

COMPARATIVE ANALYSIS OF STRATEGIC MANAGERIAL EFFECTIVENESS IN PUBLIC ADMINISTRATION: EVIDENCE FROM THE HCSO IN HUNGARY AND INDIS IN SRI LANKAN MIS SYSTEMS

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Abstract

Management Information Systems (MIS) play a significant role in modern public administration by supporting strategic digital administrative efficiency through evidence-based decision-making. This study examines the management efficiency of the Management Information System (MIS) of the Hungarian Central Statistical Office (HCSO) in Hungary and the Integrated National Data and Information System (INDIS) in Sri Lanka. Using a qualitative comparative research approach, the study analysed secondary data obtained from academic journals, official reports, policy documents, and institutional publications related to public administration and digital governance in both countries. The analysis was conducted through SWOT assessments and key management effectiveness indicators, including time efficiency, cost control, fitness for purpose, stakeholder trust, and adaptability to change. The findings reveal that the HCSO operates within a framework that is compliant with European Union standards, has strong interoperability mechanisms, is technologically advanced, and is institutionally stable. However, challenges such as technical complexity, operational costs, and system adaptability were also identified. In contrast, despite challenges such as limited ICT capacity, political instability, and resource constraints, the project demonstrates strengths in transparency, centralized administrative coordination, and integration between ministries. Overall, this study revealed that emerging digital governance systems such as INDIS can benefit from the institutional experience and technological maturity of HCSO, and that both systems provide important lessons for strengthening the strategic management effectiveness of public administration.

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1 Introduction

In recent years, the use of public administration management information systems (MIS) has increased to improve transparency, decision-making, and service delivery in the public sector [3], [23]. These systems support governments in implementing public sector policies and managing data [1]. Sri Lanka is currently using digital governance initiatives such as the Integrated National Data and Information System (INDIS) to improve data integration and evidence-based decision-making [22]. However, as this system is still in its development stage, its long-term management

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effectiveness has yet to be explored. At the same time, mature MIS practices can be seen through the Hungarian Central Statistical Office (HCSO), which implements advanced data-driven systems in line with European standards [10], [11]. The HCSO model plays an important role in its structured data management and statistical governance.

Despite these developments, there is limited comparative research between mature European Union MIS systems and developing South Asian systems, which is a research limitation. The lack of opportunities to understand how MIS maturity affects governance quality and public sector performance creates a clear research gap. This study examines the managerial effectiveness of MIS in HCSO (Hungary) and INDIS (Sri Lanka), focusing on how MIS systems affect time efficiency, cost control, stakeholder trust, operational suitability, and adaptability to change. The study compares both systems to identify practical lessons that Sri Lanka can learn from Hungary's mature MIS framework.

2 Literature review

This study examines the comparative management effectiveness of Management Information Systems (MIS) in public administration, focusing on the Hungarian Central Statistical Office (HCSO) and the Integrated National Data and Information System (INDIS) of Sri Lanka. Using secondary data, a literature review was conducted through academic journals, policy reports, and statistical publications. The study also highlights the limitations of comparative analyses between mature EU-based systems and developing South Asian digital governance frameworks, highlighting the literature that MIS and digital governance frameworks affect administrative efficiency and transparent decision-making in public institutions.

Efficiency and transparency are integral components of public administration systems. Rosenbloom et al. [3] have shown in their study that MIS plays a crucial role in improving these and that public administrations are increasingly relying on structured information systems for policy implementation and service delivery. Namath Omar et al. [1] also reveal another aspect of the government's use of digital transformation. They reveal that electronic governance systems improve administrative responsiveness and reduce inefficiencies in public sector operations. However, Erangi et al. [2] emphasize that these systems require strong institutional capacity and governance frameworks to achieve sustainable results.

In addition, strategic management and performance measurement have also become essential components of MIS effectiveness in public organizations. Bryson [12] highlights that strategic planning is a fundamental requirement for the alignment of administrative systems in long-term policy-making. Furthermore, Poister et al. [23] argue that MIS-based decision-support can be integrated with systems to provide greater efficiency. The adaptability of strategic management practices in government organizations is also key. Accordingly, Walker [20] argues that improving organizational effectiveness based on MIS can directly affect government performance outcomes. Collectively, all these proposals have helped to shift the focus of the study to a new direction, revealing that MIS performance is strongly dependent on organizational strategy and governance structure.

In the European context, data reliability is enhanced by standardized frameworks such as the Eurostat European Statistical Code of Practice and the European Statistical System Quality Assurance Framework. As Eurostat [7] and [8] reveal, these frameworks are crucial for ensuring transparency and interoperability, ensuring consistency in statistical governance and administrative data processing, and supporting advanced MIS environments. As the same reports further reveal, the European Interoperability Framework plays an important role in the integration of public sector information systems within the European Union, facilitating cross-institutional and cross-border data exchange [22].

In parallel, studies confirm that the Hungarian Central Statistical Office (HCSO) also operates under EU regulatory and statistical standards. Kárpáti [11] reveals in his study that MIS is used by HCSOs to improve not only data quality, but also data reporting accuracy and administrative efficiency, and to support integrated decision-making. Furthermore, Eurostat frameworks have also contributed to the standardization and maintenance of Hungarian statistical governance, as reported by Eurostat [7], [8]. Nagy et al. [21] further report that the benefits of MIS development in Hungary

come from long-term institutional stability, advanced technological infrastructure, and alignment with EU digital governance frameworks. Accordingly, the benefits of MIS development have created favourable conditions for Europe and Hungary so far.

In contrast, the strategic managerial effectiveness in public administration in Sri Lanka has been examined in recent studies. Studies have shown that the Integrated National Data and Information System (INDIS) represents an emerging MIS framework that aims to improve centralized data management and evidence-based decision-making in public administration. UNDP [24] emphasizes that INDIS plays a major role in improving the transparency, coordination, and administrative efficiency of public institutions in Sri Lanka. Furthermore, several supporting institutions, such as the National Spatial Data Infrastructure and Statistical Institutes, have contributed to this national data governance system by providing information [22]. However, the literature on this subject is limited, and what literature has emerged suggests that MIS systems (INDIS) are being developed with the assistance of foreign organizations, and are currently facing challenges such as limited technical capacity, fragmented data integration, and institutional coordination issues [24].

The effectiveness of MIS in public administration is considered, and research reveals that the role of MIS depends not only on the technical infrastructure but also on strategic control and organizational readiness. Shea [13] emphasizes that the success of using MIS in public administration depends on the intermediate mechanisms that coordinate administrative operations. Similarly, Walker [20] and Poister et al. [23] reveal that MIS systems and organizational objectives support the management in a structured manner. Thus, it is revealed that large positive developments in public administration can be expected from the use of MIS.

Overall, the above studies reveal that a combination of strategic management practices has shaped the MIS efficiency and governance of the organizational technology infrastructure in public administration. While HCSO represents a mature MIS environment, INDIS is a developing system that needs to be improved but has significant potential. This study is therefore able to address the clear research gap that exists due to the lack of direct comparative studies between these two contexts.

3 Research Methodology

The main research question of this study was “How can management efficiency be improved by using MIS systems in INDIS in Sri Lanka, and what are the factors associated with these improvements?” In addition, several research-based sub-research questions were posed, and data collection and analysis were carried out. “What lessons can be learned from the developments in INDIS (Sri Lanka) and HCSO (MIS) in Hungary using MIS systems?” “How does management efficiency in HCSO and INDIS affect time efficiency, cost control, objectives, and building stakeholder trust?” “What kind of contribution do the strengths, weaknesses, threats, and risks (SWOT) of HCSO and INDIS MIS systems make to the management structure?”

This research was conducted using a qualitative and comparative research design, and a data analysis based entirely on secondary data was conducted. Published reports from the Hungarian Central Statistical Office (HCSO) and the Sri Lankan Integrated National Data Information System (INDIS) were used as the main data sources for this study. In this study, data collection and analysis were carried out on the management efficiency of both contexts, based on key operational indicators such as time efficiency, cost control, fitness for purpose, stakeholder trust, and adaptability to change, using the following conceptual framework.

These indicators were revealed by Walker in his study in 2013. Furthermore, comparisons were made between the two environments using these indicators. In order to achieve this management efficiency, an analysis of the existing internal and external situation of HCSO and INDIS was carried out. It is based on (SWOT) analysis, which categorizes strengths and weaknesses as internal characteristics and threats and opportunities as external characteristics, and data collection and analysis are carried out.

Using this method, it was possible to openly analyse the differences and similarities between mature and developing MIS environments. This enabled the provision of practical recommendations for the development of public administration, to study what lessons can be learned from Hungary, a

member of the European Union, in developing digital governance and efficient administration in a transition economy like Sri Lanka, and to suggest that lessons can be learned from the developing Sri Lankan context for the Hungarian context as well.

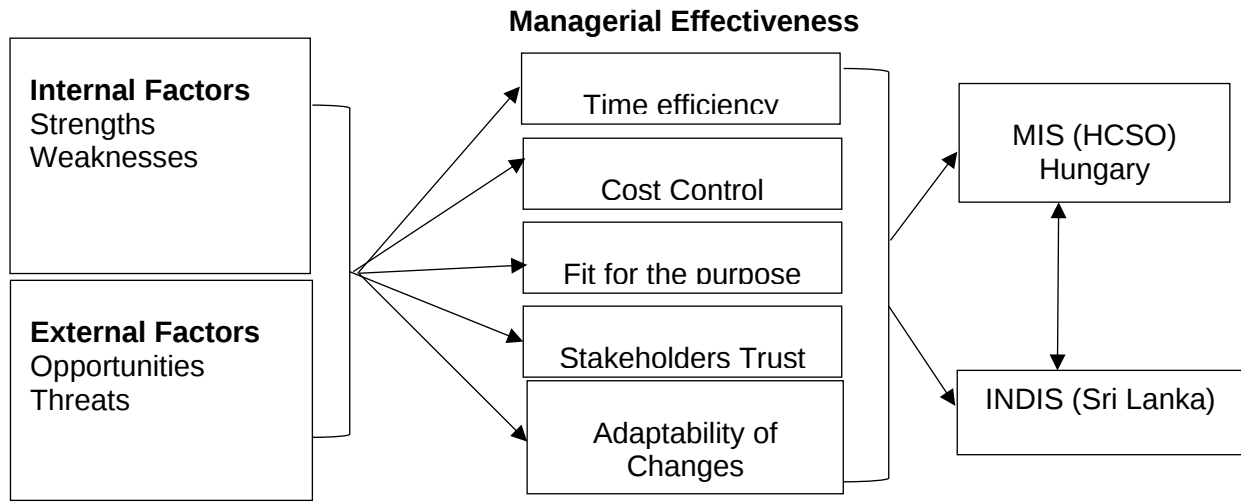


Figure 1. *Conceptual Framework (Walker, 2013) (own edition)*

4 Results and Discussion

4.1 SWOT Analysis of HCSO MIS

The use of HCSO demonstrates several significant strengths in the Management Information System (MIS) in improving the management and efficiency of public administration. The ability to provide accurate and fast reporting through integrated databases and OLAP dashboard technologies is a key factor. Therefore, there is a possibility of evidence-based decision-making by minimizing errors [11]. It can be seen that it can strengthen stakeholder trust and public confidence in transparent public administrative decision-making [4], [7]. HCSO has also increased reliability and integrity in the management of sensitive public data [11]. Furthermore, the incorporation of business intelligence tools and interoperability frameworks can be seen, and the expansion of the operational capacity of the system in line with European standards and digital governance requirements has increased its strength [5], [19]. Considering the weaknesses in the HCSO MIS framework, it is identified that the professional and specialized technical expertise is minimal compared to the technical complexity of the system [11]. In addition, it was found that there are external barriers to IT infrastructure, while maintenance and operational costs are high [11]. The system has been challenged by organizational challenges such as low data quality and fragmented operational procedures due to technological changes [4], [11].

Considering the future development opportunities of the HCSO MIS, it is possible to strengthen its administrative efficiency through European digital governance initiatives and interoperability frameworks [5], [15]. This will also enable the adoption of advanced technologies such as big data analytics and cloud computing, as well as predictive modelling and artificial intelligence [15]. This can improve decision-making capacity and organizational performance [21], while collaborating with international statistical institutions can also improve operational reliability and organizational innovation in line with international quality assurance standards [7], [8]. However, there are also threats to this system. HCSO MIS is more likely to face cybersecurity risks and information security risks. Therefore, it is necessary to subject it to proper data security management. This can reduce stakeholder trust [25]. In addition, political or regulatory changes can occasionally compromise the confidentiality of the system [11]. Costly system changes and continuous technological adaptation, resistance from organizational stakeholders, and integration of multi-source data can pose challenges to the sustainability and effectiveness of the system [11], [4], [25].

4.2 SWOT Analysis of INDIS Project

The INDIS project in Sri Lanka has several strengths. A key strength of the INDIS system is its ability to integrate multiple ministries through centralized data collection and management processes. This can easily support effective decision-making in public administration by integrating financial, administrative, and operational information [17], [18]. In addition, another key strength is the promotion of transparency and accountability through financial monitoring and administrative reporting. This naturally contributes to increasing public trust and institutional credibility [2], [17]. Therefore, this collective data further supports information sharing among public institutions and collaborative governance mechanisms within the public sector [18]. However, weaknesses can also be seen in the INDIS framework. Because it is still in a developmental stage. Although the system integrates many government agencies, there is a lack of inter-ministerial cooperation, and it has communication gaps [17]. The INDIS framework faces challenges due to difficulties in efficiently managing and reporting sensitive data, insufficient ICT literacy, a lack of technical expertise, and limited professional training [17]. The slow pace of technological improvements, resource constraints, and political instability reduces the overall reliability of the system [2],[18].

The study also identified important opportunities for the future development of the INDIS project. Due to its systemic flexibility, INDIS has significant potential to learn from mature MIS systems and international digital governance frameworks [2]. It can also benefit from international organizations and digital governance initiatives [2]. The system has the potential to be deployed to develop methodologies for advanced cloud computing, big data analytics, and predictive analytics tools [17]. Training programs and inter-ministerial coordination can improve transparency and operational efficiency with international standards [19], [22]. Despite these positive trends, there are also external threats that affect the sustainability and effectiveness of the INDIS project. Bureaucratic resistance among government departments and political instability are key. Institutional inefficiencies and barriers to long-term continuity create system failures and undermine stakeholder trust [18]. Frequent technical inconsistencies, cybersecurity threats, and data privacy risks can reduce the accuracy and consistency of data [2]. In addition, the integration of information from multiple sources poses significant challenges to public trust as data distortions can occur if not properly managed [18]. Proper management of these risks should be a primary task of INDIS.

4.3 Managerial Effectiveness of HCSO MIS

HCSO's Management Information System (MIS) improves time efficiency through the use of automated reporting tools. This capability minimizes data delays and provides accurate and timely data. This allows data to be quickly and easily transferred to decision-makers, which in turn enables faster policy making [11], [16], [4]. However, complex automated processes also run the risk of slowing down the workflow. The MIS system strengthens cost control by providing detailed reports to relevant parties. Regardless of which political group is elected, these systems facilitate efficient allocation of resources and budget control, thereby reducing additional costs and increasing operational efficiency [11], [4]. At the same time, operational costs can increase due to the high need for professional training and technical expertise. However, digital reporting systems and integrated tools have been shown to reduce redundant administrative tasks and improve productivity in public organizations [14].

Furthermore, HCSO MIS system is designed to align with organizational objectives, fit for the purposes and operational goals, thereby supporting sound decision-making and policy planning. It ensures the production of high-quality statistical reports, as they can comply with EU and institutional standards and objectives [11], [19], [7]. However, the limited ability to respond to new directives or sudden policy changes will minimize the system's adaptability [11]. Building stakeholder trust is another important aspect of an MIS system. This trust is built through transparent data reporting and compliance with international standards. Providing accurate information in policymaking strengthens trust. However, user resistance to new systems and political interference have undermined trust and usage [11]. Finally, the HCSO examines whether the MIS system is designed to adapt to a rapidly changing environment. This includes new reporting requirements, legal changes, and efforts to keep up with advanced technology tools such as AI and predictive analytics. However, institutional

changes and new policies have limited capabilities, indicating the need for further updating of the system [11], [4].

4.4 Managerial Effectiveness of Sri Lanka's INDIS Project

INDIS is designed to provide live and real-time monitoring of financial and operational activities, reducing bureaucratic delays and allowing officials and policymakers to make faster decisions [17], [18]. As automated workflows are in place, additional tasks are reduced. Problems arise due to collaboration issues between departments, and low ICT skills that do not achieve the desired efficiencies [17]. This system improves cost control through centralized data collection and reporting, reduces administrative workload, improves resource allocation, and increases financial efficiency [18]. However, high initial investment, staff training, and maintenance requirements can lead to increased operating costs. The INDIS project is designed to meet operational and structural requirements to fit with the institutional purposes [17]. It can operate with a modular architecture that can be customized to meet institution-specific needs. This supports the objectives of information collection and analysis [18]. However, constraints in customization and misalignment with workflows can limit efficiency and pose a risk of achieving desired objectives [18].

This system, INDIS, promotes transparency, accountability, and trust. Open data reporting builds trust among stakeholders and citizens. It also increases trust between policymakers and institutions. However, maintenance delays and data exchange issues between departments can reduce confidence in the system [17],[18]. The key feature that is essential when examining how the INDIS system copes with adaptability for changes is its flexibility. Flexible infrastructure, predictive analytics, and AI integration offer the potential to adapt to changing and emerging administrative needs. As political interference increases, flexibility can be challenged by budgetary constraints, lack of technical expertise, and bureaucratic resistance [18].

4.5 Qualitative Aspects in which HCSO MIS Excels Compared to INDIS

Several features are being implemented in Hungary's HCSO MIS, but they have not yet been implemented in the INDIS project. HCSO operates in accordance with European standards that ensure reliability, data governance, international compliance, and easily achieves the desired goals. It was revealed that HCSO MIS has higher quality compared to INDIS due to the use of visualization and intelligence. Although HCSO has improved efficiency by performing complex data analytics such as MIS, OLAP dashboards, and predictive modeling, INDIS is still in the development stage and has not yet acquired such technical capabilities.

The institutional stability of the HCSO MIS is high, with continuous updates and robust cybersecurity and risk management in line with European Union regulatory guidelines. However, due to limited resources and technical shortcomings, INDIS still faces challenges in these tasks. As a result, it is still not possible to protect sensitive information 100%. Ultimately, it was revealed that INDIS is capable of providing comprehensive administrative integration. However, when compared to HCSO MIS, HCSO MIS excels in terms of accuracy, reliability, security, and adherence to global best practices. Therefore, in a developing state environment, the lessons that can be learned from HCSO MIS are very relevant to the context in which Sri Lanka is still developing.

Table 01: Qualitative Aspects in which HCSO MIS Excels Compared to INDIS

Aspect	HCSO MIS – Unique Strengths	Why INDIS Lacks This
International Standard	Data governance and operations are conducted under international standards such as the EU, ensuring reliability.	Operates only at the national level
Advanced Data Analytics & BI Tools	Visualize, analyze, and predict complex data using BI tools such as advanced data analytics and OLAP dashboards.	Lacks international forecasting model capacity.
Institutional Stability & Continuity	Mature operations and consistent updates, maintaining institutional stability and continuity within the EU framework	Disaster systems frequently face political and administrative changes that affect their continuity.

Data Quality & Accuracy	Data quality and standardization ensure accuracy	Struggles with data inconsistencies and discrepancies
Cybersecurity & Risk Management	EU-regulated, uses cybersecurity strategies and risk management frameworks, ensuring data protection	Resource constraints, skill gaps, and lack of advanced cybersecurity measures
Long-Term Technical Maturity	Represents an advanced MIS that is mature and refined through technological development due to long-term use	INDIS is in early development, so there are limited and slow updates

4.6 Qualitative Aspects in which INDIS Excels Compared to HCSO MIS

The INDIS project, characterized by broad government integration and transparency, is a turning point in a developing country. The INDIS project, which centralizes financial, administrative, and operational data across multiple ministries, facilitates improved coordination, real-time monitoring, and evidence-based policymaking. It is consistently committed to promoting public participation, building accountability, and citizen trust.

In contrast, the EU-compliant and sector-specific HCSO MIS appears to have a more limited scope, as it has fewer opportunities for flexibility. INDIS not only supports continuous data reporting but also strategic decision-making. It improves cost efficiency as there is less duplication. This will serve as a driver for digital governance and public sector innovation in a developing country.

The HCSO MIS is considered excellent because it demonstrates technological sophistication, statistical accuracy, and compliance with EU standards. However, HCSO is seen as less flexible than INDIS in terms of financial oversight, integration across ministries, higher adaptability, and direct public accountability. For the further development of HCSO MIS, INDIS can also draw valuable lessons.

Table 02: Qualitative Aspects in which INDIS Excels Compared to HCSO MIS

Area	INDIS Project (Sri Lanka) Unique Strengths	Why HCSO MIS Lacks This
Cross-Ministerial Integration	Financial, administrative and operational data are well centralized across multiple ministries.	There is no integration across the government, and the focus is mainly on statistics.
Administrative Transparency	Promotes open governance and transparency through participation in government institutions	There is a lack of transparency across the government, and some data accuracy is targeted.
Fiscal Management Focus	Focuses on real-time financial monitoring and resource utilization	Finance or management is not handled and the focus is mainly on statistics and reporting.
Modular Customization	Uses a modular architecture that allows for customization, considering the usage of each organization	Limited flexibility can be seen, adhering to a standardized EU framework.
Broader Governance Scope	Supports the implementation of strategic decisions across the government, not just within one sector	Since it mainly serves the National Statistical Office, it does not involve multiple ministries or institutions.
Adaptability to Developing Contexts	There is a greater chance of establishing a high level of flexibility in the international context.	A mature and complex system exists, with little flexibility for new innovations.
Public Accountability Orientation	There is transparent data access that strengthens the trust of citizens and policymakers.	In ensuring internal statistical accuracy, and does not focus on public transparency or civic participation.
Cost Efficiency through Centralization	Efficiency is increased by integrating multiple systems into one, reducing duplication.	The use of specialized subsystems can increase operational costs

5 Comparative Conclusion

Mature MIS frameworks such as HCSO benefit from stability, technological advancements, and established processes. Emerging systems such as INDIS have significant potential but are found to face organizational and infrastructural barriers. There are many lessons that Sri Lanka's INDIS can learn from the experiences of looking at the strengths and weaknesses of HCSO, and the benefits that INDIS brings to the country as a result of its great development are also many. Therefore, according to the research problem, it is confirmed that the INDIS project has achieved high management efficiency to date. It also revealed the need for advanced contexts to foster data-driven governance, strengthen public trust, and address technological complexities. Overall, both scenarios aim to achieve sustainable public sector transformation towards effective MIS implementation. There are many lessons to be learned from each of these scenarios.

6 Recommendations

6.1 Recommendations for HCSO MIS (Hungary)

- Improving adaptability in terms of system flexibility.
- It is best to introduce systematic changes in the MIS to allow for faster response considering EU policies or updates. This can enable targeted system improvements while maintaining operational continuity.
- Considering user participation.
- Recommend to implementing change management, and conducting user training programs, can help reduce resistance in development processes and improve the efficiency of system acceptance.
- Integrate AI and predictive analytics.
- It is recommended to further strengthen strategic decision-making by integrating artificial intelligence (AI) with existing predictive analytics, such as OLAP and BI tools.
- Strengthening cybersecurity and risk management frameworks.
- It is appropriate to take measures to protect sensitive data against potential digital threats, by using and upgrading EU-aligned cybersecurity models, for example, zero-trust frameworks.
- Increase transparency and promote public data accessibility.
- Through the use of open data dashboards, public reporting systems can be expanded. This research proposes a suitable method that is expected to improve data accountability and public trust.

6.2 Recommendations for INDIS (Sri Lanka)

- Developing Information and Communication Technology (ICT) training and management.
- It is recommended that continuous professional development programs be established at the ministry level to enhance ICT literacy among government officials who handle data, as well as to strengthen immediate expertise.
- Adopting international standards and interoperability frameworks.
- It is recommended that aligning INDIS with the Statistical Code of Practice by adopting recognized methodological standards such as ISO 8000, EU, etc. will help improve reliability.
- Strengthening cybersecurity and data protection systems.
- It is recommended not only storing encrypted data, but also implementing security audits and structured approaches that help prevent data breaches and improve stakeholder trust.
- Improve governance through inter-ministerial coordination.
- It is recommended to establish a collaborative, centralized MIS governance authority, developing coordination of data management across institutions.

7 Final Remarks

- The analysis highlights that while mature MIS frameworks, such as HCSO, benefit from stability, technological advancements, and established processes due to their international presence, emerging systems such as INDIS face significant organizational and infrastructural barriers.
- By learning from the strengths and experiences of HCSO, Sri Lanka can strategically improve the management efficiency of INDIS and strengthen public trust.
- Similarly, considering the technical complexities, HCSO can continue to evolve and further develop trust by increasing the adaptability of the system.
- Overall, lessons can be learned from the developed context to the developing context, and vice versa, from the context in which development takes place to the developed context. Policymakers should therefore focus on achieving sustainable public sector management transformations.

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References

- [1] J.A. Omar and M. Osmani, "Digitally Enabled Service Transformations in Public Sector," *International Journal of Electronic Government Research*, vol. 11, no. 3, pp. 76-94, Jul. 2015, doi: 10.4018/ijegr.2015070105. <https://doi.org/10.4018/IJEGR.2015070105>
- [2] D. H. Nilusha Erangi and I. Stecenko, "DIGITAL TRANSFORMATION IN SRI LANKA: EVALUATING PROGRESS AND ADDRESSING CHALLENGES," *Green, Blue and Digital Economy Journal*, vol. 5, no. 2, pp. 1-11, Oct. 2023, doi: 10.30525/2661-5169/2024-2-1. <https://doi.org/10.30525/2661-5169/2024-2-1>
PMid:38699064
- [3] D. H. Rosenbloom, R. S. Kravchuk, and R. M. Clerkin, "Public Administration," Dec. 2021, doi: 10.4324/9781003198116. <https://doi.org/10.4324/9781003198116>
- [4] European Commission, "Digital Economy and Society Index (DESI) 2021 – Hungary," Brussels, Belgium, 2021. [Online]. Available: <https://digital-strategy.ec.europa.eu/en/policies/desi>
- [5] European Commission, "European Digital Governance and Interoperability Frameworks," Brussels, Belgium, 2021. [Online]. Available: [European Commission](https://ec.europa.eu/eurostat/web/products-catalogues/-/ks-02-18-142)
- [6] Eurostat and OECD, *Eurostat-OECD Manual On Business Demography Statistics*. OECD, 2008. Organisation for Economic Co-operation and Development (OECD). (2008). <https://doi.org/10.1787/9789264041882-en>
- [7] Eurostat, *European statistics code of practice (revised edition 2017)*. (European Commission). (2017) Luxembourg: Publications Office of the European Union, 2017. [Online]. Available: <https://ec.europa.eu/eurostat/web/products-catalogues/-/ks-02-18-142>
- [8] Eurostat, *Quality assurance framework of the European statistical system, version 2.0*. Luxembourg: Publications Office of the European Union, 2020. <https://doi.org/10.2785/847733>
- [9] F.-G. Filip, "MANAGEMENT INFORMATION SYSTEMS: Managing the Digital Firm - 9th edition, authors: Kenneth C. Laudon and Jane P. Laudon (Book Review)," *International Journal of Computers Communications & Control*, vol. 2, no. 1, p. 103, Jan. 2007, doi: 10.15837/ijccc.2007.1.2342. <https://doi.org/10.15837/ijccc.2007.1.2342>
- [10] Hungarian Central Statistical Office (HCSO), "Home." [Online]. Available: <https://www.ksh.hu/?lang=en>. [Accessed: May 16, 2026].
- [11] J. Kárpáti, "Management information system - Decision support in public administration: Case study of the Hungarian Central Statistical Office," in *Proceedings of FIKUSZ 2008 Business Sciences Symposium for Young Researchers*, 2008, pp. 81-91. [Online]. Available: <https://kgk.uni-obuda.hu/sites/default/files/KarpatiJozsef.pdf>
- [12] J. M. Bryson, "A strategic planning process for public and non-profit organizations," *Long Range Planning*, vol. 21, no. 1, pp. 73-81, Feb. 1988, doi: 10.1016/0024-6301(88)90061-1. [https://doi.org/10.1016/0024-6301\(88\)90061-1](https://doi.org/10.1016/0024-6301(88)90061-1)
- [13] J. Shea, "Taking Nonprofit Intermediaries Seriously: A Middle-Range Theory for Implementation Research," *Public Administration Review*, vol. 71, no. 1, pp. 57-66, Jan. 2011, doi: 10.1111/j.1540-6210.2010.02306.x. <https://doi.org/10.1111/j.1540-6210.2010.02306.x>

- [14] L. Buics and E. Süle, "Statistical analysis of Hungarian public service processes for key performance indicator measurement," *Hungarian Statistical Review*, vol. 3, no. 2, pp. 71-98, 2020, doi: 10.35618/hsr2020.02.en071.
<https://doi.org/10.35618/hsr2020.02.en071>
- [15] L. Garayová, "E-Government : Shaping Europe's Digital Future," *Institutiones Administrationis*, vol. 1, no. 2, pp. 16–24, Nov. 2021, <https://doi.org/10.54201/iajas.v1i2.19>
- [16] M. Aranyossy, "User adoption and value of e-government services (Citizen-centric empirical study from Hungary)," *Acta Oeconomica*, vol. 72, no. 4, pp. 477-497, Dec. 2022, <https://doi.org/10.1556/032.2022.00032>
<https://doi.org/10.1556/032.2022.00032>
- [17] M. Fernando and C. Perera, "Determinants of Integrated Citizen-centric E-services in the Public Sector of Sri Lanka," 2022 Moratuwa Engineering Research Conference (MERCon), pp. 1-6, Jul. 2022, doi: 10.1109/mercon55799.2022.9906277.
<https://doi.org/10.1109/MERCon55799.2022.9906277>
- [18] Ministry of Finance, Sri Lanka, Annual Report 2021, Colombo, Sri Lanka, 2021. [Online]. Available: <https://www.treasury.gov.lk/>
- [19] Publications Office of the European Union, European interoperability framework (EIF).Luxembourg: Publications Office of the European Union,2011.[Online]. Available: <https://op.europa.eu/en/publication-detail/-/publication/c8d6514e-e729-45a1-81c1-ea3ee811d7a6/language-en>
- [20] R. M. Walker, "Strategic Management and Performance in Public Organizations: Findings from the Miles and Snow Framework," *Public Administration Review*, vol. 73, no. 5, pp. 675-685, Jul. 2013, doi: 10.1111/puar.12073.
<https://doi.org/10.1111/puar.12073>
- [21] S. Malatyinszki, H. Nagy, and , "Improving the Digitalization Capacity of Municipalities of Hungary Through Knowledge Management Tools," *Regionalnaya ekonomika. Yug Rossii*, no. 1, pp. 70-79, Jan. 2023, doi: 10.15688/re.volsu.2023.1.6.
<https://doi.org/10.15688/re.volsu.2023.1.6>
- [22] Sri Lanka National Spatial Data Infrastructure (NSDI). (n.d.), "Home".[Online]. Available: <https://nsdi.gov.lk/> [Accessed: May 16, 2026].
- [23] T. H. Poister, D. W. Pitts, and L. Hamilton Edwards, "Strategic Management Research in the Public Sector: A Review, Synthesis, and Future Directions," *The American Review of Public Administration*, vol. 40, no. 5, pp. 522-545, May 2010, doi: 10.1177/0275074010370617.
<https://doi.org/10.1177/0275074010370617>
- [24] United Nations Development Programme (UNDP), "UN and UNDP responses", in *Assessment Of Development Results: Sri Lanka*, United Nations, 2013,pp. 25-39. <https://doi.org/10.18356/6c65752a-en>
<https://doi.org/10.18356/6c65752a-en>
- [25] V. Nagy-Takács and L. Berényi, "Information Security Management System Standards in Hungarian Public Administration," *Proceedings of the Central and Eastern European eDem and eGov Days*, pp. 112-117, Sep. 2022, doi: 10.1145/3551504.3551554.
<https://doi.org/10.1145/3551504.3551554>