



Chapter 7

The Effectiveness of Online Public Services: A Comparison of ASEAN Member States and the Way Forward

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1. Introduction

The potential of information and communication technology (ICT) to bring about digital and networked forms of governance has been a topic of much theoretical and empirical research in recent years. There is no facet of the economy, society, and life in the modern world that has not undergone a substantial change with the advent of ICT. Governments in the Association of Southeast Asian Nations (ASEAN) Member States (AMS) are no exception.

However, only developing infrastructure and simply digitising existing processes is not a workable solution for long-term successful digital government. Instead, processes need to be overhauled, and continuous improvement of infrastructure – along with public awareness and knowledge dissemination – is necessary to realise the full potential of digital government. Governments at all levels should use data analytics to improve operational efficiency and engage with citizens through news media, social media, and targeted programmes. If digital government is to be successful, AMS will have to ensure that all segments of their diverse populations are aware of and have access to e-government services.

Some AMS score substantially below not only European Union (EU) member countries but also some South Asian (e.g. Pakistan and Bangladesh) and African (e.g. Nigeria) countries on the United Nations (UN) E-Government Development Index (EGDI) 2020, which is based on three broad components: online services, human capital, and telecommunication infrastructure. For example, Cambodia is ranked 124th on the EGDI, Indonesia 88th, the Lao People's Democratic Republic (Lao PDR) 167th, Myanmar 146th, the Philippines 77th, and Viet Nam 86th. It is evident from these figures that there is room for improvement in the digital e-government of AMS. However, the region has a good base to build on, and there is no reason that AMS cannot be amongst the top performers in the world on the EGDI if they embrace digitalisation and continue to improve their digital infrastructure and capacities in the coming years.

Given this background, this paper attempts to understand the role, importance, and complex applicability of digital governance and the role of standards in the ASEAN context. The e-government movement is a major development in the world of government. It has affected the way governments operate, the services they provide to citizens, and the way they interact with each other. This paper seeks to understand the factors that contribute to the adoption, implementation, and success of e-government programmes in AMS. The study focuses on the 10 AMS: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Viet Nam, Singapore, and Thailand. The study of the e-government movement also provides an examination of the political and economic context of the countries in which it is implemented. The research provides insights into how governments can leverage technologies to improve the efficiency and effectiveness of public services.

2. Literature Review

Baird (2007) identified the following facets of an interoperability ecosystem:

- (i) Technical interoperability can be described as the capacity of a system or product to function seamlessly with other systems or products, requiring no additional effort from the user. It can be seen as the aspect of technological convergence amongst information technology (IT) systems.
- (ii) Organisational interoperability ensures that organisational structures, goals, and administrative processes align with each other, facilitating efficient collaboration and information exchange.
- (iii) Legal and public policy interoperability refers to the development of legal frameworks at both national and regional levels, along with the establishment of mutual recognition mechanisms. These measures aim to facilitate interoperability in various aspects, enabling seamless interaction and cooperation amongst different systems and entities.
- (iv) Semantic interoperability ensures comprehensibility amongst different personnel, negotiating counterparts, user communities, and devices.

Studies on e-government have addressed the issue of e-government service adoption by citizens, e-government usage in organisations, and e-government website design. In their assessment of e-governance adaptability amongst citizens in Malaysia, Lean et al. (2009) identified factors that influence citizens' 'intention' in using e-government services and ascertained how the elements of trust and perception of usefulness, relative advantage, image, and complexity influenced their decisions. Hussein et al. (2007) analysed organisational factors that influence e-government success in selected public sector agencies in Malaysia, including top management support, decision-making structure, management style, managerial ICT knowledge, goal alignment, and resource allocation. Seng, Jackson, and Philip (2010) used two case studies in Malaysia to contrast the enabling and constraining characteristics of e-governance. Southeast Asia specific studies have also focused on factors that negatively affect the implementation of e-government projects, including low economic growth, low productivity, lack of skilled personnel, poorly developed ICT infrastructure, and the digital divide, which includes digital illiteracy (Chen et al., 2006).

Researchers have highlighted the limited understanding of the dynamic processes that contribute to the success or failure of e-government initiatives. In their study on the failure of e-government in developing countries, Gunawong and Gao (2017) utilised the actor-network theory to examine the reasons behind the unsuccessful outcomes of certain national endeavours, such as Thailand's Smart ID card, which aimed to promote economic growth and structural transformation through ICT. The actor-network theory bridges the social/technical divide, treating human and non-human actors equally in understanding innovation. It offers an alternative to innovation diffusion, focusing on network formation and persuasion amongst actors. By extending ethnography, it analyses humans

and technology together, avoiding binary thinking. The actor–network theory is valuable for studying information systems with social, technological, and political interactions. It benefits areas such as online business, IT project management, collaborative work, interface design, and usability testing (Tatnall, 2005).

Degelsegger-Márquez and Remøe (2019) examined the role of science, technology, and innovation (STI) at the ASEAN level in Southeast Asia. They questioned how the intergovernmental STI system relates to the region's diversity and traditional linkages. The authors drew on the concept of 'the ASEAN Way' of integration, which prioritises non-interference, as discussed by Masilamani and Peterson (2014). They found a parallel between ASEAN governance and an intergovernmental approach, where compromise, consensus, and consultation play key roles in decision-making. This emphasis on informal processes, driven by national governments, also extends to the interoperability regime within ASEAN.

ASEAN Ministerial Meetings represent the highest level of concerted decision-making in e-governance. Lack of intra-ASEAN standardisation and linkages can lead to partnerships with external actors. A lack of supranational authority could be detrimental in cases where there is a conflict amongst state policies. Research has also shown how the success of e-governance has a direct bearing on the quality of life of citizens. Stoiciu (2011) highlighted that resistance to change poses the primary challenge in the implementation of e-services. The author emphasised the importance of aligning individual coherent strategies and public policies in the e-government sector with international standards. Again, this demonstrates the important role of standards in e-governance, which will ensure bridging the digital divide and developing a citizen-oriented, equitable digital society.

This raises the pertinent question of if and how one can properly measure and quantify interoperability for an assessment of the success of e-government measures. Maheshwari and Janssen (2012) reminded us that measuring interoperability is not only a technological challenge but also a socio-technical matter. They also flagged the importance of standards for organisational interoperability, as most maturity models and frameworks are conceptual in nature. Furthermore, we should keep in mind that while operational aspects of interoperability should be given importance, it is important to examine what citizens use e-governance for, which will determine the significance and nature of the interoperability frameworks that emerge.

Kompella (2016) noted that e-governance systems should think beyond transactional effectiveness in interoperability and should develop capabilities to include various marginalised communities and their different interests and needs while conceptualising e-governance interoperability. Greater engagement in decision-making and transparency in information sharing is necessary if e-governance is effective in the truest sense of citizen engagement in governance.

The e-Government Interoperability Guide published by the United Nations Development Programme with the support of IBM and Oracle (UNDP, 2007) emphasised the importance of formulating an e-government interoperability framework to ensure efficient and effective governance, with increased deployment of information and communication systems. The framework asserted that a government interoperability framework (GIF) is necessary for a seamless flow of information; greater transparency and accountability; citizen-centric decision-making; and achieving better coordination amongst government agencies, programmers, and services. In its review of the various GIFs, UNDP identified the common principles of GIFs – scalability, reusability, flexibility, preference for open standards, preference for standards with market support, and preference for nationally legislated and adopted standards.

3. Methodology

This paper is based on qualitative analysis of primary data collection. The primary data were collected through a structured questionnaire comprising both closed and open-ended questions (Appendix). The questionnaire was designed in the English language. For this study, the purposive sampling method was used, and the data were collected from 347 respondents across AMS between August 2021 and September 2021. The survey was conducted in all 10 AMS. Data were collected using online Google Forms, which were distributed through social media, personal contacts, and various organisations based in AMS. The data were analysed using Microsoft Excel and basic statistical tools such as central tendency and percentage.

Data were collected on the respondents, including their name, age, educational qualification, etc., as well as their perception of national e-governance and ICT policies, e-governance in the socio-economic sector, e-governance standards and technology, and regional outlook.

4. ASEAN e-Governance Profiles by Country

ICT standards increasingly have significant influence over functions that are paradigmatic responsibilities of governments. The degree of openness in technical standards has public policy implications in several areas (Roztocki, 2019). This section of the paper discusses the e-governance profiles of individual AMS.

4.1. Brunei Darussalam

Brunei Darussalam is a small, extremely wealthy country in northern Borneo that resembles the Persian Gulf sheikdoms. Its enormous oil revenues give it one of the highest incomes in the world. Like many wealthy countries, Brunei has more mobile phones than people. Brunei's Sultan Hassanal Bolkiah called for the creation of a digital nation in 2000. Planning for the project did not begin until 2003 when the e-government Program Executive Council was established. In 2008, Brunei launched a five-year E-government Strategic Plan with the aim of modernising the civil service.

One of the most significant changes in the recent past in Brunei Darussalam's public administration is the introduction of Talian Darussalam 123 (TD123), Brunei's national non-emergency call centre. From the 181,000 calls received in 2014, the centre now receives more than 300,000 calls annually. The significant number of calls to the centre reflects the public knowledge of the service. Most of Brunei Darussalam's public complaints were about water and electricity supplies. Due to the intermediary nature of TD123, one of the several challenges the system faced is the lack of an explicit deadline or timeline given to departments to resolve the problem. The data collected from the public are valuable information that can help the government to plan social and economic development. Expanding the system and infrastructure could help the country achieve its smart nation initiatives/vision.

4.2. Cambodia

Cambodia is one of the countries within ASEAN that is lagging in its digital infrastructure as well as its e-government initiatives. There is a need for significant improvement for the country to catch up with regional digital integration efforts. The government recently began earnest efforts to catch up on its commitments to ASEAN's digital integration. In February 2022, the country began its transition to digital government with the launch of the Cambodian Digital Government Policy, 2022–2035, which aims to improve citizens' access to the government and increase public trust in the government. The government also took an initiative to improve its digital governance indicators, following the criteria set by the UN Department of Economic and Social Affairs. Currently, Cambodia ranks 129th in the EGDI ranking.

The government also launched a major initiative to bridge the digital divide in the mostly rural society. The digital transformation will include building a society with high levels of inclusiveness, trust, and security while preserving national identity. The vision document (Government of Cambodia, 2021) is cognizant of the importance of data-driven governance as well as focusing on creating digital citizens, especially in an economy severely hit by the coronavirus disease (COVID-19) pandemic. Cambodia is also emphasising defining standards in public services through digital technologies while maintaining the ownership of ministries and institutions. Government ministries and institutions are launching digital projects such as e-filing systems and a e-value-added tax (VAT) system. Cambodia is also implementing a national single window (NSW) system and formulated the E-Commerce Law and the Consumer Protection Law in 2019.

4.3. Indonesia

Indonesia achieved a high level of EGDI, ranking 88th in the UN E-Government Survey 2020. With a score of 0.6824 in the Online Services Index, it is one of the lower middle-income countries making significant progress in improving its EGDI values, moving up 19 places within its group. Indonesia has effectively utilised its digital social registry systems as gateways for social protection programs, providing cash transfers and emergency assistance directly to about 94.7 million of the poorest households. This digital registry system enhances transparency and credibility in the government's delivery of social protection initiatives. The national digital registry system in Indonesia, known as the Unified Database, stores names, addresses, and socio-economic data.

e-Government was introduced in Indonesia through Presidential Instruction No. 6/2001, which aimed to develop and utilise ICT in the country and establish a 'government online'. One notable e-governance initiative in Indonesia is Lapor, launched by President Susilo Bambang Yudhono in 2011. Additionally, Indonesia adopted various electronic systems from the Republic of Korea in 2015, including an electronic patent system, a national financial management system, and a public security management system. However, access to digital governance varies based on socio-economic status, with a significant digital divide prevailing. The Ministry of Administrative Reform regularly assesses the maturity level of e-government and plans to establish a national e-service portal by 2025.

4.4. Lao PDR

Lao PDR lags other AMS in terms of digital interoperability and e-government initiatives. It exhibits a substantial gap compared with the average regional indices. In the UN EGDI, Lao PDR was ranked 167, indicating its lower level of progress in e-government implementation. Following the Lao E-Government Action Plan in 2006, the country embarked on the Lao National E-Government Project. The government has also started digitalising national ID systems, which improve citizens' access to public services. With a robust civil service and high women's representation in Parliament, without a quota system, Lao PDR stands to gain from the timely use of digital possibilities in governance and the economy. Lao PDR is the only country in the ASEAN region without a main digital citizens' portal for government services, and this needs immediate rectification. It will be interesting to see how the national digital strategy in Lao PDR develops in the coming years, as it has also proposed digital strategies at the subnational level.

4.5. Malaysia

Malaysia was ranked 33rd out of 131 countries in the Global Innovation Index 2020, second only to Singapore amongst AMS. The National Policy on Science, Technology and Innovation, 2021–2030 is expected to intensify local technology development and application efforts. The policy outlines six cores, along with 20 strategies and 46 initiatives, covering all sectors of life. The digital economy is an integral part of realising the Malaysian government's Twelfth Malaysia Plan, 2021–2025. The blueprint specifies six strategic thrusts, which include digital transformation in the public sector as well as the creation of an inclusive, secure, and ethical digital ecosystem. The government has established administrative governing bodies, such as the 4IR Council and the Strategic Change Management Office, to implement the blueprint.

The effectiveness of the use of ICT in governance in Malaysia is hindered by the absence of citizens' participation and the lack of accountability and transparency. Therefore, it is important to formulate e-citizen policies and e-literacy programmes to allay citizens' distrust on digital privacy issues. Citizens' participation is also dependent on local governments, whose involvement can be bettered as they are currently short of funding and the requisite IT skills. Inclusive development through digital inclusivity is an important component of Malaysia's Shared Prosperity Vision 2030. Malaysia was ranked 47th on the UN EGDI 2020, with an Online Service Index participation index of 0.85290, while the world average is 0.5620.

4.6. Myanmar

Myanmar's digital integration currently lags regional performance. However, the government is taking steps to improve this by developing biometric databases for implementing digital IDs, aiming to enhance citizens' access to public services. The Organisation for Economic Co-operation and Development (OECD) recognised Myanmar's national citizens' portal as the most comprehensive, given its recent establishment. This portal serves as a platform for government services provided by the responsible authority and offers unique services on its behalf, acting as a central service delivery platform with links to other online services. The launch of the Myanmar National Portal was a significant outcome of the country's first e-Governance Master Plan. While Myanmar has made progress in ICT infrastructure, there is room for improvement in ICT policies and standards to enhance interoperability. Myanmar also has low internet penetration and uneven mobile phone connectivity throughout the country. This is a challenge for the successful implementation of e-government services. With the political unrest in the country, there are also apprehensions regarding the safety of citizens from severe censorship in the online realm, which is already heavily policed through strong anti-defamation clauses in the Telecommunications Law, 2013.

4.7. Philippines

In the Philippines, the Department of Information and Communications Technology (DICT) is the primary government agency responsible for the adoption of e-government services. The DICT developed both the E-Government Masterplan and adopted the Philippine Digital Transformation Strategy in 2022. The master plan aims to achieve intergovernmental coordination and organisational interoperability through 'One Digitized Government'. The government considers this master plan to be aligned with the ASEAN ICT Masterplan 2020. The National Government Portal is the master plan's frontline project. The DICT has partnered with a blockchain company based in the United States to further the government's digital development agenda.

The Department of Science and Technology in the Philippines plays a role in supporting local governments by assisting them in establishing e-government systems for their respective local government units. This decentralisation effort is also an attempt to address the digital divide. Similarly, the Anti-Red Tape Authority is leading the Nehemiah Project, which aims to harmonise efficient measures of interrelated agencies. The Philippines is a signatory to the ASEAN Single Window agreement and launched its NSW platform in 2017. However, it still maintains two separate systems, contravening the purpose of a single window. The national QR code standard was launched to promote interoperability in payments to the government.

4.8. Singapore

Singapore is a trailblazer in successful e-government as well as a digital leader – not just in Southeast Asia but globally (Ke and Wei, 2004). In the ASEAN Digital Integration Index, Singapore fares better than the average regional score. Singapore's success is attributed to strong leadership and an effective strategic action plan, which took a centralised approach to funding and infrastructure. Singapore had suffered from high-profile cyberattacks and has continually upgraded and amended the country's personal data laws. President Halimah Jacob launched the Digital for Life Movement to address the digital divide. The Singpass digital app is emerging as the main gateway to access government services.

Singapore has also announced its first enterprise district, Punggol Digital District, which will be a technological hub for the digital economy. In its continuing efforts to make e-government interoperable, the country has also looked at blockchain technology – inviting companies to innovate and help create efficient interactions amongst the government, society, and businesses. Singapore is also a pioneer and role model in skill upgradation and skill sharing amongst its citizens. Programmes such as Skills Future Singapore and the Tech Skills Accelerator prepare working citizens to better adapt to the digital economy.

4.9. Thailand

Thailand's digital economy is regarded as the second largest in the ASEAN region and is estimated to contribute about 17% to the country's gross domestic product (GDP). In the EGDI ranking, Thailand improved significantly, moving up from 102 in 2014 to 57 in 2020. The Digital Government Act commits to achieving full digitalisation of all government services by 2022. The vision of Thailand's E-government 4.0, presented within the framework of the 3-year Digital Government Development Plan by the Electronic Government Agency, encompasses four key aspects. These include government integration, which involves integrating information and operations across various agencies and establishing a unified perspective of citizens within the government.

An important successful initiative of e-governance in this regard is the Village Broadband Internet Project (Net Pracharat), which expanded broadband high-speed internet access to remote villages. The Ministry of Digital Economy and Society also provided training to communities, in collaboration with the Ministry of Interior, in a phased manner – training community leaders who then propagate skills to the community. Thailand is considered very advanced regarding data protection and cyber protection compared with other AMS. In 2019, the government passed the Personal Data Protection Act and opened an 'anti-fake news' centre that allows access to digital data without warrant.

4.10. Viet Nam

Viet Nam is integrating its public administrative procedures and processes through an NSW. The NSW has successfully implemented 173 administrative procedures and involves 13 governmental agencies, including the Customs Administration under the Ministry of Finance. This development is seen as a positive step towards Viet Nam's alignment with the ASEAN vision of digital integration.

Viet Nam has also adopted a national digital transformation program, approved by the Prime Minister in June 2020, with a focus on placing people at the core of the transformation process. As part of this initiative, the issuance of National Digital Identity Smart Cards is under way, although multiple forms of identification are still being used throughout the country. While the citizen-centric approach and the proactive responsibility taken by the government are welcome, the country lags in its implementation as the digital strategies have to navigate multiple ministries. The government faces problems with coordination and an integrated approach because of the lack of common countrywide ICT and information standards. It also faces a silo mentality in bureaucracies, as each department/agency wants to keep their authority, power, and interest and is apprehensive about coordination because they believe it may interfere with their autonomy. Hence, interoperable e-government implementation is needed in Viet Nam.

5. Survey Findings

The online survey was conducted with 347 individuals from various AMS using Google Forms between August 2021 and September 2021. A structured questionnaire (Appendix) was designed to gather responses through a random sampling method. This section of the paper examines the survey results to comprehend the significance of e-governance in AMS, assess citizens' perceptions, and identify any challenges encountered.

5.1. Respondent profile

Table 7.1 shows the distribution of people across AMS and their nationalities. Most of the people were from Singapore (10.66%), followed by Brunei (10.37%), Thailand (10.37%), and Lao PDR (10.37%). The most diverse population in terms of nationality was found in Myanmar, Thailand, and Cambodia.

Table 7.1. Country Role and Nationality of Respondents

Country of residence	Nationality	Percentage
Brunei	Brunei	10.37
Cambodia	US	0.58
	Cambodia	8.36
	Total	8.93
Indonesia	Indonesia	8.93
Lao PDR	Lao PDR	10.37
Malaysia	Malaysia	9.22
Myanmar	UK	0.29
	Burma	8.93
	Myanmar	0.29
	Total	9.51
Philippines	Philippines	7.49
Singapore	Singapore	10.66
Thailand	UK	0.29
	India	0.29
	Thailand	9.80
	Total	10.37
Viet Nam	Viet Nam	9.51

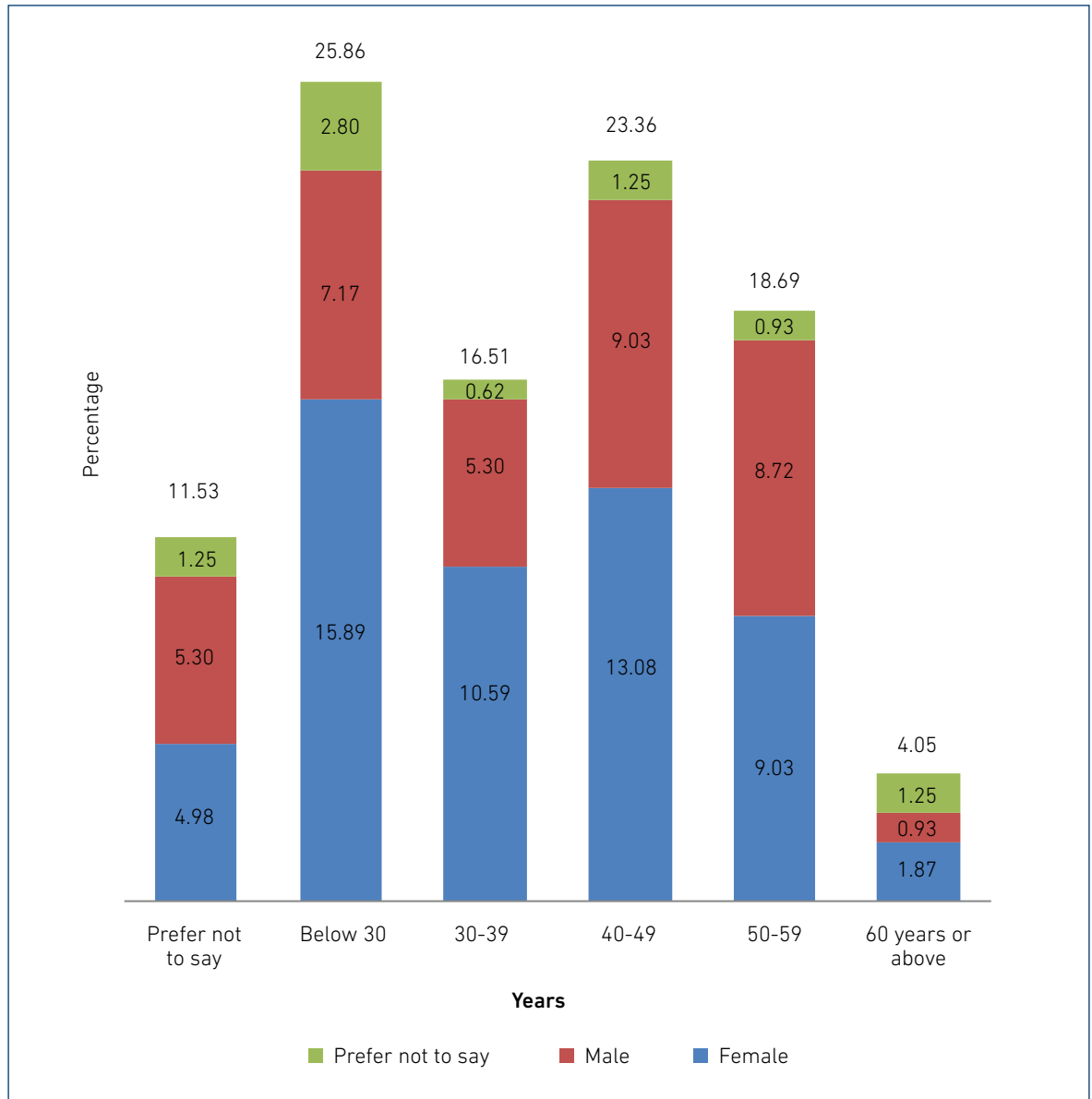
UK = United Kingdom, US = United States.

Note: Totals may not be accurate because of rounding.

Source: Author's calculation.

Figure 7.1 shows the distribution of the surveyed people according to their age and gender – 55.45% were female, 36.45% were male, and 8.10% said they prefer not to say. Most of the respondents were below 30 years of age (25.86%), of which 15.89% were female and 7.17% were male. Further, 23.36% were aged 40–49, of which 13.08% were female and 9.03% were male.

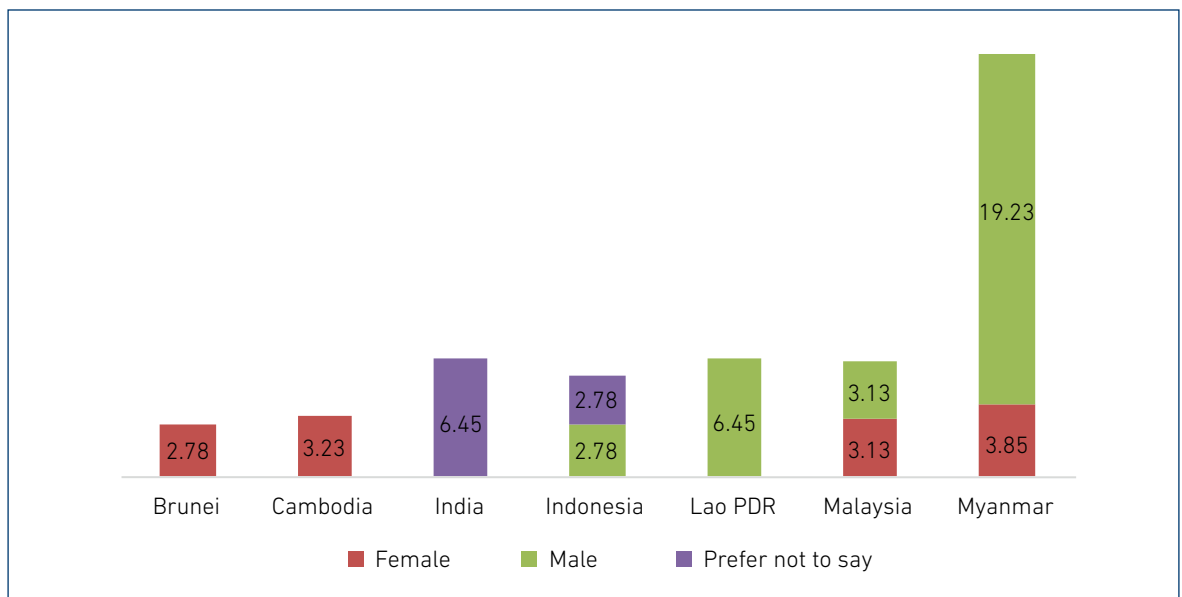
Figure 7.1. Respondents' Profile by Age and Gender
(%)



Source: Author's calculation.

Respondents reflected on the question about the use of public services via the internet/digital mode. Figure 7.2 shows the percentage of respondents not using public services via the internet/digital mode – 23.08% of respondents in the Philippines were not using the digital mode for public services, of which 19.23% were male. On the other hand, in Singapore, Thailand, and Viet Nam, all were using the internet/digital mode for public services. On average, 5.23% of respondents across ASEAN were not using the digital mode for public services; of this, there were more male (2.91%) than female (1.45%) respondents.

Figure 7.2. Respondents Not Using Digital Mode for Public Services (%)

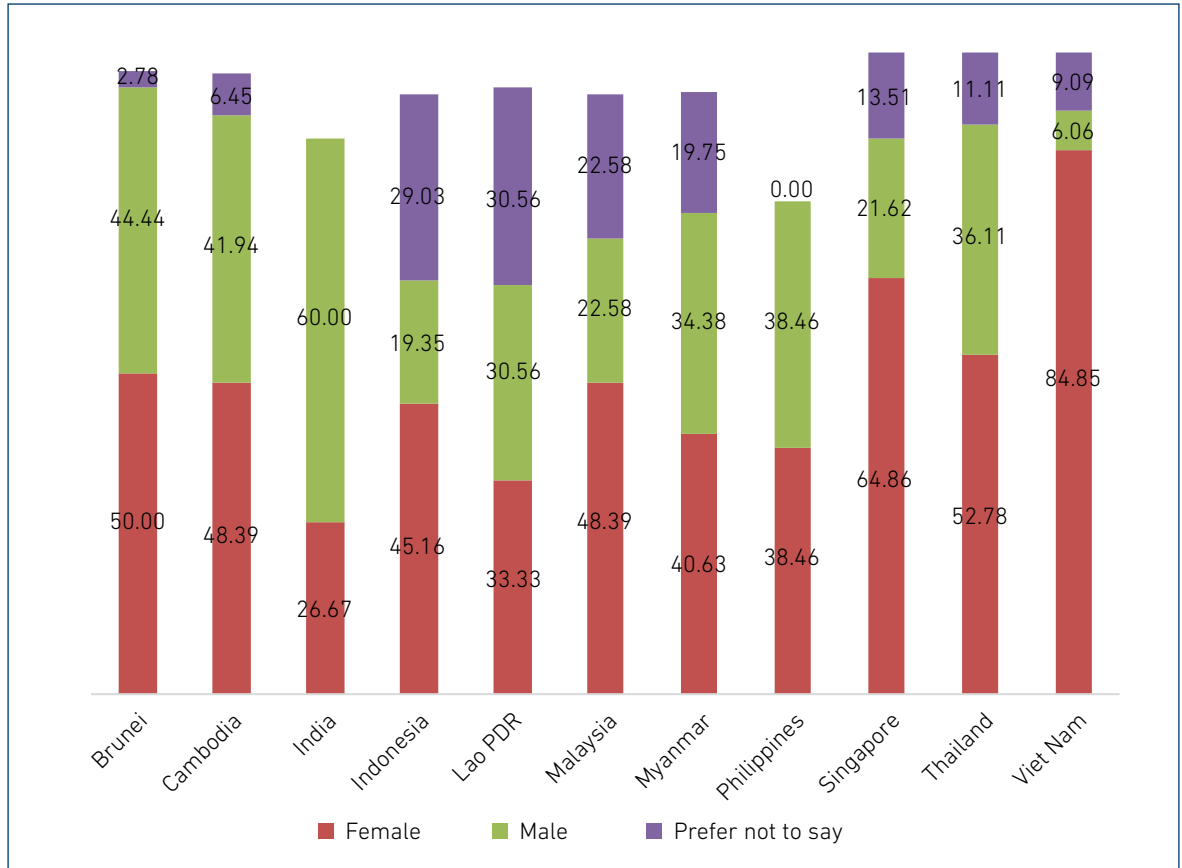


Note: The remaining countries did not record any responses.

Source: Author's calculation.

Figure 7.3 illustrates the percentage of respondents utilising the digital mode for public services, such as tax return submissions and driver's license renewals. The results indicate a significant adoption rate, with 94.77% of respondents overall and over 75% in each country opting for digital channels when accessing public services. Notably, 55.45% of the respondents were female, and 36.45% were male. The data highlights a substantial female presence, with 84.85% of females in Viet Nam utilising digital channels for public services. This suggests a notable comfort level amongst females in accessing online public services for various benefits.

Figure 7.3. Respondents Using Digital Mode for Public Services (%)

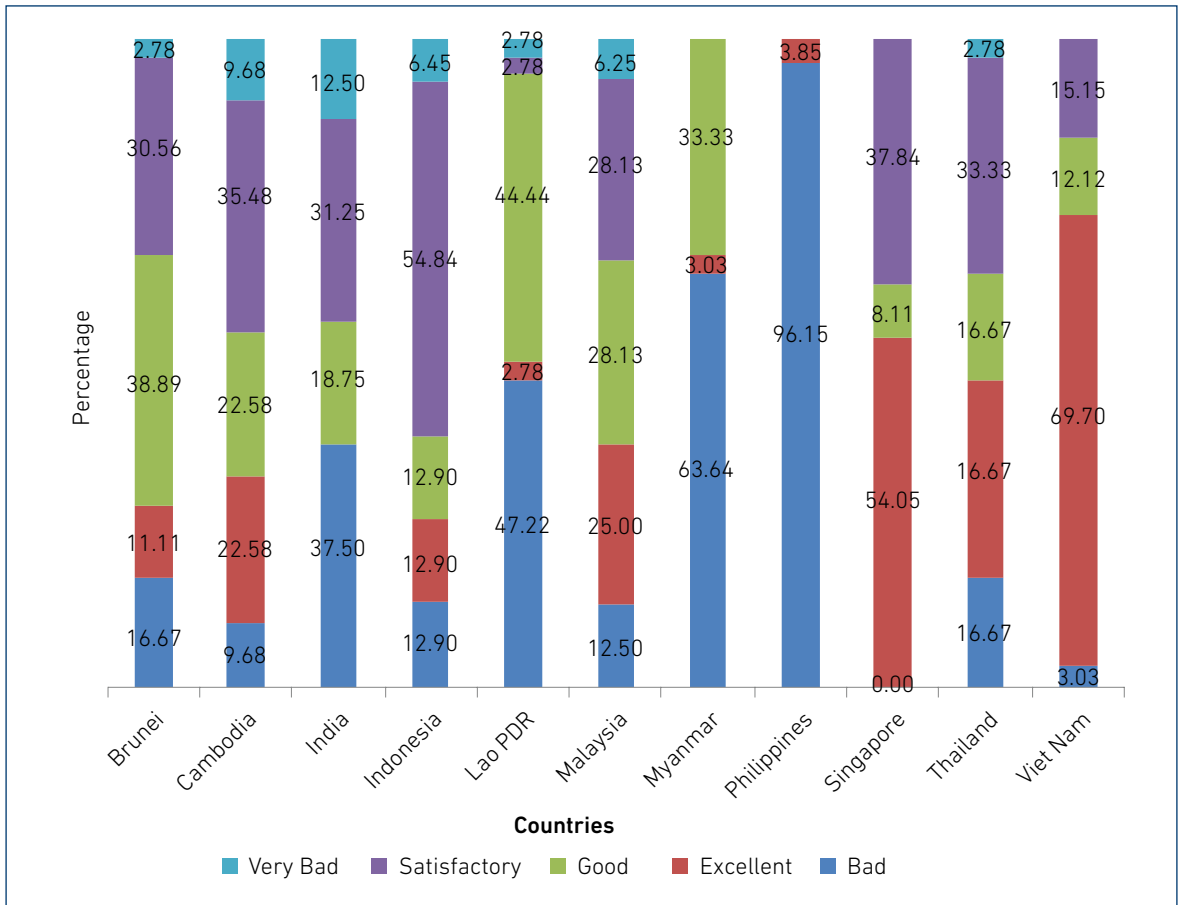


Source: Author's calculation.

5.2. National e-governance and ICT policies

Figure 7.4 shows the e-governance ratings by country. e-Governance services are rated as bad by 96.15% of internet users in the Philippines, 63.64% in Myanmar, and 47.22% in Lao PDR. On the other hand Singapore, Viet Nam, and Thailand have good e-governance services as the users seemed to be highly satisfied.

Figure 7.4. Rating of e-Governance Services by Country



Source: Author's calculation.

Table 7.2 shows the source of awareness of e-governance portals in ASEAN. Most of the respondents in almost all the countries cited advertisements as the main source of awareness, followed by social media. A few stated that news media and speeches of elected representatives also inform them about e-governance portals. In recent times, social media has become a crucial component for smartphone users and plays a significant role in spreading awareness.

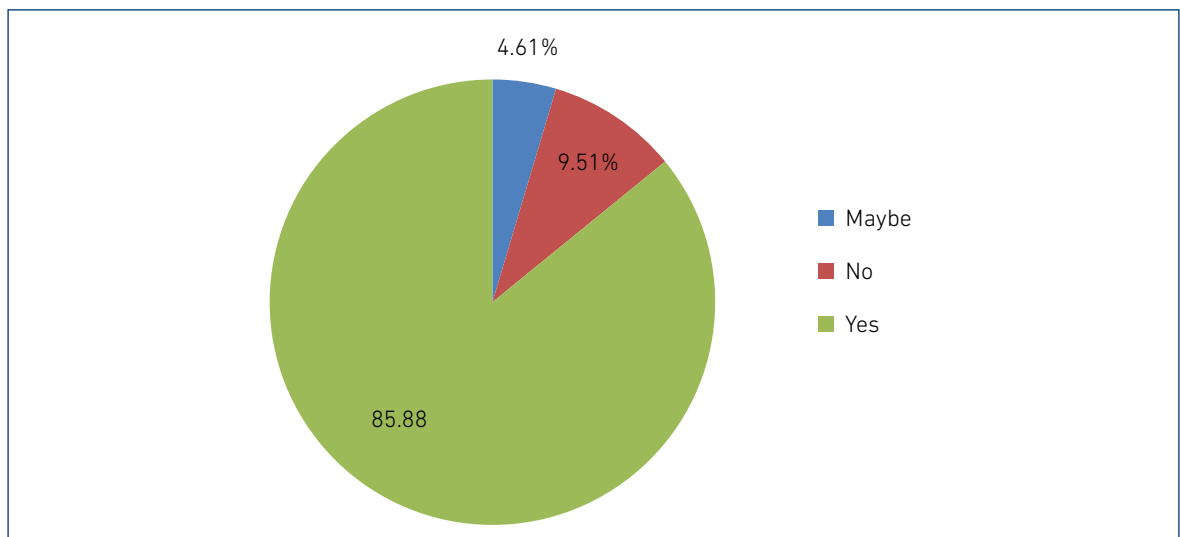
Table 7.2. Source of Awareness of e-Governance Portals
(%)

Country	Advertisements on TV/ in newspapers/ at public places	News media (news channel reporting/ broadcast)	Social media (Facebook/ Twitter)	Speeches of elected representatives (at public places/ in the media)
Brunei	47	33	75	33
Cambodia	52	29	19	10
Indonesia	26	29	55	10
Lao PDR	72	0	25	3
Malaysia	31	19	38	34
Myanmar	82	0	15	3
Philippines	69	0	27	4
Singapore	81	5	14	0
Thailand	53	31	36	3
Viet Nam	91	0	27	0

Source: Author's calculation.

Figure 7.5 highlights the percentage of respondents who use e-government portals. Most of the respondents (85.88%) said they use e-government portals, 9.51% said they do not, and 4.61% said maybe.

Figure 7.5. Percentage of Respondents That Used e-Government Portals



Source: Author's calculation.

Further, the respondents were asked about public policy areas covered by e-governance in their country (Table 7.3). According to respondents in Brunei, Lao PDR, Myanmar, the Philippines, Singapore, and Viet Nam, public service is given a lot of focus. Similarly, health was highlighted by respondents from Brunei, Cambodia, Lao PDR, Malaysia, and Viet Nam. Education was highlighted as a significant aspect by respondents from Brunei, Malaysia, and Viet Nam. The domain of economic affairs falls under e-governance in Indonesia, Malaysia, Singapore, Thailand, and Viet Nam. In Myanmar and the Philippines, 93.94% and 92.31% of respondents, respectively, mentioned public services. Additionally, in Malaysia, 46.88% of respondents stated that recreation was included within the scope of e-governance. Overall, the survey reveals that e-governance portals in Brunei, Malaysia, and Viet Nam have broader coverage in various areas.

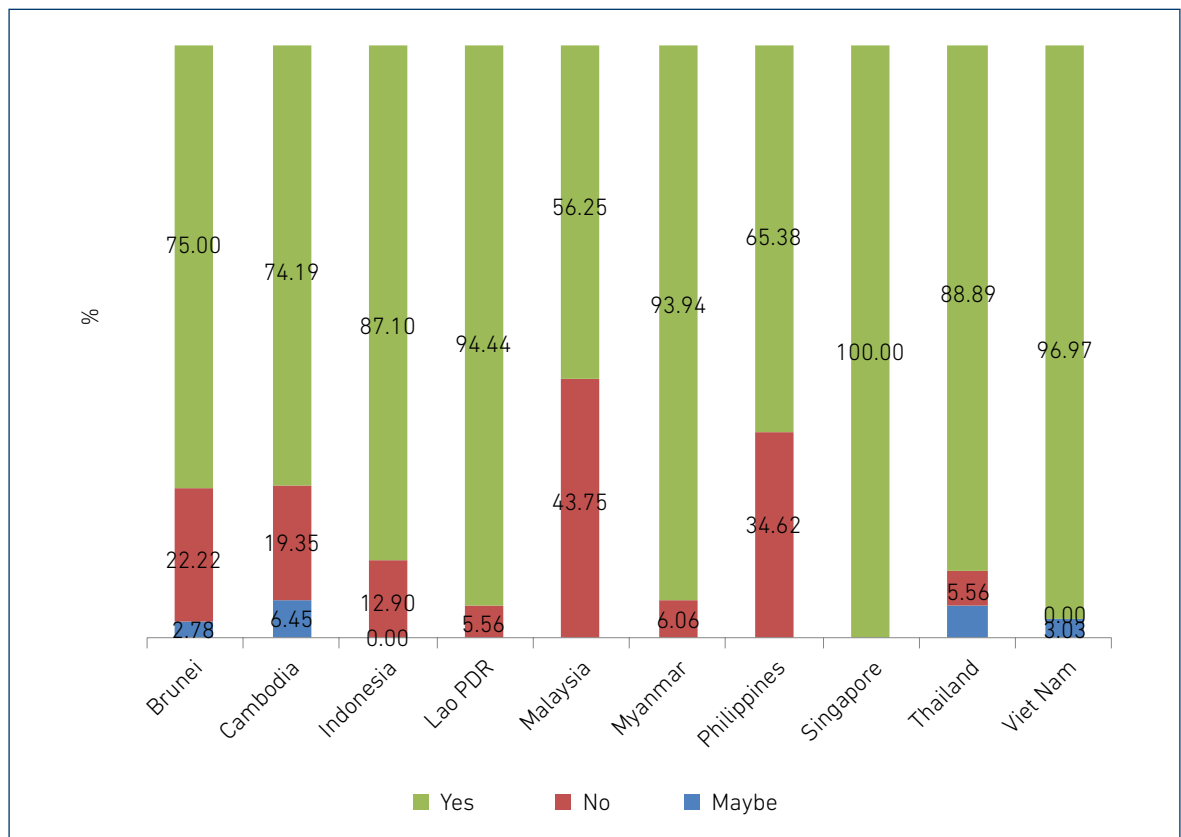
Table 7.3. Public Policy Areas Covered by e-Governance, by Country

Item	Brunei	Cam-bodia	Indo-nesia	Lao PDR	Malay-sia	Myan-mar	Philip-pines	Singa-pore	Thai-land	Viet Nam	Grand Total
General public services	66.67	51.61	32.26	77.78	43.75	93.94	92.31	54.05	47.22	72.73	63.69
Public order and safety	44.44	32.26	38.71	0.00	28.13	0.00	7.69	5.41	36.11	6.06	20.17
Health	91.67	58.06	45.16	61.11	75.00	6.06	11.54	48.65	47.22	81.82	54.18
Education	75.00	35.48	38.71	33.33	62.50	3.03	3.85	45.95	41.67	66.67	42.36
Culture and religion	41.67	12.90	16.13	2.78	46.88	0.00	7.69	0.00	11.11	3.03	14.99
Economic affairs	38.89	9.68	51.61	0.00	62.50	0.00	7.69	43.24	61.11	78.79	36.02
Defence	36.11	12.90	12.90	27.78	34.38	12.12	3.85	8.11	13.89	24.24	19.02
Social protection	38.89	3.23	0.00	2.78	15.63	0.00	3.85	0.00	11.11	0.00	9.51
Environmental protection	19.44	0.00	9.68	8.33	15.63	0.00	7.69	0.00	8.33	12.12	8.93
Recreation	41.67	12.90	16.13	0.00	46.88	0.00	3.85	2.70	16.67	3.03	15.27
Housing and community amenities	33.33	6.45	16.13	5.56	28.13	0.00	7.69	2.70	13.89	0.00	13.26

Source: Author's calculation.

Figure 7.6 shows the responses to e-government services catering largely to one or very few sectors. The figure highlights that in Singapore 100% said yes, compared with 96.97% in Viet Nam, 94.44% in Lao PDR, 93.94% in Myanmar, 88.89% in Thailand, 87.10% in Indonesia, 75.00% in Brunei, 74.19% in Cambodia, 65.38% in the Philippines, and 56.25% in Malaysia. This shows that e-government services in AMS need to include a wider range of sectors.

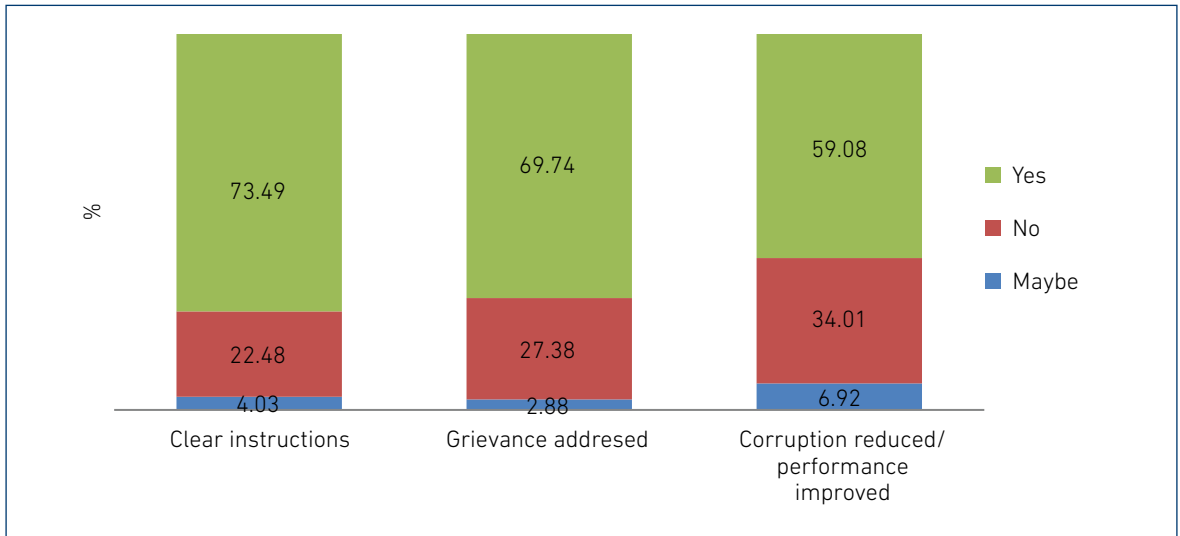
Figure 7.6. e-Government Services Catering Largely to One or Very Few Sectors
(%)



Source: Author's calculation.

Figure 7.7 shows the performance of e-government portals. It was found that 73.49% of respondents from all the AMS said that e-government portals provide clear instructions. Further, 69.74% of the respondents said that grievances were addressed through e-government portals and 59.08% said that corruption was reduced and performance improved due to e-government portals. The performance of e-government portals in the AMS was good, but the governments need to focus on optimising their e-government portals for better service delivery to citizens.

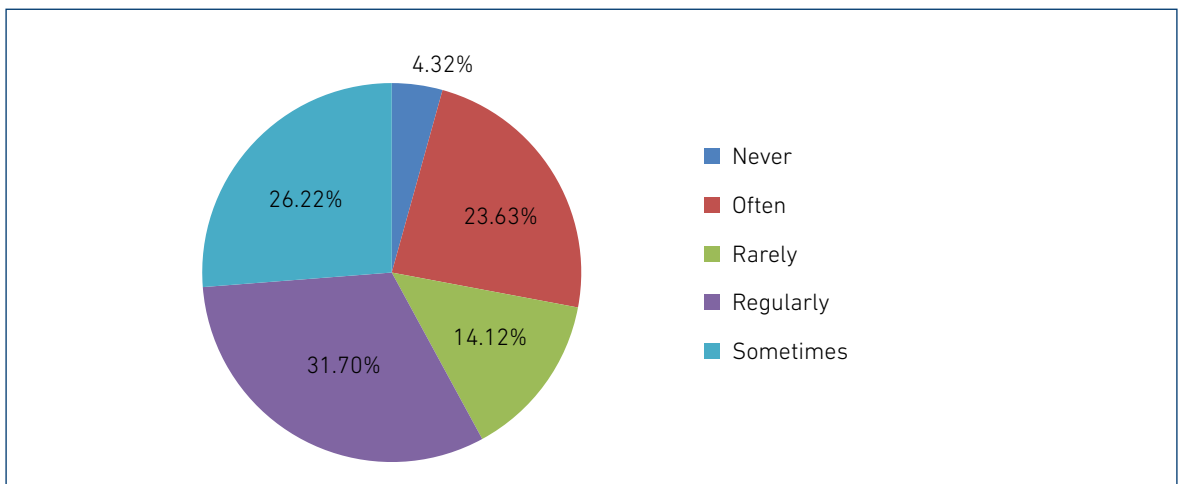
Figure 7.7. Performance of e-Government Portals
(%)



Source: Author's calculation.

Figure 7.8 highlights the frequency of visits to government offices by the respondents. It can be seen that 31.70% of the respondents visit regularly, 26.22% visit sometimes, 23.63% visit often, 14.12% visit rarely, and only 4.32% said they never visit. This shows that the e-government portals have limitations; hence, visits to government offices are required for the completion of government-related work.

Figure 7.8. Visits to Government Offices
(%)



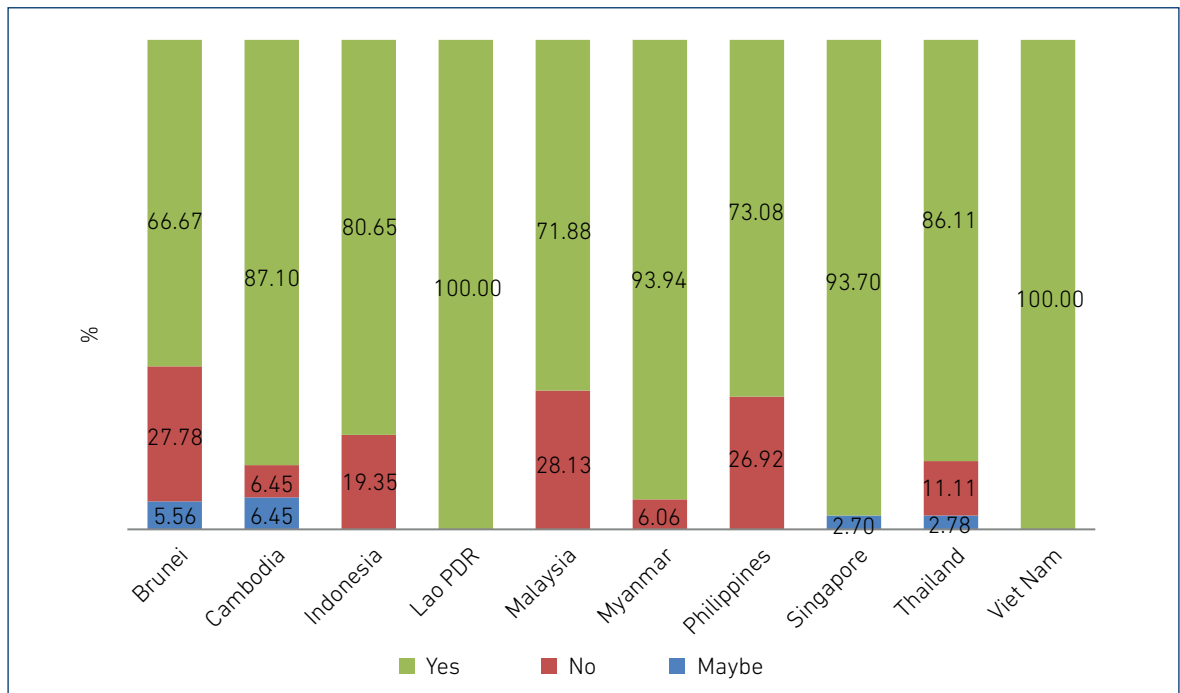
Source: Author's calculation.

5.3. e-Governance in the Socio-Economic Sector

The respondents provided ratings regarding the digital divide between urban and rural areas in their respective countries. A small percentage of respondents from Brunei (6.09%), Indonesia (10.87%), Malaysia (9.80%), the Philippines (6.67%), and Thailand (5.98%) indicated that the digital divide between urban and rural sectors was minimal. On the other hand, the majority of respondents from each country acknowledged the presence of some degree of digital divide between these sectors. However, a considerable proportion of respondents from Brunei (39.13%), Cambodia (33.98%), Indonesia (14.13%), Malaysia (37.25%), Myanmar (30.19%), the Philippines (63.33%), Singapore (17.24%), Thailand (40.17%), and Viet Nam (4.95%) expressed that the digital divide was significant. Overall, the analysis demonstrates that the rural sector, to some extent, has been neglected in terms of access to e-governance within the ASEAN region.

Figure 7.9 shows gender biases by country, i.e. if the e-governance services favour one gender over other. All the respondents from Viet Nam and Lao PDR agreed that digital services employ gender preference. More than 25% of respondents from Brunei, Malaysia, and the Philippines said that digital services in their countries were not gender-biased.

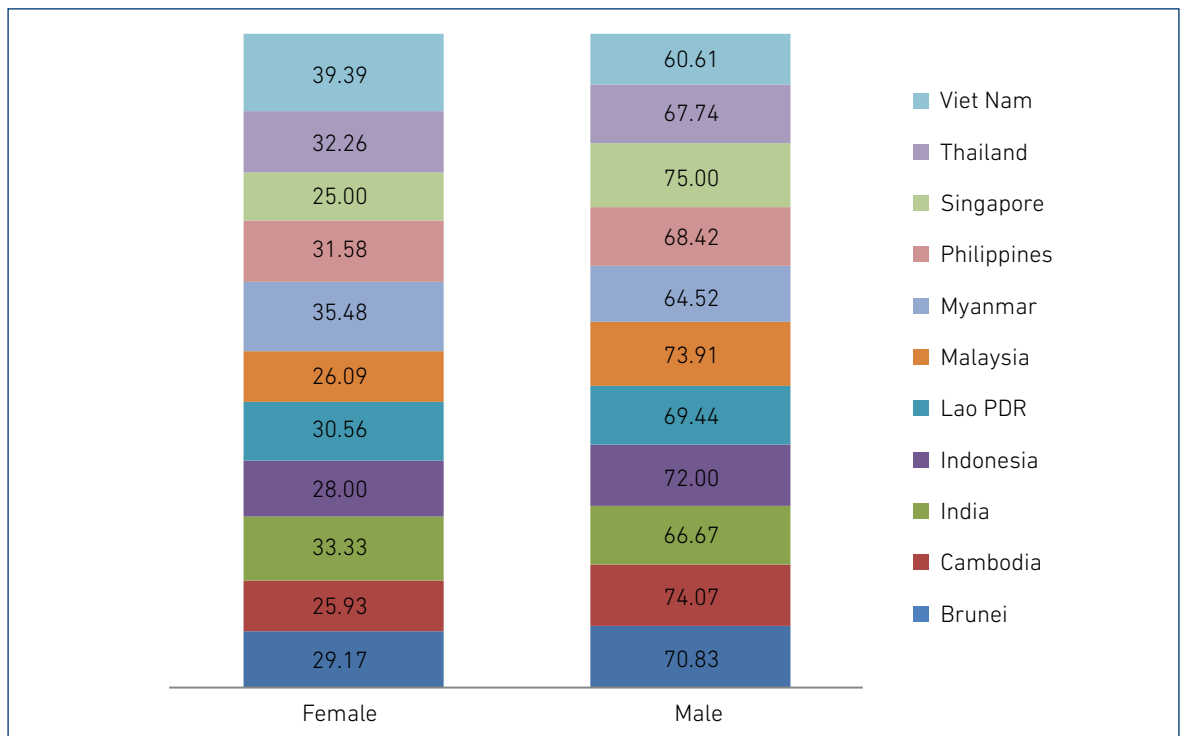
Figure 7.9. Gender Biases of Digital Services
(%)



Source: Author's calculation.

Further, the respondents revealed the gender that was given preference. As shown in Figure 7.10, most of the respondents from AMS said that males were given preference over females. Singapore, Malaysia, Indonesia, Cambodia, and Brunei are more gender-biased, as more than 70% of respondents said that males were given preference over females.

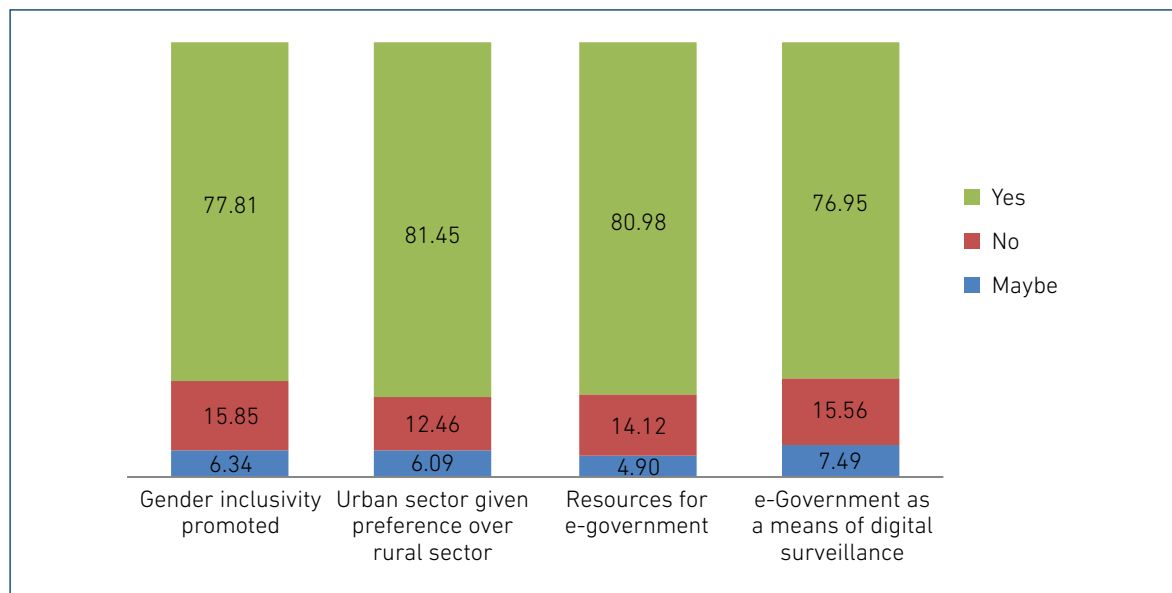
Figure 7.10. Favoured Gender
(%)



Source: Author's calculation.

The respondents were asked if e-governance helped promote gender inclusivity. As shown in Figure 7.11, 77.81% of respondents said yes, 15.85% said no, and the remainder said maybe. Similarly, 81.45% said that e-governance gave preference to the urban sector rather than the rural sector, and 80.98% said that the government had enough resources at their disposal to provide efficient e-government services. Further, 76.95% agreed that e-government portals are a means of digital surveillance. This shows that most of the respondents had a positive outlook towards the effectiveness of e-government services in ASEAN. However, governments need to improve their implementation strategies.

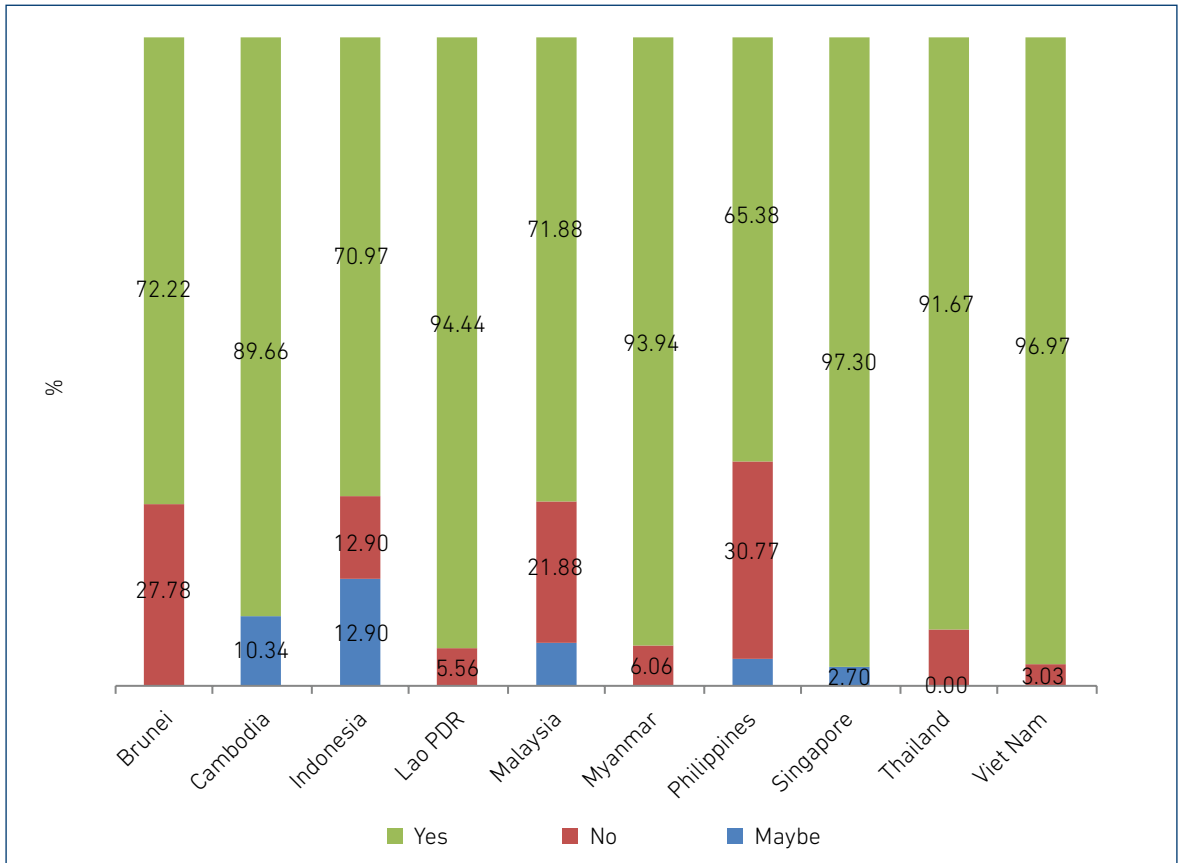
Figure 7.11. Respondents' Perspective of e-Government Services
(%)



Source: Author's calculation.

Figure 7.12 highlights the country-wise perception of respondents regarding the internal political instability affecting the efficiency of e-governance. Most of the respondents in all countries believed that internal political instability hinders the efficiency of e-governance. However, more than 20% of the respondents in Brunei, Malaysia, and the Philippines did not agree with this notion.

Figure 7.12. Internal Political Instability and e-Governance
(%)



Source: Author's calculation.

In response to a question about the robustness of their country's STI industry, 65.61% of the respondents from AMS rated it average. Similarly, most respondents from Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Singapore, Thailand, and Viet Nam rated their STI industry average. However, the STI industry in their country was considered poor by 30.30% of respondents from Myanmar, 30.55% from Thailand, and 65.39% from the Philippines.

5.4. e-Governance, Standards, and Technology

Most of the respondents (78.39%) said they were aware of monetary incentives such as tax rebates or preferences in schemes given to local tech companies. Further, 66.28% of the respondents said they were aware of eASEAN – a framework agreement to promote digital coordination in the economy, society, and government. According to 77.52% of respondents, the government is investing in research and development related activities on e-governance. Some 87.90% think that their respective governments should seek external assistance from other countries in the technological domain.

According to the respondents, e-governance standards are generally perceived as being non-discriminatory. A majority of 88.27% expressed the opinion that the adoption of open standards in e-governance would contribute to enhancing efficiency in interoperability. Additionally, it was noted that the regulations governing technology procurement for e-governance within ASEAN are strict. Both standardisation and regulation were deemed crucial for ensuring smooth utilisation of e-governance as an internal tool. The respondents further emphasised that there is still a considerable amount of work for the government to undertake to enhance technological innovation in this domain.

According to the respondents, the development of mutually recognised standards of interconnectivity and interoperability for national information infrastructure is deemed realistic and important for ASEAN. They emphasised that data-sharing agreements, coupled with effective e-governance practices, play a significant role in facilitating better intergovernmental coordination amongst AMS. Recognising the availability of considerable resources within ASEAN, investing in technological developments, and promoting interoperability in e-governance are seen as crucial. This approach could foster the adoption of open source solutions and open standards, thereby enhancing the development of efficient and effective public services within the region.

6. Recommendations/Suggestions

Institutional Approach to E-Governance:

A study by Fountain (2014) on the effects of e-governance on political institutions introduced the concept of e-government as a 'digitally mediated institution' and argued for the efficacy of extending the institutional approach to account for the study of e-government. The dimensions of digitally mediated institutions differentiate them from other types of institutions. These dimensions include sunk costs incurred in the development of large-scale, socio-technical systems in public organisations; the rigidity of many interfaces, systems architecture, code, and digital infrastructure; the pressure that such systems exert on decision-makers to re-engineer and restructure to realise a return on investment in cyberinfrastructure; and network dynamics, including a strong tendency toward interoperability (Fountain, 2014).

An institutional approach that examines the interactions amongst individuals, technologies, and structures in political environments characterised by conflicts over ideas, rights, and resources is valuable for studying e-governance. In the context of e-governance in ASEAN, such a study should focus on the temporal aspects of digitally mediated institutional development. This includes exploring policy feedback, conventions, path dependence, and key dimensions of long-term institutional development such as timing, sequencing, and gradual patterns of change. According to Fountain (2014), the potential of networked systems lies in their interoperability, which necessitates the establishment of conventions or standards for coordinated and shared benefits. An institutional approach also emphasises how the importance of interoperability extends beyond benefits to political actors to civil society, such as citizens' users of such systems.

Comparison of Vision Documents:

Perform a thorough comparison of the e-governance vision documents of ASEAN as a regional organisation as well as the e-government initiatives of individual AMS to gauge implementation and compliance. The review of the vision documents published by ASEAN as well as individual AMS across timelines reflects an awareness of the need for interoperability, especially of standards. However, implementation and compliance seem to lag in comparison. It would be beneficial to investigate further whether increased awareness of interoperability standards and their implementation – especially at the local government level of individual countries – can aid in the adoption of e-governance at the regional level as well.

User-Centric E-Government Services:

Emphasise the user centricity, transparency, and accessibility of cross-border e-government services. Research on e-governance in the EU has shown that the removal of linguistic and interoperability barriers enables Europeans to experience full cross border citizenship and entrepreneurship (European Commission, 2021). Policymakers and implementers in the ASEAN region need to be aware of where digital interoperability is achieved: is it just for business-centric initiatives or is it also a priority for citizen-centric cross-border initiatives? The accessibility and outreach of regional initiatives need to reach the most disadvantaged citizens as well. The question of accessibility is interlinked with transparency and security enablers that protect and do not violate citizens' privacy.

Conceptual Rigour in ASEAN's Context:

Employ conceptual rigour to understand the particularity of the ASEAN experience of interoperable digital governance. While the e-governance benchmark of the EU and other conceptual tools are important, there is a need to develop concepts that talk specifically about the ASEAN region and its organisational culture and aims. Concepts must be developed to address interoperability that speaks to the diversity of political cultures of individual AMS. Further, as Postill (2012) noted, this debate should not be reduced to that of a 'community–network' dichotomy. More conceptual nuance is necessary to understand the findings of this study on e-governance in ASEAN.

Promoting Awareness and Utilisation:

The interoperability standards and specifications might strengthen social and territorial cohesion by making public services more accessible, while improving crisis management through expanding access to e-health, e-education, and training. According to the survey findings, TV advertisements and social media are the main source of awareness regarding e-governance portals. Therefore, it is suggested that the ASEAN government collaborate to establish a comprehensive online platform that offers e-health services, e-education resources, training programs, and remote work opportunities for its citizens. To ensure widespread awareness and utilisation of this portal, effective promotional strategies can be employed, such as advertising through television and leveraging social media platforms.

Extending E-Governance Initiatives:

The survey revealed that respondents from Singapore expressed satisfaction with e-government services that cater to diverse sectors. This highlights the importance for governments of extending e-governance initiatives to a wider range of public sectors. To address the challenges in achieving this, it is crucial to establish a robust architecture governance framework that addresses all bottlenecks and impediments hindering the success of e-governance initiatives across sectors. Implementing a strategic framework that defines and guides the implementation of e-government can be advantageous in this regard.

Gender Mainstreaming and Local Content:

Ensure gender mainstreaming in e-governance services, connect public administration reform plans and programmes to e-government strategies, and guarantee that women and men stakeholders and civil employees are included in their creation and execution. Government should place special emphasis on the recruitment of women and men to government institutions at the national and local levels, as well as throughout a variety of programme areas, in terms of both their numbers and the positions they occupy. Gender equality in appointments, promotions, study tours, and duty assignments, amongst other things, may be tracked using ICT. Encourage the creation and distribution of local content in local languages on e-governance portals, particularly for women and low-income and vulnerable groups. Local material should address concerns connected to public services as well as existing gender inequities.

References

- Apriliyanti, I.D., B. Kusumasari, A. Pramusinto, and W.A. Setianto (2021), 'Digital Divide in ASEAN Member States: Analyzing the Critical Factors for Successful E-Government Programs', *Online Information Review*, 45(2), pp.440–60.
- ASEAN (n.d.-a), *ASEAN Digital Integration Framework*. Jakarta: Association of Southeast Asian Nations.
- ASEAN (n.d.-b), ASEAN Single Window. <https://asean.org/our-communities/economic-community/asean-single-window/>
- ASEAN (n.d.-c), 'e-ASEAN Framework Agreement'. Jakarta: Association of Southeast Asian Nations.
- ASEAN (2019), *Final Review: ASEAN ICT Masterplan 2020*. Jakarta: Association of Southeast Asian Nations.
- ASEAN (2021 a), 'ASEAN Digital Integration Index: Measuring Digital Integration to Inform Economic Policies'. Jakarta: Association of Southeast Asian Nations.
- ASEAN (2021b), *ASEAN Digital Masterplan 2025*. Jakarta: Association of Southeast Asian Nations.
- Baird, S.A. (2007), 'Government Role in Developing an Interoperability Ecosystem', in T. Janowski and T.A. Pardo (eds.) *ICEGOV'07: Proceedings of the 1st International Conference on Theory and Practice of Electronic Governance*. New York: Association for Computing Machinery, pp.65–8.
- Chen, Y.N., H.M. Chen, W. Huang, and R.K.H. Ching (2006), 'e-Government Strategies in Developed and Developing Countries: An Implementation Framework and Case Study', *Journal of Global Information Management*, 14(1), pp.23–46.
- CSA Singapore (2020), *Singapore's Safer Cyberspace Masterplan 2020*. Singapore: Cyber Security Agency of Singapore.
- Degelsegger-Márquez, A. and S.O. Remøe (2019), 'ASEAN's Science, Technology and Innovation Policy: Tension and Integration Between Intergovernmentalism and Sub-Regional Cooperation', *Asia Pacific Business Review*, 25(5), pp.637–55.
- Department of Science and Technology (2021), 'Draft 5th National Science, Technology, and Innovation Policy for Public Consultation'. <https://dst.gov.in/draft-5th-national-science-technology-and-innovation-policy-public-consultation>
- DICT (2019), *E-Government Masterplan 2022*. Manila: Department of Information and Communications Technology. <https://dict.gov.ph/ictstatistics/wp-content/uploads/2020/03/EGMP-2022.pdf>
- Economic Planning Unit (2021), *Malaysia Digital Economy Blueprint*. Putrajaya: Prime Minister's Department.
- European Commission (2021), e-Governance Benchmark 2021: Entering a New Digital Government Era. Luxembourg: Publications Office of the European Union.

- Fountain, J.E. (2014), 'On the Effects of E-Government on Political Institutions', in D.L. Kleinman and K. Moore (eds.) *Routledge Handbook of Science, Technology, and Society*. London: Routledge, pp.493–509.
- Google, Temasek, and Bain & Company (2021), 'e-Conomy SEA 2021 – Roaring 20s: The SEA Digital Decade'. https://www.bain.com/globalassets/noindex/2021/e_economy_sea_2021_report.pdf
- Government of Cambodia (2021), *Cambodia Digital Economy and Society Policy Framework, 2021–2035*. Phnom Penh.
- Government of Cambodia (2022), *Cambodian Digital Government Policy, 2022–2035*. Phnom Penh.
- Government of Malaysia (n.d.), My Government. <https://www.malaysia.gov.my/portal/index>
- Government of Malaysia (2020), *National Science, Technology and Innovation Policy, 2021–2030*. <https://www.mosti.gov.my/wp-content/uploads/2022/03/National-Science-Technology-and-Innovation-Policy-2021-2030.pdf>
- Gunawong, P. and P. Gao (2017), 'Understanding e-Government Failure in the Developing Country Context: A Process-Oriented Study', *Information Technology for Development*, 23(1), pp.153–78.
- Hao, C.J. (2018), 'Moving Forward: Bilateral Exchanges on E-governance Between Singapore and India', *ISAS Insights*, No. 498. Singapore: Institute of South Asian Studies, National University of Singapore.
- Hartanto, D., J. Dalle, A. Akrim, and H.U. Anisah (2021), 'Perceived Effectiveness of e-Governance as an Underlying Mechanism Between Good Governance and Public Trust: A Case of Indonesia', *Digital Policy, Regulation and Governance*, 23(6) pp.598–616.
- Henning, F. (2013), 'Adoption of Interoperability Standards in Government Information Networks: An Initial Framework of Influence Factors', in T. Janowski, J. Holm, and E. Estevez (eds.) *ICEGOV'13: Proceedings of the 7th International Conference on Theory and Practice of Electronic Governance*. New York: Association for Computing Machinery, pp.264–67.
- Hussein, R., N.S.A. Karim, N. Mohamed, and A.R. Ahlan (2007), 'The Influence of Organizational Factors on Information Systems Success in e-Government Agencies in Malaysia', *The Electronic Journal of Information Systems in Developing Countries*, 29(1), pp.1–17.
- Infocomm Media Development Authority (n.d.), Data Protection Trustmark Certification. <https://www.imda.gov.sg/programme-listing/data-protection-trustmark-certification>
- ITU (n.d.), 'Country Paper on e-Government (Myanmar)'. Geneva: International Telecommunication Union.
- Jiao, S. and Q. Sun (2021), 'Digital Economic Development and Its Impact on Economic Growth in China: Research Based on the Perspective of Sustainability', 13(18):10245.
- Ke, W. and K.K. Wei (2004), 'Successful e-Government in Singapore', *Communications of the ACM*, 47(6), pp.95–99.
- Kompella, L. (2016), 'Enablers for Improving Organisational Interoperability in e-Governance Systems', *Electronic Government, an International Journal*, 12(3), pp.279–300.

- Lean, O.K., S. Zailani, T. Ramayah, and Y. Fernando (2009), 'Factors Influencing Intention to Use e-Government Services Among Citizens in Malaysia', *International Journal of Information Management*, 29(6), pp.458–75.
- McDermott, G. (2021), 'Thailand's Creeping Digital Authoritarianism', *The Diplomat*, 17 February. <https://thediplomat.com/2021/02/thailands-creeping-digital-authoritarianism/>
- Maheshwari, D. and M. Janssen (2012), 'Measuring Organizational Interoperability in Practice: The Case Study of Population Welfare Department of Government of Sindh, Pakistan', in J.R. Gil-García, N. Helbig, and A. Ojo (eds.) *ICEGOV'12: Proceedings of the 6th International Conference on Theory and Practice of Electronic Governance*. New York: Association for Computing Machinery, pp.216–25.
- Masilamani, L. and J. Peterson (2014), 'The "ASEAN Way": The Structural Underpinnings of Constructive Engagement', *Foreign Policy Journal*, 15 October. <https://www.foreignpolicyjournal.com/2014/10/15/the-asean-way-the-structural-underpinnings-of-constructive-engagement/>
- Milakovich, M.E. (2011), *Digital Governance: New Technologies for Improving Public Service and Participation*, First edition. New York and London: Routledge.
- Ministry of Information and Communications (2021), 'Viet Nam Issued Its First e-Government Strategy Towards Digital Government', Article, 15 June. <https://english.mic.gov.vn/Pages/TinTuc/tinchitiet.aspx?tintucid=147615>
- Ministry of Information and Communications (2022), 'Digital Transformation - An Institutional Revolution', Article, 8 February. <https://english.mic.gov.vn/Pages/TinTuc/152545/Digital-transformation---an-institutional-revolution.html>
- OECD and ADB (2019a), *Government at a Glance Southeast Asia 2019*. Paris: Organisation for Economic Co-operation and Development.
- OECD and ADB (2019b), 'Government at a Glance Southeast Asia 2019: Country Fact Sheet – Lao PDR'. Paris: Organisation for Economic Co-operation and Development.
- Office of the National Digital Economy and Society Commission (2020), *Digital Thailand*. Bangkok: Office of the National Digital Economy and Society Commission. https://www.onde.go.th/assets/portals//files/Digital_Thailand_pocket_book_EN.pdf
- Ona, S.E. (2019), 'Case Study: e-Government and Interoperability Initiatives in the Philippines – New Directions, Challenges and Opportunities', Prepared for the Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT) of the United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP).
- Postill, J. and S. Pink (2012), 'Social Media Ethnography: The Digital Researcher in a Messy Web', *Media International Australia*, 145(1), pp.123–34.
- Rohman, H. (2020), 'Indonesia's Vision for Digital Government in 2025', *GovInsider*, 25 February. <https://govinsider.asia/inclusive-gov/indonesia-digital-government-bappenas-joko-widodo/>

- Roztock, N., P. Soja, and H.R. Weistroffer (2019), 'The Role of Information and Communication Technologies in Socioeconomic Development: Towards a Multi-Dimensional Framework', *Information Technology for Development*, 25(2), pp.171–83.
- Sabani, A., M.H. Farah, and D.R.S. Dewi (2019), 'Indonesia in the Spotlight: Combating Corruption Through ICT Enabled Governance', *Procedia Computer Science*, 161, pp.324–32.
- Sagarik, D., P. Chansukree, W. Cho, and E. Berman (2018), 'E-government 4.0 in Thailand: The Role of Central Agencies', *Information Polity*, 23, pp.343–53. <https://content.iospress.com/download/information-polity/ip180006?id=information-polity/ip180006>
- Salsabila, L. and E.P. Purnomo (2018), 'Establishing and Implementing Good Practices E-Government (A Case Study: Indonesia and South Korea E-Government Implementation 2012–2016)', *Journal of Asian Review of Public Affairs and Policy*, 3(3), pp.36–54.
- Seng, W.M., S. Jackson, and G. Philip (2010), 'Cultural Issues in Developing E-Government in Malaysia', *Behaviour & Information Technology*, 29(4), pp.423–32.
- Stoiciu, A. (2011), 'The Role of e-Governance in Bridging the Digital Divide', *UN Chronicle*, 48(3) pp.37–9. <https://www.un.org/en/chronicle/article/role-e-governance-bridging-digital-divide>
- Tatnall, A. (2005), 'Actor–Network Theory in Information Systems Research', in M. Khosrow-Pour (ed.) *Encyclopedia of Information Science and Technology*, First Edition. Hershey, PA: IGI Global, pp. 42–46.
- Thailand Board of Investment (2019), *Digital, Creative, and Startup Ecosystem*. Bangkok: Thailand Board of Investment. https://www.boi.go.th/upload/content/BOI_Digital_Economy_Brochure.pdf
- Thomas, J. et al. (2021), *Australian Digital Inclusion Index: 2021*. Melbourne: RMIT, Swinburne University of Technology, and Telestra. <https://www.digitalinclusionindex.org.au/download-reports/>
- Tilleke and Gibbins (2019), 'Cambodia Enacts a New E-commerce Law and a Consumer Protection Law', 14 November. <https://www.tilleke.com/insights/cambodia-enacts-new-e-commerce-law-and-consumer-protection-law/>
- UN E-Government Knowledgebase (2020), E-Government Development Index. <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/29-Cambodia/dataYear/2020> (accessed 15 March 2022).
- UNDP (2007), *e-Government Interoperability: A Review of Government Interoperability Frameworks in Selected Countries*. Bangkok: United Nations Development Programme.
- United Nations (n.d.), UN E-Government Survey 2020 <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2020> (accessed 15 March 2022).
- Wahyunengseh, R.D., S. Hastjarjo, T. Mulyaningsih, and D.G. Suharto (2020), 'Digital Governance and Digital Divide: A Matrix of the Poor's Vulnerabilities', *Policy and Governance Review*, 4(2), pp.152–66.
- Walsham, G. and S. Sahay (1999), 'GIS for District-Level Administration in India: Problems and Opportunities', *MIS Quarterly*, 23(1), pp.39–65.

Warf, B. (2016), *e-Government in Asia: Origins, Politics, Impacts, Geographies*. Amsterdam: Elsevier.

World Bank (2018), 'Project Information Document/Integrated Safeguards Data Sheet (PID/ISDS).

Washington, DC: World Bank. <https://documents1.worldbank.org/curated/pt/393851542862936421/pdf/Concept-Project-Information-Documents-Integrated-Safeguards-Data-Sheet-MM-Digital-Myanmar-Project-P167978.pdf>

World Economic Forum (n.d.), Digital ASEAN. <https://www.weforum.org/projects/digital-asean>

Yanti, M. and Y. Yusnaini (2018), 'The Narration of Digital Literacy Movement in Indonesia', *Informasi*, 48(2), pp.243–55.

Appendix 1: Questionnaire

Part I – Basic Information

1. Name:
2. Age:
 - a. Below 30 years
 - b. 30--40 years
 - c. 41--50 years
 - d. 51--59 years
 - e. 60 years or above
 - f. Prefer not to say
3. Email ID:
4. Country of Residence:
5. Nationality
6. Education Qualification:
7. Please specify your gender:
 - a. Female
 - b. Male
 - c. Prefer not to say
 - d. Other...
8. Please specify your occupation:
9. Do you use public services through internet/digital mode?
 - a. Yes
 - b. No
 - c. Maybe

Part II – National Policy of E-governance and ICT

10. How would you rate e-governance services of your country?
 - a. Excellent
 - b. Good
 - c. Satisfactory
 - d. Bad
 - e. Very Bad
 - f. Other...

11. How were you made aware of e-governance portals in your country?
 - a. Advertisements
 - b. Social media
 - c. News
 - d. Speeches of the elected representatives
 - e. Other...

12. Have you accessed any of the e-government portals?
 - a. Yes
 - b. No
 - c. Maybe
 - d. Other...

13. Which public policy areas does e-governance in your country cover?
 - a. General Public Services
 - b. Defence
 - c. Public Order and Safety
 - d. Economic Affairs
 - e. Environment Protection
 - f. Housing and Community Amenities
 - g. Health
 - h. Recreation, Culture, and Religion
 - i. Education
 - j. Social Protection
 - k. Other...

14. Do e-government services in your country cater to largely one or very few sectors?
 - a. Yes
 - b. No
 - c. Maybe

15. If yes, could you specify which sectors do they largely cater to?
16. Are the instructions on the e-government portals clear for you to follow?
- Yes
 - No
 - Maybe
 - Other...
17. Has your grievance been addressed successfully through e-government portals?
- Yes
 - No
 - Maybe
18. Do you still visit government offices despite the presence of e-government portals?
- Regularly
 - Often
 - Sometimes
 - Rarely
 - Never
 - Other...
19. Has corruption reduced and performance, efficiency, and transparency improved due to e-governance?
- Yes
 - No
 - Maybe
 - Other...

Part III – E-Governance in Socio-Economic Sector

20. Rate the digital divide between the urban and rural sectors in your country? 1 as least and 5 as the most
- 1 2 3 4 5
21. Have any specific measures been taken by your government to bridge the digital divide?
22. Are the digital services gender-mainstreamed? Is any particular gender given preference in your country?
- Yes
 - No
 - Maybe
 - Other...

23. If yes, could you specify the gender that is given preference?
24. Has e-governance helped promote inclusivity of all genders?
- Yes
 - No
 - Maybe
 - Other...
25. Has the urban sector been prioritized over rural areas in terms of e-governance preferences?
- Yes
 - No
 - Maybe
 - Other...
26. Are you aware of any cases of racism or sexism: where a person was denied services or access to e-governance due to their race or gender?
27. Do you think your government has enough resources at their disposal to provide efficient e-government services?
- Yes
 - No
 - Maybe
 - Other...
28. Do you think the internal political instability in your country hinders the efficiency of e-governance?
- Yes
 - No
 - Maybe
 - Other...
29. Do you feel that the e-government portals are a means of digital surveillance?
- Yes
 - No
 - Maybe
 - Other...

Part IV – E-Governance and Technology

30. How strong and robust do you think is the science, technology, and innovation industry in your country? 1 as the least and 5 as the most.
- 1 2 3 4 5
31. Are you aware of any specific incentives given to the local tech companies?
- Yes
 - No
 - Maybe
 - Other...
32. Do you think your government is investing in research and development towards e-governance?
- Yes
 - No
 - Maybe
 - Other...
33. Do you think that your government will seek external assistance (assistance from other countries) in the technological domain?
- Yes
 - No
 - Other...
34. If yes, which country or region are they likely to seek assistance from?
- United States of America
 - China
 - European Union
 - African nations
 - Countries within ASEAN
 - Oceania (Australia and New Zealand)
 - Other Asian countries like Japan and the Republic of Korea
 - India
 - Russia
 - Other...
35. Are the standards of e-governance non-discriminatory in nature?
- Yes
 - No
 - Maybe
 - Other...

36. Do you feel that open standards of e-governance will help promote efficiency in interoperability?
- Yes
 - No
 - Maybe
 - Other...
37. Are the regulations in your country for procurement of technology for e-governance stringent?
- Yes
 - No
 - Maybe
 - Other...
38. Has the standardisation of e-governance promoted seamless sharing of information across departments?
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
39. Can standardization and regulations ensure the seamless use of e-governance as an internal tool?
- Yes
 - No
 - Maybe
 - Other...
40. Do you think that your government still has a significant amount of work pending to improve the technological innovations?
- Yes
 - No
 - Maybe
 - Other...

Part V – Regional Outlook

41. Are you aware of eASEAN – a Framework Agreement to promote digital coordination on the economy, society, and government?
- Yes
 - No
 - Maybe
 - Other...

42. Is it realistic for ASEAN to develop and harmonise standards for inter-connectivity and interoperability of national information infrastructures?
- Yes
 - No
 - Maybe
 - Other
43. Will there be an increased need for robust interoperability amongst ASEAN Member States in a post-pandemic world?
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
44. Will data-sharing agreements along with effective e-governance help ASEAN Member States in better intergovernmental coordination?
- Yes
 - No
 - Maybe
 - Other...
45. Will data sharing agreements along with effective e-governance help ASEAN Member States in ensuring the transparency and accountability of governments?
- Yes
 - No
 - Maybe
 - Other...
46. Does ASEAN have considerable resources at its disposal to invest in technological developments?
- Yes
 - No
 - Maybe
 - Other...

47. Will interoperability of e-governance enhance open source solutions and open standards when building public services?
- Yes
 - No
 - Maybe
 - Other...
48. Can digital connectivity and the interoperability of regulatory systems have far-reaching implications for regional integration?
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
49. Do you agree that the lack of cohesion in the way the data are shared and managed between governments in ASEAN is preventing and undermining interoperability?
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
50. How do you see the road ahead for ASEAN in propelling robust e-governance and interoperability?