



The influence of electronic government on Sri Lanka's digital economy

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Abstract: The study aims to explore the e-government's effect on the digital economy to contribute to the body of knowledge, offering a rigorous understanding. Two research questions were formulated to guide this research: (1) What is the impact of e-government on the digital economy? (2) What key dimensions of e-government have an impact on a digital economy? relate to Sri Lanka. Notably, outcomes suggest the narratives in literature can be synthesized into five global themes, such as: Digital Infrastructure, Digital public services, Digital Users, Digital Platforms, and Digital Innovation. Furthermore, the study's outcomes identify 33 basic themes that describe these global themes. Among these, three themes stand out as particularly transformative: ICT Infrastructure Availability/Accessibility, Efficient Digital Public Services, and Digital/Computer Literacy. Most importantly, the literature underscores an urgent need for rigorous assessments that reflect the impact of e-government initiatives on economic development to address the research gap. This paper represents a rigorous review of the influence of e-government on the digital economy based on a thematic analysis of emerging research.

Index Terms - e-government, digital economy, public value, thematic analysis, conceptual framework, Sri Lanka

I. INTRODUCTION

Every society requires Information and communication between people. Deeply embedded Information and communication influence the economy and governance of a society. The spread and appearance of the internet have substantially changed modern-day governance. This new era of information technology refers to the globalization of communication as a vital foundation for a stronger universal society (Lysenko & Makovoz, 2025). Virtualization represents cyberspace, product compatibility, device interoperability, advanced innovation, and competition. Virtual places that represent cyberspaces assimilate into people's lives, gain acceptance of the internet as a standard tool, and pursue real-world needs. E-government brings the government closer to citizens (UNCTAD, 2025), overcoming the barrier of bureaucracy, reducing corruption, and bringing decision-makers to the forefront of the public service ethos, being reactive to people's needs. Which means, e-services of e-government are represented by greater transparency and efficiency (Sutomo & Pratama, 2025).

Modern public administration places a high premium on developments in digital government that facilitate efficient public service delivery. Since the 1980s, the concept of digital government, also known as e-government, has evolved in terms of conception, application, and evaluation. The complexity of e-government has increased with the advent of new technologies. The idea is no longer novel. Conflicting priorities and a technologically savvy public in the global population have made the process of digitizing public services to meet growing public expectations more challenging. As a result, e-government is acknowledged as a way to improve living standards and achieve sustainable economic growth (United Nations Department for Economic and Social Affairs, 2024).

E-government is more often defined as the ability of a government to use Information and communications technology (ICT) to provide businesses and residents with efficient and effective services (United Nations Department for Economic and Social Affairs, 2024).

E-government developments are showing a positive upward trend. There is a worldwide noticeable increase in digital infrastructure investments to promote public service delivery, thereby enhancing participatory democracy. Still, the United Nations' (UN) latest e-government survey presents a contrasting perspective. Sharp disparities in accessibility, capacity, and the widening digital divide in developing countries are noteworthy concerns. Though governments made various efforts to address these concerns with distinct approaches, conflicting priorities in these countries prove the challenging nature of addressing these issues. Privacy, data protection, online freedom of speech limitations, and digital exclusions are roadblocks in these countries. Notably, the study outcomes further present a less optimistic forecast for bridging the digital transformation gap, as indicated by the UN EGDI (United Nations Department for Economic and Social Affairs, 2024) (E-government Development Index).

Despite all these ambitious efforts, Sri Lanka's public sector apparatus remains inefficient. E-government ranked 98. It is a 32.4% decline compared to 2014, which recorded the highest index rank. The e-government development index trails behind regional leader Singapore, ranked at 0.9691, and sub-regional leader Maldives, with an index of 0.6745. More significantly, the e-participation index of 0.4110 is very low compared to regional leader Japan (0.9863) and sub-regional leader India (0.6575). Still, e-government literacy, as measured by the human capital index, remains significantly lower at 0.2778 compared to the regional average of 0.5579. All these indicate a more muted nature of citizen-government interactions. The public value is conceptualized as the collective

expectation of citizens regarding public services offered by a government. It is also unclear (United Nations Department for Economic and Social Affairs, 2024).

The term "digital economy" is widely, but loosely, referred to as the parts of the economy that are impacted by the digital transformation (Bukht & Heeks, 2018). The lack of a single, generally accepted definition of what the digital economy encompasses can encourage misperceptions (Bukht & Heeks, 2018). Also, it may partly stem from the multidimensional nature of the digital economy. However, in 2020, the G20 (G20, 2018) Digital Economy Ministers declaration of a broader definition of the digital economy as: "all economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, digital infrastructure, digital services, and data; it refers to all producers and consumers, including government, that are utilizing these digital inputs in their economic activities". More directly, economic activity reliant on, significantly enhanced or enabled by digital technologies and their appliances, commonly includes activities that increase human well-being or lead to social or environmental benefits, and can be described as the digital economy.

The EU's 'The Digital Decade' target is for all key public services for businesses and citizens to be entirely online by 2030, which is significant. Overall, the EU member states seek to modernize and improve the e-government processes to make them more user-friendly, citizen-oriented, and interoperable to boost the uptake of digital public services by businesses and individuals. Notably, the EU's DESI (Digital Economy and Society Index), which is a global standard for measuring the digital economy, identified digital public services – the e-government as the fourth dimension to measure a digital economy (European Commission, 2022). On a separate note, DET (Digital Economic Trends Framework) also recognized the necessity to factor in the global digital compact between governments and regional organizations (Digital Cooperation Organization, 2025). Summarizing all narratives implies the inexorable relationship between e-government and the digital economy.

Amidst global advancements, Sri Lanka stands at a transformative juncture. The digital economy is estimated to be worth USD 3.47 billion, which is 4.37% of GDP. Sri Lanka aims to achieve an ambitious USD 15 billion digital economy by 2030 (Ministry of Technology, 2021). And, the World Bank report suggests digital economic growth led to 1.5% overall growth of developing countries (World Bank, 2020; UNCTAD, 2025). However, the narratives of literature suggest that these key foci, critical to an emerging economy like Sri Lanka, are still under researched.

As discussed, this implies the need for a multifaceted and nuanced approach to understanding the impact of e-government on Sri Lanka's digital economy.

This research aims to understand the impact of e-government on Sri Lanka's digital economy through a critical analysis of the literature.

Accordingly, research questions are formulated as follows:

- (1) What is the impact of e-government on the digital economy?
- (2) What key dimensions of e-government have an impact on a digital economy? related to Sri Lanka.

The research questions were answered by performing thematic analysis on literature, focusing on the current status of the e-government and the digital economy of Sri Lanka.

The following sections describe the theoretical background, e-government, nature of e-government, and digital economy of Sri Lanka, as well as the results analysis, discussion, and conclusion.

II. THEORETICAL BACKGROUND

2.1 E-government

E-government was first introduced in the United States in 1983 to promote government innovation through the use of Information and communication technology. This is to reform public service institutions to meet citizens' collective expectations, satisfaction in government, while deepening democracy (United Nations Department for Economic and Social Affairs, 2024). Despite the multiplicity of definitions, the World Bank (2020) defines e-government as the use of information technologies, such as the internet and mobile computing, by government service entities to transform relationships between citizens, businesses, and other service entities. This refers to the underlying goal of an e-government. This is to create value for citizens, often described as "the common good for citizens": the public value (Moore, 1995, 2021).

Globally, e-government is now becoming an essential priority in public administration for national governments. This is mainly due to its ability to create value-driven public services to meet the needs of digitally connected societies by bridging the gap between government organizations, business entities, other service organizations, and citizens. Improved efficiency of public organizations enhances the quality of government services, spearheading public activity. Moreover, the greater transparency in government services fosters public participation in decision-making. The evolved efficiency and responsiveness of government service entities impact convenience and social development. Also, more inclusive public decision-making encourages a more conversant society. Most importantly, the digital government services not only promote sustainable development but also help address increasingly complex global environmental challenges. Ultimately, these digital transformation efforts are now widely recognized as drivers of sustainable economic growth and key to delivering public value for society (Charalabidis et al., 2019; Muñoz et al., 2022; United Nations Department for Economic and Social Affairs, 2024).

The New Public Management (NPM), a public administration theory that emerged in the 1970s, gained prominence in the 1990s. Influenced by these developments, the concept of e-government aims to achieve two primary goals: government efficiency and citizen satisfaction. Further, the approaches vary from distinct perspectives such as (a) e-administration, (b) e-services, (c) e-citizens, and (d) e-society (Deng et al., 2018; Twizeyimana & Andersson, 2019).

E-administration focuses on improving the efficiency of public service organizations by reducing operational costs. Meantime, delivering efficient, effective, and high-quality services to the public through innovative means is the aim of e-services. Connecting

citizens and public organizations, encouraging public participation, and promoting accountability, transparency, and participatory democracy are goals of the e-citizens perspective. Lastly, the e-society approach focused on building relationships between public service organizations, nonprofit organizations, and civil society, fostering community development efforts(Deng et al., 2018; Karunasena & Deng, 2011; Twizeyimana & Andersson, 2019).

Taxonomically, e-government can be further segmented based on the nature of interactions. These include, namely: G2C (government to citizens), G2G (government to government), G2B (government to business), and G2CS (government to civil society). Additionally, other types may include G2S (government to suppliers) and G2GE (government to government employees), as well as other relationships, G2NGO involving government and nonprofit organizations(Harfouche & Robbin, 2015; Charalabidis et al., 2019; Ganesh et al., 2019; Twizeyimana & Andersson, 2019; Guerrero-Bayona & Rosado-Gómez, 2020).

G2C e-government is a type focused on facilitating communication between the government and the public through electronic channels. The intent is to promote effective public service delivery and active citizens' participation in decision-making processes. For example, citizens can make inquiries related to public services offered or complete an application online rather than visiting government offices in person. Capturing public opinion, raising public awareness through citizens forums, and disseminating government policies are more common examples of this nature of e-government(Harfouche & Robbin, 2015; Charalabidis et al., 2019; Ganesh et al., 2019; Twizeyimana & Andersson, 2019; Guerrero-Bayona & Rosado-Gómez, 2020).

The primary focus of G2B e-government is to improve the efficiency and effectiveness of public service delivery organizations related to businesses. The initiatives include facilitating interactions between the government and businesses, such as processing tax returns, providing government services, and e-procurement mechanisms to handle goods and services procured by the government institutions. Collectively, they aim to enhance government business interactions (Harfouche & Robbin, 2015; Deng et al., 2018; Charalabidis et al., 2019; Ganesh et al., 2019; Twizeyimana & Andersson, 2019; Guerrero-Bayona & Rosado-Gómez, 2020).

G2C e-government focuses on interconnecting government service organizations. This is by facilitating information sharing, creating an ICT backbone for inter-government information sharing and exchange. Overall, the approach aims to improve communication and coordination among government organizations, resulting in greater efficiency and simplification of bureaucratic procedures (Harfouche & Robbin, 2015; Deng et al., 2018; Charalabidis et al., 2019; Ganesh et al., 2019; Twizeyimana & Andersson, 2019; Guerrero-Bayona & Rosado-Gómez, 2020).

All governments must focus on developing civil societies into knowledge-based societies to improve the quality of life in a society. G2CS approaches are aimed at achieving this goal(Harfouche & Robbin, 2015; Deng et al., 2018; Charalabidis et al., 2019; Ganesh et al., 2019; Twizeyimana & Andersson, 2019; Guerrero-Bayona & Rosado-Gómez, 2020). It's important to make additional efforts to ensure e-government service accessibility to populations traditionally considered as underprivileged, such as those living below the poverty line, people with disabilities, women, migrants, the elderly, and displaced. The intent is to ensure unfettered information and communication resources to all citizens.

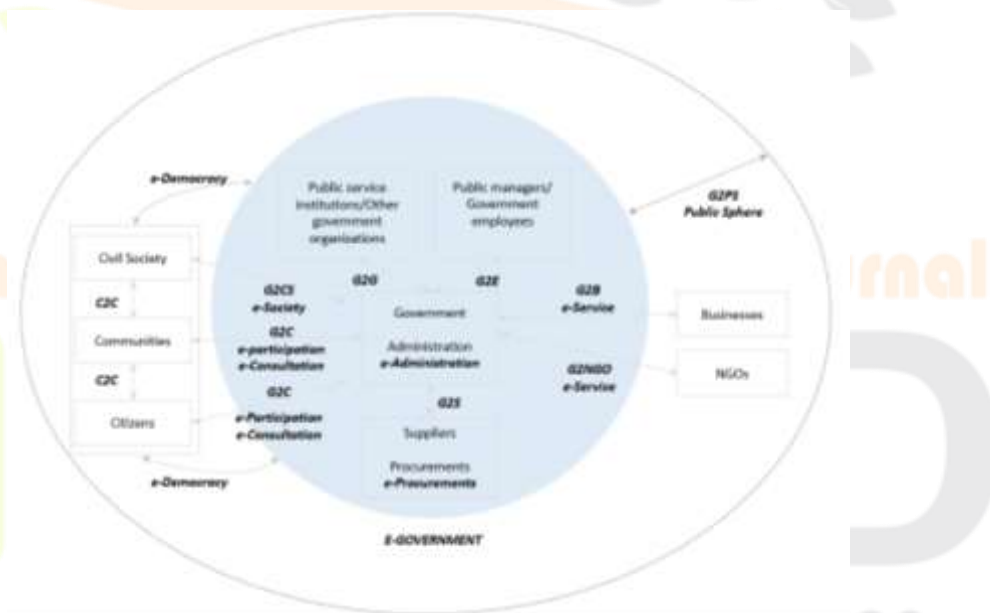


Figure 1: e-government in public -private intersection

Though the efficiency remains the primary focus of an e-government, various scholars(Otakuzieva, 2023; Goloshchapova et al., 2023; Adoko et al., 2024; Benlahcene et al., 2024; Hans & Rutenge, 2024; Napitupulu et al., 2024; Moreno & Barrios, 2025) argue the necessity of not limiting e-government initiatives solely to that aspect.

These arguments suggest the role of e-government needs to be redefined to reflect citizens' participation. This is to address the changing dynamics of a society, such as power-sharing and enhanced decision-making, to advance democratic values. Consequently, the definitions of e-government need to expand to encompass government citizen engagement, public participation, and interactions with the public in the public decision-making process.

Any development of e-government evolves in stages. Accordingly, various attempts have been made to measure the progress of e-government through evolving stages, distinct functions, and services. One of most commonly referred Layne and Lee's Four Stages Model suggest these developments can be described in four maturity stages include : (a) the catalog stage, where the government provides static online Information; (b) the transactional stage, where the government facilitates electronic transactions; (c) vertical

integration, which involves interconnectivity between local government systems and the national government; and (d) horizontal integration, where various systems at the same level are connected to provide a one-stop kind of service (Harfouche & Robbin, 2015; Ganesh et al., 2019). These categorizations dimensions also reflected in other similar models such as: (a) Andersen and Henriksen' Public Sector Process Rebuilding (PPR) Model (b) The World Bank Stage Model (c) United Nations' Five Stages Model and (d) Hiller and Belanger Electronic Government Framework with different perspectives (Ospina & Pinzon, 2018; Ganesh et al., 2019; Andersen et al., 2021; Adoko et al., 2024; Alatawi, 2025; Zubaidah et al., 2024).

At the catalog stage, the e-government focuses on delivering online services and disseminating Information through digital platforms to the public. The primary focus at this stage of maturity of e-government is the digital presence. More commonly, it offers static Information about digital services and events related to public awareness. This level of mature e-government lacks public interaction (Karunasena & Deng, 2011; Deng et al., 2018).

The transactional stage enables electronic transactions between the government and citizens, which is a further significant advancement of the primary stage. In this phase, citizens actively engage with government services, handling transactions like submitting online applications, requesting tax refunds, registering businesses, and paying fees or fines. Furthermore, these electronic interactions reduce the need for physical visits to public service institutions, minimize waiting times, and result in speedier, cost-effective delivery. In this stage of maturity, public service entities also benefit since greater efficiency is fostered through online processing (Karunasena & Deng, 2011; Deng et al., 2018).

E-government services have evolved to a vertical integration stage, aiming to interconnect government entities by sharing and interacting with Information. For example, the e-revenue license in Sri Lanka facilitates integrated services that connect local government-level services and national government-level services through a single portal. However, the horizontal stage of e-government involvement allows the connection of different government organizations at the same level to offer distinct services, thereby creating one-stop interaction for the public. This approach simplifies citizens' access to all public services (Deng et al., 2018; Karunasena & Deng, 2011).

Notably, the development of e-government faces significant challenges in many least developed countries (Charalabidis et al., 2019; Al-Refai, 2020; Bojang, 2021; Samsor, 2021; Malodia et al., 2021; Department of Economics and Social Affairs, 2022; E-Government in Local Public Sector Management and Accounting, 2022; Herdiana et al., 2022; United Nations Department for Economic and Social Affairs, 2024). Such reflection often underlined the underdeveloped or non-existent nature of Information and communication technology (ICT) infrastructure. Despite many unique approaches, these countries still struggle with conflicting priorities, such as underdeveloped legal and regulatory frameworks, limited internet access, and the absence of solid power distribution systems, which act as impediments to privacy and cybersecurity frameworks. More importantly, the digital divide. In less developed countries, the public's lower awareness remains a significant obstacle. Limited resources are also another concern. Public service apparatus remains ineffective, often characterized as bureaucratic. Further, these inefficiencies and lack of transparency lead to higher corruption levels. Therefore, implementing e-government initiatives in less developed countries remains considerably more complex compared to developed countries (United Nations Department for Economic and Social Affairs, 2024), which typically enjoy more mature e-government systems and steady economic growth. As a result, all indicators suggest e-government developments in these countries continue to lag behind developed economies.

Table 1: e-government dimensions of developed and developing countries

Dimension	Developed economies	Developing economies	Gap
Nature of e-government	<ul style="list-style-type: none"> -Whole of government, service integration and one-stop portals -Strong emphasis on user experience, personalization, and interoperability -Data-driven, proactive services; GovTech and digital identity widely adopted -Mature legal frameworks (data protection, cybersecurity, open data) 	<ul style="list-style-type: none"> -Priority on foundational digitization (registries, permits, payments) -Mixed levels of integration; many standalone or donor-funded systems -Leapfrogging via mobile channels and digital ID pilots common -Policy frameworks evolving; enforcement capacity varies 	Developed countries adopt more holistic approach in e-government in contrast to developing countries.
History / evolution	<ul style="list-style-type: none"> -Early adoption since 1990s; moved from informational sites to transactional and proactive services -Institutionalized digital units and long-term strategies; steady budget lines -Iterative modernization of legacy systems and standards (interoperability, cloud) 	<ul style="list-style-type: none"> -Rapid catch-up from mid-2000s onward; often catalyzed by donor programs or flagship reforms -Project-based starts; more discontinuities due to political/financial cycles -Recent acceleration with mobile broadband, fintech, and national ID initiatives 	Early adaptation of e-government in developed countries. Less developed countries lacks iterative modernization of systems, often discontinued due to conflicting economic priorities

Human resources and institutional capacity	-Larger pools of digital talent; competitive civil-service grades for tech roles -In-house product, cyber, data, and service-design teams; strong vendor management -Established change-management and agile procurement practices	-Scarcer specialized talent; reliance on vendors/outsourcing and development partners -Capacity gaps in cybersecurity, enterprise architecture, data governance -Brain-drain risks; training focuses on basic ICT and mid-career upskilling	Leased developed countries lack digital talent, resources and lag human capacity building
ICT infrastructure	-High-speed broadband (fixed & mobile), reliable power, modern data centers/cloud -National interoperability platforms, PKI, e-signature, and robust identity systems -Strong cybersecurity posture and incident response; redundancy and SLAs	-Uneven connectivity and power reliability; mobile-first access dominates -Core platforms emerging (payments, ID, messaging) but interoperability is patchy -Cybersecurity capacity developing; legacy hardware, limited redundancy	Leased developed countries leapfrogging necessary information and communication technology infrastructure to develop e-government
Citizens / users	-Higher digital literacy and device penetration; strong expectations for seamless UX -High trust contingent on privacy/security; demand for transparency and accessibility -Greater uptake of online participation and self-service channels	-Wide gaps in literacy, language, accessibility, and affordability -Trust varies; face-to-face and intermediated channels remain important -Mobile money and social platforms key for outreach; community support critical	Digital divide, wide gap in digital literacy and lack of public trust remain impediments to leased develop countries e-governments.

Table 2: e-government development comparison summary based on UN’s EGDI

Category	Description
Developed Countries	Examples like Denmark, Estonia, Singapore with EGDI scores close to or above 0.95 . Denmark leads with 0.9847 . Europe leads regionally, with Asia advancing fastest and many developed countries reaching the “very high” EGDI category.
Developing Countries	EGDI values are uneven. Some lower- and middle-income countries e.g., Bangladesh, Bhutan, Jamaica have surpassed the global average from 2022 to 2024. Most African, least developed countries, and Small Island Developing States (SIDS) remain below the global average. A few, like Mauritius and South Africa, have moved into the “high” EGDI group.
Global Trends & Gaps	The global average EGDI improved from 61.02% in 2022 to 63.82% in 2024; around 71.5% of UN Member States now fall in the “high” or “very high” EGDI range. However, regional disparities persist: Europe leads, Asia is rapidly catching up, while Africa generally lags behind.

2.2 Public value of e-government

Perceived values drive digital transformations. To better understand e-government, it is necessary to understand public sector management and its perceived values. While both public and private organizations aim to serve citizens, their concerns contrast. Public sector entities operate with a service mindset and view citizens of a society as stakeholders. Private organizations are more profit-oriented, focusing on maximizing profits, which drives them towards achieving income sustainability. However, the underlying intent is simple. That is to deliver value to the public. Therefore, establishing public value is a priority in any e-government. This implies a modern-day approach to assessing the public service performance as public value, which is globally the emerging trend(Capolupo et al., 2019; Sancino, 2022; Fernando & Gunasekara, 2024; Widiono et al., 2024; Alazemi & Al-Shehab, 2024; Chan et al., 2025; Kurkela et al., 2025).

Moore(Moore, 1995, 2021) theorized the public value as the citizens' collective expectations about government and public services. Later, Jørgensen and Bozeman (Bozeman, 2023) address the diverse perspectives on this complex concept, further arguing for the necessity of reflecting public value as the primary goal of public service entities. Castelnovo and Simonetta (2007) argued for the necessity of evaluating public value by considering citizens as various stakeholders, such as taxpayers, civil servants, and policymakers, as government actions may not have an equally direct impact on society. Cordella and Bonina further explained this

concept by arguing the necessity of factoring in the composite outcomes of socially desirable factors such as trust, fairness, and legitimacy (Karunasena & Deng, 2011).

With the theoretical developments related to Moore's strategic triangle (Moore, 2021), which refers to the theory of public value, various assessment frameworks emerged over a period of time to assess the public value of e-government. Adopted the framework of Kelly et al. to evaluate the public value of e-government, alongside other measuring frameworks that go beyond economic goals. These goals encompass, but are not limited to, social inclusion, democracy, participation, improved public service efficiency, accountability, and social well-being (Bukht & Heeks, 2018; Deng et al., 2018; Twizeyimana & Andersson, 2019).

Underpinned narratives underscore the e-government's roles as a cornerstone of sustainable development (United Nations Department for Economic and Social Affairs, 2024) in today's society. Therefore, achieving public value through e-government should also be viewed as the means of providing better services to citizens, enhancing government efficiency, and fostering social values that lead to more sustainable economic development.

Rapid advancements in electronic government highlight the necessity of performance monitoring and evaluation. Although various methods have been developed throughout, the economic strength of a country, education level, and technological advancements are widely viewed as common factors. Literature suggests four main dimensions to evaluate the e-government performance: (1) readiness, (2) availability, (3) demand, and (4) impact (Harfouche & Robbin, 2015; Deng et al., 2018; United Nations Department for Economic and Social Affairs, 2024). The initial stages focus on raising awareness, building channels, developing content for these channels, and addressing necessary factors related to them. As with advancements, the focus shifts to demand and availability, such as user requirements, usage patterns, perceptions, and satisfaction. Ultimately, the final stages involve evaluating the impact of e-government on citizens, addressing social demographic aspects, equity, efficiency, citizen development, reduced corruption, trust, and public value (Karunasena & Deng, 2011, 2011; Harfouche & Robbin, 2015; Department of Economics and Social Affairs, 2022).

On a similar note, based on underlying technologies and methodologies, this basic EGDI model may interpret values related to a specific nature. These results represent an aggregated and combined set of indicators that represent a country's capacity to participate in the information society. Accordingly, this indicator was refined further by aligning the OSI with the Local Online Service Index (LOSI), resulting in five subindices: (1) Service Provision (SP), (2) Technology (TEC), (3) E-Participation (EPI), and (4) Institutional Framework (IF). These subindices of the OSI are assigned weighted values based on their associated relevance to the respective category (United Nations Department for Economic and Social Affairs, 2024).

2.3 Digital government

The development of the digital economy and digital democracy substantially depends on how conceptual dimensions are accurately understood, as the digital governments represent a fundamental shift in public service delivery ethos, and digital governance is no longer limited to just a technological enabler. The digital government and digital governance are known as multifaceted, multidimensional, and multidisciplinary phenomena often used interchangeably in academic literature. Digital government recognizes that technology is a strategic driver not only to improve public sector efficiency but also to make polices more effective towards a more open, transformative, innovative, participatory, and trustworthy government (Althunibat et al., 2021; Welby, 2019; Ronzhyn & Wimmer, 2022; Huda et al., 2025; Waara, 2025).

Digital government, also known as transformational government, is defined in various ways without a single, unified definition. It often overlaps, even interchanges, between e-government due to a lack of formal distinction between digital government and e-government. However, it can observe different connotations. Digital government refers to the comprehensive digital strategies and structures set up by the government to address citizens' concerns (Nijozmetov, 2025; PARYAVI et al., 2025; Sutomo & Pratama, 2025; UNCTAD, 2025; Waara, 2025). E-government focuses on the actual utilization of information and communication technology to achieve government goals and realize socially desirable outcomes. E-government involves the digitization of procedures, documents, and services to improve governance by the use of modern technology. Digital government utilizes the tools provided to improve the management of public services that cater to citizens' needs. More specifically, e-government focuses on information and communication technology utilization to meet citizens' needs. At the same time, digital government is viewed as a more comprehensive and strategic approach, utilizing a broad range of digital technologies to transform government operations and create public value (Lysenko & Makovoz, 2025; Mara, 2025; Sutomo & Pratama, 2025; Waara, 2025). In this sense, e-government is the foundational phase of digital government.

2.4 Digital economy

Economic activity that uses or is significantly enhanced by digital technologies, the internet, and data to create goods and services is more commonly described as the digital economy. It encompasses the production and consumption of digital goods and services, relying on interconnected systems to create, distribute, and consume economic value, thereby transforming traditional industries and creating new ones. This results in billions of everyday online connections among people, businesses, devices, data, and processes. Driven by the hypoconnectivity, which means growing digital connections among people, organizations, and machines result from internet and mobile communication technologies (PARYAVI et al., 2025; UNCTAD, 2025).

Since the first introduction of the concept in 1996, the connected economy, internet economy, or the digital economy by Don Tapscot (Bukht & Heeks, 2018; Homburg, 2018; Uddin & Uddin, 2020; Oloyede et al., 2023; Pedro, 2023), today it has become a global economic driver. According to the World Bank, the digital economy comprises about 25 percent of world GDP in nominal terms. This amounts to approximately USD 16 trillion of USD 108 trillion in 2024. This is exemplified by the technological and economic advances across the world by 2025. An estimated 3.2 percent of world economic growth is recorded for 2024 and is expected to continue at the same rate in 2025. In Asia, the economic growth was above 5 percent in 2024, and is projected to continue at a higher pace than the work as a whole. With little sign of slowing down, the digital economy continues to be the fastest-growing and leading driver of U.S. GDP growth. The internet has shaped U.S. economic development more than other general-purpose technologies. The digital economy's share of the total 18 percent of U.S. GDP value, USD 4.9 T, is growing at a 2.7 times rate compared to 2020. The digital economy is the U.S. job growth engine, as employment in the sector is growing 12 times faster than

the overall U.S. economy. It now supports 28.4 million U.S. jobs. This remarkable growth stems from three key factors: 1) the shift of ad budgets to digital platforms, streaming services, and online publishers, 2) the ease of creating and distributing digital content, and 3) the rise of a more professionalized creator economy (World Trade Organization, 2023; OECD, 2024b; UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, 2024; Digital Cooperation Organization, 2025; PARYAVI et al., 2025; UNCTAD, 2025).

This century demands digital economies that are sustainable and global. Building such economies requires cooperation among governments at all levels, businesses, individuals, NGOs, and regional and global treaty organizations. It requires relentless, renewed efforts, taking a digital-first approach in socio-economic progress. The benefits of a global digital economy are significant and non-political. With leadership commitment, a sustainable digital economy can be built within developed nations as well as less-developed economies. However, top-tier digital economies are not created overnight (European Commission, 2022).

The IDCA (International Data Center Authority) (PARYAVI et al., 2025), a leading global non-partisan think tank with an exclusive focus on developing digital economies, identified four tiers of digital economy development. These are: (1) Pre-Phase described as underdeveloped digital infrastructure, below average Internet speed & access, very limited eServices and apps, inadequate electricity grids and/or sustainability. (2) Phase I (Early-Stage) with underdeveloped digital infrastructure, average Internet speed & access, some eServices and apps, inadequate electricity grids and/or sustainability (3) Phase II (Substantial Development) categories as moderately developed digital infrastructure, above average Internet speed & access, widespread eServices and apps, sub-optimal electricity grids and/or sustainability and (4) Phase III (Highly Developed) as highly developed digital infrastructure, world-leading Internet speed & access, ubiquitous eServices and apps, superior electricity grids and/or sustainability.

Accordingly, the Global Economy Report 2025 (PARYAVI et al., 2025) global categorization includes: six nations in digital economy phase III, thirty countries identified as digital economy phase II, seventy-nine countries identified in digital economy phase I, and sixty-eight countries fall into digital economy phase 0. Sri Lanka's digital economy is categorized as a phase I early-stage digital economy.

The index intends to answer the question of how well each nation is doing based on its current economic resources. Furthermore, it suggests that e-government services should be factored as a key area to consider in developing a nation's digital economy. This implies a strong correlation between the development of e-government and the growth of the digital economy (PARYAVI et al., 2025).

III. NATURE OF E-GOVERNMENT AND DIGITAL ECONOMY OF SRI LANKA

Sri Lanka introduced computers to the public sector in 1967. This is with the introduction of IBM computing machines to Insurance Cooperatives and the Department of Statistics and Engineering Cooperation. Subsequently, many computational programs were introduced to the public sector. In 1983, the National Computer Policy was introduced (Deng et al., 2018; Fernando & Gunasekara, 2024). In 2002, an ambitious e-Sri Lanka initiative was launched with the World Bank's assistance. This initiative was further expanded with the contributions from other donor groups and social actors (Deng et al., 2018).

Sri Lanka's digital transformation initiatives are further complemented. In 2005, the Information and Technology Agency of Sri Lanka (ICTA), the apex government body responsible for launching digital initiatives, launched Nenasala e-library to address the digital divide. In 2020, the Government of Sri Lanka (GoSL) launched the e-government 2020 vision with a five-pillar strategy. Followed by these developments, ambitious initiatives such as NSDI (National Spatial Data Infrastructure), e-Parliament, e-Motoring, e-Divisional Secretariat (eDS), BDM (digitalization of Birth, Death, Marriage certificates), e-Pension, e-SLIMS (State Land Information Management System), Online Revenue License Issuance, e-Samurdi, e-populations register, e-Local Government, National Fuel Pass, and more recently GovPay, were introduced to uplift the e-government (Karunasena & Deng, 2011; Deng et al., 2018; Fernando & Gunasekara, 2024).

Despite all these efforts, Sri Lanka's public service apparatus remains inefficient compared to regional peers (Galpaya et al., 2019; Elapatha & Jehan, 2020). E-government ranked at 98. This represents a 32.4% decline from 2014, and the e-government development index (EGDI) 0.6667 trails behind regional leader Singapore's index of 0.9691 and sub-regional leader the Maldives' index of 0.6745. The e-participation index of 0.4110 is significantly lower compared to regional leader Japan's index of 0.9863 and sub-regional leader India's index of 0.6575. Alarming, E-government literacy under the human capital index remains at 0.2778, while the regional average is 0.5579, indicating that citizens' ability to interact with the government is limited. Also, Sri Lanka's e-participation index ranked very low, 108th out of 193 countries. It trailed behind benchmarks, which is a very concerning outlook (United Nations Department for Economic and Social Affairs, 2024).

The majority of public services provided by government institutions retain a non-citizen-centric nature (Deng et al., 2018). Most of the information provided on websites consists of static content, such as organizational hierarchies and functional specifics, which suggests that Sri Lanka's e-government is currently in the e-information stage. The Local Government Network initiative (LGN) is not functioning efficiently due to various constraints. The non-existence of a One-stop shop kind of platform that can interact with the public to obtain public services limits citizens' participation in public discussions. The web tools necessary for e-consultation and e-decision services have yet to materialize on government websites. It is also observable that this website holds much of the information the public requires. The nature of digitalization in public service institutions, web presence, and online platforms prevents promoting two-way communication that solicits citizens' feedback. This is a sharp contrast to more mature e-governments' focus on fostering public inclusion and participatory democracy (Deng et al., 2018; der Vyver & Rajapakse, 2012; The Commonwealth, 2020; Tennakoon, 2020; Fernando & Gunasekara, 2024).

Information security is also a key public concern (Deng et al., 2018; Karunasena & Deng, 2011). Though GoSL made an effort in introducing regulatory frameworks related to it, the institution-level reality remains different. The last known study suggests nearly 10% of statutory boards and 32% of government ministries record unauthorized access or loss of data related breaches (Deng et al., 2018; Karunasena & Deng, 2011). Such outcomes tarnish the public image of e-government initiatives. GoSL made efforts to address these concerns by introducing a government cloud with a data certification authority (Deng et al., 2018).

Lack of transparency, especially related to public procurements, is also a significant concern for the public. Public service institutions often prevent the dissemination of public procurement-related information that utilizes public funds. A notable example is that only a handful of government institutions disclose their budgets and expenditure related to public procurements. Similarly, the mismanagement of public funds and unaccounted donor fund allocations are widely reported in public service institutions (Deng et al., 2018; Fernando & Madhuwanthi, 2022; Fernando & Gunasekara, 2024).

As a result, public trust in e-government varies. Even though the majority of public preference for digitally driven public services is inexorable, the above factors curtail public sentiment towards future e-government initiatives, which has now become a significant challenge for the development (Deng et al., 2018; Fernando & Gunasekara, 2024).

The current global economic activity is dynamically intertwined with the rapid advancement of the digital economy, presenting multiple opportunities and challenges that significantly affect countries like Sri Lanka. Despite economic challenges and microeconomic issues, Sri Lanka remains optimistic about its post-COVID-19 pandemic economic recovery, given its relatively developed digital landscape, with over 60% of the population owning mobile phones and a significant number accessing the internet regularly. Sri Lanka's digital economy is globally ranked 49 (PARYAVI et al., 2025). The digital economy of Sri Lanka is estimated to be USD 3.47 billion, equivalent to 4.37% of the country's GDP. The strategy also targets a threefold increase in digital exports and a doubling of the country's digital workforce to over 200,000 people. With a gradually emerging ICT/BPM workforce, Sri Lanka aims to achieve a USD 15 billion digital economy by 2030, a target supported by the World Bank report, which suggests that a digital economy can boost the economies of developing countries by 1.5% annually (Wattegama, 2021). In 2023 alone, digital transactions surged by 45% (Wattegama, 2021). E-government, such as forms like GovPay, is revolutionizing the way citizens interact with public services. These tools have enhanced efficacy and transparency. The Asian Development Bank (ADB) notes that digitized public services can reduce administrative costs by 20%. However, trust in e-commerce remains low in the country setting, as evidenced by Thema (2021).

Setting Digital Sri Lanka 2030 (Ministry of Technology, 2021), envisioned a digitally empowered Sri Lanka for innovation, inclusion, and sustainable economic growth. Under this initiative, the GoSL has allocated LKR 1 billion (USD 3.3 million) towards developing Artificial Intelligence (AI). Furthermore, Sri Lanka's Climate Prosperity Plan 2022 commits to leveraging clean technologies to digitize or provide new digital support to 50% of the economy across all sectors by 2025, 75% by 2030, and 100% by 2035 (Ministry of Technology, 2021). Most importantly, this initiative aims to build an inclusive digital economy by promoting innovation, sustainability, rights-based, human-centric, and global phenomena that connect countries to the outside world. In this initiative, GoSL recognized six critical digital economic growth enablers, such as (1) a forward-looking legal and regulatory framework, (2) foundational and secure digital identity systems, (3) a comprehensive and transparent data governance framework, (4) consistent and proactive stakeholder engagement, (5) collaborative and effective institutional governance (6) targeted private investment. In addition to this, connected digital government, digital financial services, and digitalization across sectors and MSMEs (Micro, Small, and Medium Enterprises) are identified as strategic dimensions, in addition to the remaining three dimensions. This implies the intertwined nature of the digital economy and e-government (Ministry of Technology, 2021).

However, the collective expectations of citizens regarding government services, as reflected in public value, have yet to materialize or be thoroughly measured. Although it's recognized in various strategic initiatives, it remains under researched. Notably, no real attempts were being made to understand the impact of electronic government initiatives on the digital economy (Karunasena et al., 2011; der Vyver & Rajapakse, 2012; Sufna & Fernando, 2015; Pushpakumara & Jothirathne, 2017; Elapatha & Jehan, 2020; Alahakoon & Jehan, 2020; Liyanage et al., 2020; Tennakoon, 2020; Fernando & Madhuwanthi, 2022; Withanage et al., 2022; Weerasinghe et al., 2023; Fernando & Gunasekara, 2024). Underlined concerns motivated this study to address the research gap, which would be impactful in pursuing digital economic growth and fostering public value of e-government in Sri Lanka.

IV. RESEARCH METHODOLOGY

Theory-driven thematic analysis was performed on qualitative data from available literature. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) guidelines were followed to produce a systematic review. This method provides a standard methodology that contributes to the quality assurance of the revision and replication process (Sohrabi et al., 2021; Lee & Koo, 2022; Tedja et al., 2024). A systematic review was developed by focusing on article selection criteria, search strategy, data extraction, and data analysis procedures.

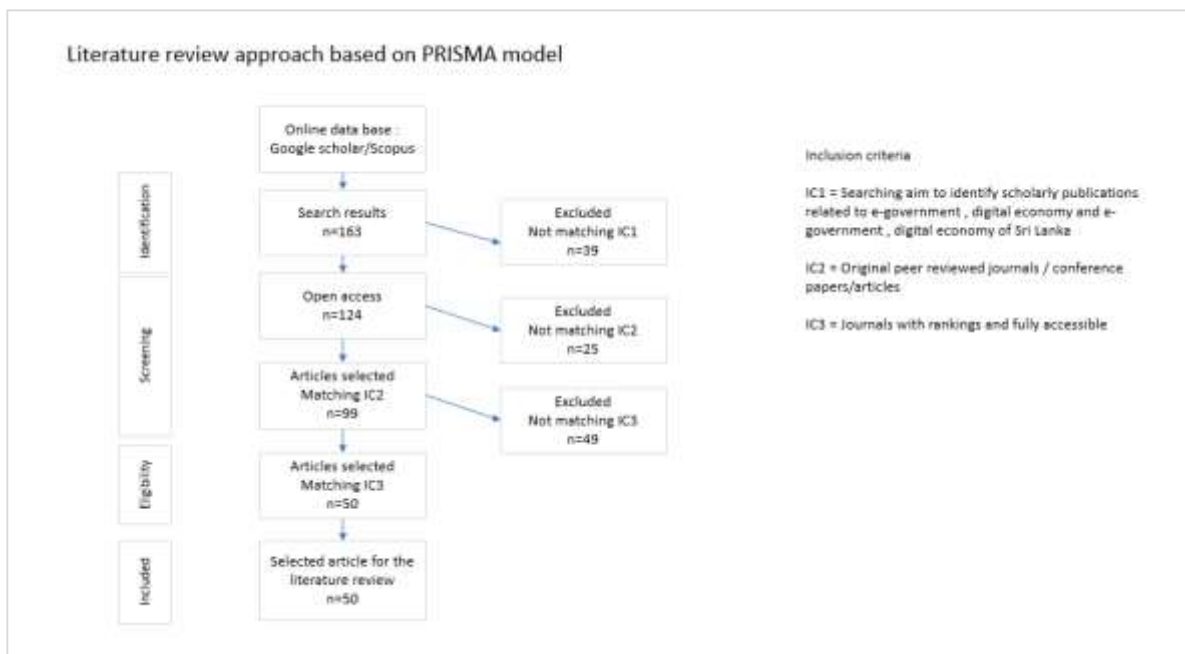


Figure 2: Literature review approach based on PRISMA model

An information search was conducted in Google Scholar, Scopus, and Semantic Scholar online repositories. Peer-reviewed journal articles with a journal ranking were selected. Articles that were not fully accessible were also excluded from the study. As illustrated in Figure 2, mainly three steps are performed:

Inclusion criteria 1: Key words related to research objectives entered “impact of e-government” OR “digital economy and e-government” OR “e-government of Sri Lanka” OR “digital economy of Sri Lanka”.

Inclusion criteria 2: Explore and select the title, abstract, and keywords based on eligibility criteria—original peer-reviewed journals/conference papers/articles.

Inclusion criteria 3: All papers not eliminated in the previous selection that have Journal rankings and are fully accessible, explored, and selected by thoroughly reading the entire article based on the eligibility criteria.

Thematic analysis was performed to analyze the literature qualitatively. Complex qualitative data are first organized systematically based on several themes. These themes were further grouped to increase the accuracy of understanding. The technique is widely used due to less demand and fewer data collection constraints. Furthermore, the approach offers a systematic means to analyze and synthesize larger volumes of data into more descriptive and meaningful themes, leading to complex qualitative data interpretations. As suggested by Howitt, firstly, the qualitative data was well read and familiarized. Secondly, initial coding was performed on selected literature. Thirdly, these themes are further reviewed, broken down to separate themes or converged overlapping themes to create new themes or discard identified themes. Finally, theme definitions and labeling were performed.

The approach of theory-driven thematic analysis is widely used because this technique leads to the development of codes and themes derived from pre-existing theories (Goyanes et al., 2025). These theoretical functions referred to the descriptive discussion under the theoretical background section of the document. As the first step, the lowest-level themes derived from initial codes were organized into basic themes. Further, these themes were organized as middle-order themes grouped into categories that represent similar narratives—global themes derived from these middle-order themes to represent principal metaphors to answer research questions.

V. RESULTS ANALYSIS AND DISCUSSION

The research findings are organized into five global themes, namely: Digital Infrastructure, Digital Public Services, Digital Users, Digital Platforms, and Digital Innovation. Individual global themes are abstracted from basic themes. Further attention was given to the Sri Lankan context during the literature review, which shapes basic themes that describe narratives.

Global Theme One: Digital Infrastructure

The Digital Infrastructure is described with two basic themes, including (1) ICT Infrastructure Availability/Accessibility, (2) Broadband Affordability. Availability and accessibility of Information and communication technology is grounded as the most grounded thematic narrative in the literature that is having an impact on the digital economy. Literature further suggests (G20, 2018; Wategama, 2021; European Commission, 2022; HUAWEI TECHNOLOGIES CO., LTD, 2024; OECD, 2024a; PARYAVI et al., 2025; Digital Cooperation Organization, 2025) that broadband affordability is a key concern, especially in developed countries. Further, the connectivity dimension looks at both the demand and the coverage of fixed and mobile broadband. Under the broadband, it describes the overall take-up, speed, and retail prices.

Global Theme Two: Digital Platforms

Digital platforms also emerge as key foci in the development of the digital economy. This dimension is described in nine basic themes, namely: (1) Security/Privacy, (2) Strategic Connectivity, (3) Transparency, (4) User Orientation, (5) Service Quality, (6) Trust, (7) Systems Functionality, (8) Mobile Money, and (9) Responsiveness. However, out of all the identified basic thematic arrangements, security/privacy indicated the most grounded in the available literature. Notably, the necessity of a secure digital connectivity infrastructure is a necessity to enable access to digital services for all citizens and maintain economic prosperity. Similarly, online security and privacy have now become a significant aspect that requires attention due to the increasing conduct of daily activities on the internet (Deng et al., 2018; Ribeiro & Naletina, 2024).

Global Theme Three: Digital Platforms

Digital platforms theme best conceptualized with a border focus on (1) Innovation and (2) Business Process Reengineering (BPR) themes. Globally, it is a well-recognized fact(European Commission, 2022; Digital Cooperation Organization, 2025; PARYAVI et al., 2025) that only continual innovation in industrial digital and intelligent applications can enable us to share the full benefits of the digital economy with all. Vis versa, the digital economy has further amplified innovation, reshaping industries, societies, and everyday lives at an unprecedented velocity. These transformation trends due to the meteoric rise of artificial intelligence, blockchain technologies, and the growth of digital platforms drive the economy and sustainability, refining how businesses operate, consumers engage, and governments govern(de Bellerive, 2024; HUAWEI TECHNOLOGIES CO., LTD, 2024; Digital Cooperation Organization, 2025; UNCTAD, 2025).

Global Theme Four: Digital Public Services

Digital transformation increasingly places new demands and expectations on the public sector. Achieving the full potential of these technologies is now a priority and key challenge for government organizations. Effective digital public services offer a wide variety of benefits, including efficiency and cost-effectiveness for both governments and businesses. Not only that, but it can also increase openness and transparency (Murotovich, 2021; Alazemi & Al-Shehab, 2024; Serikovich & Nikolaevich, 2025; Siregar et al., 2025). The availability of online public services has steadily grown over the last decade. In with these arguments, there are thirteen basic themes identified that underscores Digital public service’s global theme namely: (1) Efficient Digital Public Services (2) Regulatory Frameworks (3) Interorganizational Partnerships (4) Pub-Private Partnerships (5) Budgets (6) Information Quality (7) Sustainability (8) Cost Effectiveness (9) International Collaboration (10) Organizational Efficiency (11) Accountability (12) Active Co-production and (13) Data Management. Out of all these basic themes, the efficiency of the public services was observed as mostly grounded. However, its noticeable active co-production and data management are the least recognized.

Global Theme Five: Digital Users

Digital users theme best abstract with border focus on (1) Digital/Computer Literacy, (2) Citizens experience, (3) Citizen participation, (4) Digital Divide, (5) Public Awareness, (6) Equity basic themes. Digital skills underpin how modern work is conducted and interacted with. Digital and computer literacy, which is the most fundamental of the basic themes, is now an essential life skill that contributes to the development of the digital economy. As the dependence on the internet and digital technology increases, the workforce must keep up with the evolving skill demands. This firm demand for digital and computer skills propels innovation and competitiveness. Against this backdrop, digital users are a priority for the development of the digital economy(G20, 2018; Welby, 2019; European Commission, 2022; PwC, 2022; OECD, 2024a).

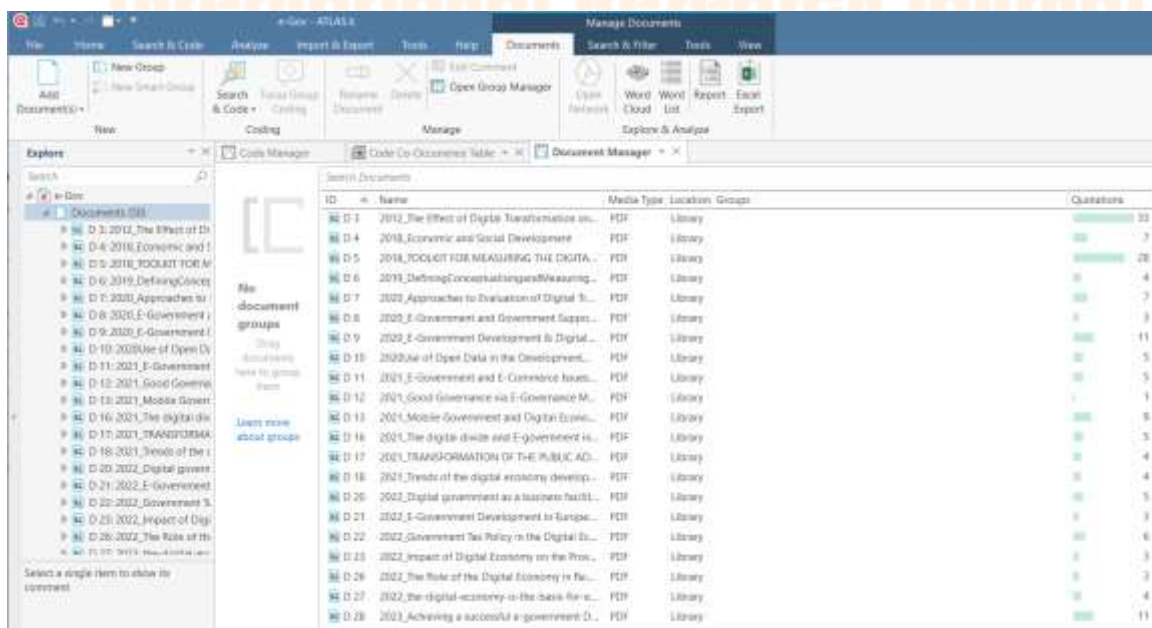


Figure 1 : Literature arrangement for thematic analysis

Figure 3 illustrate the preparation of literature for thematic analysis in ALTAS ti qualitative software. Thematic analysis performed referring 50 related peer reviewed related journals based on earlier discussed inclusion criteria during the literature review performed according to the PRIMA approach.

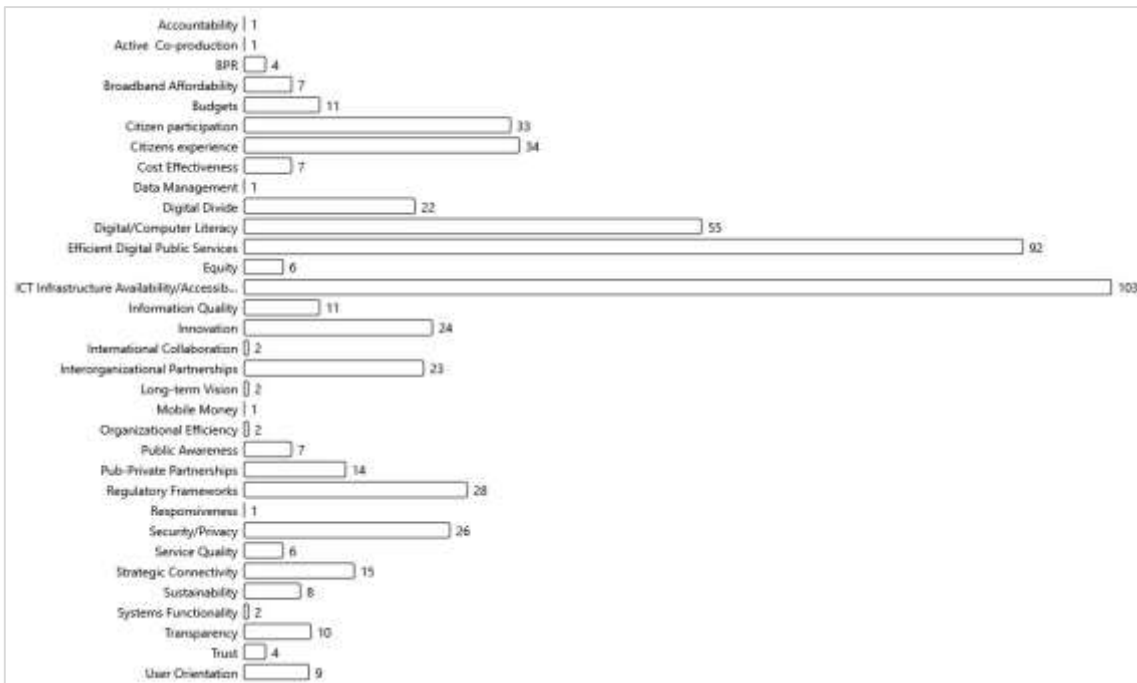


Figure 2: Coding for thematic mapping

Figure 4 is the graphical representation of grounded basic themes arrangements related to referred literature. Details suggest ICT Infrastructure Availability/Accessibility, Efficient Digital Public Services and Digital/Computer Literacy are the most grounded themes related to e-government impact a digital economy.

Table 3: Code grouping basic themes

Code	Grounded	Density	Code Groups
ICT Infrastructure Availability/Accessibility	103	0	Digital Infrastructure
Efficient Digital Public Services	92	0	Digital public services
Digital/Computer Literacy	55	0	Digital Users
Citizens experience	34	0	Digital Users
Citizen participation	33	0	Digital Users
Regulatory Frameworks	28	0	Digital public services
Security/Privacy	26	0	Digital Platforms
Innovation	24	0	Digital Innovation
Interorganizational Partnerships	23	0	Digital public services
Digital Divide	22	0	Digital Users
Strategic Connectivity	15	0	Digital Platforms
Pub-Private Partnerships	14	0	Digital public services
Budgets	11	0	Digital public services
Information Quality	11	0	Digital public services
Transparency	10	0	Digital Platforms
User Orientation	9	0	Digital Platforms
Sustainability	8	0	Digital public services
Broadband Affordability	7	0	Digital Infrastructure
Cost Effectiveness	7	0	Digital public services
Public Awareness	7	0	Digital Users
Equity	6	0	Digital Users
Service Quality	6	0	Digital Platforms
BPR	4	0	Digital Innovation
Trust	4	0	Digital Platforms
International Collaboration	2	0	Digital public services
Long-term Vision	2	0	
Organizational Efficiency	2	0	Digital public services

Systems Functionality	2	0	Digital Platforms
Accountability	1	0	Digital public services
Active Co-production	1	0	Digital public services
Data Management	1	0	Digital public services
Mobile Money	1	0	Digital Platforms
Responsiveness	1	0	Digital Platforms

Table 3 describe the identified basic themes and categorization of these themes in to five global themes. The synthesized details suggested ICT Infrastructure Availability/Accessibility grounded as the most significant e-government related dimension that impact a digital economy regardless of a country setting.

VI. A CONCEPTUAL FRAMEWORK TO EVALUATE THE IMPACT OF E-GOVERNMENT ON THE DIGITAL ECONOMY

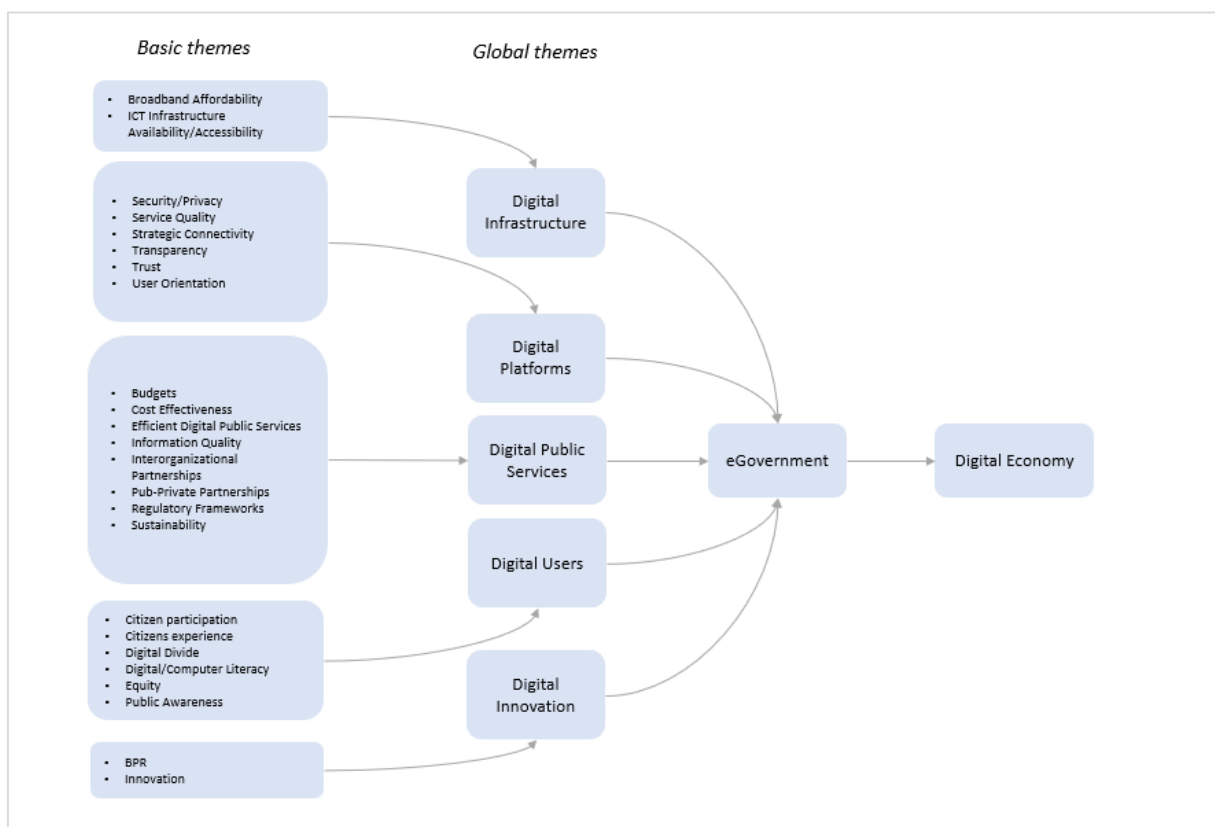


Figure 5: Conceptual framework based on thematic mapping

The proposed conceptual framework illustrated in Figure 5 hypothesizes that the Digital Infrastructure, Digital public services, Digital Users, Digital Platforms, and Digital Innovation dimensions best describe the impact of e-government on the digital economy. It's further hypothesized that these main dimensions create public value reflected in multiple sub-dimensions. The digital infrastructure is reflected by two subdimensions, such as ICT Infrastructure Availability/Accessibility and Broadband Affordability. Security/Privacy, Service Quality, Strategic Connectivity, Transparency, Trust, and User Orientation were the key dimensions of the digital platforms. Further, Budgets, Cost Effectiveness, Efficient Digital Public Services, Information Quality, Interorganizational Partnerships, Pub-Private Partnerships, Regulatory Frameworks, and Sustainability sub-dimensions replicate the digital public services dimension. Similarly, Citizen participation, Citizens' experience, Digital Divide, Digital/Computer Literacy, Equity, Public Awareness sub dimensions describe the digital users dimension. Lastly, digital innovation is best described by BPR and Innovation.

However, it's noteworthy that International Collaboration, Long-term Vision, Organizational Efficiency, Systems Functionality, Accountability, Active Co-production, Data Management, Mobile Money, and Responsiveness dimensions are still underrepresented in literature related to the focused area of the study. At the same time, there is a lack of rigorous focus on similar studies related to developed countries to identify unique socio-political contexts that need to be factored in to address the unique dimensions having an impact on the development of digital economies in these countries.

As a progressive effort, the author further wishes to operationalize the thematic map-based conceptual framework, adopting a quantitative deductive approach and deploying a closed-ended, structured online survey. The study aims to develop a conceptual framework. Unlike covariance-based SEM (Structural Equation Modeling), PLS-SEM (Partial Least Squares SEM) offers more flexibility in prediction and situations with smaller sample sizes or non-normal data. It offers flexibility in violating initial assumptions. At this stage of the research, the researcher's focus is on prediction, rather than being limited to theory testing. Also crucial to factor handling formative measurement model, which is not easily addressed by the CB-SEM method. Moreover, more focus would be on higher-order construct suites using PL-SEM compared to CB-SEM statistical methods(Andrés-Sánchez &

Puchades, 2023; Geremew et al., 2024; Kurtaliqi et al., 2024). Therefore, researcher intend to use PL-SEM, a structured equation modeling statistical technique, in constructing the model. To perform PL-SEM statistical analysis, the JASP 0.19.3 open-source software is utilized due to its feature-rich nature and its widespread use within the research community.

VII. CONCLUSION

This study organized existing literature related to e-government and digital economy, adopting thematic analysis to explore the impact of e-government on the digital economy. Attempts have been made to analyze and organize qualitative data in the literature into themes to develop a new conceptual framework for assessing the impact on the Sri Lankan digital economy, thereby addressing the research gap. Overall, 33 basic themes categorized into five global themes were identified that describe the impact of e-government on the digital economy. Furthermore, it's essential to emphasize the need for rigorous assessment in developed countries to identify unique socio-technical dimensions that contribute to the advancement of the body of knowledge.

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