

Malaysia Government Electronic Services for Future Sustainability

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ABSTRACT

The Malaysia Government's electronic services (e-Government) initiatives aim to fulfill the supply and demand for government services that rapidly evolved following the COVID-19 pandemic. Currently, there is widespread use of electronic devices to access these services online. This study analyzes the sustainability of government services during the shift from traditional manual operations to online platforms. By utilizing bibliometric analysis and systematic literature reviews, this study provides a structured approach to identifying research trends and key areas requiring improvement. While the research appropriately emphasizes trust and privacy as critical factors influencing citizens' adoption of digital services, it is limited by its reliance on secondary data rather than direct empirical evidence. As a result, future e-government development must not only address trust and privacy issues but also tackle practical challenges such as digital literacy and accessibility to ensure sustainable service delivery.

Keywords: e-Government; Bibliometric Analysis; Digital Adoption; Service Sustainability; Malaysia

INTRODUCTION

Government can be described as a system that manages a country's resources, legislates and enforces laws, and provides services to the community. The government also acts as an entity that ensures citizens live in a safe environment by providing assurance through the law. To maintain public confidence, the government must provide effective services to the community; fulfilling these expectations helps ensure that law enforcement and administration run smoothly.

The government must serve and secure basic community needs, covering justice, security, welfare, infrastructure, economic assistance, and public administration. Each of these aspects complements the others, and feedback from the community serves as an opportunity for continuous improvement. Electronic services (e-services) are defined as activities initiated, processed, and delivered via electronic networks, highly relying on internet availability. Furthermore, these e-services are non-material, allowing citizens to benefit directly from the conveniences provided (Kvasnicová et al., 2015).

Currently, the Malaysian government is shifting its services from traditional manual methods to electronic platforms. These services can be accessed via official government portals or websites, allowing citizens to save time and money. Sustainability in this context ensures that the provided services remain relevant across generations, balancing the needs of current and future populations. Good government services must cater to future generations' preferences to be delivered confidently and sustainably. This digital transition is crucial to sustaining satisfaction rates and fulfilling current demands, which in turn boosts the confidence of investors and foreign companies looking to invest in Malaysia.

BACKGROUND

Previously, government services were conducted manually. Citizens had to visit the nearest government office, queue to meet an officer, and initiate the process. While some services could be completed immediately, others required citizens to call officers for updates or make repetitive visits to conclude their business, resulting in redundant work and lengthy processing times.

Today, government services are increasingly provided electronically. This strategy ensures that services benefit the people by allowing anytime, anywhere access (Abu Bakar et al., 2015). In addition, these services can be tailored to different target markets, including specific citizen locations, government agencies, and various business sectors (Emmanouilidou & Kreps, 2010). The introduction of online services allows the government to segment users based on needs, age, lifestyle, and household income (Shaikh & Karjaluoto, 2015).

However, there is limited research focused on individual government services that have yielded low usability results via electronic means (Al-Thunibat et al., 2010). Moving forward, the government must act quickly to ensure electronic services are accessible to the majority of citizens, which will optimize costs and avoid repetitive work.

Therefore, this study examines the e-government services that impact the sustainability of communities in Malaysia. The objective is to identify e-government services that directly impact different generations, covering the shift accelerated by COVID-19. Furthermore, the study utilizes bibliometric analysis to determine relationships between e-government services and related components, while identifying areas for future improvement.

METHODOLOGY

In recent years, bibliometric analysis has become highly popular in research due to the availability and ease of use of specialized software. This analysis can handle high volumes of scientific data, assisting researchers in producing high-impact studies (Donthu, Kumar, & Pattnaik, 2020b; Donthu, Kumar, Pattnaik, & Lim, 2021; Khan et al., 2021). Bibliometric analysis utilizes advanced mapping techniques (Brown, Park, & Pitt, 2020) to understand research trends, and its growing user base proves its validity in defending chosen research topics.

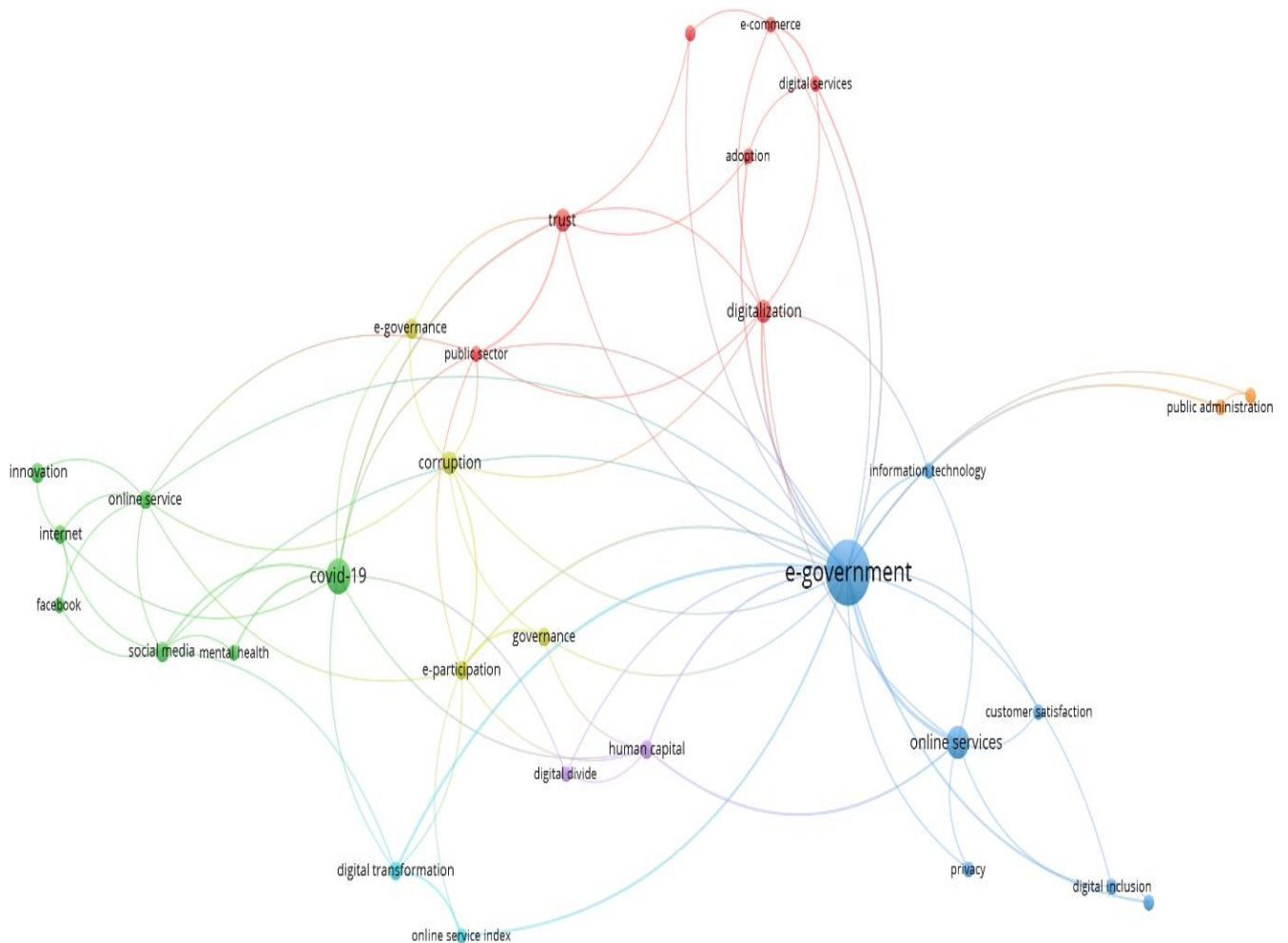
Considered a quantitative technique, bibliometric analysis is heavily used in fields like finance, human resources, and marketing (Donthu et al., 2021). While systematic literature reviews lean toward qualitative techniques, bibliometric analysis focuses on quantitative data, which helps avoid duplication and bias (MacCoun, 1998).

In this study, bibliometric analysis is used to analyze article information based on keywords, utilizing VOSviewer software. This software provides network, overlay, and density visualizations, making it easier for researchers to expand on related topics and avoid bias.

Limitations of the Methodology: While this study provides useful insights, it has limitations due to its strict reliance on bibliometric and systematic literature review methods. The research does not include direct empirical evidence from Malaysian citizens, government employees, or service providers regarding their actual experiences with e-Government platforms. As a result, the findings may not fully capture practical challenges such as digital literacy gaps, accessibility issues, infrastructure limitations, or socioeconomic differences among various user groups.

Analysis

Network Visualisation

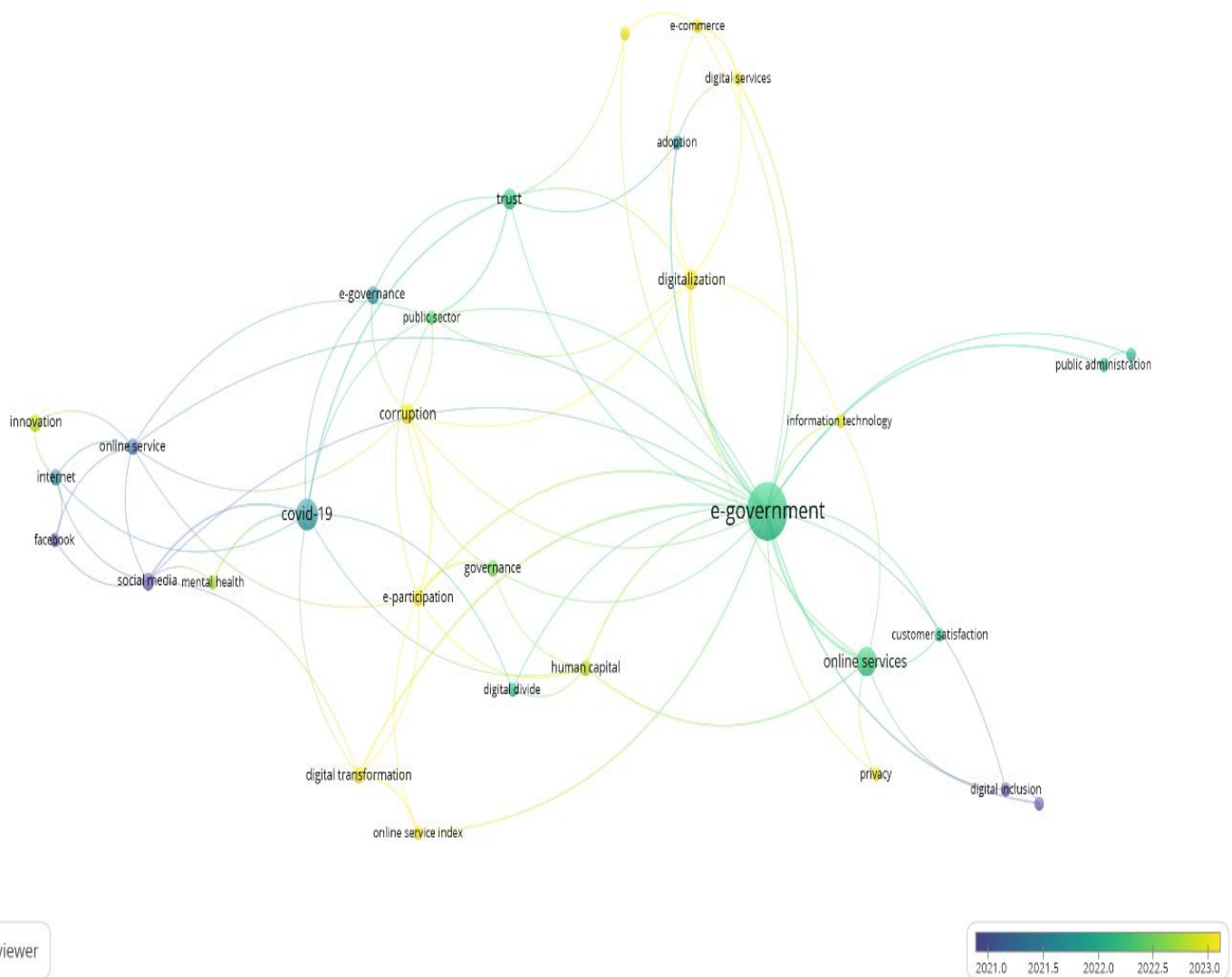


Network visualization shows the links between keywords, helping users identify major research branches and suitable keywords to meet research objectives. Based on the visualization, "e-government" is the most frequently used keyword, linking directly to digitalization, information technology, and online services.

There are 3 major factors that influenced online government services. First, privacy of the information that share in the online platform. Second, customer satisfaction when using the online services. Third, digital inclusion when using the online platform that be able access by every level of society.

Trust in electronic services is a critical factor, prompting questions about where information is stored, how it is used, and who can access it. E-governance provides assurance to users engaging with these services. During COVID-19, online activities expanded beyond basic information searches to include e-commerce, online education, and vital regional meetings, pushing government services deeper into the digitalization era.

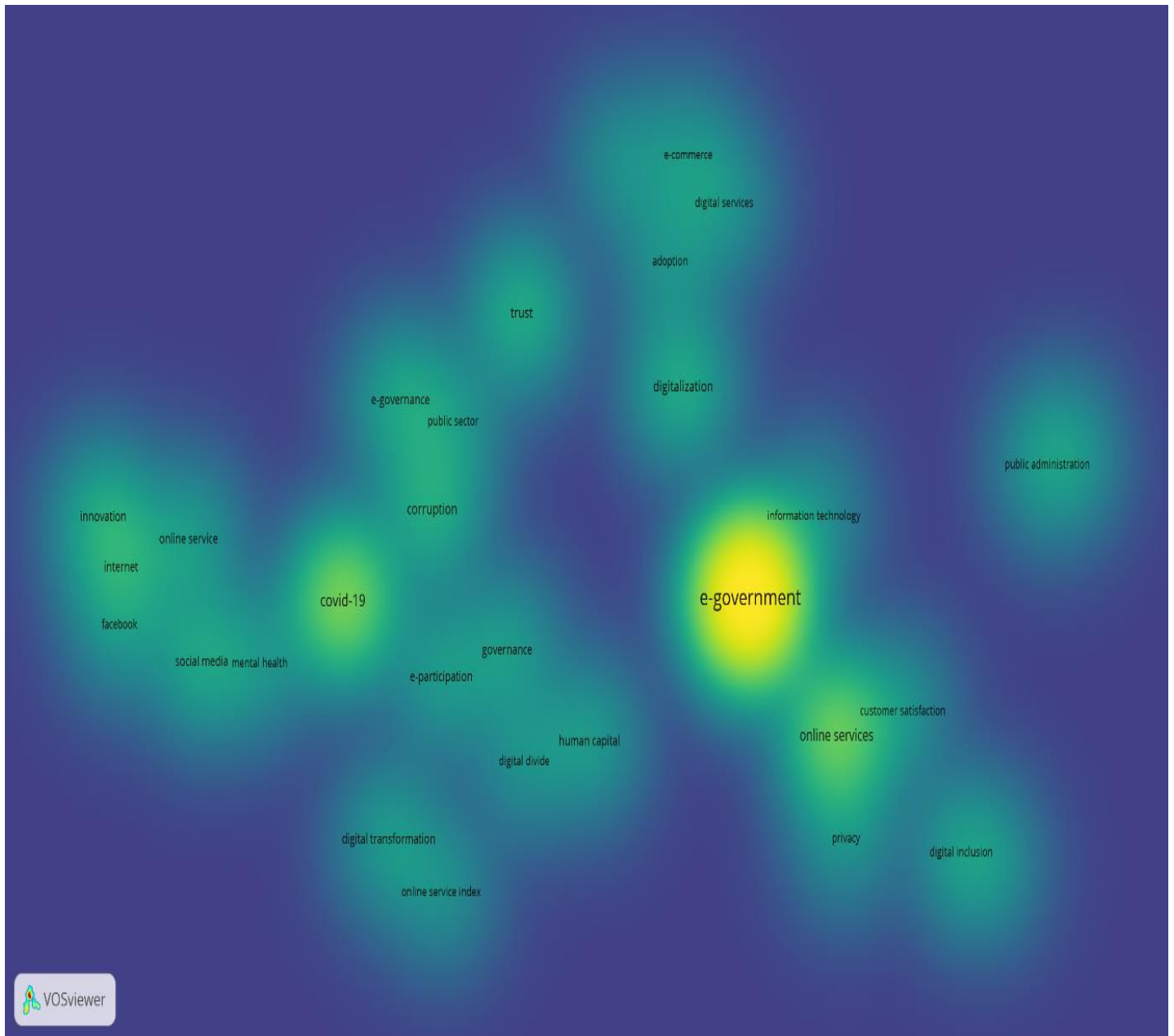
Overlay Visualisation



Overlay visualization helps track research trends over time. In early 2021, digital inclusion and social media mental health were primary discussions. Post-May 2021, research shifted toward COVID-19, e-governance, and online service adoption, showing the pandemic's direct impact and the urgent need to secure user trust.

In 2022, the focus narrowed to online services, trust, and the digital divide. Discussions centered on transitioning manual services to online platforms, customer satisfaction, and the governance required to ensure user safety. By 2023, topics evolved toward privacy, corruption, and digital transformation. The borderless nature of the digital world raised concerns about data manipulation and the misuse of personal information. Monitoring corruption and preventing external threats to strategic assets became key aspirations of Malaysia's digital transformation.

Density Visualisation



Density visualization analyzes research hotspots. "E-government" remains the most heavily discussed topic, followed by COVID-19 and online services. The least discussed topics include privacy, governance, digital transformation, and the online service index.

To address these gaps, privacy must be supported by updated governance and guidelines that align with current technological realities. Digital transformation must be explored further to keep Malaysia competitive. Although the study identifies trust and privacy concerns, it lacks a detailed analysis of specific security risks, policy measures, or technological solutions needed to address these critical issues thoroughly.

SYSTEMATIC LITERATURE REVIEW

Electronic services (e-services) provide tangible and intangible benefits to users through information and communication devices. During the Movement Control Order (MCO) in Malaysia, the Malaysia Communications and Multimedia Commission (MCMC) detected a surge in data traffic due to remote work and online classes (Bolisani et al., 2020), which sometimes resulted in slower internet speeds depending on location and network capability.

According to Hootsuite (2020), internet usage in Malaysia exceeded 7 hours per day, with high reliance on platforms like Google, YouTube, Facebook, WhatsApp, and Maybank2u. There was also an increase in e-wallet usage such as Samsung Pay, Fave, Touch 'n Go, Grab (Aji et al., 2020) and a broader demand for digital services driven by unemployment rates and the rise of e-commerce (Department of Statistics Malaysia 2020). This rapid expansion was supported by the widespread use of smartphones (Uchiyama et al. 2022).

However, the pandemic also brought extreme cyber threats and cybercrime issues (Gil, Llinares, Moneva, Kemp & Castano, 2021; Ribeiro, Burkhardt & Caneppele, 2021). Cybercrime, categorized into cyber-dependent crimes (cyber-attacks) and cyber theft/fraud, became a major concern, with data intrusion losses for cloud services rising from USD 3.46 million pre-pandemic to USD 5.12 million post-pandemic (IBM Security, 2021). Consequently, users have become highly concerned about the manipulation of their personal information. In response, institutions like Bank Negara Malaysia established dedicated cyber security and data protection units.

CONCLUSION

In conclusion, e-government services must gain user trust to ensure that data and information are securely protected. Because technology evolves rapidly, government policies must be continuously updated, and user knowledge must keep pace with technological advancements. Future e-government services must also adapt to the rise of Artificial Intelligence (AI) and utilize customer satisfaction indices to align services with national digital transformation agendas.

Suggestions for Future Improvement: To overcome the limitations of current literature-based findings, future research must incorporate user experience studies to understand citizens' direct perceptions and challenges when using e-Government services. These studies should comprehensively examine factors that influence online service adoption, such as digital skills, age, accessibility, cybersecurity awareness, and socioeconomic differences. Furthermore, greater attention must be directed toward developing robust strategies for improving trust, implementing detailed policy measures to protect user privacy, and utilizing advanced technological solutions to ensure secure data management.

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