Transformational Leadership and Digital Transformation: Bridging Strategy and Culture in the Era of Industry 5.0

Shankar Subramanian Iyer[1*], Brinitha Raji[2], Sangeeta Malhotra[3]
[1]Faculty of Business, Westford University College, Sharjah, United Arab Emirates
[2]Global Business Studies, DKP, Dubai, United Arab Emirates
[3]PWC Academy, Dubai, United Arab Emirates
Email: [1)] shankar.s@westford.org.uk, [2)] briniram@gmail.com, [3)] sans_malhotra123@yahoo.com

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Corresponding author:

Shankar Subramanian Iyer
Email:
shankar.s@westford.org.uk

ABSTRACT

Background: Digital transformation initiatives frequently fail despite substantial investments, with success rates remaining below 30% across industries.

Objectives: This study investigated the critical determinants of successful digital transformation in Industry 5.0 contexts by integrating five theoretical frameworks to examine four key constructs: Transformational Leadership Attributes, Strategic Alignment and Vision, Organizational Culture for Innovation, and Human-Centric Design and Employee Readiness.

Methods: Employing a qualitative, interpretivist multiple-case design, the study drew upon 18 semi-structured interviews conducted across three case entities, each featuring C-level executives and senior managers as informants. Analytical procedures followed Braun and Clarke's six-stage framework for thematic analysis, applied to the transcribed corpus.

Findings: Five overarching themes emerged: (1) Visionary Leadership as the Catalyst for Transformation, (2) Strategic Alignment and Agility, (3) Culture as the Foundation for Innovation, (4) Human-Centric Design and Employee Empowerment, and (5) Technology as an Enabler.

Conclusion: This study provided the first qualitative, cross-national empirical evidence integrating all four determinants simultaneously in Industry 5.0 contexts, demonstrating that successful digital transformation requires synchronized orchestration of leadership vision, strategic agility, cultural readiness, and human-centric technology integration. The findings offer actionable insights for organizations navigating the industry 4.0 to 5.0 transition.

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1. INTRODUCTION

In the context of an increasingly technology-mediated global economy, digital transformation has risen to the status of a strategic necessity for organizations aspiring to preserve competitive parity. Notwithstanding considerable capital allocation toward digital technologies, a notable share of transformation endeavors fall short of realizing their anticipated results. Both industry analyses and scholarly research converge on estimates indicating that roughly 70 percent of such initiatives fail to meet their stated goals, a pattern that produces squandered resources, operational turbulence, and foregone strategic opportunities (Verhoef et al., 2021; Vial, 2019). Such a pronounced rate of unsuccessful outcomes highlights the inherent complexity characterizing digital transformation. Unlike technology adoption alone, this phenomenon demands a systemic reconfiguration of four interdependent domains: strategic orientation, corporate culture, business processes, and executive leadership.

Additional complexity and opportunity arise from the advent of Industry 5.0 within this contextual domain. Distinct from its predecessor Industry 4.0, which concentrated on automation, networked connectivity, and data driven operational logic and whose sociotechnical considerations remained circumscribed to optimizing human machine interaction under efficiency centric production paradigms, Industry 5.0 represents a paradigmatic departure toward human centricity. Under this new model, advanced technologies including artificial intelligence, robotics, and the Internet of Things are deployed with the explicit purpose of augmenting human labor and improving well being, rather than effecting labor substitution (Rijwani et al., 2025; Xu et al., 2025). This human centric paradigm converges with wider societal movements favoring sustainability, inclusiveness, and ethically grounded technological deployment. Consequently, Industry 5.0 emerges as an organizational framework capable of fostering entities that are simultaneously technologically sophisticated, socially accountable, and economically resilient.

Despite the growing interest in Industry 5.0, there remains a significant gap in the academic literature regarding the specific determinants of successful digital transformation within this new paradigm. While numerous studies have examined digital transformation in the context of Industry 4.0, focusing on factors such as technological infrastructure, data analytics capabilities, and process automation (Ross et al., 2006; Tarafdar et al., 2020; Verhoef et al., 2021), relatively few have explored how the human-centric principles of Industry 5.0 reshape the requirements for successful transformation. Moreover, existing research has often examined individual determinants in isolation such as leadership (Christensen et al., 2015; Waldman et al., 2001), organizational culture (Hartl & Hess, 2017; Kane et al., 2015), or strategic alignment (Karimi & Walter, 2015; Ross et al., 2006) without providing an integrated framework that captures the interplay among these factors.

This study addresses these gaps by investigating the critical determinants of successful digital transformation in the context of Industry 5.0, drawing on an integrated theoretical framework that synthesizes insights from Transformational Leadership Theory (Bass, 1985), Sociotechnical Systems Theory (Trist & Bamforth, 1951), Dynamic Capabilities Theory (Teece et al., 1997), Organizational Culture Theory (Schein, 2010), and the Technology-Organization-Environment (TOE) Framework (Tornatzky et al., 1990). Specifically, the research examines four key independent constructs: (1) Transformational Leadership Attributes, (2) Strategic Alignment and Vision, (3) Organizational Culture for Innovation, and (4) Human-Centric Design and Employee Readiness. Each of these constructs is operationalized through specific sub-variables, and their influence on the dependent variable, Successful Digital Transformation in the Era of Industry 5.0, is explored through qualitative inquiry.

Table 1. Literature Gap Analysis

Study	Geographic/Sectoral Context	Theoretical Lens	Methodology	Gap Addressed by Present Study
Warner-Søderholm et al. (2018)	Multi-national (Europe, US, Asia); cross-sector	Leadership theory	Quantitative survey	Limited to leadership; no Industry 5.0 focus; lacks integration of culture, strategy, and human-centric design
Gaffley & Pelser (2021)	South Africa; manufacturing only	Strategic management	Conceptual framework	Single-sector; no empirical validation; no human-centric or Industry 5.0 lens
Sangarathas & Shanmugathas (2025)	Sri Lanka; family-owned SME	Phenomenology	Qualitative (single case)	Single case; SME-specific; lacks multi-sector and cross-national comparison
Rijwani et al. (2025)	Literature review; no empirical context	Industry 5.0 technologies	Systematic review	Conceptual only; no empirical evidence on organizational determinants
Vial (2019)	Cross-sector; primarily	Digital transformation frameworks	Systematic literature review	No Industry 5.0 focus; lacks qualitative depth on human-centric factors

Study	Geographic/Sectoral Context	Theoretical Lens	Methodology	Gap Addressed by Present Study
	Western contexts			
Present Study	UAE and India; manufacturing, healthcare, financial services	Integrated framework: Transformational Leadership, Sociotechnical Systems, Dynamic Capabilities, Organizational Culture, TOE	Qualitative multiple-case study – 18 semi-structured interviews across three case organizations	First qualitative study to examine all four determinants (leadership, strategy, culture, human-centric design) simultaneously in Industry 5.0 contexts; cross-national and multi-sector empirical evidence

As Table 1 illustrates, prior research has typically focused on single determinants (e.g., leadership or strategy), single sectors, or single geographic regions, and has rarely integrated the human-centric principles central to Industry 5.0. Moreover, much of the existing literature on Industry 5.0 remains conceptual or technology-focused, with limited empirical investigation of the organizational and human factors that enable successful transformation. This study fills these gaps by providing the first qualitative, cross-national, multi-sector empirical investigation that integrates leadership, strategic alignment, organizational culture, and human-centric design within a unified theoretical framework tailored to the Industry 5.0 context.

The research is guided by the following overarching question: What are the critical determinants of successful digital transformation in the context of Industry 5.0, and how do transformational leadership, strategic alignment, organizational culture, and human-centric design interact to enable or constrain transformation outcomes. By addressing this question, the study aims to provide actionable insights for organizational leaders, policymakers, and scholars seeking to understand and facilitate digital transformation in an era where technology and humanity must coexist and co-evolve. The findings contribute to both theory and practice by elucidating the mechanisms through which organizations can build agile, innovative, and human-empowered digital ecosystems that drive sustainability, employee empowerment, and long-term competitive advantage

2. LITERATURE REVIEW

2.1. Industry 5.0: The Human-Centric Paradigm

Industry 5.0 constitutes a substantial evolutionary departure from Industry 4.0. Its defining characteristic lies in the synergistic integration of distinctly human attributes including creative capacity, discretionary judgment, and value based reasoning with sophisticated technological systems such as artificial intelligence, robotics, and the Internet of Things (European Commission, 2021; Xu et al., 2025). A marked departure from the Industry 4.0 emphasis on automation and efficiency maximization, Industry 5.0 elevates a tripartite set of guiding pillars to the foreground. Specifically, these pillars are human centricity, sustainability, and resilience (Haleem et al., 2022; Xu et al., 2025).

Human-centricity in Industry 5.0 involves designing technological systems that augment human capabilities rather than replace them, positioning workers as problem-solvers and co-creators (Haleem et al., 2022; Van Der Schaft et al., 2024). This paradigm shift recognizes that sustainable competitive advantage in digital economies derives not solely from technological capabilities but from the synergistic integration of human and technological resources (Narkhede et al., 2023; Sangarathas & Shanmugathas, 2025). Recent research emphasizes that Industry 5.0 requires organizations to balance technological innovation with ethical considerations, employee well-being, and societal impact (Attaran et al., 2023; Peppard & Ward, 2004).

The transition to Industry 5.0 necessitates fundamental changes in organizational structures, processes, and cultures (Baker, 2000; Vial, 2019). Leaders must navigate the tension between technological efficiency and human empowerment, creating environments where employees feel

valued, empowered, and capable of contributing meaningfully to digital transformation initiatives (Bican & Brem, 2020; Ross et al., 2006). This requires new forms of leadership that combine technological literacy with emotional intelligence, ethical awareness, and commitment to human development (Schein, 2010; Verhoef et al., 2021).

2.2. Transformational Leadership in Digital Contexts

Sociotechnical Systems Theory, pioneered by Trist and Bamforth (1951) and further developed by Pasmore (1988), emphasizes the interdependence of social and technical subsystems within organizations (Trist & Bamforth, 1951; Pasmore, 1988). The theory posits that optimal organizational performance is achieved when both the technical system (comprising tools, technologies, and processes) and the social system (comprising people, relationships, and culture) are jointly optimized. This perspective is particularly relevant to digital transformation, which inherently involves the integration of new technologies with existing organizational structures, processes, and human resources.

Within the Industry 5.0 paradigm, Sociotechnical Systems Theory offers a productive analytical framework for comprehending how organizations may architect digital ecosystems that amplify rather than erode human functional capacities. Evidence from Sangarathas and Shanmugathas (2025) supports the proposition that sociotechnical congruence between technological investment and socio cultural context constitutes a determinant of digital transformation success, based on their case study of a family owned SME in Sri Lanka. Concurrently, Van Der Schaft et al. (2024) demonstrated through a multi layered sensemaking framework that employee experiences of digital transformation are mediated by social and psychological factors, thereby establishing these dimensions as focal points for organizational attention during technological change initiatives.

Several limitations characterize the existing sociotechnical literature despite its acknowledged contributions. Critics point to inadequate engagement with emergent digital technologies, specifically artificial intelligence, machine learning, and advanced robotics, all of which engender new forms of human machine relationality and pose previously unencountered ethical and design challenges. An additional shortcoming concerns the sectoral concentration of research. A preponderance of studies has focused upon manufacturing and industrial environments, whereas service sectors including healthcare and finance have received considerably less scholarly attention, despite featuring fundamentally different configurations of human technology interplay. This study extends Sociotechnical Systems Theory by examining how organizations across diverse sectors design and implement human-centric digital solutions in the industry 5.0 era.

2.3. Strategic Alignment in Dynamic Environments

Dynamic Capabilities Theory, initially proposed by Teece et al. (1997) and later extended by Teece (2007), conceptualizes organizational aptitude along three dimensions. These dimensions comprise the sensing of environmental change, the seizing of novel opportunities, and the reconfiguration of resources and competences in response to evolving conditions. The digital transformation domain renders these capabilities especially indispensable, given that rapid technological flux, shifting consumer expectations, and mounting competitive pressures compel organizations toward continuous adaptation and ongoing innovative activity.

Empirical evidence indicates that organizations possessing robust dynamic capabilities exhibit superior performance outcomes in digital transformation initiatives. Karimi and Walter (2015) demonstrated that dynamic capabilities functioned as a mediating mechanism between information technology investments and organizational agility, thereby equipping firms to address market disruptions with greater efficacy. In a complementary finding, Verhoef et al. (2021) contended that digital transformation necessitates the cultivation of novel capabilities across domains including data analytics, customer engagement, and ecosystem orchestration.

In the Industry 5.0 context, dynamic capabilities take on additional significance, as organizations must not only adapt to technological change but also reconfigure their operations to prioritize human-centricity, sustainability, and ethical considerations. However, existing research on dynamic capabilities has been predominantly quantitative and focused on large, established firms in Western contexts, with limited qualitative exploration of how dynamic capabilities are developed and enacted in emerging markets or in the context of Industry 5.0's human-centric principles. This

study addresses this gap by qualitatively examining how organizations in the UAE and India develop and deploy dynamic capabilities to navigate the transition to Industry 5.0.

2.4. Organizational Culture and Innovation

According to the framework advanced by Schein (2010) and Schein & Schein (2017)), organizational culture comprises the taken for granted assumptions, consensual values, and collective beliefs that govern organizational behavior and shape decisional logics. Scholarly consensus recognizes culture as a fundamental mediating variable in organizational change processes, digital transformation among them. Cultures that valorize innovation, experimental conduct, and learning orientation demonstrate positive associations with transformation success. In contrast, cultures marked by risk avoidance, steep hierarchical structures, and change resistance function as significant impediments to transformation efforts (Hartl & Hess, 2017; Kane et al., 2015). Research by Kane et al. (2015) identified organizational culture as one of the most significant barriers to digital transformation, with many organizations struggling to shift from traditional, hierarchical cultures to more agile, collaborative, and innovation-oriented cultures. Similarly, Hartl and Hess (2017) found that cultural alignment between digital initiatives and existing organizational values was a key predictor of transformation success.

Organizational culture under the Industry 5.0 paradigm must simultaneously support innovation and agility while also internalizing the human centric principles that distinguish this era. Specifically, a cultural profile emphasizing empathy, inclusivity, and ethically grounded practices becomes essential. Within such a culture, employees gain the agency to collaborate with advanced digital technologies in ways that advance their personal well being and professional growth trajectories. Despite widespread scholarly recognition of culture's importance, extant literature predominantly conceptualizes culture as a fixed, homogeneous entity. This static treatment obscures the fluid and contested processes through which cultural transformation unfolds during digital change efforts. By examining how organizational culture transforms in response to Industry 5.0 initiatives and how leadership action shapes culture to facilitate human centric digital ecosystems, this study makes an original contribution to the literature.

2.5. Human-Centric Design and Employee Readiness

Tornatzky et al. (1990) proposed the TOE Framework as a comprehensive analytical apparatus for understanding the determinants shaping both adoption and implementation of technological innovations (Nguyen et al., 2022). According to this framework, three distinct categories of factors exert influence. The first category, technological factors, refers to the attributes and performance characteristics of the innovation in question. The second category, organizational factors, captures internal firm attributes including scale, structural configuration, and resource availability. The third category, environmental factors, encompasses external market and institutional conditions such as industry dynamics, regulatory mandates, and competitive rivalry intensity.

The TOE Framework has been widely applied in research on digital transformation, with studies demonstrating its utility in explaining variation in adoption and implementation outcomes across different organizational and environmental contexts (Oliveira & Martins, 2011; Tornatzky et al., 1990). An empirical application of the TOE Framework by Oliveira and Martins (2011) examined factors shaping cloud computing adoption. The study revealed that three variables in particular, namely technological compatibility, the organization's state of preparative readiness, and the intensity of external competitive forces, each exerted significant predictive influence.

The TOE Framework offers considerable utility for examining how firms traverse the multifaceted interplay of technological affordances, organizational competencies, and external environmental limitations under Industry 5.0 conditions. A significant limitation of the framework, however, concerns its neglect of human agency and cultural variables, both of which constitute core elements of Industry 5.0's foundational commitment to human centricity. Moreover, the framework has been applied primarily in quantitative studies, with less qualitative exploration of how organizations interpret and respond to technological, organizational, and environmental factors in practice. This study extends the TOE Framework by integrating it with theories of leadership, culture, and sociotechnical systems, and by applying it qualitatively to examine how organizations in the UAE and India navigate the industry 5.0 transition.

2.6. Integrated Theoretical Framework

Drawing on the five theoretical perspectives reviewed above, this study develops an integrated conceptual framework that positions four key determinants as antecedents of successful digital transformation in the Industry 5.0 era: (1) Transformational Leadership Attributes, (2) Strategic Alignment and Vision, (3) Organizational Culture for Innovation, and (4) Human-Centric Design and Employee Readiness. These determinants are conceptualized as interdependent and mutually reinforcing, with each contributing uniquely to the overall transformation outcome. Figure 1 visually represents the conceptual framework, illustrating the relationships among the five theoretical components and the four key determinants.

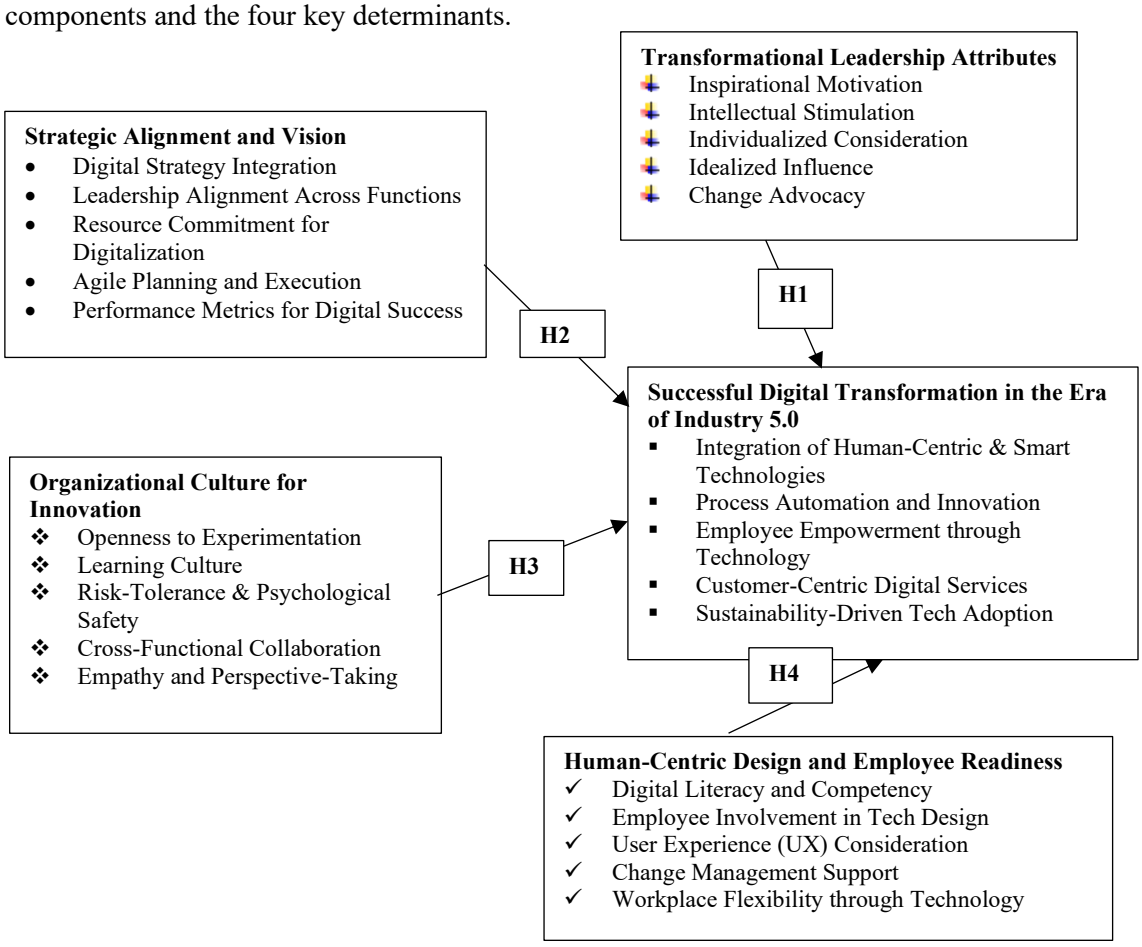

Figure 1. Integrated Conceptual Framework for Digital Transformation in Industry 5.0

The conceptual framework is structured as a multi-layered model. At the foundation, the five theoretical frameworks including Transformational Leadership Theory, Sociotechnical Systems Theory, Dynamic Capabilities Theory, Organizational Culture Theory, and the TOE Framework are represented as interconnected pillars that provide the theoretical grounding for the study. These pillars converge to inform four key determinants, depicted as intermediate constructs: (1) Transformational Leadership Attributes (operationalized through vision articulation, empowerment, and change management), (2) Strategic Alignment and Vision (operationalized through digital strategy formulation, agility, and resource allocation), (3) Organizational Culture for Innovation (operationalized through risk tolerance, collaboration, and learning orientation), and (4) Human-Centric Design and Employee Readiness (operationalized through user-centered design, digital skills development, and employee well-being).

These four determinants are shown as directional arrows pointing toward the dependent variable which is Successful Digital Transformation in Industry 5.0, represented at the apex of the model. Bidirectional arrows among the four determinants indicate their interdependence and mutual reinforcement. The framework also includes contextual factors (technological, organizational, and environmental) from the TOE Framework, depicted as surrounding the model to indicate their

moderating influence on the relationships among determinants and outcomes. This integrated framework advances literature by synthesizing multiple theoretical perspectives into a cohesive model that captures the complexity of digital transformation in the industry 5.0 context. It recognizes that successful transformation is not the result of any single factor but rather the product of synergistic interactions among leadership, strategy, culture, and human-centric design, all situated within a broader technological, organizational, and environmental context.

3. RESEARCH METHODOLOGY

3.1. Research Paradigm and Design

The research philosophy underpinning this study is interpretive and qualitative, predicated on the ontological assumption that social reality emerges as a construction shaped by the meanings and interpretive frameworks individuals attach to their lived experiences (Walsham, 1995). An interpretive approach is particularly well-suited to exploring complex, context-dependent phenomena such as digital transformation, where understanding the perspectives, motivations, and sensemaking processes of organizational actors is essential (Myers, 1997). The research employed a multiple-case study design, which allows for in-depth exploration of the phenomenon of interest across different organizational contexts while enabling cross-case comparison and pattern identification (Yin, 2009). Multiple-case studies are particularly valuable for theory building and for examining how contextual factors shape the manifestation and outcomes of organizational processes (Eisenhardt, 1989).

3.2. Case Selection and Sampling

Three organizations were selected as case sites, each representing a different industry sector and each actively engaged in digital transformation initiatives aligned with Industry 5.0 principles. The organizations were located in the United Arab Emirates (UAE) and India, two rapidly developing economies with significant investments in digital infrastructure and Industry 5.0 technologies. The case organizations were:

1) Case A: A large manufacturing firm in the UAE specializing in advanced materials and smart manufacturing, with over 2,000 employees and a strong focus on integrating AI-driven robotics with human expertise.
2) Case B: A mid-sized healthcare provider in India operating a network of hospitals and diagnostic centers, employing approximately 1,500 staff and implementing digital health platforms, telemedicine, and AI-assisted diagnostics.
3) Case C: A financial services organization in the UAE offering retail and corporate banking services, with over 3,000 employees and undergoing a comprehensive digital transformation involving AI-powered customer service, blockchain-based transactions, and data analytics.

Purposive sampling was used to select participants within each case organization. Participants were senior leaders and executives with direct involvement in digital transformation initiatives. A total of 18 semi-structured interviews were conducted: six interviews in each of the three case organizations. The decision to conduct six interviews per case was guided by purposive sampling logic: six participants per case allowed for representation across the C-suite and senior management levels (CEO, CIO, CTO, and senior functional managers), ensuring coverage of strategic, operational, and human dimensions of transformation. Data redundancy (theoretical saturation) was observed within each case by the fifth and sixth interviews, as participants' accounts began to converge on consistent themes, indicating sufficient depth of coverage for the purposes of this study (Lincoln & Guba, 1985; Yin, 2009).

3.3. Data Collection

The study employed semi-structured interviews to generate empirical data. This format provides sufficient latitude to investigate participants' lived experiences and interpretive frameworks in depth, yet retains sufficient structure to ensure that all key thematic areas corresponding to the research questions are systematically addressed (Kvale & Brinkmann, 2009). An interview protocol

was developed based on the integrated conceptual framework, with questions organized around the four key determinants: transformational leadership, strategic alignment, organizational culture, and human-centric design. Each interview spanned 60 to 90 minutes and was administered either in person or through video conferencing technology, with modality contingent upon participant schedules and expressed preferences. Audio recordings were made with explicit participant consent, followed by verbatim transcription. Supplementary data collection encompassed secondary sources, specifically organizational documentation (strategic plans, digital transformation roadmaps, and internal communications) as well as publicly available materials (annual reports, press releases, and industry reports). These secondary data provided both contextual anchoring and a mechanism for triangulating evidence obtained from the semi structured interviews.

3.4. Data Analysis

The study operationalized Braun and Clarke (2006) six phase thematic analysis protocol for interview data examination. Phase one, data familiarization, required the research team to engage in iterative reading and rereading of interview transcripts. Phase two, initial code generation, proceeded inductively to isolate data elements relevant to the research questions. Phase three, theme search, entailed grouping codes into preliminary themes reflective of cross dataset meaning patterns. Phase four, theme review, involved systematic refinement to verify that themes remained coherent, empirically supported, and clearly differentiated from one another. Phase five, theme definition and naming, required articulating precise descriptions of each theme's scope and substantive content. Phase six, report production, culminated in a written presentation of findings with representative quotations for each theme. The research team employed NVivo 12 to organize, code, and retrieve data efficiently. Regular team discussions during the analytical process served to safeguard coding consistency and thematic rigor.

3.5. Strategies for Ensuring Rigor and Trustworthiness

In accordance with Lincoln and Guba (1985) framework for establishing trustworthiness in qualitative research, the study implemented strategies addressing four criteria. For credibility, the study employed data source triangulation encompassing interviews, organizational documents, and public materials, combined with extended data immersion and member checking. The member checking process involved returning preliminary interpretations to selected participants for confirmation of accuracy and experiential alignment. For transferability, the research furnished rich, detailed descriptions of case contexts, participant profiles, and findings, thereby allowing readers to determine the degree of applicability to other organizational environments. For dependability, a detailed audit trail was maintained throughout the research process, documenting all procedural steps including data acquisition, coding decisions, and thematic development. For confirmability, reflexivity practices were institutionalized through regular team reflection on underlying assumptions, interpretive biases, and analytical choices. Additionally, multiple coders were employed to independently verify coding consistency and theme identification.

3.6. Ethical Considerations

This study adhered to the highest standards of research ethics. Ethical approval for this study was obtained from the Institutional Review Board (IRB) [Anonymized] under Approval Reference Number IRB-2025-DT-001. Given the cross-national nature of the study, ethical requirements in both the UAE and India were carefully reviewed and addressed. In the UAE, the study complied with the ethical guidelines of the UAE Ministry of Education and the National Research Ethics Committee, which emphasize informed consent, confidentiality, and the protection of participants' rights. In India, the study adhered to the ethical standards set forth by the Indian Council of Medical Research (ICMR) for research involving human participants, particularly in the healthcare sector (Case B), including additional safeguards for patient data confidentiality and institutional approval from the participating hospital network's ethics committee.

The study adhered to rigorous ethical protocols. All participants received detailed information about the research purpose, procedural steps, and participant rights, after which written informed consent was secured. Confidentiality and anonymity were guaranteed, with all identifying markers

eliminated from interview transcripts and published reports. Data security was maintained through password protected storage systems, with access limited solely to members of the research team. Participants were notified of their unconditional right to withdraw from the investigation at any time without penalty. Special attention was directed toward safeguarding voluntary participation and preventing any form of coercion or improper influence, a consideration particularly pertinent given the hierarchical organizational structures characterizing certain case sites.

4. RESULTS AND DISCUSSION

4.1. Research Results

The thematic analysis yielded five overarching themes: (1) Visionary Leadership as the Catalyst for Transformation, (2) Strategic Alignment and Agility, (3) Culture as the Foundation for Innovation, (4) Human-Centric Design and Employee Empowerment, and (5) Technology as an Enabler, Not a Driver.

4.1.1. Theme 1: Visionary Leadership as the Catalyst for Transformation

Participants across all three case organizations consistently identified visionary leadership as the single most critical determinant of successful digital transformation. A CEO from Case A (manufacturing) stated: *"Digital transformation is not a technology project; it's a leadership project. If the CEO and the top team are not fully committed, if they don't have a clear vision of where we're going and why, the whole thing falls apart."* This underscores the centrality of leadership commitment consistent with Transformational Leadership Theory's emphasis on inspirational motivation (Bass, 1985). A CTO from Case C (financial services) elaborated on the leader's role in sensemaking, and a senior manager from Case B (healthcare) described the importance of leadership visibility and accessibility, illustrating the individualized consideration dimension of transformational leadership (Bass, 1985; Bass & Riggio, 2006).

4.1.2. Theme 2: Strategic Alignment and Agility

The second major theme centered on strategic alignment and strategic agility. A Chief Strategy Officer from Case A stated: *"Every digital initiative we undertake has to answer the question: How does this support our strategic goals?"* A CIO from Case C noted the tension between alignment and agility: "*Agility doesn't mean chaos. It means having the structures and processes in place to make quick, informed decisions."* In healthcare (Case B), agility was tempered by regulatory compliance: *"We pilot, we test, we learn, and then we scale."*

4.1.3. Theme 3: Culture as the Foundation for Innovation

Organizational culture emerged as a foundational determinant of digital transformation success. A senior executive from Case A articulated: *"Culture eats strategy for breakfast. We've worked hard to build a culture where people feel safe to experiment, to fail, to learn."* This resonates with Schein's (2010) argument that culture operates at the deepest level of organizational life. A manager from Case B (healthcare) described the challenges of shifting a hierarchical, risk-averse culture, noting that *"it's still a work in progress,"* extending the organizational culture literature by showing that culture is a dynamic, contested terrain (Kane et al., 2015; Hartl & Hess, 2017).

4.1.4. Theme 4: Human-Centric Design and Employee Empowerment

The fourth theme centered on designing digital solutions that prioritize human needs and empowering employees to actively participate in transformation. A CTO from Case A described the organization's human-robot collaboration philosophy: *"We don't see robots as replacements for humans; we see them as partners. We use AI to handle repetitive, physically demanding tasks, freeing up our workers to focus on problem-solving, quality control, and innovation."* This exemplifies the human-centric design principle central to Industry 5.0 (Rijwani et al., 2025; Xu et al., 2025). A senior manager from Case B (healthcare) underscored participatory design: *"We now involve doctors and nurses from the very beginning, in the design, in the testing, in the refinement."*

4.1.5. Theme 5: Technology as an Enabler, Not a Driver

The fifth theme reflected a shared understanding that technology is an enabler, not the primary driver of digital transformation. A CEO from Case C stated: *"The real transformation is about changing how we think, how we work, how we serve our customers. Technology enables that, but it doesn't drive it."* A CIO from Case A echoed: *"Having the technology is not enough. You have to know how to use it, you have to integrate it into your processes, you have to train your people."* These statements align with the sociotechnical systems perspective (Trist & Bamforth, 1951; Pasmore, 1988) and the dynamic capabilities literature (Teece et al., 1997; Teece, 2007).

The five themes illuminate the complex, multifaceted nature of digital transformation in the Industry 5.0 context. Together, they demonstrate that successful digital transformation requires the orchestration of multiple, interdependent determinants, each of which is necessary but not sufficient on its own.

4.2. DISCUSSION

4.2.1. Theoretical Contributions

Several important theoretical advances are advanced by this study regarding digital transformation within Industry 5.0 contexts. Chief among these is the synthesis of five distinct theoretical perspectives. Through this synthesis, the study achieves a level of comprehensiveness and analytical subtlety in characterizing digital transformation determinants that surpasses the explanatory scope of prior research efforts. Second, the study extends existing theories by applying them to the specific context of Industry 5.0. Third, the study contributes to the dynamic capabilities literature by providing qualitative, process-oriented insights. Fourth, the study advances the organizational culture literature by showing that culture is a dynamic, contested terrain. Finally, the study extends the TOE Framework by integrating it with theories of leadership, culture, and sociotechnical systems.

4.2.2. Practical Implications

The findings have several important implications for organizational leaders, managers, and policymakers. First, leaders must recognize that digital transformation is fundamentally a leadership challenge. Second, organizations must ensure strategic alignment and agility. Third, cultural transformation must be a central priority. Fourth, organizations must adopt a human-centric approach to technology design. Fifth, organizations must resist the temptation to view technology as a silver bullet. The findings suggest that organizations which recognize digital transformation as a holistic, multi-dimensional endeavour which requiring sustained leadership commitment, strategic discipline, cultural courage, and an unwavering focus on human flourishing are better positioned to navigate the transition to Industry 5.0 successfully. Leaders are therefore encouraged to invest in leadership development, cultural change programmes, and participatory design processes alongside technological investments.

4.2.3. Limitations and Future Research Directions

Several constraints temper the contributions of this study despite its substantive findings. A primary limitation relates to the sample configuration. With only three case organizations and 18 participants drawn exclusively from the UAE and India, the study's external validity or generalizability to other geographic and organizational contexts remains circumscribed. Second, the cross-sectional design cannot capture the dynamic evolution of transformation over time. Third, the study focuses on senior leaders' perspectives, omitting middle managers and frontline employees. Future research should employ longitudinal, mixed-methods, or quantitative approaches and include broader stakeholder perspectives.

5. CONCLUSION

This study represents the first qualitative, cross-national, multi-sector empirical investigation to simultaneously examine the four critical determinants of successful digital transformation including transformational leadership, strategic alignment, organizational culture, and human-centric design within the emerging Industry 5.0 paradigm. By integrating five theoretical frameworks into a

unified conceptual model, the research advances theoretical understanding of how these determinants interact and mutually reinforce one another. The findings synthesize insights from 18 senior leaders across manufacturing, healthcare, and financial services organizations in the UAE and India, revealing that while transformational leadership and innovation-oriented culture serve as foundational enablers across all sectors, the enactment of strategic agility and human-centric design is shaped by industry-specific regulatory environments, workforce characteristics, and competitive dynamics. The study challenges the techno-centric assumptions that dominated Industry 4.0 discourse, demonstrating that technology functions as an enabler rather than a driver of transformation.

Looking forward, the significance of this study extends beyond its immediate empirical and theoretical contributions to its implications for organizations navigating the critical transition from Industry 4.0 to Industry 5.0. The findings offer a roadmap for leaders seeking to build agile, innovative, and human-empowered digital ecosystems. The study underscores that the Industry 5.0 transition is not merely a technological upgrade but a fundamental reimagining of the relationship between humans and machines, between efficiency and well-being, and between competitive advantage and social responsibility. In an era where the pace of technological change continues to accelerate and societal expectations for ethical, inclusive, and sustainable business practices intensify, the insights generated by this study provide both a theoretical foundation and a practical guide for organizations aspiring to thrive in the human-centric future of Industry 5.0.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this paper.

Author Contributions

S.S.I.: Conceptualization, Investigation, Writing, Software, Data Curation.
B.R.: Methodology, Supervision, Validation, Writing, Review & Editing.
S.M.: Writing.

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Informed Consent

Informed consent was obtained from all participants.

Ethical Approval

This article does not contain any studies with human participants or animals performed by the authors. For the Interviews the individual consent of the participants was taken.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

6. REFERENCES

Attaran, M., Attaran, S., & Celik, B. G. (2023). *Digital Twins and Industrial Internet of Things: Uncovering Operational Intelligence in Industry 4.0*. Elsevier BV. https://doi.org/10.2139/ssrn.4612135

Baker, M. J. (2000). Selecting a Research Methodology. *The Marketing Review*, *1*(3), 373–397. https://doi.org/10.1362/1469347002530736

Bass, B. M. (1985). Leadership: Good, better, best. *Organizational Dynamics*, *13*(3), 26–40. https://doi.org/10.1016/0090-2616(85)90028-2

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership*. Psychology press.

Bican, P. M., & Brem, A. (2020). Digital Business Model, Digital Transformation, Digital Entrepreneurship: Is There A Sustainable "Digital"? *Sustainability*, *12*(13), 5239. https://doi.org/10.3390/su12135239

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). *What Is Disruptive Innovation?* Harvard Business Review.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of Management Review*, *14*(4), 532–550. https://doi.org/10.2307/258557

European Commission. (2021). *Industry 5.0 – Towards a sustainable, human-centric and resilient European industry*. Publications Office of the European Union. https://doi.org/10.2777/308407

Gaffley, G., & Pelser, T. G. (2021). Developing a digital transformation model to enhance the strategy development process for leadership in the South African manufacturing sector. *South African Journal of Business Management*, *52*(1), a2357. https://doi.org/10.4102/sajbm.v52i1.2357

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, *3*, 275–285. https://doi.org/10.1016/j.susoc.2022.05.004

Hartl, E., & Hess, T. (2017). The role of cultural values for digital transformation: Insights from a Delphi study. *Twenty-Third Americas Conference on Information Systems, Boston, 2017*. https://core.ac.uk/download/pdf/301371796.pdf

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). *Strategy, not Technology, Drives Digital Transformation*. MIT Sloan Management Review.

Karimi, J., & Walter, Z. (2015). The Role of Dynamic Capabilities in Responding to Digital Disruption: A Factor-Based Study of the Newspaper Industry. *Journal of Management Information Systems*, *32*(1), 39–81. https://doi.org/10.1080/07421222.2015.1029380

Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing*. Sage.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

Myers, M. D. (1997). Qualitative Research in Information Systems. *MIS Quarterly*, *21*(2), 241–242. https://doi.org/10.2307/249422

Narkhede, G., Pasi, B., Rajhans, N., & Kulkarni, A. (2023). Industry 5.0 and the future of sustainable manufacturing: A systematic literature review. *Business Strategy & Development*, *6*(4), 704–723. https://doi.org/10.1002/bsd2.272

Nguyen, T. H., Le, X. C., & Vu, T. H. L. (2022). An Extended Technology-Organization-Environment (TOE) Framework for Online Retailing Utilization in Digital Transformation: Empirical Evidence from Vietnam. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(4), 200. https://doi.org/https://doi.org/10.3390/joitmc8040200

Oliveira, T., & Martins, M. F. (2011). Literature Review of Information Technology Adoption Models at Firm Level. *The Electronic Journal of Information Systems Evaluation*, *14*(1), 110–121. https://academic-publishing.org/index.php/ejise/article/view/389

Pasmore, W. A. (1988). *Designing Effective Organizations: The Sociotechnical Systems Perspective*. Wiley.

Peppard, J., & Ward, J. (2004). Beyond strategic information systems: towards an IS capability. *The Journal of Strategic Information Systems*, *13*(2), 167–194. https://doi.org/10.1016/j.jsis.2004.02.002

Rijwani, T., Kumari, S., Srinivas, R., Abhishek, K., Iyer, G., Vara, H., Dubey, S., Revathi, V., & Gupta, M. (2025). Industry 5.0: a review of emerging trends and transformative technologies in the next industrial revolution. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, *19*(2), 667–679. https://doi.org/10.1007/s12008-024-01943-7

Ross, J. W., Weill, P., & Robertson, D. (2006). *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution*. Harvard Business School Press.

Sangarathas, D., & Shanmugathas, S. (2025). Human-Centric Digital Transformation in Industry 5.0: A Phenomenological Study of Family-Owned SME in Sri Lanka. *The Electronic Journal of Information Systems in Developing Countries*, *91*(4), e70026. https://doi.org/10.1002/isd2.70026

Schein, E. H. (2010). *Organizational culture and leadership* (3rd Editio). John Wiley & Sons.

Schein, E. H., & Schein, P. A. (2017). *Organizational Culture and Leadership* (5th ed.). Wiley & Sons.

Tarafdar, M., Beath, C. M., & Ross, J. W. (2020). Using AI to Enhance Business Operations. In *How AI Is Transforming the Organization* (pp. 67–86). The MIT Press. https://doi.org/10.7551/mitpress/12588.003.0015

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Tornatzky, L. G., Fleischer, M., & Chakrabarti, A. K. (1990). *The Processes of Technological Innovation*.

Lexington Books.
Trist, E. L., & Bamforth, K. W. (1951). Some Social and Psychological Consequences of the Longwall Method of Coal-Getting. *Human Relations*, *4*(1), 3–38. https://doi.org/10.1177/001872675100400101
Van Der Schaft, A. H. T., Lub, X. D., Van Der Heijden, B., & Solinger, O. N. (2024). How Employees Experience Digital Transformation: A Dynamic And Multi-Layered Sensemaking Perspective. *Journal of Hospitality & Tourism Research*, *48*(5), 803–820. https://doi.org/10.1177/10963480221123098
Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, *122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022
Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, *28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003.
Waldman, D. A., Ramirez, G. G., House, R. J., & Puranam, P. (2001). Does leadership matter? CEO leadership attributes and profitability under conditions of perceived environmental uncertainty. *Academy of Management Journal*, *44*(1), 134–143. https://doi.org/10.2307/3069341
Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*, *4*(2), 74–81. https://doi.org/10.1057/ejis.1995.9
Warner-Søderholm, G., Bertsch, A., & Søderholm, A. (2018). Data on social media use related to age, gender and trust constructs of integrity, competence, concern, benevolence and identification. *Data in Brief*, *18*, 696–699. https://doi.org/10.1016/j.dib.2018.03.065
Xu, J., Sun, Q., Han, Q.-L., & Tang, Y. (2025). When Embodied AI Meets Industry 5.0: Human-Centered Smart Manufacturing. *Journal of Automatica Sinica*, *12*(3), 485–501. https://doi.org/10.1109/JAS.2025.125327
Yin, R. K. (2009). *Case study research: Design and methods*. SAGE Publication.