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# Barriers and Challenges of e-Government Services: A Systematic Literature Review and Meta-Analyses

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**Abstract.** Good Governance and Smart Governments are optimising the use of ICT to change the characteristics of traditional government bureaucracy to smart government. The government opens itself by applying information technology in providing services to the citizen, businesses, and government under it. We are familiar with the concept of the term e-Government. Success in implementing e-Government is undoubtedly a concern of the government because it is the responsibility of the executive side. In achieving success, we also must look for barriers ahead. This study aims to find barriers and challenges so the success can be made. In this article, we will discuss the barriers and challenges to be implementing e-Government. The method used is a systematic review and qualitative analysis of using content analysis in empirical and theoretical studies. The results show the 34 main Barriers dan Challenges of e-Government services both in theory and implementation to get the right strategies and recommendation to improve public services.

Keywords: Barriers and Challenges, E-Government Services, Systematic Literature Review.

## 1. Introduction

The term e-Government can be associated with the government and the use of Information and Communications Technology (ICT) to improve public services[1]–[5]. E-government is a multidisciplinary transformation initiative, activated by utilising ICT as enablers to develop and promote high-quality, integrated, and impacting public services for its people. To enable effective management of constituent relations; and to support the economic and social development goals of citizens, business and civil society at the state, national and international levels. E-government uses ICT in public administration to streamline and integrate workflows and processes to effectively manage data and information to achieve greater efficiency, more complete access to government services, increased service levels, greater transparency, and citizen empowerment country[4], [6]. From the above definition, the main point of e-Government is the implementation of ICTs to improve people's wellbeing. But in the process of implementation, many failures occurred. Because of many e-government projects have a failure rate of almost 70% [7]. Experts have stated that e-Government projects have seen more failures than successes. The World Bank has recognised that most of their ICT-related investments are mostly unsuccessful[7]. Why are there so many failures? To find out what causes failure, we need to know the obstacles. Understanding the barriers and its challenges is expected to guide the government in allocating the right program for e-Government implementation.



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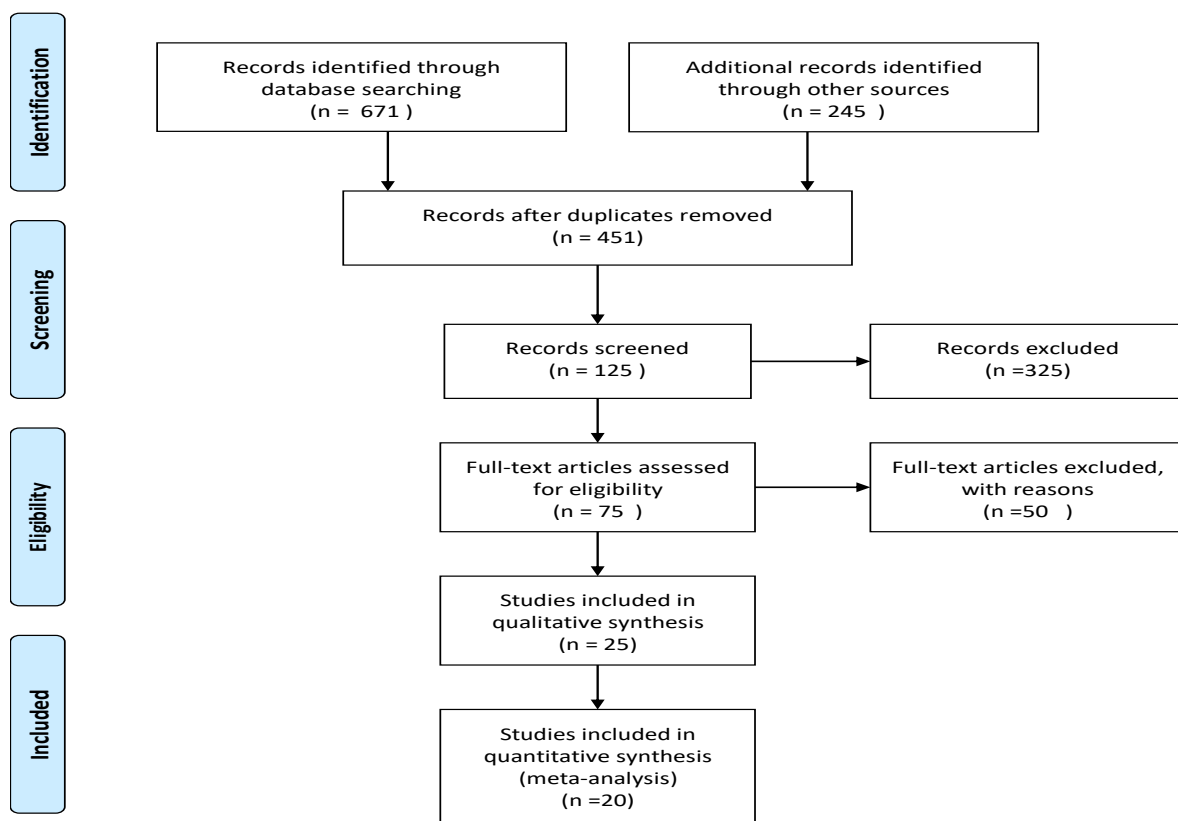
The traditional public sector is characterised by hierarchical and disparate structures, as well as bureaucracy and paper-based processes[6]. Process of e-government implementation is the process of changing from manual or traditional system to digital. Digitalisation involves using a technology-based network infrastructure, especially the internet, to migrate physical activities and content onto digital platforms for online activity.

## 2. Method

This study uses a qualitative approach that is to analyse factors or aspects that are the objectives of this study to find the barriers and challenges in the implementation of public services with eGovernment. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method of scientific database literature was conducted to explore barriers and challenges and then validated with confirmation with expert judgment. The stages of the research are shown in Figure 1.

### 2.1. Research Question Design

To find out what barriers exist, we will research to find answers and those answers are the purpose of this article. The purpose of this article is to find answers Research Question. Research Question from this article is "What is the most barrier and challenges of e-Government implementation?"



**Figure 1.** Systematic Reviews and Meta-Analyses method using PRISMA

### 2.2. Search Strategy

Figure 1 explains the four stages of the PRISMA method: identification, screening, eligibility, and inclusion. A Systematic Literature Review aims to facilitate the Obstacles and Challenges in eGovernment services. The first identification stage is done by searching keywords on a scientific database namely Scopus, IEEE Xplore, ACM, ScienceDirect and Google Scholar obtained by keyword search (*eGovernment AND Service AND implementation*) OR (*eGovernment AND Barrier*

AND adoption) OR (eGovernment AND Challenge). Obtained records identified 671 related papers through database searches and 245 papers through other sources. The Second step is the initial screening carried out to eliminate duplicate papers and exclude 125 papers. Third step Feasibility Phase conducted in full-text articles which were assessed as many as 75 papers and included a step study which included the synthesis of 25 papers and the final step is primary studies selection using a meta-analysis was 20 papers.

### 3. Result and Discussion

In this chapter, we will explain the detailed overview of primary studies and synthesised from the primary studies. The result of synthesis is the variable barriers and challenges of e-Government services.

#### 3.1. Overview Barriers and Challenges of primary studies

Based on PRISMA's steps shown in Figure 1, we get 20 articles that are used as the basis for synthesis analysis. From 20 selected articles can be explained that there are two articles that were published in 2013, 3 articles that were published in 2014, 5 articles that were published in 2015, 2 articles that were published in 2016, 4 articles that were published in 2017, and 4 articles that were published in 2018. The type of article consists of 6 conference proceedings and 14 journal articles.

According to Nam & Pardo[8], this study synthesis of existing articles is grouped into three domains: Technological, Institutions, and People. The factors extraction from 20 selected articles were review using content analysis so that the factors obtained from these 3 domains. The technological/technical have 12 aspects consist of IT infrastructure and Internet access, security and privacy issues, standards and interoperability issues, Vendor IT and Limited urban-based industries, Integrating Big and Fast/Streaming data analytics, compatibility, standardizations, feature and user interface, platform and architecture system, Slow speed connection and Unstable connectivity, Back-end servers, Installation and Maintaining issues. The Institutions have 15 aspect consists of Support from management, Resistance to change, Lack of coordination and cooperation, Financial constraints/operational cost, Administrative, Political, Governance/ Government's role, Leadership, Agreement Contract, Business Process, Policy, Legacy system, Communication Tools, Trust, Legislative structure/restrictive laws and regulations. The last one is People have 9 Aspects: Culture society, Digital Divide, Legal, Economy Society, Human Resources, Public officials and citizens slowed to adapt, Lack of Skill and expertise, Leadership and Reliability. The result grouping table can see in Table 1.

**Table 1.** Barriers and Challenges of E-Government Services

<i>Domain</i>	<i>Barriers and Challenges</i>	<i>Papers Resource</i>
Technology/ Technical Aspect	Lack of IT infrastructure and Internet access	[1], [6], [9], [10], [1], [2], [7], [11], [12], [13]
	Lack of security and Privacy issues	[1], [2], [10], [14]-[13], [15]
	Lack of standards and interoperability issues	[13], [16]
	Vendor IT and Limited urban-based industries	[11], [15]
	Integrating Big and Fast/Streaming data analytics	[6], [17], [15]
	Compatibility issues	[10], [18]
	Lack of Standardization	[6], [10]
	Feature and User interface	[6], [18], [6], [19]
	Platform and Architecture	[18], [1], [19]
	Slow speed connection and Unstable connectivity	[13], [20], [6]

<i>Domain</i>	<i>Barriers and Challenges</i>	<i>Papers Resource</i>
	Back-end servers	[14], [15]
	Installation and Maintaining issues	[15]
Institutions/Organisation Aspects	Support from management	[2], [7], [11]
	Resistance to change	[2], [6], [9]
	Lack of coordination and cooperation	[2], [6]
	Financial constraints / operational cost	[1], [2], [6], [9], [10], [21], [13]
	Administrative	[16], [21]
	Political	[7], [11], [16]
	Governance/ Government's role	[21], [13], [2], [21]
	Leadership	[11], [21], [22]
	Agreement Contract	[11]
	Business Process	[10], [17]
	Policy	[1], [3], [10]–[13], [18], [22], [23]
	Legacy system	[18]
	Communication Tools	[6]
	Trust	[1], [4], [15]
	Legislative structure/ restrictive laws and regulations	[13]
People Aspects	Culture society	[1], [15], [17], [18]
	Digital Divide	[1], [4], [6], [16]
	Legal	[16], [17]
	Economy Society	[12]
	Human Resources	[6]
	Public officials and citizens slowed to adapt	[21],[13]
	Lack of Skill and expertise	[13]
	Leadership	[13]
	Reliability	[18]

### 3.2. Findings

Further analysis is to use a qualitative approach to obtain data extractions from primaries studies. The method used is meta-analysis. Primary studies extraction data using NVivo 12 plus tools. Extract the words count from the selected article, so it looks like Figure 2 and 3.

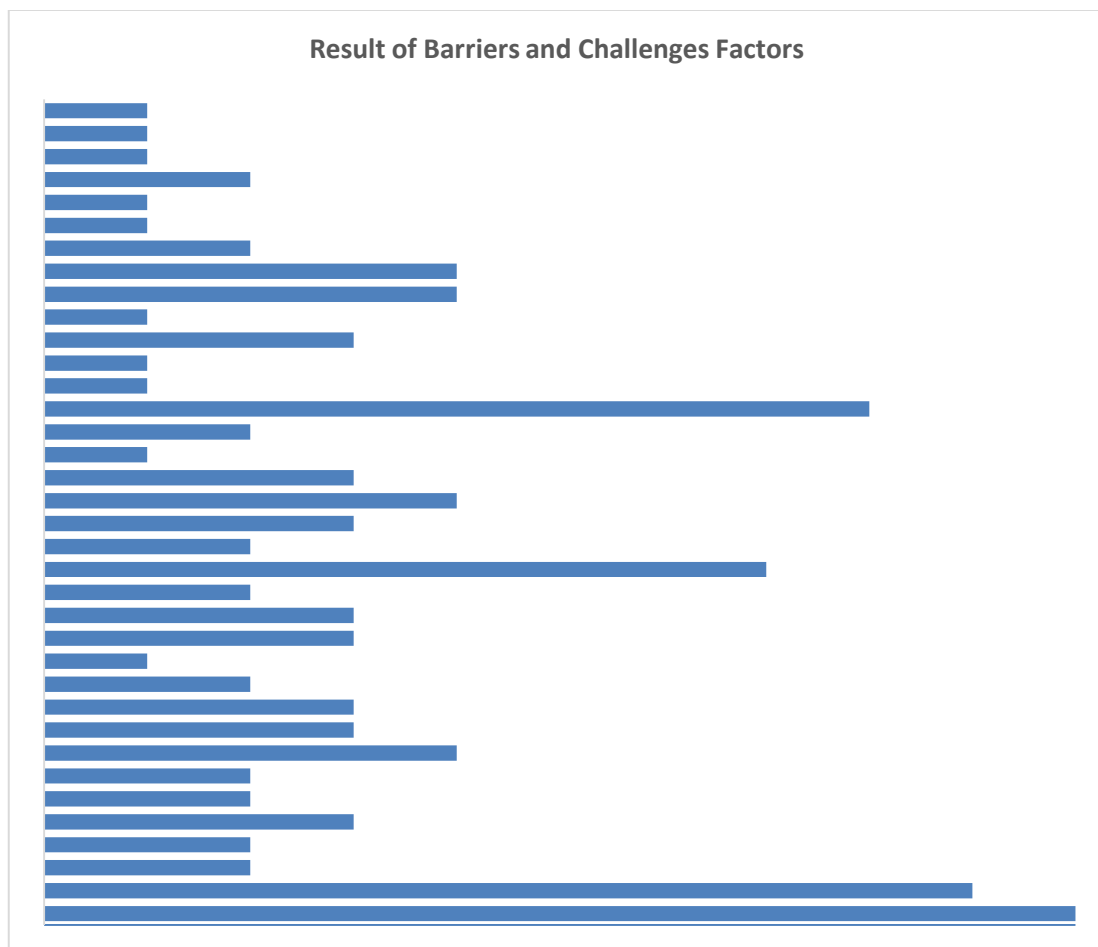
Figure 2 shows the world cloud from data extraction from 20 selected articles / primary studies. While Figure 3 shows thematic content extracted from primary studies. The qualitative approach by combining meta-analysis with the PRISMA method and extracting the factors of Barriers and Challenges with Content analysis to obtain answers from the Research Question, as shown in Figure 4. Furthermore, the word cloud using content analysis in Figure 2 shows the most number of words found with content analysis and thematic analysis related to the obstacles and challenges that sought. These themes grouped into three dimensions based on [1] this shows the barriers and challenges factors sought from this study as for continuing factors, we have 36 barriers and challenges factor's, as shown in Figure 4.



**Figure 2.** World Clouds of Primary Studies



**Figure 3.** Content analysis matrix



**Figure 4.** The 34 Finding of Barriers and Challenges Factor's

#### 4. Conclusion and Future research

The result list of 34 barriers and challenges in the implementation of e-Government services extracted in this study is based on an article that we do the synthesis process using PRISMA and content analysis. Referrals from only 20 articles as primary studies are shortcomings that we feel in the process because it is possible that other challenge variables cannot be described from other article sources. But based on the variables obtained, it can be read that the three biggest barriers of e-Government services implementation are security and infrastructure from a technological aspect, financial of the organizational aspect, and culture and digital divide from the people aspect. The variables that we synthesized may hopefully provide insight from the reader's side in determining the barriers of e-Government implementation. In conclusion, the results of this study may direct the decision-makers in the government institutions to the appropriate policies, institutional frameworks, and correct actions that can be applied to successful E-government implementation.

The variables obtained in this article are still global without looking at the characteristics of the country. For future research, the topic can be related to barriers of e-Government implementation in cases related to the characteristics of poor countries, developing countries, and developed countries. State characteristics are needed because the state of each country is different from other countries.

In addition, for future research on how to calculate the level of accuracy of the variables obtained by adopting the Partial Least Square – Structural Equation Model (PLS-SEM) method.

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