

## Identifying the factors affecting individuals' trust to use social media for e-government services: a conceptual model

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### ABSTRACT

Trust is an important determinant towards individuals' acceptance to use social media for e-government services. However, despite of its growing importance there is a dearth of prior research to investigate the antecedents that can develop individuals' trust for the usage of social media as a technology platform for e-government services. To address this gap, this paper aims to identify those factors that can affect individuals trust in using social media for e-government services. This paper proposes a new model that identifies trust enabling factors to use government social media services from multiple perspectives which are: individual characteristics, government factors, risk factors and social media characteristics. The findings of this paper can be useful for government organizations in assisting them to develop appropriate strategies for enhancing citizens trust towards such services.

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### 1. Introduction

The rapid expansion of Information and communications technology (ICT) has become a dominant part of our daily lives, and has created opportunities to serve individuals, businesses and societies. A wide range of ICT based technologies have not only changed the traditional business operations but have also influenced the government services. Governments across the globe have employed information and communication technologies called as e-government to improve the efficiency of government

services and make them accessible to individuals', business organizations and other government institutions [1, 2]. The implementation of e-government initiatives in the public sector can improve government transparency and accountability, and increase participation and collaboration within government offices, business partners and with ordinary citizens [3]. Though the investment of governments in implementation of e-government, also referred as Government 1.0 has enhanced the effectiveness and transparency of government organizations compared with traditional government services. However, most of

early e-government initiatives in providing services to citizens were limited on static ICT based technologies using Web1.0 phenomenon. Web 1.0 represents the first generation of web, based on connected hypertext documents which can be accessed through Internet. They were developed to provide information or services to citizens' in a one way direction without having any feedback mechanism [4]. Though they were instrumental to connect governments with citizens, but provided a very limited opportunity in terms of interaction and engagement between government and citizens [3]. On the contrary, today's e-governments have attained a Web 2.0 status [5]. Web 2.0 platforms are based on open participation and networking. Unlike Web 1.0, where the contents of the web pages are generated by an administrator, users of the Web 2.0 applications can generate their own contents [6]. Web 2.0 can be described as a useful transition from the static Web 1.0 based internet pages towards a collaborative web based environment that offers data and services created and shared by multiple sources [4]. The Web 2.0 characteristics facilitate the interactive information sharing and collaboration on the internet. The main benefit associated with Web 2.0 for government organizations is to enhance government transparency and increase citizens' participation in their services.

Social media, which is based on Web 2.0 phenomenon has emerged as an interactive dialogue channel between government and citizens. The evolution of Web 2.0 and social media network applications provide an opportunity for people and government to share and learn from each other's experiences. Social media facilitates interactive information sharing and collaboration between government and citizens on the internet. Social media is an online communication platform which helps government institutions and executives to increase e-participation and engagement, which were also the primary goals of developing most e-government projects [7]. It offers an opportunity for government organizations to improve their efficiency by providing public services and handling real time requirements. Its use can increase accountability and transparency of governments towards their citizens and stakeholders by enhancing their participation and collaboration with government in solving problems [7]. The results of the latest survey of United Nations conducted in 2018, depicts that 177 UN countries out of 193 are offering different features of social networking services on their national portals [8].

Trust is one of the most dominant aspect for the successful implementation of social media services of e-government. Trust generates individual's willingness to participate with government organizations and use their services [5, 9]. There have been many studies on the trust relationship between individual and government in using e-government websites with information and transaction services like design, quality, influential factors, intention to use e government services, and citizens' usage behavior [10]. The result of this trust relationship has been positive in some cases and negative in others, thus showing no consistency in results [11]. On the contrary there is limited prior research in context of using social media platforms for e-government services particularly from individuals' trust perspective. Though significance of individuals' trust in adopting social media based e-government services has been acknowledged in previous literature, [7, 12, 13] but without providing a thorough understanding on how to develop this trust. Therefore, this paper aims to investigate those factors that can develop individuals' trust to use social media platforms for e-government services. A model is proposed in this study which is based on multiple perspectives of individuals' trust to use government social media services.

## **2. Related Works**

### *2.1 Trust*

Trust is a very rich phenomenon that builds relationships and plays a crucial role in situations where there is some possibility of uncertainty in behaviours or any unexpected outcome [14]. Trust has a multidimensional nature and been studied in many disciplines. Researchers from each discipline have acknowledged the role and importance of trust [15]. In each discipline trust, has been interpreted differently, and till date there is still a lack of uniformly accepted definition of trust [16-18]. Trust has been described ranging from a personality trait to a belief. It has been defined both as a social structure and referred in terms of behavioural intention. There is no single definition of trust that can be applicable for all trust types in different contexts. This can be argued that trust is a multidimensional concept that includes expectations, vulnerability, perception of trustor about the trustee, willingness to take risk in uncertain situations, and dependability etc. [17]. In addition, as mentioned by Söllner and Leimeister [19] the nature of the trust, it's importance and it's need varies in different contexts.

## *2.2 Importance of trust and its components in e-government services*

The success of e-government initiatives mainly depends on citizens' adoption of e-government services. Indeed, e-government projects cannot deliver citizens services effectively if they are not accepted by citizens [20]. Despite of government efforts to develop different e-government platforms to enhance their interaction with citizens', such platforms cannot be effective without their adoption by citizens [21]. Therefore, this can be argued that citizens' adoption of e-government services is a main contributor to the success of e-government services. Though previous researchers have identified several factors that can influence citizens' willingness to use e-government services, but trust has been found the most common factor among them.[22-28]. According to Abu-Shanab [23] gate to the adoption of e-government services is trust. Citizens' need to trust on governments and their e-services before they start using them [22]. Citizens' will use e-government services only if they trusted on these services. Therefore, it is important for governments to build a trustworthy relationship with citizens' a way before providing e-government services.

Trust in e-government was initially accepted as a unitary concept or as a single component. However, with the increasing amount of studies, researchers have started to conceptualize trust in to different dimensions. The literature shows that trust and its enabling factors have mostly been discussed in context of government and technological dimensions. For example, Wang and Lu [29] stated that trust in internet and trust in government are two most important components for citizens' adoption of e-government. Similarly, Akram and Malik [1] mentioned that citizens' trust both in government and associated technology are indicators of their acceptance of e-government services. Therefore, e-government services can be successfully implemented by establishing trust on both on the provider of e-government services and the channel through which service is provided [30].

Beside government and technology factors, perceived risk has also been mentioned in some studies as an essential factor affecting citizens' trust to use e-government websites. For instance, Wang and Lu [29] stated that risk is much related to trust, if no risk exists there is no need to develop trust. There are few studies that have highlighted individuals' disposition to trust influencing their behaviour to trust on e-government [31, 32]. According to Alsaghier and Hussain [17], individuals' disposition of trust is positively related with

their trust in using e-government services. Similarly, Carter, et al. [24] stated that citizens' trust on internet and government are influenced by their disposition to trust.

As per previous studies, it is evident that there is no uniform classification to highlight trust factors in using e-government services. Majority of previous researchers have mainly paid attention only on technological and government factors. Though risk factors and individual aspects have been discussed by few researchers but have not been studied together with other factors. There are few studies that have viewed trust from multiple dimensions. For instance, Beldad, et al. [32] categorized determinants of trust from the viewpoint of users institution and web based. Similarly, in another study, Alzahrani, et al. [22] viewed determinants of trust in e-government from the dimension of technology, government, risk and individual aspects. However, their results are not confirmed through empirical evidence. Hence this can be argued that there is a dearth of prior research to provide a complete understanding about citizens' trust factors from multiple dimensions in context of e-government services.

## *2.3 Trust in using social media for e-government services*

Trust has been discussed as an important contributor to build strong government-public relationship through e-government websites and social media based services [33]. Although using social media platforms for e-government services is relatively a new approach of e government practice, the researchers now days have started to realize the influence of trust in using such services [5]. According to Porumbescu [34], citizens' acceptance for using government social media services strongly depends on trustworthiness of government. It is important for citizens' to have trust on government and their social media platforms for a communication and relationship between government and public [21]. Trust is a very important determinant for citizens' engagement and participation with government organizations in using web 2.0 tools like social media. The literature reflects that despite of acknowledging the significant role of social media to increase transparency, engagement and participation researchers have ignored to pay much attention about its adoption from citizens' perspective [35]. Trust has been mentioned as a single entity in previous research without providing any deep understanding about the factors that can influence trust in using social media-based services of e-government. The potential benefits of social media platforms for e-

government services can only be reflected if they are actively utilized by citizens. Hence, more research is needed to investigate about the factors that can be influential in generating citizens trust to use social media for e-government services.

### 3. Methodology

A comprehensive literature review was carried out on citizens' trust aspects on e-government and social media-based services of e-government with particular focus to identify the factors influencing citizens trust to use government social media services. The search included the use of some popular electronic databases including Scopus, ACM, Science Direct and IEEE, and Google Scholar. The keywords used in the search were "Trust factors", "Citizens' Trust", "e-government services", "government social media services". This resulted in a number of relevant articles, which were went through carefully to identify the most important factors that may be considered as antecedents of trust.

### 4. Antecedents of Trust

According to Moorman, et al. [36] there are three stages to build trust: antecedents, process and outcomes. Antecedents refer to the factors or elements that can determine the development of trust. Process represents trust, which is reflected by trustor's confidence on the trustee in uncertain situations. Outcomes mainly represents the behavioural intention resulting from the trust [37]. Similarly, Harrison McKnight, et al. [38] proposed a trust building model that consists of three levels: antecedent factors, trust and behavioural intention. Antecedents consists of trust enabling factors, trust is described by the trusting beliefs and willingness to depend on the web vendor and behavioural intention refers to the outcome of the trust in terms of users' intention to engage in a specific behaviour.

Antecedents of trust have been described by several ways in the literature. There is no uniform classification framework on antecedents of trust in online environment. Researchers have integrated theories from various fields including psychology, sociology, marketing, management, and information systems to present multidimensional perspectives of trust in online environment [30]. In contexts of this paper antecedents of trust refer to those factors which can influence citizens' behaviour to use social media-based services of e-government. The findings from the literature review identified antecedents of citizens' trust from four perspectives including: individual characteristics, government factors, risk factors and social media

characteristics. This section discusses the identified factors from these perspectives.

#### 4.1 Individual Characteristics

The literature shows that the beliefs of trustors' about trustees' can influence their level of trust [32, 39]. Previous researchers have highlighted disposition of trust and Internet experience or skills as important contributors towards trust in e-government services [16, 22, 24, 31, 32]. Disposition or propensity of trust refers the tendency of some people to depend on other people, things or online entities. It has been noticed that some individuals have the tendency to place their trust on other people/entities/things very easily, whereas some individuals need a massive information before developing their trust on any other entity or target. Thus, the higher the level of disposition of trust, the greater would be the trust, whereas and on the other end, lower level of disposition to trust would decrease the trust. Previous studies have also reported internet experience or skills also effects tendency to trust on internet and e-government services [16, 22, 23] and thus can also be considered in context of using social media platforms for e-government services. Similarly education level of citizens' also influences on trust towards government technology and its services [22] and is therefore also considered in this study. Individual characteristics influencing citizens' trust with their literature sources are shown in Table 1.

**Table 1**

Individual Characteristics Influencing Trust

Factors	Sources
Disposition to Trust	[16, 22, 24, 31, 40, 41]
Level of Internet Experience	[16, 22, 23, 32, 42]
Education Level	[22, 43]

#### 4.2 Government Factors

The relationship between government and citizens plays an important role in generating trust towards the adoption of e-government services. Citizen's willingness to adopt government services strongly depends on their belief about the ability of government organizations to provide effective and better services to their citizens. Many researchers have highlighted that citizens' trust in government and its related organizations can lead towards their successful adoption of e-government services [5, 22, 25, 31]. In this regard, citizens' prior experience in dealing with government can be very influential [1, 27]. This experience can be either offline or online experience by using any e-government website. As mentioned by Chen, et al. [27]

there is always a significant connection between performance expectation and prior experiences with government services. Hence, it can be argued that the effect of trust in government social media services can be influenced by prior experiences in dealing with the government. Trust is also influenced by government's reputation in terms of its competence, benevolence, and integrity [44]. Competence is related with the perception of citizens towards government's technical and organizational capacity to develop and use social media based services of e-government. Benevolence describes citizens' belief that government functions and services are in their best interest. Integrity on the other hand describes the honesty and promise fulfilling practices of government's towards their citizens [10]. Table 2 reflects the government factors that can influence citizens' trust identified from the literature sources.

**Table 2**

Government Factors Influencing Trust

Factors	Sources
Previous experience with government	[22, 27, 32]
Ability	[41, 45-47]
Benevolence	[28, 45, 46]
Integrity	[29, 45, 46]

#### 4.3 Risk factors

Risk can be described as citizens' fear to disclose their confidential information and their fear to be watched on the Internet [26]. Previous studies have identified a strong correlation between risk and trust [20, 42]. There are uncertainties involved in the risk, therefore the need of the trust increases [30]. There can be multiple dimensions of risk such as financial risk performance risk and time risk etc. However, since this study is more focused in terms of using an online technology to interact with government organizations therefore the technological risks such as privacy [16, 25, 40, 48] and security [25, 41, 48, 49] are considered important to impact citizens' trust in using social media as a new technology platform to interact with government organizations as illustrated in Table 3.

**Table 3**

Risk Factors Influencing Trust

Factors	Sources
Security Risk	[25, 40, 48, 49]
Privacy Risk	[16, 25, 28, 48, 49]

#### 4.4 Social media characteristics

The context of this study is based on using social media as a technology platform to use e-government services. As mentioned by Beldad, et al. [32] the characteristics

of a technology is an influential aspect towards citizens' trust to use that technology. Therefore, it is important to determine those characteristics of social media technology that can influence citizens' trust to use social media for e-government services. Perceived critical mass has been determined as an important factor of trust in using social media services [50, 51]. It is related to the social trust that is generated when enough people are using any service. Perceived critical mass was described by Russo [52] that when there are sufficient number of trusted people using any technology so one can believe that this technology is trustworthy. This is true particularly in those situations where people does not have enough knowledge about any service or technology [51]. Thus, this can be assumed that more friends or trusted people using and recommending social media for e-government services would most likely generate trust towards its adoption.

Structural assurance is also a significant factor that leads towards institution based trust [14]. In context of social networking services, structural assurances relate to the disclosure of information. It provides confidence to citizens' about the presence of policies and mechanisms to keep their information safe from the access of unauthorized parties [52]. Government organizations using social media post different information and updates about their services and ongoing activities and thus the need of structural assurances increases to fascinate citizens to use their services. Another institution based trust in any technology is situational normality which refers to the belief of citizens' that success is more likely to be achieved because the situation looks normal or favorable [53]. The perception of trust can be generated when the things in the situations appear normal, in proper order. In other words when individuals' perceive a situation in normal settings, trust can be developed in new things in that situation [51]. When a user of internet believes that the internet situation seems normal and their roles and the roles of the service providers are looking appropriate, it would affect their trusting belief in using the services and trust the service providers [53]. If users of government social media services believe that the nature of interaction and services are typical of similar applications and the technology/platform works as they anticipated, then they are likely to develop their trust in using social media for e-government services.

The quality of information has been mentioned to directly related with trust in an online environment [54]. According to Quandt [55] trust in an online environment depends on users expectation of correct, reliable and complete information. Therefore, it is important that the information should be relevant, timely, truthful and easily accessible in using an online service. The more is the citizens' perception of good quality information, the more they think about an online environment to be trustworthy [56]. The quality of information positively

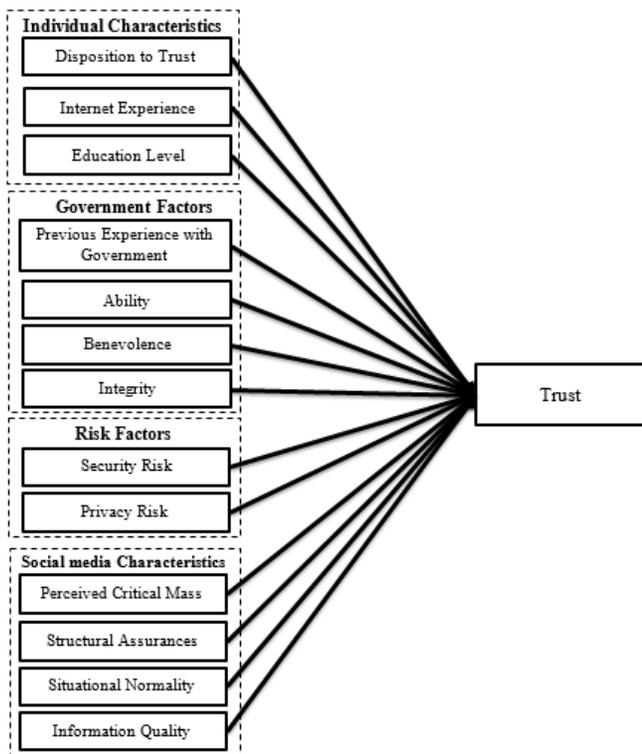
influences their trust level to use any online service. Therefore this can be argued that the quality of information on social media platform for e-government services affects citizens' trust [57]. Table 4 illustrates the social media characteristics that can influence citizens' trust along with their literature sources.

**Table 4**

Social Media Characteristics Influencing Trust

Factors	Sources
Perceived Critical Mass	[47, 52, 58]
Structural Assurances	[40, 59, 60]
Situation Normality	[14, 52, 59]
Information Quality	[23, 25, 41, 61]

## 5. Research Model



**Fig. 1.** Proposed model

A model has been proposed in this study as indicated in Fig. 1 to identify the factors affecting individuals' trust level to use social media for e-government services. The model reflects that trust is influenced by multiple factors which are categorized in to four major perspectives including individual characteristics, government factors, perceived risk and social media characteristics. The following hypotheses are suggested in the proposed model.

H1: Disposition to trust affects trust of individuals to use government social media services

H2: Level of Internet experience of individuals' affects their trust to use the services of government social media

H3: Level of education of individuals' affects their trust to use the services of government social media

H4: Previous experience with government affects individuals' trust to use the services of government social media

H5: Ability of government institutions affects individuals' trust to use the services of government social media

H6: Benevolence of government institutions affects individuals' trust to use their social media services

H7: Integrity of government institutions affects individuals' trust to use the services of government social media

H8: Security risk affects individuals' trust to use the services of government social media

H9: Privacy risk affects individuals' trust to use the services of government social media

H10: Perceived critical mass affects individuals' trust to use the services of government social media

H11: Structural assurances affects individuals' trust to use the services of government social media

H12: Situation normality affects individuals' trust to use the services of government social media

H13: Quality of information affects individuals' trust to use the services of government social media

## 6. Discussion

Previous research on trust enabling factors has mostly been limited on only technological and government aspects and with very little attention to provide a wider perspective on antecedents of trust in e-government services. In addition, the factors affecting individuals trust in context of using social media platforms for e-government services has not received much attention in previous studies. This study contributes to propose a model that identifies the influential factors that may affect individuals' trust to use social media for e-government services. The factors in the proposed model have been extracted by a thorough investigation of trust related factors from the existing literature. The distinct feature of the proposed model is that it presents a holistic view of citizens trust aspects from multiple perspectives which includes individuals' factors, government factors, risk factors and the factors associated with the social

media technology. This model may serve as a theoretical foundation to support government organizations/policy makers in designing their strategies to generate citizens' trust in using e-government services through social media platforms. The factors identified in the model can be useful for government organizations, particularly in developing countries with poor public services having a trust deficit among citizens to use e-government services. The government organizations may consider these factors to develop citizens' trust to use their e-government services through social media platforms. The increase in citizens' trust will ultimately enhance their participation and engagement with government organizations.

This study provides valuable findings on various perspectives of citizens' trust at the managerial and operation level to enhance citizens' participation in e-government services on social media. As shown in Fig 1 disposition to trust is identified as an antecedent of citizens' trust to use social media for e-government services. It is recommended that government organizations providing such services must be aware about its impact. The individual with lower disposition of trust should be targeted and motivated by government organizations to increase their trust level in using social media for e-government services. It is important for government organizations to educate individuals about the importance of using technology, specifically social media platforms for transparent and efficient e-government services. Besides that, government organizations should be aware that the education level and internet experience of individuals also have an important impact on individuals' trust behaviour in using such services.

The model of this study identifies benevolence, integrity and ability as important factors of trustworthiness. This reflects that trust of citizens is also influenced by governments reputation in terms of their competence, benevolence, and integrity. Therefore, it is important for government organizations to care about citizens and show their concerns about their rights. Once citizens get to know that government organizations have good intentions for them and care for their well-being they will find their e-government services trustworthy and would likely use them. Besides that, it is important for government organizations to be honest with citizens and should always stand on their words to gain citizens' trust. They should also work on developing a positive perception among citizens that they have the skills and potential to provide e-government services through social media in an efficient way.

Security and privacy concerns are also very important risk factors that can influence citizen's trust to use social media for e-government services. Therefore, it is recommended for government organizations that they should include that in their strategies to properly communicate their information security and privacy policies. They should provide reliable services to their citizens, clearly report the associated regulations and must ensure to address citizens queries/questions. This will ultimately generate individuals trust to use social media for e-government services.

The characteristics of any technology also influences trust. Contrary to static websites, social media is a more interactive technological platform for e-government services and therefore involves more uncertainties. Citizens need to believe that there are guarantees and safety nets in social media platforms and it is reliable for them to use social media for e-government services. Therefore, government organizations should work to educate them about the laws and regulations in social media platforms which helps to protect their rights. In addition, given the positive relationship of information quality on individuals' trust, it is also very important for government organizations to provide up to date and relevant information to develop citizens' trust in using social media for e-government services.

## **7. Conclusion and Recommendations for Future Research**

Social media is referred as a transforming agent towards opening new possibilities for governments to collaborate with citizens. Contrary to earlier studies which were conducted on static e-government websites, this paper focuses to use social media platforms for the services of e-government. This paper proposes a model that identifies those factors that can affect individuals' trust to use government social media services from multiple perspectives including individual characteristics, risk factors, government factors, and social media characteristics. This paper has both theoretical and practical contributions in terms of understanding the trust enabling factors from citizens' perspective. The findings of this study may help government organizations to develop appropriate policies/measures to facilitate individuals' trust to enhance their participation in government social media services. There are some limitations in this paper. Firstly, this study was based on secondary sources from previous literature and therefore needs empirical validation. Secondly, this paper is limited to focus on citizens trust aspects and does not cover the perspective from

government organizations regarding their strategies and plans to implement their social media-based services. Furthermore, this study is limited to only identifying the factors that can generate trust and does not provide the effect of trust on citizen's participation to use the services of government social media, which can be an important contribution for future researchers on this topic.

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