

## **ELECTRONIC GOVERNMENT IN SOCIAL SCIENCES: A LITERATURE REVIEW**

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### **Abstract**

In many countries, electronic government has become a familiar concept in the reform of public administration. In the social sciences, electronic government has also gained considerable interest from academic circles as a new idea. A systematic literature review of articles published in social sciences was carried out to increase our understanding of electronic government. Five main issues are explored in this field government, public, information, services, and citizen using NVivo analysis tools. Some propositions about the issues and proposed theoretical model were suggested. Some directions for future research are also considered in this article.

*Keywords:* Electronic government, literature review, social sciences, public administration

### **1. INTRODUCTION**

Many countries have recently started to use electronic government. In particular, these governments use ICT to improve access and basic services for their citizens. In addition, many governments have successfully promoted citizen awareness of policies, programs and activities on their websites (Pariso & Marino, 2020). Furthermore, many local governments have also implemented e-government. For example, they use communication and information technology for public service delivery and civic engagement (Dias, 2020). E-government has also transformed the form of public services. Citizens no longer need to

deal directly with the government when registering their identities, births, child support, school, health, business, and others because the government has implemented a one - stop - shop, a place where the government can provide data for one or more services through integrated digital services (Scholta et al., 2019).

Scholars have researched e-government from a number of perspectives in social sciences. For example, scholars who use an administrative view find that governments who have implemented e-government can increase innovation, openness, transparency, quality, performance, satisfaction, public participation, and reduce corruption

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(Kim, 2015; Choi, 2016; Nicolae URS, 2018; Scholta et al., 2019; Wu et al., 2020; Mellouli et al., 2020; Chohan et al., 2020; Dias, 2020; Drolet, 2020). From an economic perspective, the implementation of e-government can have a positive or negative impact on business, public-private partnerships, tax revenue, public procurement, citizen income, and welfare (Manoharan et al., 2017; Palaco et al., 2019; Kochanova et al., 2020; Ma & Wu, 2020; Pariso & Marino, 2020). However, from a political perspective, the implementation of e-government has not improved democracy (Cooley, 2018). Meanwhile, the performance of e-government has a positive effect on political life (Kassen, 2017; Szopiński & Staniewski, 2017).

Scholars have rarely made a map of the thinking of research results related to e-government literature. In particular, no scholars have yet identified in depth what issues are associated with the subject of e-government. This article aims to fill this gap by reviewing the aspects of e-government research in the social sciences. This study aims to answer the following questions by conducting a systematic literature review of research on e-government:

- (1) Are the key issues and derivative issues in social science journals about e-government?
- (2) What are the contributions of these core issues to improving the comprehensive theoretical model of e-government and the practical needs of policymakers?

## 2. SAMPLE AND METHODS

The Scopus database includes all previously published journal articles concerning e-government in the social sciences, from the beginning to 2020. To eliminate bias from a small sample

size, this study takes a whole sample of all publication years. Therefore, this study obtained a representative and precise sample. The following five measures are used to perform a systematic literature review (Wang et al., 2018): (1) planning and formulating the topic; (2) searching the literature; (3) collecting and reviewing data; (4) analyzing and interpreting data; and (5) presenting findings and proposing future studies.

This study uses the Scopus database. The search settings were: title is e-government; access type is open access and other; year from the earliest possible date until 2020; author name is all; social sciences is the subject area; document type is article; publishing stage is final; all social science journals are the source title; keywords are “E-government”, “E-Government”, “E-governments”, “E-government Services”, “Electronic Government”, “EGovernment”, “E-government Systems”, “E-Government Applications”, “E-government Implementation”, “E Governments”, and “E-Government Portals”. The country/territory is all countries; a journal is the source type, and the language is English. Consequently, this study has yielded 124 articles in journals.

The software application NVivo 12 Plus was used to analyze, visualize, and categorize data in this report. NVivo is a useful analysis program because it helps to index elements of textual documents, and search words and phrases for data (Sotiriadou et al., 2014). This research uses the NVivo 12 Plus to display the co-occurrence of keywords to provide an overview of the critical issues of network governance discussed in social science journals. In a literature review, many scholars use the NVivo to assist the analysis because it is the most popular qualitative data analysis technique. The coding scheme is also constructed by

the NVivo. In addition, NVivo can process data, and it uses the auto code method to create coding systems and nodes (Brandão & Miguez, 2017). NVivo is an optimal set of methods for literature analysis for qualitative analysis (Gregorio, 2000). Furthermore, NVivo helps scholars to handle and organize knowledge, and makes it more comfortable to analyze facts, identify trends, gain insight, and draw conclusions. Moreover, NVivo allows

the researcher to code all information and create issues, themes, classes, or nodes (Sotiriadou et al., 2014).

### 3. RESULTS AND DISCUSSION

This section will give a description and analysis of the results. The description includes the year of publication, the journal's title, and the per-author citations.

#### *The years of publication*

**Figure 1:** Evolution of posts regarding e-government over time

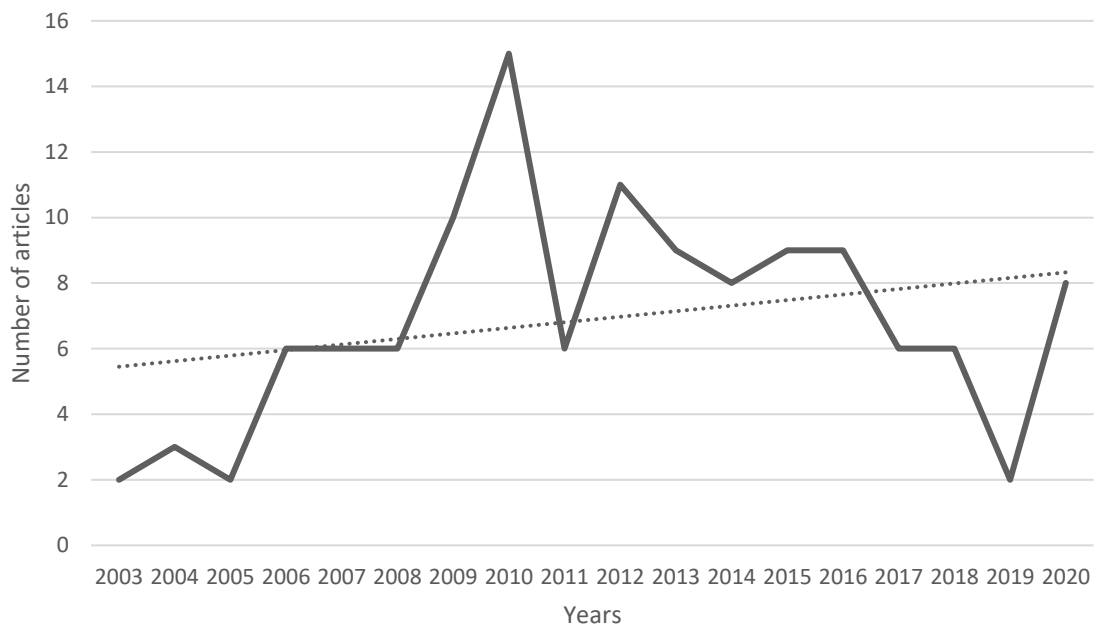


Figure 1 indicates a pattern of irregularity in the number of articles relevant to e-government. There were two and three articles in 2003 and 2004, respectively. The peak number of articles was in 2010, which was 15 articles. The number of articles

published then dropped in the following years. A sharp decline occurred in 2019, with only two articles being published. It rose again in 2020, when eight articles were published.

*Journal titles***Table 1:** Analyzed journals

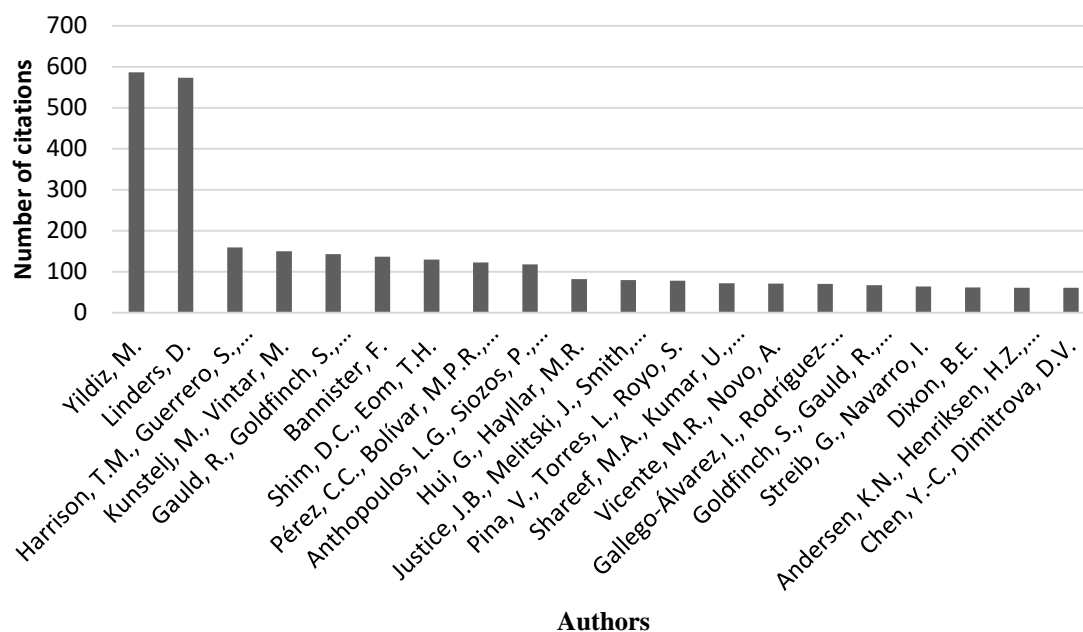
No	Journals	No. of articles	%
1	Government Information Quarterly	15	12.09
2	Information Polity	11	8.87
3	Electronic Government	10	8.06
4	International Journal of Electronic Government Research	10	8.06
5	International Journal of Public Administration	7	5.64
6	International Journal of Electronic Governance	4	3.22
7	Australian Journal of Public Administration	4	3.22
8	International Review of Administrative Sciences	4	3.22
9	Online Information Review	4	3.22
10	Transforming Government: People, Process and Policy	4	3.22
11	American Review of Public Administration	3	2.41
12	Information Technology for Development	2	1.61
13	International Information and Library Review	2	1.61
14	International Review of Public Administration	2	1.61
15	Journal of Computer Information Systems	2	1.61
16	Public Administration and Development	2	1.61
17	Social Science Computer Review	2	1.61
18	Theoretical and Empirical Researches in Urban Management	2	1.61
19	Transylvanian Review of Administrative Sciences	2	1.61

All of the journal articles on e-government have been published in the social sciences. These articles have been indexed within the Scopus database. Table 1 lists the names of the journals that contain at least two

articles on e-government. Four journals contain the largest number of articles. These journals have a scientific scope related to electronic government. Only journals publishing at least two e-government articles are presented.

**Citations per author**

**Figure 2:** The number of citations per author (top 20 authors)

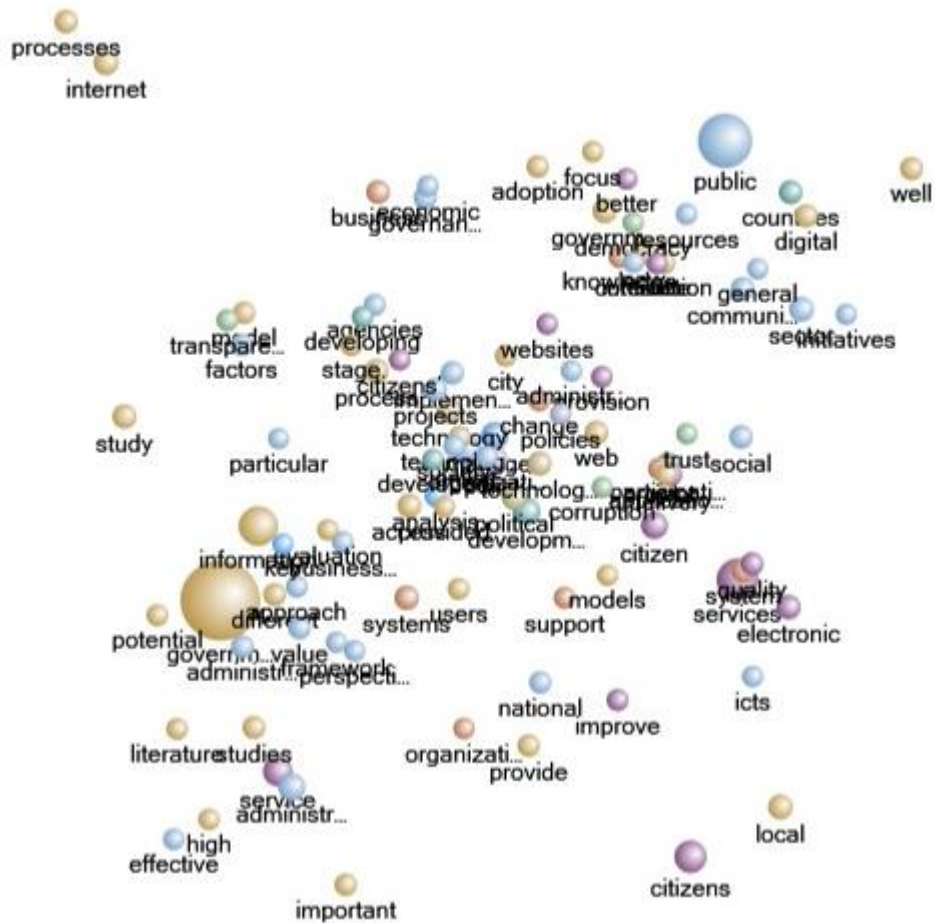


The numerical citations per author are given in Figure 2. The number of citations per author's statistics in the field of e-government displays the academic impact of the authors. The 20 authors with the highest cumulative citations are as follows. Muhamet Yildiz, Professor of Economics, Massachusetts Institute of Technology, has the most citations for articles related to e-government. Dennis Linders, government data scientist and digital government researcher, ranks

second-most in the citation of articles on e-government. Teresa M. Harrison, Department of Communication & Center for Technology in Government, University at Albany, and Santiago Guerrero, Department of Public Administration, University at Albany, and G. Brian Burke, Meghan Cook, Anthony Cresswell, Natalie Helbig, Jana Hrdinová, & Theresa Pardo, Center for Technology in Government, University at Albany all rank third in the number of citations.

*E-government issues*

**Figure 3:** Relationship of issues in e-government studies



The data for all of the journal articles that were analyzed is processed by NVivo, which gives a picture of all of the issues that occur simultaneously in each post. From all of the journal articles reviewed, Figure 3 shows all of

the e-government issues that were discussed. Figure 3 shows that the concept of e-government is related to many concepts and terms, and these scholars wrote about e-government issues in very diverse contexts.

**Main e-government issues**

**Figure 4:** Main e-government issues



In Figure 4, it can be seen that the network-image nodes are the main issues, while the links display the relationship between the main issues. Figure 4 shows the main issues of

e-government. The large fonts indicate major issues of e-government, including government, public, information, services, and citizen.

**Table 2:** Relationship of e-government and the main issues

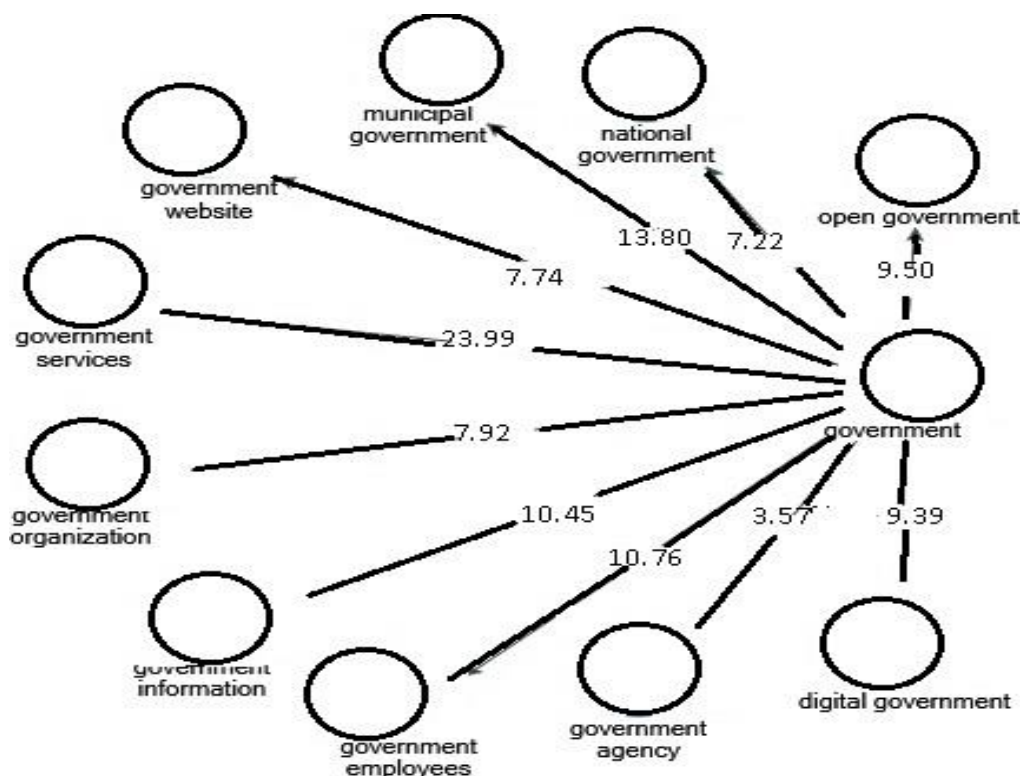
Code A	Code B	Jaccard's coefficient
e-government	government	0.94511
e-government	public	0.97060
e-government	information	0.95158
e-government	services	0.97379
e-government	citizen	0.95740

Table 2 shows that the Jaccard coefficient figure as a result of NVivo data processing is more than 0.5. This means that from the 124 articles reviewed, there is an indication that

there is a strong relationship between the theme of e-government and issues of government, public, information, services, and the citizen.

Issue 1: Government issues

**Figure 5:** Government issues identification



In Figure 5, the analysis of co-occurrence implies that government issue co-occurs in all of the articles. The numerals reflect the percentage of co-occurrence frequencies. The high frequency of issues for co-occurrence means that scholars pay more attention to these issues. In Figure 5, the government issue is related to 10 other issues. There are two issues with the greatest frequency, namely: government services and municipal governments.

Many scholars pay attention to issues of government services and local government agencies in their studies. Ma and Wu (2020), through their research in China, concluded that the government at the provincial and city levels should increase the co-production of e-government services to citizens and other stakeholders to

achieve high performance. Pariso and Marino (2020) conducted research using qualitative and quantitative methods in southern Europe from 2010 to 2017. They found that countries in the region have implemented e-government. The factor that is of greatest concern is the improvement of the government bureaucracy and the public service system. Paiva Dias (2020) stated that many scholars had conducted research on e-government. Local governments in many countries have implemented ICT. One of the most critical factors affecting the application of this new technology is e-services. Nicolae (2018) found that the implementation of e-government in Romania was done at the local municipality level. Local public institutions have successfully implemented online service delivery.



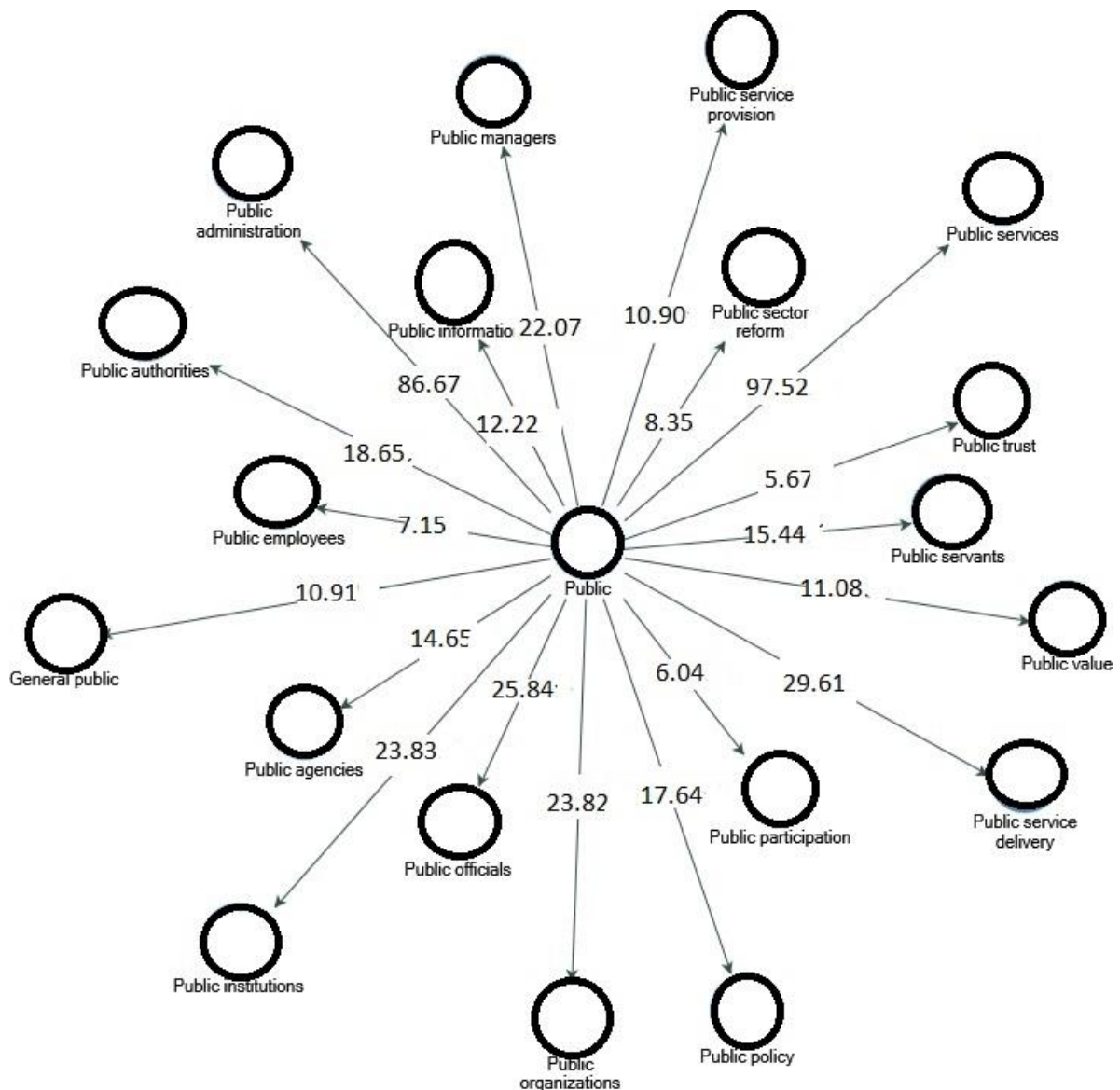
However, the central government does not support these technological changes, particularly the development of technical infrastructure. Furthermore, Virgiyanti et al. (2018) reported on the implementation of e-government in the state of Kedah, Malaysia and found that the factors of effort expectancy, social influence and facilitating conditions influence the citizen's use of ICT. In addition, Manoharan et al.(2017) compared municipalities that implement e-government and classifies cities into

the categories of digitally marginal cities, digitally minimal cities, digitally moderate cities and digitally mature cities. One of the criteria that they used to assess the local government's website is services. These results have led to the following proposition:

*Proposition One:* Many local government institutions have implemented e-government in public services that have been accessed by citizens and other stakeholders.

Issue 2: Public issues

**Figure 6:** Interconnection of public issues.



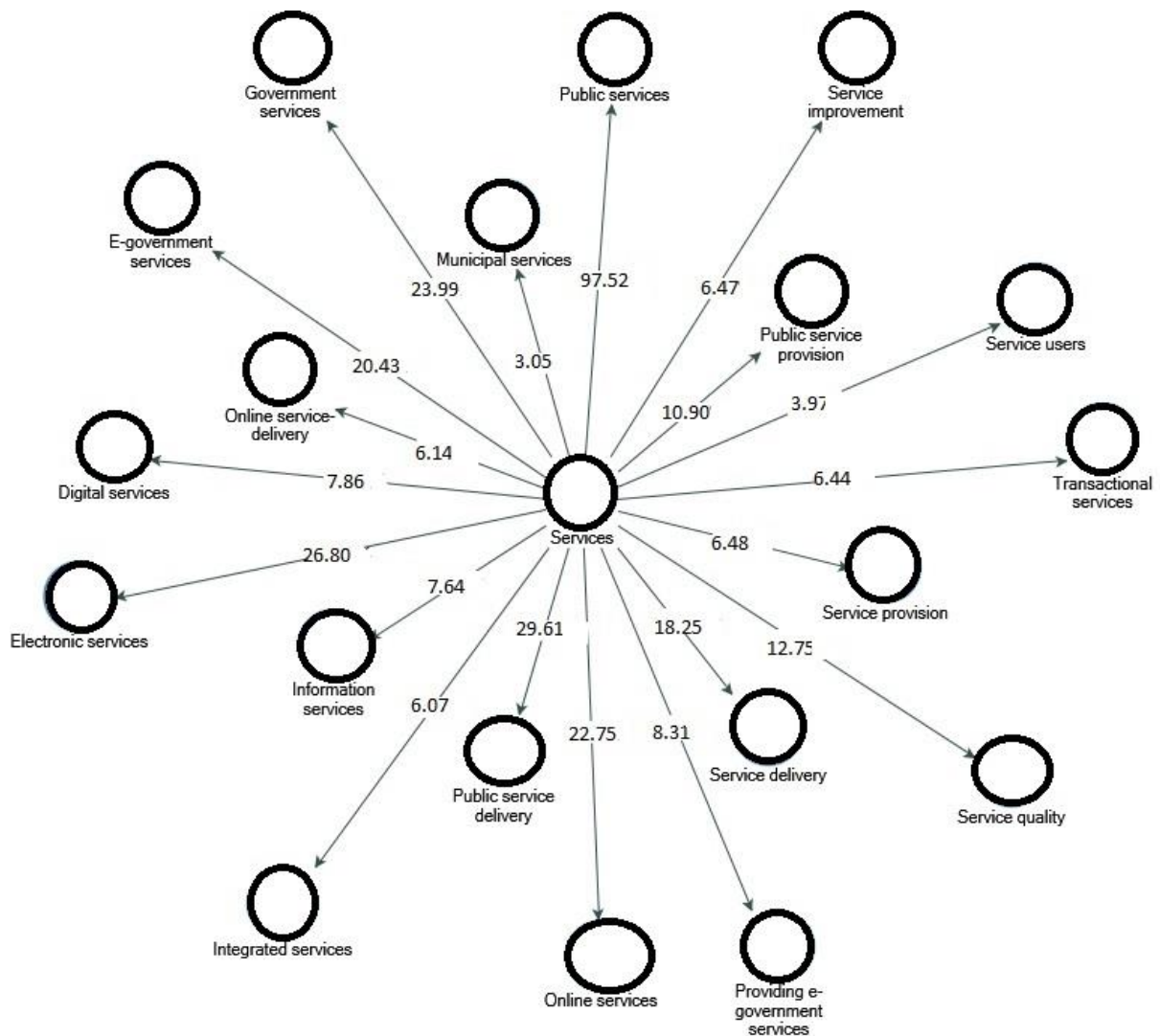
The analysis of co-occurrence shown in Figure 6 shows that the public issue co-occurs in all of the articles reviewed. The numerals in the figure indicate the proportion of frequencies of co-occurrence that scholars pay attention to. The public issue is connected to 19 other issues in Figure 6. Two issues appear with the greatest frequency, namely: public services and public administration.

Several scholars in e-government have taken public services and public administration issues into account as major issues. Welp et al. (2007) studied the application of e-government as a new form of public service in Catalonia. They concluded there had been changes in public administration. Bureaucratic administration (i.e., a bureaucracy with a traditional hierarchy) has turned into a network administration, and the relationship between bureaucracy and citizens as service-users is intimate. Lips (2012), in a New Zealand case study, introduced the term “e-Government 2.0”. This term relates to the application of ICT as a form of public service that deals with dynamic external transformations. This gave rise to “public administration 2.0”. Jansson and Erlingsson (2014) studied the development of the web-based Swedish municipality portal for

e-government. They found that there had been changes in public administration. The role of street-level bureaucrats was reduced when e-government was more developed. García-González (2016) reported that e-government implementation in the local councils of Spain is an application of the management policy business process in the public administration to provide public services. Ntaliani and Costopoulou (2018) researched European rural business and found that the public administrations of these countries can implement e-government as a public service. These public services then reduce the administrative burden on rural businesses. Kochanova et al. (2020) found that public services using e-government can improve the administration capabilities of the government. This is evident from the decrease in tax service complaints, an increase in tax collections, competitive public procurement, and a reduction in corruption. This leads to the second proposition:

*Proposition Two:* The successful adoption of e-government as a form of modern public services provided for citizens requires a change in the public administration model.

**Figure 7:** Public services interconnections



The co-occurrence analysis in Figure 7 shows that the service issue coincides in all examined articles. This figure shows the frequency of events, together with the topics that the scholars examined. In Figure 7, public issues correspond to 19 other issues. However, there is one issue with the greatest frequency, namely public services.

The issue of public services is an essential topic of scholarly discussion on e-government. Tsohou et al. (2013)

surveyed several local governments in Turkey that have implemented e-government. They found that the capacity of public services increased and the interaction of government agencies, citizens, and businesses was also enhanced. Al Mansoori et al. (2018) reported on the government of the Abu Dhabi Emirate's adoption of e-government services. They found that citizens used ICT because they were greatly influenced by Internet trust and performance expectancy.

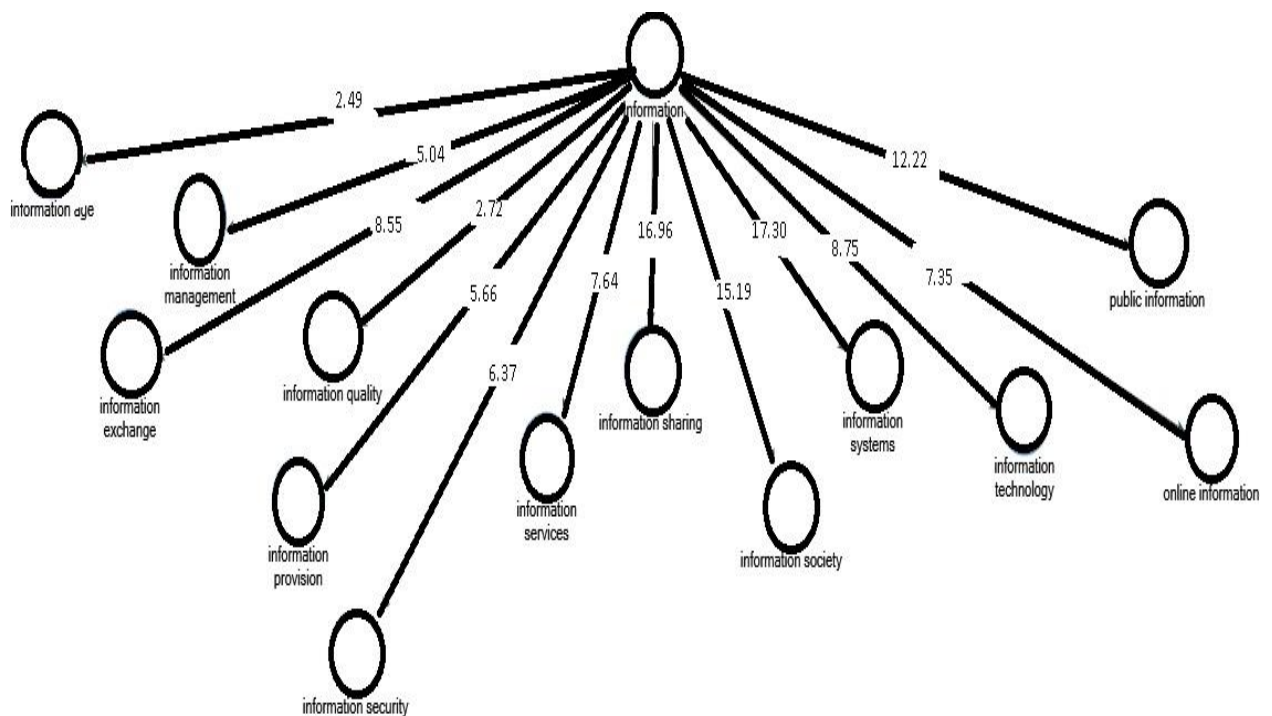
Virgiyanti et al.(2018) showed that Malaysia, as one of the developing countries in Asia, has developed e-government to improve public services. Scholta et al. (2019) found that government service delivery is of central importance when implementing e-government. They coined the term "from a one-stop-shop to a no-stop shop", where citizens no longer use paper forms but instead use digital forms when receiving services. Pariso

and Marino (2020) emphasized that the application of new ICT, such as e-government, has the main objective of increasing public service delivery and promoting citizens' access and inclusion. This has led to the third proposition:

*Proposition Three:* Citizens adopt e-services because they have trust and expectation of e-government that is implemented by the government as a new form of public service.

Issue 4: Information issue

**Figure 8:** Information issue and its relation to other issues



The concurrent event analysis in Figure 8 shows that the information issue coincides with all of the articles examined. This figure indicates the frequency of joint events conducted by scholars. In Figure 8, the information issue corresponds to another 13 issues. However, one issue has the greatest frequency, namely information system.

Some scholars have paid attention to the information issue in articles on

e-government. Groznik et al. (2008) evaluated the implementation of e-government in the Slovenian Ministry. They suggested that the government should improve the renovation and information systems to achieve data quality, efficiency, and effectiveness. Carmen Caba Pe´rez et al. (2008) examined the implementation of e-government related to information regarding financial incentives to

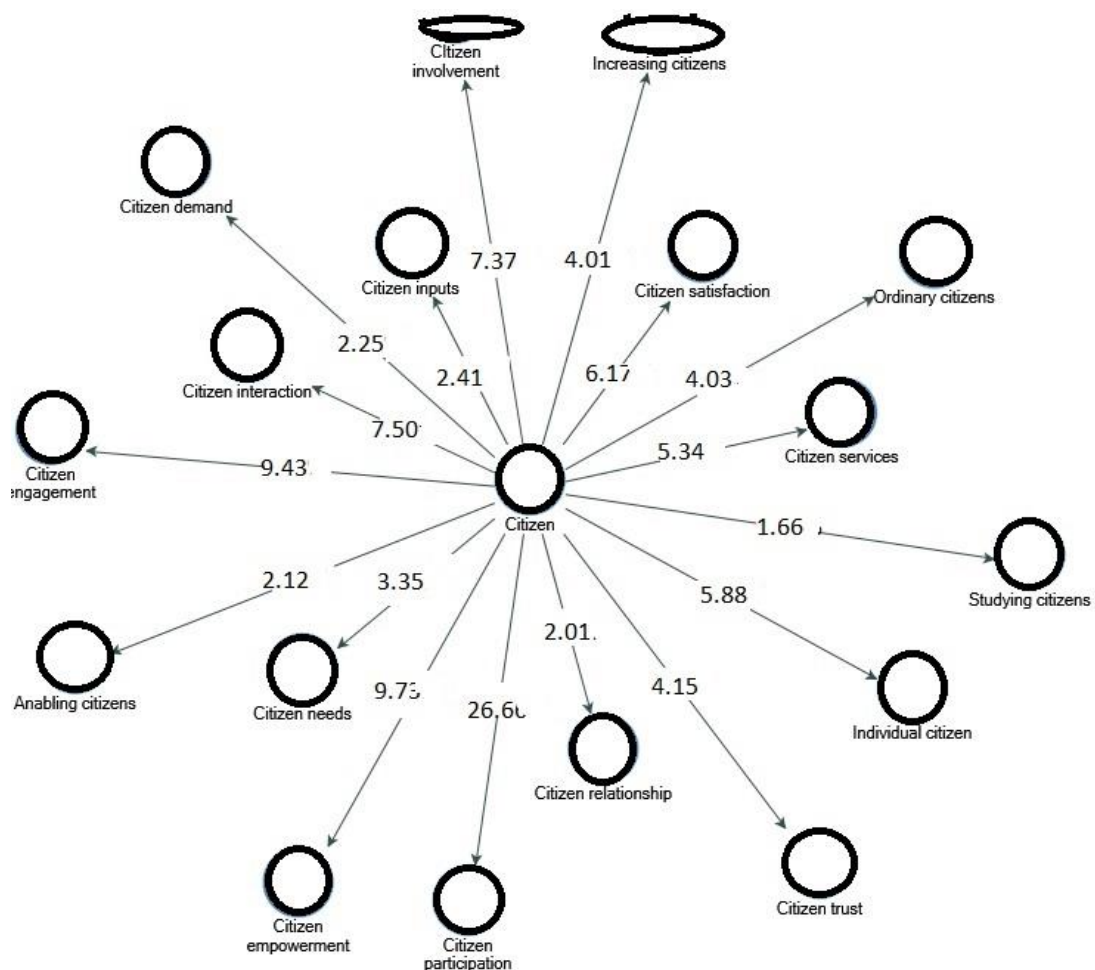
encourage entrepreneurs. They found that information system transparency was vital for government websites. Chen (2010) used data from the International City/County Management Association (ICMA) and found that many governments are not maximizing the integration information systems for citizen - centric services when implementing e-government services. Loukis and Charalabidis (2011) questioned

why e - government implementation risks failing in Greece. Their study was based on governmental information systems. This has led to the fourth proposition:

*Proposition Four:* Information system transparency is critical to the success of e-government implementation because it can improve data quality, efficiency, and service effectiveness.

Issue 5: Citizen issue

**Figure 9:** Citizen issue and other related issues.



The concurrent event analysis in Figure 9 shows that the citizen issue coincided with all of the articles examined. This figure shows the frequency of co-occurrences carried

out by the scholars. In Figure 9, the issue of citizen is related to 17 other problems. In this case, the issue with the greatest frequency is citizen participation.

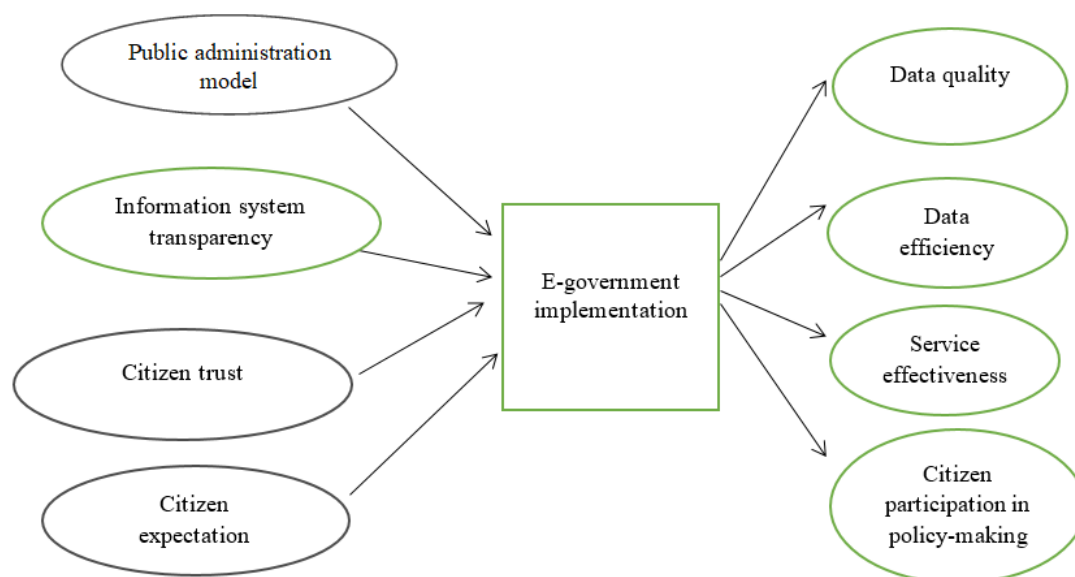
Scholars have examined the issue of citizen participation in the application of e-government in various countries. Chen and Dimitrova (2006) researched e - government and online engagement. They concluded that a government website can be used as a means of citizen participation to gain access to information, service transactions, and involvement in the public policy - making process. Streib and Navarro (2006) addressed the case of customer service in Georgia. They argue that implementing e-government requires citizen participation and interaction with the government. Björklund (2016) observed the

implementation of e-government in Estonia. He stated that the power system in the country is centralized and that citizen participation in government is consequently lacking. This has led to the final proposition:

*Proposition Five:* Citizen Participation in the public policy process should not only be to access public services efficiently and effectively but should also be a significant indicator of the successful implementation of e-government.

This study is now able to create a theoretical proposed model that is based on all of the propositions, as shown in Figure 10.

**Figure 10:** Proposed e-government theoretical model



#### 4. CONCLUSION

Many scholars have already addressed the issue of electronic government in the discipline of the social sciences. This research hopes to extend the debates and perspectives of scholars in these disciplines. The systematic analysis of previous e-government articles has helped us to

consider the state of the art and judge the trends. Analysis of the 124 articles has been further synthesized and has led to the proposed theoretical model. This model includes the variables of public administration model, citizen trust and expectation, and information system transparency, which influence the implementation of e-government services. Furthermore, the implementation

of ICT has had an impact on data quality and efficiency, service effectiveness, and citizen participation in the public policy process. This theoretical framework differs from the previous theoretical framework, which is based solely on the administrative, economic, and political perspectives (as described in the introduction). This new theoretical framework has a broader view, which includes models of government institutions that are adaptive to change, transparent information systems, and the attitudes of citizens and other stakeholders. In addition, this theoretical framework looks at the impact of implementing e-government on data quality, efficiency and effectiveness, and citizen participation in the policy-making process. Meanwhile, the administrative perspective emphasizes e-government implementation from the aspect of the readiness of the government bureaucracy. The economic outlook looks more closely at the impact of the application of e-government on business development. Finally, the political perspective emphasizes issues of power related to the implementation of e-government.

Future studies can follow up the search for an organizational model that is suitable for the implementation of service-oriented e-government for the lower classes. In addition, the creation of a transparent and accountable information system needs to be examined. Furthermore, citizens' behavior based on consideration of their interests also deserves to be explored. Further research could also examine the impact of implementing e-government on the accuracy of the data available on the system. Finally, the involvement of citizens in the process of making, implementing, and evaluating public decisions through e-government is of great importance for researchers to evaluate.

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