A SYSTEMATIC LITERATURE ANALYSIS ON DIGITAL GOVERNANCE IN DEVELOPING COUNTRIES

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ABSTRACT

It is imperative to do a thorough literature analysis on digital governance in developing nations to understand how the field is evolving and to identify any gaps in earlier studies. From the Scopus database, information is extracted, processed, and presented in the form of research trends, publication rankings, author affiliation, country affiliation, research funding sponsor, theme/scope, and research location. The information is then interpreted in light of research issues, research orientation/objectives, and research methods. A future research agenda in the area of digital governance in developing nations is produced by this study. Several tendencies can be seen as a consequence of research and analysis of 100 carefully chosen journal articles on e-government and developing nations. In terms of research trends, researchers are progressively studying e government research challenges in developing countries from year to year. The highest level of research scope interest is in digital economy (e-business concerns) and security, both of which are particularly relevant to the current situation. In terms of study topics, there are still numerous research gaps that can be addressed by new studies, particularly research on the e-government process, because there is less research on the process than research on outputs and outcomes.

KEYWORDS:

Digital Governance; Developing Contries; Systematic Literature Review; Scopus Database

INTRODUCTION

Digital Government is a very broad scope of research which many researchers are currently involved in various research projects (Pedro Rodríguez Bolívar, Alcaide Muñoz, & López Hernández, 2010). Over the past few years, several studies have been conducted on E-government in developing countries (Agangiba & Kabanda, 2016). Digital government is seen not as an option but an essential tool for better governance, especially in developing countries where the perception of government corruption is high (Bal et al., 2015; Gupta & Jana, 2003). The emergence of e-government in both practice and concept has been one of the most prominent developments in public administration over the last ten years as it has introduced new vocabulary, theoretical models and linkages between disciplines and between theory and practice (Brown, 2005). Brown asserts that E-government has had a significant impact on public administration, changing the environment in which the public service operates, adding new concepts and methods to its operations and altering the relative weight and relationships among the established

elements of public administration. This study focuses on research activities on digital government across developing countries, using data on publications of reputable journal articles from the Scopus database. Data and reviews of previous research studies regarding the implementation of digital government/e government in developing countries can be made available through this study so as to contribute to advancing knowledge on this aspect, understanding the development of research in this field and mapping research gaps and research areas that are still possible to be explored further in future research. The contribution of this research, furthermore, is also based on the fact that the discipline of public administration needs to be more aware of the rapidly growing digital government/ e government literature and use this research to advance the understanding of the application of digital government/ e government in a public sector context. In contrast to the study of digital government implementation in developed countries that are claimed to be successful, developing countries are still struggling with obstacles and problems in implementing digital government. E-government in developing countries still experiences various problems such as limited ICT infrastructure, lack of human resource capabilities, lack of literacy and low accessibility (Rorissa and Demissie; Mittal and Kaur in (Agangiba & Kabanda, 2016)). Based on the above background, the researcher intends to review previous research studies on digital government in developing countries. This research aims to produce an overview of the literature on digital government-related research in developing countries over the past few years.

RESEARCH METHODS

In this study, the researchers provide an overview of research studies on digital government in developing countries over the past few years through the literature review method. A literature review is a systematic method for collecting and synthesizing literature on digital government (Baumeister & Leary, 1997; Tranfield, Denyer, & Smart, 2003 in (Snyder, 2019)). Effective and well-conducted reviews as a research method create a solid foundation for advancing knowledge and facilitating theory development (Webster & Watson, 2002). Thus, through integrating the findings and perspectives of many empirical findings, literature reviews can answer research questions in a valid and robust manner. A literature review provides important insights into a specific scientific topic. It compiles published research on a topic, surveys various research sources, and critically examines these sources (Jahan, Naveed, Zeshan, & Tahir, 2016). Jahan further explained that literature review has a fairly high ranking/position in scientific research. There are three steps in this research:

1. Step 1: Selection of Data Sources and Documents
The first stage was a search of the Scimago 2022 Journal Ranking (SJR) issued by Scopus given that Scopus offers free journal searches and has the largest database of peer-reviewed literature and abstracts (Leydesdorff in (Husna, Kusumasari, & Pramusinto, 2019)). SJR ranks journals by what it calls "average prestige per article". Articles are ranked by citation count and the prestige of the journal in which they were published; articles in journals with higher prestige are given a higher prestige ranking. Scopus ranks prestige journals by quartiles, where journals with the best reputation and quality ratings

are placed in Quartile 1 (Q1, excellent), and others are placed in Q2, Q3, or Q4 based on reputation.

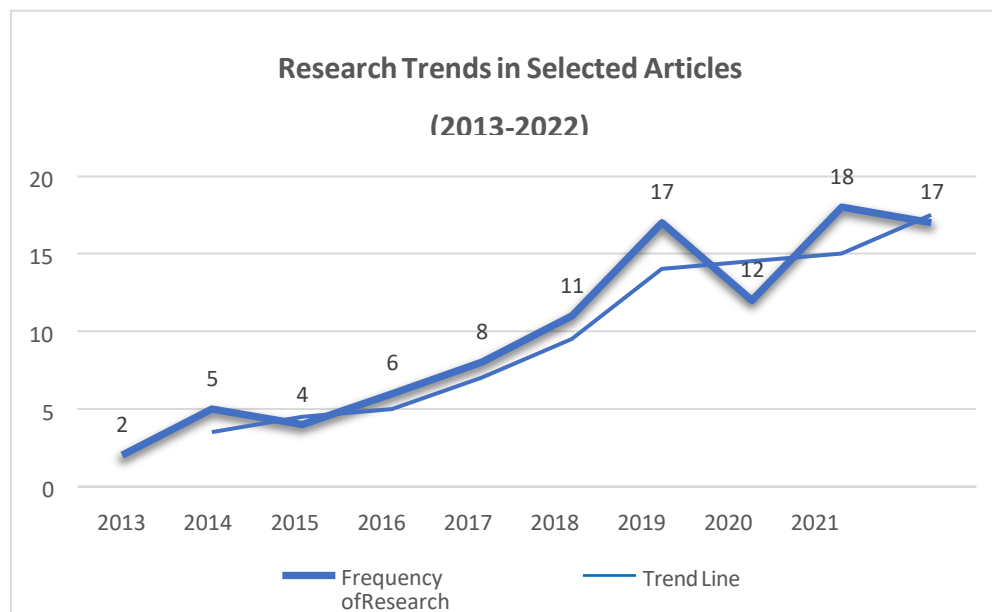2. Step 2: Research Term, Inclusion and Exclusion Process
The authors searched for articles containing the keywords "digital government", "electronic government" and "developing countries" in the title and abstract, specifically by checking each issue of each journal.

3. Step 3: Analysis and Presentation of Results
In the third stage, the authors read each article thoroughly and then classified and filtered them based on research trends, journal distribution, author affiliation, funding sponsor, theme/ scope, and research location. The articles were then analyzed and categorized into main topic areas (research issue, research orientation and research method) based on the findings.

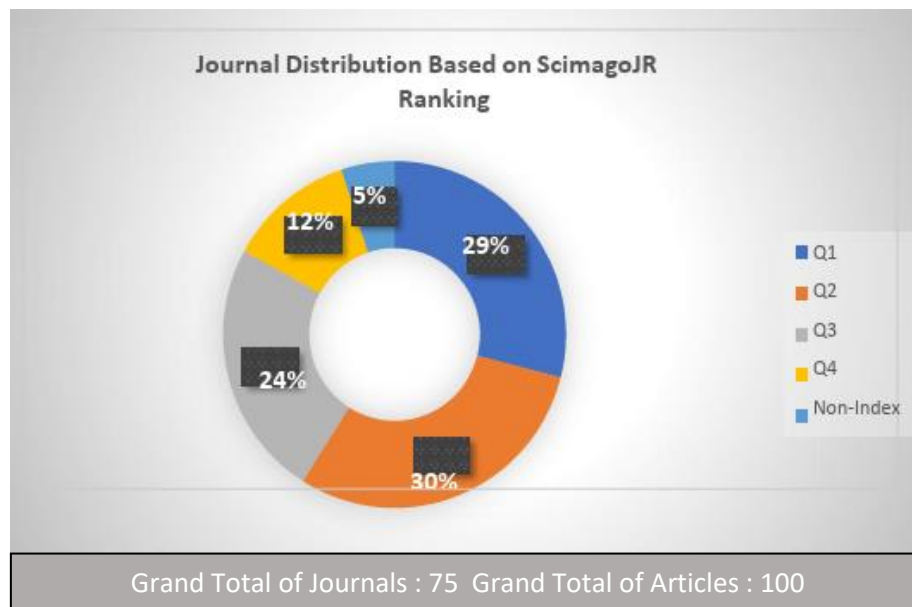## RESULTS AND DISCUSSION

Research Trends

Figure 1. Research Trends

Based on the graph above, the number of studies in the scope of E- government / e-governance - selected developing countries (2013-2022) from year to year has increased. The peak increase occurred in 2019 and had dropped in 2020. The highest research trend shows that in the last 4 years there has been a significant increase in researcher interest in the relationship between e-government and developing countries. The highest number

of studies was in 2021 where there were 18 studies in that year while the lowest number was in 2013 (2 selected studies).

Journal Distribution

Figure 2. Journal Distribution

There was a total of 75 different journals that published the 100 selected articles. The 75 journals were checked for quartiles based on the ranking done by ScimagoJR on the website www.scimagojr.com. There are four quartile categories to assess the level of reputation and influence of scientific journals. Q1, Q2, Q3, and Q4 are the levels from the highest to the lowest quartile, respectively. This quartile examination aims to provide a reference for the journal reputation of the 100 articles screened in this study. However, there are still journals that are not indexed by ScimagoJR. Therefore, this quartile ranking is not an absolute reference in assessing the quality of journals that publish scientific articles in the ScimagoJR. Out of a total of 75 journals that published 100 articles in this study 29 articles were published in 24 journals at the first quartile level (Q1). The other 30 were published in journals with Q2 reputation. Thus, it can be concluded that the majority of articles were published in journals with high reputation based on the ScimagoJR ranking. The minority of journals in this study were in the fourth quartile (Q4) at 12% (12 articles in 9 journals) and unindexed at 5%, namely 5 articles in 5 journals. Some journals contain more than one research on e-government in developing countries, such as the Electronic Journal of Information Systems in Developing Countries which has published 5 researches and Electronic Government which has published 4 researches related to this topic.

Author Affiliation (Country and Institution of Origin)

By knowing the country of origin and affiliation of the authors, it can be seen that research on the relationship between digital governance and developing countries is most in demand in which part of the world and which countries have never studied this subject. The continents with the greatest number of articles in order are Asia with a total of 57 authors, Europe with 34 articles, and Africa with 17 research articles. South America, despite having many developing countries, has the least amount of research (3 articles) on the relationship between e governance and developing countries compared to other continents. Australia has only 4 articles about the topic. Although Asia has the biggest number of authorships, Indonesia only has three articles about the topic. This indicated that the topic of research on digital governance in developing countries has not been explored in the Indonesian research community.

Research Funding Sponsor

Not all of the research studies in the selected articles were funded by their affiliated institutions/ self-funded. There are 37 of the 100 studies in the selected articles received funding from several sponsors, including banks, government agencies, NGOs (Non-Government Organization)/donor agencies and higher education institutions/universities.

Theme/Scope

The most common research theme in the selected articles is within the scope of social sciences, which covers 72 articles. In addition to the scope of social sciences, digital government studies associated with developing countries are also related to the disciplines of computer science (48 articles), economics (14 articles) and engineering (14 articles).

Research Locations

Some of the articles have single locus and some other have multi locus. There was a total of 32 articles that had a single locus in their research, of which developing countries in Asia (17 articles), 11 of which were from India. The continents with the least single locus of research in developing countries are Europe (1 article), Americas (1 article) and Australia (none). Of the 100 research articles, 32 articles have a single locus, 23 articles have multiple loci and the remaining 45 have no specific locus (examining general e-government in developing countries).

Table.1. Distribution of Articles with Multiple Research Loci

No	Article Title	Multi Locus
1	An Overview of the Common Elements of Learning Management System Policies in Higher Education Institutions	US,UK, Canada, Australia
2	Governing Cross-Border Data Flows: International Trade Agreements and Their Limits	US, UE, China, India, ASEAN, Russia, East Asian Countries, Indonesia, South Africa, Egypt, New Zealand, etc.
3	Digital Government and Sustainable Development	103 developing

		countries
4	Digital neo-colonialism: the Chinese surveillance state in Africa	China, Countries in Africa
5	Evaluationg Digital Government Performance Using Surveys: International Literature Review And Prospects For The Future Researcopen Access	50 countries from 5 continents
6	An Attractive Alternative? China's Approach to Cyber Governance and Its Implications for the Western Model	EU, China, US
7	Drivers and Barries of Digital Market Integration in East Africa: A Case Study of Rwanda and Tanzania	Rwanda and Tanzania
8	The digital tax reform for Africa: customized or one-size-fits-all approach?	26 African Countries
9	E-Government in European Countries, a Comparative Aprroach Using the Principal Components Analysis	European Union
10	Digital divide in ASEAN member states: analyzing the critical factors for successful e-government programs	8 Asean Countries
11	COVID-19, Distance Learning, and the Digital Divide: A Comparative Study of Higher Education Institutions in the US and Pakistan	PAKISTAN, US
12	The eu's recovery and resilience facility: A next phase in eu socioeconomic governance?	EU countries
13	A demand-side approach for linking the past to future urban rural development	228 developed countries and 130 developing countries
14	The new information feudalism: Africa's relationship with the global information society	African Countries
15	The Digital Economy of BRICS: Prospects for Multilateral Cooperation	Brazil, Russia, India, China, South Africa
16	Influence of technological innovations on economic inequality in developed and developing countries	37 developed and developing countries
17	Evaluating digital public services: A contingency value approach within three exemplar developing countries	Ethiopia, Nigeria, and South Africa
18	Data Standardization for Smart Infrastructure in First-Access Electricity Systems	Sub-Saharan Africa
19	Digital diplomacy via social networks: A cross-national analysis of governmental usage of Facebook and twitter for digital engagement	Pakistan, India
20	Manifestations of e-government usage in post-communist European countries	Bulgaria, Romania, the Czech Republic, Slovakia, Hungary, Poland, Lithuania, Latvia, and Estonia
21	Determinants of the long-term factors and effects of sustainability on usage of electronic government services: Evidence from the kingdom of Saudi Arabia	Saudi Arabia, India, Brazil, Taiwan
22	Mapping ICT knowledge infrastructure in South Asia	South Asian Countries
23	The Latin American path towards digitization	Latin American Countries

E-Government Research Issues

Selected articles in this study were reviewed and analyzed using mapping issues research at countries developing countries which proposed by (Alryalat, Dwivedi, Williams, Rana, & Lal, 2012). According to Alryalat et al, there are 13 broad categories of research issues examined in existing studies: adoption and diffusion, use and impact, development and growth, implementation issues, e-government applications and technology, organizational issues, e- governance, trust, digital divide, e business related issues, website quality, risk, and security. The adoption and diffusion theme examines various aspects of e-government services from the perspective of problems faced by citizens such as difficulties, barriers, benefits, and challenges that occur in the adoption and diffusion of e-government. The usage and impact theme covers all aspects of actual use of e-government facilities, their positive or negative impacts, and evaluation. The development and growth theme mainly addresses the initiation, development, strategy, and readiness of e- government in developing and underdeveloped countries. Implementation issues entail the challenges and concerns of implementing general and specialized e-government services. E government applications and technologies cover all the themes that have been studied regarding specific e- government technology applications in the field of e-government research. 'Organizational issues' relates to all aspects of e-government research related to private or public sector organizations. E governance means the discussion of the application of digital government in generating and promoting effective governance as well as digital democracy. The theme of the 'digital divide' is that which deals with unequal access to e-government services or the exclusion of certain people - or even developing or underdeveloped countries - from the information society (Joia in (Alryalat et al., 2012)). Trust issues are related to the level of public confidence in the implementation of e-government. Meanwhile, the issue of risk and security and website quality is also a study in e government in the context of developing countries.

Table 2. Research Issues Selected Article

No	E-Government Research Issues in Developing Countries	Number of Articles Chosen
1	Adoption and Diffusion	10
2	Use and Impact	26
3	Development and Growth	28
4	Implementation Issues	21
5	E-Government Application and Technology	9
6	Organizational Issues	3
7	E-Governance	13
8	Trust	2
9	Digital Divide	18
10	E-Business Related Issue	21
11	Quality of Web	1
12	Risk	5
13	Security	6

The results of the analysis tabulated in the table above show that the highest interest in the scope of development and growth studies, namely research that discusses the

initiation, development, strategy, and readiness of electronic government in developing and underdeveloped countries, a total of 28 articles were selected. After development and growth studies, studies in the scope of use and impact (26 articles), implementation issues (21 articles) and e-business related issues (21 articles) dominated all selected journal articles. The lowest interest was in research on website quality with only one article.

E-Government Research Orientation/Objectives

The selected articles were also analyzed and grouped according to the orientation/objectives of E-Government research. According to (Yildiz, 2007), research in the domain of e-government studies is divided into three domains from the perspective of orientation/objectives. The first is output- oriented research. This research analyzes an output or product resulting from the development of e-government projects, such as government websites or digital services. The second research domain is outcome-oriented research, which aims to explain how government performance indicators (cost, transparency, efficiency) can increase due to e-government development. These two domains are the domains that most e-government research studies. Another orientation of e-government research is on process, i.e., on how an e- government system or project is built and developed, its policy formulation and the actors involved in it. This latter study orientation is actually less researched than the output/ outcome study domain. The table below shows the difference between the three domains:

Table 3. E-Government Research Orientation Categorization

A new categorization of e-government research

Dimensions	Orientation		
	Output	Outcome	Process
Focus	Web sites, online government services, front office	How does an e-government application affect a certain variable such as trust, accountability, transparency, corruption, government effectiveness, users' perceptions of service quality	Processes of decision making, planning, implementation, back office

Table 4. Research Orientation on Selected Articles

No	Orientation of E-Government Research (Yildiz,2007)	Number of Articles
1	Process	18
2	Outcome	59
3	Output	23
Total		100

The results of reading and analyzing the selected articles show that most digital government research related to developing countries is oriented towards outcomes and outputs. This is in line with the opinion of (Yildiz, 2007) that research related to e government is still little/ not much about the process.

E-Government Research Methods

The research method most often applied to selected research on e-government in developing countries is the qualitative method.

Table 5. Research Methods in Selected Articles

No	Research Methods	Number of Articles
1	Mixed Methods	8
2	Qualitative	79
3	Quantitative	13
Total		100

Disscussion and Future Research Agenda

The results of research and analysis of 100 selected journal articles on e- government and developing countries show several trends. From the perspective of research trends, from year to year, research issues related to e-government in developing countries are increasingly being studied and attracted by researchers. From the Scopus database, it is found that highly reputable journals with SJR index Q1 and Q2 contain more articles on this topic than journals with SJR index Q3 and Q4. Of the 75 journals, there are 17 journals (23 percent) that publish more than one article on the theme of e government in developing countries, which means that if researchers want to research e government themed studies in developing countries, they can publish their articles in these journals. Looking at the distribution of author affiliations, researchers in Asia and Europe have a high interest in this research theme. There are only 3 researchers from Indonesia who wrote the selected articles from Gajah Mada University, Muhammadiyah Yogyakarta University and Bogor Agricultural University. This provides room for Indonesian researchers to be able to write articles on this topic and publish them in reputable international journals.

The scope distribution of research on this theme is mostly social science and computer science research. What is interesting about the selected articles is that quite a lot of research compares e-government between developing countries (multi-locus). Some studies even examine more than 5 developing countries in one article. Some articles also compare e government in developed and developing countries. The most studied country is India (11 articles).

Regarding research topics, there are still many research gaps that can still be filled by new studies, especially research that discusses the e-government process, because there is less research that discusses the process than research that discusses outputs and outcomes. Of the 13 research issues studied, namely adoption and diffusion, use and impact, development and growth, implementation issues, application and e-government technology, organizational issues, e- governance, trust, digital divide, e business related issues, website quality, risk, and security, studies in the topic areas of use and impact (26 articles), implementation issues (21 articles), and security and e business related issues (21 articles) dominate. Thus, other issues can still be explored more deeply with further research.

The research findings of this literature review have provided a future agenda that can be useful for the field of public administration. The discourse on e- government in developing countries in the discipline of public administration is important in terms of learning best practices and whether more fundamental theories are needed.

CONCLUSION

It is conclusive that public administration scholars and researchers are very interested in research on e-government in developing countries, as shown by the steady annual increase in selected research articles. Several things can be concluded, including:

1. Some clear research gaps that can be drawn from this study include the lack of research on digital governance under the scope of public administration. In addition, it can be seen that most research focuses on outcomes only, and there are still few that discuss the process of digital governance. Further researchers can also see that there is not much diversity in research issues. In conducting research, researchers use more qualitative methods than quantitative or mixed methods, so methodologies other than qualitative for research on digital government in developing countries are still possible to be explored in more depth.

2. The use of hybrid methodologies in digital government research is necessary to obtain both quantitative and qualitative data with the purpose of one methodology covering the imperfections/flaws of the other.

3. This research has a number of limitations. The articles obtained from 75 journals, totaling 100 articles, cannot represent all research on digital governance in developing countries in this study. This study solely analyses journals according to ranks, nations, themes, and particular issues. Because the distribution is based on credible journals rather than actual cases that happen in the region, the results obtained cannot be generalized to the findings as a whole and do not represent the region. In order to produce more thorough results, future research that conducts a systematic review of the literature should examine all research journal articles on e-government in developing countries in all journals at each level of the public administration journal ranking, if not in all journals at all levels. Given that public administration is multidisciplinary, a survey of journal papers from many disciplines should be carried out.

4. Research that can be studied and explored in the scope of the theme of e government in developing countries is quite a lot. One of the highest specializations is in accordance with the times, namely regarding the digital economy (e business related issues) and security. The specialization of public administration research themes usually adjusts to the needs and public problems that arise.

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