

# **Placing Humans at the Core: AI-Driven Productivity Improvements in Asian Organisations**

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## **Abstract**

This study explores the role of human-centric Artificial Intelligence (AI) in enhancing organisational productivity across diverse Asian contexts. As AI technologies become integral to the digital transformation of workplaces, there is a growing emphasis on deploying AI systems that augment human capabilities while ensuring ethical, inclusive, and socially responsible results. This study investigates how organisations in Asia—specifically in Singapore, South Korea, India, Japan, and China—integrate human-centric AI principles to drive productivity improvements. Employing a qualitative comparative case study methodology, data from organisational documents, expert interviews, and productivity reports were thematically analysed from various secondary sources to uncover patterns and challenges in human-AI collaboration across diverse sociocultural contexts.

The findings reveal that organisations adopting transparent and inclusive AI governance, such as Singapore's multi-stakeholder frameworks and South Korea's public-private partnerships, demonstrate significant efficiency gains and workforce satisfaction. Conversely, centralised governance models, such as China's, emphasise social stability but reveal potential tensions surrounding employee participation in AI oversight. India's grassroots-driven AI applications illustrate how contextualised human-centric AI can optimise productivity in underserved sectors. Japan's integration of AI governance with social welfare underscores the ethical concerns unique to an aging society.

This study highlights key productivity benefits, including task automation, decision-making acceleration, and innovation facilitation. However, challenges persist, notably workforce digital skill gaps, infrastructural limitations, and ethical governance complexities. This study advocates for culturally sensitive, adaptive governance, continuous digital literacy investment, and participatory change management to ensure that AI technologies augment rather than replace human potential. These findings offer valuable insights for policymakers and organisational leaders seeking to harness human-centric AI to sustainably boost productivity while safeguarding ethical standards in Asia's pluralistic workplaces.

**Keywords:** Human-centric AI, organisational productivity, AI governance, AI ethics, digital transformation.

## **Introduction**

Artificial Intelligence (AI) has rapidly moved from experimental laboratories into mainstream organisational strategies, becoming a cornerstone of global digital transformation. Organisations increasingly depend on AI systems for tasks ranging from automation and decision-making to predictive analytics and innovation. However, as AI becomes more deeply embedded in workplaces, questions arise about how these technologies can be developed and deployed in ways that support human dignity, fairness, inclusivity, and long-term social welfare. This perspective has led to the rise of human-centric AI, an approach that emphasises ensuring that AI serves humanity rather than replacing or undermining it (Floridi and Cowsls, 2019).

The principles underlying human-centric AI echo ancient Indian wisdom embedded in the Vedic tradition, which emphasises harmony, inclusivity, and ethical responsibility in human action. The Rig Veda (10.191.2) declares: “Sangachhadhwam samvadadhvam, sam vo manamsi janatam”— “Move together, speak together, let your minds be in harmony.” This verse stresses the value of collective consciousness and unity of purpose, resonating strongly with participatory and inclusive models of AI governance that emphasise collaboration among stakeholders, workers, and communities (Sharma, 2017).

Similarly, the Bhagavad Gita (3.19) underscores the importance of selfless action: “Tasmad asaktaḥ satatam karyam karma samacara”— “Therefore, without attachment, always perform the work that has to be done.” In the context of AI, this principle can be interpreted as a call to harness technology not for narrow profit motives but for the collective good of society (Ranganathan 2019). When organisations adopt AI systems guided by this ethic, productivity gains are complemented by a broader sense of social responsibility. Just as the Vedic tradition views all beings as interconnected, human-centric AI emphasises the design of technologies that reduce bias, empower marginalised groups, and ensure transparency in organisational contexts (Mookerji, 2002).

In the Asian context, the adoption of human-centric AI is particularly important. Asia is home to some of the most advanced digital economies and regions with vast infrastructural and skill gaps. Countries such as Singapore and South Korea represent highly digitised innovation hubs, whereas India demonstrates grassroots-driven digital transformations aimed at

empowering underserved communities. Japan faces the unique challenge of an ageing population, requiring AI integration into healthcare and welfare systems, whereas China combines rapid technological development with centralised governance (Lee, 2018; Zhang and Dafoe, 2019). This sociocultural and political diversity makes Asia an ideal ground for studying how organisations integrate human-centric AI principles to enhance productivity.

### **Significance of the Study**

This study is significant for two reasons. First, it provides practical insights for policymakers and organisational leaders on how to embed inclusive and participatory governance frameworks into AI strategies. Second, it contributes socially by advocating for AI systems that augment rather than displace human potential, aligning with sustainable development goals and long-term human welfare.

The Vedic perspective reminds us that technological progress cannot be separated from ethical responsibility. Just as the Vedic texts emphasise harmony, inclusivity, and collective well-being, organisations in Asia must ensure that AI adoption is not purely efficiency-driven but also value driven. Therefore, this study aims to explore how diverse Asian contexts integrate human-centric AI into organisational practices, highlighting the opportunities and challenges of fostering productivity while safeguarding ethical and cultural integrity.

### **Research Objectives**

This study explores how human-centric Artificial Intelligence (AI) can be leveraged to enhance organisational productivity across diverse Asian contexts. Specifically, this study seeks to analyse how AI systems prioritise ethical, inclusive, and socially responsible outcomes that are integrated into the organisational practices of five countries: Singapore, South Korea, India, Japan, and China. These nations represent a broad spectrum of governance structures, cultural values, and technological maturity, making them suitable for comparative insights.

This study was guided by the following objectives:

1. To examine how organisations in selected Asian countries adopt human-centric AI principles, such as transparency, inclusivity, and ethical governance.
2. To evaluate the impact of human-centric AI adoption on organisational productivity, focusing on key outcomes such as efficiency, innovation, decision-making, and workforce empowerment.

3. To identify the challenges and tensions organisations face in implementing human-centric AI, including ethical dilemmas, workforce skill gaps, and infrastructural limitations.

These objectives aim to contribute to academic discourse and offer actionable frameworks for AI adoption in organisational and policy settings.

## **Literature Review**

### **Human-Centric Artificial Intelligence**

The concept of human-centric AI has emerged as a counterbalance to the narratives of automation and technological dominance. Human-centric AI emphasises the design of systems that are transparent, accountable, inclusive, and aligned with human welfare (Floridi & Cowls, 2019). According to Jobin et al. (2019), more than 80 global AI guidelines emphasise principles such as fairness, accountability, privacy, and inclusivity. While these frameworks are largely normative, they demonstrate a consensus that AI development must be socially responsible and culturally adaptable to the local context.

Human-centric AI is based on the philosophy that AI should augment human intelligence rather than replace it (Shneiderman, 2020). By prioritising human values, it addresses risks such as algorithmic bias, lack of transparency, and workforce alienation. For organisations, this approach not only ensures ethical compliance but also enhances employee trust and public legitimacy (Cath, 2018).

### **AI and Organisational Productivity**

A growing body of literature highlights the productivity benefits of AI adoption in various fields. Brynjolfsson and McAfee (2017) argue that AI drives a “second machine age,” where algorithms enable unprecedented gains in efficiency and innovation. Organisations that integrate AI into their operations can automate routine tasks, accelerate decision-making, and generate insights from large datasets (Bughin et al., 2018). Davenport and Ronanki (2018) found that early adopters of AI in business gained advantages in process optimisation, customer engagement, and risk management.

However, these benefits are not uniformly distributed. Workforce skill gaps and infrastructural disparities often hinder AI’s productivity potential of AI, particularly in developing economies (Manyika et al., 2017). Furthermore, an overemphasis on efficiency risks ignoring human-centric considerations, such as employee well-being, participation in decision-making, and social trust (Zuboff, 2019).

### **Governance Models in Asia**

The adoption of AI in Asia reflects the region's diverse governance traditions.

Singapore has developed comprehensive frameworks, such as the Model AI Governance Framework (2019), which emphasises transparency, stakeholder engagement, and accountability. These frameworks encourage organisations to integrate ethical principles into AI systems while maintaining their competitiveness (Kshetri, 2021).

South Korea promotes innovation ecosystems via public-private partnerships. Its AI strategy integrates workforce training and participatory governance, ensuring employee inclusion in technological transition (Lee & Trimi, 2021).

China's centralised model prioritises efficiency, social stability, and large-scale implementations. Although this approach accelerates AI integration, it raises concerns about limited workforce participation and surveillance practices (Ding, 2018).

India represents a unique case of grassroots-driven innovation, where AI applications address challenges in agriculture, health, and education. India's National Strategy for AI (2018) highlights "AI for All", promoting inclusivity and contextual relevance (NITI Aayog 2018).

Japan has integrated AI adoption with welfare systems to address demographic challenges, especially ageing. The Society 5.0 initiative envisions AI as part of a human-centric society, where technology balances economic productivity with social well-being (Fukuyama, 2018).

These varying governance models demonstrate that AI adoption cannot be separated from cultural, political, and social contexts.

### **Ethical Challenges and Workforce Implications:**

The adoption of human-centric AI faces several challenges. Algorithmic bias and lack of transparency undermine organisational legitimacy and worker trust (O'Neil, 2016). Workforce digital skill gaps, especially in developing regions, limit employees' capacity to collaborate effectively with AI systems (Chin et al., 2021). Furthermore, ethical dilemmas such as worker surveillance, decision-making opacity, and displacement anxieties create tensions in organisational contexts (Zhang & Dafoe, 2019).

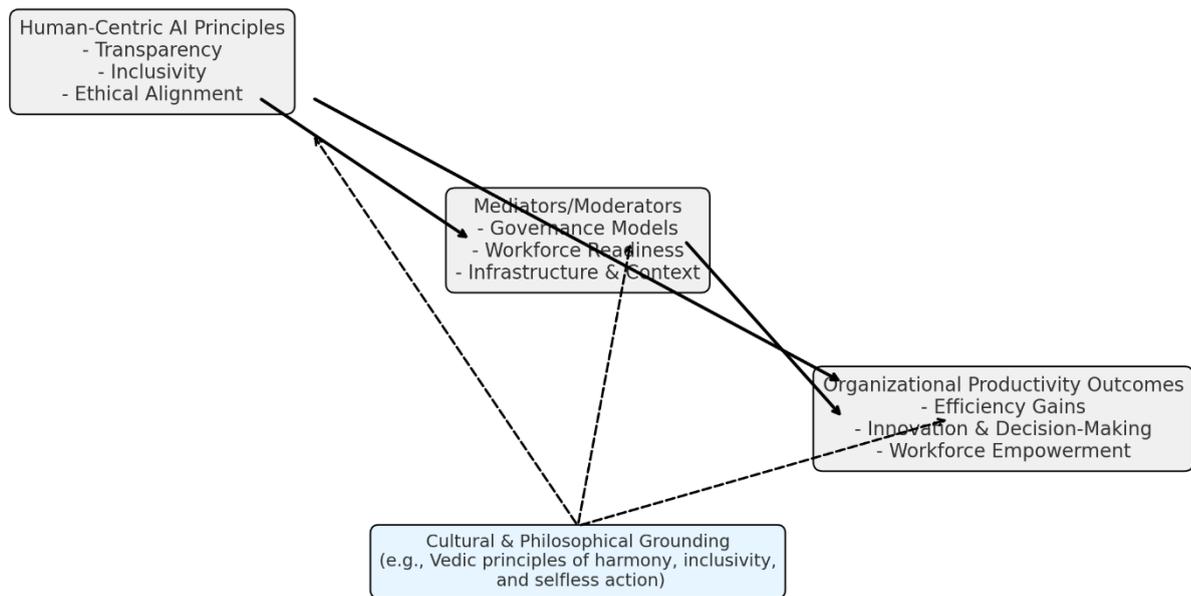
However, human-centric AI frameworks suggest that these challenges can be addressed through participatory governance and continuous digital literacy investment.

### **Research Gaps**

Despite the growing body of literature, three gaps remain. First, much of the existing research on human-centric AI is concentrated in Western contexts, with limited focus on Asia's diverse cultural and governance environment. Second, empirical studies on how organisations integrate human-centric principles into productivity practices are scarce. Third, the

exploration of how indigenous philosophies, such as Vedic thought, can inform AI ethics and governance is limited.

This study addresses these gaps by conducting comparative case analyses across Singapore, South Korea, India, Japan, and China, integrating philosophical perspectives with empirical findings to develop a culturally grounded understanding of human-centric AI.



*Flow Diagram 1: Framework of Human-Centric AI for Organisational Productivity*

## **Methodology**

This study adopts a qualitative comparative case study design to examine how organisations in Asia integrate Human-Centric Artificial Intelligence (HCAI) principles and their influence on productivity. A secondary data-driven approach was selected to capture a broad and contextualised understanding of organisational practices, governance structures and socio-cultural dynamics across diverse national contexts (Yin, 2018).

## **Data Collection**

This research relies exclusively on secondary data sources, including government policy documents, organisational white papers, annual reports, industry surveys, international guidelines, and peer-reviewed academic literature. Sources such as the World Economic

Forum, OECD reports, PwC publications and national AI strategies were systematically reviewed. This approach ensures access to credible, large-scale datasets and diverse perspectives without the logistical constraints of primary fieldwork research.

### **Data Analysis:**

The collected documents were subjected to thematic content analysis, involving coding and categorisation to identify patterns related to transparency, inclusivity, ethical governance, productivity outcomes, and implementation challenges. A comparative lens was applied across five focus countries—Singapore, South Korea, India, Japan, and China—to capture both the commonalities and contextual differences in HCAI adoption.

### **Ethical Considerations:**

Although this study used publicly available secondary sources, ethical rigor was maintained by ensuring accurate citation, avoiding misrepresentation, and critically evaluating data for reliability and potential biases.

By synthesising diverse secondary sources, this methodology provides a robust and holistic foundation for understanding how HCAI shapes organizational productivity and governance across various Asian contexts.

## **Analysis and Discussion of the Research Objectives**

### **Objective 1: Examining the Adoption of Human-Centric AI Principles in Selected Asian Countries**

Artificial Intelligence (AI) adoption in Asia is progressing rapidly; however, the success of such adoption increasingly depends on embedding human-centric AI (HCAI) principles, notably transparency, inclusivity, and ethical governance. These principles ensure that technological innovation is aligned with human values, societal trust, and sustainability (Floridi & Cowls, 2019). This objective aims to explore how organisations in Singapore, South Korea, India, Japan, and China operationalise these principles.

#### ***Transparency in Human-Centric AI Adoption Across Asian Countries:***

Transparency is a central pillar of human-centric artificial intelligence (HCAI), emphasising the importance of explainability and the ability of organisations to communicate clearly how AI-driven decisions are made. Jobin, Ienca, and Vayena (2019) highlight that transparency ensures stakeholders can critically evaluate the fairness, accountability, and reliability of algorithmic processes, thereby fostering trust between organizations and society. Among Asian countries, transparency has emerged as both a guiding principle and a challenge, given the complexity of AI technologies and varying regulatory contexts across the region.

Singapore is widely recognised as a regional leader in promoting transparent AI practices. The government introduced its Model AI Governance Framework, which mandates explainability in sectors such as finance and healthcare, two domains where AI has direct and profound impacts on citizens' lives. By encouraging organisations to disclose their decision-making logic and provide accessible justifications, Singapore's framework builds confidence in AI adoption while ensuring accountability (World Economic Forum, 2020). This proactive stance positions Singapore as a benchmark for responsible AI deployment in Asia and beyond.

Similarly, South Korea has prioritised transparency in its Digital New Deal program, a national initiative designed to advance AI integration across industries and in public services. In particular, smart city projects have been a focal point, where automated urban management systems must maintain accountability to the citizens. Transparent AI governance ensures that city residents understand how decisions regarding traffic flows, energy use, and public safety are made, reinforcing the legitimacy of AI-enabled governance structures (Lee & Lim, 2021). In India, transparency in AI adoption is gradually gaining traction, particularly in the fintech and government service delivery sectors. With the rapid growth of digital payment systems and credit scoring platforms, ensuring that algorithms remain interpretable is essential to prevent exclusionary practices. However, many firms continue to face significant hurdles owing to the so-called "black box" nature of advanced AI algorithms. This opacity undermines trust and creates challenges for regulatory oversight as stakeholders struggle to understand and audit decision-making processes (Reddy, Sharma, & Gupta, 2022).

Japan's approach to transparency is deeply embedded in its Society 5.0 vision, which envisions a fusion of advanced technologies with social well-being. Industrial automation, robotics, and manufacturing sectors are increasingly adopting AI tools designed to remain interpretable for both workers and citizens. By maintaining decision-making transparency, Japan underscores its commitment to ensuring that technology serves as a partner to humans rather than as a replacement, reflecting both cultural values and long-term governance priorities (Sano, 2020).

In contrast, China represents a more complex case. The country has rapidly advanced in AI adoption across multiple domains, from e-commerce to urban planning, positioning itself as a global leader in AI innovation. However, it faces international criticism for the opacity of its surveillance-driven systems, which often lack accountability and are not easily explained. While these applications have boosted efficiency, they raise ethical concerns regarding privacy and governance. Nonetheless, some Chinese firms are now experimenting with XAI

models, particularly in healthcare and education, suggesting a gradual shift toward more transparent practices in specific sectors (Ding, 2021).

In summary, while transparency is increasingly acknowledged as an essential feature of responsible AI adoption, its implementation varies significantly across Asia. Singapore and Japan have institutionalised transparency within their national strategies; South Korea has integrated it into urban development projects; India struggles with algorithmic opacity despite promising initiatives; and China faces global scrutiny while beginning to explore explainable solutions. This diversity illustrates that transparency in HCAI is not merely a technical issue but also a societal and governance challenge that reflects each country's political, cultural and institutional priorities.

### ***Inclusivity in Human-Centric AI Adoption Across Asian Countries***

Inclusivity is a core principle of human-centric artificial intelligence (HCAI), which ensures that AI systems reflect the diversity of populations and avoid reinforcing historical or structural biases. By embedding inclusivity into AI design and governance, organisations can create technologies that are equitable, accessible, and representative of diverse cultural, linguistic, and demographic realities. However, the degree to which inclusivity is prioritised and implemented varies across Asian contexts, reflecting each nation's unique social challenges and policy orientation.

Singapore has been at the forefront of embedding inclusivity in AI adoption. Recognising its multicultural and multilingual society, the government and industry stakeholders have developed initiatives that emphasise diverse datasets, ensuring that AI applications capture the lived experiences of different ethnic and linguistic groups. This is particularly evident in healthcare, financial services, and public administration, where AI-driven systems are calibrated to avoid disadvantaging minority communities. Such practices reflect a deliberate national strategy to balance technological advancement and social harmony, consistent with Singapore's broader governance philosophy (Tan, 2021).

In South Korea, inclusivity has been integrated into AI education and recruitment platforms as part of broader innovation strategies. The country emphasises minimising gender bias and regional disparities in AI systems. For example, AI-powered recruitment tools have been designed to reduce the risk of discrimination against women or applicants from less industrialised regions. Similarly, inclusivity is advanced through educational reforms that ensure equitable access to AI literacy across demographics, preparing a wider cross-section of society to participate in and benefit from the AI-driven economy (Lee & Lim, 2021).

India offers a unique case where inclusivity in AI adoption is linked to the empowerment of rural and marginalised populations. One prominent example is the deployment of agricultural AI tools that provide localised insights to farmers. These systems deliver information on crop yields, pest control, and weather predictions in local languages, helping bridge the knowledge gaps between urban and rural areas. These initiatives empower smallholder farmers and enhance food security. However, challenges remain, particularly uneven access to digital infrastructure, which limits the full inclusivity of AI benefits. Rural populations often face connectivity issues, exacerbating the digital divide despite promising applications (Reddy, Sharma, & Gupta, 2022).

In Japan, inclusivity is strongly tied to demographic realities, particularly an aging population. The adoption of AI in eldercare robotics reflects a deliberate effort to design solutions that support older citizens and their caregivers. These technologies address inclusivity not only by catering to a specific demographic but also by preserving the dignity, autonomy, and quality of life of the elderly. Japan's emphasis on inclusivity within eldercare demonstrates how societal needs can shape AI priorities, aligning with its Society 5.0 vision of technology serving all segments of society (Sano, 2020).

In contrast, China presents a complex scenario. Conversely, its rapidly expanding AI ecosystem increasingly recognises the importance of inclusivity in areas such as healthcare, where diverse populations require adaptable and equitable AI systems. However, surveillance-driven practices often undermine these efforts. The use of AI tools for monitoring and control has raised ethical concerns, particularly regarding equitable representation and the potential reinforcement of systemic bias against minority populations. This tension illustrates the contradiction between state priorities and the broader principle of inclusivity in AI governance (Creemers 2022).

Therefore, inclusivity in HCAI adoption across Asia reflects a spectrum of practice. Singapore and South Korea actively embed inclusivity into policy frameworks and organizational practices, whereas India focuses on rural empowerment despite infrastructural constraints. Japan's inclusive approach is shaped by its demographic challenges, emphasising elder care as a national priority. While innovating rapidly, China faces criticism over surveillance systems that often compromise inclusivity. Collectively, these cases demonstrate that inclusivity is not only a technical feature of AI but also a reflection of societal values, governance priorities, and structural inequalities within each national context.

***Ethical Governance of Human-Centric AI Adoption Across Asian Countries:***

Ethical governance plays a pivotal role in ensuring that artificial intelligence (AI) systems are designed, deployed, and monitored in accordance with societal values and ethical standards. It encompasses policies, oversight mechanisms, and accountability structures that prevent the misuse of AI while promoting fairness, transparency, and trust. According to the OECD (2021), ethical governance in AI requires a delicate balance between fostering innovation and safeguarding human rights, a challenge that manifests differently across Asian contexts.

Singapore has emerged as a leader in embedding ethical governance into its AI ecosystem. The country has established clear corporate governance guidelines that encourage organizations to set up dedicated AI ethics boards and implement internal review processes. These initiatives reflect Singapore's holistic approach, where ethical oversight is integrated into broader corporate governance structures rather than treated as an afterthought. For instance, the Model AI Governance Framework not only guides companies in ensuring transparency and fairness but also formalises accountability by recommending the creation of internal committees responsible for monitoring compliance (World Economic Forum 2020). This framework has allowed Singapore to set regional standards for aligning AI innovation with human-centric values.

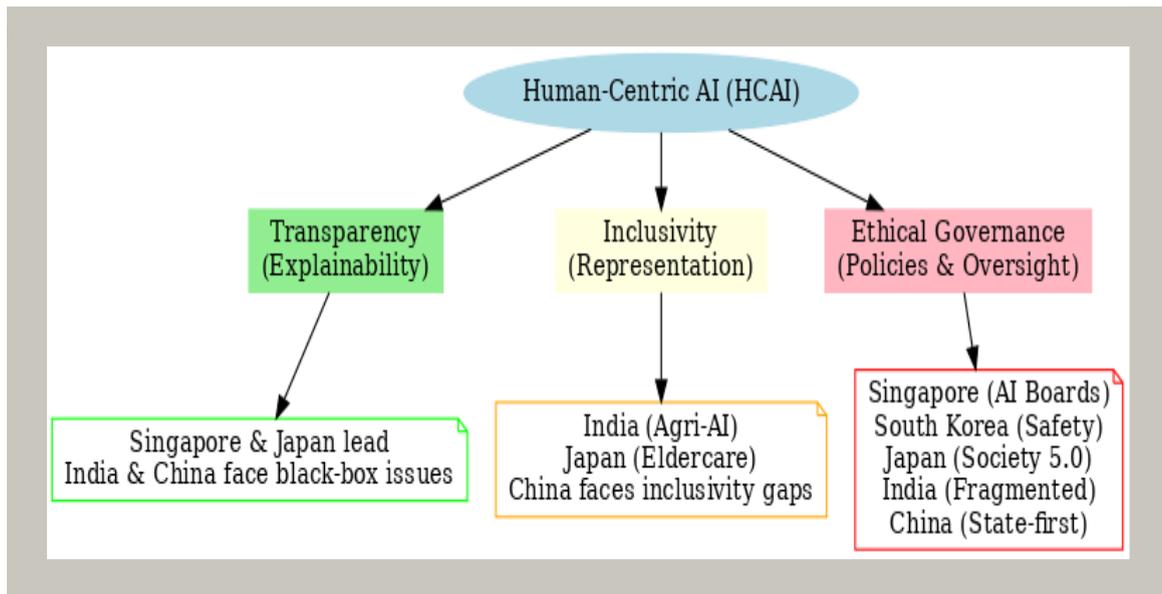
South Korea has similarly advanced ethical governance by embedding it into its national strategies. The government's emphasis on AI safety and data governance is evident in the Digital New Deal and related policies, which aim to establish responsible practices across industries. By promoting guidelines on data protection, algorithmic safety, and sector-specific standards, Korea ensures that ethical governance is not left solely to private companies but becomes a shared responsibility across the public and private sectors (OECD, 2021). This coordinated effort reflects South Korea's recognition that governance structures must evolve alongside technology adoption to maintain public trust.

In contrast, India faces significant hurdles in institutionalising ethical governance. Despite being home to a vibrant AI start-up ecosystem, its governance structures remain fragmented, and only a limited number of organisations have adopted formal AI ethics frameworks. According to PwC (2023), while some private firms, particularly in the financial and technology sectors, have begun experimenting with internal governance models, the lack of comprehensive national legislation weakens accountability. Furthermore, the inconsistent enforcement of data protection regulations exacerbates ethical concerns, especially in sectors such as fintech, healthcare, and government service delivery. India's case highlights the challenges faced by developing economies in balancing rapid innovation with slower governance reform.

Japan adopts a distinct approach to ethical governance, embedding it deeply into corporate practices and national policy. Guided by its Society 5.0 vision, Japan positions AI as a collaborator or partner rather than as a replacement for human labour and decision-making. Ethical governance is not only regulatory but also cultural, reflecting societal values that prioritise harmony, respect for human dignity, and collective well-being. Companies are encouraged to integrate ethical considerations into every stage of AI development, ensuring that technologies serve societal needs while mitigating the risks of exploitation or exclusion (Sano, 2020). This approach highlights Japan's proactive efforts to humanise technological progress.

Meanwhile, China presents a more complex and often controversial picture. Despite articulating ambitious AI strategies and investing heavily in governance frameworks, China often prioritizes state interests and political objectives over human-centric values. Although guidelines encouraging ethical AI development exist, they are frequently overshadowed by the applications of AI in surveillance, censorship, and social control. This creates tension between innovation and ethical governance, as efforts to expand AI adoption are sometimes at odds with the principles of inclusivity, transparency, and accountability (Ding, 2021). Simultaneously, some sectors, particularly healthcare and education, are beginning to explore more human-centred governance practices, indicating gradual progress in certain domains.

These variations in ethical governance depicted in the above five Asian countries underline the fact that ethical governance is shaped not only by technological capacity but also by political structures, cultural contexts, and institutional maturity. To achieve truly human-centric AI, organisations across Asia must continue to strengthen accountability frameworks while ensuring that governance systems are transparent, inclusive, and aligned with ethical principles.



**Flow Diagram 2: Human Centric AI approach in 5 Asian Countries**

#### **4.2. Objective 2: Evaluating the Impact of Human-Centric AI Adoption on Organizational Productivity:**

Artificial Intelligence (AI) is rapidly reshaping organizational processes across Asia, but the question of how human-centric AI (HCAI) adoption influences productivity remains crucial. Human-centric AI emphasizes ethical, transparent, and inclusive deployment of AI, ensuring that technological efficiency is balanced with fairness and workforce well-being (Floridi & Cows, 2019). This objective seeks to evaluate the impacts of HCAI adoption on organizational productivity, with particular focus on four outcomes: efficiency, innovation, decision-making, and workforce empowerment. To contextualize the analysis, five Asian economies—Singapore, South Korea, India, Japan, and China—are examined.

- ***Efficiency Gains through Human-Centric AI:***

Efficiency improvements are among the most direct impacts of AI adoption. By automating repetitive tasks and streamlining workflows, AI enables organizations to reduce costs and improve output quality. In Singapore, the government’s Smart Nation initiative has encouraged businesses to use explainable AI systems in healthcare and finance to optimize services without compromising accountability (World Economic Forum, 2020). For example, AI-assisted hospital scheduling systems have reduced patient wait times while maintaining transparency in allocation processes.

In South Korea, manufacturing companies deploy AI-powered robotics with strict governance standards, enhancing productivity while protecting worker safety (OECD, 2021). Similarly, India has leveraged AI in logistics and agriculture, where inclusive AI platforms improve smallholder farmer access to credit and market forecasts, balancing efficiency with equity (Reddy et al., 2022).

Japan's Society 5.0 vision integrates AI with human values, where efficiency gains in supply chain management are aligned with societal goals such as sustainability (Sano, 2020). Meanwhile, China's extensive AI deployment in e-commerce has boosted operational efficiency, although concerns about opaque algorithms highlight the tension between efficiency and transparency (Ding, 2021).

- ***Innovation through Human-Centric AI:***

Innovation capacity is significantly enhanced when AI is adopted responsibly. South Korea invests heavily in AI R&D, especially in semiconductors and smart cities, where human-centric design fosters innovation ecosystems while addressing inclusivity challenges (Lee & Lim, 2021). Singapore promotes "responsible AI sandboxes" that encourage firms to experiment with AI while adhering to ethical governance frameworks, striking a balance between innovation and trust (World Economic Forum, 2020).

India, with its vibrant start-up ecosystem, demonstrates how inclusive AI innovations can target local problems, such as language translation tools and low-cost healthcare diagnostics. These not only drive innovation but also empower marginalized communities (Reddy et al., 2022). In Japan, innovation is oriented toward robotics for elder care, aligning with demographic realities and ethical obligations of caregiving (Sano, 2020). China's innovation is largely state-driven, with AI powering advances in fintech, urban planning, and biotechnology. However, debates around governance and surveillance raise questions about the long-term sustainability of such innovation under human-centric ideals (Creemers, 2022).

- ***Improved Decision-Making:***

Human-centric AI enhances decision-making by providing explainable insights rather than opaque predictions. Singapore requires AI systems used in finance to provide justifiable reasoning, which improves trust and accountability in decision-making (World Economic Forum, 2020). South Korea has adopted AI-based decision tools in smart city governance, emphasizing transparency and inclusivity to foster citizen trust (Lee & Lim, 2021).

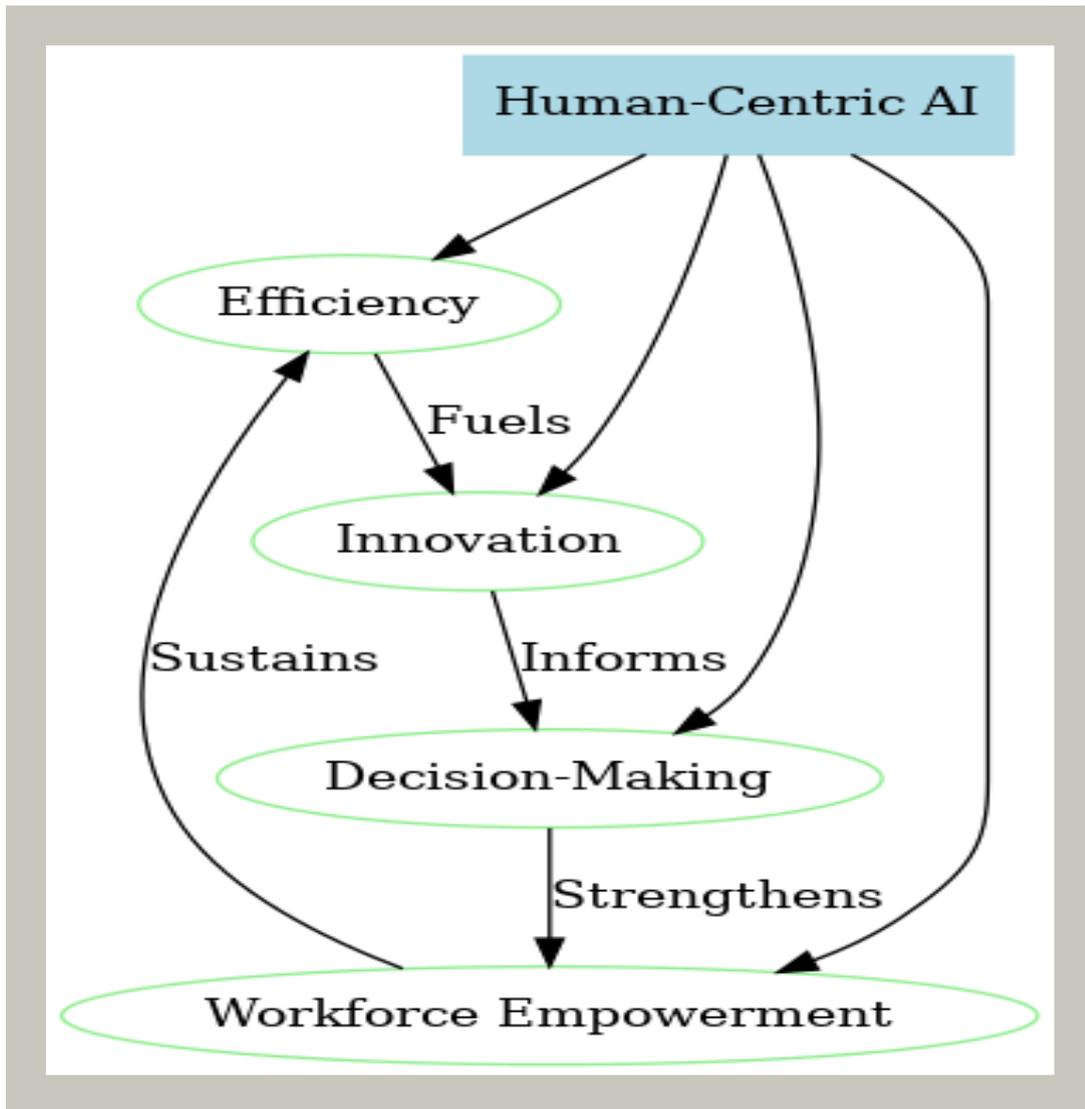
In India, AI-driven credit scoring models increasingly incorporate fairness checks to prevent exclusion of marginalized groups, thereby improving the inclusivity of financial decision-making (Reddy et al., 2022). Japan's firms apply AI in corporate governance and

quality assurance, where decisions are made collaboratively between humans and AI, reinforcing the principle of “AI as a partner, not a replacement” (Sano, 2020). China, despite deploying AI extensively in decision-making processes from e-commerce to policing, often faces criticism for lack of transparency, which undermines stakeholder trust even when efficiency gains are evident (Ding, 2021).

- ***Workforce Empowerment:***

A central concern of HCAI is its effect on human workers. In Singapore, workforce upskilling programs, such as AI Singapore’s training initiatives, ensure that employees are not displaced but rather retrained for higher-value roles (Tan, 2021). South Korea emphasizes worker safety in AI-driven industries, integrating exoskeleton robotics and monitoring systems that empower employees to perform more effectively.

India faces significant workforce skill gaps, yet inclusive AI training programs have been launched to empower rural populations with digital literacy and AI-enabled employment opportunities (PwC, 2023). Japan focuses on empowering its aging workforce through AI-driven assistive technologies, which enhance productivity while preserving dignity (Sano, 2020). Conversely, China’s AI labor practices are mixed: while firms benefit from empowered digital workforces, surveillance-based management practices may undermine employee autonomy and empowerment (Creemers, 2022).



**Flow Diagram 3: Impact of HCAI on Organizational Productivity**

**4.3. Objective 3: Challenges and Tensions in Implementing HCAI:**

While Human-Centric Artificial Intelligence (HCAI) offers significant benefits for organizations, its implementation is not without challenges. Across Asia, the integration of principles such as transparency, inclusivity, and ethical governance has been hindered by three core tensions: **ethical dilemmas, workforce skill gaps, and infrastructural limitations**. These challenges shape the extent to which organizations can align technological progress with human values.

- ***Ethical Dilemmas:***

Ethical dilemmas represent one of the most pressing challenges in implementing HCAI. For instance, Singapore has made strides in establishing ethics boards for AI governance, yet recruitment algorithms often risk perpetuating biases (World Economic Forum, 2020). South Korea’s smart city initiatives face criticism for insufficient safeguards against privacy

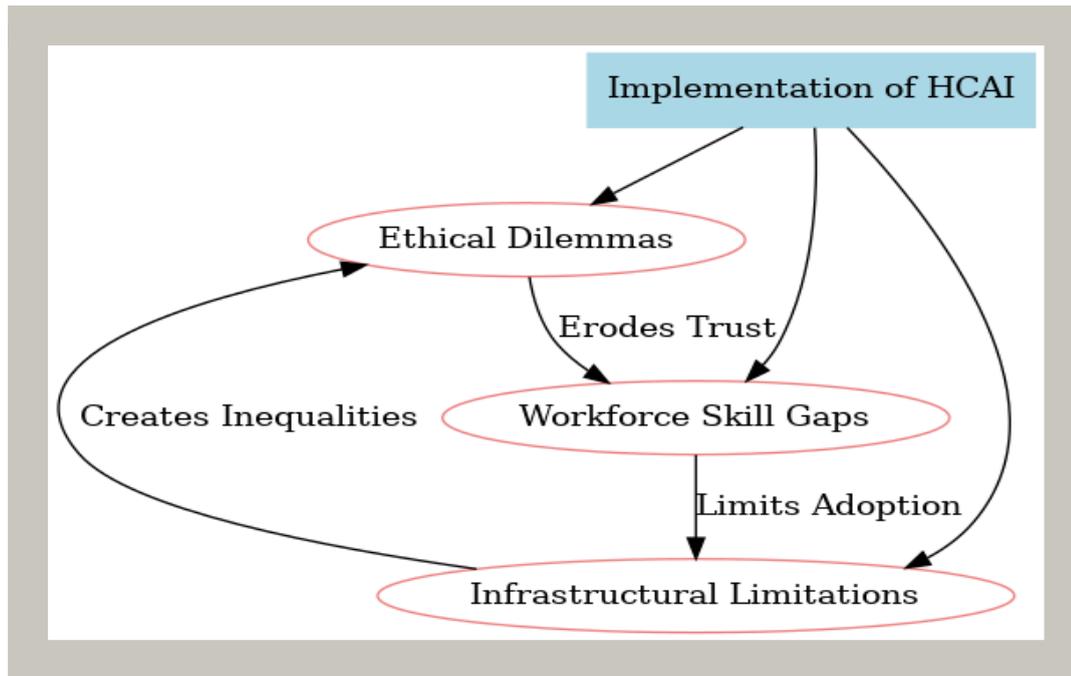
intrusions, while India continues to struggle with ensuring marginalized populations are not excluded from AI-enabled services (Reddy et al., 2022). Japan, despite cultural emphasis on human-AI partnership, faces sensitive consent issues in eldercare robotics (Sano, 2020). China, on the other hand, receives global criticism for prioritizing surveillance systems over human rights, creating tensions between rapid innovation and ethical responsibility (Ding, 2021). These examples highlight how ethical dilemmas, if unaddressed, erode public trust in AI systems.

- ***Workforce Skill Gaps:***

The effectiveness of HCAI depends heavily on a workforce that is adequately trained to design, manage, and monitor AI technologies. While Singapore and South Korea are investing heavily in reskilling programs, small and medium-sized enterprises (SMEs) often lag behind (Lee & Lim, 2021). India faces the most acute skill gaps, particularly in rural areas where workers lack the technical literacy needed to adopt AI tools effectively (PwC, 2023). Japan's shrinking labor force further limits the pool of AI-skilled professionals, while China, despite producing large numbers of AI graduates, is criticized for focusing more on technical competencies rather than embedding human-centric design principles (Creemers, 2022). These gaps hinder inclusive growth and perpetuate inequalities in the AI workforce.

- ***Infrastructural Limitations:***

Robust infrastructure is crucial for scaling HCAI across industries, but disparities persist across the selected Asian countries. In Singapore, smaller firms struggle with the financial and technical burdens of complying with governance standards. South Korea, though technologically advanced, faces bureaucratic silos that slow down cross-sector collaboration (OECD, 2021). India continues to be constrained by weak digital infrastructure, particularly in rural regions, limiting the scalability of HCAI solutions (Reddy et al., 2022). Japan grapples with regulatory frameworks that lag behind technological innovation, while China's highly centralized control stifles organizational flexibility and innovation in applying human-centric standards (Ding, 2021). These infrastructural barriers not only delay adoption but also create inequalities in how AI benefits are distributed across society.



*Flow Diagram 4: Challenges in Implementing HCAI*

### **Implications**

The findings of this study have several important implications for organisations, policymakers, and society. By adopting human-centric artificial intelligence (HCAI), Asian economies can ensure that technological progress complements, rather than undermines, human well-being. A comparative analysis of Singapore, South Korea, India, Japan, and China demonstrates that while national contexts shape distinct adoption pathways, shared principles such as transparency, inclusivity, and ethical governance remain central to sustainable and socially responsible productivity gains.

### **Implications for Practice**

For organisations, the study highlights that productivity outcomes are not solely derived from automation and efficiency but are significantly enhanced when AI adoption aligns with human values. Embedding explainability into AI systems fosters trust, while inclusive design reduces the risk of bias and expands the market reach by catering to diverse user groups. Workforce empowerment, particularly through reskilling and participatory decision-making, is a critical factor in mitigating fears of displacement and building long-term employee engagement. Firms that invest in ethical AI practices are likely to gain reputational legitimacy, enhancing customer trust and long-term competitiveness.

### **Implications for Policy**

At the policy level, governments across Asia must recognise that governance frameworks cannot be limited to technical standards alone and must incorporate cultural and social considerations. National AI strategies should integrate stakeholder consultations, digital literacy programs, and cross-sector collaborations to ensure that AI systems serve broader developmental goals. Policymakers can also draw from Indigenous philosophical traditions, such as the Vedic emphasis on harmony and the collective good, to develop ethical frameworks that resonate with cultural values. This approach not only enhances local acceptance but also positions Asia as a global leader in ethical AI governance.

### **Implications for Research**

For scholars, this study highlights the need for deeper empirical investigations into how human-centric AI is implemented at the organisational level. Much of the available research remains conceptual or policy-driven, with a limited focus on workforce experiences and sector-specific challenges. Future studies could adopt mixed-method approaches that combine organisational case studies, employee surveys, and longitudinal data to capture the dynamic relationship between AI adoption and productivity in the long term. Moreover, integrating non-Western philosophical traditions into the discourse on AI ethics opens new avenues for culturally grounded theories of technological governance.

### **Conclusion**

Human-centric AI (HCAI) is not merely a technological strategy; it is a moral and organisational compass for the digital age. The comparative analysis across five Asian economies in this study highlights that the real measure of AI's success is not how quickly it automates tasks but how effectively it amplifies human dignity, equity, and collective progress. Singapore and South Korea demonstrate that productivity can be enhanced when ethical governance is institutionalised. Japan illustrates that cultural resonance and demographic needs can guide AI's social acceptance of AI. India underscores the promise and challenges of grassroots inclusivity amid infrastructural constraints. China exemplifies both the opportunities and ethical dilemmas of state-driven innovations.

Together, these cases illuminate a central insight: the productivity dividend of AI is inseparable from the maturity of governance systems and the values that societies choose to uphold. The Human-Centric AI Productivity Framework (HCAI-PF) developed in this study advances theory by showing that inclusivity, transparency, and accountability are not ethical luxuries but structural prerequisites for sustainable digital transformation.

As organisations and policymakers continue to navigate the AI frontier, the path forward is clear: productivity without ethics is fragile, but productivity with human-centricity is enduring. By embedding human values at the heart of AI, Asia offers the world not only a technological blueprint but also a cultural and ethical beacon for shaping the future of work and society.

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