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PROMOTING A CULTURE OF INNOVATION IN THE PUBLIC SECTOR: LESSONS FROM HO CHI MINH CITY

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Abstract: *This paper explores how Ho Chi Minh City (HCMC) has successfully cultivated a culture of innovation within its public sector amid the challenges of digital transformation. Using a mixed-methods approach that integrates qualitative policy analysis and quantitative assessment of key national indicators (DTI, PAR INDEX, SIPAS, PII, and DDCI), the study demonstrates that HCMC's achievements stem from a well-structured three-pillar model encompassing (1) institutional framework, (2) digital technology, and (3) human and innovation ecosystem. Empirical evidence from 2020 to 2024 indicates that this model has enhanced governance efficiency, improved citizen satisfaction, and strengthened the city's competitiveness. HCMC has transitioned from a traditional administrative government to a "facilitating government" that fosters experimentation, risk-taking, and collaboration. The findings offer valuable insights for other local governments in Vietnam seeking to institutionalize an innovation culture as a foundation for sustainable development in the digital era.*

Keywords: *innovation culture, public governance, digital transformation, Ho Chi Minh City, institutional reform*

Reikšminiai žodžiai: *Inovacijų kultūra, viešasis valdymas, skaitmeninė transformacija, Hošimino miestas, institucinė reforma.*

1. Introduction

In the first two decades of the 21st century, the global wave of digital transformation and the profound impacts of the Fourth Industrial Revolution created a new competitive landscape among nations and cities, where the pace of innovation has now become a vital factor determining position and competitiveness.

Ho Chi Minh City is a special urban area—a center of economy, culture, education and

training, science and technology in Vietnam. It serves as a hub for international exchange and integration, a driving force for regional development, and a major contributor to the national budget (Nga et al., 2025). However, complex and unprecedented social issues have emerged, placing pressure on the city government's leadership, management, and operations. On one hand, the city grapples with the "hot" issues of a mega-urban area undergoing rapid urbanization: prolonged traffic congestion, flooding, overloaded healthcare and education infrastructure, and pressure on housing and the environment. The dense population also poses major challenges in ensuring employment and social welfare (Nga et al., 2025). On the other hand, in the context of a digital economy and society reshaping all aspects of life, HCMC faces the risk of falling behind if it fails to adapt and transform. The previous growth model, heavily reliant on capital, resources, and cheap labor, has revealed limitations and is no longer suitable for the new era. Meanwhile, citizens and businesses increasingly expect a transparent, efficient government capable of delivering high-quality public services quickly and conveniently.

In this context, finding a breakthrough governance model is no longer simply optional—it is an absolute necessity. Recognizing this, HCMC has determined that the key to transformation lies not in the fragmented application of digital technology but in a systemic and fundamental shift: public sector reform must be driven by embedding innovation as a cultural value.

Innovation culture is understood as an environment where breakthrough thinking, a spirit of daring to think and act, controlled experimentation and risk-taking, and continuous learning become core values forming the foundation for institutional, technological, and procedural initiatives to emerge and thrive. The National Assembly's issuance of Resolution 98/2023/QH15, piloting special mechanisms and policies for HCMC's development, including 44 mechanisms across seven sectors, is a testament to the urgent need for a "legal space" tailored to foster an innovation culture. This study is not merely academic; it has profound practical significance, helping answer a key question: how can local governments proactively build and nurture an innovation culture to create sustainable momentum for development in a volatile digital era?

2. Theoretical Framework

WInnovation in the public sector is defined by the Organisation for Economic Co-operation and Development (OECD) as "a new or significantly improved product or process (or a combination thereof) that differs substantially from previous ones and has been made available to users or implemented by the organization" (OECD, 2018). According to the OECD, public sector innovation involves "finding new and better ways to achieve public purposes" (OECD, 2016). Unlike the private sector, the ultimate goal of public innovation is not profit but the creation of public value, a concept proposed by Mark Moore,

which emphasizes the value society receives through public services and policies, thereby strengthening public trust in government. Moore's theory asserts that the success of a public organization is measured by its ability to create values that citizens and society deem important (Moore, 1995).

Scholars such as Geoff Mulgan and David Albury developed a theory of innovation levels, from Level 1 (incremental improvements—typically applying technology to optimize existing processes) and Level 2 (service innovation—developing new service models) to the highest level being system innovation, which requires changes in thinking, policy, and stakeholder relationships. The shift from lower to higher levels of innovation marks the transition from "doing existing things better" to "doing entirely new things," which is the core domain of innovation culture (Mulgan & Albury, 2003).

An innovation culture is a work environment where values, beliefs, norms, and behaviors are widely shared, encouraging and rewarding breakthrough thinking, experimentation, calculated risk-taking, and continuous learning from both success and failure. In the public sector, with its hierarchical structure, risk aversion, and procedural compliance, building such a culture is a major challenge that requires systemic change. Scholars such as Sandford Borins and Christian Bason have identified key characteristics of a healthy innovation culture: strong and accountable leadership support; empowerment and autonomy for staff at all levels; mechanisms for rapid experimentation and learning from failure; reward and recognition systems for innovation efforts; and openness to collaboration with external stakeholders (Borins, 2014).

For a comprehensive analysis, this study proposes an integrated analytical framework based on the three-pillar model: institutional framework, digital technology, and human and innovation ecosystem.

+ Institutional framework plays the role of creating a "safe space" for innovation, including flexible legal frameworks (e.g., sandbox mechanisms), specific incentive policies, and most importantly, political vision and commitment from leadership. Institutional theory emphasizes that rules, norms, and regulations fundamentally influence organizational behavior.

+ Digital technology acts as a catalyst and tool to realize ideas. Technology-driven innovation theory posits that digital technology not only automates old processes but also enables entirely new service and governance models.

+ Human and innovation ecosystem focuses on the capacity, mindset, and motivation of civil servants in relation to external networks. Organizational learning theory (Argyris & Schön, 1996) and innovation ecosystem theory (Adner, 2017) emphasize that innovation does not occur in a vacuum but results from continuous interaction and learning within a network of stakeholders.

The interaction and mutual reinforcement among these three pillars form a dynamic system, where institutions pave the way for technology, technology empowers people, and people use that space to innovate, thereby feeding back to improve institutions (Ostrom, 2005).

3. Research Methodology

The article employs a mixed-methods approach, combining qualitative and quantitative analysis during the period 2020–2024 (with selective updates to 2025). On the qualitative side, the study conducts systematic content analysis of policy documents, reports from the HCMC People's Committee, and sectoral programs, using a deductive coding framework based on the three-pillar model (institutions, technology, and people/ecosystem) and dimensions of innovation culture, while also adding inductive codes for emerging themes. On the quantitative side, the study analyzes national and local indices (DTI, PAR INDEX, SIPAS, PII, and DDCI), integrating trend description, process tracing, and interrupted time-series logic to examine the relationship between institutional change, technology implementation, and governance outcomes. The analysis is further strengthened by comparative benchmarking and sensitivity checks to ensure validity and caution in causal inference.

To address weak operationalization, we define innovation culture as a set of values and routines evidenced by observable indicators. Table 1 maps dimensions to measurable indicators and assessment approaches.

Dimension	Measurable indicator	Assessment approach
Leadership signals	Frequency and specificity of policy directives enabling experimentation (e.g., special mechanisms; safe-to-fail guidance)	Document analysis of resolutions, decrees, and city directives; coding of "innovation-enabling" clauses
Empowerment and autonomy	Share of departments/districts with delegated authority and experimental budgets; number of pilots approved	Budget/expenditure reviews; pilot registries under Resolution 98; internal circulars
Experimentation routines	Number of sandbox/pilot projects; duration-to-decision; iteration cadence	Program logs; decision timelines; case summaries
Risk protection	Presence and application of protective provisions for responsible risk-taking (e.g., Decree 73/2023/NĐ-CP)	Policy content analysis; recorded use in personnel/disciplinary cases (where available)
Learning and feedback	Frequency of post-implementation reviews; documented process redesigns vs "digitization only"	Post-action reports; service redesign documentation; internal audits
External collaboration	Number and diversity of partnerships (universities, startups, associations); joint initiatives	MoUs; event/contest records; center of innovation activities
Workforce capacity	Participation rates in AI/digital training; certifications; skill audits	Training rosters; HR competency frameworks; evaluation records
Citizen centricity	Two-way digital channels; usage metrics; service satisfaction changes	App analytics; SIPAS; user feedback loops
Data governance maturity	Open datasets; interoperability standards; data governance roles	Portal inventories; data policy documents; organizational charts
Incentives and recognition	Awards; performance metrics tied to innovation (e.g., DDCI sub-indices weighting)	DDCI methodology; performance appraisal criteria

Shifting the focus to the institutional and individual level, the bibliometric analysis allowed for the identification of key players in Lithuania's climate research. The dataset includes 160 institutions across the globe, led by Vytautas Magnus University (114 publications), Vilnius Gediminas Technical University (110), and Kaunas University of Technology (107), among others. A long list of other institutions, both domestic and foreign, contributed between 10 and 14 publications each.

The publication output among Lithuanian climate researchers is highly uneven, with a few individuals accounting for a substantial share. *Dalia Štreimikienė* leads with 122 publications (18% of the total), focusing on energy economics and sustainability, and is a key node in international collaborations. *Tadas Baležentis* (48 publications) works on sustainable agriculture and efficiency modelling, with strong ties to China, Poland, and Ukraine. *Paulo Pereira* (32 publications) brings an international dimension to the field, specializing in land use and ecosystems. The dominance of economists and engineers among top authors points to a strong techno-economic focus in Lithuania's climate research, with limited representation of social or ethical perspectives. With the top 10 authors producing around 45% of all publications, the research landscape is highly concentrated, offering both cohesion and a potential risk if key individuals exit the field.

Keyword analysis of Lithuanian climate publications reveals six main thematic clusters: (1) sustainability and resource management, focusing on ecosystem services, circular economy, and carbon footprints; (2) renewable energy and climate economics, with strong attention to policy, CO_2 emissions, and economic growth; (3) energy security and decision-making, using methods such as multicriteria analysis for evaluating energy options; (4) sustainable development and innovation, linking climate goals with digitalization and Industry 4.0; (5) agriculture and land use, addressing emissions, bioenergy, and rural development; and (6) energy efficiency and environmental impacts, particularly in the Baltic context, using performance benchmarking tools. These clusters emphasize techno-economic and policy-oriented approaches, with strong ties to EU climate priorities. Again, less apparent in these clusters are purely social or behavioral themes.

Finally, Lithuanian climate-related research is published across a wide array of journals, though a substantial portion appears in a few open-access outlets. The most dominant is *Sustainability* (MDPI), which accounts for 122 publications (about 18% of the total corpus). While the journal's broad scope and accessibility contribute to its popularity, its high volume has raised concerns about quality control in the scientific community. Still, the articles published there are widely cited, with over 3,000 citations collectively. Other key journals include *Energies* (40 publications), *Renewable and Sustainable Energy Reviews* (31), and the *Journal of Cleaner Production* (20), all of which reflect the strong emphasis on energy and sustainability topics in Lithuania's research landscape. The broader set of journals includes high-impact outlets such as *Science of the Total Environment* and *Sustainable Development*, as well as more regional or niche publications such as *Contemporary Economics*, *Zemdirbyste-Agriculture,* and *Journal of Security and Sustainability Issues*. This

distribution supports findings from the keyword analysis: the research is concentrated in applied sustainability, energy systems, and policy, rather than in core climate science or social science for climate change.

3.2. Results of quantitative analysis of projects funded

Project-level data from the Research Council of Lithuania (LMT) were also examined to understand how climate-related research has been supported over time. Using a keyword-based identification strategy, 773 projects were classified as climate-related between 2009 and 2023. The vast majority (i.e., approx. 87% of 569 projects) originated from investigator-initiated competitive schemes. Government-commissioned initiatives accounted for 77 projects, and internationally funded programs made up another 127 projects, reflecting the country's participation in broader European research frameworks. Three targeted national programs, i.e., LEK (Climate Change Program), ATE (Energy Transition Program), and SIT (Smart Technologies and Innovation), account for most of the state-commissioned climate projects, with 38, 17, and 17 projects, respectively.

The number of funded projects shows peaks in 2012, 2017, and 2023, which coincide with key EU and national climate initiatives and calls (i.e., Horizon 2020 and Green Deal-aligned programs). Annual climate research funding (estimated as project budget × duration) reflects these cycles, with notable surges in 2017 and 2021. Cumulatively, investigator-led projects account for ~77% of climate research funding, with state-commissioned projects contributing 12%, and international sources 11%. Although climate-related projects make up only 5–10% of all LMT-funded projects per year, their relative share has grown significantly from nascent levels in the late 2000s to more than 10% in 2023, signaling increased alignment with national and EU climate priorities.

Finally, disciplinary patterns show a strong tilt toward the natural and technical sciences, especially in fields such as physics (~27 projects), materials engineering (~24 projects), biology and ecology (~19 projects), chemistry (~15 projects), and environmental engineering. Some projects in the social sciences are present, particularly in the areas of public adaptation and environmental sociology, though they remain comparatively few. This disciplinary distribution mirrors the bibliometric findings, where technical and policy-oriented research dominate.

4. Results and Discussion

4.1. Results of Building an Innovation Culture Based on Three Pillars

a. Institutional framework

The innovation policies of Ho Chi Minh City are built on a systemic and strategic

vision, beginning with the creation of a breakthrough legal "sandbox" through Resolution 98/2023/QH15 of the National Assembly. This resolution acknowledges the rigidity of the current legal framework and grants the city the authority to pilot special mechanisms and policies, thereby removing the greatest institutional bottlenecks for initiatives. At the same time, it serves as the highest legal foundation to create space for innovation and build an innovation culture for Ho Chi Minh City. Instead of waiting for amendments to national laws, the city can proactively propose and pilot new governance solutions, especially in sensitive and complex areas such as high technology and urban management. Moreover, Resolution 98/2023/QH15 positions Ho Chi Minh City as a "laboratory" for institutional reform nationwide, where both successes and failures provide valuable lessons for replication or adjustment.

In HCMC, the strongest political-legal driver for innovation is the National Assembly's Resolution No. 98/2023/QH15, which pilots special mechanisms and policies for the development of Ho Chi Minh City (National Assembly, 2023). This resolution is considered a high-level legal experiment, allowing the city to pilot unique mechanisms and policies. The rigidity of existing legal regulations is often the biggest barrier to implementing new initiatives, especially in high-tech and complex urban management. The legislative body's approval of this special mechanism clearly acknowledges that the national legal framework is not flexible enough to support the development speed and scale of innovation in a mega-city such as HCMC. This mechanism provides the necessary space for the city government to experiment, learn, and propose creative governance solutions, thereby anchoring the city's "leap forward" on a solid institutional foundation. Resolution No. 98/2023/QH15 creates a legal "sandbox," allowing HCMC to pilot special mechanisms and remove institutional bottlenecks. The city becomes a "laboratory" for reform, where both successes and failures are replicable.

Additionally, the government's Decree No. 73/2023/NĐ-CP on encouraging and protecting dynamic, innovative officials who dare to think, act, and take responsibility for the common good is a crucial legal basis for fostering innovative thinking in the public sector. The provisions of "encouragement" and "protection" for innovation proposals create a mindset and legal foundation for civil servants to confidently perform their duties. Decree No. 73/2023/NĐ-CP directly supports Resolution 98. It establishes a dual-impact mechanism: motivating innovation and building a legal "shield" to reduce personal risk. This is key to changing the fear-of-mistakes mindset and fostering a culture of accountability.

The program "Research and Development of Artificial Intelligence (AI) Applications in Ho Chi Minh City from 2020 to 2030" aims to make AI a key economic sector, promoting rapid and sustainable economic development and positioning AI as a core technology for innovation. The main goals are to enhance the research, implementation, and technology transfer of AI; apply AI in state management, education, healthcare, and transportation; and by 2030, establish AI as a foundational industry contributing to GRDP growth.

The city government has planned nine projects to develop AI, including: (1)

infrastructure development for digital platforms; (2) high-performance computing infrastructure; (3) an AI solutions and application portal; (4) an IT and AI enterprise festival; (5) a survey on AI application needs; (6) policy and mechanism development for AI; (7) establishment of an AI development and transfer support center; (8) a network of AI research institutes and centers at academic institutions; (9) an international-standard AI workforce training program.

These projects, however, pose potential challenges. In terms of implementation, success depends on the ability to translate high-level policies (Resolution 98) into detailed, accessible, and applicable procedures and guidelines. Regarding innovation culture, Decree 73 must be realized as a truly safe working environment, where experimentation mistakes are treated as lessons rather than grounds for punishment. For measuring outcomes, a set of specific evaluation indicators should be developed for each policy (e.g., number of new mechanisms piloted, number of innovative proposals protected, indicators of AI ecosystem growth).

The institutional system is not merely a management tool but also reshapes core values, shifting the government's role from administrative control to that of a "facilitating government," prioritizing citizen service and development. The combination of legal "gateways" from the central government and proactive local action plans creates an institutional environment flexible enough to allow creativity and robust enough to guide and manage risks. This is the foundational condition for technological and procedural innovation ideas, often constrained by rigid regulations to be implemented in practice, thereby gradually forming and spreading an innovation culture throughout the government system.

Overall, Ho Chi Minh City's innovation culture policies reflect a comprehensive, visionary, and bold approach to fostering innovation. The focus is on removing institutional and psychological barriers while concentrating resources on a key technological field (AI). The success of these policies will not only determine the city's development pace but also carry pioneering significance, paving the way for institutional innovation nationwide. These policies embody a philosophy of governance transformation from "administrative government" to "enabling government" and "ecosystem builder," in which the state plays a leading, facilitating role, oriented toward serving citizens and businesses, gradually shaping and spreading an innovation culture throughout the entire system.

b. Digital technology

Technology serves as the vehicle to translate innovation values into tangible benefits for citizens and businesses. According to the Ministry of Information and Communications, HCMC's Digital Transformation Index (DTI) consistently ranks among the top nationwide from 2020 to 2024 (ranked second in 2022, 2023, and 2024).

Table 1. Digital Transformation Index Rankings of Ho Chi Minh City (2020–2024) (moha.gov.vn, 2023).

Year	Digital Transformation Index (DTI)	Ranking (nationwide)
2020	0.3848	5
2021	0.5609	3
2022	0.7163	2
2023	0.8020	2
2024	0.8455	2

HCMC has strategically built and operated a shared data platform, considered to be the city's "digital backbone." It has deployed the Data Integration Platform (DIP) and the File Storage Platform (FSP) for unstructured data. The city's data center is accessible via https://data.hochiminhcity.gov.vn, and its open data portal at https://opendata.hochiminhcity.gov.vn includes 91 datasets across 12 sectors.

In 2023, the city focused on implementing its Data Governance Strategy, targeting three data groups: (1) citizen data—administrative, civil status, healthcare, education, and social welfare; (2) financial-enterprise data—budget statistics, public investment management, business, and household; (3) land-urban data: land records, geographic information systems, construction, transportation, and planning-architecture (dti.gov.vn, 2025).

In 2024, the city completed the digitization of four civil status registers: marriage, birth, death, and parent-child recognition. These were synchronized with the Ministry of Justice's database, enabling citizens to obtain extracts regardless of registration location or residence.

In November 2024, the city launched the "Digital Citizen App," a smart mobile application enabling two-way interaction between citizens and government through convenient "one-touch" communication (People's Committee of Ho Chi Minh City, 2024).

Administrative services in HCMC have been upgraded with AI-integrated RPA systems provided by VNPT. These systems automatically process paper documents (via scanning), classify and verify them intelligently, and input data into electronic systems, saving over 2,000 labor hours daily (equivalent to 175 full-time staff annually), nearly eliminating errors, and improving citizen satisfaction to over 95% (Vietnam.vn, 2025).

In transportation, traffic surveillance cameras can recognize car license plates with 95.5% accuracy and motorbike plates with 87.1% accuracy, enhancing incident detection and citizen alerts via SMS, Zalo, or electronic boards. The city also implemented UniPass electronic payment cards and QR code scanning on 200 buses across 26 urban routes.

Innovation has also driven positive changes in HCMC's digital economy. The E-commerce Index rose steadily from 2020 to 2024 (except for a dip in 2021 due to COVID-19), consistently ranking first nationwide.

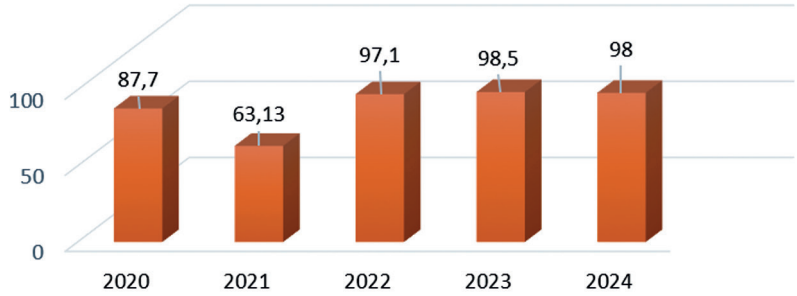

Figure 1. E-commerce Index of Ho Chi Minh City (2020–2024) (https://vecom.vn, 2020–2024)

The Human Resources and Information Technology Infrastructure Index of the city has also shown a positive development trend from 2020 to 2024, ranking first nationwide among all localities since 2022.

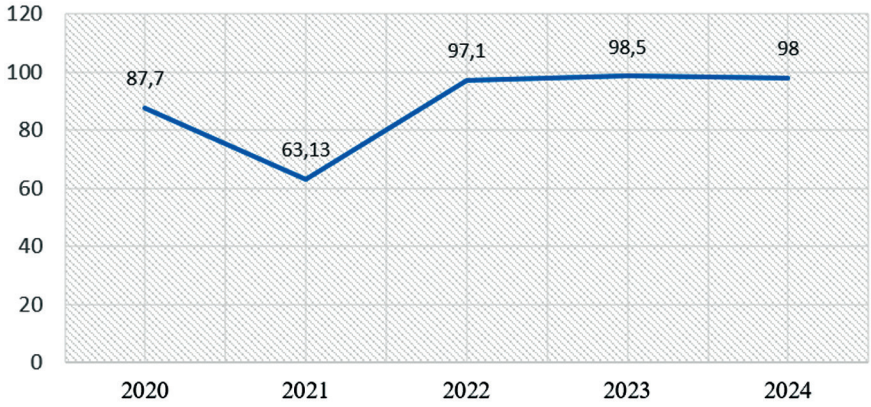

Figure 2. Human Resources and Information Technology Infrastructure Index, 2020–2024 (https://vecom.vn)

c. Human and innovation ecosystem

HCMC focuses on building capacity and mindset for civil servants—the individuals directly implementing and interacting with citizens. Through specialized workshops, AI training programs, and startup forums, the city equips its workforce with the necessary knowledge and tools to avoid falling behind and confidently propose and implement new ideas. Annually, to seek practical solutions, the Department of Science and Technology

collaborates with other units to organize the "AI Application Solutions Contest in HCMC," along with other innovation competitions in technology (tuoitre.vn, 2024).

In 2023, HCMC was the only locality in Vietnam honored with the ASOCIO Award in South Korea for the category of Outstanding Digital Government (vpub.hochiminhcity.gov.vn, 2024). In 2024, the city government established the "Ho Chi Minh City Innovation Startup Center," not just a physical location but a dedicated entity for connecting, supporting, and incubating innovation projects. This center plays a pivotal role in mobilizing resources, transforming the city from a regulator into an active partner in the startup ecosystem, marking a milestone in building an innovative urban model.

In 2025, the city organized competitions such as "AI Challenge" and "AI.Star," creating platforms to connect researchers, startups, and tech enterprises with the city's policy and investment ecosystem (dost.hochiminhcity.gov.vn, 2025).

In 2024, HCMC's innovation startup ecosystem continued to thrive, scoring 55.81 points, ranking second nationwide and 111th out of 1,000 global cities, and third in Southeast Asia (tuoitre.vn, 2024).

As of May 20, 2025, HCMC rose one spot to 110th globally, its highest ranking ever, and entered the top 5 innovation startup ecosystems in Southeast Asia for the first time, especially in Fintech, with rapid growth and a top 30 global ranking in Blockchain, second in Southeast Asia (https://vecom.vn).

The Satisfaction Index of Public Administrative Services (SIPAS) in HCMC reached 83.85% in 2024, up 2.07% from 2023. This positive improvement shows that innovation solutions in the public sector have been effective, marking a clear step forward in service quality and affirming the commitment to citizen-centric governance.

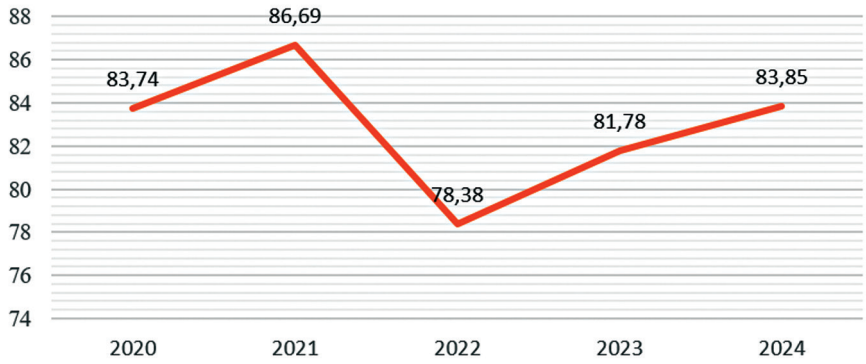

Figure 3. *Satisfaction Index of Public Administrative Services in HCMC (2020–2024) (https://vecom.vn)*

4.2. Discussion

The successful establishment of an innovation culture in HCMC has had a comprehensive impact on governance effectiveness, clearly reflected in the positive shifts of key national indicators. These figures not only demonstrate the effectiveness of specific solutions but, more importantly, reveal a causal relationship between a culture that encourages innovation and improvements in internal performance and citizen satisfaction. This impact is evident in three main dimensions: internal administrative performance, public service quality, and overall competitiveness of the system.

Moreover, an innovation culture has profoundly influenced public service quality and citizen perception, affirming that innovation efforts have been transformed into tangible public value. This increase correlates closely with citizen-centered initiatives. The simultaneous improvement of both PAR INDEX (internal performance) and SIPAS (external satisfaction) creates a positive feedback loop: internal performance improves through innovation, shortening service time and enhancing quality; better services increase citizen satisfaction and trust; and citizen trust generates positive pressure and motivation for continued innovation. This is the essence of transforming innovation culture into tangible public value.

Innovation culture has also enhanced HCMC's competitiveness and position on the regional innovation map. Maintaining second place nationwide in the Provincial Innovation Index (PII) with 55.81 points, and especially the rise of the city's startup ecosystem into the top 5 in Southeast Asia (ranked 110 globally), proves that innovation culture is not confined to the public sector but has strong spillover effects across the entire socio-economic landscape. The government's role as a facilitator—through connection forums, startup support centers, and special mechanisms—has created a nurturing environment for tech enterprises and startups to flourish.

However, the most challenging issue in public management is how to turn momentum into sustainable action. HCMC has found a creative solution: integrating indicators of "dynamism, innovation, and operational effectiveness" into the Department and District Competitiveness Index (DDCI). This is an innovation in the evaluation mechanism itself. By doing so, the city has transformed innovation from an abstract concept or spontaneous movement into a concrete evaluation criterion with weight and direct impact on the reputation and performance of each department leader. This mechanism creates positive pressure, compelling administrative units to proactively explore, improve processes, and enhance performance to avoid falling behind. It ensures that innovation is no longer the choice of a few pioneers but a mandatory requirement in the "job description" of the entire system.

4.3. Challenges and Limitations in HCMC's Innovation Model

Dependence on temporary special mechanisms: Resolution 98/2023/QH15 created a

"legal sandbox" for experimentation, but its success raises questions about sustainability once the pilot phase ends. There is a risk of forming an "innovation enclave" that widens development gaps with other regions.

Gap between indicators and real experiences: Progress is reflected in indices such as DTI, PAR INDEX, and SIPAS, yet these do not fully capture the lived experiences of all citizens. Digitalization and automation may unintentionally deepen digital inequality and obscure persistent urban problems such as traffic, flooding, or housing.

Pressure on civil servants and risk of superficial innovation: Adding "Dynamic and Innovative" criteria to the DDCI index encourages competition but may lead to short-term, easily measurable projects rather than deeper reforms. Building a psychologically safe culture that accepts risk and failure remains difficult.

Risk of technocratic thinking: Heavy focus on AI risks technology being treated as the sole solution, while foundational issues such as data ethics, social consensus, and grassroots change management receive less attention.

Execution and scalability challenges: There is a gap between progressive policies and local implementation capacity. Dependence on major technology providers poses risks, and HCMC's unique conditions make replication in other provinces difficult.

These challenges do not diminish HCMC's achievements but highlight the next stage of transformation: moving from innovation based on temporary mechanisms to sustainable institutional foundations, and from index-driven innovation to comprehensive, human-centered innovation.

5. Conclusion and Recommendations

5.1. Conclusion

The study of the process of building and developing an innovation culture in Ho Chi Minh City presents a comprehensive and vivid picture of how a local government can proactively engineer transformation in the digital age. HCMC's success is not accidental nor the result of fragmented efforts; it is the outcome of a deliberate, strategic approach implemented through a well-integrated model based on three key pillars: institutional framework, digital technology, and human and innovation ecosystem.

However, the study also identifies several bottlenecks that need to be addressed. Notably, the proportion of HCMC's online public services synchronized with the National Public Service Portal remains low relative to the city's potential and status. This highlights the urgent need for stronger innovation at the level of inter-agency process integration and technical standardization.

The success story of HCMC affirms that building an innovation culture in the public sector is a long-term journey requiring perseverance, a strategic long-term vision, and

coordinated efforts between "political will" from the top and "grassroots creativity" from the bottom. The three-pillar model adopted by HCMC can serve as a valuable reference framework for other localities across Vietnam.

5.2. Recommendations

- Strengthen the institutional framework for innovation culture: HCMC should propose sustainable special mechanisms that allow for controlled experimentation and risk-taking. Civil service reform should move toward greater flexibility, with special incentive policies to attract talent in technology, data, and public policy. Codify internal safe-to-experiment procedures, post-implementation reviews, and performance incentives independent of special authority; document pilot-to-policy pathways to reduce reliance on exceptional mechanisms.

- Breakthroughs in technology and data governance: Shift from digitizing processes to redesigning public services based on data. Establish a centralized data governance agency to ensure interoperability and data quality across administrative levels. Apply AI and automation in document processing, analytics, forecasting, and decision-making (e.g., transportation, healthcare, public investment). Form a special task force to review and standardize online public service procedures and integrate them with the National Public Service Portal. Establish a centralized data governance function with clear standards; prioritize reimagining high-volume services end-to-end; embed AI and automation where measurable cycle-time reduction and error reduction are demonstrated.

Performance integration: Incorporate innovation culture indicators (Table 1) into department-level KPIs and link DDCI sub-indices to leadership appraisals; reward documented learning and responsible risk-taking.

- Human and innovation ecosystem: Empower grassroots units with autonomy and experimental budgets to encourage creativity. Train leaders and managers in service design thinking and agile governance. Integrate the PII and DDCI indicators into civil servant performance evaluations, especially for department heads, to link innovation with personal accountability.

Data Availability Statement

The data used to support the findings of this research are available from the corresponding authors upon request.

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Pham Thi Ninh

INOVACIJŲ KULTŪROS SKATINIMAS VIEŠAJAME SEKTORIUJE: PAMOKOS IŠ HOŠIMINO MIESTO

Santrauka. Šiame straipsnyje nagrinėjama, kaip Hošimino miestas (HCMC) sėkmingai puoselėjo inovacijų kultūrą viešajame sektoriuje, susidūręs su skaitmeninės transformacijos iššūkiais. Tyrime, taikant mišrių metodų metodą, kuris integruoja kokybinę politikos analizę ir kiekybinį pagrindinių nacionalinių rodiklių (DTI, PAR INDEX, SIPAS, PII ir DDCI) vertinimą, parodoma, kad HCMC pasiekimai kyla iš gerai struktūrizuoto trijų ramsčių modelio, apimančio (1) institucinę struktūrą, (2) skaitmenines technologijas ir (3) žmonių ir inovacijų ekosistemą. 2020–2024 m. empiriniai duomenys rodo, kad šis modelis padidino valdymo efektyvumą, pagerino piliečių pasitenkinimą ir sustiprino miesto konkurencingumą. HCMC valdžia iš tradicinės administracinės valdžios tapo „pagalbine valdžia“, kuri skatina eksperimentavimą, rizikos prisiėmimą ir bendradarbiavimą. Šie rezultatai suteikia vertingų įžvalgų kitoms Vietnamo vietos valdžios institucijoms, siekiančioms institucionalizuoti inovacijų kultūrą kaip tvaraus vystymosi pagrindą skaitmeniniame amžiuje.

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