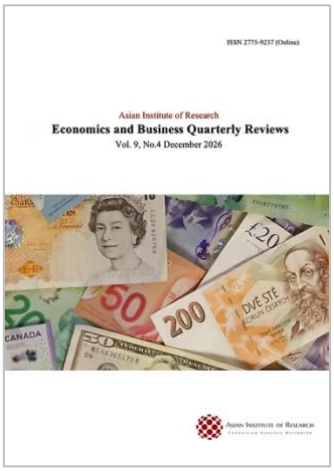


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From K-Digital Government to Digital Development Cooperation: Can Korea's AI Governance Model Be Adapted to Bangladesh?

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Abstract
The Republic of Korea has ranked among the world's most advanced digital governments for two decades and has recently enacted the AI Framework Act (2025), one of the first comprehensive national AI laws. As Korea increasingly exports its digital government model through the World Bank-Korea Digital Knowledge Centre and UNDESA technical cooperation, a pressing question is whether a model built on sustained political continuity, dense administrative capacity, and mature legal infrastructure can be adapted to a structurally different recipient. This paper examines that question for Bangladesh, combining a policy-transfer-theory-grounded transferability assessment with quantitative analysis of the complete 2003-2024 UN E-Government Development Index (EGDI) panel, the World Bank Worldwide Governance Indicators, the Oxford Insights Government AI Readiness Index, and a 2024 cross-section of 20 countries. Bangladesh's EGDI rose from 22.2% to 67.9% of Korea's between 2003 and 2024, but piecewise trend models show that convergence began only after 2014, and an exact decomposition attributes 65% of the post-2016 narrowing to telecommunication infrastructure. Over the same period Bangladesh's relative standing on governance-quality indicators did not change (53.4% of Korea's in 2003, 52.9% in 2024; difference in convergence slopes = 2.03 percentage points per year, $p < .001$), revealing a decoupling of digital from institutional convergence. Consistent with this, Korea's model is transferable in its formal architecture and cooperation packaging but only weakly transferable along the legal-institutional, coordinating-authority, human-capacity, and political-continuity dimensions that made it work in Korea. The paper argues that Korea-Bangladesh cooperation is more likely to succeed as sequenced institutional learning, prioritizing data-governance and coordinating-authority reform before AI-specific regulation, than as wholesale model transplantation, and proposes a phased, indicator-monitored cooperation framework.

Keywords: K-Digital Government, AI governance, policy transfer, digital development cooperation, Bangladesh, Smart Bangladesh, E-Government Development Index, institutional capacity

1. Introduction

Digital government has become one of the most closely watched arenas of international development cooperation over the past two decades, and the Republic of Korea (hereafter Korea) has, in that period, become its most frequently cited success case. Korea ranked first in the United Nations E-Government Development Index (EGDI) in 2010, 2012, and 2014, and first in the OECD Digital Government Index in 2019, a record of sustained leadership

that has made "K-Digital Government" a recognizable brand in international governance-reform circles (OECD, 2025). More recently, Korea has extended this leadership into artificial intelligence (AI) governance specifically: in December 2024, the National Assembly consolidated nineteen previously separate legislative proposals into the Framework Act on the Development of Artificial Intelligence and Establishment of Trust (the AI Framework Act), making Korea only the second jurisdiction in the world, after the European Union, to enact a comprehensive, binding national AI law (Framework Act, enacted January 2025, effective January 2026). Korea has simultaneously moved to package and export its digital government experience directly, co-chairing ASEAN and APEC digital-cooperation forums, hosting technology-transfer partnerships with UNDESA since 2016, and announcing in 2024 a joint Digital Knowledge Centre with the World Bank explicitly designed to transfer Korean digital government know-how to developing-country partners (OECD, 2025).

Bangladesh is one of the country's most visibly engaged in the kind of digital-transformation agenda that such cooperation targets. Having pursued a "Digital Bangladesh" vision since 2009 through the Aspire to Innovate (a2i) program, the government announced in December 2022 an even more ambitious successor, "Smart Bangladesh Vision 2041," organized around four pillars of smart citizens, smart government, smart economy, and smart society, and it has followed this with successive drafts of a National AI Policy, most recently for 2026-2030, explicitly intended to align the country's technological trajectory with international governance standards (Kaiser, 2024; Wasif, 2026). Yet independent assessments consistently find that Bangladesh's digital-government fundamentals remain considerably weaker than the ambition of its stated vision: the country ranks 100th of 193 countries on the 2024 UN E-Government Development Index and ranked 82nd on the 2023 Oxford Insights Government AI Readiness Index (75th in the 2025 edition), with the same assessments citing acute infrastructural, human-capital, and institutional-continuity constraints (Oxford Insights, 2023; Sultana et al., 2026; United Nations Department of Economic and Social Affairs, 2024). This juxtaposition, a globally leading digital-government exporter on one side and an aspiring but structurally constrained recipient on the other, motivates the central question of this paper: can Korea's AI governance model be meaningfully adapted to a context such as Bangladesh's, and if so, under what conditions and sequencing?

This question matters for three distinct audiences. For development-cooperation practitioners, it addresses a live and consequential design choice: whether Korea-Bangladesh digital cooperation, and South Korean digital-development assistance more broadly, should be structured around comprehensive model transplantation or around narrower, sequenced institutional learning. For public administration and policy-transfer scholarship, the case extends a literature that has, to date, focused overwhelmingly on transfer among structurally similar, high-capacity states (Dolowitz & Marsh, 2000) or on transfer of specific programmatic instruments rather than whole governance architectures (Song & Hwang, 2019), leaving underexamined the harder case of governance-model transfer across a substantial capacity gradient. For Bangladeshi policy, the analysis offers an evidence-based corrective to a pattern, visible in the country's own digital-transformation stakeholder consultations, in which international best-practice models are frequently invoked as aspirational benchmarks without a corresponding structured assessment of the domestic institutional conditions such models actually presuppose (Kaiser, 2024).

The paper proceeds as follows. Section 2 specifies the research questions and objectives. Section 3 reviews the theoretical and empirical literature on digital government, AI governance, and policy transfer, and situates Korea's and Bangladesh's respective trajectories within it. Section 4 describes the mixed-method secondary-data design and the analytical framework used to structure the comparison. Section 5 presents the qualitative comparative findings, culminating in a dimension-by-dimension transferability assessment. Section 6 subjects the secondary quantitative record to formal statistical analysis, testing when and why Bangladesh's digital-government indicators converged toward Korea's, whether that convergence extended to governance-quality indicators, and whether the indicator evidence supports the qualitative transferability ratings. Section 7 discusses the implications for how digital development cooperation between Korea and Bangladesh, and between advanced and developing digital governments more generally, should be conceived. Section 8 sets out policy recommendations, and Section 9 concludes with the study's contributions, limitations, and directions for future research.

2. Research Questions and Objectives

This study is organized around one overarching research question and four subsidiary questions that structure the comparative and quantitative analysis presented in Sections 5 and 6.

Overarching research question: To what extent, and under what institutional conditions, can Korea's AI governance model be adapted to Bangladesh's digital government context?

RQ1: What are the core institutional components of Korea's AI governance model, and which of these components are presented, in Korea's own international-cooperation framing, as transferable to developing-country partners?

RQ2: What is the current state of Bangladesh's digital government and AI-readiness infrastructure, and which specific institutional gaps does the secondary-data record identify as most consequential for absorbing an externally sourced AI governance model?

RQ3: Has Bangladesh's measurable convergence toward Korea on digital-government indicators been accompanied by convergence on the governance-quality indicators that proxy the model's institutional prerequisites, and which components have driven, or held back, that convergence?

RQ4: Applying policy-transfer theory, which dimensions of Korea's model are realistically transferable to Bangladesh in the short-to-medium term, which are not, and what sequencing of digital development cooperation follows from this assessment?

Correspondingly, the study has four objectives: first, to map Korea's AI governance model onto its constituent legal, institutional, infrastructural, and diffusion components (Section 5.1); second, to assess Bangladesh's digital government and AI-governance readiness against the same component structure using the best available secondary data (Section 5.2); third, to estimate the timing, composition, and institutional depth of Bangladesh's convergence toward Korea using the UN E-Government Development Index, the Worldwide Governance Indicators, and the Government AI Readiness Index (Sections 6.1 to 6.6); and fourth, to synthesize both strands into a structured transferability assessment, checked against indicator evidence (Sections 5.3 and 6.7), capable of informing the design of Korea-Bangladesh digital development cooperation specifically, and of contributing more generally to policy-transfer scholarship on governance-model diffusion across substantial capacity gradients.

3. Literature Review

3.1. Digital Government, AI Governance, and Policy Transfer: Theoretical Foundations

Digital government scholarship distinguishes between e-government, understood as the digitization of existing administrative processes and service channels, and the more recent concept of digital government, which describes a deeper reorganization of government around data, platforms, and increasingly automated or AI-assisted decision-making (Cheong & Cho, 2024). Myeong (2025) frames this second stage explicitly as a shift from e-government toward "digital platform government," in which artificial intelligence, once confined to discrete pilot applications, becomes embedded in the routine operating logic of public administration itself, from resource allocation to citizen-facing service delivery to regulatory enforcement. Criado, Sandoval-Almazán, and Gil-Garcia (2025) argue that understanding this shift requires analysis at three simultaneous levels, the micro level of individual bureaucratic discretion, the meso level of organizational and policy-sector design, and the macro level of national governance and institutional architecture, because AI's administrative effects at any one level cannot be adequately explained without reference to the other two.

Policy-transfer theory provides the analytical vocabulary for asking whether a governance model developed at one level, in one national setting, can be moved to another. Dolowitz and Marsh (2000) define policy transfer as the process by which knowledge of policies, administrative arrangements, institutions, and ideas in one political setting is used in the development of policies, administrative arrangements, institutions, and ideas in another

political setting, and they distinguish transfer along a continuum from voluntary lesson-drawing, in which a recipient jurisdiction selectively adapts elements of a model to its own context, to coercive imposition, in which transfer is compelled by external conditionality. Song and Hwang (2019) apply this framework specifically to Korea's own international development-aid programming, showing empirically that successful transfer of Korean e-government and IT-focused official development assistance to a partner country, in their case Vietnam, depended less on the technical sophistication of the transferred instrument than on the presence of a domestic policy entrepreneur inside the recipient administration capable of championing, adapting, and sustaining the transferred program against competing bureaucratic priorities. This finding is directly relevant to the present study, because it suggests that the presence or absence of an equivalent institutional champion inside Bangladesh's administration, most plausibly a2i in its current form, is itself a variable that should be assessed rather than assumed.

A closely analogous recent case, in a different sectoral domain, offers a further methodological template. Warraich (2026) examines whether Pakistan can adapt the European Union's AI Act, itself the world's first comprehensive AI law, to its own regulatory landscape, and finds that Pakistan's engagement with the EU framework sits closer to the voluntary end of Dolowitz and Marsh's transfer continuum, driven by reputational and market-access considerations rather than direct EU conditionality, but that adoption remains constrained by the absence of a binding domestic AI law, weak data-protection infrastructure, and the lack of a risk-classification system comparable to the EU's. The structural parallel to the Korea-Bangladesh case examined here, an aspiring developing-country adopter looking to a globally prominent AI governance model without yet possessing the binding legal or data-protection infrastructure the model presupposes, is close enough that Warraich's transfer-continuum framing is adopted directly in the analytical approach developed in Section 4.

3.2. Korea's Digital Government and AI Governance Model

Korea's digital government trajectory is typically periodized into a foundational phase, running from the National Computerization Agency's establishment in 1987 through the Electronic Government Act of 2001, and a digital-transformation phase from approximately 2016 to the present (Cheong & Cho, 2024). The foundational phase built the technical and administrative infrastructure, standardized data formats, shared networks, a unified civil-service identification system, on which later digital services could be layered; the transformation phase has been characterized by the introduction of mobile government identification, the 2020 mobile civil-servant ID pilot and 2021 mobile driver's licence, the expansion of the "once-only" principle under which citizens and businesses are required to submit a given piece of data to government only a single time, and, most recently, the systematic integration of AI into service design under the Government-wide User Interface/User Experience Design System and the 2024 e-Government Performance Management Manual (OECD, 2025).

The AI Framework Act, passed in December 2024 and taking effect in January 2026, formalizes this integration into binding law. Its principal provisions establish a risk-based regulatory structure with specific obligations for high-impact and generative AI systems, extraterritorial application to any AI activity affecting Korea's domestic market or users, incentives to attract foreign AI talent, a requirement that foreign AI providers designate a Korean legal representative, and the establishment of a national AI Safety Research Institute alongside encouragement for sector-specific AI ethics committees (Framework Act, 2025; International Association of Privacy Professionals, 2025). The Act's passage followed a period of considerable legislative fragmentation, nineteen separate AI governance bills were introduced independently by different National Assembly members after mid-2024, before a legislative subcommittee consolidated them into the single framework that ultimately passed with bipartisan support despite the political turbulence surrounding President Yoon Suk Yeol's December 2024 martial-law declaration and subsequent impeachment (International Association of Privacy Professionals, 2025). This consolidation process is itself analytically significant: it demonstrates that even within Korea's mature legislative and administrative system, translating a proliferation of AI-related policy ideas into a single coherent governance architecture required a specific institutional mechanism, centralized legislative consolidation authority, that not every political system possesses in equivalent form.

Myeong (2025) situates the AI Framework Act within a broader model the author terms "digital platform government," in which four elements reinforce one another: a unified data and service platform; a lead coordinating

ministry (in Korea's case, the Ministry of Science and ICT working alongside the Ministry of the Interior and Safety) with real rule-making authority over subordinate agencies; systematic citizen-facing performance measurement, exemplified by Korea's recurring e-Government Service Usage Survey; and, increasingly, embedded AI functions operating within, rather than alongside, this platform. The OECD's own 2025 Digital Government Review of Korea identifies substantially the same architecture and explicitly recommends it as an exportable template, organizing its policy recommendations around four pillars, governance and skills, data governance, AI for public-sector transformation, and human-centred service delivery, that map closely onto the components synthesized in Table 1 of this paper (OECD, 2025). Both sources converge on a claim with direct bearing on this study's central question: that Korea's international digital-cooperation activity, the World Bank-Korea Digital Knowledge Centre, the UNDESA partnership dating to 2016, Korea's co-chairing role in ASEAN and APEC digital-ministerial forums, is not incidental to the model but an increasingly deliberate extension of it, positioning digital government transfer as a form of soft-power and development-cooperation strategy in its own right (OECD, 2025).

3.3. Bangladesh's Digital Government Landscape and AI Readiness

Bangladesh's digital government programming began with the 2009 "Digital Bangladesh" vision, operationalized primarily through the Access to Information program, subsequently renamed and restructured as Aspire to Innovate (a2i), a UNDP-supported initiative housed first in the Prime Minister's Office and later moved under the ICT Division (Hossen et al., 2025). Under this program, Bangladesh has implemented a substantial portfolio of digital initiatives, including union digital centres providing last-mile citizen services, the e-Nothi digital file-management system, the MyGov service-integration bus, e-mutation for digital land records, and mobile-financial-service integration through bKash and Nagad (Hossen et al., 2025). In December 2022, the government announced "Smart Bangladesh Vision 2041," a considerably more ambitious successor organized around four pillars, smart citizens, smart government, smart economy, and smart society, targeting high-income status with GDP per capita above USD 12,500, 100% paperless and cashless public services, and universal digital literacy by 2041 (Kaiser, 2024). A draft National AI Policy followed in 2024, explicitly framed as aligning Bangladesh's technological trajectory with international standards including UNESCO's Recommendation on the Ethics of Artificial Intelligence (Sultana et al., 2026).

Independent secondary-data assessments, however, converge on a picture of considerably more constrained institutional readiness than this policy ambition implies. Kaiser's (2024) qualitative study of thirty-eight multi-sector stakeholders identifies fourteen distinct challenges to Bangladesh's smart-governance transition, the most severe of which, each identified by 84% or more of stakeholders, concern unreliable electricity supply, data privacy and security gaps, and the absence of a comprehensive policy and regulatory framework; the same study finds that political instability, cited by nearly 80% of stakeholders, and conservative bureaucratic resistance, cited by over two-thirds, are seen as comparably serious constraints. Hossen et al.'s (2025) systematic review of 70 studies published between 2015 and 2024 corroborates this picture from the demand side, identifying the digital divide between urban and rural citizens, low digital literacy, and bureaucratic inefficiency as the most persistent barriers to Digital Bangladesh's stated objectives, notwithstanding genuine progress in specific service domains. At the level of formal cross-national indices, Bangladesh ranks 100th of 193 countries on the 2024 UN E-Government Development Index and ranked 82nd of 193 on the 2023 Oxford Insights Government AI Readiness Index, with an overall score of 46.04 against Korea's 75.65 (Oxford Insights, 2023), the latter index specifically noting that Bangladesh's comparative strength lies in governmental vision and stated policy intent rather than in the technology and data-infrastructure pillars that determine whether such intent can be operationalized (Sultana et al., 2026). Bangladesh improved to 75th in the 2025 edition of the same index (Wasif, 2026).

The most granular available secondary evidence on Bangladesh's AI-specific institutional capacity comes from Sultana et al.'s (2026) mixed-method study of fifty-nine stakeholders across five leading computer-science programs and the local technology industry. That study documents acute GPU and computing-infrastructure scarcity even at Bangladesh's most prominent research universities, an almost complete absence of formal AI-ethics instruction in university curricula, pronounced gender disparities among AI faculty and industry practitioners, and curriculum-reform processes so encumbered by University Grants Commission approval layers

that AI-relevant syllabus updates can take years to implement, a governance friction with direct implications for how quickly any newly adopted national AI framework could be operationalized in practice. Romke (2025) reaches a broadly convergent conclusion at the macro level, finding that Digital Bangladesh's socio-economic impact has been real but uneven, concentrated in urban and better-resourced institutional settings, and constrained by the same infrastructural and human-capital limitations identified in the other sources reviewed here.

3.4. Policy Transfer to the Global South: Conditions and Constraints

The broader policy-transfer literature offers several conditioning variables directly applicable to the Korea-Bangladesh case. Dolowitz and Marsh's (2000) original framework specifies that the likelihood and depth of successful transfer depend on the presence of domestic actors with genuine authority to adapt (rather than simply copy) the transferred model, on the perceived similarity between the source and recipient political-administrative systems, and on whether transfer is driven by voluntary lesson-drawing or by external conditionality; models transferred under conditions of low perceived similarity and without empowered domestic adapters, the framework predicts, are the most likely to result in superficial or "lesson-mimicking" adoption rather than substantive institutional change. Song and Hwang's (2019) empirical account of Korea's own aid-financed e-government transfer to Vietnam adds a further, more specific condition: that a domestic policy entrepreneur inside the recipient bureaucracy, someone with both the standing to champion the transferred program and the bureaucratic skill to adapt it to local administrative constraints, was decisive in explaining why some Korea-financed e-government transfers succeeded while comparable initiatives elsewhere stalled.

Warraich's (2026) Pakistan-EU AI Act case illustrates how these conditions play out specifically in the AI governance domain, and does so in a developing South Asian context structurally comparable to Bangladesh's. That study finds that even where a developing-country government has clear reputational and market-access incentives to align with an internationally prominent AI governance model, and even where domestic policy actors are genuinely receptive, adoption remains constrained less by political will than by the prior absence of the specific institutional infrastructure the source model presupposes, in Pakistan's case, binding data-protection law and a risk-classification apparatus. The implication for this study is that Bangladesh's demonstrated appetite for aligning with international AI governance norms (Sultana et al., 2026) should not, by itself, be read as evidence of transfer readiness; the more decisive question, consistent with both Dolowitz and Marsh's (2000) framework and Warraich's (2026) empirical finding, is whether the specific institutional prerequisites a model presupposes, in Korea's case a unified data-governance platform, an empowered coordinating ministry, and binding legislative capacity, are present or absent in the recipient system.

3.5. Research Gap

Three gaps in the reviewed literature justify the present study. First, the great majority of empirical policy-transfer research, including Song and Hwang's (2019) own Korea-focused study, examines transfer of discrete programmatic instruments (specific e-government applications, specific aid-financed IT projects) rather than transfer of a comprehensive governance model encompassing legal, institutional, and infrastructural components simultaneously; this study addresses that gap by treating Korea's AI Framework Act and its supporting digital government architecture as a single, multi-component model whose components can be assessed for transferability individually. Second, while both the Korea-side literature (Cheong & Cho, 2024; Myeong, 2025; OECD, 2025) and the Bangladesh-side literature (Kaiser, 2024; Hossen et al., 2025; Sultana et al., 2026) are individually well developed, no existing published study systematically pairs them within a single comparative, transferability-oriented framework; this study is, to the author's knowledge, the first to do so. Third, the closest analogous transfer case in the literature, Warraich's (2026) Pakistan-EU AI Act study, examines transfer of a horizontal regulatory instrument (the EU AI Act) rather than transfer of an integrated source country's whole digital-government-plus-AI-governance model; this study extends that line of inquiry to the more demanding case of whole-model transfer, and does so specifically within the context of bilateral Korea-Bangladesh digital development cooperation rather than unilateral emulation of a third-party framework.

4. Methodology

4.1. Research Design

This study employs a mixed-method comparative case-study design based entirely on secondary data, appropriate for a research question that requires synthesizing dispersed institutional, legal, and empirical evidence about two national systems rather than generating new primary data (Yin, 2018). The design pairs a source-country case (Korea) and a recipient-country case (Bangladesh) and applies a common analytical framework, developed in Section 4.3, to both, following the most-different-systems comparative logic appropriate to policy-transfer research, in which the analytical interest lies precisely in identifying which components of a model survive, and which do not, when moved across a substantial structural difference between systems (Dolowitz & Marsh, 2000). The qualitative strand (Section 5) is complemented by a quantitative strand (Section 6) that analyses publicly available cross-national indicators for the two countries and for a comparator group; the two strands are integrated at the interpretation stage, with the quantitative evidence used both to establish the trajectory and composition of the Korea-Bangladesh gap and to check the qualitative transferability ratings.

4.2. Secondary Data Sources

Secondary data were drawn from four categories of source, triangulated against one another wherever the same claim could be independently verified. First, primary legal and policy texts: Korea's AI Framework Act (2025) and its official English-language legislative translation; Bangladesh's National AI Strategy (2019-2024) and draft National AI Policy (2024); and the Smart Bangladesh Vision 2041 strategy documents published by a2i. Second, international organizational assessments: the OECD's 2025 Digital Government Review of Korea; the United Nations E-Government Development Index; and the Oxford Insights Government AI Readiness Index. Third, peer-reviewed academic literature published between 2019 and 2026 on Korea's digital government and AI governance trajectory (Cheong & Cho, 2024; Myeong, 2025; Song & Hwang, 2019) and on Bangladesh's digital government and AI-readiness landscape (Kaiser, 2024; Hossen et al., 2025; Romke, 2025; Sultana et al., 2026), identified through targeted searches of recent public administration, digital government, and development-studies literature and prioritized for currency, methodological transparency, and direct relevance to the study's comparative framework. Fourth, comparative policy-transfer scholarship providing the study's analytical framework (Dolowitz & Marsh, 2000; Warraich, 2026; Criado et al., 2025). Fifth, quantitative indicator datasets: the complete UN E-Government Development Index panel for both countries (twelve survey waves, 2003-2024) and the 2024 survey cross-section for 18 comparator countries (United Nations Department of Economic and Social Affairs, 2024); the World Bank's Worldwide Governance Indicators (World Bank, 2025); and the Oxford Insights Government AI Readiness Index (Oxford Insights, 2023). These are described in detail in Section 6.1 and Table 3.

4.3. Analytical Framework

The comparative analysis in Section 5 is organized around a five-component model-decomposition framework, synthesized from the Korea-side literature reviewed in Section 3.2 and summarized in Table 1: (1) legal foundation, (2) coordinating authority, (3) digital and data infrastructure, (4) oversight and trust mechanisms, and (5) political-administrative continuity. Each component is first mapped for Korea (Section 5.1) and then assessed for Bangladesh against the same component (Section 5.2), using the secondary-data sources listed above. Section 5.3 then applies Dolowitz and Marsh's (2000) voluntary-to-coercive transfer continuum and Warraich's (2026) institutional-prerequisites logic to rate each component's transfer feasibility as Low, Low-Moderate, Moderate, or Moderate-High, a four-point ordinal scale chosen deliberately over a numerical index because the underlying secondary evidence, drawn from heterogeneous qualitative and administrative sources, does not support the false precision of a quantitative score.

4.4. Limitations of the Secondary-Data Approach

Three limitations follow directly from the study's reliance on secondary data. First, the Korea-side and Bangladesh-side literatures were not originally designed for direct comparison, and some asymmetry in data granularity is

unavoidable, official OECD and government sources dominate the Korea-side evidence base, while the Bangladesh-side evidence base relies more heavily on independent academic stakeholder studies. Second, secondary sources on Bangladesh's AI-specific institutional capacity remain comparatively recent and limited in number, since the country's National AI Policy is itself still in draft form; the analysis compensates for this by triangulating across the available sources (Kaiser, 2024; Hossen et al., 2025; Sultana et al., 2026) rather than relying on any single study. Third, the transferability ratings in Table 2 are the author's structured qualitative judgments, informed by but not mechanically derived from the cited sources, and should be read as a defensible synthesis rather than a definitive measurement; Section 6.7 subjects them to an indicator-based consistency check, and Section 9 returns to this limitation and proposes primary-data validation as a direction for future research. Fourth, the quantitative indicators used in Section 6 are proxies: the EGDI measures online services, connectivity, and education rather than the data-governance architecture or AI-specific capacity at the heart of Korea's model, and the Worldwide Governance Indicators are perception-based composites; neither can substitute for institutional analysis, which is why they are used to complement, not replace, the qualitative assessment.

5. Comparative Analysis and Findings

5.1. Korea's AI Governance Architecture: Components and Enabling Conditions

Table 1 synthesizes the five-component architecture identified in Section 3.2 into a single comparative reference point for the transferability assessment in Section 5.3.

Table 1: Components of Korea's AI Governance and Digital Government Model

Component	Institutional Mechanism	Function in the AI Governance Model
Legal foundation	AI Framework Act (Basic Act on the Development of Artificial Intelligence and Establishment of Trust), enacted January 2025, effective January 2026	Establishes a unified, risk-based statutory basis for AI development, safety, and trust; consolidates 19 previously fragmented bills
Lead coordinating body	Ministry of Science and ICT (MSIT); Ministry of the Interior and Safety (MOIS)	Sets national AI strategy, drafts enforcement decrees, coordinates cross-agency digital government implementation
Digital government backbone	Government Digital Platform, e-Government Performance Management Manual, once-only data-sharing principle	Provides the integrated data and service infrastructure into which AI functions are embedded
Oversight and trust mechanisms	AI Safety Research Institute; sector AI ethics committees; Personal Information Protection Commission (PIPC) policy roadmap	Provides technical safety evaluation, ethical review, and independent data-protection oversight of AI systems
International diffusion channel	World Bank–Korea Digital Knowledge Centre; UNDESA/UN Project Office on Governance partnership; ASEAN and APEC digital-ministerial co-chairing	Packages Korea's model as a transferable good-governance and anti-corruption template for partner countries

Three features of this architecture bear directly on the transferability question. First, the legal foundation did not emerge in 2025 as a standalone act but as the consolidation point of a legislative and administrative tradition running back to the 2001 Electronic Government Act, meaning the AI Framework Act inherited, rather than had to build from scratch, the definitions, data-sharing obligations, and cross-agency reporting lines that a comparable law would otherwise need to establish. Second, the coordinating authority vested in the Ministry of Science and ICT and the Ministry of the Interior and Safety carries genuine rule-making power over subordinate and sectoral agencies, evidenced by MOIS's ability to issue the binding 2024 e-Government Performance Management Manual without further legislative authorization; this is a qualitatively different form of authority from a coordinating body that can only recommend or convene. Third, the international diffusion channel, the World Bank-Korea Digital Knowledge Centre and the UNDESA partnership, is not a neutral technical-assistance vehicle but is explicitly framed in Korea's own OECD review as an instrument for exporting the model's governance logic, not merely its software tools (OECD, 2025), a framing with direct implications for how any Korea-Bangladesh cooperation initiative is likely to be structured and marketed by the Korean side.

5.2. Bangladesh's Institutional Readiness: Capacities and Gaps

Mapping Bangladesh's current digital government landscape onto the same five components reveals a markedly different profile. On legal foundation, Bangladesh possesses a National AI Strategy (2019-2024) and successive drafts of a National AI Policy, the most recent covering 2026-2030 and proposing a four-tier risk classification and mandatory algorithmic impact assessments for high-risk systems, but none carries the force of binding legislation comparable to Korea's Framework Act (Wasif, 2026). The legal environment for data has moved quickly but remains unsettled: the Cyber Security Act (2023), which drew documented human-rights concerns (Sultana et al., 2026), was superseded by a Cyber Security Ordinance approved by the interim government in May 2025, and a Personal Data Protection Ordinance was approved by the Council of Advisers in October 2025 (Dhaka Tribune, 2025); as ordinances promulgated without a sitting parliament, both depend on ratification by the parliament elected in February 2026 to remain in force. On coordinating authority, a2i and the ICT Division perform functions analogous to Korea's MSIT/MOIS pairing, and a2i in particular has accumulated two decades of institutional continuity and international donor relationships (Hossen et al., 2025), but neither body possesses comparable statutory rule-making power over line ministries; the draft AI policy names a National Data Governance and Innovation Agency as coordinator, but that body was not yet operational at the time of writing (Wasif, 2026), and Kaiser's (2024) stakeholder interviews find that 84% of respondents identify the absence of a robust, enforceable policy and regulatory framework as a top-tier barrier precisely because existing coordinating bodies cannot compel compliance from other parts of government.

On digital and data infrastructure, the picture is more differentiated than the aggregate rankings suggest. Physical connectivity has improved rapidly: Bangladesh's Telecommunication Infrastructure Index rose from close to zero in 2003 to 0.650 in 2024 (Section 6.2). The data layer, however, lags: a national data-exchange architecture comparable to Korea's once-only system does not yet exist, existing government data systems remain fragmented across ministries (Hossen et al., 2025), and Kaiser's (2024) stakeholders rate uninterrupted electricity supply and basic smart infrastructure as the two most severe barriers to any smart-governance transition, cited by 95% and 95% of respondents respectively. On oversight and trust mechanisms, Bangladesh has no operating algorithmic-impact-assessment protocol and no equivalent to Korea's AI Safety Research Institute; existing oversight capacity is concentrated in narrowly scoped bodies such as the Bangladesh e-Government Computer Incident Response Team, whose remit is cybersecurity incident response rather than AI-specific safety or ethics review (Sultana et al., 2026). On political-administrative continuity, the constraint is structural rather than merely administrative: Kaiser's (2024) stakeholders identify political instability as a top-tier barrier precisely because successive changes in government have historically altered or discontinued predecessor digital-transformation programs, a pattern the same study's respondents explicitly contrast with what they perceive as the durability of East Asian digital-government programs. The August 2024 transition to an interim government, followed by the February 2026 general election and the formation of a new Bangladesh Nationalist Party government under Prime Minister Tarique Rahman (Al Jazeera, 2026), has restored an elected government but also illustrates the recurrent risk that flagship digital programs and interim-period ordinances are revisited when governments change.

5.3. Structured Transferability Assessment

Table 2 synthesizes Sections 5.1 and 5.2 into a structured, dimension-by-dimension transferability assessment, applying the analytical framework specified in Section 4.3. Two ratings were revised after the indicator-based consistency check reported in Section 6.7; the original ratings are shown in brackets.

Table 2: Transferability Assessment of Korea's AI Governance Model to Bangladesh

Transferability Dimension	Korea (Source Model)	Bangladesh (Recipient Context)	Transfer Feasibility
Legal-institutional foundation	Single consolidated AI Framework Act; decades of e-government legislation (Electronic Government Act, 2001) preceding it	No consolidated AI law; National AI Strategy (2019-2024) and draft National AI Policy (2024; revised 2026-2030 draft) remain non-binding; a2i operates by administrative mandate rather than statute	Low
Coordinating authority	MSIT/MOIS with clear statutory rule-making power and enforcement decrees	ICT Division and a2i coordinate digital initiatives, but lack binding authority over line ministries; National AI Strategy implementation and accountability mechanisms remain underdeveloped	Low [Low-Moderate]
Data and digital infrastructure	Once-only principle, integrated national data exchange, near-universal broadband and mobile ID	Rapidly improving connectivity (UN TII 0.650 in 2024, up from 0.004 in 2003) but fragmented data systems across ministries and no national data-exchange or once-only architecture; 100th globally on the 2024 UN EGDI; unreliable electricity and rural connectivity	Low-Moderate [Low]; connectivity Moderate, data governance Low
Human and technical capacity	Deep pool of public-sector data scientists; systematic e-Government Service Usage Survey and performance management	Acute shortage of AI-trained faculty and public officials; GPU and computing-infrastructure scarcity documented even in leading universities	Low
Political-administrative continuity	Multi-decade, cross-administration continuity of the digital government agenda since the 1987 National Computerization Agency	Frequent disruption of flagship programs across political transitions; 2024 interim government and February 2026 change of government; historical instability repeatedly cited by stakeholders as a barrier	Low
Accountability and rights safeguards	PIPC oversight, AI ethics committees, mature Personal Information Protection Act	Cyber Security Act (2023) raised rights concerns and was superseded by a 2025 ordinance; Personal Data Protection Ordinance approved October 2025, pending parliamentary ratification; no operating algorithmic-impact-assessment protocol	Low-Moderate
Political will and international positioning	Sustained presidential-level prioritization; active international diffusion strategy (Korea as digital-government exporter)	Strong top-level rhetorical commitment (Smart Bangladesh Vision 2041) and demonstrated appetite for learning from international models	Moderate-High

The pattern in Table 2 is not uniformly pessimistic, and its shape is analytically informative in its own right. Six of the seven dimensions rate Low or Low-Moderate, concentrated specifically in the components, legal foundation, coordinating authority, data infrastructure, human capacity, political continuity, and rights safeguards, that made Korea's model function as an integrated system in the first place rather than as a set of independently adoptable features. This pattern is consistent with Dolowitz and Marsh's (2000) prediction that transfer succeeds least where perceived similarity between source and recipient systems is lowest and where the recipient lacks the specific enabling infrastructure the model presupposes, and it echoes Warraich's (2026) finding that Pakistan's constrained absorption of the EU AI Act traced to the prior absence of institutional prerequisites rather than to any deficit of political will. The final dimension, political will and international positioning, rates Moderate-High, and this

divergence from the other six dimensions is itself the paper's most important empirical finding: Bangladesh's demonstrated appetite for aligning with international digital governance norms, expressed through the Smart Bangladesh Vision 2041 rhetoric and the government's engagement with UNESCO's AI ethics framework, exceeds its current capacity to absorb the specific institutional architecture that gives Korea's model its operational substance. Section 6 shows that this qualitative pattern has a clear quantitative counterpart: the dimension with the highest indicator-based readiness ratio is political will and international positioning (70.0% of Korea's level), and Bangladesh's digital-government indicators have converged toward Korea's while its governance-quality indicators have not.

6. Quantitative Analysis: Digital Convergence and Institutional Decoupling

This section complements the qualitative assessment in Section 5 with a formal analysis of the secondary quantitative record. It addresses RQ3 in four steps: it establishes whether, and from when, Bangladesh's digital-government indicators converged toward Korea's (Sections 6.2 and 6.3); it identifies which components drove that convergence and which now constitute the residual gap (Section 6.4); it tests whether digital convergence was matched by convergence on governance-quality indicators that proxy the institutional prerequisites identified in Section 5 (Section 6.5); and it situates Bangladesh among comparator countries (Section 6.6). Section 6.7 then uses the same indicators to check the qualitative transferability ratings in Table 2.

6.1. Data, Variables, and Estimation Strategy

Four publicly available datasets were assembled (Table 3). The core dataset is the complete United Nations E-Government Development Index (EGDI) panel for Korea and Bangladesh, covering all twelve UN E-Government Survey waves conducted between 2003 and 2024 (2003, 2004, 2005, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022, and 2024), extracted from the UN E-Government Knowledgebase country profiles (United Nations Department of Economic and Social Affairs, n.d., 2024). For each country and wave, the composite EGDI and its three equally weighted sub-indices, the Online Service Index (OSI), the Telecommunication Infrastructure Index (TII), and the Human Capital Index (HCI), each scaled 0 to 1, were recorded. Because the EGDI is by construction the arithmetic mean of the three sub-indices, this identity was used as a data-integrity check: for all 24 country-waves the recomputed mean matched the published EGDI to within 0.0012 points. A second dataset is the 2024 survey cross-section for Korea, Bangladesh, and 18 comparator countries: the other South Asian states except Afghanistan (India, Pakistan, Sri Lanka, Nepal, Bhutan, and the Maldives) and a purposive selection of developing Asian and African countries that are frequent partners in digital-government cooperation (Viet Nam, Indonesia, the Philippines, Cambodia, Myanmar, the Lao People's Democratic Republic, Mongolia, Uzbekistan, Kenya, Rwanda, Ghana, and Ethiopia).

To capture the institutional prerequisites that the EGDI does not measure, the study uses the World Bank's Worldwide Governance Indicators (WGI), which aggregate expert, firm, and household assessments into governance scores on a 0-100 scale (Kaufmann et al., 2011; World Bank, 2025). Four WGI dimensions were mapped onto the components of the analytical framework in Section 4.3: Government Effectiveness (the quality of the civil service and of policy formulation and implementation) as a proxy for coordinating authority; Regulatory Quality (the capacity to formulate and implement sound regulation) for the legal-institutional foundation; Rule of Law for accountability and rights safeguards; and Political Stability and Absence of Violence for political-administrative continuity. Annual WGI scores for 2003-2024 were used. Finally, pillar scores from the 2023 Oxford Insights Government AI Readiness Index (GAIRI), the edition cited in Section 3.3, provide AI-specific readiness measures for the Government, Technology Sector, and Data and Infrastructure pillars (Oxford Insights, 2023).

Three families of models were estimated. First, ordinary least squares (OLS) trend models regress each country's EGDI, the absolute gap (Korea minus Bangladesh), and the logarithm of the gap on time, measured as years since 2003. Because Durbin-Watson statistics indicated positive serial correlation in several series, Newey-West heteroskedasticity- and autocorrelation-consistent (HAC) standard errors with one lag are reported alongside conventional standard errors (Newey & West, 1987). Second, to test whether convergence was continuous or began

at an identifiable point, piecewise (hinge) linear models allowing a change in slope at a single survey wave were estimated for every candidate break between 2008 and 2018, and the break with the largest F-statistic was retained; because selecting the break by search inflates nominal significance, the retained F-statistic is also compared with Andrews' (1993) critical values for a break at an unknown date. Third, an exact additive decomposition, Gap = [(OSI_KOR - OSI_BGD) + (TII_KOR - TII_BGD) + (HCI_KOR - HCI_BGD)] / 3, attributes the gap in each wave, and its change over time, to the three components. Institutional convergence was tested by stacking Bangladesh's EGDI and mean WGI scores, each expressed as a percentage of Korea's, at the twelve survey years and estimating a difference-in-slopes model. All analysis was conducted in Python 3.13 using statsmodels 0.15 and SciPy 1.18 (Seabold & Perktold, 2010); the dataset and analysis script are provided as supplementary material.

Table 3: Data Sources, Indicators, and Their Role in the Analysis

Dataset	Indicators	Coverage	Role in analysis
UN E-Government Development Index panel	EGDI; OSI; TII; HCI (0-1)	Korea and Bangladesh; 12 survey waves, 2003-2024	Trend, structural-break, and decomposition analysis (Sections 6.2-6.4)
UN E-Government Survey 2024 cross-section	EGDI; OSI; TII; HCI (0-1)	Korea, Bangladesh, and 18 comparator countries; 2024	Regional benchmarking (Section 6.6)
World Bank Worldwide Governance Indicators	Government Effectiveness; Regulatory Quality; Rule of Law; Political Stability (0-100)	Korea and Bangladesh; annual, 2003-2024	Institutional-convergence test (Section 6.5); readiness ratios (Section 6.7)
Oxford Insights Government AI Readiness Index 2023	Total; Government, Technology Sector, and Data & Infrastructure pillars (0-100)	Korea and Bangladesh; 2023 edition	AI-specific readiness; readiness ratios (Sections 6.6-6.7)

6.2. Descriptive Trends

Table 4 reports descriptive statistics for the two countries' EGDI and sub-index series. Korea's mean EGDI across the twelve waves is 0.894 (SD = 0.064), a consistently high but compressed distribution close to the index's ceiling of 1.0; Bangladesh's mean is 0.358 (SD = 0.164), reflecting both a much lower level and much greater movement. Over 2003-2024, Korea's EGDI rose by 0.224 points (compound annual growth rate, CAGR = 1.26%), while Bangladesh's rose by 0.492 points (CAGR = 6.79%), roughly 5.4 times Korea's annualized rate. The sub-indices reveal sharply different trajectories within Bangladesh's aggregate improvement. Its TII rose from almost nothing (0.004) to 0.650, its OSI rose from 0.092 to a peak of 0.785 in 2018 before settling at 0.737 in 2024, and its HCI moved least, from 0.400 to 0.583. Korea's OSI reached the maximum value of 1.000 in 2010, 2012, 2020, and 2024, while its HCI fell from 0.950 to 0.912, partly reflecting revisions to the HCI's construction over successive survey rounds.

Table 4: Descriptive Statistics, UN EGDI and Sub-Indices, Korea and Bangladesh, 2003-2024 (n = 12 survey waves)

Indicator	KOR 2003	KOR 2024	KOR mean (SD)	BGD 2003	BGD 2024	BGD mean (SD)	BGD 2024 as % of KOR
EGDI (composite)	0.744	0.968	0.894 (0.064)	0.165	0.657	0.358 (0.163)	67.9%
Online Service Index	0.607	1.000	0.936 (0.115)	0.092	0.737	0.429 (0.256)	73.7%
Telecom. Infrastructure Index	0.675	0.992	0.812 (0.136)	0.004	0.650	0.168 (0.211)	65.6%
Human Capital Index	0.950	0.912	0.934 (0.040)	0.400	0.583	0.476 (0.077)	64.0%
EGDI CAGR, 2003-2024		1.26%			6.79%		

KOR = Korea; BGD = Bangladesh. Source: author's calculations from United Nations Department of Economic and Social Affairs (n.d.) UNeGovKB country data.

Table 5 reports the year-by-year gap, Bangladesh's EGDI as a percentage of Korea's, and the contribution of each sub-index to the gap. The gap narrowed from 0.579 points in 2003 (Bangladesh at 22.2% of Korea's score) to 0.311

points in 2024 (67.9%), but the narrowing was neither monotonic nor smooth. The gap widened to 0.697 in 2005, fluctuated between 0.54 and 0.67 through 2014, and then fell in every subsequent wave except 2020. Figure 1 plots both trajectories and the gap.

Table 5: Korea-Bangladesh EGDI Gap and Its Component Contributions by UN Survey Year

Year	KOR EGDI	BGD EGDI	Gap	BGD as % of KOR	OSI contribution	TII contribution	HCI contribution
2003	0.744	0.165	0.579	22.2%	0.172	0.224	0.183
2004	0.857	0.179	0.679	20.8%	0.288	0.220	0.170
2005	0.873	0.176	0.697	20.2%	0.301	0.222	0.173
2008	0.832	0.294	0.538	35.3%	0.157	0.221	0.160
2010	0.879	0.303	0.576	34.5%	0.215	0.202	0.158
2012	0.928	0.299	0.629	32.2%	0.185	0.257	0.187
2014	0.946	0.276	0.671	29.1%	0.210	0.280	0.180
2016	0.891	0.380	0.512	42.6%	0.106	0.245	0.161
2018	0.901	0.486	0.415	54.0%	0.065	0.217	0.133
2020	0.956	0.519	0.437	54.3%	0.129	0.199	0.109
2022	0.953	0.563	0.390	59.1%	0.110	0.173	0.106
2024	0.968	0.657	0.311	67.9%	0.088	0.114	0.110
Change 2003-2024	+0.224	+0.492	-0.268	+45.7 pp	-0.084 (31.5%)	-0.110 (41.0%)	-0.074 (27.6%)
Change 2016-2024			-0.201	+25.3 pp	-0.019 (9.4%)	-0.131 (65.1%)	-0.051 (25.5%)

Component contributions are (Korea minus Bangladesh sub-index score) / 3 and sum to the gap. Source: author's calculations from United Nations Department of Economic and Social Affairs (n.d.).

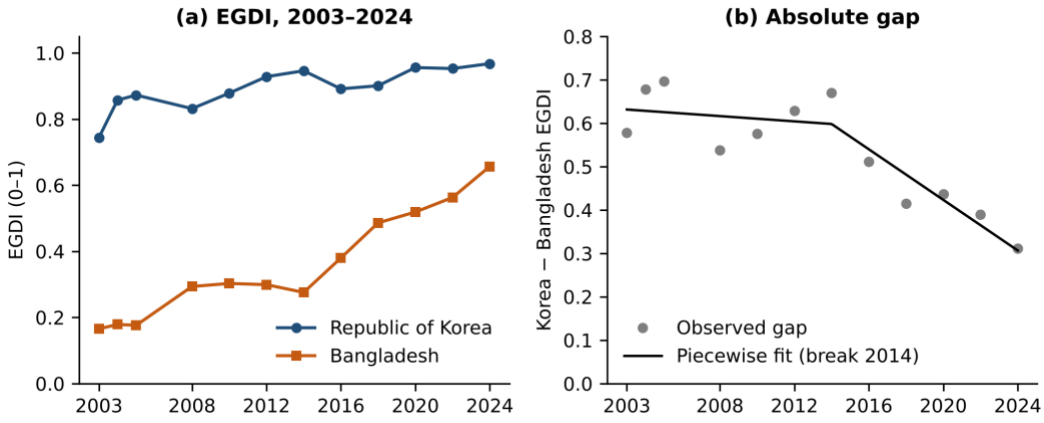


Figure 1: (a) EGDI trajectories of Korea and Bangladesh, 2003-2024; (b) absolute EGDI gap with fitted piecewise-linear trend (break at 2014; Model 6 in Table 6)

Source: author's calculations from UNeGovKB data.

6.3. Trend and Structural-Break Models

Table 6 reports the trend models. Both countries show statistically significant positive linear trends (Models 1 and 2). Korea's slope of 0.0074 EGDI points per year (R2 = .684) is shallow, consistent with its proximity to the ceiling, while Bangladesh's slope of 0.0220 points per year (R2 = .928) is three times steeper. The gap narrows at an average of 0.0146 points per year (Model 3, $p < .001$), and the log-linear specification (Model 4) implies that the gap shrinks by about 2.9% per year, corresponding to a half-life of 23.3 years. Inference is unchanged when HAC standard errors are used: all four slopes remain significant at $p < .001$.

The linear models, however, misrepresent the timing of convergence. Scanning candidate break points between 2008 and 2018, the improvement in fit is largest for a break at 2014 for both Bangladesh's EGDI (F = 13.44, p = .005) and the gap (F = 7.17, p = .025); breaks at 2012 and 2016 improve fit less, and breaks at 2008, 2010, and 2018 do not improve it significantly for either series. Against Andrews' (1993) critical values for a single break at an unknown date (8.68 at the 5% level and 7.12 at the 10% level, with 15% trimming), the break in Bangladesh's EGDI is significant at the 5% level and the break in the gap at the 10% level, a qualification that should be kept in mind given the short series. The piecewise models show that Bangladesh's EGDI rose by 0.0135 points per year up to 2014 and by 0.0327 points per year thereafter, a 2.4-fold acceleration (Model 5). More importantly, the gap did not narrow at all before 2014 (slope = -0.0030, p = .555) and has narrowed by 0.0292 points per year since (Model 6). Korea-Bangladesh digital-government convergence is therefore a post-2014 phenomenon, coinciding with the scaling-up phase of the Digital Bangladesh program, rather than a continuous twenty-year process. Because the UN has revised the construction of its sub-indices across survey rounds, part of any between-wave change may reflect measurement; within each wave, however, both countries are scored on an identical methodology, so the gap itself is comparable across countries even where levels are not perfectly comparable across waves.

Table 6: OLS Trend and Piecewise Models, UN EGDI, 2003-2024 (n = 12 survey waves). t = years since 2003; post-2014 term = max(0, year - 2014)

	(1) Korea	(2) Bangladesh	(3) Gap	(4) ln(Gap)	(5) Bangladesh, piecewise	(6) Gap, piecewise
Intercept (2003)	0.820	0.139	0.682	-0.354	0.175	0.632
t (years since 2003)	0.0074*** (0.0016) [0.0014]	0.0220*** (0.0019) [0.0015]	-0.0146*** (0.0031) [0.0024]	-0.0298*** (0.0060) [0.0053]	0.0135*** (0.0026) [0.0023]	-0.0030 (0.0049) [0.0046]
Post-2014 slope change					0.0192** (0.0052) [0.0048]	-0.0261* (0.0098) [0.0081]
Implied post-2014 slope					0.0326	-0.0292
R2	0.684	0.928	0.693	0.708	0.971	0.829
Adjusted R2	0.652	0.921	0.662	0.679	0.965	0.791
Durbin-Watson	1.71	1.01	1.32	1.12	1.83	2.02

*Conventional standard errors in parentheses, Newey-West HAC standard errors (1 lag) in brackets. * p < .05, ** p < .01, *** p < .001 (conventional). Source: author's calculations.*

6.4. Which Components Closed the Gap?

The exact decomposition (Table 5 and Figure 2) shows that the three sub-indices played very different roles. Of the 0.268-point narrowing between 2003 and 2024, telecommunication infrastructure accounts for 41.0%, online services for 31.5%, and human capital for 27.6%. Since 2016, when convergence was most rapid, the composition is starker: the TII accounts for 65.1% of the 0.201-point narrowing, the HCI for 25.5%, and the OSI for only 9.4%, since the online-service gap had already narrowed substantially by 2016. The residual 2024 gap of 0.311 points is now spread almost evenly across infrastructure (36.6%), human capital (35.2%), and online services (28.1%).

The post-2016 component slopes indicate which part of the residual gap is likely to persist. Over the five waves from 2016 to 2024, Bangladesh's TII rose by 0.066 points per year (p = .002) and its HCI by 0.024 points per year (p = .033), while its OSI showed no significant trend (0.005 per year, p = .747) after peaking in 2018. At these rates, Bangladesh would reach Korea's 2024 TII level in about five years but Korea's 2024 HCI level only in about 13.5 years. These estimates rest on only five observations and are illustrative rather than predictive, but the direction is clear: the infrastructure gap is closing quickly, the online-service gap has stalled, and the human-capital gap, which is the slowest to move, now constitutes as large a share of the residual gap as infrastructure does. This is consistent with the qualitative evidence in Section 5.2 on the scarcity of AI-trained faculty and officials (Sultana et al., 2026), and it identifies human capital, rather than connectivity, as the binding medium-term constraint on absorbing an AI governance model.

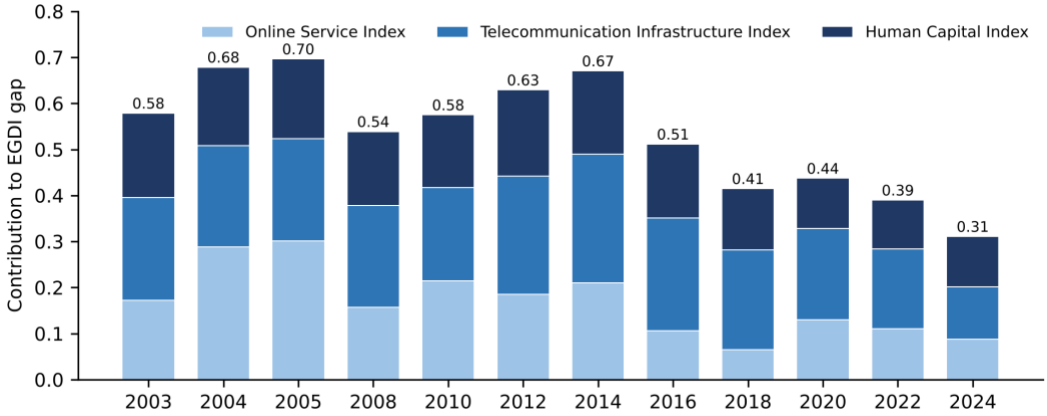


Figure 2: Decomposition of the Korea-Bangladesh EGDI gap by sub-index, 2003-2024

Bar heights equal the EGDI gap; segments show each sub-index's contribution, (Korea minus Bangladesh) / 3. Source: author's calculations from UNeGovKB data.

6.5. Digital Convergence Without Institutional Convergence

The EGDI measures the technical and human-resource layers of digital government, not the legal, coordinating, and political conditions that Section 5 identifies as the prerequisites of Korea's model. Table 7 therefore compares the two countries on the four WGI dimensions mapped to those prerequisites. The contrast with the EGDI is striking. On none of the four dimensions did the gap narrow between 2003 and 2024: the Government Effectiveness gap moved from 41.1 to 40.4 points (trend +0.09 points per year, p = .253), the Regulatory Quality gap widened from 29.1 to 33.0 (+0.11 per year, p = .073), the Rule of Law gap widened from 32.7 to 34.1 (+0.20 per year, p = .011), and the Political Stability gap widened from 28.0 to 37.7 points, although its trend is not significant given large year-to-year volatility (p = .523). Bangladesh did improve in absolute terms on Government Effectiveness (+0.50 points per year, p < .001) and Political Stability (+0.39 points per year, p = .001), but Korea improved in parallel, so relative standing did not change.

Table 7: Governance-Quality Gap, Korea and Bangladesh, Worldwide Governance Indicators (0-100 scale), 2003-2024 (n = 22 annual observations)

WGI dimension (mapped component)	KOR 2003	KOR 2024	BGD 2003	BGD 2024	Gap 2003	Gap 2024	Gap trend per year [HAC SE]	p
Government Effectiveness (coordinating authority)	72.3	81.0	31.2	40.6	41.1	40.4	+0.088 [0.077]	0.253
Regulatory Quality (legal-institutional foundation)	65.7	72.0	36.6	39.0	29.1	33.0	+0.108 [0.060]	0.073
Rule of Law (accountability and rights)	71.5	77.1	38.8	43.0	32.7	34.1	+0.202 [0.079]	0.011
Political Stability (political continuity)	71.4	78.5	43.4	40.8	28.0	37.7	-0.096 [0.151]	0.523
Mean of four, Bangladesh as % of Korea					53.4%	52.9%		

Gap trend is the OLS slope of (Korea minus Bangladesh) on year with Newey-West HAC standard errors (2 lags). Source: author's calculations from World Bank (2025).

Figure 3 places the two forms of convergence on a common scale by expressing Bangladesh's scores as a percentage of Korea's. Measured at the twelve EGDI survey years, Bangladesh's relative EGDI standing rose by 2.12 percentage points per year (p < .001), while its mean relative standing across the four WGI dimensions rose by only 0.09 percentage points per year (p = .301), from 53.4% in 2003 to 52.9% in 2024. A stacked difference-in-slopes model confirms that the two trajectories differ significantly (difference = 2.03 percentage points per year, HAC SE = 0.17, z = 12.32, p < .001). In 2003 Bangladesh's relative digital-government standing (22.2%) lay far below its relative governance standing; the two crossed between 2020 and 2022, and by 2024 its digital standing (67.9%) exceeded its governance standing by 15.0 percentage points. Bangladesh's digital-government indicators now run ahead of the institutional foundations on which, in Korea's experience, an AI governance model rests.

This decoupling is the central quantitative finding of the paper: convergence on the measurable, transferable technical layers of digital government has not been accompanied by convergence on the institutional layers that policy-transfer theory identifies as decisive (Dolowitz & Marsh, 2000; Warraich, 2026).

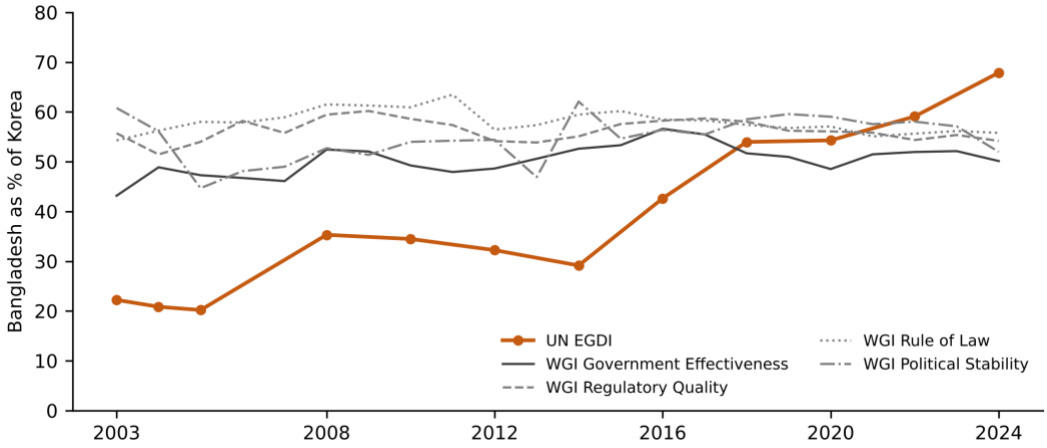


Figure 3: Bangladesh's standing as a percentage of Korea's: UN EGDI (survey years) versus four Worldwide Governance Indicators (annual), 2003-2024

Source: author's calculations from United Nations Department of Economic and Social Affairs (n.d.) and World Bank (2025).

6.6. Regional Benchmarking: Services Ahead of Foundations

Benchmarking Bangladesh against the 18 comparator countries in 2024 qualifies the picture further (Figure 4). Bangladesh's EGDI (0.657) sits close to the comparator mean (0.634; z = 0.17) and to the South Asian mean (0.629), but its profile is unbalanced. Its OSI is 0.59 standard deviations above the comparator mean, while its TII (z = -0.21) and HCI (z = 0.02) are at or below average. Defining an imbalance index as OSI minus the mean of HCI and TII, Bangladesh's value of 0.121 is the fifth highest among the 19 developing countries (comparator mean = -0.002, SD = 0.177), placing it in a group with Rwanda, Pakistan, India, and Kenya, all countries with ambitious service-digitization programs built on comparatively thin foundations; Viet Nam, Sri Lanka, and Nepal show the opposite pattern. Across the 19 countries, OSI is correlated with HCI (r = .61, p = .006) but not with TII (r = .25, p = .301), suggesting that sustained service sophistication depends more on human capital than on connectivity alone.

For Korea-Bangladesh cooperation, the implication is that the front-end service layer, the part of digital government most easily transferred through discrete cooperation projects, is already Bangladesh's relative strength. Its comparative deficit lies in the foundations. The same pattern appears in the 2023 GAIRI pillar scores: Bangladesh reached 66.2% of Korea's score on the Government pillar, which captures vision, strategy, and governance intent, and 63.6% on Data and Infrastructure, but only 48.0% on the Technology Sector pillar, which captures domestic AI industry maturity, innovation capacity, and human capital (Oxford Insights, 2023).

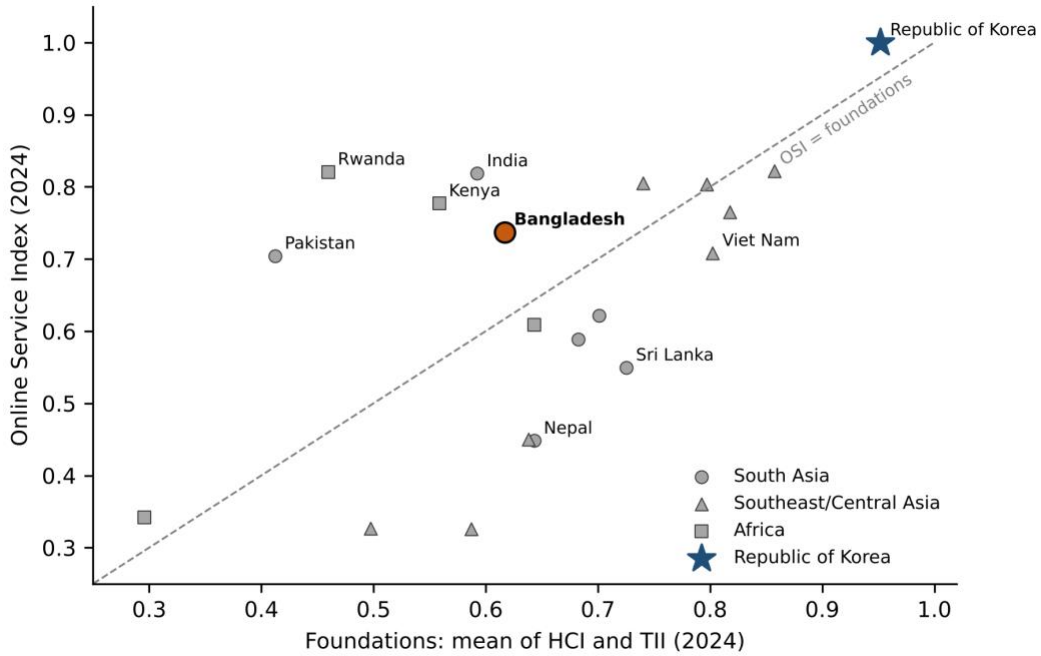


Figure 4: Online Service Index versus foundations (mean of HCI and TII), 2024, Korea and 19 developing countries

Points above the dashed line have online services ahead of foundations. Source: author's calculations from United Nations Department of Economic and Social Affairs (2024).

6.7. Indicator-Based Check on the Transferability Ratings

Table 8 maps each of the seven transferability dimensions in Table 2 to one or two indicators and expresses Bangladesh's latest score as a percentage of Korea's. Three results stand out. First, the readiness ratios fall in a narrow band from 50.1% to 70.0%, so the indicators discriminate less sharply between dimensions than the qualitative ratings do, which is unsurprising given that cross-national composites are not designed to capture the specific institutional mechanisms examined in Section 5. Second, the dimension with the highest ratio is political will and international positioning (70.0%), the only dimension rated Moderate-High in Table 2, so the paper's central qualitative finding, that Bangladesh's stated ambition exceeds its institutional absorptive capacity, is corroborated by the indicators.

Third, the rank correlation between the original qualitative ratings and the indicator ratios is weak (Spearman's rho = .18, p = .700, n = 7), and two dimensions account for most of the disagreement. Coordinating authority has the lowest ratio of all seven dimensions (Government Effectiveness: 50.1% of Korea's score), yet it was originally rated Low-Moderate; together with the qualitative evidence that existing coordinating bodies cannot compel line-ministry compliance (Kaiser, 2024), this supports revising it to Low. Data and digital infrastructure, originally rated Low, has the second-highest ratio (64.6%) because the available indicators, the TII and the GAIRI Data and Infrastructure pillar, chiefly measure connectivity, which has converged rapidly (Section 6.4). No cross-national indicator captures the data-exchange and interoperability architecture that the qualitative assessment identifies as absent, so the rating has been revised to Low-Moderate, with connectivity rated Moderate and data governance Low. These revisions are reflected in Table 2. The ratios are not sensitive to the choice of reference year: substituting 2023 WGI scores for 2024 scores, to remove the effect of Bangladesh's 2024 political transition, changes the governance-based ratios by 0.4 to 5.1 percentage points without altering their ordering relative to the political-will dimension. With seven dimensions and proxy indicators, this exercise is a consistency check rather than a validation, and Section 9 identifies primary-data validation as a priority for future work.

Table 8: Indicator-Based Readiness Ratios for the Seven Transferability Dimensions

Transferability dimension	Mapped indicator(s)	Korea	Bangladesh	BGD as % of KOR	Rating in Table 2 [original]
Legal-institutional foundation	WGI Regulatory Quality	72.0	39.0	54.2%	Low
Coordinating authority	WGI Government Effectiveness	81.0	40.6	50.1%	Low [Low-Moderate]
Data and digital infrastructure	UN TII; GAIRI Data & Infrastructure	0.992; 85.02	0.650; 54.10	64.6%	Low-Moderate [Low]
Human and technical capacity	UN HCI; GAIRI Technology Sector	0.912; 54.36	0.583; 26.07	56.0%	Low
Political-administrative continuity	WGI Political Stability	78.5	40.8	52.0%	Low
Accountability and rights safeguards	WGI Rule of Law	77.1	43.0	55.8%	Low-Moderate
Political will and international positioning	GAIRI Government; UN OSI	87.55; 1.000	57.96; 0.737	70.0%	Moderate-High

Ratio = Bangladesh score as a percentage of Korea's; where two indicators are mapped, the ratio is their unweighted mean. Latest available year: WGI 2024, UN E-Government Survey 2024, GAIRI 2023. Source: author's calculations.

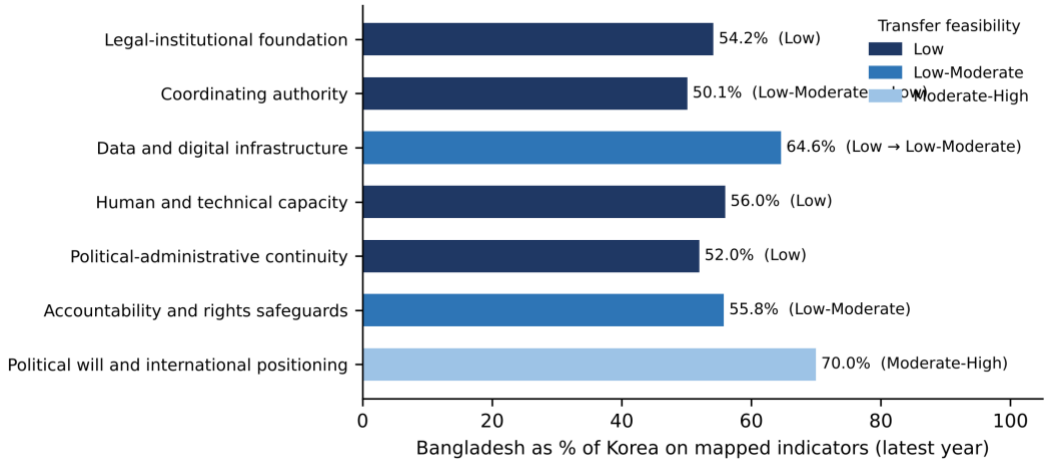


Figure 5: Indicator-based readiness ratios and transfer-feasibility ratings by dimension

Arrows mark ratings revised after the consistency check. Source: author's calculations; see Table 8.

6.8. Illustrative Convergence Projections and Their Limits

Extrapolating the fitted trends gives a wide range of illustrative dates for full EGDI convergence. The intersection of the two countries' linear trends (Models 1 and 2) falls in about 2050; continuing the post-2014 rate of gap closure (Model 6) would close the 2024 gap of 0.311 points in roughly eleven years, around 2035; and the log-linear model (Model 4) implies that the gap would only halve, to about 0.16 points, by around 2047. The spread itself is the main lesson: the projected date depends heavily on specification, and none of these extrapolations should be read as a forecast. Two further reasons qualify them. First, Korea's trajectory is compressed by the index ceiling, so its historical slope cannot continue indefinitely. Second, and more importantly for this paper's argument, Section 6.5 shows that aggregate EGDI convergence has been decoupled from governance convergence; an extrapolation of the EGDI therefore says nothing about when the institutional prerequisites of Korea's AI governance model will be in place. Continued EGDI convergence should be read as evidence that Bangladesh's digital government indicators are moving in the right direction at a policy-relevant pace, not as evidence that the specific AI governance model examined in Section 5 is becoming more transferable in step with the aggregate index.

6.9. Summary of Quantitative Findings

Four quantitative findings inform the discussion in Section 7. First, Bangladesh has converged substantially toward Korea on the UN EGDI, from 22.2% to 67.9% of Korea's score between 2003 and 2024, but this convergence is a

post-2014 phenomenon: the gap did not narrow before 2014 and has narrowed by about 0.029 points per year since. Second, the convergence was driven mainly by telecommunication infrastructure, which accounts for 65.1% of the narrowing since 2016, whereas human capital is the slowest-moving component and now constitutes as large a share of the residual gap as infrastructure. Third, digital convergence has been decoupled from institutional convergence: on the WGI dimensions mapped to coordinating authority, legal-institutional foundation, rights safeguards, and political continuity, Bangladesh's standing relative to Korea was the same in 2024 as in 2003. Fourth, among comparator countries Bangladesh's online services are ahead of its foundations, and the indicator evidence corroborates the qualitative finding that political will is the dimension on which Bangladesh is closest to Korea, while supporting a downgrade of coordinating authority to Low.

7. Discussion

The transferability profile in Table 2 supports a central interpretive claim: Korea's AI governance model is best understood as a capstone achievement resting on a multi-decade institutional foundation, rather than as a discrete policy instrument that can be lifted from its enabling context and installed elsewhere. The AI Framework Act's rapid 2024 legislative consolidation was possible only because the underlying data-sharing infrastructure, coordinating authority, and civil-service digital competence had already been built over the preceding two decades (Cheong & Cho, 2024; OECD, 2025); the Act formalized capacities that already substantially existed rather than creating them from a standing start. This has a direct and somewhat counterintuitive implication for Korea-Bangladesh digital development cooperation: the most visible and internationally marketed component of Korea's model, the AI Framework Act itself, is very likely the least appropriate starting point for cooperation, precisely because it is the component that most depends on the other four being already in place. A cooperation strategy organized around helping Bangladesh draft AI-specific legislation before its underlying data-governance and coordinating-authority infrastructure is strengthened would be adopting the capstone without the foundation, a sequencing error the policy-transfer literature has repeatedly identified as a driver of superficial, lesson-mimicking adoption that fails to produce substantive institutional change (Dolowitz & Marsh, 2000; Warraich, 2026).

The quantitative evidence in Section 6 sharpens this interpretation. Bangladesh has closed more than half of its EGDI gap with Korea since 2014, so on the most widely cited indicator of digital government the two countries look increasingly similar. Over the same period, its standing on the governance-quality indicators that proxy coordinating authority, regulatory capacity, rule of law, and political continuity has not moved relative to Korea's. In policy-transfer terms, this decoupling raises the perceived similarity between source and recipient, which Dolowitz and Marsh (2000) identify as a driver of transfer attempts, without raising the actual institutional similarity on which successful transfer depends. It thus creates precisely the conditions under which lesson-mimicking adoption, the formal adoption of a model's visible features without its enabling institutions, is most likely. A cooperation strategy that took EGDI convergence as evidence of readiness for Korea's AI governance model would be reading the wrong indicator.

A second, related implication concerns the specific institutional-champion condition Song and Hwang (2019) identify as decisive in their study of Korea's own aid-financed transfer to Vietnam. Bangladesh's closest analogue to the kind of domestic policy entrepreneur that study identifies as necessary is a2i, which has accumulated two decades of institutional continuity, donor relationships, and demonstrated capacity to adapt externally sourced digital-government models to Bangladeshi administrative conditions, evidenced by its successful localization of union digital centres and e-Nothi file management (Hossen et al., 2025). This suggests that Korea-Bangladesh cooperation channeled through, and explicitly designed to strengthen the coordinating authority of, a2i and the ICT Division is considerably more likely to succeed than cooperation that bypasses existing coordinating structures to work directly with individual line ministries or that is designed primarily around transplanting Korean legal text. At the same time, Kaiser's (2024) stakeholder evidence that existing coordinating bodies cannot compel line-ministry compliance indicates that strengthening a2i's technical capacity alone would be insufficient without a parallel, and politically more difficult, strengthening of its formal authority relative to other ministries, a change that would require sustained political commitment across the electoral cycles that Bangladesh's own stakeholders identify as historically discontinuous (Kaiser, 2024).

A third implication concerns the risk that model transfer, even when well-intentioned, could import governance instruments poorly calibrated to Bangladesh's actual risk profile. Korea's AI Framework Act was designed for an economy in which the dominant AI governance concern is calibrating oversight of an already substantial domestic AI industry and a dense flow of foreign AI providers; Bangladesh's more immediate AI governance concerns, on the evidence reviewed in Section 5.2, are foundational rather than calibrational, ranging from the absence of any AI-ethics instruction in university curricula to the absence of algorithmic-impact-assessment capacity of any kind (Sultana et al., 2026). A risk-based regulatory architecture modeled closely on Korea's Act could, if adopted prematurely, create compliance obligations that Bangladesh's current administrative and technical capacity cannot realistically discharge, reproducing at the AI-governance level the broader pattern Kaiser's (2024) stakeholders describe, ambitious policy commitments outpacing the country's capacity to implement them, that has recurred across successive digital-transformation initiatives since 2009.

These implications converge on a reframing of the paper's central question. The evidence does not support treating "adaptation" as a binary outcome, either Korea's model transfers or it does not, but rather as a sequencing problem: which components of an integrated governance architecture can be usefully transferred now, which require prior domestic institution-building before transfer would be productive, and which components of the source model, given the recipient's different risk profile, may not warrant transfer at all in their Korean form. This reframing is consistent with, and extends, Warraich's (2026) conclusion that Pakistan's most defensible path with respect to the EU AI Act is "selective alignment" rather than wholesale adoption; the Korea-Bangladesh case examined here suggests that selective, sequenced alignment, prioritizing data-governance and coordinating-authority reform ahead of AI-specific legislation, is the more defensible framing for digital development cooperation between an advanced digital-government exporter and a developing-country partner more generally.

8. Policy Implications and Recommendations

Five recommendations follow from the analysis in Sections 5 and 6, addressed jointly to Bangladeshi policymakers and to the design of Korea-Bangladesh digital development cooperation.

First, sequence cooperation around data governance and coordinating authority before AI-specific legislation. Given Table 2's finding that coordinating authority and data governance both rate Low, and Section 6.4's finding that connectivity, unlike data governance, is already converging rapidly, the highest-value near-term cooperation would focus on a Korea-supported national data-exchange and interoperability platform for Bangladesh, modeled on Korea's once-only principle, and on strengthening a2i's and the ICT Division's formal, statutory coordinating authority over line ministries, rather than on drafting AI-specific legislation. This mirrors Korea's own developmental sequence, in which data infrastructure and coordinating capacity preceded, by roughly two decades, the AI Framework Act (Cheong & Cho, 2024).

Second, calibrate any transferred AI governance instrument to Bangladesh's actual risk profile rather than importing Korea's risk categories directly. A Bangladesh-specific AI policy should prioritize foundational safeguards, a minimum viable data-protection law, a basic algorithmic-impact-assessment requirement for public-sector AI use, and mandatory AI-ethics content in publicly funded computer-science curricula, over the more calibrationally sophisticated risk-tiering apparatus that Korea's Act provides for an already mature AI market (Sultana et al., 2026).

Third, invest cooperation resources in human capacity before institutional capacity in the strict AI-governance domain. Sultana et al.'s (2026) findings on GPU scarcity, absent faculty upskilling pathways, and near-total absence of AI-ethics instruction indicate that a Korea-Bangladesh cooperation package weighted toward legal and regulatory technical assistance, without parallel investment in shared computing infrastructure, faculty training pipelines, and curriculum reform support for Bangladeshi universities, is unlikely to produce the domestic technical capacity needed to operate any newly adopted governance framework.

Fourth, use a2i as the primary institutional channel for cooperation, while explicitly working to strengthen, rather than assume, its cross-ministerial authority. Consistent with Song and Hwang's (2019) policy-entrepreneur finding,

cooperation design should treat a2i's authority relative to line ministries as a variable to be strengthened through the cooperation itself, for example through jointly negotiated inter-ministerial data-sharing agreements with Korean technical support, rather than as a precondition already satisfied.

Fifth, monitor cooperation against institutional as well as digital indicators. Because Section 6.5 shows that EGDI convergence can proceed without institutional convergence, a Korea-Bangladesh cooperation framework should track a small dashboard that includes both: the HCI and TII sub-indices, which Section 6.4 identifies as the residual gap's main components; WGI Government Effectiveness and Regulatory Quality, as proxies for coordinating authority and regulatory capacity; and program-specific milestones such as the number of ministries connected to a national data-exchange layer and the operational status of the coordinating agency named in the draft National AI Policy. Progression from foundational cooperation to support for AI-specific legislation would then be conditioned on observable institutional progress rather than on aggregate digital-government rankings.

9. Conclusion

This paper has examined whether Korea's AI governance model, formalized most recently in the 2025 AI Framework Act but resting on a much longer digital government foundation, can be adapted to Bangladesh's structurally different institutional context. Applying a five-component decomposition of Korea's model and a structured, policy-transfer-theory-grounded transferability assessment, the analysis finds that the model transfers unevenly: strongly along the dimension of political will and international positioning, but weakly along the legal-institutional, data-infrastructural, human-capacity, and political-continuity dimensions that actually enabled the model to function in Korea. The paper's central contribution is to reframe the guiding question from a binary of transferable versus non-transferable toward a sequencing problem, identifying which components of an integrated source-country governance architecture warrant near-term cooperation investment, data governance and coordinating authority foremost among them, and which, AI-specific legislation most prominently, are better understood as capstone achievements that presuppose foundations Bangladesh has not yet built. The quantitative analysis adds a further, measurable dimension to this conclusion: Bangladesh's EGDI rose from 22.2% to 67.9% of Korea's between 2003 and 2024, almost entirely after 2014 and driven chiefly by connectivity, while its relative standing on governance-quality indicators did not change, a decoupling of digital from institutional convergence that explains why aggregate digital-government progress is a poor guide to transfer readiness.

These findings extend policy-transfer scholarship (Dolowitz & Marsh, 2000) from its traditional focus on discrete programmatic instruments to the more demanding case of whole-governance-model transfer, and they extend the Korea-specific transfer literature (Song & Hwang, 2019) into the AI governance domain specifically, while corroborating, in a South Asian case, the institutional-prerequisites logic that Warraich (2026) identifies in the structurally comparable Pakistan-EU case. For Korea-Bangladesh digital development cooperation specifically, the analysis suggests that Korea's growing international positioning as a digital-government exporter (OECD, 2025) will be most productive for Bangladesh if it is calibrated to Bangladesh's actual institutional starting point rather than organized around the most visible and recently legislated component of Korea's own model.

Four limitations, beyond those already noted in Section 4.4, qualify these conclusions and point toward future research. First, this is a secondary-data comparative study; although Section 6.7 checks the transferability ratings in Table 2 against cross-national indicators, those indicators are proxies, and the ratings would benefit from validation through primary-data fieldwork directly comparing Korean and Bangladeshi digital-government officials' own assessments of transfer feasibility, a study design the present paper's framework could directly support. Second, the analysis captures a single point in an evolving policy landscape, both Korea's AI Framework Act enforcement decrees and Bangladesh's National AI Policy remain, at the time of writing, in active implementation and drafting stages respectively, and the transferability profile identified here should be revisited as both instruments mature. Third, the quantitative analysis rests on short series, twelve survey waves for the EGDI, so the structural-break and projection results should be treated as indicative, and the decoupling finding should be re-examined as future survey waves and WGI updates become available. Fourth, the study examines only the Korea-Bangladesh dyad; future research could usefully extend the five-component framework developed here to other Korea-developing country digital cooperation pairings, or to comparison with alternative source

models such as Estonia's or Singapore's digital government architectures, to test whether the sequencing logic proposed in Section 7 generalizes beyond this specific case.

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