



How Do Governments Leverage the Use of Social Media? A Systematic Review

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Abstract

As social media has embedded in our daily lives, having a presence and activity on social media is no longer an option but a requirement for private and public sectors. While businesses successfully leverage social media to gain a competitive advantage, the lack of literature on government social media success stories has drawn academic attention. This paper aims to synthesize the existing literature across multiple fields to describe the state of government and social media use and conceptualize an integrative social media use model for governments. Fifty-two relevant existing studies were carefully analyzed. This paper first discussed the trends, foci, methodologies, contexts, samples, and theoretical foundations adopted in government and social media research. This paper also developed a model that explains the determinants, public social media engagement and impact of government social media use and highlighted the direction for future research. This study contributes to the field by conceptualising a model of government social media use. To government leaders and policymakers, the study offers avenues for better understanding factors shaping citizens' decisions to use and engage with government social media pages and design adequate strategies to maximise the benefits of delivering public services to citizens through social media.

Managerial relevance statement— Social media is an important part of e-government services delivery. Social media-leveraged governments are expected to gain benefits such as increased transparency and collaboration with the citizens in the decision-making and increased citizens' confidence and trust in the government. However, 80 per cent of government organisations are still at the initial or developing digital maturity stages as governments are reported using the platform merely to make announcements and news updates rather than getting citizens' engagement. Thus, this study consolidates and makes sense of the findings from previous studies to provide an integrative model to reflect the determinants and impact of social media use among government organisations. Having this proposed model, we aim to offer avenues for better understanding factors enabling and inhibiting citizens' decisions to use and engage with government social media pages and design appropriate strategies in managing the pages to maximise the benefits of delivering public services to citizens.

Keywords: Social media, Government, Citizen-centric services, e-Government, Public value.

1. Introduction

Social media such as Facebook, Instagram, and Twitter have revolutionised the way individuals communicate and engage with one another. Hence, having a presence and activity on social media nowadays is no longer an option but a requirement for individuals and organisations. There is longstanding evidence that businesses have fully leveraged social media to engage with their customers, run marketing campaigns and advertising, and conduct market research and product development [1, 2]. Social media use among the government worldwide has unprecedented growth in recent years. For instance, governments are adopting these emerging social technologies to communicate and engage with citizens [3, 4] and share information and deliver services more quickly and effectively [5], particularly during a crisis [6]. During the outbreak of COVID-19, we witnessed the governments worldwide using Facebook to report on case statistics and update the national policy [7]. Therefore, such governmental social media uses indicate that social media have become an important communication platform for the government to deliver up-to-date news related to the pandemic to citizens on time.

Indeed, the use of social media extends the early information and communication technology (ICT) landscape of government in the services delivery called the *e-government* [8] and is a part of the *government 2.0* phenomenon [9]. Social media-leveraged governments are expected to gain benefits such as increased transparency and collaboration with the citizens in the decision-making [10] and increased citizens' confidence and trust in the government [6, 11]. However, unlike businesses, the potential benefits of government social media use are not entirely clear and quite challenging to be realised, as 80 per cent of government organisations are still at the initial or developing digital maturity stages [12]. Evidence revealed that government organisations are currently using the platform merely to make announcements and news updates rather than engage with citizens (e.g. Arshad and Khurram [13], Schwalje and Aradi [14], Al-Aufi, Al-Harhi [15]). As social media evolves rapidly, concerns regarding the lack of governmental social media use success stories in public service delivery have increasingly attracted researchers' interest. For example, researchers like [16] and Hofmann, Beverungen [17] have examined what determines a successful government's use of social media in a metric form such as the number of likes, comments and shares on the social media page. However, we posited that the evaluation of governmental social media use should be viewed from the supply side (i.e. government social media) and the demand side, which examines what influences a citizen to interact and engage with the government through these novel platforms. These dual views on governmental social media use are still scarce [18, 19]. To understand this phenomenon, holistic insight into the dyadic relationships between social media, government, and citizens are needed [20-22].

Given the impressive body of literature on how the government has used social media in delivering public services to the citizens, this paper seeks to do a systematic review to achieve two objectives. First, this paper evaluates the current state of government and social media use research. Second, through this review, we develop an integrative model to represent an effective social media use between the government and citizens in public service delivery. We contribute by providing an in-depth understanding of how the government should use (or not use) such novel technologies and shed light on their impact and deriving aspects for future research. This study firstly describes the process of systematic literature search and identification. Secondly, we provide an in-depth description of the research findings on the state of government and social media use. Thirdly, the integrative model of government social media use is discussed. We conclude by summarising our findings, contributions, and future research.

2. Literature Search and Identification

This literature review adopted a formal systematic literature process for identifying and screening articles in various governmental social media use domains, as illustrated in Figure 1. This method offers the ground to synthesise the vast and scattered understanding on a topic into a more logical and consistent view of the subject [23-25]. For the identification of articles addressing government and social media phenomena, we searched for journal articles in the four significant databases named AIS Electronic Library, ACM Digital Library, Science Direct, and Emerald Insight by using the terms ("social media adoption" OR "social media usage" OR "social media implementation" OR "public value" AND ("government" OR "citizen"). These terms were keyed in the databases to limit the search result to a more relevant article. A total of 2955 articles from the search were screened and assessed based on the title and abstract, excluding articles not focusing

on social media adoption, usage, and implementation among government and reducing the number of relevant articles to 86.

The selected papers were downloaded and read in full. A second assessment has been made based on the following criteria. The first criteria exclude articles that provide no empirical data, such as abstracts, editorials, conference summaries, short papers, and book chapters. Second, all the non-English written articles must be excluded. Third, similar duplicate articles were removed. After these criteria have been fulfilled, ten articles have remained. After these selections had been made and downloaded, we conducted a further backward reference search to learn more about this body of knowledge development. This method analyzed the citation in selected articles related to the terms searched earlier. Forty-two articles (n=42) have been included, and 52 articles (n=52) have been selected for review in this study.

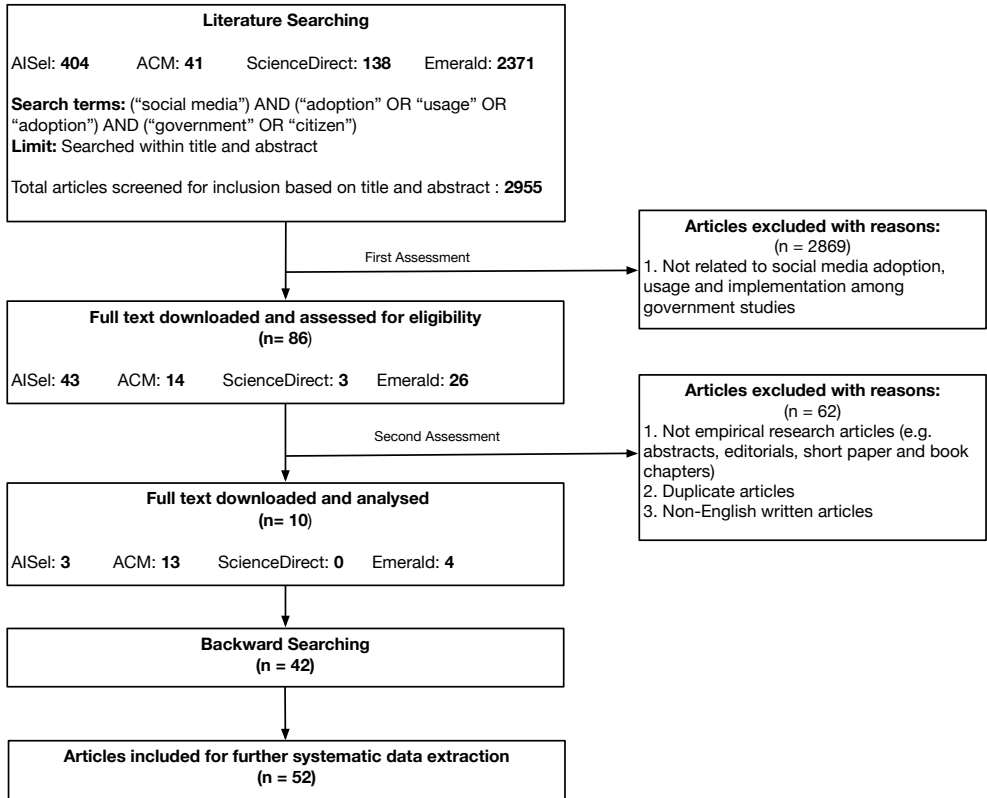


Figure 1: Systematic literature search

3. The Current State of Government and Social Media Research

This paper adopts Chan, Cheung [26] to conduct the literature review and analysis in social media and government research. These questions have effectively structured the literature review and synthesized existing research. Each of these questions is attended to in the subsequent sections:

- 1. What were the trends in government and social media research?
- 2. What were the foci in government and social media research?
- 3. What were the research methods used in government and social media research?
- 4. What were the research contexts and samples?
- 5. What were the theories and frameworks adopted in government and social media research?

3.1 Research Trends

The literature analysis revealed that government organizations' studies on social media usage have increased over the past decade, as shown in Figure 2. The publication of articles peaked between 2016 and 2020, with around six to eight articles each year. The number of publications is maintained, reflecting that government social media usage might have drawn the attention of researchers across disciplines.

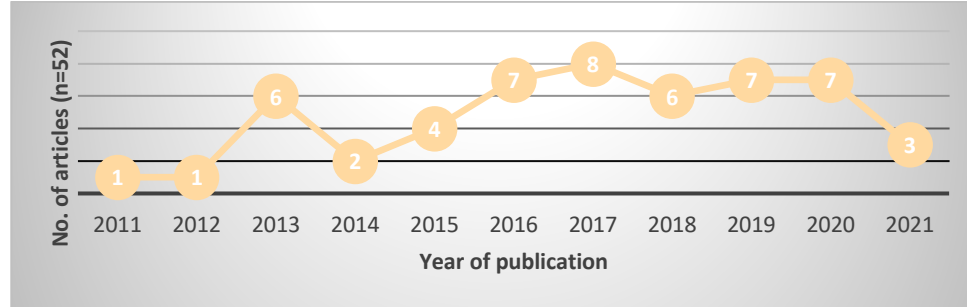


Figure 2: Distribution of journal articles based on the year of articles' publication

3.2 Research Foci

The literature analysis identified twelve research foci from the previous research on government social, as shown in Table 1. From the analysis, most studies focus on investigating the state and underlying factors that enable and inhibit social media adoption and usage among the governments (n=21). For instance, Arshad and Khurram [13] studied the enabling factors, Lovari and Bowen [27] investigated the barriers to social media use, and Vos, Sutton [28] examined factors that influence message sharing during a crisis. This is followed by studies focusing on developing measurements for citizen engagement on government's social media and the factors that lead to it (n=10). The third research focuses on understanding the type and characteristics of communication content on social media for the government (n=6). The subsequent research focuses on public value creation (n=4), where studies focused on the public value generation to interpret successful engagement. From the analysis, we also found three studies focus on assessing citizens' trust level towards government and the social media use and the factors to generate the trust (n=3). For instance, Al-Omoush, Palacios-Marque [29] investigated the impact of trust on citizens' sense of responsibility which consequently influenced their continuance intention to communicate with the social government. The sixth focus is on the barriers to social media adoption. For instance, Lovari and Bowen [27] investigated the barriers and challenges faced by the government in using social media platforms during the South Carolina flood. The next focus is on citizen perception of the government's presence and service delivery on social media (e.g., responsiveness) (n=2) and followed by the assessment of how the government implements social media (n=2). For instance, Valle-Cruz and Sandoval-Almazán [30] assessed the level of social media implementation from innovators to laggards. The eighth focus investigated the social media impact on the government (n=1). The study by Sharif, Troshani [31] found that perceived benefits, security risks, compatibility, and degree of formalization significantly influence social media's impact on local governments. The last focus is on user roles (n=1), where the study focused on how different actors behave on Twitter during the crisis [32].

Table 1: An overview of the research foci of government and social media research.

Focus	Study
Social media adoption and usage among government (n=21)	[33] [34] [35] [3] [36] [19] [37] [17] [13] [38] [39] [40] [41] [42] [43] [44] [45] [46] [21] [47] [48]
Citizen engagement (n=10)	[49] [50] [51] [52] [53] [54] [55] [56] [57] [58]
Posted content on social media (n=6)	[59] [60] [61] [62] [63] [28]
Public value creation (n=4)	[64] [65] [66] [67]
Trust (n=3)	[68] [69] [29]
Barriers in social media adoption (n=2)	[70] [27]
Citizen perception (n=2)	[15] [71]
Levels in social media implementation (n=2)	[30] [72]
Social media impact (n=1)	[31]
User Roles (n=1)	[32]

3.3 Research Methods

The most chosen research method used in existing government and social media studies is content analysis (n=16). Content analysis is a widely used research method in studying governmental social media as it allows the researcher to examine the social media page insights such as likes, comments, and shares from the citizens [55] and the posted contents by the government organisations [59]. Several studies incorporated different content analysis methods such as sentiment analysis (i.e., Hofmann, Beverungen [17] to appraise the polarity of the posted contents and descriptive analysis (i.e. Haro-de-Rosario, Saez-Martin [51] to assess citizen engagement in government social media pages using metrics. The second most adopted research method in government and social media studies is a survey (n=13). The survey is one of the frequently used methods used in research to describe and explain behaviour, which also offers a high validity level [73]. This is followed by mixed methods (n=12) methodology, where these studies collected, analyzed, and integrated the qualitative and quantitative data in a single study for triangulation. For instance, Alam [52] used mixed methods (e.g., content analysis and survey) to analyze the social media content and get narrative feedback from the government. Apart from the mixed methods, survey, and content analysis, we also found that case studies (n=5) and interviews (n=3) were used to study social media use among government organisations. The research methods used in the reviewed studies are summarized in Table 2.

Table 2: An overview of the research method used in government and social media research.

Research Method	Study
Content analysis (n=16)	[59] [30] [50] [34] [36] [53] [55] [60] [42] [28] [61] [62] [63] [45] [17] [51]
Survey (n=14)	[64] [15] [72] [49] [65] [35] [31] [56] [13] [54] [69] [46] [47] [29]
Mixed-methods (n=12)	
Case study and content analysis (n=6)	[66] [33] [39] [41] [32] [58]
Interview and survey (n=2)	[68] [57]
Content analysis and interview (n=2)	[71] [40]
Content analysis and survey (n=2)	[37] [52]
Case study (n=5)	[67] [3] [48] [43] [21]
Interview (n=3)	[19] [38] [70]

3.4 Research Contexts and Samples

From the countries' and regions' perspectives, this paper found out that most of the reviewed articles have been conducted in Asia continental (n=19), China (n=4), Malaysia (n=3), Saudi Arabia (n=3), Pakistan (n=2), Jordan (n=2), Oman (n=1), Nepal (n=1), Taiwan (n=1), Korea (n=1), and Kingdom of Bahrain (n=1), followed by American countries (n=15), which involved countries from the United States (n=12) and Mexico (n=3). The remaining population studied is Europe (n=12) and Australia (n=3). Most of these studies examined the phenomenon from the government perspective (n=35), while 14 studies are from the citizens' perspective. Three studies were conducted from both the government and citizens' views. Of the 35 studies conducted from the government perspective, 14 studies used human subjects as their unit of analysis. In comparison, 22 studies used non-human subjects such as Facebook and Twitter data as a unit of analysis. Facebook is the most studied platform in the reviewed studies (n=16), followed by Twitter (n=8). Meanwhile, twelve studies investigated social media platforms in general (e.g., Facebook and Twitter, and the other social media including Sina Weibo, Wechat, e-government, and Government 2.0). Table 3 shows the research context and sample overview.

Table 3: An overview of the research contexts and samples in government and social media research

No	Author	Geographical focus	Unit of Analysis	Social Media Platform
1	Warren, Sulaiman [57]	Malaysia	Citizen	Facebook
2	Song and Lee [56]	United States	Citizen	Social media in general
3	Hofmann, Beverungen [17]	German	Citizen	Facebook
4	Al-Aufi, Al-Harathi [15]	Oman	Citizen	Social media in general
5	Chu, Tseng [65]	Taiwan	Citizen	E-government and Social media in general
6	Aladalah, Cheung [49]	Saudi Arabia	Citizen	Gov 2.0
7	Guo, Zhang [54]	China	Citizen	Sina Weibo; Wechat
8	Valle-Cruz [64]	Mexico	Citizen	SM in general
9	Althaqafi, Foster [67]	Saudi Arabia	Citizen	SM in general
10	Hidayat, Rafiki [37]	Kingdom of Bahrain	Citizen	SM in general
11	Guo, Liu [47]	China	Citizen	Microblogging
12	Arshad and Khurram [13]	Pakistan	Citizen	Facebook; Twitter
13	Khan, Umer [69]	Pakistan	Citizen	Social media in general
14	Al-Omoush, Palacios-Marque [29]	Jordan	Citizen	Facebook
15	Shah and Lim [68]	Nepal	Citizen and Government	NA
16	Wang and Medaglia [43]	China	Citizen and Government	WeChat
17	Villodre and Criado [32]	Spain	Citizen and Government – Non-Human	Twitter
18	Magnusson, Bellström [3]	Sweden	Government – Non-Human	Facebook
19	Hofmann, Beverungen [17]	German	Government – Non-Human	Facebook
20	Khasawneh and Abu-Shanab [48]	Jordan	Government – Non-Human	Facebook
21	Valle-Cruz and Sandoval-Almazán [30]	Mexico	Government – Non-Human	Twitter and Facebook
22	Haro-de-Rosario, Saez-Martin [51]	Spain	Government – Non-Human	Facebook and Twitter
23	Bellström, Magnusson [39]	Sweden	Government – Non-Human	Facebook
24	Mishaal and Abu-Shanab [36]	Arab countries	Government – Non-Human	Facebook
25	Jukić and Merlak [34]	Slovenia	Government – Non-Human	Facebook
26	Marino and Lo Presti [59]	Europe	Government – Non-Human	Twitter
27	Nadzir, Harun [50]	Malaysia	Government – Non-Human	Facebook
28	Rahim, Ibrahim [55]	Malaysia	Government – Non-Human	Facebook
29	Chen, Min [53]	China	Government – Non-Human	Sina Weibo
30	DePaula, Dincelli [60]	United States	Government – Non-Human	Facebook
31	Sandoval-Almazan, Valle-Cruz [42]	Mexico	Government – Non-Human	Twitter and Facebook
32	Wukich [58]	United States	Government – Non-Human	Facebook
33	Vos, Sutton [28]	United States	Government – Non-Human	Twitter
34	Ross, Potthoff [62]	Berlin, London & Stockholm	Government – Non-Human	Facebook
35	Renshaw, Mai [63]	United States	Government – Non-Human	Twitter
36	Hagen, Neely [44]	Miami	Government – Non-Human	Twitter
37	Sutton, Gibson [61]	NA	Government – Non-Human	Twitter
38	Mainka, Hartmann [45]	NA	Government – Non-Human	Social media in general
39	Mossberger, Wu [33]	United States	Government	Facebook; Twitter; Flickr; Youtube; Blog
40	Mergel [19]	United States	Government	Social media in general
41	Oliveira and Welch [35]	United States	Government	Social media in general
42	Feroz Khan, Young Yoon [40]	Korea	Government	Twitter
43	Sharif, Troshani [38]	Australia	Government	Social media in general
44	Sharif, Troshani [31]	Australia	Government	Facebook
45	Alam [52]	Australia	Government	Facebook
46	Seigler [72]	United States	Government	Social media in general
47	Althaqafi, Foster [66]	NA	Government	Social media in general
48	Dekker, van den Brink [41]	United Kingdom and the Netherland	Government	Social media in general
49	Bermudez-Tamayo, Alba-Ruiz [46]	Spain	Government	Social media in general
50	Criado and Villodre [21]	Europe	Government	Twitter
51	Harrison and Johnson [70]	Canada	Government	NA
52	Lovari and Bowen [27]	United States	Government	NA

*NA : Not Available

3.5 Theories and Frameworks

In terms of underlying theories and frameworks used in understanding the government and social media phenomenon, we found that most of the reviewed studies (n=41) did not specify any theoretical base to examine their data because most of the studies are descriptive (e.g., Nadzir, Harun [50], Rahim, Ibrahim [55] or grounded their proposition from literature review (e.g., Seigler [72]). Eleven studies adopted one or

more theories to investigate social media adoption, citizen engagement, public value, and social media impact. These theories are Diffusion of Innovation (DOI), Public Value Theory (PVM), Empowerment Theory (ET), Social-Technical System (STS), Technology-Organization-Environment (TOE), Media Richness Theory (MRT) and Dialogic Communication Theory (DCT) and Stimulus-Organism-Response (SOR) as stated in Table 4.

Table 4: The overview of theories adopted in government and social media research

Name of theory	Theory Description	Application of Theory	Study
Diffusion of Innovation Theory (DOI)	This theory argues that there are five levels in adopting an innovation. The innovation needs to be communicated through specific platforms, embraced by social group members within a certain period.	To classify and interpret the government efforts in using Twitter and Facebook to communicate with the citizen.	[30] [42]
Public Value Theory (PVM)	This theory suggests that the performance of public services can be measured through public value creation that can be achieved through legitimacy and support and operational capabilities, also known as the Strategic Triangle.	To build a model to investigate public value creation by using the social media application.	[67] [49]
Empowerment Theory (ET)	This theory suggests that engagement and participation allow people to gain control over concerning issues, and this process is referred to as empowerment.	To explain how the gov2.0 enables public engagement, which consequently enhances public value.	[49]
Web Model Theory (Socio-Technical System (STS))	This theory posits that people and technology are part of a more extensive socio-technical system. The technology serves a technical approach that includes the processes, tasks, and technology to turn input to output. In contrast, the people serve in the social system, which considers the attributes of the people, their relationship, rewards system, and the structures of authority. This theory is referred to as “two jointly independent, but correlative interacting systems” by Bostrom and Heinen (1977).	To explore the interrelationships between various social media technology and various activities performed by the local government.	[35]
Technology-Organization-Environment (TOE)	This theory suggests that technology use at the organisation level can be determined through Technological, Organisational, and Environmental factors.	To determine the determinants of social media impact in government.	[31] [38]
Media Richness Theory (MRT)	This theory suggests that communication channels can be used effectively if media richness matches task ambiguity.	To examine the effect of media richness on citizen engagement.	[53]
Dialogic Communication Theory (DCT)	This theory refers to “any negotiated exchange of ideas and opinions” guided by two principles. First, those in dialogue do not have to agree, and secondly, dialogic communication is about intersubjectivity.	To study how dialogic loop facilitates citizen engagement.	[53]
Stimulus-Organism-Response (SOR) Model	This theory suggests that external environmental factors trigger a behavioral response through the stimulation of individual psychological and emotional state	To measure the effect of Gratification factors on individual GSM Continuance intention through the stimulation of their online experiential state.	[47]

Valle-Cruz and Sandoval-Almazán [30] adopted the *DOI* to classify and measure the social media implementation by local government in Mexico in five categories: innovators, early adopters, early majority, late majority, and laggards. Althaqafi, Foster [67] explained how the local government could generate public value through social media usage from the theoretical lens of *PVM*. Meanwhile, the study by Aladalah, Cheung [49] explored the role of empowerment in enabling public engagement and enhancing public value using *ET*. Oliveira and Welch [35] utilized the *STS* to explore the interrelationships between various social media tools and tasks performed by the government organization. Sharif, Troshani [38] and Sharif, Troshani [31] adopted the *TOE* to identify the technological and organizational factors influencing the Australian government's social media use. Chen, Min [53] used *MRT* and *DCT* to investigate how media richness, dialogic loop, and content type affect citizen engagement during crises. Guo, Liu [47] adopted the *SOR* model to investigate the effect of gratification factors as the stimulus, individual citizen's flow

experience and sense of belonging as an organism that subsequently affects their continuance intention (as a response) to engage with government social media.

4. Variables Related to Government Social Media Use

Twenty studies are analyzed from the fifty-one reviewed articles to develop a conceptual government social media use model. The remaining studies are not included because they focused on describing social media use from organizational insights and not on the interaction between government and citizens. For instance, the variables from Seigler [72]'s study were excluded as they focused on the determinants of social media adoption among government administrators and not on social media use from the government and citizen perspectives. Also, Khasawneh and Abu-Shanab [48]'s study were excluded because they only described the social media insights and offered the status finding of engagement level on the government social media official account. Table 5 shows the definition and meaning of the forty-eight government and social media use variables. The identified variables are sensibly analysed, categorised, and conceptualized into seven broad variables: platform quality, content quality, government service quality, perceived individual benefits, perceived behavioural control, platform use and perceived organizational benefits.

Platform Quality

We conceptualised *platform quality* from four variables: social media capability, perceived ease of use, social media type and comfort. This construct represents the attributes of social media platforms utilised by the government (i.e. type and capability) and citizens' perception of the platforms (i.e. easy to use and comfort). For instance, Althaqafi, Foster [67] found that social media's functionalities, features and characteristics positively drive citizen engagement when leveraged. While there are many social media platform types available online, the chosen social media used by government citizens should be popular and favourite among citizens of all ages, making communication more comfortable [16]. Thus, we defined platform quality as attributes of social media platforms regarding features and functionalities used by the government to deliver their services.

Content Quality

We conceptualized content quality from five identified variables: information quality, emotion, content type, media richness and dialogic loop. The importance of content in government social media has been highlighted by many researchers as it was able to attract the citizens' interest to engage with the post [59]. For instance, the content type is critical in successful communication between the government and citizens on social media [36, 53]. The information delivered by the government on social media should have a richness of media and triggers a dialogic loop such as stimulating public dialogue [53] as well as citizens' involvement requests, polls or reference to co-creation [17]. Other than that, Haro-de-Rosario, Saez-Martin [51] found that the sentiment of the posted content (or emotion), either in a positive or negative feeling, impacts the citizens' engagement. According to DePaula, Dincelli [60], the content provided by the government should include information provision, input seeking, online dialogue and offline interaction, and symbolic presentation. Therefore, we define content quality as the attributes of the government-generated and posted on social media in terms of accuracy, completeness, media richness, and sentiment of the content.

Government Service Quality

Government service quality is conceptualized from perceived responsiveness and political context variables. Perceived responsiveness refers to the overall support delivered by the government in terms of its responsiveness to the citizen's needs, demands, and opinions in the social media [13], while political context reflects the ideologies of the governing political party, be it a conservative or progressive party [51]. Government service quality is vital to drive the government to achieve democratic goals through social media. Haro-de-Rosario, Saez-Martin [51] asserted that a progressive governing party would likely

strengthen citizen engagement due to their modern ideology. When the government is progressive and responsive to the questions and needs of citizens, it will likely increase citizen engagement. Hence, the government service quality factor refers to the subjective evaluation of government service delivery through social media.

Table 5: Identified Variables Related to Government Social Media Use Success

Identified Variables	Definition	Study
Social media capability	Government's ability to make use of social media function, features, and characteristics to promote citizen engagement for government service delivery	[66]
Perceived Ease of Use	The difficulty of using social media as a technology for government services	[69]
Social Media Type	Social media platform used to engage	[51]
Comfort	Comfort use of social media for a comfortable communication	[16]
Information Quality	The completeness and accuracy of the information in online environment	[69]
Emotion	The positive and negative emotions in a social media post	[53]
Content Type	The type of topics posted on social media post	[53]
Media Richness	The richness of media in social media post that includes text only, pictures or GIFs or videos	[53]
Dialogic Loop	Dialogue between citizen and government on social media through the channel provided by government for raising questions, also to respond and share feedback	[53]
Perceived Responsiveness	The belief that the government is listening and care about what the citizens have to say	[13]
Political Context	The ideology of the governing party where conservative parties tends to execute activities of economic nature while progressive party are more likely to focus on social activities and citizen engagement	[51]
Group Incentives	The belief that incentives such as one's attachment, sense of duty and outcome benefits can be gained through social engagement	[57]
Sense of impact	The degree to which individual can influences the outcome of an activity	[74]
Competence	The belief that one is able to do the relevant behaviour competently	[74]
Meaningfulness	The value and importance of the task or its purpose, compared to one's standard	[74]
Sense of Control	The degree to which individual is having a choice in an activity	[74]
Citizen satisfaction	Positive feeling and pleasurable experience about using social media	[74]
Informational Support	Provision of information and access to information	[54]
Emotional Support	The extent to which individual's expression of spiritual support to others	[54]
Sense of Responsibility	The extent to which a citizen feels the responsibility for the well-being of the state	[54]
Perceived Usefulness	Citizen's perception on the usefulness of government social media as compared to offline or e-government website services	[69]
Trust propensity	A stable within-party factor that will affect the likelihood the party to trust	[57]
Trust in social media	The actual relationship between users and technology in terms of functionality, helpfulness, and reliability	[67]
Perceived Privacy	Citizen's perception on their ability to control and monitor their information that is being disclose, use, and reuse in online environment	[69]
Perceived Security	Citizen's perception on the protection level against the security threat in online environment	[69]
Perceived Risk	Citizen's perceptions on the risk and severity of Covid-19	[29]
Structural Assurance	The belief that policies and technological structures are designed and implemented in the technology to assure user's right	[69]
Personal Involvement	The degree to which a user is personally involved in or has some relationship with an event	[54]
Engagement	Citizen's participation in social issues within the social media community	[51]
Use	Citizen's use of social media	[56]
Participation	The level of citizen activities and behaviours in social media	[74]
Intention to participate	The intention to participate with government on social media	[69]
Public Value	Refers to what the public values	[74]
Operational Value	The extent to which social media effectively increases economic and non-economic efficiency and effectiveness	[65]
Political Value	The extent to which social media provides opportunities for the public to express their demands, exchange opinion or obtain information based on the principles of openness and fairness	[65]
Social Value	The extent to which social media enhances capacities, mutual trust and welfare of individuals and groups in society and contribute to environmental sustainability	[65]
Ethical Value	The extent to which social media assist the creation of values such as integrity, accountability and transparency.	[67]
Transparency	The availability of information about the government that allows the citizen to monitor the workings or performance of government	[56]
Trust in government	The trustworthiness or the confidence citizen has towards the government	[57]
Information Source Preference	The extent to which citizen chooses government social media as a mean of acquiring information	[54]
Innovation	The implementation of a new or significantly improved product or process which results in significant improvements in and/or a complete transformation of outcomes in the form of efficiency, effectiveness and/or quality	[67]
Collaboration	Increase exchange with citizen or collaboratively work with other government stakeholders on innovative ideas to fulfill the mission of government	[19]

Perceived Individual Benefits

We conceptualized perceived individual benefits from ten variables: group incentives, sense of impact, competence, meaningfulness, sense of control, citizen satisfaction, informational support, emotional support, sense of responsibility, and perceived usefulness. When citizens perceive that doing something benefits them, they will likely engage in that activity more often. For instance, Warren, Sulaiman [57] found that group incentives affect civic engagement behaviour. Also, when citizens believe that their interaction with the government on social media can make an impact, meaningful and give them choice and rights, they will feel more empowered and satisfied and are more likely to engage with the government [74]. The social support received by the citizen in terms of informational and emotional support will also influence their engagement with the government's social media [54]. As citizens perceive that engaging with the government is useful and strengthens their sense of responsibility, their engagement will also increase [54, 69]. Therefore, we conceptualized perceived individual benefits as the extent to which citizens believe engaging with the government on their social media pages benefits them.

Perceived Behavioral Control

Perceived behavioural control is conceptualized from seven variables: trust propensity, trust in social media, perceived privacy, security, risk, structural assurance, and personal involvement. According to Taylor and Todd [75], perceived behavioural control in the IS research is defined as internal and external force perceptions on a behaviour. When a behaviour is within a citizen's control, he or she will likely perform more of the behaviour. For instance, ALotaibi, Ramachandran [76] and Al-Omouh, Palacios-Marque [29] posits that trust is the significant determinant of citizens' intention to use governmental social media. Similarly, Althaqafi, Foster [66], Althaqafi, Foster [67] also found that citizens' trust significantly influences citizen engagement in social media. Another study also revealed that trust would reduce online transaction risk and ambiguity and eventually encourage individuals to use social media [69]. Other than that, perceived behavioural control also involves citizens' perception of security and trust. For example, Khan, Umer [69] found that perceived privacy, security, and structural assurances are associated with trust influencing intention to participate. Citizens' perception of their ability to control their information, the protection level against threats, their belief in legal and technological structures implemented on the social media platform, and their trust in government gives a sense that their engagement with the government is within their control. Thus, we define perceived behavioural control as to how citizens perceive privacy, security, risk and trust towards engaging with the government on social media platforms.

Platform Use

We conceptualized *platform use* from citizens' engagement, use, and intention to participate with the government social media page. Previously, citizens' intention to use and engage will lead to social media use success with the generation of net benefits [77] and has been regarded as a powerful predictor of actual use [78]. While Althaqafi, Foster [67] and Aladallah, Cheung [49] found that citizen engagement led to public value creation and DeLone and McLean [77] postulated that system use will generate net benefit, we argue that platform use by citizens generates such benefits for government. Therefore, we posit that platform use will positively influence the perceived organisational benefits for the government.

Perceived Organizational Benefits

We conceptualized perceived organizational benefits from variables such as the public, operational, political, social, and ethical values, transparency, trust in government, information source preference, innovation, and collaboration. Public value is the value gained by the citizen from the government, which can evaluate the government's performance [79]. Government organizations leveraging social media users are expected to create public value for the citizen in the context of public sector service delivery [80, 81].

Chu, Tseng [65] further elaborated on public value in terms of operational, political, and social value. A previous study found that citizen engagement increased innovation and transparency [67]. The government will be more transparent and improve towards complete transformation. Thus, we define perceived organizational benefits as the degree to which the citizen believes using social media benefits the government, such as generating public value and increasing transparency and collaboration. Table 6 summarizes the result of conceptualising all the variables related to government social media use.

Table 6: Conceptualised Variables Related to Government Social Media Use Model

Dimension	Conceptualised Variables	Identified Variables	Warren, Salaiman [56]	Song and Lee [55]	Chu, Tseng [64]	Aladalah, Cheung [48]	Guo, Zhang [53]	Althaqafi, Foster [66]	Arshad and Khurram [13]	Khan, Umer [68]	Haro-de-Rosario, Saez-Martin [59]	Misbaal and Abu-Shanab [35]	Marino and Lo Presti [58]	Chen, Min [52]	Mergel [19]	Althaqafi, Foster [65]	Hofmann, Beverungen [17]	Renshaw, Mai [62]	Ross, Pothhoff [61]	Sutton, Gibson [60]	Vos, Sutton [28]	DePaula, Dincelli [59]
Technological Determinants	Platform Quality	Social media capability						<		✓						<	<					
		Perceived Ease of Use																				
		Social Media Type										<										
		Comfort										✓										
Governmental	Content Quality	Information Quality							✓	✓												
		Emotion									✓										✓	
		Content Type										✓	✓	✓				✓	✓	✓	✓	✓
		Media Richness										✓		✓			✓	✓	✓	✓	✓	✓
		Dialogic Loop												✓			✓					
	Government Service Quality	Responsiveness							✓		✓											
		Political Context									✓											
Individual	Perceived Individual Benefits	Group Incentives	✓																			
		Sense of impact				✓																
		Competence				✓																
		Meaningfulness				✓																
		Sense of Control				✓																
		Citizen satisfaction				✓																
		Informational Support					✓															
		Emotional Support					✓															
		Sense of Responsibility					✓															
	Perceived Behavioral Control	Perceived Usefulness								✓												
		Trust propensity	✓																			
		Trust in social media						✓								✓						
		Perceived Privacy								✓												
		Perceived Security								✓												
		Structural Assurance								✓												
		Personal Involvement					✓															
Use	Platform Use	Engagement	✓					✓			✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
		Use		✓																		
		Participation				✓	✓		✓													
		Intention to participate								✓												
Outcome	Perceived Organisational Benefits	Public Value				✓																
		Operational Value			✓			✓								✓						
		Political Value			✓			✓								✓						
		Social Value			✓			✓								✓						
		Ethical Value						✓								✓						
		Transparency		✓				✓	✓	✓	✓	✓			✓							
		Trust in government	✓	✓					✓	✓												
		Information Source Preference					✓															
		Innovation						✓								✓						
		Collaboration										✓			✓							

5. Toward an Integrative Government Social Media Use Model

The seven conceptualized variables identified in the previous section capture and explain how governments can leverage the use of social media. Our literature review suggests and envisages these variables as sets of interacting Determinants, Usage and Outcome (DUO) variables of government and social media research. Figure 3 depicts the integrative government social media use model and the relationships between the DUO variables. For the Determinants variables, the *technological* (i.e. social media platform), *governmental*, and *individual* determinants have collectively influenced the citizens' use and engagement on the government's social media page. We denote *technological* determinants are related to the characteristics and capabilities of the social media platform used by the government to deliver their services, such as *platform quality*. Each social media platform has unique features that have different engagement and organic reach regarding who sees the post, likes comments, shares the post, and responds to an event or answers questions [51]. For instance, Haro-de-Rosario, Saez-Martin [51] found that Facebook is preferred, compared to Twitter, for communication in Spanish local government. The result of the study indicated that these platforms offer different levels of comfort and easiness in using them. Thus, it is crucial for the government to assess the right social media for delivering public services. We posit that platform quality is vital in encouraging citizens to use government social media.

Governmental determinants generally relate to attributes of the government-generated *content quality*, and their *service quality* on social media in terms of responsiveness will positively influence citizens' platform use. For the content quality, the government must be critical about information quality, emotion, content type, media richness and dialogic loop. Previously, Vos, Sutton [28] found that severity and efficacy information has a better chance of passing to others in risk communication. Chen, Min [53] found that dialogic loop and positive emotion encourage citizen engagement. As Chen, Min [53] found the negative impact of media richness on engagement, Ross, Potthoff [62] found that low richness negatively affected the number of shares while images and videos received more engagement. In this study, we argue that the government must post complete, accurate content with positive emotion, high media richness, and a dialogic loop to encourage citizen engagement. Therefore, we posit that content quality will positively affect citizen's platform use. From the perspective of service quality, the government's responsiveness and political context are critical for citizen engagement. Previous studies revealed that a government with higher responsiveness encouraged more citizens to engage in social media [13, 51]. Responding more often and timely to the citizen's comments and need gives the impression that the government cares about the citizen's feelings and thoughts. Not only that, but a progressive government will also influence how the government rule and strengthen public engagement. Thus, we posit that government service quality will positively increase the platform used by the citizen.

Individual determinants refer to *perceived individual benefits* and *perceived behavioural control* that influence citizen platform use. For instance, Aladalah, Cheung [74] come up with a model to explore the citizen empowerment's impact on citizen engagement and satisfaction, resulting in public value creation. They proposed that when citizens believe in having a sense of impact, competence, meaningfulness, and sense of control, it will increase their engagement in government social media as they have a sense of control over the citizen-government relationship. Prior literature also found a significant positive relationship between perceived usefulness and group incentives with social media use [57, 69]. When citizens perceive that they will gain positive benefits from interacting with the government's social media, they will likely engage often. Therefore, we postulate that perceived individual benefits positively influence citizens' platform use. In perceived behavioural control, we postulate that citizens will want to interact more with the government when they believe they have control over their interaction with the government. For instance, users are likely to be exposed to privacy and security threats in an online environment. Thus, knowing that their privacy and security are protected while trusting the technology will increase their sense

of control to perform the behaviour. Therefore, we posit that perceived behavioural control will increase citizens’ platform use.

After social media use by citizens to engage with the government, their behaviour will change [54]. Apart from perceived individual benefits, we also conceptualised perceived organizational benefits as the *outcome* of citizen-government interaction. For instance, Song and Lee [56] asserted that when citizens use government social media as their information source preference, they can get real-time and latest news quickly, which will increase their perception of a higher level of transparency. This increases their trust in the government [13, 56]. Another value generated as a result of citizens’ use of government social media is the public value [74]. Chu, Tseng [65] and Althaqafi, Foster [67] listed the types of public value, such as operational value, political value, social value and ethical value, which result from citizen platform use. Citizen engagement on government social media also strengthens innovation and collaboration where the government is improving and collaborating more with citizens on public issues. Therefore, we posit that citizen’s platform use will generate perceived organizational benefits.

To conclude, considering the determinants, usage and outcome variables unearthed from the literature as positively related allows us to theorize how to leverage the governmental social media use. This integrative government social media use model would allow governments to explore the range of practices, mechanisms, and guidelines, which would maximise their expected benefits of using social media to deliver public services to citizens.

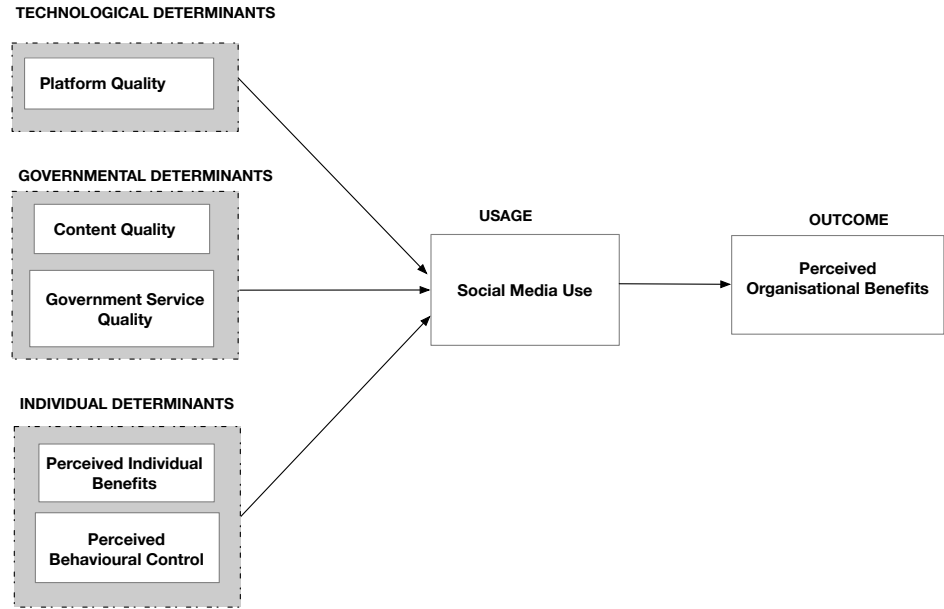


Figure 3: An Integrative Government Social Media Use Model

5. Discussion, Contribution and Future Research

In this study, we reviewed the literature to investigate the phenomenon of governmental social media use and understand how a government organization can leverage its social media use in public service delivery. We addressed our first objective by delineating the research trends, foci, methods, contexts, samples, and theories and frameworks in government and social media studies. First, our review showed that the research on government and social media trends is still in its infancy. Despite the rate and level of social media adoption among governments increasing over the years, the potential benefits of social media are not yet fully leveraged by government and citizens. More research is needed to examine how the governments adopt social media and what are the roles and changes in organizational arrangement

required to utilise social media effectively and sustain them for potential benefits. Second, we found that the most focused area of research is social media adoption and usage and citizen engagement, and there was a minimal focus on areas like social media impact, as highlighted by Sharif, Troshani [31]. More studies are required to understand the impact of social media on government and citizens and facilitate the government and policymakers to plan their social media use strategies to approach citizens and promote engagement. However, we argued that social media has its dark side. More study is needed to grasp the potential impact of social media use on the government and citizens from the bright and dark sides.

Third, we showed that the content analysis method on non-human data (i.e. government social media page data) had been predominantly used as the research method. However, engagement insights such as likes, comments, and shares do not provide enough evidence that government and citizens have meaningful engagement. More studies are needed to explain the determinants influencing users to like, comment, and share the government social media post [82]. Future empirical studies can explore mixed methods that use the government and citizens as their unit of analysis to look forward and integrate heterogeneous insight from two perspectives in the same research context. Fourth, our review also identified that the popular studied social media tools are mainly Facebook and Twitter. While different social media platforms are targeting different demographic of citizens, more studies need to examine the use of rising social media platforms like Instagram and Tik Tok among governments. Future studies should also study different platforms to see if there is a difference in their roles and effectiveness in public service delivery.

Fifth, this review found that only a few studies have adopted theories in their studies. However, these studies have been employed within a sole research context, such as within a particular region or certain group of participants. For example, Valle-Cruz and Sandoval-Almazán [30] and Chen, Min [53] have adopted DOI theory, Media Richness, and Dialogic Communication theory in their studies but only focusing on the content analysis of the government social media post. Other than that, Oliveira and Welch [35] have adopted the web model theory and surveyed the top managers of the government. Due to the differences in context, these theories need to be expanded and improved to a new context to comprehend the government social media research better. As the relationship between government and citizens in social media is dynamic, no single theory and framework can explain why and how the government and citizens think and behave. Thus, future research should integrate existing theories and frameworks to holistically explain government social media phenomena.

We addressed our second objective by developing an integrative model of how the government can leverage social media in public service delivery from DUO views. This integrative government social media use model suggests several implications for practice and future research direction. First, the government's social media platform choice is critical, considering that many different types of social media tools have different features and capabilities and have different impacts on communication and the type of audience. The government's official social media platforms must be a widely accepted communication medium by citizens with many active users and easy to use. The visibility of the government's presence on popular social media platforms might increase citizens' engagement. Therefore, future research needs to explore the effectiveness of each social media platform in delivering public services and enhancing engagement among different age groups of citizens.

Second, the content diversity generated by the government on social media is the key to citizen engagement. For instance, the governments must assess the type, media richness and emotion of content they post on social media to attract citizens to engage with them. The content characteristics can be informational, gain citizen interaction and deliver public service purposes [21]. In addition, the government also need to consider the media richness of each post depending on a given situation. For instance, plain text content is more influential than pictures and videos during a crisis, and hashtags, mentions, and questions is effective in attracting citizens engagement [53]. Future research should study how the content characteristics such as richness, supportive and accuracy can catalyse citizen engagement with the government. Third, although

social media is an alternative communication channel for public service delivery other than online systems and websites, the government needs to respond to every comment and message timely and accurately to promote citizen engagement. The slow responsiveness of citizen posted comments inhibits citizens from engaging with the government on social media platforms. Also, more studies are required to understand the new changes in government using social media in their services and how to measure their public service delivery performance on social media.

Fourth, even though government is using social media platform delivery, without the citizen engagement, the potential benefits its use cannot be realized. Thus, the government plays a vital role in creating awareness of potential individual benefits such empowerment and increased a sense of belonging among citizens to increase their engagement. In addition, how citizens perceive their privacy, rights, and level of protection against the risk and threats in engaging with the government on social media is critical in determining their intention to use. Therefore, the government need to be transparent on its social media use regulations to protect citizens' digital rights. A transparent government that doesn't hide too much information from the citizen is likely to be more trusted by the citizens [13, 56]. Future research needs to explore these cognitive sides of the citizens who engage with the government on social media and what impact on their behaviour.

6. Future Research and Conclusion

This paper comes with some limitations that could be addressed in future research. The literature search for this article was limited to four databases only, and all included papers are journal papers. Given that there are many types of sources in literature, such as conference proceedings, it might provide further insights into the research. Future studies could explore these sources to add to the literature. Furthermore, this paper develops an integrative government social media use model using twenty-two relevant previous studies. Thus, it cannot guarantee that all the significant variables contributing to social media use success among government organisations are covered in this review in general.

In conclusion, this paper contributes to the field with an integrative model synthesized from previous studies to predict the government's social media use to engage with citizens. Here, we propose a set of propositions to be confirmed in future empirical studies. Even though the future empirical findings do not confirm all the propositions embedded in our integrative model, this study will still contribute to the field by facilitating in-depth insight into the phenomenon of government social media. This study will assist researchers to know which methodologies and underlying theories from prior literature that can be applied to study government social media use and which contexts, or sides of social media used in government demand further study. The message from our study is that effective social media use by governments requires the amalgamation of technological, governmental, and individual determinants, which leads to social media usage by citizens and expected organizational benefits. To government leaders and policymakers, the study offers avenues for better understanding determinants shaping citizens' decisions to use and engage with government social media pages and design adequate strategies to maximise the benefits of public services delivery to citizens via social media.

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21 July 2022

Dear Professor Tugrul U. Daim,

We wish to submit a new manuscript entitled “*How Do Governments Leverage the Use of Social Media? A Systematic Review*” for consideration by IEEE Transactions on Engineering Management.

We confirm that this work is original and has not been published before nor is it currently under consideration for publication elsewhere.

In this paper, we consolidate and make sense of the findings from previous studies to provide an integrative model to reflect the determinants and impact of social media use among government organisations. This is significant because 80 per cent of government organisations are still at the initial or developing digital maturity stages as governments are reported using the platform merely to make announcements and news updates rather than getting citizens’ engagement. This study attempts to what are the salient determinants that shape citizens’ decisions to use and engage with government social media pages as well as the impact of their use and engagement. Results from the study proposed an integrative government social media use model. Our study contributes by delineating the importance of chosen social media platform, content quality, government service quality on the social media, citizen’s perceived individual benefits and behavioural control in promoting social media usage among citizens. The paper should be of interest to both academicians and practitioners in the areas of government and social media use.

Thank you for your considering of this manuscript for publication in your esteemed journal.