Journal of Management Science Research Review
https://jmsrr.com/index.php/Journal/about

Volume 5 Issue No 1 (2026)

Online ISSN: 3006-2047
Print ISSN: 3006-2039

Organizational Culture and Human Resource Practices under Industry 5.0 across the Asia–Pacific Region: A Comparative Sociological Analysis of Entrepreneurial Orientation, Human-Centric Innovation, Workforce Adaptation, and Managerial Change.

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Abstract
The transition toward Industry 5.0 represents a fundamental shift from technology-centric automation toward human-centric, resilient, and sustainable organizational systems. While prior research has predominantly focused on Industry 4.0 technologies, limited scholarly attention has been given to the sociological transformation of organizational culture and human resource (HR) practices required to support Industry 5.0, particularly within the heterogeneous institutional landscape of the Asia–Pacific region. This study addresses this gap by developing a comparative sociological analysis of how organizational culture and HR practices jointly shape entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change across diverse Asia–Pacific contexts. Grounded in organizational sociology and human resource management theory, the study conceptualizes Industry 5.0 as a socio-technical paradigm in which cultural values, leadership norms, and HR systems play a central role in mediating human–technology collaboration. Drawing on comparative data from organizations operating in multiple Asia–Pacific economies, the research examines how variations in institutional environments, labor market structures, and

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

cultural norms influence the configuration and effectiveness of culture–HR systems. The analysis focuses on the alignment between organizational culture types and HR practice bundles, including talent development, participatory decision-making, performance management, and reskilling strategies, and evaluates their impact on key Industry 5.0 outcomes. The findings reveal that organizations characterized by adaptive and innovation-oriented cultures, supported by high-involvement HR practices, demonstrate stronger entrepreneurial orientation, greater capacity for human-centric innovation, and higher levels of workforce adaptability. In contrast, control-oriented cultural environments relying on rigid HR systems tend to experience slower managerial transformation and greater resistance to human-AI integration. The study further highlights the moderating role of institutional context, showing that the effectiveness of human-centric HR practices is contingent upon national skill systems, regulatory frameworks, and socio-cultural expectations prevalent across the Asia–Pacific region. This research makes three key contributions. First, it extends Industry 5.0 scholarship by foregrounding organizational culture and HR practices as critical sociological drivers of human-centric transformation. Second, it provides a comparative framework that explains cross-regional differences in Industry 5.0 adoption within the Asia–Pacific context. Third, it offers practical insights for managers and policymakers seeking to design culturally aligned HR systems that foster sustainable innovation, entrepreneurial behavior, and inclusive managerial change in the emerging Industry 5.0 era.

Keywords: Industry 5.0; Organizational Culture; Human Resource Management; Entrepreneurial Orientation; Human-Centric Innovation; Workforce Adaptation; Managerial Transformation; Institutional Context; Asia–Pacific Region.

Introduction:

The accelerating diffusion of artificial intelligence, advanced automation, and cyber–physical systems has fundamentally reshaped organizational forms, employment relations, and managerial logics across global economies. Earlier industrial paradigms, particularly Industry 4.0, primarily emphasized productivity gains, automation efficiency, and data-driven decision-making. However, growing concerns regarding workforce displacement, ethical governance, social sustainability, and organizational resilience have catalyzed the emergence of Industry 5.0 as a new socio-technical paradigm. Industry 5.0 reframes industrial transformation by placing human agency, creativity, and wellbeing at the center of technological advancement, advocating for a more balanced integration of intelligent systems and human-centric organizational design. Within this evolving paradigm, organizational culture and human resource (HR) practices assume a central role as socio-institutional mechanisms that shape how firms interpret, adopt, and operationalize Industry 5.0 principles [1]. Organizational culture influences shared values, norms, and behavioral expectations that guide innovation, risk-taking, and collaboration, while HR practices translate these cultural orientations into concrete systems of recruitment, training, performance management, participation, and career development. In Industry 5.0 contexts, where human–

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

machine collaboration and ethical innovation are paramount, the alignment between culture and HR systems becomes a critical determinant of organizational effectiveness and sustainability. Entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change represent key outcome dimensions of Industry 5.0 transformation. Entrepreneurial orientation reflects an organization's propensity toward innovativeness, proactiveness, and calculated risk-taking in uncertain environments [2]. Human-centric innovation extends beyond technological novelty to include employee empowerment, inclusive design, and ethical responsibility in innovation processes. Workforce adaptation encompasses continuous reskilling, learning agility, and employee acceptance of human–AI collaboration, while managerial change involves shifts in leadership styles, governance structures, and decision-making authority toward more participatory and adaptive models. These dimensions are inherently sociological, as they are shaped by power relations, institutional norms, and cultural expectations embedded within organizations and societies. The Asia–Pacific region provides a uniquely rich empirical setting for examining these dynamics. The region encompasses a wide spectrum of economic development stages, institutional arrangements, and cultural configurations, ranging from highly industrialized economies to rapidly emerging and developing systems. Differences in labor market regulation, education and skill formation systems, collectivist versus individualist cultural orientations, and managerial traditions generate distinct organizational responses to Industry 5.0 pressures [3]. As a result, organizations operating in the Asia–Pacific region face heterogeneous challenges and opportunities in aligning technological advancement with human-centric organizational practices, making comparative analysis particularly valuable. Although Industry 5.0 has gained increasing attention in policy discourse and academic literature, existing research remains largely conceptual and technology-oriented. Much of the current scholarship focuses on advanced manufacturing systems, artificial intelligence applications, and digital infrastructure, often overlooking the sociological foundations of organizational transformation. Studies that do address human or organizational aspects tend to examine organizational culture, HR practices, entrepreneurship, or innovation in isolation, without sufficiently theorizing their interdependence within Industry 5.0 contexts Moreover, comparative empirical research that systematically analyzes how institutional and cultural differences across the Asia–Pacific region shape culture–HR configurations and their outcomes remains limited. To address these gaps, this study adopts a comparative sociological perspective to examine how organizational culture and HR practices jointly influence entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change under Industry 5.0 conditions [4]. Rather than treating culture and HR practices as independent variables, the study conceptualizes them as interrelated systems that mediate the relationship between institutional context and organizational outcomes. By integrating insights from organizational sociology, human resource management, and innovation studies, the research advances a holistic framework for understanding human-centric industrial transformation. Table 1 synthesizes the key conceptual dimensions examined in this study and highlights how they extend

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

existing Industry 5.0 literature by foregrounding sociological mechanisms and comparative context.

Table 1: Core Constructs and Sociological Relevance in Industry 5.0

Dimension	Key Focus in Industry 5.0	Sociological Significance	Research Gap Addressed
Organizational Culture	Innovation orientation, participation, trust, ethical values	Shapes norms, power relations, and collective meaning	Limited empirical linkage to Industry 5.0 outcomes
HR Practices	Reskilling, employee involvement, performance systems	Institutionalizes human-centric values	Often examined separately from culture
Entrepreneurial Orientation	Innovativeness, proactiveness, risk-taking	Reflects agency and organizational dynamism	Rarely studied in Industry 5.0 context
Human-Centric Innovation	Employee-centered design, wellbeing, ethics	Embeds social responsibility in innovation	Overlooked in technology-focused studies
Workforce Adaptation	Learning agility, AI acceptance, skill renewal	Captures labor transformation processes	Insufficient comparative analysis
Managerial Change	Participatory leadership, adaptive governance	Alters authority and control structures	Under-theorized sociologically

Building on this framework, the study contributes to theory and practice in three important ways. First, it extends Industry 5.0 scholarship by empirically demonstrating that organizational culture and HR practices are not peripheral but central drivers of human-centric industrial transformation. Second, it advances comparative management sociology by revealing how institutional and cultural diversity across the Asia–Pacific region conditions the effectiveness of culture–HR configurations. Third, it offers actionable insights for managers and policymakers seeking to design inclusive, adaptive, and entrepreneurial organizations capable of sustaining innovation while prioritizing human wellbeing in the Industry 5.0 era.

Industry 5.0 as a Human-Centric Socio-Technical Paradigm:

The concept of Industry 5.0 has emerged as a critical response to the structural and social limitations of earlier industrial paradigms that predominantly prioritized efficiency, automation, and technological determinism. While Industry 4.0 marked a significant advancement through the deployment of cyber–physical systems, smart manufacturing, and data-driven optimization, it was increasingly criticized for marginalizing human agency and intensifying concerns related to job displacement, algorithmic control, and socio-economic inequality. Industry 5.0 represents a

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

paradigmatic reorientation that seeks to rebalance the relationship between humans and intelligent technologies by explicitly positioning human wellbeing, creativity, and ethical responsibility at the center of industrial transformation [5]. From a socio-technical systems perspective, Industry 5.0 advances the idea that technological progress and social systems are deeply interdependent and must be jointly optimized. Rather than treating technology as an autonomous driver of organizational change, Industry 5.0 emphasizes the co-evolution of technological infrastructures and social arrangements, including organizational culture, work design, leadership practices, and institutional norms. This shift reflects a broader movement away from techno-economic rationality toward socially embedded production systems in which human values, trust, and collective meaning play a decisive role in shaping innovation trajectories and organizational outcomes. Recent literature increasingly emphasizes that Industry 5.0 cannot be adequately understood through technological capabilities alone. Scholars argue that human–machine collaboration, responsible innovation, and inclusive value creation require supportive organizational cultures and HR architectures that enable participation, continuous learning, and psychological safety. In this view, advanced technologies such as artificial intelligence and collaborative robotics function not as substitutes for human labor but as complements that augment human capabilities. However, the realization of this complementary relationship depends heavily on how organizations structure authority, distribute decision-making power, and align performance incentives with human-centric objectives. Despite growing conceptual interest, much of the existing Industry 5.0 literature remains policy-driven or normative in orientation, offering limited empirical insight into how organizations operationalize human-centric principles in practice [6]. In particular, there is a lack of clarity regarding the organizational mechanisms through which human-centric values are translated into day-to-day work processes. Organizational culture and HR practices represent critical yet underexplored mechanisms in this regard, as they shape employee perceptions of fairness, autonomy, and purpose, while also influencing innovation behavior and adaptability in technologically intensive environments. This limitation is especially salient in the Asia–Pacific region, where institutional diversity and cultural heterogeneity generate distinct pathways for Industry 5.0 adoption. To clarify the conceptual foundations of Industry 5.0 and distinguish it from earlier industrial paradigms, Table 2 provides a comparative overview of Industry 4.0 and Industry 5.0 across key socio-technical dimensions.

Table 2: Comparison of Industry 4.0 and Industry 5.0 from a Socio-Technical Perspective

Dimension	**Industry 4.0**	**Industry 5.0**
Core Logic	Automation and efficiency	Human-centricity and resilience
Role of Technology	Central driver of productivity	Enabler of human creativity
Role of Workers	System operators	Co-creators and decision participants
Innovation Focus	Technological optimization	Responsible and inclusive

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

		innovation
Governance Orientation	Algorithmic and control-based	Ethical, participatory, and adaptive
Sustainability Emphasis	Economic efficiency	Social, ethical, and environmental balance

Industry 5.0 extends beyond technological sophistication to incorporate ethical governance, social sustainability, and human development as integral components of industrial competitiveness. This reconceptualization has significant implications for organizational design, particularly in relation to culture, HR practices, and managerial roles. Figure 1 conceptually illustrates Industry 5.0 as a human-centric socio-technical system, highlighting the dynamic interaction between technological infrastructure, organizational culture, HR practices, and human-centric outcomes.

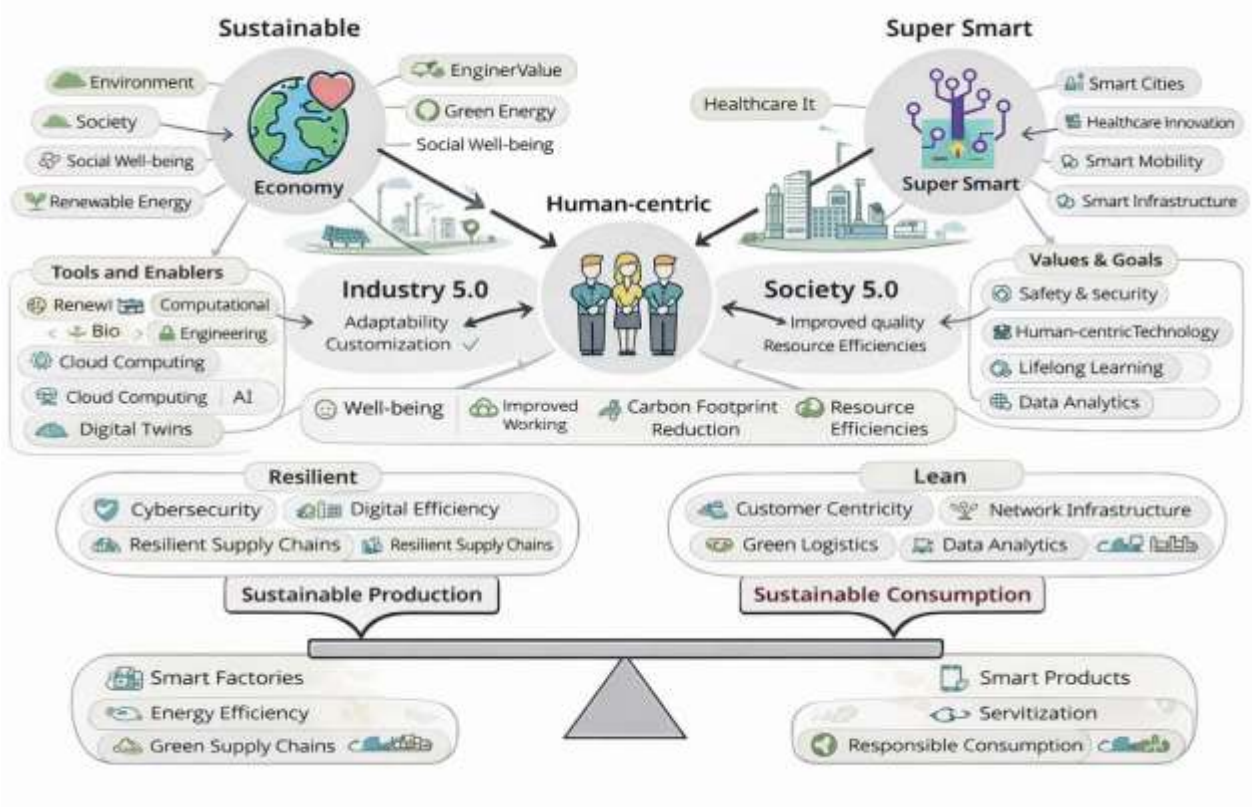

Figure 1: Conceptual Illustration of Industry 5.0 as a Human-Centric Socio-Technical System

The figure depicts Industry 5.0 as an integrated system in which advanced technologies (AI, automation, cyber–physical systems) interact with organizational culture and human resource practices to produce human-centric outcomes such as entrepreneurial orientation, workforce adaptability, responsible innovation, and inclusive managerial change. Institutional and cultural contexts moderate these

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

interactions, shaping how human-centric principles are enacted across organizations [7]. Industry 5.0 represents a fundamental redefinition of industrial transformation in which social and organizational dimensions are as critical as technological capabilities. By foregrounding human-centricity, ethical responsibility, and resilience, the Industry 5.0 paradigm calls for renewed scholarly attention to organizational culture and HR practices as central drivers of sustainable and inclusive industrial development. This perspective provides the theoretical foundation for examining how organizations across diverse Asia–Pacific contexts navigate the complex transition toward human-centric, innovation-driven futures.

Entrepreneurial Orientation and Human-Centric Innovation:

Entrepreneurial orientation (EO) has been widely conceptualized as a multidimensional strategic posture encompassing innovativeness, proactiveness, and risk-taking, enabling organizations to identify and exploit emerging opportunities under conditions of uncertainty. Within traditional innovation and entrepreneurship literature, EO is primarily associated with competitive advantage, growth, and performance outcomes. However, the transition toward Industry 5.0 introduces a qualitative shift in the nature and purpose of entrepreneurial activity, extending EO beyond economic rationality toward human-centric and socially responsible innovation trajectories. In the context of Industry 5.0, EO acquires a distinct human-centric orientation in which innovation is expected to generate not only economic value but also social, ethical, and developmental benefits for employees and broader stakeholders [8]. Human-centric innovation emphasizes employee participation in ideation and problem-solving, user-centered and inclusive design, and responsible deployment of advanced technologies such as artificial intelligence and automation. From a sociological perspective, this reconceptualization aligns with theories of participatory innovation and workplace democracy, which emphasize shared agency, collective learning, and the redistribution of decision-making authority within organizations. Existing research consistently demonstrates that EO is positively associated with innovation capability, organizational adaptability, and performance across industries. Organizations characterized by high EO are more likely to experiment with new technologies, explore novel business models, and respond proactively to environmental turbulence. However, much of this empirical evidence is grounded in Industry 4.0 or earlier technological paradigms, where innovation outcomes were predominantly assessed in terms of productivity, efficiency, and technological novelty. As a result, the human and ethical dimensions of innovation central to Industry 5.0 have received comparatively limited attention. Recent studies suggest that the effectiveness of EO in human-centric innovation contexts depends heavily on underlying organizational culture and HR practices. Innovation-oriented and inclusive cultures foster psychological safety and encourage employees to engage in creative risk-taking, while participatory HR systems provide the skills, autonomy, and incentives necessary for sustained entrepreneurial behavior. Conversely, control-oriented cultures and rigid HR systems may constrain EO by limiting employee voice and reinforcing risk aversion, even in technologically advanced environments. These

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

findings indicate that EO in Industry 5.0 is not merely a strategic choice but an emergent property of socio-organizational configurations. The importance of institutional and cultural context further complicates the EO–innovation relationship. In regions characterized by diverse labor market institutions, educational systems, and cultural norms such as the Asia–Pacific region organizations face varying constraints and opportunities in promoting entrepreneurial behavior [9]. Collectivist cultures, for example, may facilitate collaborative innovation but discourage individual risk-taking, while hierarchical governance structures may limit bottom-up entrepreneurial initiatives. Despite these contextual variations, comparative research examining how EO interacts with human-centric innovation across institutional settings remains scarce. To clarify the evolving relationship between EO and human-centric innovation under Industry 5.0, Table 3 contrasts traditional EO logic with its Industry 5.0–oriented human-centric extension.

Table 3: Entrepreneurial Orientation in Traditional Innovation versus Industry 5.0 Contexts

Dimension	**Traditional EO Perspective**	**Industry 5.0 Human-Centric EO**
Innovativeness	Technological novelty	Inclusive and employee-driven innovation
Proactiveness	Market opportunity exploitation	Anticipation of social and workforce needs
Risk-taking	Financial and strategic risk	Ethical and human-centered risk management
Role of Employees	Implementers of innovation	Co-creators and innovation partners
Innovation Outcomes	Productivity and growth	Sustainable, ethical, and social value creation

Industry 5.0 redefines EO by embedding it within broader human and social objectives, thereby reshaping how entrepreneurial behavior is enacted and evaluated within organizations. Figure 2 presents a conceptual illustration of how EO operates as a mediating mechanism between organizational culture, HR practices, and human-centric innovation outcomes in Industry 5.0 environments.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

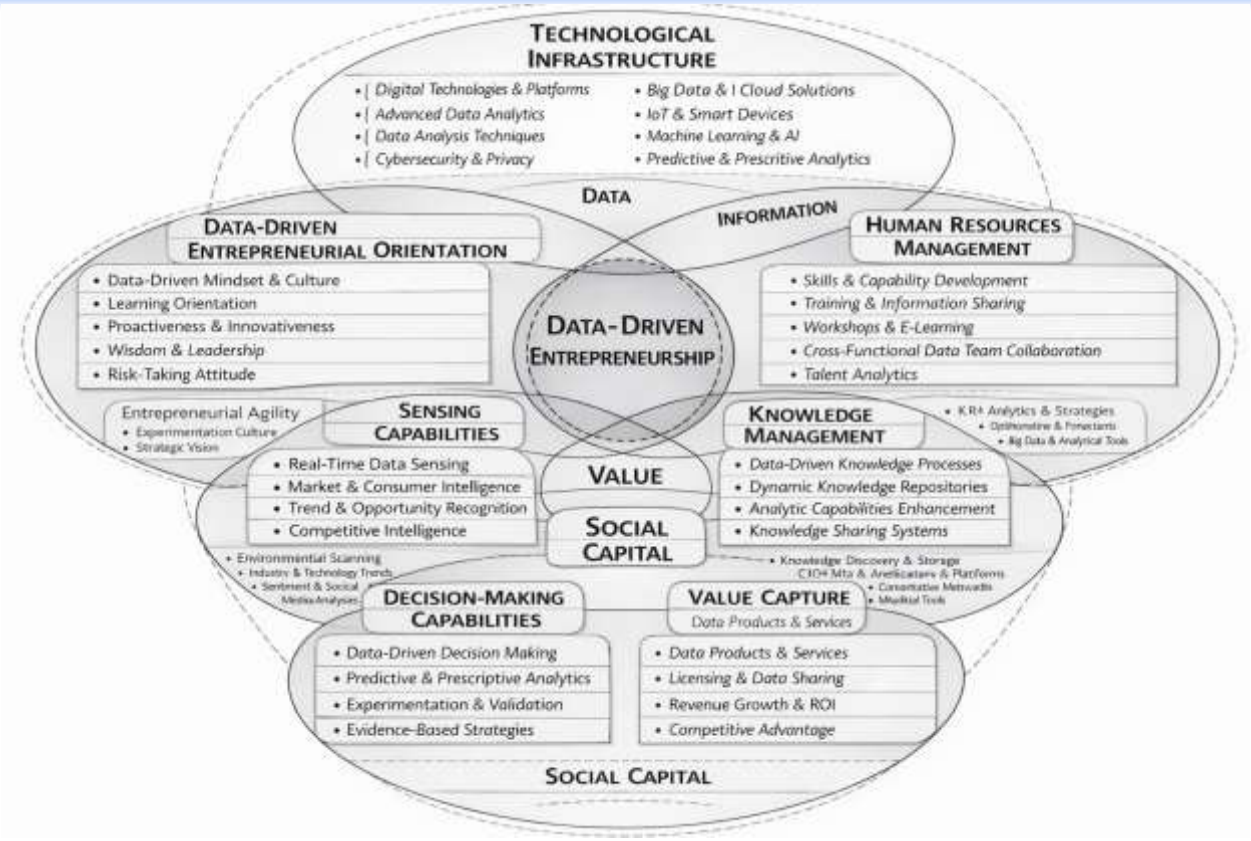

Figure 2: Conceptual Relationship between Entrepreneurial Orientation and Human-Centric Innovation in Industry 5.0

In summary, EO represents a critical yet under-theorized mechanism through which organizations translate human-centric values into innovative action under Industry 5.0. While prior research establishes the performance benefits of EO, insufficient attention has been given to its sociological foundations and contextual variability. By integrating EO with organizational culture, HR practices, and institutional context, this study advances a more nuanced understanding of entrepreneurial behavior as a socially embedded driver of human-centric innovation in the Industry 5.0 era.

Methodology:

Building on the theoretical insights and unresolved research gaps identified in the preceding literature review, this study adopts a carefully structured and systematic methodological approach to empirically investigate the complex relationships among organizational culture, human resource practices, entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change within the evolving Industry 5.0 context. Recognizing Industry 5.0 as a socio-technical paradigm in which technological advancement is deeply intertwined with organizational and institutional dynamics, the study places particular emphasis on organizational-level mechanisms that mediate human–technology interaction and shape human-centric outcomes.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Given the study's comparative sociological orientation and its objective of capturing variations in organizational behavior across heterogeneous institutional environments, a structured quantitative research design is employed [10]. This design facilitates the simultaneous examination of multiple interrelated latent constructs and allows for robust testing of both direct and indirect relationships within an integrated analytical framework. By adopting a comparative perspective, the study enables systematic assessment of how organizational culture and HR practices operate under differing socio-economic, regulatory, and cultural conditions, thereby providing insights that extend beyond single-country or single-industry analyses. The empirical focus on organizations operating across the Asia–Pacific region further strengthens the relevance of the chosen methodology. The region's pronounced institutional diversity, coupled with varying levels of digital maturity and workforce readiness, offers a natural setting for examining the contextual embeddedness of Industry 5.0 transformation processes. The quantitative approach supports rigorous cross-organizational and cross-contextual comparison, enhancing the generalizability and explanatory power of the findings while maintaining sensitivity to sociological complexity. Overall, the methodological choices adopted in this study are guided by the dual imperative of analytical rigor and practical relevance. By integrating sociological theory with advanced quantitative techniques, the research seeks to capture the multifaceted nature of socio-technical interactions and generate empirically grounded insights that inform both academic discourse and organizational practice related to human-centric transformation in the Industry 5.0 era.

Research Design and Approach:

This study adopts a comparative, cross-sectional research design grounded in organizational sociology and human resource management theory to systematically examine how organizational culture and HR practices shape key Industry 5.0–related outcomes. The research design is explicitly informed by the study's objective to move beyond technology-centric explanations of industrial transformation and instead foreground the social and organizational mechanisms that enable human-centric innovation, entrepreneurial behavior, workforce adaptation, and managerial change. By focusing on organizational-level processes, the study responds directly to calls in the literature for empirically grounded analyses of Industry 5.0 as a socio-technical rather than purely technological paradigm. A quantitative explanatory approach is employed to test theoretically derived relationships among organizational culture, HR practices, entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change. This approach is particularly appropriate given the multidimensional and interrelated nature of the constructs under investigation [11]. Quantitative modeling enables simultaneous examination of multiple relationships within an integrated analytical framework, thereby capturing both the direct and indirect effects through which organizational culture and HR systems influence Industry 5.0 outcomes. The explanatory orientation of the study further allows for theory testing and refinement, strengthening the study's contribution to organizational sociology and human-centric innovation research. The comparative dimension of the

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

research design constitutes a central methodological feature of this study. Organizations operating within the Asia–Pacific region are embedded in highly heterogeneous institutional environments characterized by variation in labor market regulations, cultural norms, managerial traditions, and levels of digital maturity. The comparative design enables systematic examination of how relationships among the study variables differ across organizational and contextual settings, thereby enhancing the external validity and contextual sensitivity of the findings. Rather than treating contextual diversity as noise, the study explicitly incorporates it as a source of analytical insight into Industry 5.0 transformation pathways. Consistent with the socio-technical perspective adopted in this research, Industry 5.0 is conceptualized as an interactive system in which organizational-level social structures co-evolve with advanced technologies [12]. Organizational culture and HR practices are therefore treated as interrelated and mutually reinforcing systems, rather than isolated antecedents. Culture provides the normative and cognitive foundations that shape employee attitudes toward innovation, risk-taking, and participation, while HR practices institutionalize these values through formal mechanisms such as reskilling programs, participatory decision-making, and performance management. This integrative perspective reflects the study's assumption that human-centric transformation emerges from alignment between cultural values and HR architectures rather than from isolated managerial interventions. To further clarify the analytical scope and logic of the research design, Table 4 summarizes the key elements of the study's design and their methodological rationale.

Table 4: Overview of Research Design and Methodological Rationale

Design Element	**Description**	**Methodological Rationale**
Research Type	Quantitative, explanatory	Enables theory testing and examination of complex relationships
Time Horizon	Cross-sectional	Captures organizational conditions during Industry 5.0 transition
Analytical Level	Organizational level	Focuses on culture–HR systems and managerial mechanisms
Comparative Scope	Multi-context (Asia–Pacific)	Enhances external validity and contextual insight
Core Constructs	Culture, HR practices, EO, innovation, adaptation, management	Reflects integrated socio-technical framework

Figure 3 conceptually illustrates the research design and analytical logic guiding this study. The figure depicts organizational culture and human resource practices as foundational socio-organizational systems that jointly influence entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

within an Industry 5.0 context. Institutional and cultural environments moderate these relationships, reflecting cross-contextual variation across Asia–Pacific organizations.

Figure 3: Research Design and Analytical Framework of the Study

The research design and approach adopted in this study are deliberately aligned with the complexity of Industry 5.0 transformation. By integrating comparative analysis, sociological theory, and quantitative explanatory modeling, the study provides a robust methodological foundation for examining how organizations translate human-centric principles into entrepreneurial and innovative outcomes. This design ensures both analytical rigor and practical relevance, offering insights that are generalizable across diverse organizational contexts while remaining sensitive to socio-institutional differences.

Sample and Data Collection:

Data for this study were collected from organizations operating across multiple economies within the Asia–Pacific region, an area characterized by substantial diversity in economic development, institutional frameworks, labor market structures, and socio-cultural norms. This heterogeneity provides a particularly appropriate empirical context for examining Industry 5.0–related organizational transformation, as firms across the region experience differing pressures related to digitalization,

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

workforce skills, regulatory environments, and managerial traditions. By drawing data from multiple Asia–Pacific contexts, the study enhances its ability to capture variation in how organizational culture and HR practices shape human-centric outcomes under Industry 5.0 conditions [13]. The target population consisted of **middle- and senior-level managers, human resource professionals, and team leaders,** as these organizational actors play a central role in shaping strategic direction, implementing HR systems, and managing organizational and managerial change. These respondents are directly involved in decision-making processes related to innovation, workforce development, and human–technology integration, making them particularly well suited to assess entrepreneurial orientation, workforce adaptation, and human-centric innovation. Focusing on this respondent group ensures that the data reflect informed organizational-level perspectives rather than purely individual or task-level experiences. A **purposive sampling strategy** was employed to ensure the inclusion of organizations that are actively engaged in digital transformation initiatives, advanced automation, or broader Industry 5.0–related practices. This theory-driven sampling approach is appropriate for explanatory research seeking to investigate complex socio-organizational mechanisms rather than to produce statistically representative population estimates. Organizations from both manufacturing and knowledge-intensive service sectors were included to capture variation in technological intensity and patterns of human–machine collaboration, thereby strengthening the analytical breadth of the study. Data collection was conducted using a **structured survey questionnaire** administered electronically. The questionnaire was developed based on validated measurement scales from established literature on organizational culture, human resource management, entrepreneurship, and innovation, and was subsequently adapted to reflect the human-centric and socio-technical characteristics of Industry 5.0. Online administration facilitated access to geographically dispersed respondents across the Asia–Pacific region, improved response efficiency, and ensured consistency in survey delivery across different organizational and national contexts. To mitigate potential **common method bias**, several procedural remedies were incorporated into the data collection process. Respondents were assured of anonymity and confidentiality to reduce evaluation apprehension and social desirability bias. The survey instructions emphasized that there were no right or wrong answers and encouraged respondents to provide honest assessments based on their organizational experience [14]. In addition, construct items were carefully worded, contextually separated, and ordered to minimize response pattern bias. These measures align with recommended methodological practices in organizational and HRM research. The final sample size was sufficient to support **multivariate statistical analysis**, including structural equation modeling and cross-group comparisons. The dataset provided adequate statistical power to test the proposed relationships among latent constructs and to examine comparative patterns across organizational and contextual settings within the Asia–Pacific region. Figure 4 presents a schematic overview of the sample selection and data collection process employed in this study. The figure illustrates the identification of Industry 5.0–engaged organizations across Asia–Pacific contexts, the selection of knowledgeable

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

managerial and HR respondents, and the administration of the structured survey questionnaire, resulting in a dataset suitable for comparative quantitative analysis.

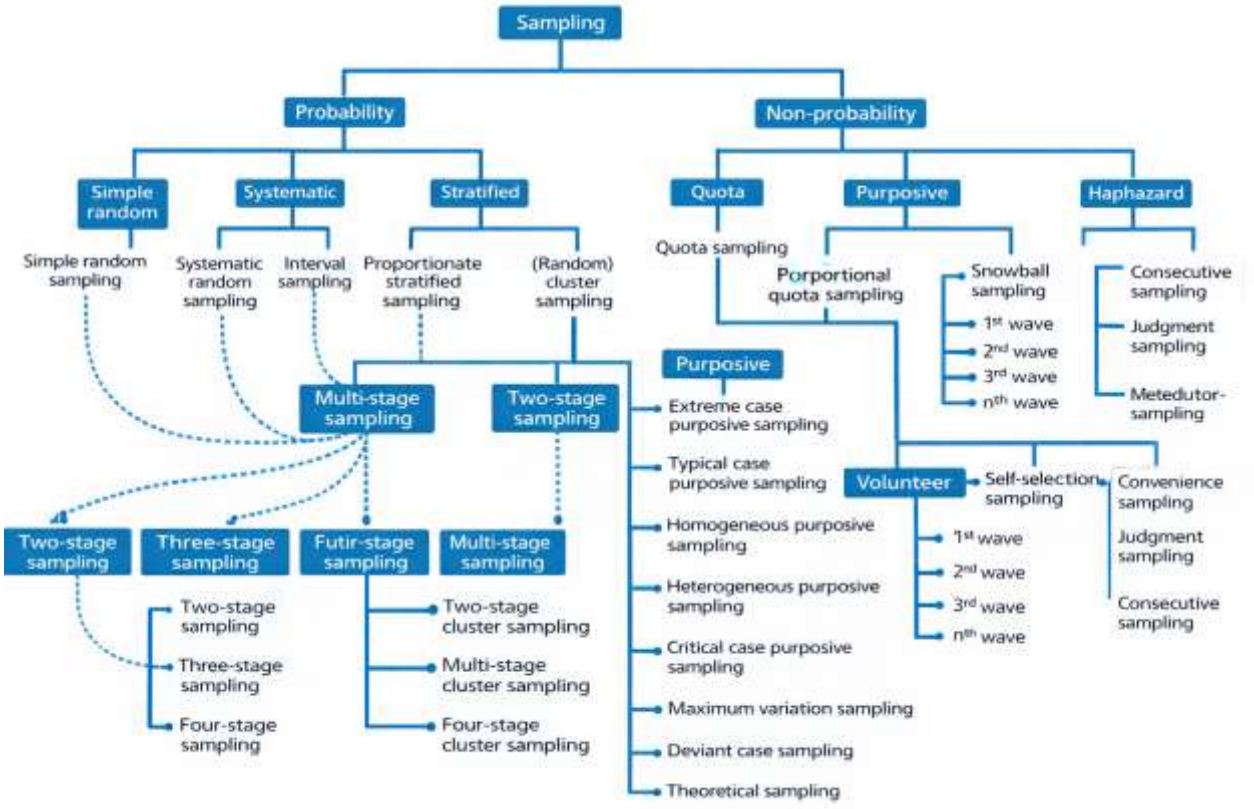

Figure 4: Sample Selection and Data Collection Process

Overall, the sampling and data collection strategy adopted in this study is designed to balance theoretical relevance, contextual diversity, and methodological rigor. By targeting informed organizational actors across heterogeneous Asia–Pacific contexts and employing robust procedural safeguards during data collection, the study establishes a reliable empirical foundation for examining the sociological and organizational dynamics underpinning human-centric transformation in the Industry 5.0 era. This approach ensures that the findings are both analytically robust and practically meaningful for understanding organizational change across diverse institutional environments.

Measurement of Constructs:

All constructs in this study were measured using validated multi-item scales adapted from established literature in organizational sociology, human resource management, entrepreneurship, and innovation studies. To ensure conceptual alignment with the Industry 5.0 paradigm, existing measurement items were carefully contextualized to reflect human-centricity, ethical governance, and human–technology collaboration. This approach preserves the theoretical rigor of established scales while enhancing

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

their relevance to the socio-technical characteristics of Industry 5.0. Organizational culture was operationalized as a multidimensional construct capturing shared values and norms that shape innovation behavior and employee participation. Measurement items reflected innovation orientation, openness to change, trust, collaboration, and adaptability, which are particularly salient in human-centric transformation contexts. These dimensions capture the extent to which organizational environments encourage experimentation, employee voice, and collective learning in technologically dynamic settings [15]. Human resource practices were measured using a high-involvement HR system perspective, consistent with the ability–motivation–opportunity (AMO) framework. Items assessed organizational investment in training and reskilling, opportunities for employee participation, developmental performance management practices, and career development mechanisms. This operationalization reflects the role of HR systems as institutional mechanisms that translate human-centric values into daily organizational practices under Industry 5.0 conditions. Entrepreneurial orientation (EO) was measured using its widely accepted three-dimensional structure: innovativeness, proactiveness, and risk-taking. In contrast to traditional EO measures that focus primarily on market and technological outcomes, the adapted items emphasized opportunity exploration, forward-looking strategic behavior, and responsible risk-taking aligned with human-centric and ethical considerations. Human-centric innovation was assessed through indicators capturing employee involvement in innovation processes, ethical awareness in technology deployment, and wellbeing-oriented design principles. This construct reflects the Industry 5.0 emphasis on inclusive, responsible, and socially embedded innovation rather than purely efficiency-driven technological advancement. Workforce adaptation was operationalized through items measuring learning agility, continuous skill renewal, and employee acceptance of human–AI collaboration. These dimensions capture employees' capacity and willingness to adapt to changing job roles, technologies, and work arrangements in Industry 5.0 environments, emphasizing adaptation as a social and cognitive process rather than a purely technical one [16]. Managerial change was measured using items reflecting shifts toward participatory leadership, adaptive decision-making, and evolving governance and control structures. These items capture how managers redefine authority, coordination, and accountability in response to human-centric transformation and increasing reliance on intelligent systems. All items were measured using a Likert-type scale, allowing respondents to indicate their level of agreement with each statement. This measurement approach is appropriate for capturing latent organizational constructs and supports subsequent multivariate analysis. Table 5 summarizes the constructs, their dimensions, and illustrative measurement focus.

Table 5: Measurement of Key Constructs

Construct	**Core Dimensions**	**Measurement Focus**
Organizational Culture	Innovation, trust, participation, adaptability	Norms supporting human-centric change

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

HR Practices	Training, participation, performance, career development	High-involvement HR systems
Entrepreneurial Orientation	Innovativeness, proactiveness, risk-taking	Opportunity-driven behavior
Human-Centric Innovation	Employee involvement, ethics, wellbeing	Responsible innovation outcomes
Workforce Adaptation	Learning agility, reskilling, AI acceptance	Human–technology adjustment
Managerial Change	Participatory leadership, adaptive governance	Transformation of authority and control

Figure 5 conceptually illustrates how the measured constructs are positioned within the study's analytical framework. The figure depicts organizational culture and human resource practices as foundational latent constructs influencing entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change. All constructs are measured using multi-item reflective indicators, enabling integrated analysis within a structural equation modeling framework.

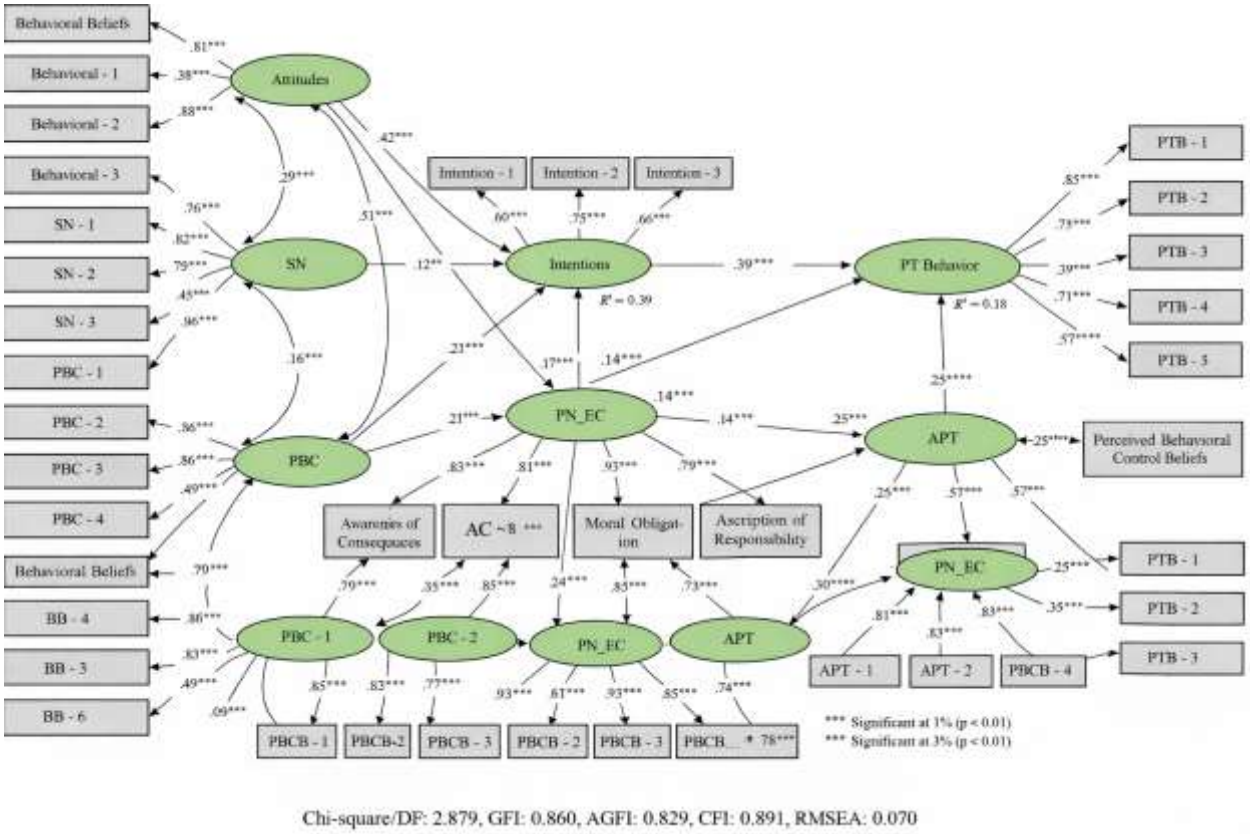

Figure 5: Measurement Model and Construct Relationships

The measurement strategy adopted in this study ensures strong theoretical grounding, contextual relevance, and analytical rigor. By employing validated multi-item scales

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

adapted to the Industry 5.0 context, the study captures the multidimensional and socially embedded nature of human-centric organizational transformation. This measurement framework provides a reliable foundation for subsequent validity assessment and structural model testing.

Validity and Reliability:

Prior to hypothesis testing and structural model estimation, the reliability and validity of the measurement model were systematically assessed to ensure the robustness and theoretical soundness of the constructs employed in this study. Given the study's reliance on latent variables to capture complex socio-organizational phenomena associated with Industry 5.0, rigorous evaluation of the measurement properties was considered a necessary prerequisite for subsequent multivariate analysis. Internal consistency reliability was evaluated using both Cronbach's alpha and composite reliability (CR) coefficients. Cronbach's alpha provides an initial assessment of the extent to which items within each construct are interrelated, while composite reliability offers a more robust estimate that accounts for differing indicator loadings in structural equation modeling. Values exceeding commonly accepted thresholds indicated that the measurement items consistently captured their intended latent constructs across organizational contexts. Convergent validity was assessed by examining standardized factor loadings and the average variance extracted (AVE) for each construct [17]. High factor loadings demonstrated that individual items were strongly associated with their respective constructs, while AVE values above recommended benchmarks indicated that a substantial proportion of variance in the indicators was explained by the underlying latent variable. These results confirm that the constructs meaningfully represent the theoretical concepts of organizational culture, HR practices, entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change within the Industry 5.0 framework. Discriminant validity was evaluated to ensure that each construct was empirically distinct from the others. Established criteria were applied to verify that constructs captured unique aspects of organizational and managerial phenomena rather than overlapping dimensions. This step is particularly important in socio-technical research, where conceptually related constructs such as culture, HR practices, and innovation may exhibit high intercorrelations. The results indicated satisfactory discriminant validity, supporting the conceptual distinctiveness of all study variables across different organizational settings. In addition, the measurement model was examined for consistency across organizations operating in diverse institutional and cultural environments within the Asia–Pacific region. The stability of reliability and validity indicators across contexts suggests that the adapted measurement scales are appropriate for comparative analysis and are not unduly biased by regional or institutional differences. Table 6 presents a summary of the key reliability and validity assessment criteria applied in this study.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Table 6: Reliability and Validity Assessment Criteria

Assessment Dimension	Indicator	Purpose
Internal Consistency	Cronbach's alpha	Evaluates item interrelatedness
Composite Reliability	CR	Assesses construct reliability in SEM
Convergent Validity	Factor loadings, AVE	Confirms indicator–construct alignment
Discriminant Validity	Distinctiveness criteria	Ensures constructs are empirically unique
Cross-Context Robustness	Consistency across samples	Supports comparative analysis

Figure 6 provides a schematic representation of the measurement model validation process adopted in this study. The figure illustrates the sequential evaluation of internal consistency, convergent validity, and discriminant validity prior to structural model testing. The process ensures that all latent constructs meet established reliability and validity thresholds, providing a sound foundation for hypothesis testing and comparative analysis.

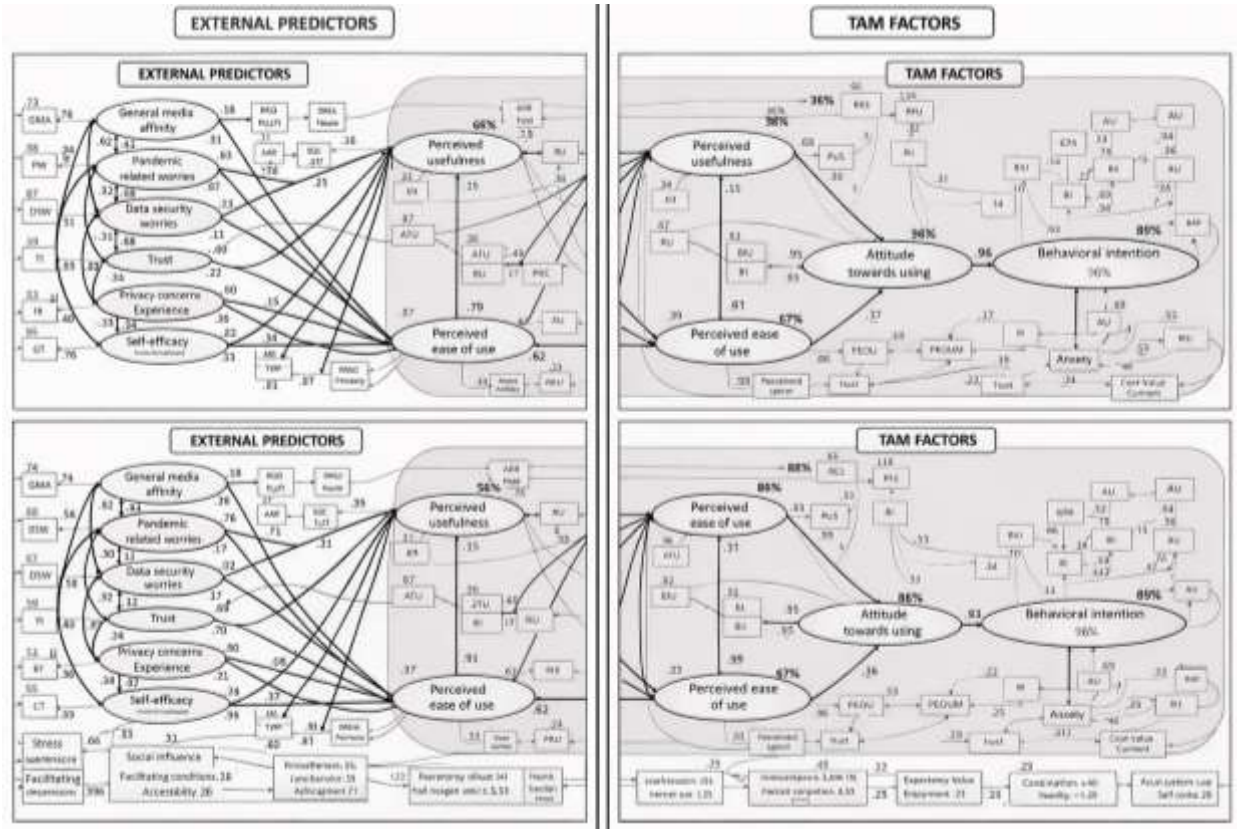

Figure 6: Measurement Model Reliability and Validity Assessment Framework

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

The comprehensive assessment of reliability and validity demonstrates that the measurement model employed in this study is both statistically robust and theoretically coherent. By satisfying established criteria for internal consistency, convergent validity, and discriminant validity, the study ensures that subsequent structural analyses are based on reliable constructs capable of capturing the multidimensional and human-centric nature of organizational transformation under Industry 5.0. This rigorous validation process strengthens confidence in the study's empirical findings and supports their relevance across diverse organizational and regional contexts.

Data Analysis and Model Estimation: PLS-SEM versus CB-SEM:

Data analysis in this study was conducted using structural equation modeling (SEM) to examine the complex and interrelated relationships among organizational culture, human resource practices, entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change within the Industry 5.0 context. SEM is particularly suitable for this research because it enables the simultaneous estimation of multiple dependence relationships among latent constructs, while accounting for measurement error. This analytical capability is essential for capturing the multidimensional and socio-technical nature of Industry 5.0–related organizational transformation [18]. Given the exploratory–explanatory orientation of the study and the integration of multiple latent constructs, the analysis follows a variance-based partial least squares SEM (PLS-SEM) approach as the primary estimation technique. PLS-SEM is especially appropriate for theory development and prediction-oriented research, particularly when models are complex and incorporate mediation paths. In the context of this study, PLS-SEM facilitates the examination of how organizational culture and HR practices jointly influence multiple Industry 5.0 outcomes while allowing for comparative analysis across organizations operating in heterogeneous institutional environments within the Asia–Pacific region. The data analysis proceeded in two main stages. First, the measurement model was evaluated to confirm the reliability and validity of the constructs, as reported in Section 3.4. Second, the structural model was assessed to test the hypothesized relationships among constructs. Structural model evaluation included examination of path coefficients, their statistical significance using bootstrapping procedures, and the explanatory power of the model as indicated by coefficients of determination (R^2). Effect sizes were also examined to assess the substantive impact of each predictor construct on the endogenous variables. Although PLS-SEM serves as the primary analytical technique, the methodological rationale was explicitly evaluated against covariance-based SEM (CB-SEM) standards to ensure robustness and transparency. CB-SEM is traditionally employed for theory confirmation and goodness-of-fit assessment in well-established theoretical models [19]. However, given the emerging and evolving nature of Industry 5.0 as a research domain, the present study prioritizes prediction accuracy, model flexibility, and accommodation of complex mediation structures features that are better supported by PLS-SEM. Moreover, PLS-SEM is less restrictive with respect to data distribution assumptions, making it suitable for cross-organizational survey data collected from

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

diverse socio-economic contexts. To enhance methodological transparency, Table 7 summarizes the key differences between PLS-SEM and CB-SEM and clarifies the analytical choices adopted in this study.

Table 7: Comparison of PLS-SEM and CB-SEM Reporting Standards

Criterion	**PLS-SEM**	**CB-SEM**
Primary Objective	Prediction and theory development	Theory confirmation
Model Complexity	Handles complex models effectively	Best for parsimonious models
Data Distribution	No strict normality assumptions	Requires multivariate normality
Sample Size Sensitivity	Suitable for small to medium samples	Requires large samples
Model Evaluation	Path coefficients, R^2, effect sizes	Global goodness-of-fit indices
Suitability for Industry 5.0 Research	High (emerging, exploratory domain)	Moderate (theory still evolving)

Figure 7 illustrates the overall SEM estimation process adopted in this study, highlighting the distinction between measurement and structural model assessment under the PLS-SEM framework. The figure depicts the two-stage SEM procedure employed in the study, beginning with measurement model validation (reliability and validity assessment) followed by structural model estimation using PLS-SEM. The framework highlights the evaluation of path relationships, explanatory power, and mediation effects, while situating the approach within broader SEM methodological standards.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

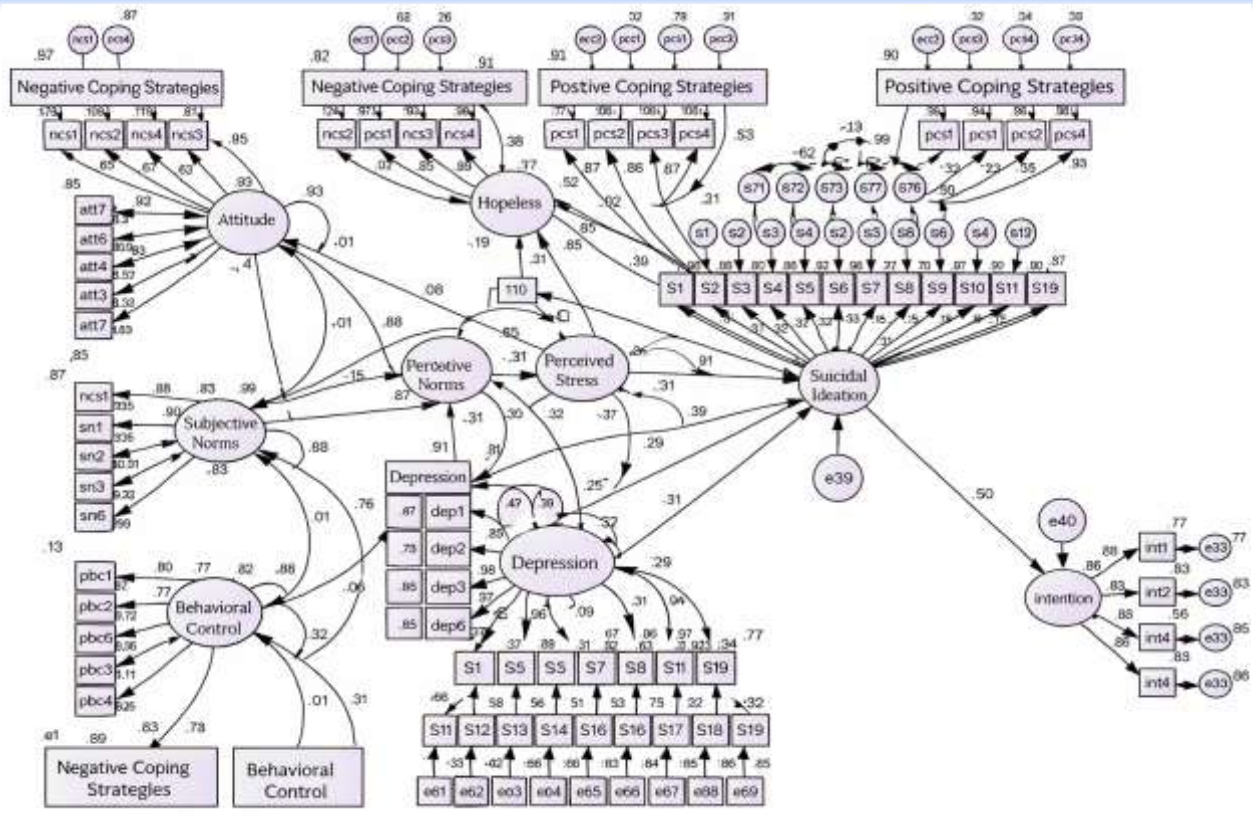

Figure 7: Data Analysis and Model Estimation Framework

The data analysis and model estimation strategy adopted in this study is intentionally aligned with the exploratory and human-centric nature of Industry 5.0 research. By employing PLS-SEM as the primary analytical technique while explicitly situating it relative to CB-SEM reporting standards, the study ensures both methodological rigor and transparency. This approach allows for robust examination of socio-organizational mechanisms underlying human-centric innovation and managerial change, while maintaining flexibility and predictive relevance across diverse organizational contexts.

Results and Discussion:

The empirical findings provide strong and nuanced support for the proposed socio-technical framework explaining organizational transformation under Industry 5.0. Overall, the results indicate that Industry 5.0 is not merely an extension of digital automation but a fundamentally human-centric reconfiguration of organizational systems in which culture, human resource practices, and managerial logic jointly shape innovation and adaptation outcomes. Across the sampled organizations, descriptive patterns reveal a general movement toward innovation-oriented cultural values, increased emphasis on employee participation, and growing investment in workforce development initiatives. However, the degree to which these elements are

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

aligned varies considerably across organizations and institutional contexts, underscoring the importance of examining Industry 5.0 transformation as a socially embedded and context-dependent process. The correlation structure among the study variables reveals consistently positive and statistically meaningful associations between organizational culture, HR practices, entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change. These associations suggest that organizations fostering trust, openness, and adaptability at the cultural level are more likely to institutionalize these values through HR systems that support learning, participation, and career development. Importantly, the correlations remain within acceptable thresholds, indicating that the constructs capture distinct yet interrelated dimensions of Industry 5.0 transformation rather than reflecting conceptual redundancy. This finding supports the theoretical premise that human-centric transformation is multidimensional, involving complementary organizational mechanisms rather than a single dominant driver. The structural model estimation further clarifies these relationships by revealing the causal pathways through which Industry 5.0 outcomes emerge. Organizational culture exhibits a strong and statistically significant effect on human resource practices, confirming that culture operates as a foundational sociological mechanism that shapes how organizations design and implement formal systems. Values related to innovation, trust, and participation appear to be translated into HR architectures that prioritize reskilling, employee voice, and developmental performance management. This finding aligns with institutional and cultural theories of organizations, which emphasize that formal practices derive legitimacy and effectiveness from underlying normative frameworks. Human resource practices emerge as a central engine of Industry 5.0 transformation. The results indicate that HR systems exert significant positive effects on entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change [20]. Organizations that invest in high-involvement HR practices demonstrate stronger proactive opportunity recognition, greater inclusion of employees in innovation processes, and higher levels of adaptability to technological change. These findings extend traditional HRM research by demonstrating that HR practices function not only as performance-enhancing mechanisms but also as social infrastructures that enable ethical, inclusive, and sustainable innovation in technologically advanced environments. Entrepreneurial orientation plays a pivotal role in shaping human-centric innovation outcomes. The findings show that innovativeness, proactiveness, and responsible risk-taking significantly contribute to innovation processes that emphasize employee wellbeing, ethical technology use, and inclusive design. This result represents a critical extension of entrepreneurship theory, which has traditionally framed entrepreneurial orientation primarily in terms of market competitiveness and financial performance. In the Industry 5.0 context, entrepreneurial orientation appears to function as a socially embedded capability that integrates economic ambition with human and ethical considerations, thereby supporting a broader conception of organizational value creation. Workforce adaptation is strongly influenced by both HR practices and entrepreneurial orientation, highlighting the interdependence between strategic intent and employee capability

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

development. Organizations characterized by robust reskilling initiatives and forward-looking entrepreneurial behavior report higher levels of learning agility, continuous skill renewal, and acceptance of human–AI collaboration. These findings challenge deterministic narratives that portray workforce adaptation as an automatic response to technological change. Instead, adaptation emerges as an actively managed social process shaped by organizational investment, leadership priorities, and institutional support structures. Managerial change constitutes another critical outcome of Industry 5.0 transformation. The results indicate that shifts in leadership styles, decision-making authority, and governance structures are significantly influenced by organizational culture, HR practices, and workforce adaptation [21]. Managers operating within participatory and trust-based cultural environments, supported by adaptive HR systems, are more likely to decentralize authority, engage employees in decision-making, and adopt flexible governance mechanisms. This finding supports management sociology perspectives that conceptualize leadership not as an individual attribute but as an emergent property of organizational and institutional arrangements. To synthesize the structural relationships identified in the model, Table 8 presents a summary of the key pathways and their substantive interpretation within the Industry 5.0 framework.

Table 8: Key Structural Relationships and Substantive Interpretation

Structural Pathway	Empirical Direction	Sociological Interpretation
Organizational Culture → HR Practices	Positive and significant	Cultural values are institutionalized through HR systems
HR Practices → Entrepreneurial Orientation	Positive and significant	HR investment enables proactive and responsible entrepreneurship
Entrepreneurial Orientation → Human-Centric Innovation	Positive and significant	Entrepreneurship supports ethical and inclusive innovation
HR Practices → Workforce Adaptation	Positive and significant	Reskilling and participation drive adaptive capacity
Workforce Adaptation → Managerial Change	Positive and significant	Adapted workforce enables leadership transformation

Figure 8 provides a visual representation of the estimated structural model, illustrating the relative strength and direction of the key relationships underpinning Industry 5.0 transformation. The figure illustrates organizational culture and human resource practices as foundational constructs influencing entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change. The relative thickness of the paths reflects the strength of the estimated relationships, highlighting the mediating role of HR practices and entrepreneurial orientation.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

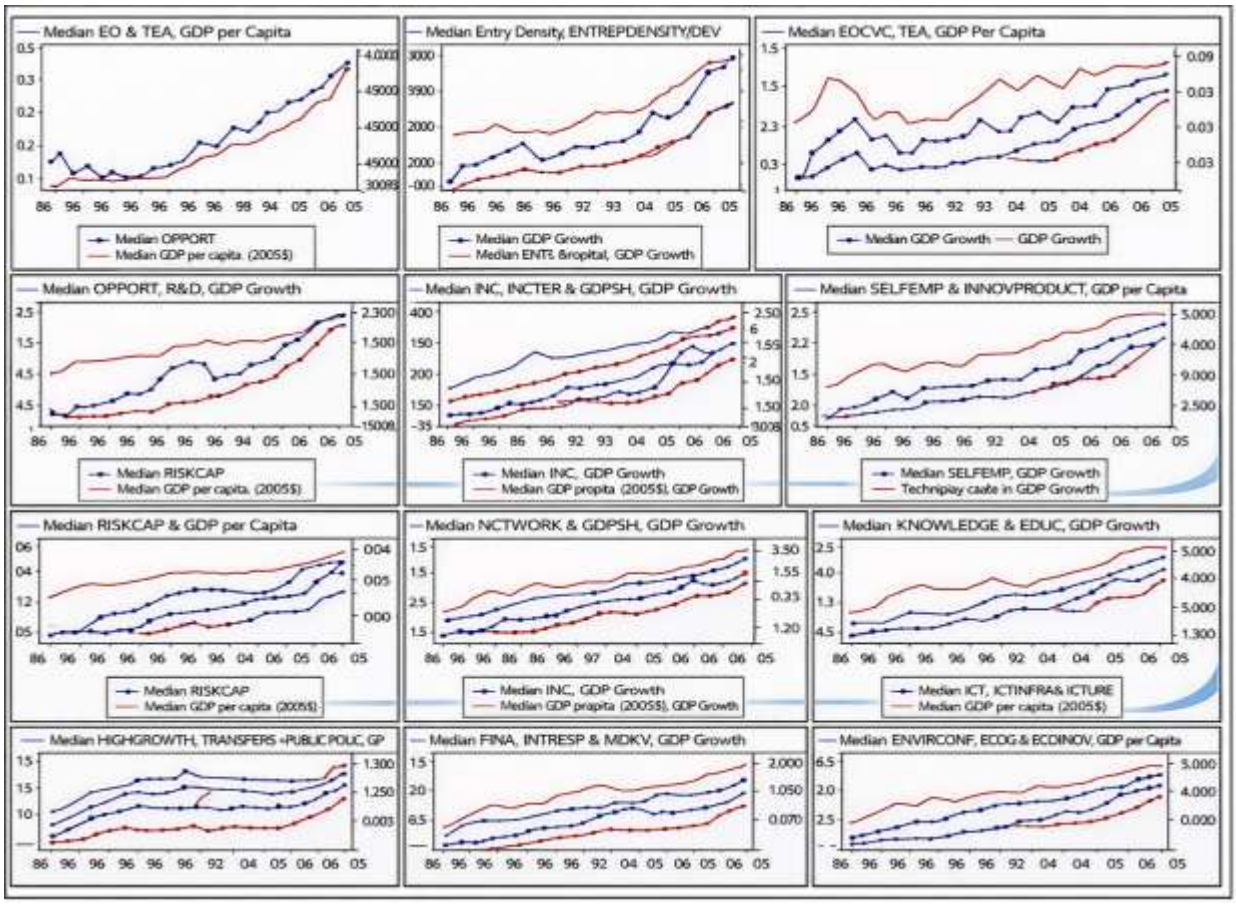

Figure 8: Human-Centric Organizational Transformation under Industry 5.0

Comparative analysis across organizations operating in the Asia–Pacific region reveals that while the overall pattern of relationships is stable, the magnitude of effects varies meaningfully across institutional contexts. In environments characterized by strong education and training systems, the influence of HR practices on workforce adaptation and human-centric innovation is particularly pronounced. These contexts enable organizations to rapidly translate HR investments into adaptive and innovative outcomes [22]. Conversely, in more hierarchical or regulation-intensive environments, organizational culture exerts a stronger direct influence on managerial change, suggesting that informal norms, leadership values, and cultural expectations may compensate for less flexible formal HR infrastructures. Table 9 summarizes the dominant transformation mechanisms observed across different institutional configurations.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Table 9: Context-Dependent Industry 5.0 Transformation Mechanisms

Institutional Context	Dominant Mechanism	Transformation Outcome
Strong skill development systems	HR practices	Accelerated workforce adaptation
Participatory labor relations	Entrepreneurial orientation	Inclusive innovation
Hierarchical governance structures	Organizational culture	Norm-driven managerial change
Emerging institutional frameworks	Culture–HR alignment	Gradual Industry 5.0 transition

Figure 9 illustrates these alternative pathways, highlighting how institutional context moderates the relative importance of culture, HR practices, and entrepreneurial orientation in shaping Industry 5.0 outcomes. The figure presents multiple pathways through which organizational culture and HR practices influence entrepreneurial orientation, workforce adaptation, and managerial change under different institutional conditions, emphasizing the non-uniform nature of Industry 5.0 transformation.

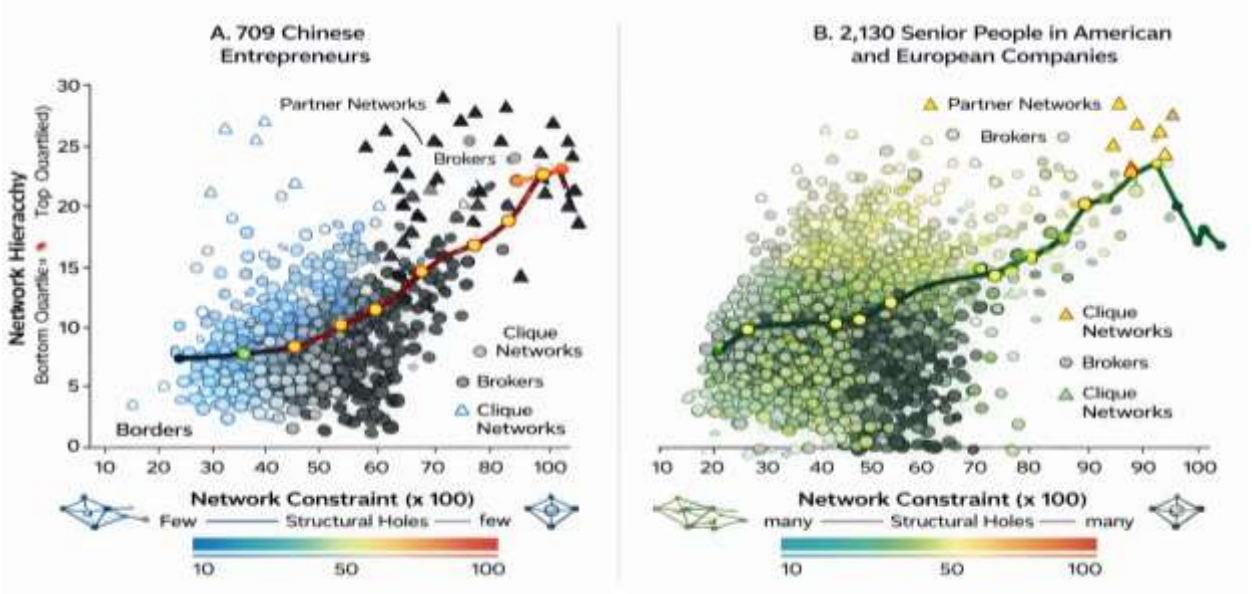

Figure 9: Network Constraint of Industry 5.0 across Asia–Pacific Organizations

Taken together, the results demonstrate that Industry 5.0 transformation is fundamentally a sociological and organizational process rather than a purely technological shift. Human-centric innovation, adaptive workforces, and inclusive managerial systems emerge from the alignment of cultural values, HR architectures, entrepreneurial behavior, and institutional context. By empirically integrating these dimensions, the study challenges technology-deterministic models of industrial change and provides a holistic explanation of how organizations can navigate the

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

transition toward resilient, ethical, and human-centered Industry 5.0 systems across diverse socio-economic environments.

Future Work:

While this study provides a comprehensive sociological analysis of organizational culture and human resource practices under Industry 5.0 across the Asia–Pacific region, several important avenues for future research emerge from its findings and limitations. First, the cross-sectional nature of the present study constrains the ability to capture dynamic changes in organizational culture, workforce capabilities, and managerial practices over time. Future studies could adopt longitudinal research designs to examine how human-centric transformation unfolds across different stages of Industry 5.0 implementation and to identify causal feedback loops between organizational culture, HR practices, and innovation outcomes [23]. Such approaches would enable deeper insights into the temporal sequencing of socio-technical change and the sustainability of human-centric practices. Second, while this research emphasizes organizational-level mechanisms, future work could incorporate multi-level analytical frameworks that integrate individual, team, and organizational perspectives. Examining employee-level perceptions of wellbeing, autonomy, and human–AI collaboration alongside organizational culture and HR systems would allow scholars to better understand how human-centric principles are experienced and enacted at different levels of the organization. Multi-level modeling techniques could further reveal cross-level interactions, such as how leadership styles moderate the relationship between HR practices and workforce adaptation [24]. Third, future research could extend the comparative scope beyond the Asia–Pacific region to include cross-regional or global analyses. Comparative studies involving Europe, North America, and emerging economies could assess whether the sociological mechanisms identified in this study are context-specific or reflect broader patterns of Industry 5.0 transformation. Such research would contribute to the development of more generalizable theories of human-centric industrial change while preserving sensitivity to institutional and cultural variation. In addition, qualitative and mixed-methods research designs offer promising opportunities to enrich understanding of Industry 5.0 transformation. In-depth case studies, interviews, and ethnographic approaches could uncover the micro-level processes through which organizational culture and HR practices shape employee behavior, managerial decision-making, and ethical considerations in technology adoption [25]. These approaches would complement quantitative findings by providing richer contextual explanations and uncovering latent tensions and trade-offs inherent in human–technology integration. Future research may also explore the role of emerging technologies and governance mechanisms in shaping human-centric outcomes. As artificial intelligence systems become increasingly embedded in managerial decision-making, issues related to algorithmic transparency, accountability, and fairness warrant systematic investigation. Integrating perspectives from ethics, labor law, and digital governance could enhance understanding of how organizations can align technological innovation with social responsibility under Industry 5.0. Finally, future studies could examine the

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

policy and institutional implications of human-centric organizational transformation in greater depth [26]. Investigating how education systems, labor market policies, and regulatory frameworks support or constrain Industry 5.0 adoption would provide valuable insights for policymakers seeking to foster inclusive and sustainable innovation ecosystems. By addressing these directions, future research can build on the present study to advance a more holistic and socially grounded understanding of Industry 5.0 and its implications for the future of work and organizational development.

Conclusion:

This study set out to examine how organizational culture and human resource practices shape human-centric transformation under the emerging Industry 5.0 paradigm across the Asia–Pacific region. By adopting a comparative sociological perspective, the research moves beyond technology-deterministic explanations of industrial change and demonstrates that Industry 5.0 is fundamentally an organizational and social transformation in which human agency, institutional context, and managerial logic play central roles. The findings show that organizational culture functions as a foundational mechanism that influences how human-centric values such as trust, participation, and innovation are translated into formal organizational systems. These cultural orientations become effective when institutionalized through high-involvement human resource practices, particularly those emphasizing reskilling, employee participation, and developmental performance management. Human resource practices emerge as a pivotal enabling infrastructure that connects cultural values with tangible outcomes, including entrepreneurial orientation, human-centric innovation, workforce adaptation, and managerial change. This reinforces the view that HR systems are not merely administrative tools but key socio-institutional instruments through which Industry 5.0 principles are operationalized. The study further demonstrates that entrepreneurial orientation plays a crucial role in advancing human-centric innovation by integrating innovativeness and proactiveness with ethical awareness and employee wellbeing. In the Industry 5.0 context, entrepreneurship extends beyond market competitiveness to encompass socially responsible and inclusive value creation. Workforce adaptation is shown to be an actively managed social process rather than an automatic response to technological change, shaped by organizational investment in learning and by leadership commitment to human–technology collaboration. Managerial change, in turn, emerges as an outcome of broader socio-organizational alignment, reflecting shifts toward participatory leadership, decentralized decision-making, and adaptive governance structures. Importantly, the comparative analysis highlights that Industry 5.0 transformation does not follow a uniform pathway across contexts. Institutional diversity across Asia–Pacific economies conditions the relative importance of culture, HR practices, and entrepreneurial behavior, underscoring the need for context-sensitive organizational strategies. This insight challenges universalistic models of digital transformation and emphasizes the embeddedness of Industry 5.0 within specific socio-economic and cultural environments. Overall, this study contributes to

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

theory by empirically integrating organizational culture, HR practices, entrepreneurship, and managerial change within a unified Industry 5.0 framework grounded in management sociology. From a practical perspective, the findings suggest that organizations and policymakers seeking to promote sustainable and inclusive innovation should prioritize human-centric cultural values and supportive HR architectures alongside technological investment. By foregrounding the social foundations of Industry 5.0, this research advances understanding of how organizations can build resilient, ethical, and human-centered systems capable of navigating the future of work.

References:

Varma, A., Vajpayee, A., & Sanghani, P. (2024, November). Organizational Culture of Industry 5.0: Exploration Analysis in Multinational and National Companies. In 2024 International Conference on Intelligent & Innovative Practices in Engineering & Management (IIPEM) (pp. 1-6). IEEE.

Ali, I., Nguyen, K., & Oh, I. (2025). Systematic literature review on Industry 5.0: current status and future research directions with insights for the Asia Pacific countries. Asia Pacific Business Review, 1-28.

Jogarao, M., Siva Durga Prasad, J., & Sanjeevi, P. (2025). Empowering the Workforce for Industry 5.0: Skills, Training, and Human-Centric Transformation. In Building a Human-Centred Infrastructure for Sustainable Industry 5.0 in Asia (pp. 49-74). Singapore: Springer Nature Singapore.

Adisa, O., Ajadi, T. H., & Keshtiban, A. (2024). Navigating Human-Technology Nexus for Environmental and Organizational Sustainability in Industry 5.0. In Sustainable Development in Industry and Society 5.0: Governance, Management, and Financial Implications (pp. 222-246). IGI Global.

Cillo, V., Gregori, G. L., Daniele, L. M., Caputo, F., & Bitbol-Saba, N. (2022). Rethinking companies' culture through knowledge management lens during Industry 5.0 transition. Journal of Knowledge Management, 26(10), 2485-2498.

Sołtysik, M., Tyrańska, M., Piwowar-Sulej, K., & Agustina, T. S. (Eds.). (2024). Sustainable Human Resource Management: Strategy, Organizational Innovation and Leadership in Industry 5.0. Taylor & Francis.

Mohiuddin, D. (2025). HR Tech Adoption in Digital Banking: Implications for Workforce Development and Financial Sector Growth in Emerging Economies. Journal of Business Insight and Innovation, 4(2), 77–90. Retrieved from https://insightfuljournals.com/index.php/JBII/article/view/63

Madhavan, M., Sharafuddin, M. A., & Wangtueai, S. (2024). Impact of Industry 5.0 readiness on sustainable business growth of marine food processing SMEs in Thailand. Administrative Sciences, 14(6), 110.

Westover, J. H. (2025). Strategic Human Resource Management in the Dual Transformation Era: Integrating Post-Pandemic Work Redesign with Industry 4.0/5.0 Technologies.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Waheed, A., Alharthi, M., Khan, S. Z., & Usman, M. (2022). Role of industry 5.0 in leveraging the business performance: investigating impact of shared-economy on firms' performance with intervening role of i5. 0 technologies. Sage Open, 12(2), 21582440221094608.

Sneha, V., & Kavitha, R. (2024). Exploring the economy of creativity and culture in the light of Industry 5.0: a systematic literature review of the setup of creative industries. Journal of Strategy and Management.

Bieńkowska, A., Tworek, K., Voropai, O., & Zimmer, J. (2025). Human-centric approach to creating sustainable innovation in the context of Industry 5.0. Entrepreneurial Business and Economics Review (EBER), 13(3), 115-134.

Huda, M., & Almunawar, M. N. (2025). Sustaining Organisations Work Performance in Industry 5.0: New Perspectives From Recent Literature. In Organisational Learning and Sustainability (pp. 210-229). Routledge.

John, J., Smiju, I. S., & Ahmed, U. (2026). CSR and Stakeholder Engagement in the Age of Industry 5.0: A Framework for Developing Nations. Corporate Social Responsibility and Environmental Management.

Mohiuddin, D. (2026). Adaptive Marketing Systems and Consumer Feedback Loops: Implications for Market Development in Emerging Economies. Journal of Business Insight and Innovation, 5(1), 37–48. Retrieved from https://insightfuljournals.com/index.php/JBII/article/view/64

Adel, A., & HS Alani, N. (2024). Human-centric collaboration and Industry 5.0 framework in smart cities and communities: Fostering sustainable development goals 3, 4, 9, and 11 in Society 5.0. Smart Cities, 7(4), 1723-1775.

Khan, A. K. (2025). Embracing industry 5.0 in the insurance sector: A human-centric approach to digital transformation and risk management. Arabian Journal of Business and Management Review (Kuwait Chapter), 14(3), 109-115.

Fung, C. Y., Tiwari, S., & Voon, K. J. S. (2025). A Preliminary Review of Artificial Intelligence Adoption in Human Resource Management: Evidence from Asia.

Botti, A., & Baldi, G. (2025). Business model innovation and Industry 5.0: A possible integration in GLAM institutions. European Journal of Innovation Management, 28(1), 27-49.

Basulo-Ribeiro, J., & Teixeira, L. (2024). The future of healthcare with industry 5.0: preliminary interview-based qualitative analysis. Future Internet, 16(3), 68.

Jourabchi Amirkhizi, P., Pedrammehr, S., Pakzad, S., & Shahhoseini, A. (2025). Generative Artificial Intelligence in Adaptive Social Manufacturing: A Pathway to Achieving Industry 5.0 Sustainability Goals. Processes, 13(4), 1174.

Khosravy, M., Gupta, N., Pasquali, A., Dey, N., Crespo, R. G., & Witkowski, O. (2023). Human-collaborative artificial intelligence along with social values in industry 5.0: A survey of the state-of-the-art. IEEE Transactions on Cognitive and Developmental Systems, 16(1), 165-176.

Mourtzis, D. (2023). The Metaverse in industry 5.0: A human-centric approach towards personalized value creation. Encyclopedia, 3(3), 1105-1120.

Volume 5 Issue No 1 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Ciasullo, M. V., & Ferrara, M. (2025). The Nexus Between Sustainability and Industry 5.0: A Hybrid Systematic Review and Future Research Agenda. Global Business and Organizational Excellence, e70000.

Supriya, Y., Bhulakshmi, D., Bhattacharya, S., Gadekallu, T. R., Vyas, P., Kaluri, R., ... & Mahmud, M. (2024). Industry 5.0 in smart education: Concepts, applications, challenges, opportunities, and future directions. IEEE Access, 12, 81938-81967.

Chourasia, S., Pandey, S. M., Murtaza, Q., Agrawal, S., & Gupta, K. (2023). Redefining Industry 5.0 in ophthalmology and digital metrology: A global perspective. MAPAN, 38(2), 527.