A systematic literature review and a proposed model on antecedents of trust to use social media for e-government services

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1. Introduction

In recent years, the world has witnessed an increasing interest in reshaping the public sector by using information and communication technologies (ICTs) to provide services to citizens and other stakeholders. This phenomenon was referred to as e-government by the United Nations (Samijadi, 2017). E-government has introduced new dimensions to promote public services and the process of governance. Government organizations both in developed and developing countries are increasingly investing to harness the power of ICTs as mediating tools to address citizens’ concerns towards their access to information, increase organizational transparency and support collaboration and engagement between government businesses and citizens (Khan, 2015). Social media which is a part of web 2.0 applications is the latest step to use internet or ICT enabled services by the government. Many governments across the world have established their social media presence to promote interactive networking and communication with the public. Social media offers an opportunity for government organizations to be more accessible, responsive and efficient than before, and at the same time, it allows the public to express their views on government policies and the quality of government services (Park et al., 2015). Social media enables government organizations and executives to increase participation and engagement which were also the primary goals of developing most e-government projects (Hao et al., 2016). It has the potential to breed accountability and transparency of governments towards their citizens and stakeholders through increased participation and collaboration with the government (Hao et al., 2016).
The e-government survey of the United Nations in 2016 reflects that now every 4 out of 5 countries have incorporated social media links in their national web portals. However, the efforts of government organizations and the potential values of social media for e-government services cannot be displayed without addressing citizens’ acceptance of such services (Khan et al., 2018b).

Trust has been identified as a major determinant for citizens’ adoption of e-government services (Abu-Shanab, 2014). The more citizens’ trust in e-government services the better is the chances for their acceptance of such services (Bélanger and Carter, 2008). However, despite the importance of trust, there are limited studies on how to develop citizens’ trust to use e-government services (Alzahrani et al., 2017). There is a missing gap of research in the literature to systematically explore antecedents of citizens’ trust in e-government services from multiple dimensions. In addition, the context of using social media for e-government services as being a new approach has not received much attention in previous studies. Though the literature has highlighted the need for trust to encourage citizens’ participation in government social media services (Park et al., 2015) but there is little understanding about the factors influencing their trust to use such services (Khan et al., 2018b).

The use of social media is a newly emerging practice of e-government with little empirical evidence. The success of such e-government initiatives strongly depends on citizens’ trust and their acceptance of these services. Thus, there is a need for government organizations to understand citizens’ trust factors to promote their participation in social media-based services of e-government. This study uses a systematic review approach to collect and analyze published studies with an objective to determine the current state of research on various trust aspects of e-government services. This study contributes to provide a comprehensive understanding of multiple dimensions of citizens’ trust in e-government services and proposes a new model that identifies antecedents of citizens’ trust in the context of using social media as a technology platform for e-government services. The findings of this study also provide useful insights and recommendations for researchers about the areas where more research is needed in the context of citizens’ trust to use social media as a new practice for e-government services. The paper is organized as follows: First, the methodology for the systematic literature review is provided, which is followed by a discussion about the results of the review. The next section of the paper presents the proposed model and finally, the conclusion is presented with some limitations and recommendations for future works.

2. Methodology

A systematic literature review (SLR) has been selected as the methodology of research in this paper. The systematic literature review (SLR) uses some detailed and rigorous criteria to explore, critically evaluate and synthesizes all the literature on a specific topic (Salahuddin and Ismail, 2015). This paper uses a systematic literature review methodology proposed by Brereton et al. (2007) which is used by many researchers consistently in the field of software engineering and information systems. Three significant phases should be adopted to identify related articles in IS research. Their phases are: Planning the review, conducting the review and documentation/reporting of review. The process followed in these phases is discussed in the next section (Brereton et al., 2007).

The planning phase explains the research flow to conduct the review. It involves the development of research questions, the research strategy to search the databases/resources based on some inclusion and exclusion criteria and the data extraction from selected studies. In the review phase, the research work is performed and finally, the data reporting phase involves an analysis of the findings based on the research objectives of the study (Najafabadi and Mahrin, 2016).

2.1. Planning the review

The first step of this phase is to specify the research question of the study. The research questions of this study are as under:

**RQ1:** What is the influence of trust towards citizens’ acceptance of e-government services?

**RQ2:** What are the antecedents of trust in the context of using social media as a technology platform for e-government services?

Published studies for this research were identified through seven electronic databases: Scopus, IEEE, ACM, Science Direct, Springer link, Taylors and Francis and Google Scholar. The reason for selecting these databases is that they provide the most important and the high impact journals and conference proceedings from the field of information systems in general and particularly in the context of e-government and social media services. After an initial search of the selected databases, additional reference scanning was carried out to ensure that nothing is missed to select a comprehensive set of studies related to this research. The search keywords were chosen to find relevant studies in respect of factors influencing citizens’ trust in e-government and social media services which include: “Trust”, “citizens trust”, “e-government”, “social media factors”, “government social media”, “antecedents of trust”, “social networking sites”, “adoption factors”, and “trust factors”. This search resulted to initially identify 291 articles.

2.2. Conducting the review

To conduct the review a systematic analysis of each paper was carried out by reading their abstract to select relevant papers meeting the inclusion
criteria, as follows: Papers published in English, published in the years from 2007 to 2017, and should have a relevant discussion of trust factors in context of e-government or government social media services. The articles must represent citizens’ trust perspective in using e-government services or government social media services. Those articles which are based on the implementation issues, strategies or organizational challenges of e-government or social media services and the studies representing government organizations’ perspective on e-government were excluded from this study. Table 1 shows the inclusion and exclusion criteria for this study.

Table 1: Inclusion and exclusion criteria

| Inclusion criteria                                                                 | Exclusion criteria                                                                 |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| • English papers including conference papers, journal papers, and book chapters. | • Studies that are not published in English.                                       |
| • Papers focused on e-government websites or government social media services with a relevant discussion of trust and other adoption factors. | • Studies that are not related to the research questions of this paper.            |
| • Published from 2007 to 2017.                                                    | • Duplicate studies in terms of their title or content.                            |
|                                                                                 | • Short papers (e.g. poster).                                                     |

Of the articles studied, 32 were found relevant to meet the objective of this study. In addition, the reference scanning was carried out to ensure if any further relevant articles were not missed in the initial search. After this process, three more articles were found relevant to this study. Thus, finally, a total number of 35 articles were found to meet the objective of this study. Fig. 1 represents the review process which was followed to check whether the selected studies meet the inclusion/exclusion criteria in this paper.

![Fig. 1: The review process of the study](image-url)
2.3. Data reporting

The data collected from 35 articles are reported in Table 2. The first column shows the ID of the paper, which is used to refer to the paper in later discussions. The second column shows the article reference, the antecedents of trust are classified as technology, government, risk and citizens aspects in third, fourth, fifth and sixth columns. The seventh column identifies the dependent variable used in selected studies, eight-column identifies theories or models adopted in selected studies and finally, the ninth column shows major findings resulted from selected studies.

Table 3 shows the numbers of papers found through keywords search from each of the selected databases. The first column represents the database source. The second column shows the result of the initial extraction of papers from each database. The third column shows the number of papers selected from each source after the elimination of exclusion criteria and following the inclusion process. Finally, the fourth and fifth columns reflect the percentage of relevant studies from each source and percentage of all the relevant selected papers respectively.

Table 4 represents the numbers of a type of study from all selected papers. The major contribution in this systematic literature review is of journal papers that represent around 69% of the selected papers. The conference proceedings and book chapters stand in second and third place of contribution by 28.5% and 2.8% respectively.

| ID  | Reference                          | Technology                        | Government                        | Risk                          | Citizens                      | Dependent variable                      | Findings                                              |
|-----|------------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-------------------------------|----------------------------------------|------------------------------------------------------|
| S1  | Lee and Lei (2007)                 | Trust in government website       | ×                                 | ×                             | ×                             | Intention to use e-government services | Trust and compatibility are important factors towards citizens’ intention to use e-government services. |
| S2  | Bellanger and Carter (2008)      | Trust of the Internet             | Trust of the government           | ×                             | Disposition to trust           | Intention to use                        | The results show that the trust of the internet and the trust of the government are positively related to citizens’ intention to use e-government. |
| S3  | Cole (2009)                       | Trust in technology               | Perceived usefulness              | Organizational trustworthiness | Privacy concerns; Risk perception | Demographic characteristics; Internet experience; Propensity to trust | Disposition to trust positively influences the trust of the internet and the government. |
| S4  | Lean et al. (2009)                | ×                                 | ×                                 | Intention to use e-government services | Trust in e-government         | Online privacy; Strength of online non-reputation; Online authentication | Online privacy and perceived strength of online non-reputation is positively related to trust. |
| S5  | Wang and Lu (2010)                | Trust in internet                 | Trust in government               | ×                             | ×                             | Citizens’ trust                        | Trust in government and Trust in the internet are the main factors towards citizens trust in e-government. |
| S6  | Liu and Zhou (2010)               | ×                                 | Perceived risk                    | Citizens’ trust                |                               | Perceived risk and citizens’ satisfaction enhance citizens’ trust.             |
| S7  | Beldad et al. (2012)              | Website quality                   | Organizational reputation         | Security; Privacy             | The propensity to trust; Internet experience | Trust in the organization in the online environment | Perceived privacy, the quality of their online government experience and organizational reputation influence trust in government organizations. |
| S8  | Alshebahr and Hussain (2012)      | ×                                 | ×                                 | Disposition to Trust;         |                               | Trust towards intention to adopt e-government services | Disposition to trust, familiarity, institution-based trust, website quality, ease of use and perceived usefulness are important factors that can influence trust that leads towards citizens’ intention to use e-government services. |
| S9  | Alomari et al. (2012)             | Trust in internet                 | Trust in government               | ×                             | ×                             | E-government adoption                | Trust in government, design of the website and perceived usefulness are major factors that can affect citizens’ intention towards using e-government. |
| S10 | Ruffin et al. (2012)              | Trust in e-government service     | ×                                 | ×                             | ×                             | Intention to use e-government         | Trust has a significant effect on the intention to use e-government services. |
| S11 | Akram and Malik (2012)            | Trust in the medium               | Trust in government               | ×                             | e-government adoption         | Perceived ease of use has a significant relationship with perceived usefulness but not with the intention to use e-government services. |
| S12 | Taiwo et al. (2012)               | ×                                 | Trust beliefs                     | e-government adoption         | Behavioral intentions towards e-government services | Perceived ease of use, perceived functional benefit, trust in medium and citizens’ satisfaction influence their adoption of e-government services. |
| S13 | Wang and Lo (2013)                | Trust of the Internet             | Trust of government               | ×                             | Intention to use e-government website | Trust in the government, facilitating conditions and attitude toward the use of government websites have positive effects on intention to use government websites. |
| S14 | Zhao and Khan (2013)              | Trust on the internet             | Trust in government               | ×                             | Behavioral intentions towards e-government | Perceived usefulness, the trust of government, trust in internet and computer self-efficacy are important factors influencing citizens’ intention to use e-government services in the USA and the UK. |
| S15 | Abu-Shareeh (2014)                | Trust in technology               | Trust in government               | Privacy and security concerns | Trust in e-government         | Trust, ease of use and usefulness and social influence are positively associated with intention to use e-government. |
| S16 | Freire et al. (2014)              | Trust in technology               | ×                                 | Social influence               | Behavioral intention to adopt e-government services | Trust, privacy, security, social influence, relative advantage, web design and ease of use influence citizens’ intention to use e-government services. |
| S17 | Idriss and Salama (2012)          | Trust of the government           | ×                                 | Acceptance of G2C             |                               | The study highlights performance expectations, |
Table 3: Studies retrieved from search engines

| Source               | Papers found | Selected | % of relevant studies | % of all the relevant studies |
|----------------------|--------------|----------|-----------------------|------------------------------|
| Science Direct       | 25           | 09       | 36                    | 25.7                         |
| ACM                  | 13           | 02       | 15.38                 | 5.7                          |
| Scopus               | 25           | 03       | 12                    | 8.5                          |
| IEEE                 | 54           | 07       | 12.96                 | 20                           |
| Springer link        | 16           | 02       | 12.5                  | 5.7                          |
| Taylor and Francis   | 83           | 06       | 7.2                   | 17.1                         |
| Total                | 291          | 35       | 12.02                 | 100                          |

Table 4: Selected studies type

| Study                        | Count | Percentage |
|------------------------------|-------|------------|
| Journal paper                | 24    | 68.5%      |
| Conferences Proceeding       | 10    | 28.5%      |
| Book chapter                 | 01    | 2.8%       |

3. Results and data analysis

The data was analyzed to extract findings related to the influence of trust towards citizens’ acceptance of e-government services (addressing RQ1) and to identify antecedents of citizens’ trust to use social media for e-government services (addressing RQ2).
To discuss the influence of trust in context of e-government services, it was observed that previous literature has identified trust as the most significant factor towards citizen’s intention to use e-government services (Abu-Shanab, 2014; Alsaghier and Hussain, 2012; Ranaweera, 2016; Rehman et al., 2016; Roy et al., 2015). Trust has been mentioned as an essential requirement for the successful implementation of e-government services. However, in the majority of articles trust has been conceptualized in a single perspective identifying technology as a major determinant of citizen’s trust or it has been viewed in terms of technology and government factors. Researchers have argued that citizens must have trust in both the entity providing e-government services and the technology through which services are provided (Alotaibi et al., 2016; Bélanger and Carter, 2008; Chen et al., 2015). Thus, it is very important to develop citizens’ trust in both the government and the technology platform that is used to provide e-government services. Previous studies have also discussed perceived risk as an important factor associated with trust. According to Liu and Zhou (2010), the risk is closely connected with trust; when there is no risk, there is no need for trust and when risk is present, trust is mandatory. Similarly, Mohajerani et al. (2015) stated that privacy and security concerns have a positive impact on trust in e-government services. There are some studies where the factors associated with risk are addressed directly towards an attitude in using a technology (Roy et al., 2015). However, the importance of risk is always highlighted as a significant factor in using government services. Furthermore, citizens’ aspects were also investigated by a few studies as significant factors influencing trust in e-government services (Beldad et al., 2012; Colesca, 2009). According to Alzahrani et al. (2017), the characteristics of individuals should not be ignored in determining their attitude towards e-government services. Thus, based on the results of this systematic literature review four dimensions of trust have been identified which are: Technology factors, government factors, risk factors and citizens aspects. Table 5 shows the antecedents of trust discussed in previous studies from multiple dimensions.

The results of the review show that out of 35 selected articles, there were only three articles by Colesca (2009), Beldad et al. (2012) and Alzahrani et al. (2017) which have discussed different factors related with these dimensions (i.e. technology, government, risk, citizens) as antecedents of trust to use e-government websites. However, the study by Colesca (2009) has just discussed the identified factors randomly without any categorization of common factors. Beldad et al. (2012) grouped trust factors using internet user-based determinants of trust, organizations-based determinants of trust and web-based determinants of trust. They grouped risk and technical factors into one dimension. The review shows that there was only one article by Alzahrani et al. (2017) which was found to have grouped common factors together into technical factors, individual factors, risk factors and government factors. However, their study was based on a literature review without any empirical evidence. In addition, their study was also limited in the context of using e-government websites only in Saudi Arabia.

Table 5: Findings on antecedents of trust

| Trust factors               | No. of articles | References                  |
|-----------------------------|-----------------|------------------------------|
| Technology                  | 8               | S1, S10, S19, S21, S22, S26, S28, S35 |
| Government                  | 1               | S12                          |
| Risk                        | 1               | S4                           |
| Technology+Risk             | 2               | S6, S20                      |
| Technology+Government       | 13              | S5, S9, S11, S13, S14, S17, S18, S23, S25, S30, S31, S33, S34 |
| Technology+Citizens          | 2               | S8, S16                      |
| Technology+Government+Risk  | 2               | S15, S27                     |
| Technology+Government+Citizens | 3           | S2, S24, S29                |
| Technology+Government+Citizens+Risk | 3 | S3, S7, S32                |

3.1. Theoretical foundation

The majority of studies have used the technology acceptance model (TAM) to examine the role of trust in government services by testing ease of use and usefulness as factors influencing trust. Fig. 2 shows the studies that have used a theory or model to develop their research model in the context of e-government websites or social media services. It was noticed that there are some studies that are not based on any theory or model to develop a research model of trust in e-government. Furthermore, it was also observed that there are some studies that have utilized more than one model in their research.

3.2. Research approach

The quantitative method was the dominant method used in most of the research studies. The research approach of the reviewed papers is illustrated in Fig. 3 that shows the qualitative method was used by only one study, while four studies used a mixed approach (Quantitative and Qualitative).
The role of social media has been acknowledged to bridge the relationship gap between the government and the public through participation and engagement (Alotaibi et al., 2016). In recent years, researchers have recognized the use of social media and its correlation with citizens' trust (Franks and Driskill, 2014). The result of this review shows that despite the importance of trust in using social media-based e-government services there is not enough research in this domain. The focus of the majority of previous studies on the relationship of trust between government and public was based on e-government websites. The context of using social media as a technology for government services has not received much attention in previous studies. Trust on both government and social media technology has a positive influence on citizens’ intention to use social media-based services of e-government (Alotaibi et al., 2016). However, being a relatively novel approach to providing e-government services through social media, the majority of previous studies in this domain are merely based on the literature review and lacks to provide any empirical analysis. This is evident from the results of this review that the research on the use of social media in e-government services is relatively immature as compared to the research on e-government websites, especially from citizens’ trust perspectives. Thus, more research is needed to investigate citizens’ trust from multiple dimensions to provide a comprehensive understanding of the antecedents of citizens’ trust to promote their participation in government social media services.

Table 6 is a presentation of the factors influencing trust from the reviewed article in the context of government services. The results indicate that the
identified factors are quite limited to explain the antecedents of citizens’ trust from multiple dimensions. Previous researchers have mostly used trust in technology and trust in government in general terms (individual constructs or variables) as antecedents of trust without specifying the corresponding factors which are related to technology and government dimensions. Though a few studies have shown a range of factors influencing trust as mentioned in Table 6, the frequency of their appearance has been mostly limited with one or two studies. Among all factors and only disposition to trust, perceived security perceived privacy and information quality were those factors that were examined and validated in three or more studies. Therefore, due to the lack of studies on citizens’ trust factors in e-government services, it is important to identify more factors to propose the model of this study from multiple dimensions of citizens’ trust.

Table 6: Trust enabling factors in E-government

| Factors                        | Hypothesized Studies | Empirically Validated |
|-------------------------------|----------------------|-----------------------|
| Disposition to trust          | S2, S3, S7, S8, S29, S32 | S2, S3, S8, S29       |
| Internet experience           | S7, S32              | S7                    |
| Security                      | S7, S15, S20, S27, S32 | S15, S20, S27         |
| Privacy                       | S3, S4, S7, S15, S20, S27, S32 | S3, S4, S7, S15, S20, S27 |
| Performance risk              | S32                  | ×                     |
| Time risk                     | S32                  | ×                     |
| Online Non-repudiation         | S4                   | ×                     |
| Online authentication          | S4                   | ×                     |
| The reputation of government organization | S7, S32       | S7                    |
| Experience with government    | S7, S32              | S7                    |
| Website quality               | S7, S8               | S8                    |
| Information quality           | S15, S20, S27, S28, S32 | S15, S20, S27, S28   |
| Internet familiarity          | S8, S15              | S8                    |
| System quality                | S28, S32             | S28                   |
| Service quality               | S32                  | ×                     |
| Perceived ease of use         | S8                   | S8                    |
| Perceived usefulness          | S3, S8               | S3, S8                |

4. Findings

As discussed above that a range of factors influencing trust in e-government services have been identified but most of them have been mentioned one or two times and very few of them have been empirically validated in previous trust literature as illustrated in Table 6. This indicates that citizens’ trust has not been thoroughly investigated by multiple dimensions in the public sector. Therefore, to propose the model of this study more empirical studies on factors influencing trust were identified from the trust literature which is based on the different contexts of online services in both the public and private sectors. It is worthwhile to mention here that those factors which were found supported (empirically validated) in the trust literature are considered in this study and are further classified into four dimensions which are: Individual characteristics, government factors, risk factors and social media characteristics as summarized in Table 7. The first column shows the dimension of trust, the second column represents the factors in the respective dimensions and the third column shows the literature sources/references that have validated the identified factors of this study in different domain of online services, but not in the current context of using social media for e-government services.

Table 7: Factors influencing trust in government social media services

| Antecedents of Trust | Constructs/Factors | References |
|----------------------|--------------------|------------|
| Individual characteristics | Disposition to trust | (Bélanger and Carter, 2008; Colquitt et al., 2007; June et al., 2006; Kim and Prabhakar, 2004; Kivijärvi et al., 2013; Mayer et al., 1995; Xin et al., 2015) |
|                      | Uncertainty         | (Doney et al., 1998; Xin et al., 2015) |
|                      | avoidance           | (Colquitt et al., 2007; Davis et al., 2000; June et al., 2006; Mayer and Davis, 1999) |
|                      | Ability             | (Colquitt et al., 2007; Davis et al., 2000; June et al., 2006; Mayer and Davis, 1999) |
| Government factors   | Benevolence         | (Colquitt et al., 2007; Davis et al., 2000; June et al., 2006; Lee and Turban, 2001; Mayer and Davis, 1999) |
|                      | Integrity           | (Colquitt et al., 2007; Davis et al., 2000; June et al., 2006; Lee and Turban, 2001; Mayer and Davis, 1999) |
| Risk factors         | Perceived privacy   | (Al-Sharafi et al., 2016; Collesa, 2009; Gupta and Dhami, 2015; Lean et al., 2009; Mayeh et al., 2013; Ramos et al., 2018; Ranaweera, 2016; Susanto et al., 2013) |
|                      | Perceived security  | (Al-Sharafi et al., 2016; Ponte et al., 2015; Gupta and Dhami, 2015; Mayeh et al., 2013; Normalini and Ramayah, 2017; Ramos et al., 2018; Ranaweera, 2016; Susanto et al., 2013) |
|                      | Structural assurances| (Gefen et al., 2003; Kim et al., 2009; Kim and Prabhakar, 2004; Oliveira et al., 2014; Xin et al., 2015) |
| Social media         | Information quality | (Abu-Shanah, 2014; Ayyash et al., 2013; Ponte et al., 2015; Nicolau and McKnight, 2006; Ranaweera, 2016; Wang, 2017; Weerakkody et al., 2016) |
| characteristics      | Perceived ease of use| (Al-Sharafi et al., 2017; Alsaghier and Hussain, 2012; Ayyash et al., 2013; Belanche et al., 2012; Gefen et al., 2003; Ramos et al., 2018) |
|                      | Perceived usefulness| (Alsaghier and Hussain, 2012; Ayyash et al., 2013) |
A model has been proposed to provide a holistic view on the antecedents of citizens’ trust in using social media for e-government services as illustrated in Fig 4. The model also reflects the influence of trust towards citizens’ intention to use social media for e-government services. Antecedents of trust in Fig 4 represent the group of factors that can influence citizens’ trust in using social media-based services of e-government which are classified as individual characteristics, government factors, risk factors and social media characteristics and are discussed below in this section.

**4.1. Individual characteristics**

Disposition of trust refers to the individuals’ tendency to trust on other people/technologies. Some people are willing to trust technology or system more than the others (Mayer et al., 1995) whereas, some people need a great deal of information to trust new innovations/systems. Researchers have highlighted disposition to trust as a major determinant of trust in different contexts of online services (Colesca, 2009; Colquitt et al., 2007; June et al., 2006; Xin et al., 2015). Since the use of social media for e-government services is still in initial phases of development, thus it’s logical to assume some relationship of individuals’ disposition towards their trust in using such services.

Uncertainty avoidance is referred to as the level of risk tolerated by people when they are in uncertain situations (Srite and Karahanna, 2006). Uncertainty avoidance has been cited in the literature as having a close relationship with trust (Doney et al., 1998; Khan et al., 2018a; Xin et al., 2015) but has hardly been discussed as an antecedent of trust in e-government services. In the context of this study, uncertainty avoidance can be considered important due to the novel nature of using social media in e-government services. At the initial stages, citizens might feel uncertainties/risks about the functioning of these services, which may hinder their participation in social media with government organizations. Thus, the relationship of uncertainty avoidance with trust needs investigation in the context of this study.

**4.2. Government factors**

The trustworthiness of government organizations has an important role in citizens’ adoption of e-government services (Khan et al., 2018a). Literature has highlighted ability, benevolence and integrity as the most significant factors of trustworthiness in different domains of online services (Colquitt et al., 2007; June et al., 2006; Mayer and Davis, 1999) and are therefore considered to be investigated in the context of this study. Ability represents the competency or skills of government organizations to
provide social media-based services of e-government. Benevolence represents citizens’ belief that government organizations are concerned about citizens’ welfare in providing such services and integrity represents their honesty and promise-keeping practices with citizens (Khan et al., 2018a; Mayer and Davis, 1999).

4.3. Risk factors

Previous studies have mentioned a strong correlation between risk and trust in online services (Alzahrani et al., 2017; Mayer et al., 1995). Perceived risk is referred to as the extent that there is some feeling of uncertainty regarding a negative consequence of using some service. Perceived risk is more complicated in the context of using social media-based services of e-government because social media platforms are managed by third parties which are beyond the control of government organizations (Mergel, 2013). Perceived security and perceived privacy have been mentioned the most significant risk factors that may influence citizens to trust in adoption of online services (Gupta and Dhami, 2015; Khan et al., 2018a; Mayeh et al., 2013; Ranaweera, 2016) and thus are considered to be investigated in this study.

4.4. Social media characteristics

The characteristics of a technology that is used to provide e-government services influence citizens’ trust in using that technology (Beldad et al., 2012). Structural assurances that ensure the presence of legal, contractual or physical support to use technology are positively related in developing citizens’ trust towards that technology. The relationship of structural assurances with trust has been validated in different domains of online services (Kim and Prabhakar, 2004). The need for structural assurances in the context of government social media services is much important to attract citizens’ acceptance to use such services (Khan et al., 2018a). Similarly, information quality has been mentioned to significantly influence citizens to trust in e-government services (Abu-Shanab, 2014; Ayyash et al., 2013; Ranaweera, 2016). In the context of government social media services, there is a variety of information on social media and thus the need for reliable, relevant and timely information is much important to generate citizens’ trust in these services. Perceived ease of use and perceived usefulness are also two important factors that represent citizens perception about the effortless use of any system/technology and its usefulness to improve the system were also found to have a positive relationship with trust (Alsaghier and Hussain, 2012; Ayyash et al., 2013). Thus, this study also considers investigating the influence of both perceived ease of use and perceived usefulness towards citizens’ trust in using social media for e-government services.

5. Conclusion, contributions, limitation, and directions for future research

A systematic literature review was conducted to provide an in-depth understanding of the factors influencing citizen’s trust in e-government services. This study extends the body of knowledge about trust in e-government services with consideration of both technical and non-technical perspectives. The literature review of selected articles shows that antecedents of trust in e-government services have not been thoroughly investigated from multiple dimensions. The majority of previous studies have mainly focused on two dimensions to determine citizens’ trust in e-government services which are trust in technology and trust in government. Though risk factors and individual aspects of citizens’ have been discussed by a few researchers but have not been addressed thoroughly together with technological and government factors. In this paper antecedent of trust are classified into four dimensions which are individual characteristics, risk factors, government factors and social media characteristics. Though a few studies have generally discussed the importance of these dimensions (government, technology, risk and individual characteristics) but have not addressed the antecedents/factors in these dimensions, which is a major contribution of this study.

The results reveal that the majority of previous studies on the relationship of trust between government and citizens’ have been conducted on e-government websites. The use of social media for e-government services is an emerging phenomenon and very little research has been carried out in this domain, particularly from citizens’ trust perspective. Thus, this study also contributes to propose a model that identifies the antecedents of citizens’ trust from multiple dimensions in the context of using social media as a technology platform for e-government services. This study provides valuable insights to government organizations to understand the importance of trust and its influential role in attracting citizens’ acceptance of e-government services through social media platforms. The results of this study may enable government organizations to design appropriate measures for improving citizens’ participation in social media for e-government services by developing their trust in such services. Since the use of social media in e-government is still a new field of research, the results of this systematic literature review can serve as a reference for other researchers in this field. It can help the researchers to get relevant ideas when seeking to study citizens’ trust to increase their participation in social media-based e-government services.

This study is ongoing research and has certain limitations. Firstly, the results of this study are based on secondary data in the context of citizen’s trust in using e-government websites or social media services. The results cannot be considered complete unless the proposed model is validated with
empirical results. Secondly, the results of this systematic literature review are based on seven electronic databases. Future studies might explore more databases and journals with the use of other combinations of keywords like “culture” etc. Thirdly, the articles used in this study were published in the period from 2007 to early 2017. Since the research on social media for e-government is in early-stage therefore quite possibly more publications will continue to surface. Therefore, future research should use more recent publications in this domain.

Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

References

Abu-Shanab E (2014). Antecedents of trust in e-government services: An empirical test in Jordan. Transforming Government: People, Process and Policy, 8(4): 480-499. https://doi.org/10.1108/117868313-00000014

Akram MS and Malik A (2012). Evaluating citizens’ readiness to embrace e-government services. In the 13th Annual International Conference on Digital Government Research, ACM, College Park, Maryland, USA: 58-67. https://doi.org/10.1145/2307729.2307740

Alharbi A, Kang K and Hawryszkiewycz I (2016). The influence of trust and subjective norms on citizens’ intentions to engage in e-participation on e-government websites. Available online at: https://bit.ly/2Ne0100

Alkhilali WH and Salaíman H (2014). Identification of factors influencing G2C services acceptance in developing countries. In the 6th International Conference on Information Technology and Multimedia, IEEE, Putrajaya, Malaysia: 141-145. https://doi.org/10.1109/ICIMU.2014.7066619

Almarshadeh I and Almadi MK (2017). How to make them use it? Citizens acceptance of M-government. Applied Computing and Informatics, 13(2): 194-199. https://doi.org/10.1016/j.aci.2017.04.001

Alomari M, Woods P, and Sandhu K (2012). Predictors for e-government adoption in Jordan: Deployment of an empirical evaluation based on a citizen-centric approach. Information Technology and People, 25(2): 207-234. https://doi.org/10.1108/09593841211232712

Alotaibi RM, Ramachandran M, Kor AI, and Hosseini-Far A (2016). Factors affecting citizens’ use of social media to communicate with the government: A proposed model. Electronic Journal of E-Government, 14(1): 60-72.

Alshagihie HM and Hussain R (2012). Conceptualization of trust in the e-government context: A qualitative analysis. In: Manoharan A (Ed), Active citizen participation in e-government: A global perspective: 528-557. IGI Global, Pennsylvania, USA. https://doi.org/10.4018/978-1-4666-0116-1.ch027

Al-Sharafi MA, Arshah RA, Abu-Shanab EA, and Elayah N (2016). The effect of security and privacy perceptions on customers’ trust to accept internet banking services: An extension of TAM. Journal of Engineering and Applied Sciences, 11(3): 545-552.

Al-Sharafi MA, Arshah RA, Herzallah FA, and Alajmi Q (2017). The effect of perceived ease of use and usefulness on customers’ intention to use online banking services: The mediating role of perceived trust. International Journal of Innovative Computing, 7(1): 9-14.

Alzahrani L, Al-Karagholi W, and Weerakkody V (2017). Analysing the critical factors influencing trust in e-government adoption from citizens’ perspective: A systematic review and a conceptual framework. International Business Review, 26(1): 164-175. https://doi.org/10.1016/j.ibusrev.2016.06.004

Ayyash MM, Ahmad K, and Singh D (2013). Investigating the effect of information systems factors on trust in e-government initiative adoption in Palestinian public sector. Research Journal of Applied Sciences, Engineering and Technology, 5(15): 3865-3875. https://doi.org/10.19016/rjaset.5.44447

Belanche D, Casaló LV, and Flavián C (2012). Integrating trust and personal values into the technology acceptance model: The case of e-government services adoption. Cuadernos de Economía y Dirección de la Empresa, 15(4): 192-204. http://dx.doi.org/10.1016/j.cede.2012.04.004

Bélanger F and Carter L (2008). Trust and risk in e-government adoption. The Journal of Strategic Information Systems, 17(2): 165-176. https://doi.org/10.1016/j.jsis.2007.12.002

Beldad A, van der Geest T, de Jong M, and Steehouder M (2012). A case study of two e-government websites. Available online at: https://jstpol.politecn.edu/2015/8031

Bourdieu P, Habermas J, and Wiebe J (2005). The effect of perceived ease of use and usefulness on customers’ intention to adopt and use e-government services: Exploring citizen participation on e-government websites. Available online at: https://bit.ly/2Ne0100

Bourdieu P, Habermas J, and Wiebe J (2005). The effect of perceived ease of use and usefulness on customers’ intention to adopt and use e-government services: Exploring citizen participation on e-government websites. Available online at: https://bit.ly/2Ne0100

Bourdieu P, Habermas J, and Wiebe J (2005). The effect of perceived ease of use and usefulness on customers’ intention to adopt and use e-government services: Exploring citizen participation on e-government websites. Available online at: https://bit.ly/2Ne0100

Bourdieu P, Habermas J, and Wiebe J (2005). The effect of perceived ease of use and usefulness on customers’ intention to adopt and use e-government services: Exploring citizen participation on e-government websites. Available online at: https://bit.ly/2Ne0100
Doney PM, Cannon JP, and Mullen MR (1998). Understanding the influence of national culture on the development of trust. Academy of Management Review, 23(3): 601-620. https://doi.org/10.5465/amr.1998.92629

Franks P and Driskill M (2014). Building trust in government through social media: An inter PARIS trust research project. In the European Conference on Social Media, University of Brighton, Brighton, UK: 744-747.

Freire M, Fortes N, and Barbosa J (2014). Decisive factors for the adoption of technology in e-government platforms. In the 2014 9th Iberian Conference on Information Systems and Technologies, IEEE, Barcelona, Spain: 1-6. https://doi.org/10.1109/CISTI.2014.6877042 PMid:26029518

Gefen D, Karahanna E, and Straub DW (2003). Trust and TAM in online shopping: An integrated model. MIS Quarterly, 27(1): 51-90. https://doi.org/10.2307/30036519

Gupta A and Dhami A (2015). Measuring the impact of security, trust and privacy in information sharing: A study on social networking sites. Journal of Direct, Data and Digital Marketing Practice, 17(1): 43-53. https://doi.org/10.1057/ddmp.2015.532

Hao X, Zhang D, Zeng Q, and Fan W (2016). How to strengthen the social media interactivity of e-government: Evidence from China. Online Information Review, 40(1): 79-96. https://doi.org/10.1108/OR-03-2015-0084

June MLP, Rahid MR, and Othman AS (2006). Trust-in-supervisor: Antecedents and effect on affective organizational commitment. Asian Academy of Management Journal, 11(2): 35-50.

Khan GF (2015). The government 2.0 utilization model and implementation scenarios. Information Development, 31(2): 135-149. https://doi.org/10.1177/0266666913502061

Khan S, Rahim NZ, and Maarop N (2018a). A model on multiple perspectives of citizens’ trust in using social media for e-government services. International Journal of Engineering and Technology, 7(4:31): 95-100.

Khan S, Rahim NZA, and Maarop N (2018b). Towards the development of a citizens’ trust model in using social media for e-government services: The context of Pakistan. In the International Conference of Reliable Information and Communication Technology, Springer, Kuala Lumpur, Malaysia: 1002-1012. https://doi.org/10.1007/978-3-319-99007-1_93

Kim G, Shin B, and Lee HG (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. Information Systems Journal, 19(3): 283-311. https://doi.org/10.1007/s11518-007-00269-x

Kim KK and Prabhakar B (2004). Initial trust and the adoption of B2C e-commerce: The case of internet banking. ACM SIGMIS Database: The DATABASE for Advances in Information Systems, 35(2): 50-64. https://doi.org/10.1145/1007965.1007790

Kivijärvi H, Leppänen A, and Hallikainen K (2013). Technology trust: From antecedents to perceived performance effects. In the 46th Hawaii International Conference on System Sciences, IEEE, Wailea, USA: 4586-4595. https://doi.org/10.1109/HICSS.2013.510

Kurkcu M, Arifoğlu A, Tokdemir G, and Paçin Y (2017). Adoption of e-government services in Turkey. Computers in Human Behavior, 66: 168-178. https://doi.org/10.1016/j.chb.2016.09.041

Lallmahomed MZ, Lallmahomed N, and Lallmahomed GM (2017). Factors influencing the adoption of e-government services in Mauritius. Telematics and Informatics, 34(4): 57-72. https://doi.org/10.1016/j.tele.2017.01.003

Lean OK, Zaibli S, Ramayah T, and Fernando Y (2009). Factors influencing intention to use e-government services among citizens in Malaysia. International Journal of Information Management, 29(6): 485-475. https://doi.org/10.1016/j.ijinfomgt.2009.03.012

Lee CBP and Lei U (2007). Adoption of e-government services in Macao. In the 1st International Conference on Theory and Practice of Electronic Governance, ACM, Macao, China: 217-220. https://doi.org/10.1145/1328057.1328102

Lee MK and Turban E (2001). A trust model for consumer internet shopping. International Journal of Electronic Commerce, 6(1): 75-91. https://doi.org/10.1080/10864415.2001.11044227

Liu Y and Zhou C (2010). A citizen trust model for e-government. In the 2010 IEEE International Conference on Software Engineering and Service Sciences, IEEE, Beijing, China: 751-754. https://doi.org/10.1109/ICSESS.2010.5552260

Mayeh M, Ramayah T, and Ramadaes S (2013). Antecedents of e-trust: A study among taxpayers in Malaysia. In the International Conference on e-Learning, e-Business, Enterprise Information Systems, and e-Government (EEE), Athens, Greece: 190-196.

Mayer RC and Davis JH (1999). The effect of the performance appraisal system on trust for management: A field quasi-experiment. Journal of Applied Psychology, 84(1): 123-136. https://doi.org/10.1037/0021-9044.84.1.123

Mayer RC, Davis JH, and Schoorman FD (1995). An integrative model of organizational trust. Academy of Management Review, 20(3): 709-734. https://doi.org/10.5465/ammr.1995.9508080335

Mellouli M, Bentahar O, and Bidan M (2016). Trust and e-government acceptance: The case of Tunisian on-line tax filing. The Electronic Journal Information Systems Evaluation Volume, 19(3): 197-212.

Merget I (2013). Social media adoption and resulting tactics in the US federal government. Government Information Quarterly, 30(2): 123-130. https://doi.org/10.1016/j.giq.2012.12.004

Mohajerani S, Shahrekorjizj, and Azarlo M (2015). The impact of performance, privacy and security concerns, trust in technology and information quality on trust in e-government and intention to use e-government. In the 9th International Conference on e-Commerce in Developing Countries: With Focus on e-Business, IEEE, Isfahan, Iran: 1-6. https://doi.org/10.1109/EDC2015.7156332

Najafabadi MK and Mahrin MNR (2016). A systematic literature review on the state of research and practice of collaborative filtering technique and implicit feedback. Artificial Intelligence Review, 45(2): 167-201. https://doi.org/10.1007/s10462-015-9443-9

Nicolaou Al and McNight DH (2006). Perceived information quality in data exchanges: Effects on trust, risk, and intention to use. Information Systems Research, 17(4): 332-351. https://doi.org/10.1287/isre.1060.0103

Normalin MK and Ramayah T (2017). Trust in internet banking in Malaysia and the moderating influence of perceived effectiveness of biometrics technology on perceived privacy and security. Journal of Management Sciences, 4(1): 3-26. https://doi.org/10.20547/jms.2014.1704101

Oliveira T, Faria M, Thomas MA, and Popovič A (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. International Journal of Information Management, 34(5): 669-703. https://doi.org/10.1016/j.ijinfomgt.2014.06.004

Park MJ, Choi H, Kim SK, and Rho JJ (2015). Trust in government’s social media service and citizen’s patronage behavior.
Ponte EB, Carvalho-Trujillo E, and Escobar-Rodriguez T (2015). Influence of trust and perceived value on the intention to purchase travel online: Integrating the effects of assurance on trust antecedents. Tourism Management, 47: 286-302. https://doi.org/10.1016/j.tourman.2014.10.009

Ramos FL, Ferreira JB, Freitas ASD, and Rodrigues JW (2018). The effect of trust in the intention to use m-banking. Brazilian Business Review, 15(2): 175-191. https://doi.org/10.15728/bbr.2018.15.2.5

Ranaweera HMBP (2016). Perspective of trust towards e-government initiatives in Sri Lanka. SpringerPlus, 5: 22. https://doi.org/10.1186/s40064-015-1650-y

Rehman M, Kamal MM, and Esichaikul V (2016). Adoption of e-government services in Pakistan: A comparative study between online and offline users. Information Systems Management, 33(3): 248-267. https://doi.org/10.1080/10580530.2016.1188570

Rodríguez G, Sarabdeen J, and Balasubramanian S (2016). Factors that influence consumer adoption of e-government services in the UAE: A UTAUT model perspective. Journal of Internet Commerce, 15(1): 18-39. https://doi.org/10.1080/15332861.2015.1121460

Roy MC, Chartier A, Crête J, and Poulin D (2015). Factors influencing e-government use in non-urban areas. Electronic Commerce Research, 15(3): 349-363. https://doi.org/10.1016/j.ercres.2015.01.004

Rufín R, Medina C, and Sanchez Figueroa JC (2012). Moderating factors in adopting local e-government in Spain. Local Government Studies, 38(3): 367-385. https://doi.org/10.1080/03003930.2011.636035

Salahuddin L and Ismail Z (2015). Classification of antecedents towards safety use of health information technology: A systematic review. International Journal of Medical Informatics, 84(11): 877-891. https://doi.org/10.1016/j.ijmedinf.2015.07.004 PMid:26238706

Samijadi M (2017). Social media usage in e-government: Evidence from Suriname. Journal Public Admin Governance, 7(2): 75-87. https://doi.org/10.5296/jpagv7i2.11268

Srite M and Karahanna E (2006). The role of espoused national cultural values in technology acceptance. Management Information Systems Quarterly, 30(3): 679-704. https://doi.org/10.2307/25148745

Susanto A, Lee H, Zo H, and Ciganek AP (2013). User acceptance of internet banking in Indonesia: Initial trust formation. Information Development, 29(4): 309-322. https://doi.org/10.1177/026666912467449

Susanto TD and Aljoza M (2015). Individual acceptance of e-government services in a developing country: Dimensions of perceived usefulness and perceived ease of use and the importance of trust and social influence. Procedia Computer Science, 72: 622-629. http://doi.org/10.1016/j.procs.2015.12.171

Taiwo AA, Mahmoud AK, and Downe AG (2012). User acceptance of eGovernment: Integrating risk and trust dimensions with UTAUT model. In the 2012 International Conference on Computer and Information Science, IEEE, Kuala Lumpur, Malaysia, 1: 109-113. https://doi.org/10.1109/IC CISci.2012.6297222

Wang HJ and Lo J (2013). Determinants of citizens’ intent to use government websites in Taiwan. Information Development, 29(2): 123-137. https://doi.org/10.1017/s0266669112453835

Wang T and Lu Y (2010). Determinants of trust in e-government. In the 2010 International Conference on Computational Intelligence and Software Engineering, IEEE, Wuhan, China: 1-4. http://doi.org/10.1109/CISE.2010.5676832

Wang Y (2017). Antecedents of social network trust in SNS usage: The moderating role of offline familiarity. Social Networking, 6(2): 107-134. https://doi.org/10.4236/sn.2017.62007

Weerakkody V, Irani Z, Lee H, Hindi N, and Osman I (2016). Are UK citizens satisfied with e-government services? Identifying and testing antecedents of satisfaction. Information Systems Management, 33(4): 331-343. https://doi.org/10.1080/10580530.2016.1220216

Xin H, Techatassanasoontorn AA, and Tan FB (2015). Antecedents of consumer trust in mobile payment adoption. Journal of Computer Information Systems, 55(4): 1-10. https://doi.org/10.7913/jcisi.2015.11645781

Zhou F and Khan MS (2013). An empirical study of e-government service adoption: Culture and behavioral intention. International Journal of Public Administration, 36(10): 710-722. https://doi.org/10.1080/01900692.2013.791314