Toward a Global Integrative Leadership Model: Bridging Ethical, Cognitive, Cultural, Digital, and AI Leadership

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ABSTRACT

Leadership theory faces increasing fragmentation under the combined pressures of globalization, digital transformation, and artificial intelligence, limiting its ability to explain leadership effectiveness in contemporary contexts. The purpose of this study is to develop the Global Integrative Leadership Model (GILM), which unifies ethical, cognitive, cultural, digital, and AI leadership domains into a coherent framework. The study adopts a conceptual, theory-building approach grounded in an integrative literature review, synthesizing established and emerging research across leadership, organizational studies, and socio-technical systems. Transforming Steward Leadership (TSL), comprising character, competence, and stewardship, is positioned as the foundational driver that activates four higher-order capabilities: Ethical-Cognitive Leadership, Adaptive Global Capability, Socio-Technical Transformation Capability, and Responsible AI Leadership Capability. The model proposes that leadership effectiveness and broader outcomes emerge from the alignment and interaction of these capabilities rather than isolated competencies. The key contribution lies in advancing a multidimensional, systems-based leadership framework that addresses the complexities of global and AI-enabled environments while providing a clear pathway for future empirical validation using structural equation modeling.

Keywords: Global Leadership; Transforming Steward Leadership (TSL); Global Integrative Leadership Model (GILM); Cultural Intelligence; Digital Leadership; Artificial Intelligence Leadership

INTRODUCTION

The purpose of this study was to conduct an integrative study towards developing GILM leadership construct. Currently GILM does not exist, and no study has been conducted that integrates TSL's character, competence and stewardship as antecedents impacting, Grander's (2006) five great minds, cultural leaders, digitals and AI leadership to coin a single construct.

Global leadership is undergoing a profound transformation driven by the convergence of globalization, digitalization, and artificial intelligence (AI). Organizations now operate across geographically dispersed, culturally diverse, and technologically interconnected environments, requiring leaders to navigate unprecedented levels of complexity. The rise of digital platforms, virtual collaboration, and data-driven decision-making has fundamentally reshaped how leadership is enacted, shifting it from predominantly interpersonal processes to increasingly socio-technical systems of influence and coordination (Cortellazzo, Bruni, & Zampieri, 2019; Shahzad, 2024; Quaquebeke & Gerpott, 2023).

At the same time, AI is redefining the boundaries of leadership by augmenting human cognition, enabling predictive analytics, and automating routine decisions. While these developments offer significant opportunities for efficiency and innovation, they also introduce new challenges related to ethics, accountability, transparency, and human agency (Raisch & Krakowski, 2021; Jarrahi, 2018). Leaders are therefore no longer required only to manage people and organizations, but also to govern intelligent systems and ensure their responsible integration into decision-making processes.

Despite these shifts, much of the global leadership literature remains anchored in traditional constructs such as ethical leadership, cognitive capability, and cultural intelligence (Park et al., 2018). Although these frameworks provide valuable insights, they often fail to fully capture the digital and AI-mediated contexts in which leadership now operates. Emerging research suggests that digital leadership and AI-related competencies are becoming central to leadership effectiveness, yet they are frequently treated as separate or peripheral domains rather than as integral components of a unified framework (Hossain, Fernando & Akter, 2025; Groves & Feyerherm, 2023).

In this study this gap is addressed by proposing the Global Integrative Leadership Model (GILM), which synthesizes transforming steward leadership, the five minds, cultural leadership, digital leadership, and AI leadership capability into a comprehensive model. By integrating ethical, cognitive, cultural, and technological dimensions, the aim of this study is to provide a more complete and contemporary understanding of global leadership in the digital and AI era.

Background of the Study

The evolution of leadership theory reflects a shift from performance-oriented models to more complex, multidimensional frameworks. Early approaches emphasized traits and behaviors, while transformational leadership highlighted vision, motivation, and change (Bass, 1985; Judge & Piccolo, 2004). Meta-analytic evidence confirms its strong relationship with organizational performance (Wang et al., 2011). With globalization, leadership increasingly required effectiveness across cultures, leading to the development of cultural intelligence (CQ), which predicts cross-border leadership effectiveness beyond cognitive and emotional intelligence (Ang et al., 2007; Rockstuhl et al., 2011). The rise of digital technologies further expanded leadership demands, requiring capabilities in transformation, collaboration, and innovation (Cortellazzo et al., 2019), with links to both performance and well-being (Zeike et al., 2019). More recently, artificial intelligence (AI) has introduced new complexities related to decision-making, ethics, and human–machine interaction (Raisch & Krakowski, 2021; Dellermann et al., 2019). Despite these advances, leadership research remains fragmented, highlighting the need for integrative frameworks.

Statement of the Problem

Transforming Steward Leadership (TSL), grounded in character, competence, and stewardship, provides a critical foundation for leadership in the contemporary global environment. Its emphasis on ethical responsibility, capability, and long-term value creation positions it as foundation in shaping how leaders think, relate, and act across complex contexts. In particular, TSL has the potential to influence the development of advanced cognitive capacities (the Five Minds), cultural intelligence, digital leadership, and AI leadership capability, ensuring that these dimensions are exercised in a responsible and human-centered manner.

However, despite its foundational relevance, there is currently no comprehensive leadership model that systematically integrates TSL with these interdependent domains. Existing frameworks tend to treat cognitive, cultural, digital, and AI capabilities as separate or peripheral constructs, rather than as dimensions shaped by a unifying ethical core. As leadership increasingly unfolds within digitally mediated and AI-augmented environments, the lack of integration limits both theoretical understanding and practical application. Therefore, there is a need for a robust, integrative leadership model in which TSL serves as the central driver shaping cognitive, cultural, digital, and AI leadership capabilities, providing a holistic explanation of leadership effectiveness in the global era.

Purpose of the Study

The purpose of this study is to develop a Global Integrative Leadership Model (GILM) that positions Transforming Steward Leadership (TSL) as the foundational driver of leadership behaviour in the contemporary global environment. Specifically, the aim is to synthesize fragmented leadership literatures—transforming steward leadership, cultural intelligence, digital leadership, and AI leadership—to conceptualize a new integrative construct: the Global Integrative Leadership Model (GILM).

Research Objectives

1. To examine how Transforming Steward Leadership (TSL) influences leaders' cognitive capabilities (Five Minds), cultural intelligence, digital leadership, and AI leadership in the global environment.
2. To develop and propose a comprehensive Global Integrative Leadership Model (GILM) that synthesizes TSL, the Five Minds, cultural leadership, digital leadership, and AI leadership in explaining effective global leadership.
3. To develop a GILM construct based on empirically validated items from previous studies.

Research Questions

1. How does Transforming Steward Leadership (TSL) influence leaders' cognitive capabilities (Five Minds), cultural intelligence, digital leadership, and AI leadership in the global environment?
2. How can Transforming Steward Leadership (TSL), the Five Minds, cultural leadership, digital leadership, and AI leadership be integrated into a comprehensive Global Integrative Leadership Model (GILM) to explain effective global leadership?
3. How can a reliable and valid GILM construct be developed using empirically validated items from existing studies?

Definition of Global Integrative Leadership Model

The Global Integrative Leadership Model (GILM) is defined as a multidimensional leadership construct integrating ethical stewardship, cognitive capability, cultural intelligence, digital leadership, and AI-augmented decision-making to enable effective leadership in globally interconnected and technologically complex environments.

The construct is conceptualized through five integrated theories with observable leadership outcomes, including leadership effectiveness, cross-cultural effectiveness, innovative work behavior, organizational resilience, and responsible AI practices as follows:

(1) Transforming Steward Leadership (TSL)—demonstrated through character, competence, and stewardship in decision-making;
(2) Cognitive capability (Five Minds)—evidenced by disciplined expertise, synthesis of complex information, creativity, respect for diversity, and ethical reasoning;
(3) Cultural intelligence—reflected in the ability to adapt, interpret, and function effectively across cultures;
(4) Digital leadership—captured by the leader's capacity to drive digital transformation and coordinate technology-enabled work; and
(5) AI leadership capability—indicated by responsible AI use, human–AI collaboration, and ethical governance.

GILM is operationalized as the extent to which leaders demonstrate integrated moral and ethical, cognitive, cultural, digital, and AI capabilities that translate into effective and sustainable global leadership outcomes.

LITERATURE REVIEW

Transforming Steward Leadership (TSL)

Transforming Steward Leadership (TSL), as conceptualized by Katsande, Dean, Winner & Winston (2022), represents an integrative leadership paradigm that synthesizes transformational, servant, and stewardship leadership traditions into a unified framework. The construct is grounded in three core dimensions—character, competence, and stewardship—which collectively define leadership as both a moral and performance-oriented endeavour. Character reflects integrity and ethical grounding; competence captures the leader's ability to execute and adapt strategically (Salvatore and Spinnato, 2025); and stewardship emphasizes responsibility for

long-term collective well-being across organizational and societal domains (Casoli, Visentin, Tuan & Cappiello, 2025).

TSL addresses a longstanding limitation in leadership theory, the separation of transformational capability from moral and ethical accountability. While transformational leadership emphasizes vision, change, and performance as attributed by Burns (1978) and Bass (1985), and stewardship highlights responsibility and trust Davis et al. (1997), these perspectives have often remained theoretically fragmented. Katsande, Dean, Winner & Winston (2022) advanced the field by integrating these traditions, positioning transformation as inherently guided by stewardship. The integration ensures that leadership effectiveness is not evaluated solely in terms of outcomes, but also in terms of moral and ethical legitimacy and sustainability.

The integration of TSL into the present model is particularly critical in digitally mediated and AI-enabled environments, where leadership decisions have amplified scale and consequences. According Raisch and Krakowski (2021) issues such as algorithmic bias, data governance, and technological externalities require leaders to exercise judgment that is both technically informed, morally and ethically grounded. Within the Global Integrative Leadership Model (GILM), TSL functions as the normative foundation, shaping how cognitive, cultural, digital, and AI-related capabilities are enacted. It ensures that leadership remains oriented toward responsible, human-centered, and sustainable outcomes.

The Five Minds (Cognitive Leadership Capability)

The Five Minds framework, introduced by Gardner (2008), conceptualizes leadership cognition as comprising five distinct yet interrelated capabilities: the disciplined, synthesizing, creating, respectful, and ethical minds. Extending his earlier theory of multiple intelligences, Gardner argued that effective leadership in complex environments requires not only domain expertise but also the ability to integrate knowledge, innovate, and act responsibly within social systems.

The five minds construct addresses the increasing cognitive demands placed on leaders operating in environments characterized by information abundance, interdisciplinary complexity, and rapid technological change (Abror & Suud, 2025). According to Shraddha and Malik (2025) the disciplined mind enables mastery of knowledge domains, while the synthesizing mind facilitates the integration of diverse and often fragmented information sources. The creating mind supports innovation and adaptive problem-solving, and the respectful and ethical minds ensure that leadership remains socially inclusive and morally grounded (Gardner, 2008).

The relevance of the Five Minds is further amplified in digital and AI-driven contexts, where leaders must interpret large-scale data, evaluate algorithmic outputs, and make decisions under conditions of uncertainty (Jarrahi, 2018; Raisch & Krakowski, 2021). Accroding to Baltezarević & Battistac (2025) the digital and AI context demands not only technical understanding but also cognitive flexibility and ethical discernment. As such, the Five Minds function as the cognitive infrastructure of leadership within the GILM framework.

Their integration is essential, digital and AI capabilities alone do not guarantee effective leadership (Hossain, Fernando & Akter, 2025). Al Masaeid, Alkhalidi, Al Ali, Almaazmi & Alami (2025) posited that lack of the ability to synthesize information, generate innovation, and exercise ethical judgment, leaders risk misinterpreting data or over-relying on automated systems, which leads to bias. In the context of GILM, the Five Minds therefore provide the intellectual mechanisms through which TSL is operationalized and through which digital and AI capabilities are meaningfully leveraged.

Cultural Leadership and Cultural Intelligence

Cultural leadership is grounded in the concept of Cultural Intelligence (CQ), originally developed by Earley and Ang (2003) and empirically operationalized by Ang et al. (2007). CQ is defined as an individual's capability to function effectively in culturally diverse settings, encompassing cognitive (knowledge), motivational (interest), and behavioral (adaptability) dimensions (Mammadov, & Wald, 2025). According to Sousa (2025) CQ has become a foundational construct in global leadership research, reflecting the importance of cross-cultural competence in increasingly interconnected environments.

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The construct addresses the challenges associated with globalization, including differences in values, communication styles, institutional norms, and social expectations (Sousa, 2025). Empirical research demonstrates that CQ significantly influences decision-making quality, trust formation, and team performance in multinational contexts (Ng, Van Dyne, & Ang, 2009). Consequently, within a digitally mediated environment, the challenges are further intensified where communication is often asynchronous and lacks contextual cues (Shakeeva, Andashova & Jumalieva, 2025).

The integration of cultural leadership into the GILM is necessary. According Nelson, Gardener and Beejay (2025) argued that digital and AI systems operate within culturally embedded contexts rather than neutral environments. Consequently Rüth and Netzer (2020) further affirmed that the interpretation of algorithmic decisions, the acceptance of technological change, and the effectiveness of digital communication are all influenced by cultural norms. Fundamentally, Teng and Purnomo (2026) acknowledged that cultural leadership therefore functions as a contextual moderator, shaping how digital leadership and AI capabilities are enacted and perceived across different settings.

Without cultural intelligence, leaders may fail to build trust or achieve legitimacy, even when technologically proficient (Wengel, 2025). Thus, cultural leadership ensures that the GILM model remains globally adaptable and socially grounded, bridging universal leadership principles with local cultural realities.

Digital Leadership

Digital leadership has emerged from the literature on digital transformation as a distinct leadership capability concerned with leveraging technology to drive organizational change (Hossain, Fernando & Akter, 2025). It is commonly defined as the ability to articulate digital vision, orchestrate technological transformation, and lead within digitally mediated environments (Westerman, Bonnet, & McAfee, 2014). More recent scholarship conceptualizes digital leadership as operating within socio-technical systems, where leadership involves the integration of human and technological elements (Cortellazzo, Bruni, & Zampieri, 2019; Shahzad, 2024).

According to Tran (2025) the construct addresses the inadequacy of traditional leadership models in explaining leadership effectiveness in environments characterized by virtual collaboration, platform ecosystems, and continuous technological disruption. Relatively digital leaders manage distributed teams, utilizing data-driven insights, and coordinate complex networks of stakeholders and technologies (Razzak, Al Kharusi & Umrani, 2025; Cortellazzo, Bruni & Zampieri, 2019).

Within the GILM, digital leadership functions as the operational layer through which foundational leadership capabilities are enacted. It translates ethical intent (TSL), cognitive capacity (Five Minds), and cultural awareness into actionable practices within digital environments. This includes leading virtual teams, facilitating digital communication, and managing transformation processes.

Kamal, Hossain, Islam, Alam, Ibn Sayed, Assiri and Mia (2025) attest that the integration of digital leadership is essential as leadership is increasingly enacted through digital infrastructures. Kamal et al. further posited that without this capability, even highly ethical, cognitively advanced, and culturally aware leaders may struggle to achieve effectiveness in modern organizational contexts. Digital leadership therefore ensures that the GILM reflects the practical realities of contemporary leadership, enabling scalability, agility, and innovation.

Artificial Intelligence Leadership Capability

Artificial Intelligence (AI) leadership capability represents an emerging domain within leadership research, reflecting the increasing integration of intelligent systems into organizational processes. While AI as a field originated with McCarthy (1956), its implications for leadership have been more recently conceptualized in management literature. AI leadership capability is defined as the ability to understand, interpret, and govern AI systems in ways that enhance decision-making while ensuring ethical accountability (Jarrahi, 2018; Raisch & Krakowski, 2021).

The Artificial intelligence leadership capacity addresses a critical gap in traditional leadership, which has largely assumed that decision-making is exclusively human-driven (Marangozoglu, 2025). In contrast, contemporary organizations increasingly rely on AI systems for prediction, optimization, and automation (Adepoju, 2025). Islam and Ajma (2026) reiterated that AI systems function as quasi-agents in decision processes, shaping outcomes in ways that require oversight and interpretation.

The integration of AI leadership capability into the GILM fundamentally alters the nature of leadership. Pandey (2025) recommended that leaders must now navigate human–AI collaboration, balancing algorithmic efficiency with human judgment as navigating the modern leadership complexity requires competencies such as AI literacy, moral and ethical leadership, transparency, data stewardship and responsible use of AI.

Importantly, AI acts as both an enabler and a risk multiplier as it enhances cognitive capacity and operational efficiency, but also introduces risks related to bias, opacity, and loss of accountability (Dhiman, Malik, Kumar & Kamboj, 2025). Furthermore, within the model, AI leadership capability serves as an augmentation layer, amplifying leadership effectiveness Pelagatti and Di Giosaffatte (2025), while requiring strong grounding in TSL and the ethical mind.

TSL as the Antecedent Driver of the Global Integrative Leadership Model

Transforming Steward Leadership (TSL) can be theorized as the principal independent variable in the Global Integrative Leadership Model, its three dimensions—character, competence, and stewardship—supply the moral, cognitive-behavioral, and fiduciary foundations through which the remaining constructs are activated. Katsande, Dean, Winner & Winston (2022)'s TLS formulation is especially important, it does not treat ethicality as an optional adjunct to leadership effectiveness; instead, it embeds integrity, capability, and responsibility into the same higher-order construct. The integration makes TSL especially suitable as the starting mechanism in a model intended to explain leadership under conditions of globalization, digitalization, and AI.

Character is expected to influence the respectful and ethical minds most directly, both depend on integrity, reflexivity, and moral consistency. In a study conducted by Crossan, Seijts, & Gandz (2024) character emerged as an antecedent regulating use of power responsibly, and recognize stakeholder dignity, and resist instrumental uses of technology that undermine fairness. Crossan et al. further attributes that moral consistency strengthens cultural leadership, as it builds cross-cultural legitimacy, not only through knowledge of difference but through trustworthiness across difference. According to Vrontis, Dennehy, Pouloudi, Griva, & Dwivedi (2022) in digital settings, character supports ethical communication, transparency, and responsible data use; in AI contexts, it underpins fairness oversight, accountability, and the refusal to delegate moral judgment uncritically to algorithmic systems (Jarrahi, 2018; Raisch & Krakowski, 2021).

Competence is critical for leadership and organisation effectiveness (Boyatzis, 2008). According to Crossan et al. (2006) competence is the dimension most strongly linked to the disciplined, synthesizing, and creating minds. Mumford, Zaccaro, Harding, Jacobs, & Fleishman (2000) further attributed that competent leaders master domain knowledge, integrate complex signals, and generate workable solutions under uncertainty. Kashive & Raina (2025) that the same capabilities are prerequisites for digital leadership, which requires strategic vision, technological fluency, and the ability to coordinate socio-technical change. Vrontis et al. (2022) further argued that competence is fundamental to AI leadership; specifically, the effective governance of algorithms requires leaders to decipher model constraints and critically evaluate automated outputs to ensure they align with organizational goals. In this context, technical proficiency serves as the functional bridge that transforms theoretical ethical standards into measurable strategic and operational outcomes. Katsande, Dean, Winner & Winston (2022) further argued that competence is the mechanism by which leaders translates ethical aspiration into strategic and operational capability.

Stewardship links TSL to the broader social purpose of leadership (Katsande, Dean, Winner & Winston, 2022). Crossan et al. (2024) linked stewardship as connected to humanity and justice as a component of the ethical mind, while cultural intelligence in Crossan et al. study considered stewardship as the glue of cultural intelligence that created cultural legitimacy. Vrontis et al. (20222) on the other hand posited that stewardship

drives transparency, accountability and socio-technical responsibility on applying digital leadership. Consequently Crossan et al. (2024) advocates that stewardship drives responsible AI leadership, while Vrontis et al. (2022) suggest that stewardship of AI use involves care for social systems, safety, and secure Innovation. Similarly, Raisch, S., & Krakowski, S. (2021), attributed stewardship to impact transparency and human over-sight. Steward leaders are oriented toward long-term value creation rather than narrow short-term advantage. This orientation makes them more attentive to sustainable transformation, stakeholder inclusion, institutional trust, and the downstream effects of digital and

AI-enabled decisions Crossan et al. (2024), taken together, TSL can be modelled as the primary driver of the GILM, it explains why some leaders are able to develop advanced cognitive capability, earn cross-cultural legitimacy, execute digital transformation responsibly, and govern AI effectively, while others with technical ability alone do not. The model therefore predicts that TSL positively shapes the Five Minds, cultural leadership/intelligence, digital leadership, and AI leadership capability, which in turn influence observable leadership outcomes.

Conceptual Framework

Figure 1: Conceptual Framework for GILM

The conceptual framework of the Global Integrative Leadership Model (GILM) illustrates how leadership effectiveness emerges through a structured, multi-level integration of capabilities. At the foundation, Transforming Steward Leadership (TSL)—comprising character, competence, and stewardship—acts as the primary driver shaping leadership behaviour. TSL influences the development of The Five Minds (disciplined, synthesizing, creating, respectful, and ethical), which represent the cognitive core of leadership.

Building on this cognitive base, leadership is enacted across three interconnected domains: Cultural Leadership, which provides contextual understanding and legitimacy; Digital Leadership, which enables socio-technical transformation; and AI Leadership Capability, which supports intelligent augmentation through ethical and effective use of AI.

These domains interact dynamically rather than operating in isolation, reinforcing one another to produce integrated leadership capability. The framework ultimately leads to global leadership outcomes, including effectiveness, cross-cultural legitimacy, responsible innovation, organizational resilience, and sustainable transformation. The model presents leadership as a system of interconnected capabilities, where ethical grounding, cognitive capacity, and technological competence collectively drive performance in complex global environments.

TSL as The Antecedent driver of GILM

Character

Character exerts a broad, yet predominantly normative–regulatory influence, as it defines the ethical boundaries within which leadership behaviour is enacted (Hoch et al., 2018; Brown et al., 2005). Specifically, character influences four core constructs—Five Minds (cognitive capability), cultural leadership/intelligence, digital leadership, and AI leadership—while generating 17 interaction elements, including integrity, ethical judgment, reflexivity, moral consistency, responsible use of power, trustworthiness, stakeholder dignity, cross-cultural legitimacy, respect for difference, transparency, ethical communication, responsible data use, fairness, accountability, explainability, and moral restraint (Gardner, 2008; Rockstuhl et al., 2011; Cortellazzo et al., 2019; Raisch & Krakowski, 2021). From these interactions, four synthesized GILM outcomes emerge: ethical-cognitive discernment, ethical intercultural legitimacy, digital ethical integrity, and responsible AI accountability.

Within the cognitive domain, character most directly shapes the respectful and ethical minds, given that integrity, reflexivity, and moral consistency underpin ethical reasoning and judgment (Gardner, 2008). Consequently, ethical-cognitive discernment emerges, reflecting the capacity to integrate moral evaluation with complex decision-making. Similarly, within cultural leadership, character transforms cultural knowledge into cross-cultural legitimacy, as trust across difference depends on perceived fairness, credibility, and respect for stakeholder dignity (Rockstuhl et al., 2011). In turn, ethical intercultural legitimacy develops, enabling leaders to build trust and acceptance across diverse contexts.

Moreover, within digital leadership, character constrains opportunistic or purely instrumental uses of data and technology, thereby reinforcing transparency, ethical communication, and fairness in digitally mediated environments (Cortellazzo et al., 2019). As a result, digital ethical integrity emerges as a critical leadership outcome. In parallel, within AI leadership, character underpins accountability, explainability, and moral restraint, ensuring that algorithmic decision-making remains aligned with ethical standards and organizational values (Raisch & Krakowski, 2021; Dellermann et al., 2019). Accordingly, responsible AI accountability is produced as a synthesized outcome.

Empirical evidence further supports these relationships, given that ethical leadership has been consistently linked to follower trust, legitimacy, and performance across contexts (Hoch et al., 2018). Additionally, cross-cultural leadership research demonstrates that effectiveness across borders depends not only on cognitive capability but also on relational legitimacy grounded in ethical conduct (Rockstuhl et al., 2011). Taken together, character functions as the normative mechanism that shapes how leadership capability is exercised, ensuring alignment between decision-making, technological application, and ethical accountability in global contexts.

Competence

Competence demonstrates the strongest functional and executional influence, as it directly underpins the application of leadership capabilities across domains (Boyatzis, 2008; Judge & Piccolo, 2004). Specifically, competence influences four core constructs—Five Minds (cognitive capability), cultural leadership/intelligence, digital leadership, and AI leadership—while generating 17 interaction elements, including domain mastery, synthesis, creativity, complexity management, workable solutions, context reading, adaptive behaviour, intercultural judgment, situational fluency, strategic vision, technological fluency, change coordination, digital agility, AI literacy, critical evaluation, model interpretation, and operational alignment

(Gardner, 2008; Cortellazzo et al., 2019; Raisch & Krakowski, 2021). From these interactions, four synthesized GILM outcomes emerge: adaptive cognitive capability, cross-cultural adaptability, digital-transformational capability, and human–AI decision competence.

Within the cognitive domain, competence operates most prominently in the disciplined, synthesizing, and creating minds, given that mastery of knowledge, integration of complexity, and the generation of viable solutions under uncertainty are central to effective leadership (Gardner, 2008; Mumford et al., 2000). Consequently, adaptive cognitive capability emerges, reflecting the ability to process complexity and produce actionable insight. Similarly, within cultural leadership, competence enables accurate contextual interpretation and appropriate behavioural adaptation, thereby strengthening cross-cultural adaptability and effectiveness in diverse environments (Ang et al., 2007; Bücker et al., 2015).

Moreover, in digital leadership contexts, competence translates into technological fluency, strategic vision, and the coordination of socio-technical change, thus producing digital-transformational capability as a key outcome (Cortellazzo et al., 2019; Westerman et al., 2014). In parallel, within AI leadership, competence extends to AI literacy, critical evaluation of algorithmic outputs, and alignment of automated recommendations with organizational objectives, thereby enabling human–AI decision competence (Dellermann et al., 2019; Raisch & Krakowski, 2021)

Empirical evidence further reinforces this pattern, as leadership meta-analyses indicate that higher levels of competence are associated with improved performance outcomes (Judge & Piccolo, 2004; Wang et al., 2011). Additionally, cultural intelligence research demonstrates that interpretive and behavioural capabilities predict effectiveness across culturally diverse environments (Ang et al., 2007; Rockstuhl et al., 2011). Taken together, competence functions as the operational bridge linking ethical intent to measurable leadership execution within the GILM framework (Boyatzis, 2008; Wang et al., 2011).

Stewardship

Stewardship demonstrates the most distinctive integrative and future-oriented influence, as it systematically reorients leadership capabilities toward collective responsibility and long-term value creation (Hernandez, 2012; Davis et al., 1997). Specifically, stewardship influences four core constructs—Five Minds (cognitive capability), cultural leadership/intelligence, digital leadership, and AI leadership—while generating 17 interaction elements, including humanity, justice, long-term orientation, collective responsibility, inclusion, stakeholder care, cultural legitimacy, transparency, accountability, socio-technical responsibility, sustainable transformation, human oversight, safety, trust, and secure innovation (Crossan et al., 2024; Ng et al., 2009; Raisch & Krakowski, 2021). From these interactions, four synthesized GILM outcomes emerge: purpose-driven cognition, inclusive global stewardship, responsible digital stewardship, and AI stewardship orientation.

Within the cognitive domain, stewardship assigns social purpose to the disciplined, synthesizing, and ethical minds, thereby aligning cognition with justice, humanity, and long-term societal outcomes (Gardner, 2008; Crossan et al., 2024). Similarly, within cultural leadership, stewardship functions as the mechanism that translates cultural intelligence into inclusion, stakeholder engagement, and cross-cultural legitimacy, strengthening trust across diverse contexts (Ng et al., 2009; Rockstuhl et al., 2011). Moreover, in digital leadership contexts, stewardship moderates transformation by prioritizing transparency, accountability, and socio-technical responsibility, rather than efficiency-driven outcomes alone (Cortellazzo et al., 2019; Zeike et al., 2019).

In parallel, within AI leadership, stewardship becomes particularly consequential, as it foregrounds human oversight, system safety, trust preservation, and responsible innovation, ensuring that algorithmic systems remain aligned with organizational and societal values (Raisch & Krakowski, 2021; Dellermann et al., 2019). Empirical evidence further reinforces this pattern, given that stewardship-oriented leadership is associated with long-term stakeholder value, organizational trust, and sustainability outcomes (Hernandez, 2012). Additionally, research on digital and AI governance consistently identifies transparency, ethical oversight, and accountability as necessary conditions for sustainable technological implementation (Raisch & Krakowski,

2021; Cortellazzo et al., 2019). Taken together, stewardship functions as the integrative mechanism that aligns leadership capability with ethical, sustainable, and system-level global outcomes.

Overall Synthesis

A clear pattern emerges: each TSL dimension affects the same number of domains—four constructs each—but in different ways. Character regulates the ethical quality of leadership behavior. Competence enables execution and adaptation. Stewardship directs leadership toward long-term and collective value. Each dimension generates 17 specific interaction elements and four synthesized GILM elements, showing a structurally balanced influence across the model. Direct empirical studies testing TSL against all four downstream domains at once remain limited, but the converging evidence across ethical leadership, CQ, digital leadership, and AI governance strongly supports the proposition that TSL is the antecedent mechanism that activates and aligns the entire model.

Synthesis and Model Implications

Collectively, the four higher-order constructs provide a parsimonious representation of interaction elements within GILM while retaining theoretical depth. Conceptual complexity is reduced without sacrificing explanatory power, thereby enabling operationalization through structural equation modeling.

Each construct functions as a mediating mechanism linking Transforming Steward Leadership with global leadership outcomes. Micro-level elements are thus translated into macro-level capabilities, strengthening both theoretical clarity and empirical tractability.

Higher-Order Construct Development

The interaction of Transforming Steward Leadership (TSL) with cognitive, cultural, digital, and AI leadership domains generates a diverse set of micro-level elements that explain leadership functioning in complex global environments. Such multiplicity enhances theoretical richness; however, it simultaneously introduces fragmentation and reduces conceptual parsimony. In line with structural equation modeling principles, interaction elements are therefore clustered into higher-order latent constructs to strengthen theoretical coherence and enable empirical modeling (Hair et al., 2019; Becker et al., 2012).

Clustering follows the logic of second-order construct specification, where conceptually related dimensions are aggregated into broader explanatory capabilities. Leadership phenomena, characterized by multidimensionality and interdependence, are more effectively represented through hierarchical structures. As a result, seventeen interaction elements are synthesized into four higher-order constructs, each representing a distinct yet interconnected leadership capability within the Global Integrative Leadership Model (GILM).

Ethical-Cognitive Leadership

Ethical-cognitive leadership was confirmed by Brown, Treviño, and Harrison (2005), who investigated ethical leadership using survey data from 525 employees across multiple organizations and applied confirmatory factor analysis and regression analysis. Results showed significant relationships with ethical conduct ($r \approx .32–.38$), satisfaction ($r \approx .45$), and voice behavior ($r \approx .33$), indicating integration of moral orientation with cognitive processing grounded in principled reasoning. Complementary evidence from Thiel et al. (2012), using scenario-based experiments with leader samples, identified structured processes of evaluation, self-regulation, and judgment, supporting constituent elements of integrity, ethical judgment, reflexivity, moral consistency, and responsible use of power.

Adaptive Global Capability

Adaptive global capability was confirmed by Groves and Feyerherm (2011), who examined leader cultural intelligence using data from 99 multicultural work teams ($N \approx 1,400$ members) and applied hierarchical regression analysis. Results showed that leader cultural intelligence significantly predicted team performance under high cultural diversity (β significant, $p < .01$), reflecting integration of interpretive, behavioral, and

relational processes. Supporting evidence from Şahin and Gürbüz (2014), based on a survey of 215 employees with regression analysis, found cultural intelligence predicted adaptive performance (β significant, $p < .01$). Findings concluded that context reading, intercultural judgment, adaptive behavior, stakeholder inclusion, and cultural legitimacy capture leadership effectiveness across diverse cultural environments.

Socio-Technical Transformation Capability

Socio-technical transformation capability was confirmed by Aftab et al. (2025), who examined digital leadership using survey data from SMEs ($N \approx 300+$) and applied PLS-SEM analysis. Results showed that digital leadership significantly influenced firm performance through technological proficiency and strategic alignment (path coefficients significant, $p < .01$), reflecting integration of technological and organizational processes grounded in disciplined transformation execution. Supporting evidence from Brunner and Gonzalez-Castañé (2021), based on a survey of organizational professionals ($N \approx 200$) using regression analysis, found that digital leadership competencies significantly predicted digital transformation capability and technology adoption (β significant, $p < .01$). Findings concluded that strategic vision, technological fluency, change coordination, digital agility, and innovation orientation capture socio-technical transformation capability

Responsible AI Leadership Capability

Responsible AI leadership capability was confirmed by Xia et al. (2026), who examined responsible AI governance using a large firm-level panel dataset ($N > 1,000$ firms) and applied a difference-in-differences regression model. Results showed that implementation of AI governance mechanisms significantly improved firm performance and compliance outcomes (coefficients significant, $p < .01$), reflecting integration of ethical standards with decision processes. Supporting evidence from Hiremath et al. (2025), based on a survey of organizational professionals ($N \approx 250$) using multiple regression analysis, found that transparency, accountability, and oversight significantly predicted responsible AI decision-making (β significant, $p < .01$). Findings concluded that AI literacy, critical evaluation, model interpretation, transparency, accountability, and human oversight capture responsible AI leadership capability.

Table 2: Synthesized Elements Generating GILM Outcomes

GILM key synthesized element	**GILM outcome informed**	**Analytical pathway from element to outcome**	**Validated empirical anchor**	**Reliability evidence (Cronbach's α)**
Ethical-cognitive discernment	Leadership effectiveness	Leaders who combine moral consistency with reflective judgment are better able to guide teams, handle complexity, and coordinate action effectively.	Perceived leadership effectiveness (Hiller-derived scale)	Hao et al. (2020); Judge & Piccolo (2004); Wang et al. (2011) a=.90
Adaptive cognitive capability	Leadership effectiveness	Disciplined, synthesizing, and creating capabilities improve decision quality, complexity management, and strategic execution.	Leadership effectiveness criteria used in team leadership studies	Commonly high-.80s to .90; Hao et al. reported α = .90. Gardner (2008); Hao et al. (2020)
Ethical intercultural legitimacy	Cross-cultural effectiveness	Integrity and trustworthiness make cultural capability credible, allowing leaders to build legitimacy across difference.	Cultural Intelligence Scale (CQS)	Original and later applications typically .70–.90+; recent use reported α = .95. Ang et al. (2007); Ng et al. (2009); Rockstuhl et al. (2011); Bücker, Furrer, Lin & Peeters Weem (2015)
Cross-cultural adaptability	Cross-cultural effectiveness	The ability to interpret, adjust, and respond across cultures improves leadership	Cultural Intelligence Scale (CQS)	Often .70–.90+ across subscales. Ang et al. (2007); Rockstuhl et al.

		effectiveness in global settings.		(2011); Bücker et al. (2015); Ott, & Michailova. (2018).
Digital-transformational capability	Innovative work behaviour/ responsible innovation capability	Digital fluency and socio-technical coordination create the conditions for generating, promoting, and implementing new ideas.	Janssen's Innovative Work behaviour scale	α = .93, α = .96 in later studies. anssen (2000); Çelik et al. (2024); Uppathampracha (2022)
Responsible digital stewardship	Innovative work behaviour / responsible innovation capability	Stewardship ensures innovation remains responsible, human-centred, and aligned with organizational values.	Organizational resilience scales derived from Lee et al.	Janssen-based IWB measures, interpreted through stewardship lens. Commonly >.90 in replications
Adaptive cognitive capability + responsible digital stewardship	Organizational resilience	Cognitively capable and stewardship-oriented leaders improve adaptation, continuity, learning, and recovery under disruption.	Organizational resilience scales derived from Lee et al.	Commonly >.80; recent studies report α = .85 and ranges up to .89–.97. Lee et al. (2013); Nyaupane et al. (2020); Hollands et al. (2024)
Inclusive global stewardship	Organizational resilience	Inclusion, stakeholder trust, and long-term orientation strengthen organizational capacity to absorb shocks and recover.	Adapted organizational resilience measures	Typically >.80. Lee et al. (2013); Prayag et al. (2020)
Responsible AI accountability	Responsible AI implementation effectiveness	Fairness oversight, transparency, and accountability improve trust and legitimacy in AI-enabled decisions.	No single gold-standard scale yet; use validated AI literacy/ethics/trust indicators	AI literacy and ethics measures typically .76–.94. Raisch & Krakowski (2021); Dellermann et al. (2019); Yang et al. (2025)
Human–AI decision competence	Responsible AI implementation effectiveness	AI literacy and critical evaluation enable leaders to align AI outputs with organizational goals while preserving human judgment.	AI literacy / AI ethics / AI readiness measures	Examples include α = .83, α = .90+, and subscales .762–.921. Wang et al. (2023); Hobeika et al. (2024); Yang et al. (2025)
AI stewardship orientation	Responsible AI implementation effectiveness	Stewardship directs AI use toward fairness, safety, trust preservation, and long-term societal value.	Emerging second-order outcome using transparency, ethics, and oversight indicators	No dominant universal scale; indirect measures show acceptable to strong reliability. Dellermann et al. (2019); Raisch & Krakowski (2021); Ghosh & Panda (2025)

Analytical Synthesis Information the Outcome GILM Framework

The empirical literature suggests that the key synthesized elements of GILM form an interdependent pathway from foundational leadership capability to observable outcomes. Ethical-cognitive discernment and adaptive cognitive capability most directly inform leadership effectiveness, leaders who combine judgment, integrity, and complexity management are consistently perceived as more effective, with Hiller-derived measures showing strong reliability (α = .90) (Hao et al., 2020). Ethical intercultural legitimacy and cross-cultural adaptability lead to cross-cultural effectiveness, supported by the Cultural Intelligence Scale, which demonstrates stable reliability from acceptable to very strong levels, including recent evidence of α = .95 (Ang et al., 2007; Awad et al., 2025).

In turn, digital-transformational capability and responsible digital stewardship support innovative work behaviour, with Janssen's well-established IWB scale repeatedly showing excellent reliability (α = .93–.96). At the organizational level, adaptive cognitive capability, inclusive global stewardship, and responsible digital stewardship strengthen organizational resilience, with Lee et al.-derived measures typically exceeding α = .80 and recent studies reporting α = .85 and higher (Lee et al., 2013; Nyaupane et al., 2020; Hollands et al., 2024). On the other hand, responsible AI accountability, human–AI decision competence, and AI stewardship orientation inform responsible AI implementation effectiveness. Notably the AI field research is still emerging: there is no single dominant outcome scale comparable to CQS or Janssen's IWB. Still, related AI literacy, ethics, and trust measures show acceptable to strong reliability, ranging from α = .76 to .94, which supports the construct indirectly while indicating the need for further scale consolidation (Wang et al., 2023; Hobeika et al., 2024; Yang et al., 2025).

The synthesis of the constructs leading to the generation of the GILM elements, was further subjected to an integrative synthesis leading to GILM outcomes. The analysis showed that when character, competence and stewardship is fused with GILM elements. The outcomes emerged.

Leadership Effectiveness

The reviewed literature, fusing Transforming Steward Leadership (TSL) with cognitive, cultural, digital, and AI leadership capabilities produces leadership effectiveness as a composite outcome of ethical grounding, adaptive cognition, and socio-technical competence. Empirical evidence shows that transformational and stewardship-based leadership significantly showed effectiveness and performance (Judge & Piccolo, 2004; Wang et al., 2011; Hernandez, 2012), while cultural intelligence enhances cross-border leadership effectiveness (Rockstuhl et al., 2011). Digital and AI leadership further strengthen coordination, innovation, and decision augmentation (Cortellazzo et al., 2019; Raisch & Krakowski, 2021). The leadership effectiveness outcome is further affirmed by empirical research by Hao et al. (2020), which measured leadership effectiveness using Hiller et al.-derived items and demonstrated strong reliability (α = .90). The empirically tested items: goal attainment effectiveness, complexity management capability, coordination and resource integration, and overall leadership performance by Hao et al. emerged from the literature review as elements composing leadership effectiveness for GILM, providing a robust and empirically validated assessment of leadership outcomes.

Cross-Cultural Effectiveness

Within the GILM framework, cultural intelligence (CQ) emerges as a critical outcome reflecting a leader's ability to remain effective across diverse cultural contexts. As leadership increasingly operates in globalized environments, intercultural effectiveness becomes a key indicator of whether integrated capabilities—ethical stewardship, cognition, digital, and AI leadership—translate into contextually appropriate behaviour. The cultural intelligence scale (CQS) developed by Ang et al. (2007) provides a robust and widely validated measure of this construct, with studies reporting strong reliability across dimensions ranging from Cronbach's alpha values of .70 and to above–.90 (Ang et al., 2007; Bücker et al., 2015). SamulWithin GILM, CQ is reflected through elements such as adaptive interaction across cultures, behavioural flexibility, confidence in unfamiliar cultural settings, and accurate interpretation of culturally diverse behaviours. Studies by Ang et al. (2007) and Ng et al. (2009) confirms CQ as a strong predictor of cross-cultural leadership effectiveness, reinforcing its validity as a key global leadership outcome.

Innovative Work Behavior / Responsible Innovation Capability

Within the GILM framework, innovative work behavior (IWB) emerges as a key outcome reflecting a leader's capacity to translate ethical, cognitive, cultural, and technological capabilities into value-creating action. GILM not only emphasizes responsible and culturally grounded leadership but also the ability to drive adaptation and innovation in dynamic environments. The Innovative Work Behavior scale developed by Janssen (2000) is one of the most widely validated measures of this construct, with strong reliability reported across studies, including Cronbach's α = .93 (Çelik et al., 2024) and α = .96 (Uppathampracha, 2022). Within this framework, IWB is reflected through elements such as generating original solutions, exploring new

methods, mobilizing support for innovative ideas, and implementing ideas into practice. Empirical evidence consistently supports IWB as a robust indicator of innovation performance, reinforcing its validity as a critical outcome of integrative global leadership.

Organizational Resilience

A critical downstream outcome of the GILM framework is organizational resilience, reflecting the capacity of organizations to withstand, adapt to, and recover from disruption in increasingly volatile environments. By integrating Transforming Steward Leadership with cognitive, cultural, digital, and AI capabilities, GILM fosters adaptive systems that are both ethically grounded and operationally agile. Organizational resilience is commonly assessed using scales derived from Lee, Vargo, and Seville (2013), which have been extensively applied and demonstrate strong reliability, typically exceeding Cronbach's $\alpha = .80$. Within this framework, resilience is captured through elements such as rapid adaptation to unexpected change, continuity of operations during disruptions, speed of recovery following crises, and learning and improvement from setbacks. Empirical studies confirm that these dimensions are strongly associated with sustained performance and adaptive capacity (Lee et al., 2013; Shatila, 2025), supporting their validity as key outcomes of integrative global leadership.

Responsible AI Implementation Effectiveness

An emerging yet theoretically significant outcome within the GILM framework is responsible AI leadership, reflecting how effectively leaders govern and apply AI in ethically aligned and organizationally accountable ways. This construct is central to GILM's integration of AI capability and stewardship; however, the empirical measurement literature remains nascent and lacks a universally accepted, psychometrically established scale. Current research supports its construct validity indirectly through related dimensions such as algorithmic transparency, ethical governance, human–AI collaboration, and trust in AI systems. For instance, studies on AI in management highlight the importance of explainability and human oversight in maintaining decision quality and accountability (Raisch & Krakowski, 2021), while hybrid intelligence research emphasizes the complementary role of human judgment in AI-enabled systems (Dellermann et al., 2019). Accordingly, responsible AI leadership may be operationalized through elements such as transparency of AI decisions, ethical alignment, human oversight, and trust preservation. Nonetheless, given the absence of a dominant validated scale, it should be treated as a developing construct or second-order outcome requiring further empirical validation.

Hypotheses Development

To enhance theoretical rigor and enable empirical testability, to advance the study, the following propositions are hypotesised:

H1: Transforming Steward Leadership (TSL) positively influences leaders' cognitive capabilities (Five Minds), reflected in disciplined, synthesizing, creating, ethical, and respectful thinking capacities.

H2: Transforming Steward Leadership (TSL) positively influences cultural intelligence and cross-cultural leadership effectiveness through ethical grounding and relational legitimacy..

H3: Transforming Steward Leadership (TSL) positively influences digital leadership capability, including technological fluency, strategic alignment, and socio-technical coordination.

H4: Transforming Steward Leadership (TSL) positively influences AI leadership capability, particularly human–AI decision competence, ethical oversight, and responsible algorithmic governance.

H5: The integration of TSL with cognitive, cultural, digital, and AI leadership capabilities leads to higher levels of leadership effectiveness.

H6: The integration of these capabilities positively predicts cross-cultural effectiveness, innovative work behavior, organizational resilience, and responsible AI implementation.

RESEARCH METHODOLOGY

In this study I employed a conceptual and theory-building research design grounded in an integrative literature review methodology, emphasising theoretical advancement, global relevance, and interdisciplinary integration. Integrative reviews are particularly appropriate for leadership research seeking to develop new models or reconceptualize existing frameworks by synthesizing fragmented bodies of knowledge (Torraco, 2005, 2016; Callahan, 2010).

Research Approach

The study was based on a theory elaboration and model development approach, aimed at integrating and synthesizing transforming steward leadership, the Five Minds, cultural intelligence, digital leadership, and AI leadership into the proposed Global Integrative Leadership Model (GILM). The integrative approach prioritizes context-sensitive, globally applicable leadership models (Elsbach & van Knippenberg, 2020).

Search and Selection

A structured search strategy was employed to identify relevant literature from peer-reviewed journals, seminal books, and high-impact academic sources across leadership, organizational studies, digital transformation, and AI. Databases included Google Scholar, Scopus-indexed journals, and publisher platforms. The selection criteria prioritized: Theoretical relevance to core constructs (TSL, cognition, culture, digital, AI), Empirical grounding (including meta-analyses and validated scales), Global applicability, reflecting diverse cultural and technological contexts.

Analytical Strategy

The analysis followed Torraco's (2005) integrative review process: Conceptual deconstruction – Identifying core dimensions and theoretical assumptions of each construct. Comparative synthesis – Examining intersections, complementarities, and gaps across leadership domains. Model integration – Positioning TSL as the antecedent driver and synthesizing cross-domain elements into GILM.

Measurement Conceptualization and Alignment

The study conceptualizes measurement by systematically aligning all GILM constructs with established and empirically validated scales, thereby ensuring theoretical rigor and facilitating future empirical validation. Such alignment strengthens construct validity while maintaining consistency with prior leadership, organizational, and socio-technical research traditions. Transforming Steward Leadership (TSL) is specified as a higher-order construct comprising character, competence, and stewardship, reflecting an integrated leadership orientation grounded in ethical responsibility, capability, and long-term value creation (Hernandez, 2012; Hoch et al., 2018). Positioning TSL in this manner supports hierarchical modeling and enables examination of its influence across multiple leadership domains.

The four synthesized GILM constructs are operationally anchored in well-established measurement domains to ensure conceptual clarity and empirical tractability. Ethical-Cognitive Leadership is grounded in ethical leadership literature, capturing ethical reasoning, moral consistency, and principled decision-making processes (Brown et al., 2005). Adaptive Global Capability draws from cultural intelligence and intercultural effectiveness research, emphasising context sensitivity, behavioural adaptability, and cross-cultural legitimacy (Ang et al., 2007; Ng et al., 2009). Socio-Technical Transformation Capability integrates constructs from digital leadership and innovation research, reflecting technological fluency, strategic alignment, and the capacity to coordinate socio-technical change (Cortellazzo et al., 2019; Janssen, 2000). Responsible AI Leadership Capability is conceptualized using emerging measures related to AI literacy, transparency, accountability, and human oversight, capturing leadership effectiveness in AI-enabled environments (Dellermann et al., 2019; Raisch & Krakowski, 2021).

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Leadership outcomes are similarly derived from validated constructs to ensure consistency between theoretical specification and empirical measurement. Leadership effectiveness reflects performance and goal attainment, cross-cultural effectiveness captures leadership success across diverse cultural contexts, innovative work behaviour measures the generation and implementation of new ideas, and organizational resilience reflects the capacity to adapt and recover under disruption. Responsible AI implementation is conceptualised through indicators related to ethical, transparent, and accountable AI use.

In addition, measurement items are designed to be reflective and suitable for Likert-scale assessment, enabling robust statistical analysis. Constructs are expected to demonstrate strong reliability and validity, assessed through Cronbach's alpha, composite reliability, and average variance extracted. The hierarchical structure of GILM further allows second-order construct modelling, enhancing parsimony while preserving theoretical richness.

Overall, the measurement conceptualisation ensures alignment between theory and operationalisation, enabling the GILM framework to be tested using confirmatory factor analysis and structural equation modelling. The following table presents the conceptualised measurement structure, providing a foundation for future empirical investigation and scale refinement.

Table 3: Conceptualised Measurement Model for GILM (CFA Specification)

Construct	**Dimension**	**Indicators (Sample Items)**	**Source**	**Reliability (α / CR)**
Transforming Steward Leadership (TSL)	Character Competence Stewardship	I demonstrate consistency, honest and responsibility in my Actions. Leader shows competence Leader prioritizes long-term stakeholder value	Katsande et al. (2022)	.85–.92
Ethical-Cognitive Leadership	Ethical reasoning Reflexivity Moral Consistency	I make decisions based on ethical principles I critically evaluate my own decisions I align my actions with my values	Brown et al. (2005)	.88–.93
Adaptive Global Capability	Cultural Intelligence Intercultural Judgment Inclusion	I adapt behavior across cultures I interpret cultural differences accurately I engage diverse stakeholders effectively	Ang et al. (2007)	.70–.95
Socio-Technical Transformation Capability	Digital leadership Technological fluency Innovation	I lead digital transformation effectively I understand digital systems I promote new ideas and solutions	Cortellazzo et al. (2019),Westerman et al. (2014), Janssen (2000)	
Responsible AI Leadership Capability	AI literacy Transparency Human oversight	I understand AI system limitations I can explain AI decisions I maintain Human judgment in AI use	Dellermann et al.(2019), Raisch & Krakowski (2021)	.76–.92
Leadership Effectiveness	Performance	I achieve my plans and goals with ease	Hao et al. (2020)	.90

Cross-Cultural Effectiveness	CQ outcome	I adjust and relate easily across cultures	Rockstuhl et al. (2011)	.80–.90
Innovative Work Behaviour	Innovation	I generate and implement new ideas	Janssen (2000)	.93–.96
Organizational Resilience	Adaptation	I comfortable with change and adapt new methods.	Lee et al. (2013)	.80–.90
Responsible AI Implementation	Leadership outcome	I use AI responsibly and in an ethical way	Raisch & Krakowski (2021)	.80–.90

PROPOSED MODEL OUTCOME AND DISCUSSIONS

Proposed Hypotheses Outcomes

The proposed hypotheses collectively position Transforming Steward Leadership (TSL) as a foundational driver of leadership effectiveness through its capacity to activate and align higher-order leadership capabilities. While empirical validation remains a necessary next step, the theoretical relationships specified in H1–H6 provide a structured explanation of how leadership effectiveness is generated in complex, global, and technologically mediated environments. The model advances a systems-based logic in which leadership outcomes emerge not from isolated traits, but from the dynamic interaction of interdependent capabilities.

Hypotheses H1–H4 specify that TSL exerts a positive influence on Ethical-Cognitive Leadership, Adaptive Global Capability, Socio-Technical Transformation Capability, and Responsible AI Leadership Capability. Each pathway reflects a distinct mechanism through which TSL shapes leadership behaviour. Ethical-Cognitive Leadership captures the alignment between moral reasoning and decision processes, ensuring that judgment remains principled under complexity. Adaptive Global Capability reflects the ability to interpret and respond to diverse cultural contexts, strengthening legitimacy and relational effectiveness. Socio-Technical Transformation Capability emphasizes the coordination of technological systems and organizational processes, enabling digital transformation and innovation. Responsible AI Leadership Capability extends leadership into AI-enabled environments, where transparency, accountability, and human oversight remain essential. Collectively, these relationships indicate that leaders grounded in character, competence, and stewardship develop integrated capabilities that enhance both decision quality and execution capacity.

Hypothesis H5 extends the model by proposing that the synthesized GILM constructs collectively enhance leadership effectiveness. Leadership performance is therefore understood as the outcome of alignment across ethical judgment, adaptive cognition, and technological capability. Such alignment enables leaders to manage complexity, coordinate diverse resources, and sustain performance under conditions of uncertainty. The implication is that effectiveness depends on the coherence of capabilities rather than the strength of any single domain.

Hypothesis H6 further broadens the model by linking the GILM constructs to wider organizational and contextual outcomes, including cross-cultural effectiveness, innovative work behaviour, organizational resilience, and responsible AI implementation. Adaptive Global Capability supports effectiveness across cultural boundaries, while Socio-Technical Transformation Capability drives innovation and responsiveness. Ethical-Cognitive Leadership and Responsible AI Leadership Capability reinforce trust, legitimacy, and sustainability in decision-making, particularly in environments shaped by digital and AI technologies.

Overall, the analysis underscores that leadership effectiveness within the GILM framework is inherently multidimensional and integrative. Outcomes emerge through the interaction of ethical grounding, adaptive capability, and socio-technical competence, forming a coherent explanatory structure that is well suited for future empirical testing using structural equation modelling.

Figure 2: TSL Dimensions, Sysnthesised Elements and Outcomes, GILM Framework

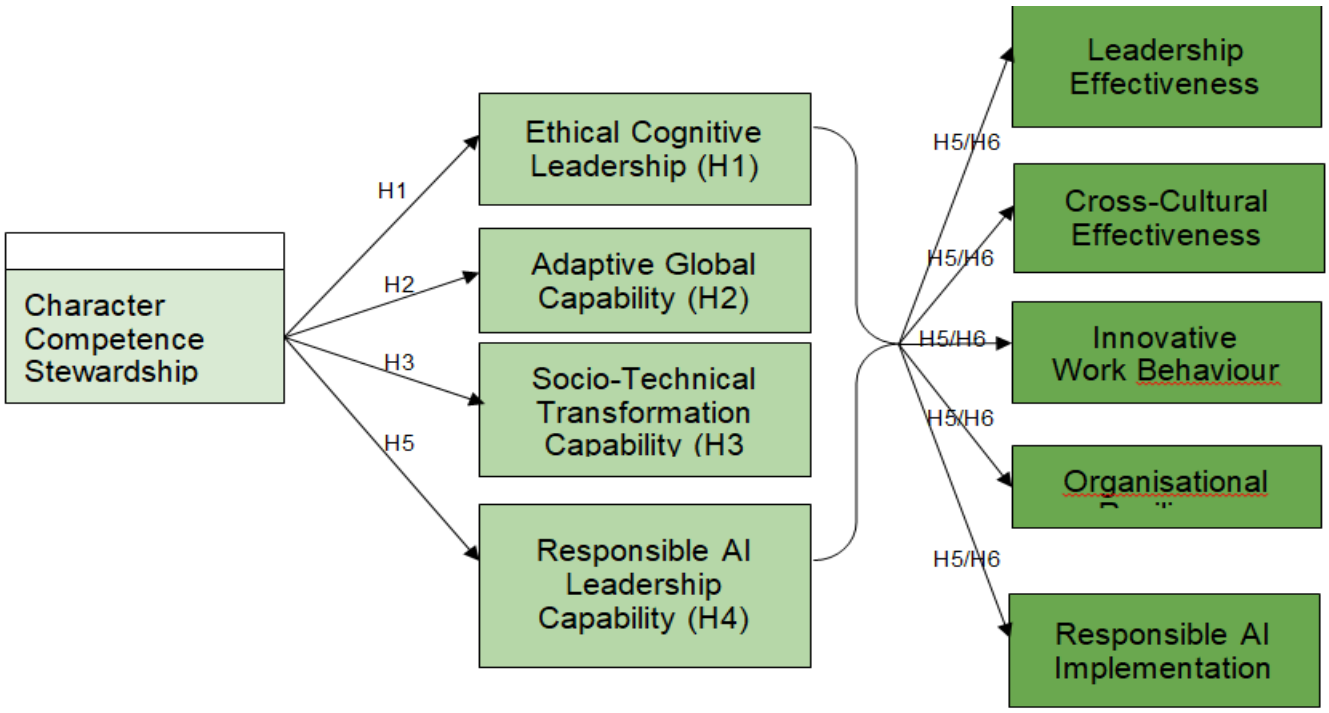

Table 4: Analytical Synthesis (Conceptual Deconstruction)

Construct	**Core Dimensions**	**Theoretical Anchors**	**Conceptual Focus in GILM**	**Literature Base**
Transforming Steward Leadership (TSL)	Character, competence, stewardship	Leadership effectiveness is inseparable from ethical responsibility, capability, and accountability; leadership is inherently moral and fiduciary.	Foundational antecedent shaping all leadership behaviour and capabilities	Katsande, Dean, Winner & Winston (2022); Hernandez (2012); Davis et al. (1997)
Five Minds (Cognitive capability)	Disciplined, synthesizing, creating, respectful, ethical minds	Effective leadership in complex environments requires advanced cognitive processing, integration, and ethical reasoning.	Cognitive engine enabling judgment, learning, and innovation	Gardner (2008)
Cultural Intelligence (CQ)	Cognitive, metacognitive, motivational, behavioral	Leadership effectiveness across cultures depends on the ability to adapt, interpret, and function in diverse contexts.	Contextual capability for global leadership effectiveness	Ang et al. (2007); Ng et al. (2009); Rockstuhl et al. (2011)
Digital Leadership	Digital transformation, technological fluency, virtual coordination, innovation	Leadership must evolve to manage digital systems, virtual teams, and data-driven environments.	Operational capability for leading in digitalized organizations	Cortellazzo et al.(2019); Westerman et al. (2014); Zeike et al. (2019)
AI Leadership	AI literacy, human–AI collaboration, ethical governance, decision augmentation	Leadership increasingly involves managing algorithmic systems and balancing automation with human judgment.	Socio-technical capability for AI-enabled decision-making and governance	Raisch & Krakowski (2021); Dellermann et al. (2019); Jarrahi (2018)

Applying Torraco's (2005) conceptual deconstruction reveals that each construct contributing to GILM is grounded in distinct yet complementary theoretical assumptions. TSL stands apart as a normative and foundational construct, asserting that leadership must integrate character, competence, and stewardship as inseparable elements. This contrasts with the Five Minds, which assume leadership effectiveness is primarily a function of cognitive sophistication, emphasizing thinking processes rather than moral grounding.

Cultural intelligence extends this by introducing a contextual assumption, namely that leadership effectiveness is contingent upon adaptability across cultural environments. In parallel, digital leadership shifts the focus toward technological embeddedness, assuming that leadership must operate within digitally mediated systems. AI leadership further deepens this logic by introducing a socio-technical assumption, where decision-making is shared between humans and intelligent systems, requiring oversight, augmentation, and ethical governance.

The deconstruction highlights a critical gap in the literature: while each construct explains a specific dimension of leadership, none independently captures the full complexity of global, digital, and AI-driven contexts. This fragmentation justifies the integration proposed in GILM, where TSL provides the unifying foundation, and the remaining constructs function as complementary capability domains, collectively explaining contemporary global leadership.

Comparative Findings

Table 5: Comparative Synthesis of Leadership Constructs (Intersections, Complementarities, and Gaps)

Construct	Key intersections with other constructs	Complementary contributions	Conceptual gaps / limitations	Implication for GILM integration
Transforming Steward Leadership (TSL)	Intersects with all constructs through ethics, responsibility, and leadership intent	Provides moral foundation linking cognition, culture, digital, and AI leadership	Lacks explicit articulation of digital and AI capability	Serves as the antecedent integrative driver across domains
Five Minds (Cognitive capability)	Intersects with CQ (adaptive thinking), digital (problem-solving), AI (decision-making)	Provides cognitive depth: synthesis, creativity, ethical reasoning	Does not explicitly address cultural or technological execution contexts	Functions as the cognitive engine of GILM
Cultural Intelligence (CQ)	Intersects with TSL (ethical legitimacy), Five Minds (adaptive cognition), digital (global collaboration)	Enables effectiveness across cultural contexts and global environments	Limited engagement with digital and AI-mediated interactions	Provides contextual and relational capability
Digital Leadership	Intersects with competence (TSL), cognition (Five Minds), and AI leadership	Enables transformation, innovation, and coordination in digital environments	Often under-theorized in ethical and cultural dimensions	Provides operational and transformation capability
AI Leadership	Intersects with digital leadership (technology), TSL (ethics), cognition (decision-making)	Enables human–AI collaboration, decision augmentation, and intelligent systems governance	Lacks mature theoretical and measurement frameworks	Provides advanced socio-technical capability

Intersections

The comparative analysis reveals that the constructs are not theoretically isolated; rather, they converge around shared functional domains of leadership, particularly ethics, cognition, and decision-making. TSL operates as the central intersecting construct, linking moral intent with execution across all domains. Its emphasis on character aligns directly with the ethical and respectful minds, while its competence dimension overlaps with the disciplined, synthesizing, and creating minds, and extends into digital and AI contexts through decision capability. Similarly, cultural intelligence intersects with cognition through adaptive sensemaking, and with

digital leadership through global virtual interaction. AI leadership and digital leadership converge most strongly in the domain of socio-technical systems, where decision-making is mediated by technology. These intersections indicate that contemporary leadership is best understood as a network of mutually reinforcing capabilities, rather than discrete competencies.

Complementarities

While intersections highlight overlap, the constructs also exhibit functional complementarity, where each addresses a distinct dimension of leadership inadequately covered by others. TSL contributes normative coherence, embedding ethics and responsibility into leadership behavior. The Five Minds provide cognitive architecture, enabling leaders to process complexity and generate insight. Cultural intelligence extends leadership into relational and contextual domains, ensuring effectiveness across diverse environments. Digital leadership operationalizes leadership within technologically mediated systems, translating intent into coordinated action. AI leadership further extends this capability into algorithmic environments, introducing decision augmentation and governance of intelligent systems. Analytically, these constructs form a layered system of capabilities, where each domain compensates for the limitations of the others, collectively producing a more complete representation of leadership in complex environments.

Gaps

Despite these complementarities, the analysis exposes systemic fragmentation within the leadership literature. Each construct has evolved within its own epistemological boundary, resulting in partial explanations of leadership effectiveness. TSL, while robust in ethical grounding, does not sufficiently engage with technological realities. The Five Minds framework, although cognitively rich, lacks contextual and operational specificity. Cultural intelligence remains largely confined to interpersonal and cross-cultural domains, with limited integration into digital or AI-mediated environments. Digital leadership, while operationally strong, often lacks deep ethical anchoring, and AI leadership remains conceptually emergent, with underdeveloped theoretical and measurement foundations. These gaps are not merely additive; they reflect a lack of integrative logic across domains, which limits the explanatory power of existing models in global, digital, and AI-driven contexts.

DISCUSSION

The purpose of this study was to develop the Global Integrative Leadership Model (GILM) by positioning Transforming Steward Leadership (TSL) as the foundational driver of leadership behaviour in contemporary global environments. The discussion advances the theoretical implications of the proposed hypotheses by interpreting how the integration of ethical, cognitive, cultural, digital, and AI leadership capabilities contributes to leadership effectiveness and broader organizational outcomes.

Integration of Leadership Domains

A central implication emerging from the Global Integrative Leadership Model (GILM) is that leadership effectiveness cannot be adequately explained through single-domain theories (Judge & Piccolo, 2004; Wang et al., 2011). The relationships proposed in H1–H4 indicate that Transforming Steward Leadership (TSL) activates interdependent capabilities: Ethical-Cognitive Leadership, Adaptive Global Capability, Socio-Technical Transformation Capability, and Responsible AI Leadership Capability—advancing a capability-based understanding of leadership (Hernandez, 2012; Hoch et al., 2018; Elsbach & van Knippenberg, 2020).

Futhermore, ethical-cognitive leadership emphasizes that decision-making quality depends on alignment between moral reasoning and cognitive processing (Brown et al., 2005; Gardner, 2008). At the same time adaptive global capability highlights contextual sensitivity and cross-cultural legitimacy (Ang et al., 2007; Rockstuhl et al., 2011). Socio-technical transformation capability underscores alignment between technological systems and organizational processes (Cortellazzo et al., 2019; Westerman et al., 2014). While responsible AI Leadership Capability introduces a critical dimension, requiring human judgment, transparency, and accountability in AI-enabled environments (Raisch & Krakowski, 2021; Dellermann et al., 2019).

Collectively, leadership effectiveness emerges from the integration of ethical grounding, adaptive cognition, and socio-technical competence rather than isolated competencies (Wang et al., 2011; Judge & Piccolo, 2004).

TSL as the Antecedent Mechanism

The hypotheses position TSL as the primary mechanism through which leadership capabilities are developed. Character, competence, and stewardship operate as mutually reinforcing dimensions that shape how leaders think, act, and make decisions (Katsande et al.,2022). Ethical grounding regulates the use of power and technology, competence enables execution and problem-solving, and stewardship directs leadership toward long-term value creation (Hoch et al., 2018).

Theoretical perspectives indicate that leaders who embody TSL are more likely to develop integrated capabilities, thereby enhancing effectiveness in complex, uncertain, and technologically mediated environments (Elsbach & van Knippenberg, 2020). Leadership effectiveness, therefore, depends on the degree of integration across domains, rather than on expertise within any single domain (Judge & Piccolo, 2004; Wang et al., 2011).

Implications for Leadership Outcomes

The relationships proposed in H5 and H6 extend the model beyond capability development to observable outcomes (Hao et al., 2020; Judge & Piccolo, 2004). Leadership effectiveness is conceptualized as a direct result of alignment between ethical reasoning, cognitive capability, and technological execution (Wang et al., 2011). Leaders who demonstrate such alignment are better equipped to guide teams, manage complexity, and coordinate resources effectively (Hiller et al., 2006).

Beyond effectiveness, the model predicts broader outcomes, including cross-cultural effectiveness, innovative work behaviour, organizational resilience, and responsible AI implementation (Rockstuhl et al., 2011; Janssen, 2000; Lee et al., 2013). Adaptive Global Capability enhances performance in diverse cultural settings, while Socio-Technical Transformation Capability fosters innovation and adaptability (Ang et al., 2007; Cortellazzo et al., 2019). Ethical-Cognitive Leadership and Responsible AI Leadership Capability contribute to trust, legitimacy, and sustainable decision-making, which are critical for resilience and ethical technology use (Brown et al., 2005; Raisch & Krakowski, 2021). The discussion therefore reinforces the view that leadership outcomes are multidimensional and interdependent, shaped by the interaction of human, cultural, and technological factors (Wang et al., 2011). GILM thus advances leadership theory by shifting from fragmented models to an integrated systems perspective for complex, global environments (Elsbach & van Knippenberg, 2020).

Theoretical Contributions

In this study, leadership theory is advanced in significant ways by introducing the Global Integrative Leadership Model (GILM) as a novel framework that unifies previously fragmented domains—ethical leadership, cognitive capability, cultural intelligence, digital leadership, and AI leadership—into a single explanatory model. In the study transforming steward leadership (TSL) was positioned as a higher-order antecedent, extending TSL by demonstrating its role in shaping ethical behaviour, cognitive, technological, and global leadership capabilities.

The Introduction of GILM in this study contributes to leadership research by bridging socio-cognitive and socio-technical perspectives, showing that leadership effectiveness emerges from the interaction between human judgment, cultural adaptability, and technological competence. Finally in this study an advancement of methodological rigor by conceptually clustering micro-level interaction elements into higher-order constructs, enabling future empirical validation using structural equation modeling, contributed significantly to leadership theory.

Practical Implications

GILM offers practical implications for leadership development and organizational practice. Leadership development programs should move beyond traditional competency models and focus on **integrated**

capability development, including ethical reasoning, cultural intelligence, digital fluency, and AI literacy. Organizations should design leadership systems that promote transparency, accountability, and human-centered decision-making, particularly in AI-enabled environments. Furthermore, the emphasis on stewardship suggests that leadership should be evaluated not only in terms of short-term performance but also in relation to long-term value creation, stakeholder inclusion, and ethical responsibility.

CONCLUSION

This study set out not merely to combine existing leadership constructs, but to interrogate the conditions under which leadership remains effective in an increasingly complex, global, digital, and AI-mediated environment. The process of integrative synthesis revealed a critical insight: leadership theory has evolved in parallel silos, each addressing a specific dimension of reality—ethics, cognition, culture, or technology—without sufficiently accounting for their interdependence. The development of the Global Integrative Leadership Model (GILM) therefore represents less an additive exercise and more a reconfiguration of leadership logic, where effectiveness is understood as the outcome of interacting, rather than isolated, capabilities.

A key observation emerging from this process is the centrality of Transforming Steward Leadership (TSL) as a generative mechanism rather than a peripheral ethical layer. The analysis demonstrates that character, competence, and stewardship do not simply enhance leadership; they condition the quality, direction, and legitimacy of all other leadership capabilities. In particular, the findings suggest that technological advancement—whether digital transformation or AI deployment—does not inherently produce effective leadership outcomes. Instead, such outcomes are contingent upon the ethical calibration (character), executional capacity (competence), and long-term orientation (stewardship) embedded within leadership behaviour. This repositions leadership from a model of capability accumulation to one of capability alignment and governance.

The results further indicate that leadership effectiveness in contemporary contexts is structurally differentiated. Traditional outcomes such as leadership effectiveness and innovation are supported by relatively stable and well-validated constructs, whereas more complex outcomes—such as organizational resilience and responsible AI implementation—require a denser integration of cognitive, ethical, and socio-technical elements. This suggests that as organizational environments become more technologically and culturally complex, leadership effectiveness becomes increasingly systemic rather than individual, shifting from the performance of the leader to the configuration of leadership capabilities across domains.

Importantly, the study also exposes the uneven maturity of measurement across leadership domains. While constructs such as cultural intelligence and innovative work behaviour demonstrate strong psychometric stability, the measurement of AI-related leadership outcomes remains emergent. This gap is not merely methodological but conceptual, reflecting the still-evolving nature of leadership in AI-mediated contexts. As such, GILM not only integrates existing knowledge but also maps the frontier of leadership research, identifying where theoretical consolidation has occurred and where it remains underdeveloped.

Future Research Direction

The Global Integrative Leadership Model (GILM) provides a theoretically grounded framework integrating ethical, cognitive, cultural, digital, and AI leadership domains. Despite its conceptual contribution, empirical validation remains essential to establish robustness, generalizability, and its prdictability. Future research should therefore prioritize a systematic focus of empirical testing using quantitative and mixed-method approaches. The following research areas are necessary to strengthen GILM into a robust, empirically supported framework capable of explaining leadership effectiveness in global, digital, and AI-enabled environments.

Development and Validation

Conduct research operationalizing Transforming Steward Leadership (TSL) and the four higher-order constructs. Although existing validated scales can be adapted, refinement is required to ensure construct

specificity within the GILM context. The use of Exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA) would be useful to establish dimensionality, reliability (Cronbach's α, composite reliability), and convergent and discriminant (validity Average Variance Extracted, Heterotrait-Monotrait Ratio). Multi-item scales for Responsible AI Leadership Capability warrant particular attention, given the relative immaturity of measurement in this domain.

Structural Model Testing

Further research should test the full GILM using Structural Equation Modeling (SEM). Partial Least Squares SEM (PLS-SEM) is appropriate for initial validation due to model complexity and predictive orientation, while covariance-based SEM (CB-SEM) can be employed for confirmatory testing. Hypothesized relationships (H1–H6) should be assessed through path coefficients, bootstrapping procedures, and model fit indices. Higher-order constructs should be modeled using a two-stage or repeated indicators approach to ensure parsimony and theoretical alignment.

Cross-Cultural and Multi-Context Validation

Since GILM carries a global orientation, future research should examine measurement invariance and structural stability across cultural contexts. Multi-group SEM can assess whether relationships hold across regions, industries, and organizational types. Longitudinal designs may further evaluate the temporal stability of leadership capabilities and outcomes, particularly in rapidly evolving digital and AI environments.

Multi-Level and Longitudinal Analysis

Leadership operates across individual, team, and organizational levels. Future studies should adopt **multi-level modeling approaches** to examine how TSL and GILM constructs influence outcomes at different levels of analysis. Longitudinal designs will enable causal inference and provide insight into how leadership capabilities develop over time, particularly in response to digital transformation and AI adoption.

AI-Specific Measurement Development

Current measurement approaches rely on proxy constructs such as AI literacy, transparency, and trust. Future research should prioritize the development of a validated scale for Responsible AI Leadership Capability. Scale development studies should follow rigorous psychometric procedures, including item generation, pilot testing, and cross-validation, to establish a widely accepted measurement instrument.

REFERENCE

1. Abror, M. B. A. M., & Suud, F. M. (2025, June). Multiple Intelligences and Educational Leadership in the Society 5.0 era: An Analysis of Leadership Values in Context of Gardner's Theory. In ACIE 2024: Proceedings of the 3rd Annual Conference of Islamic Education, ACIE 2024, 14-15 October 2024, Jember, East Java, Indonesia (p. 352). European Alliance for Innovation.\
2. Adepoju, A. S. (2025). „Transforming administrative functions through AI: Strategic planning, task automation, and resource optimization". International Journal of Research Publication and Reviews, 6(1), 4300-4316.
3. Al Masaeid, T., Alkhalidi, M. M., Al Ali, A. A. A., Almaazmi, S. M. G. A., & Alami, R. (2025). Artificial intelligence-augmented decision-making: Examining the interplay between machine learning algorithms and human judgment in organizational leadership. Journal of Ecohumanism, 4(1), 4683-4699.
4. Amabile, T. M. (1996). Creativity in context. Westview Press.
5. Ang, S., Van Dyne, L., Koh, C., Ng, K.-Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment, decision making, cultural adaptation and task performance. Management and Organization Review, 3(3), 335–371. https://doi.org/10.1111/j.1740-8784.2007.00082.x

6. Baltezarević, B. V., & Battista, D. (2025). Artificial Intelligence and Cognitive Boundaries: A Critical Examination of Intelligence, Understanding, and Consciousness. Knowledge-International Journal, 69(1), 61-66.
7. Bass, B. M. (1985). Leadership and performance beyond expectations. Free Press.
8. Brown, M. E., Treviño, L. K., & Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. Organizational Behavior and Human Decision Processes, 97(2), 117–134. https://doi.org/10.1016/j.obhdp.2005.03.002
9. Bücker, J., Furrer, O., Lin, Y., & Peeters Weem, T. (2015). Measuring cultural intelligence: A review and new research avenues. International Journal of Management Reviews, 17(2), 215–235. https://doi.org/10.1111/ijmr.12042
10. Callahan, J. L. (2010). Constructing a manuscript: Distinguishing integrative literature reviews and conceptual and theory articles. Human Resource Development Review, 9(3), 300–304. https://doi.org/10.1177/1534484310371492
11. Casoli, D., Visentin, M., Tuan, A., & Cappiello, G. (2025). The power of a stewardship mind: Reorienting organizations around the duty to care to better address grand challenges. International Journal of Management Reviews.
12. Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. Frontiers in Psychology, 10, 1938. https://doi.org/10.3389/fpsyg.2019.01938
13. Crossan, M., Seijts, G. H., & Furlong, B. (2024). The character compass: Transforming leadership for the 21st century. Routledge.
14. Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. Academy of Management Review, 22(1), 20–47.
15. Dellermann, D., Ebel, P., Söllner, M., & Leimeister, J. M. (2019). Hybrid intelligence. Business & Information Systems Engineering, 61, 637–643. https://doi.org/10.1007/s12599-019-00595-2
16. Dhiman, M. T., Malik, M. A., Kumar, A., & Kamboj, M. G. (2025). Artificial Intelligence Synergies: A Multidisciplinary Outlook. Chyren Publication.
17. Earley, P. C., & Ang, S. (2003). Cultural intelligence: Individual interactions across cultures. Stanford University Press.
18. Elsbach, K. D., & van Knippenberg, D. (2020). Creating high-impact literature reviews. Journal of Management Studies, 57(6), 1272–1276. https://doi.org/10.1111/joms.12581
19. Gardner, H. (2008). Five minds for the future. Harvard Business School Press.
20. Hernandez, M. (2012). Toward an understanding of the psychology of stewardship. Academy of Management Review, 37(2), 172–193. https://doi.org/10.5465/amr.2010.0363
21. Hao, P., He, W., & Long, L. R. (2020). Why and when empowering leadership has different effects on employee work performance: The pivotal roles of passion for work and role breadth self-efficacy. Journal of Leadership & Organizational Studies, 27(4), 401–414. https://doi.org/10.1177/1548051819848992
22. Hiller, N. J., Day, D. V., & Vance, R. J. (2006). Collective enactment of leadership roles and team effectiveness. The Leadership Quarterly, 17(4), 387–397. https://doi.org/10.1016/j.leaqua.2006.04.004
23. Hoch, J. E., Bommer, W. H., Dulebohn, J. H., & Wu, D. (2018). Do ethical, authentic, and servant leadership explain variance above transformational leadership? Journal of Applied Psychology, 103(5), 501–529. https://doi.org/10.1037/apl0000290
24. Hossain, M., Akter, S., & Dwivedi, Y. K. (2022). The role of digital leadership in organizational transformation. Technological Forecasting and Social Change, 174, 121267. https://doi.org/10.1016/j.techfore.2021.121267
25. Hossain, S., Fernando, M., & Akter, S. (2025). Digital leadership: Towards a dynamic managerial capability perspective of artificial intelligence-driven leader capabilities. Journal of Leadership & Organizational Studies, 32(2), 189-208.
26. Islam, A., & Ajma, M. (2026). Orchestrating Human–AI Work Systems: Leadership, HPWS, and Agentic Intelligence. Journal of Social Signs Review, 4(02), 107-123.
27. Janssen, O. (2000). Job demands, perceptions of effort–reward fairness and innovative work behaviour. Journal of Occupational and Organizational Psychology, 73(3), 287–302. https://doi.org/10.1348/096317900167038

28. Jarrahi, M. H. (2018). Artificial intelligence and the future of work. Business Horizons, 61(4), 577–586. https://doi.org/10.1016/j.bushor.2018.03.007
29. Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test. Journal of Applied Psychology, 89(5), 755–768. https://doi.org/10.1037/0021-9010.89.5.755
30. Kamal, M. B., Hossain, M. B., Islam, J., Alam, I. K., Ibn Sayed, N., Assiri, M. A., & Mia, R. (2025). Digital ethics: A review of leadership theories, challenges, and responsibilities. Sage Open, 15(4), 21582440251386901.
31. Lee, A. V., Vargo, J., & Seville, E. (2013). Developing a tool to measure and compare organizations' resilience. Natural Hazards Review, 14(1), 29–41. https://doi.org/10.1061/(ASCE)NH.1527-6996.0000075
32. Mammadov, A., & Wald, A. (2025). The role of cultural intelligence in a firm's international activities: review, synthesis, and future research. The International Journal of Human Resource Management, 36(18), 3251-3315.
33. Marangozoglu, S. (2025). Reconstructing Leadership: The Convergence of Leadership Theories and AI-Driven Decision-Making (Doctoral dissertation, Technische Universität Wien).
34. Mumford, M. D., Zaccaro, S. J., Harding, F. D., Jacobs, T. O., & Fleishman, E. A. (2000). Leadership skills for a changing world. The Leadership Quarterly, 11(1), 11–35. https://doi.org/10.1016/S1048-9843(99)00041-7
35. Nelson, J., Gardener, O., & Beejay, S. (2025). Designing AI Systems for Diverse Cultural Contexts.
36. Ng, K.-Y., Van Dyne, L., & Ang, S. (2009). Cultural intelligence as a learning capability. Academy of Management Learning & Education, 8(4), 511–526. https://doi.org/10.5465/amle.8.4.zqr511
37. Pandey, V. (2025). Leadership in the AI Era: Navigating and shaping the future of organizational guidance. Available at SSRN 5331975.
38. Park, S., & Kim, E.-J. (2018). Fostering organizational learning through leadership. Journal of Leadership & Organizational Studies, 25(3), 321–334. https://doi.org/10.1177/1548051818762340Quaquebeke, N. V., & Gerpott, F. H. (2023).
39. Pelagatti, C., & Di Giosaffatte, L. (2025). Augmented Leadership in Digital Transformation: Human-AI Teaming and Strategic Intelligence in Intermediary Organizations.
40. Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. Academy of Management Review, 46(1), 192–210. https://doi.org/10.5465/amr.2018.0072
41. Razzak, M. R., Al Kharusi, S., & Umrani, W. A. (2025). Digital leadership and adaptive capacity. Journal of Family Business Management.
42. Rockstuhl, T., Seiler, S., Ang, S., Van Dyne, L., & Annen, H. (2011). Cultural intelligence and leadership effectiveness. Journal of Applied Psychology, 96(4), 825–840. https://doi.org/10.1037/a0022622
43. Rüth, M., & Netzer, N. (2020). The role of culture in digital transformation: A review and research agenda. Business Research, 13(2), 533–561. https://doi.org/10.1007/s40685-020-00118-2Shahzad, M. U. (2024). Digital leadership competencies. The Bottom Line, 37(4), 454–470.
44. Salvatore, F. P., & Spinnato, R. (2025). Embedding character in leadership capabilities: a strategic-business approach for value creation in healthcare organisations. International Studies of Management & Organization, 1-18.
45. Shakeeva, N., Andashova, R., & Jumalieva, G. (2025). Intercultural communication in digital space: Challenges and adaptation strategies. Bulletin of the Jusup Balasagyn Kyrgyz National University, 17(3), 59.
46. Shraddha, G., & Malik, A. (2025). Recent trends in five minds for the future. The International Journal of Indian Psychology, 13(3).
47. Sousa, M. (2025). Cultural intelligence in higher education: Promoting inclusion and global collaboration. Societal Impacts, 5, 100115.
48. Teng, Z., & Purnomo, B. R. (2026). AI-powered organizational transformation: the role of digital mindset, change management, and cross-cultural leadership in shaping future business strategies. Future Technology, 5(2), 49-59.

49. Torraco, R. J. (2005). Writing integrative literature reviews. Human Resource Development Review, 4(3), 356–367.
50. Torraco, R. J. (2016). Writing integrative literature reviews: Guidelines and examples. Human Resource Development Review, 15(4), 404–428.
51. Tran, A. N. (2025). From theory to practice: How can leadership be redefined to address the complexities of cultural diversity and virtual collaboration? A systematic review. Westford Research Journal–The Essence of Organizational Excellence: Practices Across Industries, 4(1), 114-136.
52. Van Quaquebeke, N., & Gerpott, F. H. (2023). The now, new, and next of digital leadership: How leadership in digital contexts is evolving. The Leadership Quarterly, 34(1), 101633. https://doi.org/10.1016/j.leaqua.2022.10163
53. Wang, G., Oh, I.-S., Courtright, S. H., & Colbert, A. E. (2011). Transformational leadership and performance. Personnel Psychology, 64(2), 223–270. https://doi.org/10.1111/j.1744-6570.2011.01201.x
54. Wengel, J. (2025). Cultural intelligence and trust in global virtual teams. Business and Professional Communication Quarterly, 88(1), 54-72.
55. Westerman, G., Bonnet, D., & McAfee, A. (2014). Leading digital. Harvard Business Review Press
56. Zeike, S., Bradbury, K., Lindert, L., & Pfaff, H. (2019). Digital leadership skills and well-being. International Journal of Environmental Research and Public Health, 16(14), 2628. https://doi.org/10.3390/ijerph16142628