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BEYOND TEAM DIVERSITY: THE PRIMACY OF INFORMATION SYSTEMS IN SHAPING STRATEGIC DECISION OUTCOMES

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ABSTRACT

Strategic decision-making effectiveness remains paramount for organizational survival in dynamic industries where leadership teams must integrate analytical precision with adaptive responsiveness. This research investigated the influence of top management team (TMT) diversity, information processing capability, and decision support effectiveness on strategic decision endorsement within Indonesia's information and communication technology sector. Anchored in Upper Echelon Theory, Information Processing Theory, and Team Process Theory, the investigation employed partial least squares structural equation modeling to examine a comprehensive pathway model incorporating four heterogeneity dimensions, two organizational enablers, and two behavioral intermediaries—strategic alignment and decision velocity. Results revealed differential heterogeneity effects: job-relevant diversity enhanced decision velocity, whereas other dimensions, particularly cognitive diversity, demonstrated negligible or adverse influences. Conversely, information processing capability and decision support effectiveness uniformly reinforced both alignment and velocity. The research advances theoretical understanding by extending Upper Echelon Theory through demonstrating heterogeneity's multidimensional rather than unitary effects, strengthening Information Processing Theory by confirming that organizational enablers surpass compositional attributes in influence, and enriching Team Process Theory by conceptualizing alignment and velocity as cascading intermediaries in strategic decision processes. These outcomes support reconceptualizing strategic effectiveness as dependent on robust information processing infrastructure rather than team diversity optimization alone.

KEYWORDS: Strategic Decision-Making, TMT Heterogeneity, Information Processing, Decision Support, Consensus, Emerging Markets.

1. INTRODUCTION

In today's global economy, strategic decision-making within top management teams (TMTs) is increasingly complex, particularly in high-velocity industries where technological disruption, market volatility, and competitive intensity demand both rapid responsiveness and analytical rigor (Aftab et al., 2025; Bourini et al., 2024). Nowhere is this challenge more visible than in the information and communication technology (ICT) sector, where leadership teams must respond to fast-evolving consumer demands, shifting regulatory landscapes, and relentless innovation while making timely, high-stakes decisions (Nguyen et al., 2024; Joshi et al., 2024). Within such contexts, the composition of TMTs—especially their heterogeneity—has traditionally been regarded as a key driver of strategic effectiveness (Alam, 2023; Chopra & Gupta, 2020). This assumption is particularly pronounced in the ICT sector, where rapid technological evolution requires diverse expertise spanning technical, commercial, and strategic domains to navigate complex digital transformation challenges, theoretically benefiting from heterogeneous leadership teams that can process multifaceted information and anticipate market disruptions (Obrenovic et al., 2020; Cajander et al., 2022).

However, empirical evidence presents conflicting findings that challenge this conventional wisdom. While Upper Echelon Theory suggests that diversity in team members' functional, educational, cognitive, and experiential backgrounds broadens perspectives and strengthens information processing, thereby enhancing strategic decision-making (Wowak et al., 2022; Boone et al., 2019), insights from social identity and categorization theory caution that excessive diversity may weaken team cohesion, increase interpersonal conflict, and delay consensus—outcomes that can be particularly detrimental in high-velocity ICT environments where timing is critical (Kearney et al., 2019; Ellwardt et al., 2020). These conflicting theoretical perspectives are reflected in empirical work: some studies highlight the benefits of heterogeneity (Wang et al., 2020; Torchia & Calabrò, 2016), while others report null effects, negative associations, or curvilinear outcomes, with results often contingent on contextual and processual moderators (Post & Byron, 2015; Liu & Yi, 2022).

Current understanding of TMT dynamics rests on three foundational theories that guide this investigation. Upper Echelon Theory (Hambrick & Mason, 1984) posits that organizational outcomes reflect the characteristics of top management, with diversity theoretically enhancing information processing and strategic choice quality (Rai et al., 2024; Ismail et al., 2021). Information Processing Theory (Tushman & Nadler, 1978; Galbraith, 1974) emphasizes that decision effectiveness depends on matching information processing requirements with organizational capacity, where technological infrastructure and analytical systems enable effective cognitive resource utilization (Davidavičienė et al., 2020; Gatiti, 2022). Team Process Theory (Hackman, 1987; Marks et al., 2001) explains that effectiveness emerges through sequential input-process-output pathways where strategic consensus reduces conflict and facilitates coordination (Deroncele-Acosta et al., 2021; Delcker & Ifenthaler, 2021). Contemporary research in ICT contexts reveals that systemic enablers may be more influential than team composition alone, with studies demonstrating that information and communication technologies, digital infrastructure, and knowledge management systems significantly impact organizational performance and decision quality, particularly when supported by top management and technological leadership (Sharma, 2020; Zamzeer et al., 2020; Mishra et al., 2022).

Despite this growing body of knowledge, several critical gaps persist that limit our understanding of TMT dynamics in strategic decision-making. First, while theoretical frameworks distinguish between different types of heterogeneity, empirical applications in ICT contexts remain fragmented, treating diversity as monolithic rather than examining differentiated effects of cognitive versus demographic, and task-related versus relation-oriented dimensions (Palale & Ishida, 2024). Second, the relative importance of team composition versus systemic enablers—such as information processing capacity and decision support quality—remains underexplored in technology-intensive sectors, despite growing evidence that these process-oriented mechanisms may be more influential than heterogeneity per se (Figueroa-Domecq et al., 2020; Kor et al., 2021). Third, existing studies typically examine partial pathways rather than modeling complete mediation sequences from heterogeneity through consensus and speed to organizational support for decisions, leaving the full causal chain underexplored in dynamic ICT environments (López-López et al., 2022; Sosa-Díaz et al., 2022). Finally, geographic concentration in Western contexts limits understanding of how cultural factors prevalent in emerging markets might moderate these relationships in ICT sectors characterized by rapid digital transformation and unique regulatory environments (Kumari & Lenka, 2024; Kumar et al., 2024).

Building on this foundation, this study develops and empirically tests an integrative model that investigates how TMT heterogeneity, information processing capacity, and decision support quality influence strategic decision effectiveness through the sequential mediation of strategic consensus and decision speed. Drawing on the integration of Upper Echelon Theory, Information Processing Theory, and Team Process Theory, we employ a PLS-SEM approach to test a multi-pathway model that disaggregates heterogeneity into four distinct dimensions while incorporating systemic enablers and behavioral mediators. Testing this model within Indonesia's dynamic ICT sector—characterized by high strategic complexity and unique cultural features such as collectivist orientation and high-power distance (House et al., 2014; Irawanto et al., 2011)—provides a compelling context to examine these relationships in an underrepresented institutional setting.

This research makes three key theoretical and empirical contributions. First, it demonstrates that information systems matter more than team composition for strategic effectiveness, challenging the traditional emphasis on diversity optimization in ICT leadership by extending Upper Echelon Theory through empirical validation of differentiated heterogeneity effects. Second, it advances Information Processing Theory by demonstrating that systemic enablers exert stronger influence than compositional features on decision outcomes, while enriching Team Process Theory by modeling consensus and speed as sequential mediators in the decision-making process. Third, it provides evidence from Southeast Asia's underrepresented institutional context, extending TMT theory beyond Western settings to include emerging market dynamics. These findings advocate a paradigm shift from optimizing team composition toward building robust information processing capabilities that enable strategic clarity and responsiveness in rapidly evolving technological landscapes.

2. THEORETICAL BACKGROUND

Strategic decision-making in top management teams (TMTs) has long been analyzed through Upper Echelon Theory (UET), Information Processing Theory (IPT), and Team Process Theory (TPT). UET (Hambrick & Mason, 1984) posits that organizational outcomes reflect managerial characteristics, with diversity broadening cognitive resources for strategic choices, yet meta-critiques reveal methodological inconsistencies and mixed results regarding which heterogeneity dimensions matter most (Neely et al., 2020). While some studies show positive effects of cognitive and demographic diversity (Popli et al., 2022; Aboramadan, 2021), others find curvilinear or negative associations under high pressure (Zhao et al., 2024). Emerging work on "blended teams" suggests demographic proxies inadequately capture cognitive processes in digitally enabled, AI-augmented contexts (Mueller-Saegebrecht, 2025). Complementing this, IPT (Tushman & Nadler, 1978; Galbraith, 1974) emphasizes aligning information requirements with organizational capacity, where infrastructure and technology reduce ambiguity and enhance coordination. Recent studies underscore the strong influence of information processing on consensus and speed (Tarigan & Silitonga, 2025), though the relative weight of systemic enablers versus team composition remains underexplored, even as AI and analytics reshape information processing (Csaszar et al., 2024). Meanwhile, TPT (Hackman, 1987; Marks et al., 2001) highlights sequential input–process–output pathways where consensus facilitates coordination, but most research still examines partial pathways, with limited integration of digital collaboration and virtual dynamics (Zhu et al., 2021; Zhao et al., 2024).

Across these perspectives, four contemporary gaps emerge. First, methodological fragmentation persists, with UET focusing on demographic proxies, IPT on technological capacity, and TPT on behavioral dynamics, rarely integrated systematically (Neely et al., 2020). Second, temporal dynamics are underexplored, as team processes are often treated as static despite reciprocal and evolving decision-making patterns (Zhu et al., 2021). Third, contextual specificity is limited, since most studies remain Western-centric and overlook cultural factors like collectivism and power distance that influence ICT leadership in emerging markets (Aboramadan, 2021). Fourth, technological disruption remains insufficiently theorized, even though AI, digital platforms, and virtual collaboration tools are reshaping assumptions about diversity, information processing, and team interaction (Csaszar et al., 2024). Taken together, these gaps underscore the need for integrative models that differentiate heterogeneity effects, emphasize systemic enablers alongside composition, and trace complete mediation pathways in diverse institutional and technology-intensive contexts (See Table 1).

Table 1: Summary Of Theoretical Foundations and Key Propositions.

Theory	Key Propositions	Recent Gaps Identified
Upper Echelon Theory (Hambrick & Mason, 1984)	• Organizational outcomes reflect characteristics of top management • TMT diversity broadens cognitive resources and perspectives • Heterogeneity affects strategic choices through enhanced information processing	• Mixed empirical findings on heterogeneity dimensions • Limited integration with digital decision-making contexts (Neely et al., 2020)
Information Processing Theory (Tushman & Nadler, 1978; Galbraith, 1974)	• Decision effectiveness depends on matching information processing requirements with organizational capacity • System infrastructure enables effective utilization of cognitive resources • Technology and support systems reduce ambiguity and facilitate coordination	• Relative importance vs. team composition unclear • Strong effects on consensus and speed documented (Tarigan & Silitonga, 2025; Csaszar et al., 2024)
Team Process Theory (Hackman, 1987; Marks et al., 2001)	• Team effectiveness emerges through sequential input-process-output mechanisms • Strategic consensus reduces conflict and facilitates coordination • Process variables mediate the relationship between inputs and outcomes	• Partial pathway focus rather than complete mediation sequences • Limited understanding of digital collaboration effects (Zhao et al., 2024; Zhu et al., 2021)

3. HYPOTHESIS DEVELOPMENT

Extant scholarship on TMTs has long emphasized heterogeneity as a critical antecedent to strategic decision quality, based on the premise that diverse cognitive and demographic profiles enrich information processing and enhance decision-making effectiveness (Hambrick & Mason, 1984; Bell et al., 2011). However, heterogeneity in itself does not necessarily lead to better outcomes. Its impact depends on how effectively teams process complex information, synthesize diverse viewpoints, and respond to dynamic conditions with speed and clarity (Boone et al., 2019; Nadkarni & Chen, 2014). Drawing on Upper Echelon Theory, Information Processing Theory, and Team Process Theory, this study proposes a multi-pathway model that positions strategic decision effectiveness as the outcome of interrelated cognitive, structural, and behavioral mechanisms. TMT heterogeneity is conceptualized using a four-dimensional framework that distinguishes between cognitive and demographic characteristics, and between task-related and relation-oriented traits (Tacheva, 2007). To capture the full decision-making process, the model also incorporates two process enablers: information processing capacity and decision support quality. These constructs are expected to influence two critical mediators—strategic consensus and decision speed—which in turn shape the level of support for strategic decisions. This integrative approach offers a more nuanced understanding of how team diversity interacts with systemic capabilities to influence strategic outcomes.

3.1. Top Management Team (TMT) Heterogeneity and Related Constructs

Scholarly interest in TMT heterogeneity has been shaped largely by Upper Echelon Theory, which asserts that organizational outcomes are influenced by the characteristics of those at the top (Hambrick & Mason, 1984). TMT heterogeneity—the variation in backgrounds, perspectives, and cognitive styles among executives—is believed to enhance decision-making by enriching information pools and promoting broader strategic insights, though it can also introduce coordination challenges and interpersonal frictions (Bell et al., 2011; Jehn & Bezrukova, 2010). The literature distinguishes between cognitive and demographic diversity, each subdivided into task-related and relation-oriented components (Tacheva, 2007), with these distinctions influencing how diversity affects team processes like consensus formation and decision speed (Wang & Hu, 2020). Beyond composition, process-oriented constructs have gained attention, particularly information processing capacity and decision support systems effectiveness, which shape team alignment and responsiveness in high-velocity environments (Tushman & Nadler, 1978; Hair et al., 2017).

Despite this conceptual richness, several critical gaps limit our understanding of how TMT characteristics translate into strategic effectiveness. While Tacheva's (2007) four-dimensional framework has gained theoretical acceptance, empirical applications remain fragmented, with most studies treating heterogeneity as monolithic rather than examining differentiated effects of distinct dimensions (Bell et al., 2011; Richard et al., 2004).

Additionally, the relative importance of team composition versus systemic enablers remains unresolved, despite growing evidence that information processing capacity and decision support quality may be more influential than heterogeneity per se (Boone et al., 2019; Bartkus et al., 2021). Most critically, existing studies examine partial pathways rather than complete mediation sequences from heterogeneity through consensus and speed to organizational support, while geographic concentration in Western contexts limits understanding of how cultural factors such as collectivism and power distance might moderate these relationships in emerging markets like Indonesia (González-Moreno et al., 2019; Georgakakis et al., 2016). These limitations underscore the need for an integrative study that disaggregates heterogeneity dimensions, emphasizes systemic enablers, and models complete mediation pathways in culturally distinct contexts.

3.2. Effects Of TMT Heterogeneity on Strategic Processes (H1)

TMT heterogeneity's effects on strategic processes vary across diversity dimensions. Building on Tacheva's (2007) four-dimensional typology and recent evidence, this study examines how each dimension shapes strategic consensus and decision speed through distinct mechanisms. Cognitive task-related heterogeneity—differences in mental models, analytical frameworks, and problem-solving approaches—can initially complicate deliberation but ultimately enrich consensus by pooling complementary cognitive resources for broader information processing and option evaluation (Boone et al., 2019; Buyl et al., 2011). Such richness fosters higher-quality strategic alignment once coordination challenges are managed. Cognitive relation-oriented heterogeneity, which reflects differences in values and interpersonal orientations, may enhance consensus in collectivist contexts like Indonesia, where inclusive decision-making and stakeholder consideration strengthen team commitment (Wang & Hu, 2020).

Demographic task-related heterogeneity, including variations in education, functional background, and industry experience, consistently improves consensus and speed by enabling specialization, reducing knowledge gaps, and facilitating parallel information processing (Richard et al., 2004). Demographic relation-oriented heterogeneity—differences in age, gender, and tenure—can trigger initial social categorization but also broaden perspectives on stakeholders, markets, and long-term strategies, with benefits particularly salient in complex environments (Kearney et al., 2019).

These arguments suggest the following hypotheses:

H1a: *Cognitive task-related heterogeneity (HEKTR) positively influences strategic consensus.*

H1b: *Cognitive relation-oriented heterogeneity (HEKRO) positively influences strategic consensus.*

H1c: *Demographic task-related heterogeneity (HEDTR) positively influences strategic consensus.*

H1d: *Demographic relation-oriented heterogeneity (HEDRO) positively influences strategic consensus.*

In addition, for decision speed, each dimension offers unique acceleration mechanisms. Cognitive task-related diversity enables faster option generation through parallel cognitive processing (Nadkarni & Chen, 2014). Cognitive relation-oriented diversity facilitates rapid stakeholder alignment in culturally complex environments. Demographic task-related differences promote efficient specialization and reduce information search time. Demographic relation-oriented diversity provides broader market insight that accelerates opportunity recognition (Xie et al., 2020).

These considerations lead to the following hypotheses:

H1e: Cognitive task-related heterogeneity (HEKTR) positively influences decision speed.

H1f: Cognitive relation-oriented heterogeneity (HEKRO) positively influences decision speed.

H1g: Demographic task-related heterogeneity (HEDTR) positively influences decision speed.

H1h: Demographic relation-oriented heterogeneity (HEDRO) positively influences decision speed.

3.3. Effects Of Information and System Capacity on Strategic Processes (H2)

While heterogeneity provides informational variety, Information Processing Theory emphasizes that organizational capacity to synthesize and act upon diverse inputs determines strategic effectiveness (Tushman & Nadler, 1978; Galbraith, 1974). Two systemic enablers are particularly critical for TMT effectiveness. Information processing capacity (KPI) represents the team's collective ability to gather, interpret, and integrate strategic data from multiple sources. High processing capacity enables teams to synthesize diverse inputs, reduce information ambiguity, and develop shared understanding more effectively, thereby facilitating consensus formation (Bartkus et al., 2021; Liu & Yi, 2022). Complementing this, decision support quality (KPP) reflects the availability and effectiveness of analytical systems, technological infrastructure, and advisory structures that assist strategic decision-making. While KPI captures the internal ability to process information, KPP provides the external tools and frameworks that reduce cognitive load, ensure accessible and reliable information, and facilitate coordination.

Both enablers accelerate decision speed by reducing information search time, minimizing interpretive ambiguity, and enabling real-time response to strategic opportunities, particularly critical in high-velocity ICT environments (Hair et al., 2017; Nadkarni & Chen, 2014).

Taken together, these arguments lead to the following hypotheses:

H2a: Information processing capacity (KPI) positively influences strategic consensus.

H2b: Decision support quality (KPP) positively influences strategic consensus.

H2c: Information processing capacity (KPI) positively influences decision speed.

H2d: Decision support quality (KPP) positively influences decision speed.

3.4. Effects Of Strategic Consensus on Outcomes (H3)

Strategic consensus represents the degree of shared understanding and agreement among TMT members regarding strategic priorities, resource allocation, and implementation approaches. Drawing on Team Process Theory, consensus serves as a critical mediator that transforms diverse inputs into coordinated organizational action through two distinct mechanisms. Consensus–Speed Relationship. Strategic consensus facilitates decision speed by establishing shared mental models and reducing coordination costs within the TMT. When members align on strategic direction, they operate from common interpretive frameworks that enable rapid situation assessment and coordinated response (Nadkarni & Chen, 2014). This shared understanding minimizes time-consuming debates over assumptions, allows efficient delegation of authority, and enables parallel processing of initiatives. In high-velocity contexts such as Indonesia's ICT sector, consensus provides the cognitive infrastructure necessary for agile strategic responses (Bartkus et al., 2021).

Consensus–Support Relationship. Strategic consensus also enhances organizational support for decisions through ownership effects and legitimacy mechanisms. Participation in consensus formation creates psychological ownership that motivates members to champion decisions during implementation. This ownership cascades throughout the organization, encouraging broader support when leadership alignment is visible (Heavey & Simsek, 2017). In addition, consensus signals decision quality and reduces uncertainty for stakeholders, fostering confidence in strategic direction and greater willingness to commit resources (Wang et al., 2020).

Taken together, these mechanisms suggest the following hypotheses:

H3a: Strategic consensus positively influences decision speed.

H3b: Strategic consensus positively influences support for strategic decisions

3.5. Effects Of Strategic Speed on Outcomes (H4)

Decision speed represents the TMT's ability to move efficiently from problem identification through solution selection to implementation commitment. In dynamic environments, especially technology-intensive sectors, speed emerges as a strategic capability that shapes outcomes through signaling and opportunity capture mechanisms. Speed–Support Relationship. Decision speed enhances organizational support via several complementary pathways. Rapid decisions signal leadership competence and strategic agility, increasing confidence in TMT effectiveness and support for initiatives (Shams et al., 2021). Speed also enables capitalization on time-sensitive opportunities before competitive windows close, demonstrating tangible value creation that strengthens stakeholder commitment (Eisenhardt, 1989). Moreover, faster cycles reduce uncertainty and ambiguity, allowing employees and managers to align more effectively around clear strategic directions. In Indonesia’s fast-changing ICT sector, where disruption is frequent, decision speed is especially critical for sustaining momentum and maintaining stakeholder trust in leadership. These arguments lead to the following hypothesis:

H4: *Decision speed positively influences support for strategic decisions*

3.6. *Conceptual Framework*

The conceptual framework presented in Figure 1 integrates Upper Echelon Theory, Information Processing Theory, and Team Process Theory to explain how top management team (TMT) composition, systemic capabilities, and team processes collectively influence strategic decision effectiveness. Grounded in Upper Echelon Theory (Hambrick & Mason, 1984), the model positions TMT heterogeneity—disaggregated into four distinct dimensions: cognitive task-related, cognitive relation-oriented, demographic task-related, and demographic relation-oriented (Tacheva, 2007)—as a formative construct that brings informational richness and diverse perspectives into strategic deliberation.

Building on Information Processing Theory (Tushman & Nadler, 1978; Galbraith, 1974), the framework incorporates two reflective constructs: information processing capacity and decision support quality. These systemic enablers capture the organization's ability to handle complexity, reduce ambiguity, and coordinate decision-making through both cognitive and technological infrastructure. Drawing from Team Process Theory (Hackman, 1987; Marks et al., 2001), the model emphasizes strategic consensus and decision speed as critical mediators that translate the inputs of team composition and structural capacity into meaningful organizational outcomes. Strategic consensus represents shared understanding and alignment among decision-makers, while decision speed reflects the team's ability to respond efficiently under time pressure. Both are theorized to influence the ultimate outcome—support for strategic decisions, defined as organizational commitment to, and implementation of, agreed-upon strategic choices.

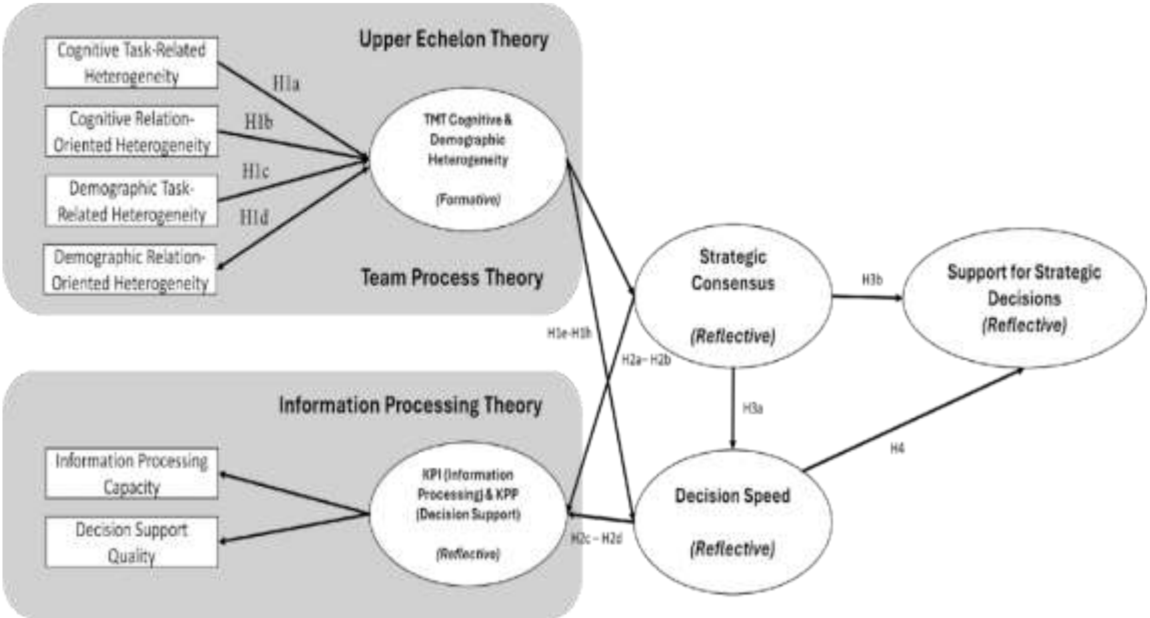

Figure 1: Conceptual Framework.

4. METHODOLOGY

This study aims to examine how top management team (TMT) heterogeneity, information processing capacity, and decision support quality influence support for strategic decisions through the mediating mechanisms of strategic consensus and decision speed. Anchored in Upper Echelon Theory, Information Processing Theory, and Team Process Theory, the research integrates compositional, structural, and behavioral perspectives to explain how diverse leadership teams navigate complexity in high-velocity environments. A quantitative, cross-sectional survey design was adopted to empirically test the proposed relationships within Indonesia's information and communication technology (ICT) sector—a dynamic industry marked by rapid innovation, digital transformation, and heterogeneous organizational structures. By focusing on this context, the study seeks to provide a deeper understanding of how team diversity, supported by effective systems and decision processes, contributes to strategic alignment and execution in emerging markets.

4.1. *Sampling And Data Collection Procedure*

The participating firms exhibited substantial heterogeneity across industries, firm size, age, ownership, and business models, enhancing external validity by reflecting diverse strategic contexts in Indonesia's ICT ecosystem. Such variation is essential in studies of TMT heterogeneity, where contextual factors shape how demographic and cognitive differences affect decision processes (Hambrick, 2007). TMT membership was defined as executives with strategic authority, including senior and mid-level managers involved in strategic planning. The "Manager/Others" category encompassed functional roles such as Strategic Planning, Business Development, and Regional Managers who contribute meaningfully to TMT decisions despite not holding director-level titles. This inclusive approach reflects the collaborative nature of strategic decision-making in Indonesian ICT firms. As shown in Table 2, respondents spanned varied positions, industries, and geographic regions, capturing both established incumbents and emerging digital firms, thereby strengthening the generalizability of findings across the ICT sector in emerging markets.

Table 2: Respondent Characteristics (N=143).

Demographic	Category	Count	%
Position Level	CEO/President Director	25	17.5
	Director	18	12.6
	General Manager	15	10.5
	Division Head	14	9.8
	Senior Manager	12	8.4
	VP/C-Level	15	10.5
	Manager/Others	44	30.7
Company Type	Telecommunications	45	31.5
	ICT Services	28	19.6
	Technology Manufacturing	18	12.6
	Media & Broadcasting	15	10.5
	Software/IT Solutions	12	8.4
	System Integrator	10	7.0
	Others	15	10.5
Geographic	Jakarta Metro	89	62.2
	West Java (Bandung)	35	24.5
	Central Java	8	5.6
	East Java	6	4.2
	Other Regions	5	3.5

While the sample size of 47 firms may initially appear modest, multiple safeguards were applied to ensure its statistical adequacy and empirical representativeness. First, the total of 143 top management team (TMT) members surveyed—averaging over three respondents per firm—enhances the granularity and reliability of team-level aggregation, consistent with best practices in multilevel organizational research (James et al., 1984). Moreover, the sample includes meaningful variance across firm size, industry segment, age, revenue, and ownership structure, improving external validity and mitigating risks of homogeneity bias (Finkelstein et al., 2009). While some subcategories (e.g., very large firms or firms outside Java) were less represented, the stratified purposive sampling approach and 72.3% response rate from targeted firms support the robustness of the dataset within the bounds of Indonesia's ICT sector. Furthermore, although the model may have reduced statistical power to detect subtle or marginal effects, the significant path coefficients and effect sizes reported suggest that core relationships were strong enough to be detected under conservative conditions (Cohen, 1988). Overall, while future research should aim for larger and more stratified samples, the current study's methodological rigor and data quality controls lend credibility to the validity of its inferences (See Table 3).

Table 3: Sample Firm Characteristics (N=47 Firms).

Characteristic	Category	Count	%	Details
Firm Size (Employees)	Small (50-249)	12	25.5	Median: 145 employees
	Medium (250-999)	18	38.3	Median: 520 employees
	Large (1,000-4,999)	11	23.4	Median: 2,350 employees
	Very Large (≥5,000)	6	12.8	Range: 8,500-45,000
Annual Revenue (IDR)	Small (<50B)	14	29.8	Median: IDR 28B
	Medium (50B-500B)	16	34.0	Median: IDR 245B
	Large (500B-5T)	12	25.5	Median: IDR 1.8T

	Very Large (>5T)	5	10.6	Range: IDR 12T-78T
Firm Age (Years)	Young (3-10)	15	31.9	Mean: 6.8 years
	Mature (11-20)	18	38.3	Mean: 15.2 years
	Established (21-35)	10	21.3	Mean: 27.1 years
	Legacy (>35)	4	8.5	Range: 38-52 years
Ownership Structure	Public Listed	8	17.0	Including Telkom, Indosat
	Private Domestic	28	59.6	Local entrepreneurs
	Foreign/JV	11	23.4	MNCs and joint ventures
Business Model	B2B Services	22	46.8	Enterprise solutions
	B2C Products	15	31.9	Consumer technology
	B2B2C Platform	10	21.3	Digital platforms

Note: Firm size categories follow Indonesian SME classification (Law No. 20/2008). Revenue figures represent 2023 annual revenue in Indonesian Rupiah. Sample includes mix of established corporations and emerging digital companies, representative of Indonesia's ICT ecosystem diversity.

4.2. Measurement Of Constructs

As summarized in **Table 4**, this study applies a structured, theory-informed approach to measuring TMT heterogeneity, strategic process enablers, and outcomes. TMT heterogeneity follows Tacheva's (2007) four-dimensional typology, distinguishing between cognitive and demographic diversity across task-related and relation-oriented domains. Each subdimension is measured using validated multi-item indicators from prior studies, assessed on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Although the study relies on perceptual data from TMT members, this approach is appropriate because constructs such as strategic consensus and decision support quality represent team-level phenomena best captured through shared perceptions. To ensure reliability, responses were collected from multiple TMT members per firm, enabling within-group aggregation and reducing common method bias.

Table 4: Measurement Constructs, Items, And References.

Construct	Item Code	Item Description	Key References
TMT Heterogeneity: Cognitive Task-Related	HEKTR5	Intuition tendency	Wang & Hu (2020); Boone et al. (2019); Bell et al. (2011)
	HEKTR6	Risk tolerance	
	HEKTR7	Action orientation	
TMT Heterogeneity: Cognitive Relation-Oriented	HEKRO1	Attitude	Jehn & Bezrukova (2010); Ensley & Pearson (2005)
	HEKRO2	Personality	
	HEKRO3	Values	
TMT Heterogeneity: Demographic Task-Related	HEDTR1	Education level	Richard et al. (2004); Lee et al. (2020); Bell et al. (2011)
	HEDTR2	Education type	
	HEDTR4	Industry experience	
TMT Heterogeneity: Demographic Relation-Oriented	HEDRO1	Age	Hambrick et al. (1996); Georgakakis et al. (2016); Kearney et al. (2019)
	HEDRO4	Tenure in industry	
	HEDRO5	Tenure in team	
Information Processing Capacity	KPI3	Collecting information	Bartkus et al. (2021); Nadkarni & Chen (2014); Tushman & Nadler (1978)
	KPI7	Integrating perspectives	
	KPI11	Evaluating alternatives	
Decision Support Quality	KPP1	Monitor sales	Hair et al. (2017); Liu & Yi (2022); Lee et al. (2020)
	KPP2	Monitor operations	
	KPP9	Real-time communication	
Strategic Consensus	CON2	Strategic scope agreement	Vissa & Chacar (2009); González-Moreno et al. (2019); Krause et al. (2016)
	CON8	Agreement on approach	
	CON9	Agreement on alternatives	
	CON10	Agreement on final choice	
	CON11	Agreement on importance	
Decision Speed	SPEED2	Fast goal setting	Wally & Baum (1994); Nadkarni & Chen (2014); Souitaris & Maestro (2010)
	SPEED3	Quick approach selection	
	SPEED4	Rapid information gathering	
	SPEED7	Timely decision choice	
	SPEED8	Quick execution	
Support for Strategic Decisions	DPK4	Commitment of funds	Heavey & Simsek (2017); Wang et al. (2020); Atuahene-Gima & Li (2004)
	DPK6	Support from senior management	
	DPK8	Coordination across levels	
	DPK12	Communicating strategy benefits	

	DPK15	Sustained engagement	

Survey items were adapted from validated scales and contextualized for Indonesia's ICT sector. For example, cognitive task-related heterogeneity included "*TMT members differ significantly in their tolerance for taking risks in strategic decisions*" (HEKTR6). Strategic consensus was measured with items such as "*TMT members agree on the strategic scope and direction of the company*" (CON2). Decision speed was captured through items like "*Our TMT is able to gather necessary information for strategic decisions rapidly*" (SPEED4). All items were translated into Bahasa Indonesia using back-translation to ensure linguistic equivalence.

In the measurement model assessment stage, several indicators were removed due to outer loadings below the recommended threshold of 0.70, as suggested in variance-based SEM guidelines (Hair et al., 2017). The elimination process followed a sequential evaluation procedure to improve construct reliability (CR) and convergent validity (AVE) while maintaining theoretical coherence (Fornell & Larcker, 1981). Importantly, indicator removal was not based solely on statistical criteria; each decision was carefully examined to ensure that the conceptual domain of the construct remained adequately represented. Indicators were retained when they captured unique conceptual dimensions essential to content validity, even if their loadings were marginally acceptable, consistent with recommendations that measurement refinement should preserve theoretical meaning (Hair et al., 2017). Conversely, indicators were removed only when their exclusion did not alter the substantive meaning or dimensional structure of the construct. This approach ensures that construct refinement enhanced measurement quality without compromising theoretical integrity or content validity (Diamantopoulos & Winklhofer, 2001).

5. DATA ANALYSIS AND RESULTS

To analyze the relationships between TMT heterogeneity, information processing capacity, decision support quality, strategic consensus, decision speed, and support for strategic decisions, this study employed partial least squares structural equation modeling (PLS-SEM) using SmartPLS 4. PLS-SEM was chosen for its suitability in handling complex, theory-building models with multiple constructs and hierarchical latent variables. Compared to covariance-based SEM (CB-SEM), PLS-SEM offers greater statistical power, fewer distributional assumptions, and enhanced performance with smaller sample sizes—making it appropriate for exploratory research in emerging market contexts such as Indonesia's ICT sector.

5.1. Outer Model Testing Result

The outer model evaluation involved two iterations of indicator loading refinement, guided by the PLS-SEM standard threshold of 0.70 for acceptable outer loadings (Hair et al., 2017). In the first iteration, numerous indicators across constructs—such as CON1, CON3, and HEDRO2—exhibited weak loadings (<0.70) and were consequently excluded to enhance the model's psychometric quality. The second iteration revealed significantly improved measurement performance, with retained items (e.g., CON10, DPK6, SPEED3) demonstrating strong loadings and high internal consistency. Multicollinearity was concurrently assessed via variance inflation factors (VIF), with all reported values remaining under the critical threshold of 5.0, suggesting that collinearity among indicators was not a source of estimation bias (Diamantopoulos & Siguaw, 2006). Notably, higher VIFs were observed in the SPEED construct (e.g., SPEED3 = 4.317), which may indicate dense conceptual overlap, yet still within acceptable diagnostic range. These results provide empirical justification for the measurement model's adequacy and support its readiness for structural analysis (See Table 5).

Table 5: Outer Model Testing Result.

	1st iteration	**2nd iteration**	**VIF (<0.5)**
CON1	0.687		
CON10	0.722	0.774	2.099
CON11	0.782	0.848	2.092
CON2	0.735	0.712	1.518
CON3	0.609		
CON4	0.691		
CON5	0.617		
CON6	0.561		
CON7	0.695		
CON8	0.793	0.839	2.196

CON9	0.738	0.792	2.259
DPK1	0.290		
DPK10	0.800		
DPK11	0.727		
DPK12	0.770	0.802	2.085
DPK13	0.748		
DPK14	0.633		
DPK15	0.775	0.815	2.143
DPK16	0.765		
DPK17	0.751		
DPK18	0.668		
DPK19	0.636		
DPK2	0.644		
DPK20	0.723		
DPK21	0.753		
DPK22	0.757		
DPK3	0.689		
DPK4	0.785	0.819	2.112
DPK5	0.768		
DPK6	0.800	0.865	2.406
DPK7	0.816		
DPK8	0.775	0.820	2.136
DPK9	0.810		
HEDRO1	0.713	0.754	1.397
HEDRO2	0.573		
HEDRO3	0.102		
HEDRO4	0.803	0.857	1.843
HEDRO5	0.803	0.832	1.548
HEDTR1	0.819	0.791	1.130
HEDTR2	0.676		
HEDTR3	0.575		
HEDTR4	0.733	0.792	1.459
HEKRO1	0.808	0.804	1.923
HEKRO2	0.829	0.847	2.193
HEKRO3	0.923	0.917	1.788
HEKTR1	-0.172		
HEKTR2	-0.258		
HEKTR3	-0.037		
HEKTR4	-0.165		
HEKTR5	0.472		
HEKTR6	0.639		
HEKTR7	0.709	0.881	1.354
KPI1	0.406		
KPI10	0.453		
KPI11	0.660		
KPI12	0.434		
KPI13	0.523		
KPI14	0.528		
KPI15	0.553		
KPI16	0.118		
KPI17	0.237		
KPI18	0.071		
KPI19	0.688		
KPI2	0.637		
KPI20	0.737		
KPI21	0.569		
KPI22	0.516		
KPI23	0.632		
KPI3	0.681		
KPI4	0.515		
KPI5	0.506		
KPI6	0.626		
KPI7	0.707	0.809	1.429
KPI8	0.605		
KPI9	0.576		

KPP1	0.705	0.849	2.146
KPP10	0.615		
KPP11	0.551		
KPP12	0.433		
KPP13	0.134		
KPP14	0.125		
KPP15	0.126		
KPP16	0.144		
KPP17	0.113		
KPP18	0.105		
KPP2	0.770	0.883	2.280
KPP3	0.693		
KPP4	0.628		
KPP5	0.519		
KPP6	0.557		
KPP7	0.547		
KPP8	0.692		
KPP9	0.756	0.730	1.240
SPEED1	0.628		
SPEED10	0.389		
SPEED11	0.377		
SPEED2	0.789	0.820	2.478
SPEED3	0.880	0.922	4.317
SPEED4	0.886	0.877	3.208
SPEED5	0.890		
SPEED6	0.868		
SPEED7	0.869	0.904	3.57
SPEED8	0.888	0.895	3.486
SPEED9	0.541		

5.2. Reliability And Validity

Construct reliability and convergent validity were assessed using Composite Reliability (CR) and Average Variance Extracted (AVE), with all constructs exceeding the conventional thresholds of 0.70 for CR and 0.50 for AVE (Hair et al., 2017). These results suggest that the indicators consistently measure their respective latent constructs and that sufficient variance is captured by each construct. Notably, constructs such as SPEED and HEKRO demonstrated particularly high AVE values (0.782 and 0.735, respectively), indicating strong unidimensionality and content cohesion. However, constructs with lower AVE—like HEDTR at 0.563—though still above the threshold, may benefit from future refinement to better capture their theoretical domains. Rather than interpreting these scores solely as technical validation, they can also be viewed as reflections of the conceptual clarity embedded in the operationalization of each construct (See Appendix A). Overall, the reliability and convergent validity metrics lend empirical support to the model's measurement quality but also call attention to dimensions that may warrant theoretical sharpening (See Table 6).

Table 6: Construct Reliability and Validity.

	CR (>0.7)	**AVE (>0.5)**
CON	0.895	0.631
DPK	0.914	0.68
HEDRO	0.856	0.665
HEDTR	0.794	0.563
HEKRO	0.892	0.735
HEKTR	0.832	0.624
KPI	0.85	0.654
KPP	0.862	0.678
SPEED	0.947	0.782

Discriminant validity was examined using the Heterotrait–Monotrait ratio (HTMT), a more rigorous criterion than the traditional Fornell–Larcker approach (Henseler et al., 2015). All HTMT values fell below the conservative 0.85 threshold, confirming that each construct is empirically distinct from others. Nonetheless, some HTMT values approached the upper limit—particularly between

KPI and DPK (0.811)—suggesting conceptual proximity that should not be ignored in interpretation. This overlap may reflect the inherent interdependence between strategic decision support and information processing capacity, rather than measurement error. In contrast, several HTMT values (e.g., 0.084 between CON and HEDRO) were exceptionally low, potentially indicating conceptual fragmentation or overly narrow indicator scopes. Taken together, these findings support the discriminant validity of the constructs while also highlighting the delicate balance between theoretical distinctiveness and empirical separability within multidimensional models (See Table 7).

Table 7: Heterotrait-Monotrait (HTMT) Matrix For Discriminant Validity Assessment.

	CON	DPK	HEDRO	HEDTR	HEKRO	HEKTR	KPI	KPP	SPEED
CON									
DPK	0.791								
HEDRO	0.084	0.101							
HEDTR	0.13	0.089	0.55						
HEKRO	0.142	0.106	0.389	0.534					
HEKTR	0.125	0.097	0.445	0.318	0.716				
KPI	0.78	0.811	0.054	0.113	0.138	0.215			
KPP	0.659	0.771	0.134	0.113	0.094	0.137	0.713		
SPEED	0.644	0.648	0.175	0.149	0.076	0.157	0.652	0.626	

5.3. Structural Model and Hypothesis Testing Results

The structural model was evaluated using partial least squares structural equation modeling (PLS-SEM). Four nested models were tested sequentially to examine the effects of TMT heterogeneity, system enablers, and decision processes on strategic decision outcomes. The model which incorporated all four heterogeneity dimensions along with information processing capacity (KPI) and decision support quality (KPP), was selected as the final and most comprehensive specification. The results of this model are presented in Table 8, with standardized path coefficients and t-statistics reported.

Table 8: Structural Model Result.

Path Relationship	Coefficient	t-value	p-value
Demographic Relation → Consensus (HEDRO → CON)	0.026	0.036	> 0.10
Demographic Relation → Speed (HEDRO → SPEED)	0.113	0.116	0.07†
Demographic Task → Consensus (HEDTR → CON)	-0.083	0.084	> 0.10
Demographic Task → Speed (HEDTR → SPEED)	0.154	0.153	0.026*
Cognitive Relation → Consensus (HEKRO → CON)	-0.097	0.088	0.07†
Cognitive Relation → Speed (HEKRO → SPEED)	-0.017	0.032	> 0.10
Cognitive Task → Consensus (HEKTR → CON)	0.093	0.069	0.08†
Cognitive Task → Speed (HEKTR → SPEED)	-0.142	0.13	0.03*
Information Processing → Consensus (KPI → CON)	0.481	0.48	< 0.001***
Information Processing → Speed (KPI → SPEED)	0.18	0.182	0.03*
Decision Support → Consensus (KPP → CON)	0.288	0.285	< 0.001***
Decision Support → Speed (KPP → SPEED)	0.221	0.228	0.007**
Consensus → Speed (CON → SPEED)	0.348	0.338	< 0.001***
Consensus → Support (CON → DPK)	0.54	0.544	< 0.001***
Speed → Support (SPEED → DPK)	0.282	0.28	< 0.001***

† p < 0.10, p < 0.05*, p < 0.01, p < 0.001***. Statistically significant at 95% (p < 0.05) means there is less than a 5% chance that the observed relationship between the variables is due to random variation, indicating a real relationship exists at a 95% confidence level.**
Source: Author's PLS-SEM analysis, SmartPLS 4 output.

The structural model results provide partial empirical support for the proposed hypotheses and reveal nuanced relationships between top management team (TMT) composition, systemic enablers, and strategic decision processes. Among the heterogeneity dimensions (H1), demographic task-related heterogeneity (HEDTR)—capturing variation in education and industry experience—emerged as a significant positive predictor of decision speed ($\beta = 0.154$, $p < 0.05$), supporting H1g. This suggests that such diversity fosters specialization and parallel information processing, thereby enabling faster decision-making in dynamic contexts. Additionally, demographic relation-oriented heterogeneity (HEDRO) showed a marginally significant positive association with decision speed ($\beta = 0.113$, $p < 0.10$), offering weak support for H1h. This implies that generational and tenure-related variation may contribute to adaptability under pressure.

Interestingly, cognitive task-related heterogeneity (HEKTR) displayed mixed results: while it showed a marginally positive influence on strategic consensus ($\beta = 0.093$, $p < 0.10$, supporting H1a weakly), it was negatively associated with decision speed ($\beta = -0.142$, $p < 0.05$), contradicting H1e. This inverse effect suggests that although diverse cognitive styles may help shape shared understanding, they can also slow down execution when timely convergence is required. Other heterogeneity pathways—particularly cognitive relation-oriented and demographic dimensions on consensus—were not supported, indicating that team diversity alone does not consistently translate into collective strategic alignment.

By contrast, the effects of systemic enablers were both strong and consistent. Supporting H2a–H2d, information processing capacity (KPI) and decision support quality (KPP) significantly improved both strategic consensus ($\beta = 0.481$ and $\beta = 0.288$, respectively; $p < 0.001$) and decision speed ($\beta = 0.180$, $p < 0.05$ and $\beta = 0.221$, $p < 0.01$). These findings confirm that the presence of structured information flow, digital tools, and advisory mechanisms plays a pivotal role in enhancing both alignment and responsiveness—especially when TMT heterogeneity is high.

Further downstream, strategic consensus significantly predicted both decision speed ($\beta = 0.348$, $p < 0.001$) and support for strategic decisions ($\beta = 0.540$, $p < 0.001$), validating H3a and H3b. This underscores the dual function of consensus in both accelerating the decision process and ensuring organizational buy-in. Finally, decision speed itself had a strong, positive impact on support for strategic decisions ($\beta = 0.282$, $p < 0.001$), in line with H4. This indicates that timely decisions not only enhance execution but also generate confidence and alignment across organizational layers (See Figure 2).

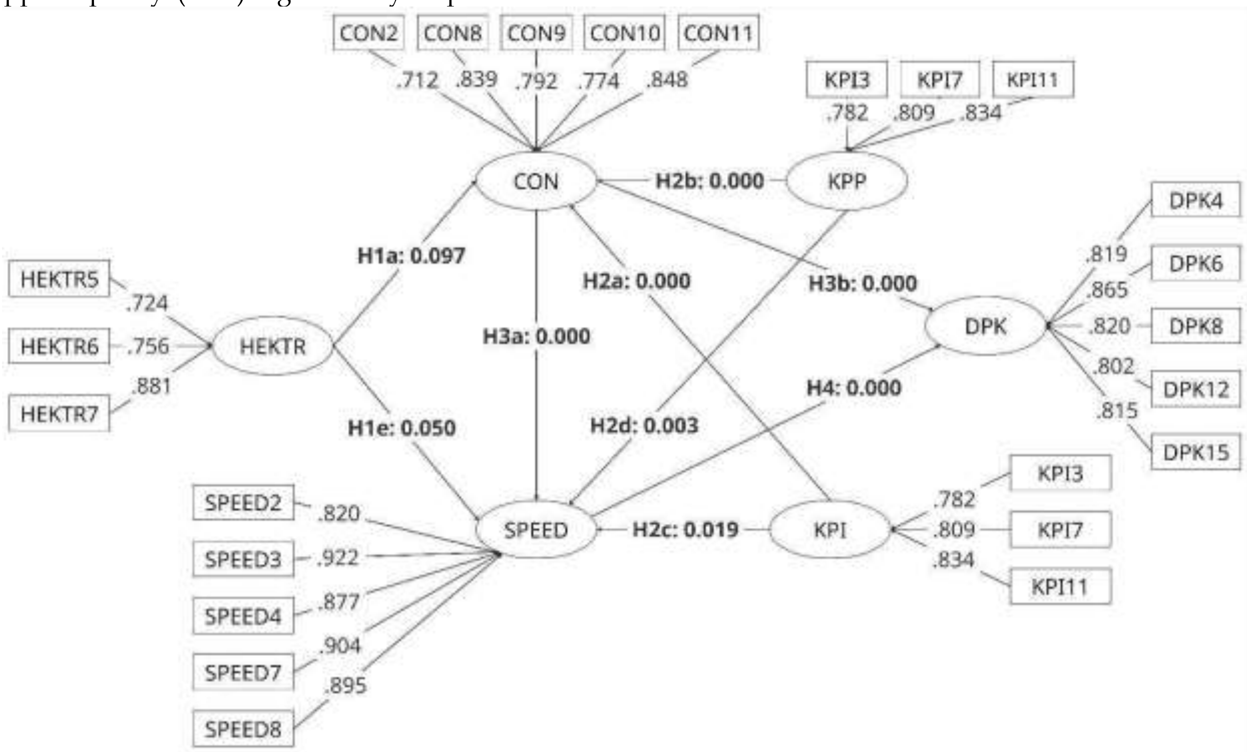

Figure 2: Final Structural Model.

While the structural model offers meaningful insights into how TMT heterogeneity and systemic enablers shape strategic decision outcomes, several analytical limitations suggest the findings should be interpreted with caution. Most critically, the model assumes linear relationships, potentially oversimplifying the dynamic and multi-layered nature of decision-making in complex organizations. Prior studies highlight that diversity-related effects are often non-linear—where moderate heterogeneity may enhance performance, but excessive variation can hinder coordination and lead to conflict (Harrison & Klein, 2007; van Knippenberg et al., 2004). Yet the absence of interaction terms or curvilinear modeling leaves such dynamics unexplored. Furthermore, no subgroup analyses were conducted—such as by firm size or industry—despite evidence that organizational context can moderate the impact of diversity and system factors (Hambrick et al., 1996; Nielsen, 2010). These omissions limit the generalizability and contextual richness of the findings. Moreover, the lack of robustness checks—such as sensitivity testing or re-specification of model paths—raises concerns about the stability of the structural results (Aguinis et al., 2010).

Equally important, the model does not account for potential moderators or feedback loops, both of which are central to contemporary organizational theory. Variables such as firm age, decision urgency, or task complexity could meaningfully shape how heterogeneity interacts with processing systems—yet these are excluded, limiting the model's theoretical depth (Finkelstein et al., 2009). In addition, the model follows a strictly linear structure, disregarding the recursive nature of decision-making processes, where outcomes like strategic support or speed may influence future team dynamics or information infrastructure. This is inconsistent with theories of organizational learning and complexity, which emphasize adaptation and cyclical feedback over time (March, 1991; Anderson et al., 1999). As a result, while the model captures key first-order effects, it underrepresents the adaptive, non-linear, and context-dependent realities of strategic decision-making in practice.

6. DISCUSSION

This study provides critical insights into strategic decision-making within Indonesia's ICT sector by examining how TMT heterogeneity, systemic enablers, and process mechanisms jointly shape decision effectiveness. The findings both support and challenge existing theoretical frameworks while underscoring the importance of cultural and institutional context in emerging markets. Compared to predominantly Western-based TMT literature, the results present a more complex picture. Regarding heterogeneity, while Hambrick and Mason's (1984) Upper Echelon Theory and subsequent Western studies (Bell et al., 2011; Boone et al., 2019) emphasize the benefits of diverse TMT composition, our findings reveal that diversity operates as a "double-edged sword" (Knight et al., 1999; Wang & Hu, 2020). Specifically, only demographic task-related heterogeneity enhanced decision speed, whereas cognitive task-related heterogeneity hindered it—contrasting with Western research that highlights the benefits of cognitive diversity (Wowak et al., 2022).

In contrast, the effects of systemic enablers strongly align with recent process-centric perspectives. Prior Western studies demonstrate the importance of digital infrastructure and knowledge integration (Bartkus et al., 2021; Lee et al., 2020), and our findings provide robust support, showing that information processing capacity and decision support quality exert even stronger effects in Indonesia's ICT sector. This suggests that systemic enablers may be particularly critical in emerging markets where formal institutional support systems are less developed. The dynamics of consensus and speed also reinforce but extend prior work. While González-Moreno et al. (2019) and Nadkarni and Chen (2014) emphasize their mediating roles, our study demonstrates a sequential relationship, with the consensus-to-speed pathway ($\beta = 0.348$) stronger than typically reported, reflecting the heightened importance of alignment in a collectivist society.

Cultural and institutional factors help explain these patterns. In high power distance contexts such as Indonesia (House et al., 2014), relation-oriented heterogeneity in age, tenure, and interpersonal orientations may not encourage open deliberation, unlike in Western settings (Georgakakis et al., 2016). Similarly, Indonesia's collectivist orientation (Irawanto et al., 2011) may explain why cognitive relation-oriented heterogeneity weakened consensus: rather than fostering constructive debate as in individualistic cultures, such diversity can disrupt harmony, which is culturally prioritized over cognitive conflict. These insights advance theoretical understanding in several ways. First, they extend Upper Echelon Theory by showing that heterogeneity dimensions have differentiated effects in emerging market contexts, where cultural moderators significantly shape outcomes. Second, they strengthen Information Processing Theory by demonstrating that systemic enablers consistently outperform compositional features, with effect sizes for information processing capacity ($\beta = 0.481$ for consensus) exceeding those typically reported in Western studies. Third, they enrich Team Process Theory by providing evidence that heterogeneity influences outcomes indirectly through systemic enablers, consensus, and decision speed before shaping organizational support, offering a more complete account than the partial pathways common in Western research.

At the same time, these results reconcile contradictions in the literature. The negative effect of cognitive task-related heterogeneity on speed challenges Western findings (Wowak et al., 2022) and reflects coordination challenges amplified in high-context cultures. The limited consensus effects of demographic relation-oriented diversity contrast with positive age and tenure diversity effects found in Western studies (Kearney et al., 2019), likely because hierarchy fosters social distance rather than productive deliberation. By contrast, the overwhelming impact of systemic enablers aligns with emerging Western research (Boone et al., 2019; Bartkus et al., 2021) but appears even stronger in Indonesia, where organizational capabilities substitute for weaker institutional infrastructure. In summary, the findings suggest that strategic decision-making theory requires greater cultural and institutional sensitivity. Diversity effects are context-dependent rather than universal, systemic enablers represent more robust drivers of effectiveness across settings, and consensus and speed operate in tightly coupled sequences in collectivist environments. While Upper Echelon Theory, Information Processing Theory, and Team Process Theory provide valuable frameworks, their application must account for cultural and institutional moderators that remain underexplored in Western-dominated literature.

7. CONCLUSION

This study investigated how TMT heterogeneity, information processing capacity, and decision support quality influence support for strategic decisions through the mediating roles of strategic consensus and decision speed, focusing on Indonesia's rapidly evolving ICT sector. The model builds on and extends Upper Echelon Theory, Information Processing Theory, and Team Process Theory by disaggregating heterogeneity into four distinct dimensions and integrating systemic enablers as key explanatory variables.

While prior research has generally posited that TMT diversity enhances decision quality, the results of this study reveal that the effects of heterogeneity are more nuanced. Only demographic task-related diversity—reflecting variations in education and industry experience—was positively associated with decision speed. Other forms of diversity, such as cognitive task-related heterogeneity, even demonstrated negative effects on speed, highlighting the contextual challenges of coordination and alignment in diverse teams.

By contrast, systemic enablers—information processing capacity and decision support quality—consistently and strongly predicted both consensus and speed. This indicates that effective systems, rather than composition alone, may be the primary levers for decision-making success in high-velocity sectors. Furthermore, the inclusion of consensus and speed as process mediators provides new insight into how compositional and structural inputs are translated into strategic outcomes. This contributes to a richer understanding of decision-making dynamics in emerging market environments where formal systems and team maturity often vary widely.

7.1. Practical Implications

The findings of this study offer several actionable insights for executives, strategists, and policymakers working in fast-paced sectors such as Indonesia's ICT industry. A key implication lies in the decisive role of systemic enablers—specifically, information processing capacity and decision support systems—in shaping strategic consensus and accelerating decision speed. To strengthen organizational responsiveness and execution quality, firms should invest in integrated decision infrastructures, including ERP platforms, real-time analytics, digital dashboards, and advisory networks. These tools facilitate the rapid synthesis of information and enable top management teams to align diverse inputs into cohesive, strategy-ready outputs—an essential capability in environments marked by uncertainty and time pressure.

Beyond technological infrastructure, the findings also urge caution in how team diversity is approached. Although diversity in cognitive styles, backgrounds, and experiences holds potential, it does not inherently lead to better decision outcomes. On the contrary, when left unmanaged, heterogeneity may impede alignment, create friction, and prolong decision cycles. To unlock the benefits of diversity, leadership teams must actively manage it through structured facilitation, collaborative goal-setting, and clear communication protocols. Practices such as promoting psychological safety, encouraging constructive dissent, and deliberately integrating contrasting viewpoints into decision routines are essential. This shift from viewing diversity as a static asset to managing it as a dynamic process can help organizations harness difference productively.

Equally important is the study's emphasis on strategic consensus and decision speed as critical mediators in the decision-making process. These elements serve as levers through which systemic supports and team attributes are converted into organizational alignment and follow-through. Rather than focusing exclusively on who sits at the decision-making table, leaders should prioritize how decisions are constructed and communicated. Techniques such as collaborative scenario planning, cross-departmental alignment forums, and time-constrained decision protocols can foster timely, well-supported actions. In contexts like Indonesia, where hierarchical structures may suppress open participation, structured participatory mechanisms can play a vital role in promoting clarity, inclusivity, and strategic legitimacy across organizational layers.

7.2. Theoretical Contribution

Theoretically, this study advances three key contributions. First, it extends Upper Echelon Theory by empirically validating that different forms of heterogeneity produce distinct effects, with some enabling responsiveness and others impeding it. Unlike traditional models that treat diversity as monolithic (Bell et al., 2011), this study shows the value of typological disaggregation. Second, it deepens Information Processing Theory by demonstrating that systemic enablers like KPI and KPP exert stronger influence on alignment and speed than static compositional features. Third, it contributes to Team Process Theory by modeling consensus and speed as dual mediators—capturing both deliberative integration and temporal execution. Lastly, by situating the model within Indonesia's ICT sector, the study fills a gap in the literature on TMT dynamics in non-Western, rapidly evolving organizational environments, highlighting the need for culturally sensitive and system-aware frameworks in strategic management research.

7.3. Limitations And Future Research Directions

While this study offers meaningful insights into the mechanisms shaping strategic decision effectiveness in emerging markets, several limitations should be acknowledged to inform future research. To begin with, the study employed a cross-sectional design, which captures perceptions and relationships at a single point in time. Although this approach is useful for theory-building, it does not account for how team dynamics, decision processes, or system enablers might evolve over repeated decision cycles. Longitudinal studies could better illuminate whether the influence of heterogeneity and system quality fluctuates across different phases of strategic planning or in response to environmental shifts.

Another consideration involves the contextual scope of the research. The focus on Indonesia's ICT sector was intentional, given its high strategic velocity and institutional complexity. However, this specificity may limit the generalizability of the findings to other sectors or regions. Future studies would benefit from cross-industry comparisons—including traditional manufacturing, financial services, or public sector organizations—to examine whether the interplay between diversity, system enablers, and decision outcomes holds under different institutional logics or technological maturity levels. Likewise, research across diverse national settings could shed light on how cultural variables, such as power distance or uncertainty avoidance, may condition the effects observed here.

Lastly, methodological refinements could enhance the robustness of future work. Although steps were taken to mitigate common method bias, the study relied on self-reported perceptions from senior executives. Incorporating objective behavioral or archival data—such as meeting logs, digital decision records, or post-decision performance metrics—could provide richer and more triangulated insights. Furthermore, future research should explore potential moderators such as leadership behaviors, organizational culture, or digital maturity. These variables may shape how systemic supports interact with team characteristics, as suggested by prior studies (Lee et al., 2020; Wang & Hu, 2020). Given the rise of hybrid and cross-border leadership teams, examining how digital collaboration, geographic dispersion, and global diversity influence consensus and speed would also be a promising direction for expanding the theoretical and practical relevance of this model.

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APPENDIX A CONSTRUCT VALIDITY AND REABILITY

Construct	Item Code	Outer Loading	VIF	CR	AVE
TMT Heterogeneity: Cognitive Task-Related	HEKTR5	0.724	2.099	0.832	0.624
	HEKTR6	0.756	2.092		
	HEKTR7	0.881	1.518		
TMT Heterogeneity: Cognitive Relation-Oriented	HEKRO1	0.804	2.196	0.892	0.735
	HEKRO2	0.847	2.259		
	HEKRO3	0.917	2.085		
TMT Heterogeneity: Demographic Task-Related	HEDTR1	0.791	2.143	0.794	0.563
	HEDTR2	0.662	2.112		
	HEDTR4	0.792	2.406		
TMT Heterogeneity: Demographic Relation-Oriented	HEDRO1	0.754	2.136	0.856	0.665
	HEDRO4	0.857	1.397		
	HEDRO5	0.832	1.843		
Information Processing Capacity	KPI3	0.782	1.548	0.85	0.654
	KPI7	0.809	1.13		
	KPI11	0.834	1.476		
Decision Support Quality	KPP1	0.849	1.459	0.862	0.678
	KPP2	0.883	1.923		
	KPP9	0.73	2.193		
Strategic Consensus	CON2	0.712	1.788	0.895	0.631
	CON8	0.839	1.451		
	CON9	0.792	1.682		
	CON10	0.774	1.354		
	CON11	0.848	1.507		

Decision Speed	SPEED2	0.82	1.441	0.947	0.782
	SPEED3	0.922	1.429		
	SPEED4	0.877	2.146		
	SPEED7	0.904	2.28		
	SPEED8	0.895	1.24		
Support for Strategic Decisions	DPK4	0.819	2.478	0.914	0.68
	DPK6	0.865	4.317		
	DPK8	0.82	3.208		
	DPK12	0.802	3.537		
	DPK15	0.815	3.486		