



Biblio- Systematic Review of E-government Satisfaction

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ABSTRACT- One of the most important valuation tools and approaches is the satisfaction of the citizen/ users of the e-government services and portals. Thisbiblio - Systematic paper will address all the articles published in SCOPUS& Google scholar databases that have the keywords “E-government Satisfaction” in their title.

The aim of this study is to present the bibliometric aspects of most cited or productive articles, authors and journals, as well as a systematic review of the content of these articles identifying the most used independent, depended, and other variables that are used frequently with the E-Government Satisfaction.

Keywords: E. Government, Satisfaction, Bibliometric study, Systematic review.

I. INTRODUCTION:

Informatics and Communications (ITC) has had a major impact on society since the late 1990s. This was mainly due to the development of the Internet. Globally, governments are recognizing the opportunities that ITC offers to meet user demands and starting online information and transactions in what is currently known as e-government. Despite increased government efforts in developing countries to expand e-government services, these countries also face challenges such as a lack of awareness of people on e-government services and a lack of public interest in governments and the Internet. Such problems lead to policy programs loss. Concerns of users about insufficient safety systems and the confidentiality of the online networks may also contribute to consumer frustration with e-government services. Deficient security and privacy present major risks, such as unwarranted access to sensitive personal information or online fraud or identity theft vulnerability(Yap, 2017).

For this context, several reports focused on user satisfaction in embracing e-government services show that the main issue in e-government adoption is balancing people' and users ' desire. A big problem has been generated by the issue of balanced citizens ' demand for services with e-government resources (Idoughi, 2018; Lee, 2018; Sachan, 2018; Santa, 2019). Studies in developing countries have found that e-government supply variables—including accessibility, affordability, reliability and ease of use—do not follow high standards. This absence creates a large distance between digital government information capacity and actual information usage (Ma, 2019; Novikova, 2017; Wong, 2018; Yap, 2017). This problem is exacerbated by the lack of nationality and public approval by the plurality of E-Government Services (Idoughi, 2018; Lee, 2018). Research also shows that policymakers that address the real interests of people have gained tremendous benefits through the delivery of successful e-government services. Understanding the development of e-government and exploring factors affecting e-government development have become important subjects for research (Yap, 2017).

II. LITERATURE REVIEW:

Different models were developed and used to explain why IT was embraced by users. These include the diffusion of innovation (DOI) to investigate four key diffusion elements (Rogers, 1995) and the successful model of Delone and Mclean's information system (IS) to investigate the impact of system performance on perceived utility, user experience, and system usage (Delone & Mclean, 2004). The rational action theory

(TRA) (Fishbein & Ajzen, 1976) was also used to describe the use of computers and the acceptance actions of a variety of factors in the adoption of e-government services. Another model used to figure out how people come to accept and use software was the innovation adoption model developed by (Davis, 1989). The UTAUT is the newest accepted framework for forecasting and describing purpose to use (Venkatesh, Morris, Davis, & Davis, 2003; Zhao, 2011). This model is the most detailed framework for defining different factors that provide insights into the perception of individual e-government services intentions.

Adoption of IT principles is useful in understanding consumer adoption and e-government usage. Studies have been conducted to recognize many factors that affect the ability of people to implement e-government services in order to tackle this dimension. Some of the main factors examined in these studies are perceived usefulness, awareness, confidence, quality of service, ease of use, quality of information, perceived efficacy, social influence, user satisfaction and intention to use (Al Shibly & Tadros, 2010; Venkatesh et al., 2003; Zhao, 2011) Table 1 summarizes the most cited e-government studies that use TBA, UTAUT, and DOI to empirically examine the effect of certain selected variables on citizens' intentions to implement e-government and presents the main outcomes of each study.

These studies provided useful insights into understanding the intention of citizens (users) to use e-government services. There is plenty of literature on IS adoption. Researchers such as (Al Shibly & Tadros, 2010; Venkatesh et al., 2003) analyzed a variety of user acceptance attributes of ISs. Al Shibly and Tadros (2010) study is an empirical analysis of attributes relating to the adoption of e-government aspects by employees; these include system reliability, quality of information, perceived ease of use, and perceived utility. The findings have shown that all of these attributes affect the acceptance of e-government. Venkatesh et al. (2003) found in the analysis of the degree to which IS systems are used and adapted by potential users that perceived utility and perceived ease of use influence user attitudes to IS systems acceptance. In addition, (Sambasivan, Cutrell, Toyama, & Nardi, 2010) analyzed the factors influencing the decision to use e-government and the practical use of e-government procurement systems. The study results showed a strong positive correlation between the preceding variables and the actual use-related intention.

In the sense of user satisfaction and willingness to use e-government, different studies have examined individual characteristics that affect e-government attributes, such as application performance (Zhao, 2011), knowledge quality (Skordoulis, 2017), user satisfaction and user value evaluation (Lee, 2018; Ma, 2019; Mishra, 2019). The findings of these studies are overwhelming and confounding to the degree that a holistic view of e-government adoption and user intent to use e-government services is required to investigate theoretical clarity.

Most of these studies was performed in advanced economies (Al Shibly & Tadros, 2010). This current research therefore adds to the limited pool of studies conducted in developing countries in general and in Arab countries in particular. For developing countries, few e-government studies have been conducted (Al Shibly & Tadros, 2010). Nevertheless, assuming that theories and models of acceptance of information technology predict a similar impact in all social settings, especially in Arab countries, is incorrect. This study was planned because different nations that vary in the applicability of a model.

III. METHODOLOGY:

In this study, SCOPUS & Google Scholar database was targeted to search for the keyword "e-government / Satisfaction" in the title of the articles, search. In 24th April 2019 the research resulted in 129 articles published in Scopus that compel to the above mentioned search limitation. After reading and inspecting these articles, only 70 articles were related to the subject of using Tablet devices to effect on students' engagement.

Table 1: Top cited articles, authors, and journals.

Search Keywords	Database	Results No.
e-government / Satisfaction	G. Scholar	44
egovernment / Satisfaction	G. Scholar	1
e-government / Satisfaction	SCOPUS	76

egovernment / Satisfaction	SCOPUS	8
Total		129
Duplicates		26
Irrelevant		33
Final Total		70

Systema-BibliometricReview Results:

Starting this paper will demonstrate five main bibliometric results; publication count per year, top cited papers, authors and journals, most productive countries and finally top frequent keywords used.

The following figure 1 will show the ratio of publication in each year of the selected 70 articles. Where a peak of publication is to be found in year 2009 and stability of publishing in the following years not exceeding 6 articles per year.

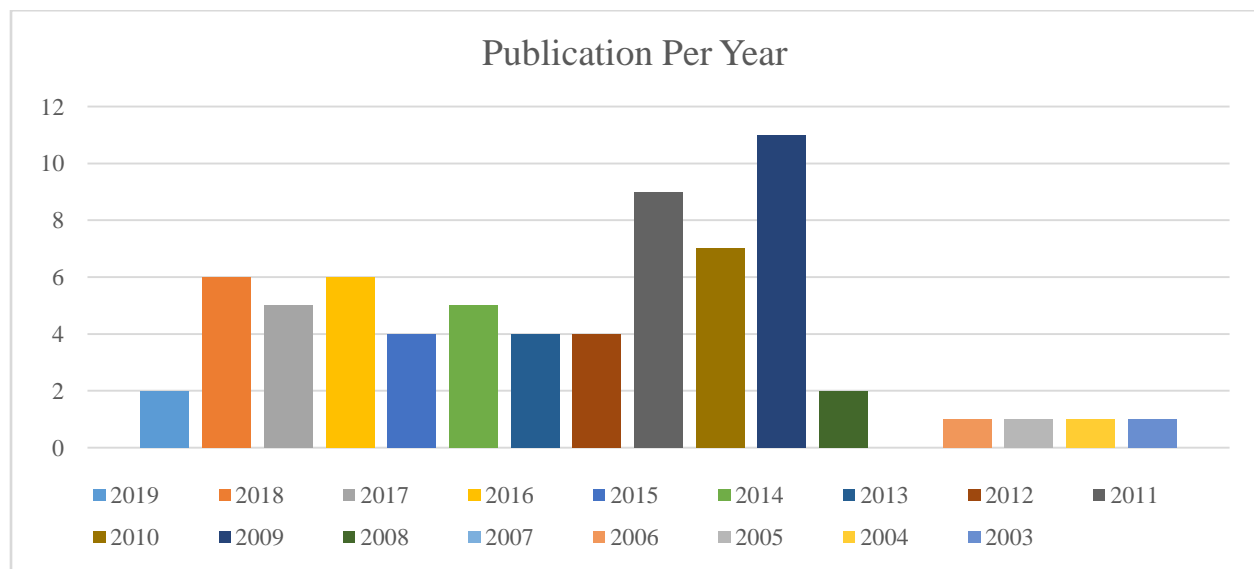


Figure 1: Publication per year

Following, the top cited article is entitled “Linking citizen satisfaction with e-government and trust in government” which gained 987 citation and consequently placed its writers “EW Welch, CC Hinnant, MJ Moon” in the first place of the 70 article selected. Whereas in the fifth place two writers shared the place “Horan, Abhichandani, &Rayalu” as their articles gain 101 cites.

Table 2: Top cited articles, authors, and journals.

No.	cites	author	Title	year	Journal	Citation
1	987	EW Welch, CC Hinnant, MJ Moon	Linking citizen satisfaction with e-government and trust in government	2004	Journal of public administration research and theory	(Welch, Hinnant, & Moon, 2004)
2	441	P Verdegem, G Verleye	User-centered E-Government in practice: A comprehensive model for measuring user satisfaction	2009	Government information quarterly	(Verdegem & Verleye, 2009)
3	263	FKY Chan, JYL Thong, V Venkatesh...	Modeling citizen satisfaction with mandatory adoption of an e-government technology	2010	Journal of the Association for Information Systems	(Chan et al., 2010)

4	123	A Alawneh, H Al-Refai, K Batiha	Measuring user satisfaction from e-Government services: Lessons from Jordan	2013	Government Information Quarterly	(Alawneh, Al-Refai, & Batiha, 2013)
5	101	TA Horan, T Abhichandani...	Assessing user satisfaction of e-government services: development and testing of quality-in-use satisfaction with advanced traveler information systems (ATIS)	2006	Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS'06),	(Horan, Abhichandani, & Rayalu, 2006)

The following Table 3 will illustrate the percentage of the articles according to the data bases derived from whether SCOPUS or Google Scholar, in the first place is United States with 9 articles out of 25, in the second is Australia wit 5 and finally Canada with 2 out of 25 articles. Lastly is Figure 2 that shows the Keyword weight according to their frequency usage in the articles, where clearly shows E-Government, Satisfaction, Services, evaluation, citizen and quality are from the hottest keywords used in these articles



Figure 2: Weighted Keywords Cloud.

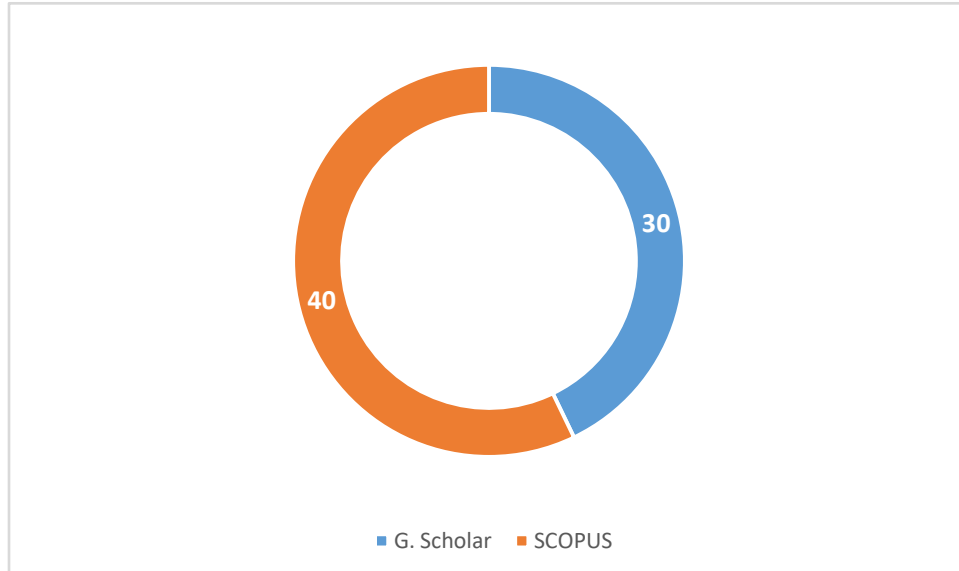


Figure 3: percentage of the articles according to the data bases.

Systematic review Results:

Following the systematic review of these 70 articles resulted in three main tables; the first Table 4 which illustrate the main Dependent Variables which were addressed in these studies accompanied with the count and percentage out of 70, which they are orderly; Satisfaction, Intention, and Trust, whereas the rest has less than 5 studies addressing them.

Table 3: Main variables that are affected by other factors in the study cases (Dependent Variables – DV).

	Variables Affected (Dependent Variables – DV)	No. (108)	%
1	Satisfaction	70	65.74%
2	Intention	5	4.63%
3	Trust	5	4.63%
4	Continue Use	3	2.78%
5	Government image	2	1.85%
6	Outcome Expectation	2	1.85%
7	Public Loyalty	2	1.85%
8	Adoption	1	0.93%
9	Complains	1	0.93%
10	Customer Complaints	1	0.93%
11	Customer Loyalty	1	0.93%
12	Loyalty	1	0.93%
13	Online political efficacy	1	0.93%
14	Operational effectiveness	1	0.93%
15	Overall Attitude	1	0.93%
16	Perceived Power Relationship	1	0.93%

17	Performance Failure	1	0.93%
18	Positive Disconfirmation (Mediator)	1	0.93%
19	Prec. Self-Efficacy	1	0.93%
20	Quality	1	0.93%
21	Retention	1	0.93%
22	Service Convince	1	0.93%
23	User Anxiety toward using website	1	0.93%
24	user performance	1	0.93%
25	Word of Mouth	1	0.93%

Secondly, the table 5 would the main Independent Variables which were addressed in these studies accompanied with the count and percentage out of 70, which they are orderly; Quality, User Factors, Web Design, Ease of Use and Security/ Privacy, whereas the rest has less than 15 studies addressing them.

Table 4: Main variables that are affecting on the dependent variables in the study cases (Independent Variables – IV).

	Affecting Variables	No	%
1	Quality	38	11.11%
2	User Factors	36	10.53%
3	Web Design	27	7.89%
4	Ease of Use	19	5.56%
5	Security/ Privacy	16	4.68%
6	Accessibility	12	3.51%
7	Content	12	3.51%
8	Social Factors	11	3.22%
9	Trust	11	3.22%
10	Usefulness	10	2.92%
11	Customization	9	2.63%
12	E-Service	9	2.63%
13	Reliability	8	2.34%
14	Utility	7	2.05%
15	Awareness	6	1.75%
16	Benefit	6	1.75%
17	Efficiency	5	1.46%
18	Flexibility	5	1.46%
19	Support	5	1.46%
20	Transparency	5	1.46%
21	Usability	5	1.46%
22	Failure	4	1.17%
23	Image	4	1.17%
24	Interactivity	4	1.17%
25	Performance expectancy	4	1.17%

26	Timeliness	4	1.17%
27	Accuracy	3	0.88%
28	Availability	3	0.88%
29	Cost	3	0.88%
30	Effectiveness	3	0.88%
31	Reuse	3	0.88%
32	Value	3	0.88%
33	Compatibility	2	0.58%
34	Decision	2	0.58%
35	Expectation	2	0.58%
36	Policy	2	0.58%
37	Responsiveness	2	0.58%
38	Service Failure	2	0.58%
39	Stability	2	0.58%
40	Transaction convenience	3	0.88%
41	Usage	2	0.58%
42	completeness	1	0.29%
43	Government affairs openness	1	0.29%
44	Humanistic care	1	0.29%
45	Job Relevance	1	0.29%
46	Knowledge	1	0.29%
47	Needs	1	0.29%
48	Organizational Context	1	0.29%
49	Perceive fit	1	0.29%
50	Perception	1	0.29%
51	Procedural Justice	1	0.29%
52	Process	1	0.29%
53	Product	1	0.29%
54	Qualitative feedback	1	0.29%
55	Recommendation	1	0.29%
56	Regulatory Changes	1	0.29%
57	Regulatory Compliance	1	0.29%
58	Relative Advantage	1	0.29%
59	Resources Acquisition	1	0.29%
60	Service Delivery	1	0.29%
61	Strategic Reaction	1	0.29%
62	Strategic Regulation	1	0.29%
63	Systems' attributes	1	0.29%
64	Technology readiness	1	0.29%

In addition to the table 6 which identifies the subject which the satisfaction was measured toward. These subjects were mainly 2; the e-government Service, and the e-government Portal/ website, the rest of the 7

items were addressed less than 5 times. Whereas, table 7 identified the users whose satisfaction was measured, who were mainly; Citizens and users, whereas the rest of the 6 categories were addressed less than 6 times.

Table 5: subject which the satisfaction was measured toward.

	Satisfaction Toward?	No	%
1	Service	43	61.43%
2	Portal/ Website	19	27.14%
3	Information System	4	5.71%
4	Usage	1	1.43%
5	Web Security	1	1.43%
6	Mandatory Adoption	1	1.43%
7	Performance	1	1.43%

Table 6: Users who the satisfaction was measured toward.

	Satisfaction Of Who?	No	%
1	Citizen	35	50.00%
2	Users	24	34.29%
3	Businesses	5	7.14%
4	Customer	2	2.86%
5	Employees	2	2.86%
6	Students	2	2.86%

Finally, table 8 identified the percentage of the articles that studied Voluntary Vs. Mandatory cases which was mostly voluntary cases, nearly 95% of the cases were voluntary cases.

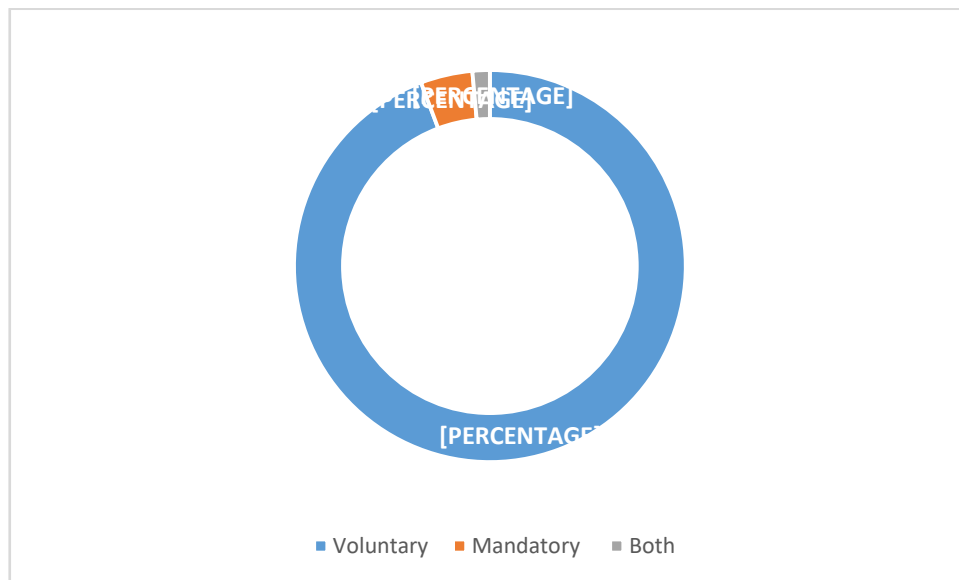


Figure 4: percentage of the articles that studied Voluntary Vs. Mandatory cases

IV. LIMITATION AND FUTURE WORK:

The first limitation in this study is the database used "SCOPUS & Google scholar" which is one of the most spread databases which indexes high quality peer review papers. For future studies it is recommended to choose other data bases as well such as ISI.

V. CONCLUSION:

This study addressed one of the most important elements contributing literature of e-government studies presenting the bibliometric aspects of most cited or productive articles, authors and journals, as well as a systematic review of the content of these articles identifying the most used independent, depended, and other variables that are used frequently with the E-Government Satisfaction.

In this Systema-Bibliometric Paper all the articles cited in SCOPUS & Google Scholar databases which have in their title the keyword "E-Government Satisfaction".

The five main bibliometric results; publication count per year, top cited papers, authors and journals, and most frequent keywords used were clarified and illustrated via tables and figures. Setting the path clear for the interested researchers to start at the exact qualified literature that is related to the subject.

Further important information was clustered such as; the most important (frequently used) independent variables, dependent variables, users that their satisfaction was measured and toward what their satisfaction was in addition to a percentage of studies which addressed the cases of voluntary or mandatory use of the subject of the study.

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