

Public Value Creation towards a Seamless End-To-End Services in E-Government: A Systematic Literature Review

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Abstract

This paper presents a review on public value creation approach that offers an understanding of future directions in e-government service delivery which identifies patterns and trends in the field of e-government. A systematic review was conducted by reviewing public value in e-government studies between 2019 and 2024 using two main research databases namely Scopus, Web of Science and Google Scholar as a support. Four themes and 12 sub-themes emerge as a result of analysis upon 27 eligible studies namely (1) adoption and technology use (2) service quality (3) citizen engagement and (4) security and privacy. Several contributions were presented for practical aim and future research. The findings further highlight the importance of public value creation to leverage e-government service delivery towards the implementation of an end-to-end services. The motivation that drove towards conducting this review is to explore a new perspective on the concept of public value which might enhance the foundation of identifying the role of end-to-end services in e-government.

Keywords: Public Value, Service Delivery, End-To-End, Systematic Literature Review, E-Government

Introduction

Digital technologies offer public administration with the tools to enhance the efficiency and effectiveness of public services through the implementation of Electronic Government (e-government). e-government has emerged as the new way of digital interaction among citizens and businesses and have proven to be beneficial in terms of service delivery efficiency and promoting good governance (United Nations, 2022). Through continuous growth of e-government services, the public sector has taken the opportunity to introduce new services and improve existing services in fulfilling citizen demand towards alternative channels of service delivery. Successful implementation and effectiveness of e-government is vital to ensure all levels of citizens can gain full benefits and improve their well-being and quality of

life (Chen & Aklidikou, 2020). Although e-government services are expected to achieve its objectives, due to the rise of expectation and technology capacity, the public demands for a responsive interaction through e-government and the potential of seamless integration, where all transactions are performed online, is yet to be achieved by e-government services (Elnaghi et al., 2019; Sepasgozar et al., 2019). Generally, an end-to-end e-government services offers the convenience of service delivery through a digital workflow from the initial stage to its completion. It emphasises on all activities of delivering specific services within the e-government framework, ensuring an uninterrupted experience and interaction, from start to finish. Thus, a systematic literature review is crucial to provide a deep understanding on the current state of knowledge regarding public value creation in e-government and the role of end-to-end services in providing valuable services to the public.

Background

Electronic Government (e-government) has become one of the leading applications of Internet technology by government in developed and developing nations to engage with modern civilization in today's digital economy. The Organization for Economic Co-operation and Development (OECD) defines "e-government" as "the use of information and communication technologies, and particularly the Internet, as a tool to achieve better government" (OECD, 2003) and while UN define it, as the use of ICTs for improving the efficiency of government agencies and providing government services online (United Nations, 2022).

Since its inception, e-government initiatives have reformed public administration in delivering quality and reliable services through a progressive development stage. According to a study by (Lee, 2010), twelve e-government models were identified, and the author further addresses five metaphors which are based on integration of citizen and operational perspective. E-government early stages, it began with the introductory services such as information provision that eventually evolve into interactive approach enhancements where citizen can interact with the government. Further along the journey of advancement, online transactions were introduced, and citizens role became a self-server in acquiring services (Distel & Lindgren, 2023). At the final stages, various services were integrated into a single portal where user participation and involvement were injected into the system for quality improvement (Scholta et al., 2017). IT evaluation investment in e-government services as a public project, should imply broad benefits to citizens as its main stakeholders, as a result of this transformation. Due to this reason, there is a strong interest among scholars to explore public value paradigm to further research the broader outcomes of e-government (Golubeva et al., 2019).

The concept of public value discussed originally by (Moore, 1995) focuses on the role of public managers in adapting private value towards a reform public management to improve effectiveness and efficiency in service delivery. This concept has emerged as a transformational approach towards public service reform and was later discussed in e-government studies. Public value is a widely used approach to critically evaluate the efficiency and effectiveness of e-government systems that generate benefits (value). Creating value should be the aim of e-government services in fulfilling the expectations and needs of citizens when they adopt and use these digital channels. Several studies have adopted the concept of public value to assess and evaluate e-government performance. Through public value

approach, public organizations have the ability to better understand the benefits and social outcomes from e-government usage and holds the opportunity to re-design government process to meet the needs and expectation of citizen (Wouters et al., 2023). End-to-end requires integration and connects services that can be deliver seamlessly by providing a focal point of contact for various services that leads to time saving and cost reduction for citizens and government agencies. Through public value approach, public managers can find a practical solution in enhancing e-government processes towards developing an end-to-end services delivery.

Finally, the motivation that drove towards conducting this literature review is to explore a new perspective on the concept of public value which might enhance the foundation of identifying the role of end-to-end services in e-government and make original contributions to the field of digital government. The expected results of this review would provide insight into improving service delivery approach in e-government to meet the high expectations of citizens, for a seamless and responsive service delivery.

Problem Statement

According to Twizeyimana and Andersson (2019), they argued that existing research mainly focused on producing categories to better understand values in e-government and there is a need to delve into prescriptive framework about achieving and measuring public values. Furthermore, this argument is supported by (MacLean & Titah, 2022) stated that there is a lack of theoretical clarity in the core concept of public value, especially regarding the identification and measurement of public value created by government organizations. Although there's literature on public value, its impact on governments and the benefits to citizens from e-government, there is a gap in research that systematically reviewing a comprehensive approach on measuring value using peer-reviewed research methods and identifying values elements that contributes to modernizing government process. Furthermore, Hooda & Singla (2020) concluded that current government process in developing countries, are not mature enough to provide efficacy in service delivery due to the lack in re-engineering of these processes. By understanding further, the elements of public value in e-government, it can provide insight on public values of e-government and ways to modernize business processes towards fulfilling public expectation for an efficient and proactive service delivery through end-to-end services.

Methodology

Systematic review of past studies is important, as (Robinson & Lowe, 2015) state that there are several issues in classical literature reviews which tend to be less comprehensive, highly prone to bias from the reviewer's point of view while not taking account of differences in study quality. According to (Kitchenham & Charters, 2007), a Systematic Literature Review (often referred to as a systematic review) involves identifying, evaluating, and interpreting relevant research related to specific questions, area of interest or particular phenomena. Systematic Literature Review (SLR) are particularly useful when there is some uncertainty to a particular research question because they allow for an examination of all available evidence on a given issue. Systematic review of the available evidence may be helpful in determining whether an intervention is effective or not (Petticrew & Roberts, 2006). Several studies have provided a comprehensive guidelines towards conducting SLR in various field of studies (Haddaway et al., 2018; Kitchenham & Charters, 2007; Okoli, 2015; Petticrew & Roberts, 2006;

Xiao & Watson, 2019a) and based on these guidelines, in this study, SLR approach was identified to be the appropriate method to review past literatures, due to following reasons (1) effective methods to extract relevant researches on the topic of public value in e-government using rigorous searching approach (2) offers a wide range of review protocol that can be followed closely for analysis and in-depth synthesis (3) identifying research gaps by summarizing findings and compilation of all relevant information on public value in e-government which is crucial in this study. SLR consists of four main phases: planning, selection, execution, and extraction (Okoli, 2015) and each phase involves several activities: (1) determining the right research question (2) constructing a review protocol (3) identification of research using search strategies (4) selection of relevant research incorporating inclusion and exclusion criteria (5) quality assessment of selected research (6) data extraction and analysis. The study by Kitchenham and Charters (2007) indicates that the ultimate aim of performing a systematic review is to point out research gaps in existing literatures, conduct future exploration, and provide a holistic conception of new phenomena. Furthermore, the study also proposed a way to locate, analyse and interpret research that closely linked to research questions, area of study or emerging phenomena using SLR. After reviewing several SLR guidelines, this study used the guideline as recommended by (Kitchenham & Charters, 2007) as it is suitable with the field of studies and outline the activities as follows:

Research Questions

This systematic review aim is to investigate existing research patterns on public value of e-government, to understand the existing knowledge in this area, Table 1 presents the SLR questions and rationale that needs to be addressed in this study.

Table 1

Research Questions and Rationale

No.	Research Questions	Rationale
Q1	What is the current state of research of public value services in e-government?	To explore the fundamental of public value in e-government practices which involve definitions, components, and importance.
Q2	What is the focus of public value in e-government addressed in previous literatures?	To identify key research themes/topics on public value in e-government services

Review Protocol

The review protocol is similar to a study design in social science. The methods used for the review shall be specified in this preliminary plan (Xiao & Watson, 2019b). In order to enhance the quality of review, as it reduces the possibility of a researcher's bias in data selection and analysis, reviewing protocols are an important part of this process (Kitchenham & Charters, 2007). Figure 1 presents the review protocol framework that guides this study, adapted from (Eid & Hussin, 2023).

Inclusion and Exclusion Criteria

Selection of primary studies that are relevant to the research question is crucial to set boundaries of the study. Due to the large numbers of irrelevant studies, incorporating inclusion and exclusion criteria into the selection process, will exclude these papers that do not address any aspect of the research questions (Kitchenham & Charters, 2007). According to Okoli (2015), determining the range of period of the studies will provide reliable ability for the researcher in the review process because it is impossible to review all existing studies. Therefore, as one of the inclusion criteria, this study has chosen papers which are published between 2019 until 2024 (6 years) as current research is required regarding the research question. The reason for the year 2019 was selected because the searching was started in Mac 2024 and the period is not counted as full year. Table 2 presents the criteria used in this study.

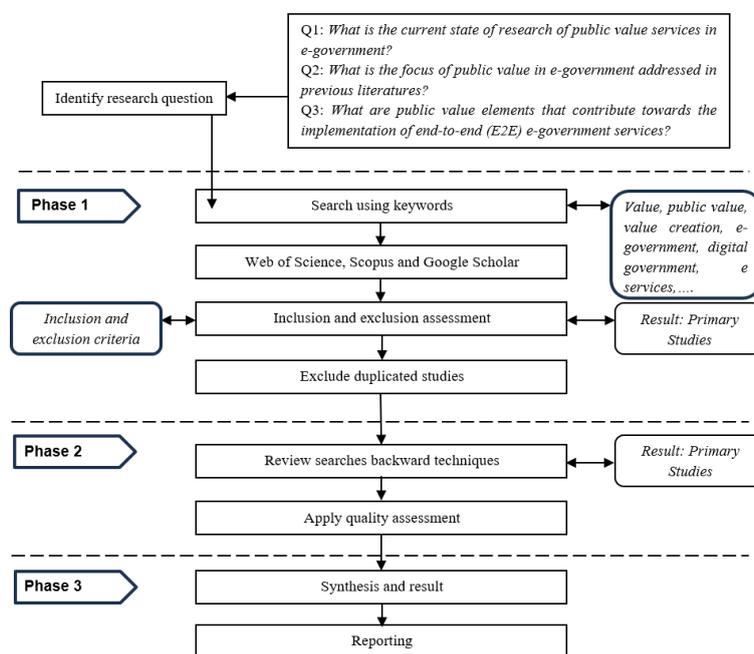


Figure 1. The Review Protocol, adapted from (Eid & Hussin, 2023)

Table 2
Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Timeline	2019 - 2024	<2019
Document type	Article journal (empirical data)	Article review, chapters in book, book series, book, conference proceeding
Language	English	Non-English
Database	Web of Science & Scopus	Duplicated studies
Domain of study	Public value in e-government	Irrelevant to the domain of study

Search Strategy and Study Selection Process

Before conducting the search of relevant literature, identifying the sources of these literature is important where currently there are three dominant sources that exist today: (1) electronic

databases; (2) backward searching; and (3) forward searching (Xiao & Watson, 2019a). There are a wide range of leading academic journals which are stored electronically that can reduce the search time and provide convenience in the searching process. The primary source of published literature collections is the electronically stored databases (Petticrew & Roberts, 2006). Although there are no specific rules in choosing how many databases to be used in this review, a systematic search for academic papers should be extracted from multiple databases (Xiao & Watson, 2019a).

Based on suggestions by Okoli (2015), main keywords are derived from research questions and the identification process relies solely on online thesaurus, past studies and suggestions by Scopus and Web of Science. Searching through synonyms of several identified main keywords has enriched those keywords that are relevant to the domain of study and the author further developed search strings that were used to draw out literatures from Web of Science and Scopus database as presented in Table 3. According to (Gusenbauer, 2020; Martín-Martín et al., 2018), these databases are able to be the dominant electronic databases in systematic literature reviews due to several benefits it occupies, mainly advanced searching functions, numerous journals indexed, quality assurance and focus on a variety of fields of study including information systems research. Apart from these databases, Google Scholar also complemented the source of literature in this study, through forward and backward searching. In line with (Haddaway et al., 2015), who observed the ability of Google Scholar to support a database in a systematic review process, it was suggested that Google Scholar should be chosen as an additional data base. Google Scholar provides advantages to the review process due to its enormous collection of academic resources.

Next, study selection was performed to highlight articles that are relevant within the specified criteria and in relation to the research questions. Information retrieval process requires a structured and systematic literature search that increases the availability of data for analysis purposes and the most widely adopted reporting guidance is the Preferred Reporting Items for Systematic reviews and Meta-Analyses Statement, or PRISMA Statement (Rethlefsen et al., 2021). This study further uses the PRISMA framework in the selection process as illustrated in Figure 2. Results for the searching process from Web of Science, Scopus, and Google Scholar, yielded a total of (1,164) studies and were sorted out using Microsoft Excel. After applying the inclusion and exclusion criteria, a total of (404) remained while (19) papers were identified as duplicated documents and were excluded. (385) articles were assessed through screening of full text, to ensure their eligibility in answering the research question and within the domain of the study that resulted in a total of (360) papers removed and concluded a total of (25) articles. A total of (2) articles were added through the forward and backward search in Google Scholar (see Appendix A).

Table 3

The Search Strings

Database	Search string
Web of Science	TS = (("e-government" OR "electronic government" OR "digital government" OR "e-government service*" OR "digital transformation" OR "egovernment") AND ("digital public service*" OR "public e-service*" OR "e-service*" OR "government service*" OR "digital service*") AND ("value*" OR "public value*" OR "value creation" OR "value co-creation" OR "value co-production"))
Scopus	TITLE-ABS-KEY (("e-government" OR "electronic government" OR "digital government" OR "e-government service*" OR "digital transformation" OR "egovernment") AND ("digital public service*" OR "public e-service*" OR "e-service*" OR "government service*" OR "digital service*") AND ("value*" OR "public value*" OR "value creation" OR "value co-creation" OR "value co-production"))

Quality Assessment

In a systematic review, the process of assessing results and methods is often refers to "assessing study quality" and aims to determine whether the study is adequate to answer the research question (Petticrew & Roberts, 2006). (Kitchenham & Charters, 2007) stated that quality instruments should be developed to assess the reliability and usability that are most appropriate for the research questions that needs to be addressed in the study. The quality instruments can be in the form of checklists and questionnaires. Therefore, to assess the quality of each study, the authors developed four quality assessment (QA) criteria during this review. These criteria are detailed below:

QA1. Is the topic addressed in the article related to end-to-end services in e-government?

QA2. Is the research methodology clearly discussed in the article?

QA3. Is the data collection procedure clearly presented and discussed in the article?

QA4. Is data analysis method discussed clearly in the article?

QA in this study adopted a scoring scheme suggested by (Nidhra et al., 2013) where the authors use the level of high, medium and low for the assessment. According to the scoring criteria, article which are completely fulfil the QA criteria, was given a score of 1, partial fulfilment was given as score of 0.5 and article that does not fulfil the criteria, was given 0. Article which scored above the score of 3, is categorize as high quality, medium quality was between the score of 1 and 3 and low quality produced a score of below 1 (see Appendix B). Figure 2 illustrates the QA distribution in this study.

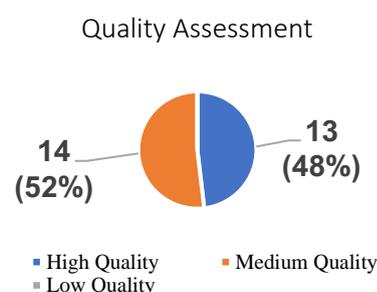


Figure 2. Level of Article Quality

Data Extraction and Synthesis

Liang and Turban (2012) has develop a research framework that can organized many literatures to assist the author in identifying potential research issues. Through the quality assessment process, the author found that all selected article scored high and medium level of quality and can be used to develop themes and sub-themes for qualitative synthesis. The author then read all (27) reviewed articles thoroughly focusing on the abstract, results and discussion section and further conduct a thematic analysis to identify, analyse and report patterns in relation to public value in e-government service (Braun & Clarke, 2006). Firstly, to begin the process of conducting a thematic analysis, the author performed an in-depth reading of the articles content to familiarize and search for main trends and patterns, focusing on frequent discussed topics and sub-topics. This step helps the authors to identify emerging patterns and trends that further be grouped into a pool of common and related topics that resulted in four main groups. While conducting this step and repetitively scheming through the review articles, relevant sub-topics were also identified, and the author found 12 sub-topics. The author took a step further to re-examine the generated main themes and sub-themes to ensure its usability and accuracy that really represents the whole reviewed data set. This process concluded with four main themes and 12 sub-themes, the author then starts to name these themes by individual groups and sub-groups.

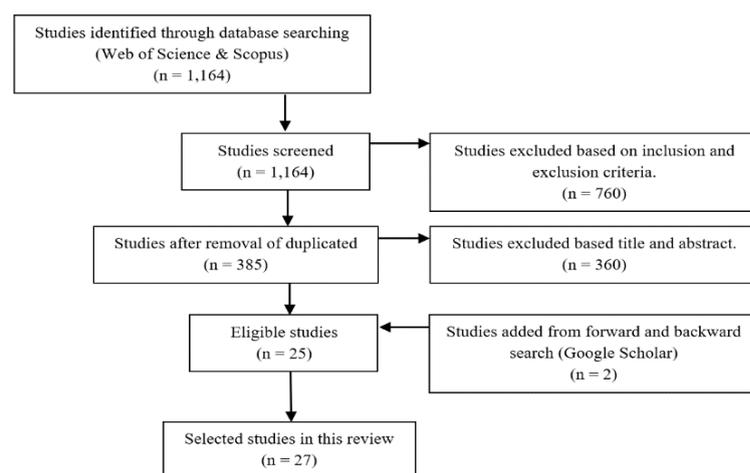


Figure 3. Selection Process using PRISMA

Based on the thematic analysis conducted, as discussed, four themes were identified (1) Adoption and Technology Use (2) Service Quality (3) Citizen Engagement and (4) Security and Privacy.

The descriptions provided in Table 4 are based on the research objectives and questions used to report the results for each item. Consequently, the necessary data were synthesized and extracted by thoroughly reviewing all selected eligible studies during the full-text screening. The goal was to analyse public value in e-government, considering factors such as the date of publication, research methodologies used in previous studies, an overview of publication sources, and the theoretical foundation of these studies (see Appendix C for more details).

Table 4

Data Extraction Column

Extracted data	Description
Authors (s)	Name (s) of author (s)
Title of the study	The article or paper name appears in the searching phase
Date of publication	The year in which the paper published (2019-2024)
Source	e.g. Journal
Methodology	Type of research method, qualitative, quantitative, mixed method
Theme of the research	The study domain description
Theory	Theory/model adopted by the researcher
Outcome measure	Eventual results of the research paper
Method of data collection	Survey, interview, literatures

Temporal View of Publication

The publication year of each study used in this review is shown in Figure 4. The number of publications increased between 2022 and 2023, with the highest number of public values in e-government studies published in 2019. This increase reflects growing academic interest in e-government studies, which align with the vast technological advancements and emergence of digitalized public services.

Types of Research Methods Used

Fourteen studies (52%) had a clear research methodology, while the remaining studies were ambiguous. The quantitative method was the most used (n=18, 66.6%), followed by the qualitative method (n=7, 26%), while the mixed method was the least used (n=2, 7.4%). In the data collection tool, the most common method was survey (n=15, 56%), followed by interviews (n=3, 11%), both survey & interview (n=1, 3.7%), and other tools, such as content analysis. Most studies emphasize heavily on the use of quantitative methods, focusing on empirical and measurable data. This is in line with research trends in e-government studies, where measurable and quantifiable metrics are frequently used to examine and assess effectiveness and user satisfaction. However, there are studies that incorporate qualitative approach to gain insight into user experiences and social impact of e-government services. Table 5 summarizes the research methods employed in the selected eligible studies.

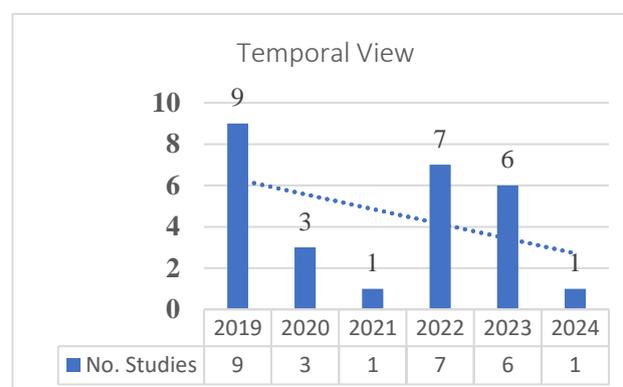


Figure 4. Temporal View of the Studies

Results

The Concept of Public Value In E-Government and It's Importance

Several definitions and concepts were discussed by previous literatures in various perspectives within the context of public administration generally and e-government specifically. However, the elements of public value and how to measure them, is still a debate among public administration scholar (MacLean & Titah, 2022; Twizeyimana & Andersson, 2019). While it is unclear whether investment in e-Government are providing value to the citizen (Goh & Arenas, 2020) and limited empirical studies on e-government achievement in public value creation (Mellouli et al., 2020), understanding the importance and benefits of public value in the implementation of e-government services has provided insights towards uncovering the outcomes of these services, especially in enhancing social well-being and improving citizen's quality of life. Several authors have adapted this concept to assess and evaluate the effectiveness of e-government practice. One thing is clear that, the creation of public value is from the consumption of government services by the public (Lopes et al., 2019) and can be achieved through e-government (Cordella & Bonina, 2012). From the systematic review conducted, several studies has discussed the concept of public value in e-government and describe public value as citizen's satisfaction through the usage of public e-services (Golubeva et al., 2019; Hariguna et al., 2022; Valle-Cruz, 2019a), expectations of stakeholders related to public service delivery (Akgül, 2022; Mensah et al., 2022; Xin et al., 2022), and perceive value by the citizen related to efficiency of the government (Frohlich et al., 2023). Hence, this study assumes all these concepts and focuses on the ability of e-government systems in fulfilling delivery of service (that is of value) to citizens with efficacy.

Table 5

Summary of Research Methods

No.	Author(s)	Study Design	Method of Study
1	(Valle-Cruz, 2019a)	Quantitative	Survey
2	(Mensah et al., 2022)	Quantitative	Survey
3	(Golubeva et al., 2019)	Quantitative	Survey
4	(Abdulkareem & Ramli, 2021)	Quantitative	Survey
5	(Hariguna et al., 2022)	Quantitative	Survey
6	(Sterrenberg & L'Espoir Decosta, 2023)	Qualitative	Interview
7	(van den Velden & Sadowski, 2023)	Quantitative	Eurostat database
8	(Tetteh et al., 2023)	Quantitative	Survey
9	(Lopes et al., 2019a)	Qualitative	Content and Interview
10	(Abdulkareem & Mohd Ramli, 2022)	Quantitative	Survey
11	(Xin et al., 2022)	Quantitative	Survey
12	(Akgül, 2022)	Quantitative	Content Analysis
13	(Okunola & Rowley, 2019)	Quantitative	Survey
14	(Jain et al., 2023)	Mixed Method	Survey and Interviews
15	(Li & Shang, 2020)	Quantitative	Survey
16	(Distel & Lindgren, 2023)	Qualitative	Literature
17	(Weerakkody et al., 2019)	Qualitative	Interview
18	(Pham et al., 2023)	Quantitative	Survey
19	(Aranyosy, 2022)	Quantitative	Survey
20	(Hu et al., 2019)	Quantitative	Survey
21	(Kwilinski et al., 2023)	Quantitative	Content Analysis
22	(Zhang & Kimathi, 2022)	Qualitative	Content Analysis
23	(Roy, 2019)	Quantitative	NA
24	(Sundberg, 2019)	Mixed Method	Survey
25	(Goh & Arenas, 2020a)	Qualitative	Interview
26	(Mellouli et al., 2020)	Quantitative	Survey
27	(Panagiotopoulos et al., 2019)	Qualitative	NA

Presently, there is a growing attentiveness among information systems scholars to explore public value perspective in the boundaries of e-government, focusing diverse aspect to evaluate and promote improvement, shifting from government-centric to citizen-centric.

According to (Deng et al., 2018), e-government can be utilized to create public value that enables the delivery of public services, promote efficiency of public organizations and assist in the achievement of socially desirable outcomes. Early stages of e-government development focus on information dissemination through website/portal and later, transaction mechanisms were introduced into the systems to further enhance public services delivery. Current stages focus on stakeholder engagement in e-government development, especially citizen which are the ultimate user and collaborative strategies was further implemented (Zhang & Kimathi, 2022). Through public value approach, public organizations can better understand the benefits and social outcomes from e-government usage and holds the opportunity to re-design government process to meet the needs and expectation of citizen.

Themes in Public Value of E-Government Study

This result of this research has produced several research themes which include topic raised and factors examined by previous literatures. According to (Liang & Turban, 2012), themes are the core subject or topics that each study tries to examine and explore. 4 emerging themes and 12 sub-themes derived from analysis of selected studies: adoption and technology use, service quality, citizen engagement and security and privacy. Table 6 presents the findings of selected studies.

Table 6
Findings of the Selected Studies

No.	Author(s)	Adoption and Technology Use			Service Quality		Citizen Engagement			Security & Privacy		
		Usage factors	Emerging Technologies	Challenges & Opportunity	Value evaluation	Digital Interaction	Efficiency & Effectiveness	Communication	Online Participation	Collaboration Strategies	Trust	Transparency
1	Valle-Cruz (2019)		✓	✓				✓		✓		✓
2	Mensah et al (2022)	✓						✓				
3	Golubeva et al (2019)	✓				✓					✓	
4	Abdulkareem & Ramli (2021)	✓		✓	✓							
5	Harijuna et al (2022)		✓				✓					
6	Sterrenberg & L'Espoir Decosta (2023)	✓				✓			✓			
7	van den Velden & Sadowski (2023)		✓				✓					
8	Tetteh et al (2023)						✓					
9	Lopes et al (2019)	✓							✓			
10	Abdulkareem & Mohd Ramli (2022)				✓						✓	
11	Xin et al (2022)	✓							✓			
12	Akgul (2022)					✓					✓	✓
13	Okunola & Rowley (2019)			✓							✓	
14	Frohlich et al. (2023)	✓		✓								
15	Li & Shang (2020)	✓				✓						
16	Distel & Lindgren (2023)							✓	✓			
17	Weerakkody et al. (2019)			✓			✓				✓	
18	Pham et al. (2023)						✓	✓			✓	
19	Aranyosy (2022)	✓				✓					✓	
20	Hu et al. (2019)								✓		✓	
21	Kwilinski et al. (2023)		✓		✓							
22	Zhang & Kimathi (2022)					✓		✓				
23	Roy (2019)								✓		✓	
24	Sundberg (2019)				✓			✓				✓
25	Goh & Arenas (2020)			✓								
26	Mellouli et al. (2020)	✓										
27	Panagiotopoulos et al. (2019)					✓		✓				

Discussion and Recommendations

Digital transformation has shaped the government sector service delivery landscape toward a reform in public administration to provide an efficient and effective service outcome that socially benefits citizens. For the past two decades, E-government system has certainly played a pivotal role for citizen’s convenience in getting the relevant services based on their needs. Unfortunately, as technological advancement emerges, equipping these services with value added functionalities, there are new challenges that inhibits the continuous benefits of e-government services. Due to the dynamic demand and rise of expectations among stakeholders for an improved social value and wellbeing ((Twizeyimana & Andersson, 2019), e-government owners are pushing forward collaborative strategies by involving citizen

participation on the design and development of these digital services. Emphasizing on citizen-centric approaches are now the foci of e-government and implementing a single point of contact (one-stop) service with integrated capabilities across government agencies, is currently a well-established service delivery approach for most countries (Baheer et al., 2020; Scholta et al., 2019).

As reviewed, e-government adoption and usage are major concern among academic scholars and government practitioners that hinders e-government main objective as a public value instrument in service delivery due to trust on the Internet (Aranyossy, 2022) and trust in the Government (Akgül, 2022; Okunola & Rowley, 2019). Adoption and perceive trust among e-government users are inter-related where they are nudging public organisations through their actions, sending a message to government to further improve their digital services. Citizens will only use digital services if they believe that there is sufficient protection to their personal information – both from threats outside government and from misuse within government (World Bank, 2016). While several studies have highlighted the importance of leveraging internet-based services to increase the level of trust and openness of public administration, emerging technologies such as social media has significant effects on information dissemination regarding government policies, law and regulation to attract citizens awareness of the availability of these services (Valle-Cruz, 2019b).

Service quality is essential aspect on promoting e-government services through continuous usage and re-use of e-government. A study by (Tetteh et al., 2023) found that improving e-government service quality leads to increased user satisfaction and perceived public value, ultimately enhancing the performance of state institutions while (Li & Shang, 2020) argued that continuous-use intention is crucial for user loyalty, and poor service quality can deter citizens from reusing e-government services. A critical component of any e-government design and development is emphasizing on quality attributes where it can further enhanced user experience through seamless interaction. When e-government initiatives took off in early 1990s, the focus was transforming services into digital form and at that time, each public organization were urged to individually developed their own systems and without any guideline, numerous IT based systems emerged even internally.

The use of public value approach in e-government studies is essential in providing quality attributes, perceived by citizens through their live experience in using these digital services. One important issue generating public value is the aspiration to achieve horizontally and vertically coordinated thinking and action, enabling citizen access to seamless rather than fragmented services. Integration within the administration (at all levels) is a significant problem where it requires the upgrading of e-government system to provide efficient collaboration within public administration (Bojovic et al., 2023). Interconnected services have become a leverage for e-government advancement where different information systems can interact with each other within the organization, using service architectures (Baheer et al., 2020). Responsiveness is one the public values premises that constitute to a successful e-government usage by citizens that provide a meaningful interaction and one of the keys to achieving an end-to-end service. According to (Sterrenberg & L'Espoir Decosta, 2023), due to the advancement of technology usage in public administration, citizens perceive higher expectations of responsiveness and expect immediate response from the public office, although response are usually delayed due to the need of human intervention. These

limitations create frustrations due to the inability to monitor response progress that eventually urge them to engage physically at service centre. Furthermore, citizen values services that can save them a huge amount of time, cost and provide extra convenience from having to physically acquire over-the counter services after performing online services. The findings reveal that understanding the concept of public value can further improve e-government services delivery towards identifying characteristics of digital services delivery approach that provides the maximum benefit for citizens, such as end-to-end process where uninterrupted experiences and interaction can be achieved. Recommendations for future research agendas based on the discussion, there are some considerations for future research agendas that should be taken including theoretical aspects. Table 7 shows the questions that direct the additional research.

Table 7

Future Research Agenda

Topics	Questions
Theoretical considerations	<ul style="list-style-type: none"> • What other theories can be applied in end-to-end services in e-government? • What are the characteristics of end-to-end services in e-government implementation? • What model/framework can be developed for an end-to-end service in e-government?
Practical considerations	<ul style="list-style-type: none"> • What is the impact of end-to-end services towards citizen's value from e-government? • Which digital transformation strategies need to be used in end-to-end service delivery? • Which service delivery approach is suitable to be incorporated in an end-to-end service?

Conclusion

This study provides an analysis of end-to-end services in e-government through a systematic literature review of 27 eligible studies. It focuses the importance of using a public value perspective to assess e-government initiatives, emphasizing on factors such as service quality, citizen engagement, security, and privacy. This study identified four main themes derive from selected literatures: Adoption and Technology Use, Service Quality, Citizen Engagement, and Security and Privacy, along with sub-themes within each category. The in-depth analysis highlights the significance of integrated service delivery approaches across government agencies, emphasizing the need for horizontally and vertically coordinated services to ensure seamless user experiences. Challenges such as fragmented services and the necessity for efficient collaboration within public administration are addressed. Moreover, this study discusses the importance of responsiveness in e-government services, emphasizing citizens' expectations for immediate and meaningful interactions. It also examines the role of digital transformation strategies in enhancing service delivery and emphasizes the importance of citizen-centric approaches. Finally, this study provides recommendations for future research agendas, focusing on both theoretical and practical considerations.

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