Military Resort Command 141/Toddopuli	Watampone	Kodam XIV/Hasanuddin
39	Military Resort Command 142/Taroada Tarogau	Mamuju	-
40	Military Resort Command 143/Halu Oleo	Kendari	-
41	Military Resort Command 151/Binaiya	Ambon	Kodam XVI/Pattimura
42	Military Resort Command 152/Baabullah	Sofifi	-
43	Military Resort Command 161/Wira Sakti	Kupang	Kodam IX/Udayana
44	Military Resort Command 162/Wira Bhakti	Mataram	-
45	Military Resort Command 163/Wira Satya	Denpasar	-
46	Military Resort Command 172/Praja Wira Yakhti	Wamena	Kodam XVII/Cenderawasih
47	Military Resort Command 173/Praja Vira Braja	Nabire	-
48	Military Resort Command 174/Anim Ti Waninggap	Merauke	-
49	Military Resort Command 181/Praja Vira Tama	Sorong	Kodam XVIII/Kasuari
50	Military Resort Command 182/Jazira Onim	Fakfak	-

3.5. Data Collection Method

Data were collected through a structured questionnaire distributed to all selected respondents. The questionnaire was designed to measure each of the variables and indicators defined in the study, with Likert-scale items ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire is based on assessment items as listed in the variable definition table (**Table 2**).

Table 2. Definition of variables.

Variable	Variable Definition	Assessment Items
Hierarchical Bureaucracy (X1) (Shen, Gao, & Yang, 2017; Wakhid, 2011)	A bureaucracy with an organizational hierarchy, where lines of authority are clearly defined in specific areas of activity, and all actions are based on written rules (Gualmini, 2008).	<ol style="list-style-type: none"> 1) The organization applies a command-implement exploitation model. 2) The organization does not grant employees flexibility in task execution. 3) Management practices are formal and rigid. 4) Information flows in a hierarchical, top-down manner.
Bottom-Up Learning (X2) (Yi, Gu, & Wei, 2017)	The behavior of knowledge integration by managers through communication with lower-level or frontline employees (McDonald & Westphal, 2003; Mom et al., 2007; Wei et al., 2011).	<ol style="list-style-type: none"> 1) Top management and employees directly communicate and share various types of information. 2) Top managers regularly discuss competitor strengths and strategies with employees. 3) Employees can participate in strategic decision-making through employee consulting institutions, complaint feedback, and employee surveys. 4) Employees have ample opportunities to engage in informal conversations with leadership.
Organizational Learning (XM1) (Mukharomah, 2013; Senge, 1990)	A condition in which members continuously develop their capacity to create the results they desire by adopting new ways of thinking, fostering freedom, and learning together as a team (Mukharomah, 2013).	<ol style="list-style-type: none"> 1) Implements system thinking, where problems are viewed holistically and interconnectedly. 2) Maintains mental models regarding images, assumptions, and stories about external aspects. 3) Fosters personal mastery within the organization, including responsibility and commitment. 4) Emphasizes team learning, involving communication skills, leadership ability, and relationship-building among groups. 5) Engages in building a shared vision related to understanding the organizational vision and using it as a guide for task execution.

Continued

Speed of Strategic Change (XM2) (Yi, Gu, & Wei, 2017)	The total time span taken for the strategic change process (Gersick, 1994).	<ol style="list-style-type: none"> 1) Designs strategic plans very quickly. 2) Implements strategic plans very quickly. 3) Top managers reach consensus on the design and implementation of new strategies very quickly. 4) Members accept new organizational strategies and adapt very quickly.
Organizational Performance (Y) (Spekle & Verbeeten, 2014; Harits & Bhagya, 2020)	The work outcomes achieved by the organization in line with its strategy, goals, and objectives.	<ol style="list-style-type: none"> 1) Organizational productivity 2) Quality of service 3) Public responsiveness 4) Public responsibility 5) Public accountability.

Due to the military setting, permission was obtained from relevant authorities to ensure access to the respondents and adherence to confidentiality protocols. To encourage honest responses, participants were informed that the data collected would be kept anonymous and used solely for research purposes.

3.6. Data Analysis Method

This study employs the Partial Least Squares (PLS) method for structural equation modelling. PLS is particularly well-suited for this research due to its robustness in handling complex models with multiple variables and its effectiveness with smaller sample sizes. The analysis is conducted in three primary steps to ensure thorough examination and model validation.

The first step is measurement model evaluation, where the reliability and validity of each variable and indicator within the model are assessed. This stage evaluates convergent validity, discriminant validity, and internal consistency to confirm the accuracy of the measurements. Further, the structural model evaluation step examines the relationships among variables, determining the strength and significance of paths between independent, mediating, and dependent variables. The final step is mediation analysis, which investigates the mediating effects of speed of strategic change and organizational learning on the relationships between hierarchical bureaucracy, bottom-up learning, and organizational performance. This analysis uses the bootstrapping method to reveal indirect effects of the independent variables on organizational performance. Through these analyses, the study aims to validate its conceptual framework and to assess both direct and indirect relationships among the key variables, offering a comprehensive understanding of the dynamics affecting organizational performance.

4. Results and Discussion

4.1. Measurement Model

We conducted a convergent validity test for each construct to evaluate the reliability and validity of our measurement model. This process involved examining the factor loadings, average variance extracted (AVE), and t-statistics of each item within the construct (Table 2).

The Convergent validity test was assessed based on factor loadings and AVE scores, with each construct surpassing the threshold of 0.50 for AVE, thereby indicating adequate convergent validity. Specifically, the AVE values for Hierarchical Bureaucracy, Bottom-Up Learning, Organizational Learning, Speed of Strategic Change, and Organizational Performance were 0.714, 0.837, 0.806, 0.790, and 0.786, respectively, demonstrating that these constructs are well-represented by their respective indicators.

Regarding the factor loadings, each item across all constructs were well above the minimum acceptable value of 0.70, with values ranging from 0.742 to 0.973. Each item's loading was statistically significant, with t-values exceeding the 1.96 threshold ($p < 0.001$), confirming that the items are robust indicators of their respective constructs. Overall, these results confirm that each construct in the model exhibits strong convergent validity, with high factor loadings and AVE values that meet or exceed recommended standards for reliability and validity.

Table 3. Convergent validity testing.

Variable	Indicator	Loading Factor	t-statistic	AVE	Conclusion
Hierarchical Bureaucracy	HB1	0.908	24.781	0.714	Valid
	HB2	0.858	17.167		Valid
	HB3	0.856	14.289		Valid
	HB4	0.763	16.045		Valid
	HB5	0.893	23.599		Valid
	HB6	0.806	11.533		Valid
	HB7	0.918	34.049		Valid
	HB8	0.742	8.925		Valid
Bottom-Up Learning	BUL1	0.881	11.437	0.837	Valid
	BUL2	0.796	13.148		Valid
	BUL3	0.952	41.428		Valid
	BUL4	0.95	24.628		Valid
	BUL5	0.897	15.549		Valid
	BUL6	0.954	23.331		Valid
	BUL7	0.973	28.047		Valid
	BUL8	0.904	21.266		Valid

Continued

	OL1	0.88	18.547	0.806	Valid
	OL2	0.873	16.952		Valid
	OL3	0.967	98.886		Valid
	OL4	0.85	13.691		Valid
Organizational Learning	OL5	0.953	44.538		Valid
	OL6	0.951	41.302		Valid
	OL7	0.89	20.168		Valid
	OL8	0.94	34.832		Valid
	OL9	0.859	14.157		Valid
	OL10	0.802	12.078		Valid
	SSC1	0.887	17.243	0.79	Valid
	SSC2	0.859	10.511		Valid
	SSC3	0.945	39.823		Valid
	SSC4	0.959	82.969		Valid
Speed of Strategic Change	SSC5	0.968	132.991		Valid
	SSC6	0.865	22.134		Valid
	SSC7	0.837	16.908		Valid
	SSC8	0.759	15.633		Valid
	SSC9	0.879	10.121		Valid
	SSC10	0.907	20.888		Valid
	OP1	0.772	16.982	0.786	Valid
	OP2	0.895	21.255		Valid
	OP3	0.823	25.53		Valid
	OP4	0.895	20.822		Valid
	OP5	0.882	22.443		Valid
	OP6	0.87	15.103		Valid
Organizational Performance	OP7	0.935	30.23		Valid
	OP8	0.926	27.053		Valid
	OP9	0.859	16		Valid
	OP10	0.924	25.031		Valid
	OP11	0.906	21.406		Valid
	OP12	0.94	33.057		Valid
	OP13	0.938	32.328		Valid
	OP14	0.827	11.548		Valid

Note(s): HB = Hierarchical Bureaucracy; BUL = Bottom-Up Learning; OL = Speed of Strategic Change; SSC = Speed of Strategic Change; OP = Organizational Performance.

In addition, we conducted discriminant validity testing to ensure that the constructs in our model are distinct and measure separate conceptual domains, as summarized in **Table 3**. Discriminant validity is achieved when items load more highly on their respective constructs than on other constructs, and when the cross-loadings with other constructs are minimal.

The factor loadings demonstrate that each indicator's highest loading is on its corresponding construct rather than on other constructs. For example, indicators for Bottom-Up Learning (e.g., BUL1 and BUL2) have high loadings within their construct (0.881 and 0.796, respectively) and minimal cross-loadings with other constructs, supporting the distinctiveness of each construct. Similar patterns are observed across other constructs, including Hierarchical Bureaucracy, Organizational Learning, Speed of Strategic Change, and Organizational Performance. These results indicate that each construct is conceptually distinct from the others, affirming the discriminant validity of our measurement model.

We then assessed the internal consistency and reliability of each construct using Cronbach's Alpha and Composite Reliability (CR), as shown in **Table 4**. All constructs demonstrate high internal consistency, with Cronbach's Alpha values exceeding the threshold of 0.70, confirming their reliability. The composite reliability (CR) values also exceed 0.70, indicating that each construct has a high level of reliability and consistency across its indicators.

Table 4. Discriminant validity testing.

Indicator	Bottom-Up Learning	Hierarchical Bureaucracy	Organization Learning	Organizational Performance	Speed of Strategic Change
BUL1	0.881	0.07	0.268	0.292	0.298
BUL2	0.796	0.175	0.365	0.349	0.361
BUL3	0.952	0.033	0.335	0.381	0.316
BUL4	0.95	0.001	0.242	0.25	0.284
BUL5	0.897	0.163	0.292	0.288	0.265
BUL6	0.954	0.09	0.325	0.329	0.325
BUL7	0.973	0.036	0.296	0.307	0.341
BUL8	0.904	0.192	0.356	0.33	0.363
HB1	0.046	0.908	0.317	0.362	0.455
HB2	0.075	0.858	0.414	0.369	0.415
HB3	0.078	0.856	0.395	0.337	0.384
HB4	0.065	0.763	0.323	0.298	0.514
HB5	0.059	0.893	0.296	0.365	0.542
HB6	0.213	0.806	0.273	0.296	0.634
HB7	0.088	0.918	0.319	0.389	0.54
HB8	0.095	0.742	0.306	0.3	0.49

Continued

OL1	0.235	0.491	0.88	0.52	0.486
OL10	0.342	0.3	0.802	0.427	0.544
OL2	0.283	0.271	0.873	0.547	0.599
OL3	0.355	0.352	0.967	0.612	0.548
OL4	0.237	0.23	0.85	0.59	0.552
OL5	0.314	0.315	0.953	0.657	0.509
OL6	0.334	0.405	0.951	0.592	0.513
OL7	0.344	0.33	0.89	0.59	0.54
OL8	0.283	0.368	0.94	0.63	0.476
OL9	0.366	0.424	0.859	0.458	0.44
OP1	0.31	0.342	0.405	0.772	0.528
OP10	0.343	0.371	0.595	0.924	0.619
OP11	0.283	0.477	0.61	0.906	0.635
OP12	0.324	0.424	0.621	0.94	0.599
OP13	0.271	0.297	0.604	0.938	0.572
OP14	0.138	0.201	0.446	0.827	0.475
OP2	0.417	0.49	0.638	0.895	0.662
OP3	0.33	0.374	0.422	0.823	0.547
OP4	0.419	0.45	0.653	0.895	0.595
OP5	0.32	0.311	0.446	0.882	0.522
OP6	0.317	0.308	0.536	0.87	0.524
OP7	0.314	0.376	0.612	0.935	0.599
OP8	0.292	0.243	0.581	0.926	0.596
OP9	0.218	0.259	0.547	0.859	0.553
SSC1	0.375	0.502	0.484	0.544	0.887
SSC10	0.397	0.485	0.526	0.602	0.907
SSC2	0.2	0.455	0.535	0.54	0.859
SSC3	0.375	0.603	0.545	0.608	0.945
SSC4	0.328	0.576	0.53	0.508	0.959
SSC5	0.395	0.552	0.519	0.59	0.968
SSC6	0.305	0.559	0.544	0.67	0.865
SSC7	0.279	0.534	0.501	0.623	0.837
SSC8	0.139	0.514	0.373	0.418	0.759
SSC9	0.291	0.472	0.546	0.632	0.879

Note(s): HB = Hierarchical Bureaucracy; BUL = Bottom-Up Learning; OL = Speed of Strategic Change; SSC = Speed of Strategic Change; OP = Organizational Performance.

Overall, the discriminant validity and reliability of these constructs imply that our measurement model is both robust and theoretically sound. This strong construct validity suggests that the observed relationships in subsequent analyses can be attributed to the intended theoretical constructs rather than measurement errors or overlapping definitions. As a result, our model can be used to explore the relationships among Bottom-Up Learning (BUL), Hierarchical Bureaucracy (HB), Organizational Learning (OL), Speed of Strategic Change (SSC), and Organizational Performance (OP) with greater confidence in the accuracy of the findings.

4.2. Structural Model

The structural model results, presented in **Table 5**, reveal the direct effects among constructs, providing insights into the hypothesized relationships in our model. The path from Bottom-Up Learning (BUL) to Organizational Learning (OL) was positive and significant ($\beta = 0.306, p < 0.01$), supporting the role of bottom-up learning processes in enhancing organizational learning. Likewise, Bottom-Up Learning also showed a significant positive effect on Speed of Strategic Change (SSC) ($\beta = 0.293, p < 0.05$), suggesting that fostering bottom-up learning may facilitate more agile and responsive strategic adaptations. However, the path from Bottom-Up Learning to Organizational Performance (OP) was not statistically significant ($\beta = 0.081, p = 0.544$), indicating that bottom-up learning alone may not directly impact overall organizational performance.

Table 5. Reliability test.

Construct	Cronbach's Alpha	Composite Reliability	Note
HB	0.942	0.952	Reliable
BUL	0.972	0.976	Reliable
OL	0.973	0.976	Reliable
SSC	0.97	0.974	Reliable
OP	0.979	0.981	Reliable

Note(s): HB = Hierarchical Bureaucracy; BUL = Bottom-Up Learning; OL = Speed of Strategic Change; SSC = Speed of Strategic Change; OP = Organizational Performance.

Hierarchical Bureaucracy (HB) was found to have a significant positive effect on both Organizational Learning ($\beta = 0.357, p < 0.01$) and Speed of Strategic Change ($\beta = 0.561, p < 0.001$), underscoring the importance of hierarchical structures in supporting learning and enabling faster strategic change. Nonetheless, the effect of Hierarchical Bureaucracy on Organizational Performance was non-significant ($\beta = 0.013, p = 0.897$), suggesting that while hierarchical structures contribute to internal processes, they may not directly enhance performance outcomes.

The results further demonstrate that Organizational Learning has a significant positive impact on Organizational Performance ($\beta = 0.363$, $p < 0.05$), implying that organizations that invest in learning processes are more likely to see improvements in performance. Additionally, Speed of Strategic Change was positively associated with Organizational Performance ($\beta = 0.405$, $p < 0.05$), highlighting the importance of an organization's adaptability in driving better performance results. Overall, these findings support the view that both hierarchical structures and bottom-up learning mechanisms play vital roles in fostering organizational learning and strategic agility, which in turn are critical for enhancing organizational performance. However, the direct impact of hierarchical and learning-oriented practices on performance remains indirect, mediated through learning and strategic change capabilities, thus suggesting a layered influence on performance outcomes.

We extend our analysis to examine the mediating role of Organizational Learning (OL) and Speed of Strategic Change (SSC) on the relationship of Bottom-Up Learning [BUL] and Hierarchical Bureaucracy [HB] and Organizational Performance (OP). The analysis reveals that the indirect effect of Bottom-Up Learning on Organizational Performance through Organizational Learning is not statistically significant ($\beta = 0.111$, $p = 0.162$), indicating that while bottom-up learning positively contributes to organizational learning, this effect does not extend to enhancing overall performance. Similarly, the indirect effect of Hierarchical Bureaucracy on Organizational Performance through Organizational Learning was non-significant ($\beta = 0.130$, $p = 0.200$), suggesting that hierarchical structures do not directly influence performance through the learning processes in this model (**Table 6**).

Table 6. Structural model (Direct effect).

Structural paths	Path coefficient (β)	Std Dev.	T Stat.	P Values	Note
BUL -> OL	0.306***	0.125	2.449	0.015	Supported
BUL -> OP	0.081	0.133	0.607	0.544	Rejected
BUL -> SSC	0.293**	0.115	2.546	0.011	Supported
HB -> OL	0.357***	0.125	2.848	0.005	Supported
HB -> OP	0.013	0.097	0.13	0.897	Rejected
HB -> SSC	0.561***	0.107	5.242	0.000	Supported
OL -> OP	0.363**	0.181	2.01	0.045	Supported
SSC -> OP	0.405**	0.187	2.166	0.031	Supported

Note(s): HB = Hierarchical Bureaucracy; BUL = Bottom-Up Learning; OL = Speed of Strategic Change; SSC = Speed of Strategic Change; OP = Organizational Performance. ***denotes $p < 0.001$, ** $p < 0.005$, and * $p < 0.01$.

Conversely, the results indicate a significant mediating effect of Speed of Strategic Change in the relationship between both Bottom-Up Learning and Hierarchical

Bureaucracy with Organizational Performance. Specifically, Speed of Strategic Change significantly mediates the effect of Bottom-Up Learning on Organizational Performance ($\beta = 0.119$, $p < 0.10$), supporting the notion that bottom-up learning enhances performance when it facilitates strategic adaptability. Likewise, Speed of Strategic Change also significantly mediates the relationship between Hierarchical Bureaucracy and Organizational Performance ($\beta = 0.227$, $p < 0.10$), indicating that hierarchical structures can contribute to improved performance when they enhance the organization's capacity for timely and effective strategic changes. These findings imply that while both bottom-up learning and hierarchical structures are valuable, their influence on organizational performance is indirect and primarily realized through the organization's ability to adapt strategically. This highlights the critical role of Speed of Strategic Change as a mediator that channels the potential benefits of structural and learning-oriented practices into performance improvements (Table 7).

Table 7. The results of mediating effect.

Mediating effects	Path coefficient (β)	Std. Dev.	T Stat.	P Values	Note
BUL -> OL -> OP	0.111	0.079	1.399	0.162	Rejected
HB -> OL -> OP	0.130	0.101	1.283	0.200	Rejected
BUL -> SSC -> OP	0.119*	0.071	1.668	0.096	Supported
HB -> SSC -> OP	0.227*	0.117	1.946	0.052	Supported

Note(s): HB = Hierarchical Bureaucracy; BUL = Bottom-Up Learning; OL = Speed of Strategic Change; SSC = Speed of Strategic Change; OP = Organizational Performance. ***denotes $p < 0.001$, ** $p < 0.005$, and * $p < 0.01$.

In summary, referring to the hypotheses presented in the previous section, the verification results show that eight hypotheses are supported, while two hypotheses are not supported. The details are as follows (Table 8):

Table 8. Hypothesis verification result.

Hypothesis	Result
H1: Hierarchical bureaucracy has a significant positive effect on organizational learning	Supported
H2: Bottom-up learning has a significant positive effect on organizational learning.	Supported
H3: Hierarchical bureaucracy has a significant effect on the speed of strategic change	Supported
H4: Bottom-up learning has a significant positive effect on the speed of strategic change	Supported
H5: Hierarchical bureaucracy has a significant effect on organizational performance.	Rejected

Continued

H6: Bottom-up learning has a significant positive effect on organizational performance.	Rejected
H7: Organizational learning has a significant positive effect on organizational performance	Supported
H8: Speed of strategic change has a significant positive effect on organizational performance	Supported
H9: Speed of strategic change and organizational learning mediate the relationship between hierarchical bureaucracy and organizational performance	Supported
H10: Speed of strategic change and organizational learning mediate the relationship between bottom-up learning and organizational performance	Supported

4.3. Discussion of Research Findings**4.3.1. Direct Effects on Organizational Learning and Speed of Strategic Change**

The significant positive impact of Bottom-Up Learning on Organizational Learning is consistent with prior research, which indicates that bottom-up approaches foster knowledge sharing and learning throughout the organization (citation). This underscores the importance of grassroots learning mechanisms in fostering a culture of continuous learning. Additionally, Bottom-Up Learning significantly boosts Speed of Strategic Change, suggesting that encouraging employees to take part in learning processes can support a more flexible and responsive approach to strategy (citation). However, Bottom-Up Learning did not show a direct link to Organizational Performance, indicating that while employee-driven learning enhances agility, it may not independently improve overall performance.

Likewise, Hierarchical Bureaucracy was found to have a strong positive effect on both Organizational Learning and Speed of Strategic Change, highlighting the role of structured frameworks in supporting learning and adaptability (citation). Formal structures likely provide the channels needed to capture and spread organizational knowledge, which helps facilitate strategic adjustments. Still, in line with past studies that question the direct performance benefits of hierarchical structures (citation), Hierarchical Bureaucracy had no significant direct effect on Organizational Performance. This suggests that while hierarchical systems enhance learning and adaptability, they may not directly drive performance.

4.3.2. Direct Effects on Organizational Performance

The positive and significant impacts of both Organizational Learning and Speed of Strategic Change on Organizational Performance highlight the critical role that adaptability and continuous learning play in enhancing performance. These findings support theories that organizations emphasizing learning and flexibility are better prepared to respond to external changes, ultimately boosting performance

(citation). Thus, while hierarchical structures and bottom-up learning don't directly impact performance, they contribute indirectly by fostering organizational learning and adaptability, which are crucial for performance improvements.

4.3.3. Mediating Effects of Organizational Learning and Speed of Strategic Change

The analysis of mediating effects sheds light on the indirect pathways through which Bottom-Up Learning and Hierarchical Bureaucracy impact Organizational Performance. The non-significant mediation effect of Organizational Learning on the link from Bottom-Up Learning to Organizational Performance and from Hierarchical Bureaucracy to Organizational Performance suggests that while these structures enhance learning, this alone may not be enough to improve performance. This aligns with arguments that learning must be translated into concrete strategic actions to drive real performance gains.

On the other hand, Speed of Strategic Change showed a significant mediating role in the relationships between both Bottom-Up Learning and Hierarchical Bureaucracy with Organizational Performance. Specifically, the pathway from Bottom-Up Learning to Organizational Performance through Speed of Strategic Change was significant, as was the pathway from Hierarchical Bureaucracy to Organizational Performance through Speed of Strategic Change. These results suggest that both bottom-up and hierarchical structures positively impact performance indirectly by enhancing strategic agility. The significant mediating role of Speed of Strategic Change underscores the idea that adaptability is essential to translate learning into performance, particularly in rapidly changing environments (citations)

5. Conclusion, Limitations, Implications, and Recommendations

5.1. Conclusion

This study examined the relationships between hierarchical bureaucracy, bottom-up learning, speed of strategic change, organizational learning, and organizational performance within Indonesian military organizations. The findings provide valuable insights into how these constructs interact within structured, hierarchical settings. Hierarchical bureaucracy was found to positively influence organizational learning within a disciplined military environment, where structured frameworks promote learning within established boundaries. Bottom-up learning also enhances organizational learning by incorporating insights from frontline personnel, which enables the organization to respond more effectively to operational demands.

Hierarchical structures were shown to have a complex relationship with speed of strategic change. Although formalized procedures can sometimes limit flexibility, they can also facilitate rapid responses under certain conditions. Bottom-up learning accelerates the speed of strategic change by ensuring a direct flow of

information from lower ranks to senior management, supporting more agile responses to emerging challenges. However, neither hierarchical bureaucracy nor bottom-up learning directly influences organizational performance. Instead, their impacts are indirect, mediated by speed of strategic change, emphasizing a layered influence on performance outcomes.

These findings support the contingency theory framework, which suggests that organizational performance improves when structure, adaptability, and learning are aligned. In military organizations, where both hierarchy and adaptability are crucial, this combination allows the institution to maintain control while remaining responsive to change.

5.2. Implications

This study offers significant theoretical, practical, and policy-related implications. Theoretically, this study contributes to contingency theory by showing that hierarchical bureaucracy and bottom-up learning can be combined to improve organizational performance, especially when adaptability factors such as organizational learning and speed of strategic change are integrated. These findings provide new insights into the role of bottom-up learning in hierarchical military settings, demonstrating that even highly structured organizations can benefit from grassroots input. From a practical perspective, the study suggests that military organizations could enhance performance by incorporating bottom-up learning practices. Leaders should foster open communication channels across levels, as insights from lower ranks can improve decision-making and strategic responsiveness. By valuing input from frontline personnel, military organizations can become more adaptive to operational demands. For policy, this study underscores the importance of flexibility and adaptability within hierarchical military organizations. Policymakers may consider creating policies that support bottom-up learning and enhance strategic agility without compromising structural discipline. Encouraging flexibility within hierarchical frameworks could allow organizations to retain control while adapting to change.

5.3. Limitations

While this study provides important insights, certain limitations should be acknowledged. First, the research focuses on the Indonesian military, specifically the Indonesian Army's territorial commands, which may limit the generalizability of the findings to other contexts, such as non-military organizations or other branches of the military. Second, the study relies on a relatively small sample size of high-ranking officers, which may impact the robustness of the statistical analysis. A larger sample could enhance the reliability of the results and provide more comprehensive insights. The cross-sectional design of the study also limits its ability to capture the evolution of these relationships over time. Additionally, the use of self-reported data may introduce response bias, as participants might interpret questions differently or respond in ways they perceive as socially desirable.

5.4. Recommendations for Future Research

Building on the findings and limitations of this study, future research could explore several directions to provide a more comprehensive understanding of these relationships. Firstly, expanding the scope to include other branches of the military, different national contexts, or non-military organizations would enhance the generalizability of the findings. Examining these relationships in a broader range of settings could provide insights into how different organizational types and cultural contexts impact the interplay between hierarchical structures, learning processes, and performance. Further, longitudinal studies could also offer valuable insights into how these relationships evolve over time, particularly in response to changing external conditions. Such studies could capture the dynamic nature of organizational learning, strategic change, and performance, thereby providing a more detailed understanding of these constructs. In addition, using larger and more diverse samples would allow for more comprehensive statistical analysis, enhancing the reliability and validity of the findings. Including a broader range of participants, such as officers from various levels and backgrounds, could yield a more nuanced understanding of how hierarchical and learning structures impact performance. Finally, future research could incorporate additional variables, such as organizational culture or leadership styles, to develop a richer understanding of the factors influencing performance in hierarchical organizations. By examining these elements, researchers could gain further insights into the complex interplay between structural, cultural, and leadership factors that drive organizational outcomes.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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