Bangladesh's Experience With Social Media Adoption in Public Organizations

Wang Guohua, Huazhong University of Science and Technology, China

Muhammad Atique, Huazhong University of Science and Technology, China

Bikram Biswas, Noakhali Science and Technology University, Bangladesh*

Shariful Islam, Huazhong University of Science and Technology, China

ABSTRACT

The main purpose of this research is to find the effective strategies and factors of Bangladesh's experience with social media adoption in public organizations through data from nationality representative surveys conducted on different city corporations in Bangladesh. A structured questionnaire method was conducted, and data were collected from 311 public organizations of different city corporations in Bangladesh. Technology acceptance, a multiple regression model, is estimated by the OLS method to find the significant factors of social media adoption in the public organization of Bangladesh. Moreover, the results of OLS estimation found that if the public organization of Bangladesh perceives that social media is a useful, improved, and easier tool to ðnd information, the level of social media adoption will be increased, and if the service delivery system is improved by using social media, the level of social media adoption in the public organization of Bangladesh will be increased significantly.

KEYWORDS

Adoption, Bangladesh, Determinants, Public Organizations, Social Media

INTRODUCTION

Social media platforms transmit remarkable consequences in every sphere of human activities. Individuals have integrated themselves into this platform for social communication (Adolf and Deicke, 2015). All in all, relationships are now being replaced by social media networks which have become an easy medium for discussing moral and political ideas (Brady et al., 2017).With the adoption of social media, the traditional relationship between the government and citizens is being changed across the globe (Guzman, 2016). Public organization makes widespread use of social media without promoting. (Mathieson, 2014) Private organizations are more adaptive than public organizations with the increasing level of technology over time. Most management of the public-organization are inactive with the latest technology to address upcoming problems (Serrat, 2017). They often face daunting tasks of meeting the growing client demand of gaining accessibility and comprehend information. As per to the indication of EMC Corporation (2010) that public organization management can adopt digital channels such as social media to get better, faster, and more assured communications. Social media have changed the process of governance and have ben governing throughout the world and

*Corresponding Author

those platforms offer government agencies new opportunities to improve the quality and efficiency of their interactions with constituents (Falco, 2011).

With the availability of modern information and communication technologies, there is an unprecedented opulence and flow of information among the mass people in Bangladesh. Even though, a developing country, Bangladesh has already taken up the initiative to use social media to accelerate the national decision-making process and enhance the performance of government officials at all levels, increase the involvement of the public in various activities (Azad, 2017). This will lead Bangladesh to a more responsible government in providing fundamental privileges to the general public. Thus, public organizations are getting used to the new tools of information technology, which is very relevant to ordinary citizens. It allows ordinary people to interact with the government at various levels on matters of governance to provide inputs for decision-makers (a2i, 2018). In addition to internet-based interaction between government and citizens, web 2.0 based social media platforms like, wiki, blogs, Facebook, Twitter, you-tube, etc. are providing broader connection facilities (Chun et. al. 2010; Hand & Ching, 2011; Nam, 2012). Eventually, citizens are now better connected to the government in terms of information, community collaboration, and finding rapid solutions in an emergency (Lee & Kwak, 2012).

LITERATURE REVIEW

Social Media

The media which allow creating, storing, transmitting of human knowledge and experiences, and engaging with multiple forms of sociality on cyberspace in social and cultural contexts can be considered as social media (Wittel, 2001). Mostly internet-based social media is a platform for sharing and discussing information with the users and it is the combination of software tools and technologies, online spaces, social interaction, and the creation of multiple forms of texts such as words sound pictures, and pictures that are published and shared in an online social environment. The study of social media requires a clear understanding of some terms related to society, sociality, media, information, communication, interaction, participation, private and public sphere, culture, community (Ellison & Boyd 2013).The forms of sociality include information, cognition, communication, interaction, participation, community, cooperation, and collaborative works (Fuchs, 2014). Facebook is considered as a social media as it contains a lot of information, allowing people to orm groups, communities, create shared meanings and collaborate to achieve certain goals which has 2.27 billion users. Moreover, Facebook is on the top of the most popular social media platforms around the world, followed by YouTube (1.9 billion), WhatsApp (1.5 billion users), Facebook Messenger (1.3 billion users), WeChat (1.08 billion users), Instagram (1 billion users), QQ (803 million users), QZone (531 million users), Douyin/Tik Tok (500 million users) and Sino Weibo (446 million users).

Graham (2014) explored the use and perceptions of social media as a communication tool with data collected from interviews with public information officers in local governments and he argued that various social media platforms can be beneficial as a tool for communication with local governments. By analyzing 119 Italian municipalities in Italy, Agostino and Deborah (2013) argued that YouTube can be useful for supporting public communication while Facebook can enhance public participation. The adoption and application of social in public agencies are highly influenced by officials concerned of the organizations. Multiple factors influence the use and adoption of social media in government organizations. Al Riyami and Ashrafi (2016) identified 20 factors that are important for social media adoption by using Analytic Hierarchy Process (AHP) method in ranking the factors and they argued that some factors such as Social Media Strategy, Training and experience of Staff, Community Influence, and Top Management Support are more important in developing countries when compared them with the developed countries. Meanwhile, Guillamón et al.(2016) disclose that level of e-participation, population size, citizens' income level, and level of indebtedness influence

social media use in local governments in Italy and Spain while Picazo-Vela,Gutiérrez-Martínez & Luna-Reyes,(2018)investigated the perceptions of risks, benefits, and strategic guidelines about social media applications in Mexico. They interviewed 250 public servants of the country and from the analysis of data, they concluded that the usage and application of social media at public agencies may improve communication, participation in governance and ensure more transparency in public service delivery of the government-citizen.The adoption and use of social media local government agencies is considered as a strong tool for detecting, evaluating, managing, and communicating a crisis (Bennett & Manoharan, 2016; Taekke, 2017; Graham et. al, 2015; Jin, Liu & Austin, 2014). In a study, Graham et. al (2015) have shown that there is a positive relationship between social media use and the ability to control a crisis official of local government officials. The level of social media has an impact on crisis from the data of 300 local government officials from municipalities across the United States. Interestingly, results show that local city officials used social media more during public health crises than for natural disasters, transportation, political, social, or criminal crises. Also it revealed that more city officials used social media tools more than their ability to control a crisis as well as their overall evaluations of the strength of their responses is increased. Meanwhile, the users' perceptions in local government organizations about the benefits of social media (Sharif et al., 2016) may influence the use of social media applications in organizations.

Earlier Research on Social Media Adoption

Very few studies have investigated the factors leading to the acceptation or rejection of new technology in public organizations in Bangladesh. Kamruzzaman et al., (2018) have investigated that the social media use among agricultural workers at the Department of Agricultural Extension (DAE) in Bangladesh. They perceived ease of use, usefulness are the most influential factors that determine DAE staff acceptance of social media for performing professional functions. The DAE official perceived social media as a tool for improving professional performance, such as disseminating agricultural information; garnering support for new agricultural policy; networking with clients and colleagues while enabling coordination of services provided by colleagues. There are 20 factors that influence social media adoptions in public organizations; support from top management, training, experience, and staff resources, perceived risk, financial and technical resources, relative advantage, community influence, social media strategy and policies, compatibility, centralization, organizational innovativeness, the complexity of social media, costs, autonomy, bandwagon effect, formalized culture, self-efficacy, time resources, performance expectancy, job satisfaction, and social influence(Al Riyami & Ashrafi, 2016)

It was found out the adoption models are rooted in a variety of theories including: Technology Acceptance Model (TAM), Theory of Planned Behavior, Diffusion of Innovation theory, Theory of Reasoned Action, Unified Theory of Acceptance and Use of Technology, Social Cognitive Theory, Uses and Gratification Theory. According to the theories and models, multiple factors impact on to the adoption, use, acceptance of new technologies. The factors include attitudes, social norms and intention, availability of resources, opportunities and skills, perceived significances of the resources, perceived usefulness, perceived ease of use, and attitude toward use, social influence result demonstrability, job relevance, and output quality; motivations, behavioral usage and gratifications/satisfaction (Taherdoost, 2018; Al-Tarawneh, 2019).

The new information and communication technologies, there is an unprecedented opulence and flow of information among the mass people in Bangladesh. This leads Bangladesh government to a more responsible in providing fundamental privileges to the general people. As a result, Bangladesh too, as a developing country, has taken up the initiative to use this component of ICT to enhance the performance of government officials at all levels, increase the involvement of the public in various activities (Azad, 2017). Therefore, they are getting used to the new tools of information technology with ordinary citizens. It allows ordinary people to interact with the government at various levels on matters of governance to provide inputs for decision-makers (a2i, 2018).

THEORETICAL MODEL

Availability, intention and behavior of using technology is inevitable for successful implementation of social media in organizational activities and also depends on the availability of modern technology. The issues of technology acceptance, actual utilization and their mutual relationship have been researched from multiple theoretical perspectives. In this respect, the notable models are Technology Acceptance Model (TAM) by Davis (1989), Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB).Technology acceptance can be described as the approval, favorable reception and ongoing use of newly introduced devices and systems (Umrani, Ghadially, 2008). There are four main concepts, such as performance expectancy, effort expectancy, social influence and facilitating conditions. These constructs have direct influence on intention and actual usage behavior (Venkatesh et. al., 2003). However, the present study follows the theory underlined by Technology Acceptance Model proposed by Davis (1989). The TAM, introduced by Davis (1989), is an adaptation of social psychology theory of reasoned action, specifically adapted for modeling user acceptance of information systems. The TAM shows a systematic and fundamental relationships among system designed features, perceived usefulness and ease to use, attitude towards and intentions to use and thereby recommends actual usage.

TAM assumes that beliefs or attitudes about perceived usefulness (PU) determine intention to use (IU) the technology which, then, leads to actual usage (Davis, 1989; Venktatesh and Davis, 2000). For our current study on social media, the study operationalizes IU as the continued intention to perform social media-related activities using the social media site (Fishbein and Ajzen, 1975). Further, the study defines actual use (AU) in terms of the frequency of social media used by the user. The TAM model based the relationship of PU, IU, and AU from the TRA model (Ajzen and Fishbein, 1980). Based on the TRA, we argue that a social media user's behavior to use social media is determined by their intention to perform the behavior and that this intention is, in turn, a function of his/her perceived benefit from the social media. "Intention reflects a decision that the person has made about whether to perform a behavior or not, and as such gets formed through a process of mental deliberation, conflict, and commitment that may span a significant time period" (Davis, 1986). Therefore, intention indicates a more stable mental status of a user regarding usage behavior of social media. Davis (1989) suggested revising the original TAM by removing the "attitude" construct, and the study results supported that the revised TAM model was a powerful model for predicting and explaining user behavior on only three theoretical constructs of ease of use (EU), PU, and IU. Such simplification of the theoretical framework of the TAM model for behavioral beliefs and behavior intention has become common in researches (Davis et al., 1992; Klobas, 1995; Venktatesh and Davis, 2000; Venkatesh et al., 2002; Thong et al., 2002; Lee et al., 2007; etc.).

The following model is a generalized form where actual usage or adoption of social media is determined by the intention to use of social media.

The research model in Figure 1 is adopted and revised from the mature Technology Acceptance Model (TAM) proposed by Davis (1989) to investigate the factors affecting social media adoption in the context of Bangladesh although it is rigorously proposed and investigated in prior literature for technology adoption.This is a well-known model of econometric analysis but a new technique in the discipline of communication studies.

Thus, the theoretical contribution is to testify the model for social media adoption in the context of Bangladesh. So, to prove the specialty, the researcher translates the model into a multiple regression model.

Figure 1. The Modified Technology Acceptance Model proposed by Davis (1989) for Social Media Adoption in Bangladesh
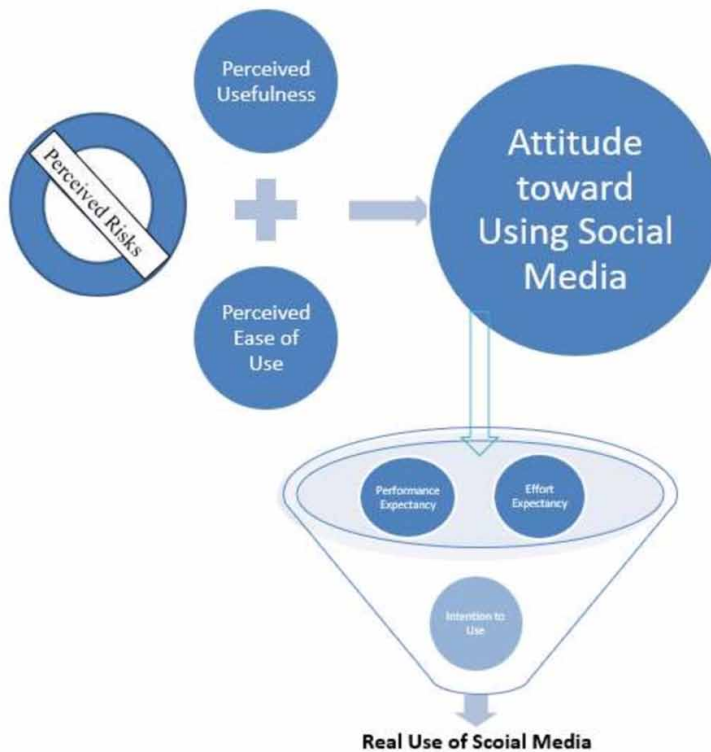
MATERIALS AND METHODS

Research Approach

This study applied the mixed approach and the social media practitioners from randomly selected government or public organizations in Bangladesh. The study used simple statistical tools like, mean, median, mode, frequency, percentage, etc. and study considers a sequential exploratory study (Creswell, 2009).Finally, to determine the factors of social media adoption, this study estimates a multiple regression model by OLS technique reflecting the relationship between five broad category factors of two mediating factors (intention to use and attitude toward using social media) and social media adoption in public organizations of Bangladesh.

Sources of Data

Though interviews primary data were collected from the government or public organizations situated in city corporation areas of Bangladesh. The reasons behind choosing city corporation areas as the sample units as they concentrated, diversified types of government organizations are trying to provide online services to their customers. The social media practitioners of those randomly selected public organizations were interviewed by face-to-face conversation using a well-designed question schedule. The interview schedule was prepared based on research questions in order to achieve the objectives.

A pilot survey was initiated in order to test the accuracy of the questionnaire about the usage behavior of social media at the organizational level in Bangladesh.

Sampling Design

Probability sampling was done in collecting primary data from the government offices in the city corporation areas of Bangladesh. Multi-stage simple random sampling technique was done for selecting the government offices. Firstly, Bangladesh was divided into different city corporations and twelve city corporations in Bangladesh were selected for study. Secondly, 311 public organizations were chosen from those four randomly selected city corporations. Finally, primary data were collected from the concern officers from the information desk or relationship officers of those randomly selected government organizations located in these four city corporation areas in Bangladesh.

Models of Factors influencing Social Media Adoption in Public Organizations in Bangladesh

Social networking technologies have attracted hundreds of millions of users of different ages, gender, culture, language, educational qualifications, or social status to build social networks, communicate and interact with each other for mutual assistance through the past years, which is of paramount importance for identifying the human behavior and relationship patterns in different platforms. Currently, social media and communication technology have become ubiquitous and are reshaping almost every facet of human life in an unprecedented manner, and the education sector is no exception. In measuring the factors affecting social media adoption in public organizations of Bangladesh, the following model is proposed (Table 1).

Table 1. Proposed Model of Analyzing the Factors Affecting Social Media Adoption in Public Organization of Bangladesh

Independent variables	Mediator Variables	Dependent variable
①Perceived benefits	Attitude towards Social Media	Social Media Adoption by the Public Organization of Bangladesh
,Perceived risks		
ƒPerceived Ease of Use		
„Performance Expectancy	Intention to Use Social Media	
Effort Expectancy		

Before conducting regression analysis, it is important to measure the identified variables in the proposed model. As seen in Table 4.1, the proposed model shows that intention of attitude toward using social media in public organizations are two mediating factors of social media.In estimating the multiple regression model, the five independent variables are disaggregated by different questions to the respondents, and the answers of the respective questions are thereby coded by using a 5-point Likert scale.

The intention to use social media in public organization is defined as a dummy variable measured by asking "whether the organizations are intended to use social media in their service delivery system or not" whereas the attitude toward using social media is also defined as a dummy variable measured by asking "whether there exists positive or negative attitude of top management toward using social media".

Table 2. Factors Influencing Social Media Adoption in Public Organization of Bangladesh

Dependent Variables	Measures	
Social Media Adoption	Combined Social Media Score	
Independent Variables	**Measures**	**Expected Effects on Social Media Adoption**
Perceived usefulness	PU_1= social media makes it easier to ðnd information. PU_2= social media improves my information-seeking. PU_3= social media helps me to ðnd information more quickly. PU_4= I ðnd social media useful in my information seeking.	+
Perceived risks	Organizations face high risks of misusing shared information in social media	-
Perceived Ease of Use	PEOU_1= My interaction with social media is clear and understandable. PEOU_2= Interacting with social media does not require a lot of my mental effort. PEOU_3= It was easy for me to become skillful in using social media. PEOU_4= I ðnd social media to be easy to use. PEOU_5= I ðnd it easy to get social media to do what I want it to do.	+
Performance Expectancy	The service delivery system is improved by using social media	+
Effort Expectancy	Customers think that social media is a feasible medium in their practical lives	+
Mediator Variables		
Attitude towards Social Media	Dummy: 1 if the organizations are intended to use social media in their service delivery system and 0 otherwise	+
Intention to Use Social Media	Dummy: 1 if there exists positive attitude of top management toward using social media and 0 otherwise	+

DATA ANALYSIS

The Characteristics of the Surveyed Public Organizations

Public organizations in Bangladesh are often referred to as state sector, government-owned undertakings/enterprises, or state-owned enterprises and they are formed under the legal proceedings, wholly or partly owned and controlled by the government and produce marketable goods and services, have an explicit or extractable budget, and are supposed to finance their operating costs from their resources (Banglapedia). However, local governments play a vital role in providing public services such as education, health, and basic infrastructure (Kurata and Arimoto, 2018). The research surveyed different public organizations and this included diversified organizations. The surveyed organizations are scattered and so far there exist no integrated services, leading to redundant works for most government information systems. The identified services are outlined in the following table.

Training and Experience on Using Social Media

Table 5 shows the training and experience of using social media. It is observed in Table-5 that the various public organization receive adaption of social media by 62% and the rest of the organizations don't receive this type of training. And it is Observed that 95% organization has not received the IT management training and the amount of taking this training is only 10%. Table-5.2 also shows the duration of taking experience. The table reveals that 47% organization has the IT works experience under less than one year. And only 6% organization has more than three or more.

**Table 3. Identified Services Provided by Surveyed Public Organizations**

Service Name	Service Name
Agricultural development	Defense
Registration/certification	Taxation
Education	Public procurement
Social Awareness	Transportation
Health	Utility services
ICT Training	Water supply and sanitation
Passport	Audit and Monitoring

Table 4. Training and experience on using social media

Types of Training	Yes (%)	No (%)	Years of Experience	Yes (%)
Adaptation of social media	62	38	Less than 1 year	47
Privacy and security issues	10	90	1-2 years	32
IT management	5	95	2-3 years	15
Data literacy	12	88	3 or more years	6

Outcomes of Social Media Usage in Public Organization of Bangladesh

Figure 2. Percentage of Responses about the Impacts of Social Media Adoption
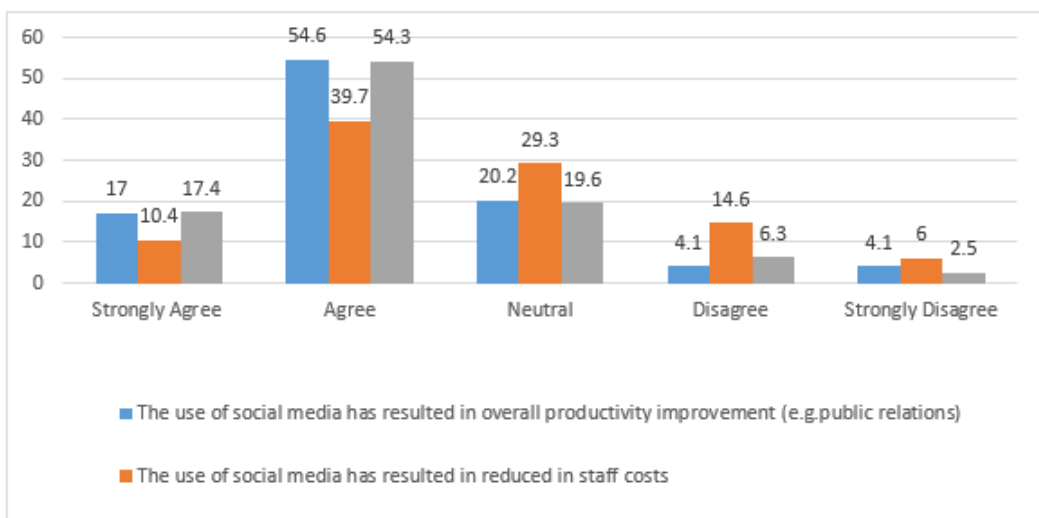
Level of Social Media Adoption by the Public Organizations

The study followed Lee and Kwak Model (2012), namely the Open Government Maturity Model (OGMM) which identifies four categories or levels such as, no social media use, emerging social media use, advanced social media use, and collaborative social media use. Thus, during data collection respondents were asked to respond to one of the four questions about no social media use, emerging social media use, advanced social media use, and collaborative social media use. Levels of social media used were examined by the individual organization and combined organizations. A descriptive analysis of the combined organizations show that overall 77% of the respondents are using some form of social media in their organization. When broken into levels of use, 49.75% are using social media at the emerging level, 7.25% are using social media at the advanced level, and 20% are using social media at the collaborative level. When separated into different city corporations, Dhaka south and north city corporations both have the highest overall level of social media use at 85%, Rajshahi city corporation has the least amount of overall social media use at 78%, and Khulna city is in the level at 78% social media use.

Table 5. Level of Social Media Adoption by the Public Organizations

Levels of Adoption	Dhaka South	Dhaka North	Khulna	Rajshahi	Total Average
No social media use	15%	15%	22%	40%	23%
Emerging Social Media Use	45%	36%	67%	51%	49.75%
Advanced Social Media Use	8%	14%	3%	4%	7.25%
Collaborative Social Media Use	32%	35%	8%	5%	20%
Combined Social Media Use	85%	85%	78%	60%	
Source: Calculated from Field Survey, 2019					

The Factors Affecting Social Media Adoption in Public Organization of Bangladesh

Firstly, this Section applies one-way ANOVA to show the relationships between the four perceived influential categories and levels of social media use. The second step uses the results from the first step to determine whether or not the five departmental environments, as proposed, are likely to result in one of the four levels of social media adoption.

The Relationships between the Perceived Influential Categories and Levels of Social Media Use

Perceived political trust, perceived organizational culture, perceived administrator preconceptions, and perceived public influence are the four main constructs used in this research after scoring social media use (SMU), the second step was to analyze each of the four proposed environmental influences to verify whether they have an impact on the levels of social media use. One-way ANOVA analyses was used to examine the relationships between the perceived influential among the four categories of responses and the levels of social media use. The following table describes the outputs of one-way ANOVA analysis.

Table 6. Results of one-way ANOVA Analysis to find out the Impact of perceived Influential Categories on Social Media Use

Assumptions	Findings	Decision
A public organization with a higher perception of political trust should lead to higher levels of social media adoption.	Accepted	There is a significant positive relationship between political trust and the levels of social media adoption
A public organization with a manager who perceives a more decentralized organizational culture should show higher levels of social media adoption.	Rejected	There is no significant relationship between the decentralized organizational culture and the levels of social media adoption.
A public organization with a manager who perceives higher organizational resources should show higher levels of social media adoption.	Accepted	There is a significant positive relationship between the organizational resources and the levels of social media adoption.
A public organization with a manager who has a higher faith in technology should show higher levels of social media adoption.	Rejected	There is a significant positive relationship between faith in technology and the levels of social media adoption
A public organization with a more innovative manager should show higher levels of social media adoption.	Accepted	There is a significant positive relationship between a more innovative manager and the levels of social media adoption
A public organization with a manager who has higher willingness to engage citizens in the participation process should show higher levels of social media adoption.	Accepted	There is a significant positive relationship between the willingness to engage citizens in the participation process and the levels of social media adoption.
A public organization with a manager who has higher willingness to engage citizens in the participation process should show higher levels of social media adoption.	Accepted	There is a significant positive relationship between the willingness to engage citizens in the participation process and the levels of social media adoption.
A public organization with a manager who has had good prior engagements with citizens should show higher levels of social media adoption.	Rejected	There is no significant relationship between a good prior engagement with citizens and the levels of social media adoption.
A public organization with a manager who perceives citizens as having the knowledge to engage in the deliberative process should show higher levels of social media adoption.	Rejected	There is no significant relationship between the knowledge to engage in the deliberative process and the levels of social media adoption.
A public organization with a manager who is highly influenced by the public/media should show higher levels of social media adoption.	Accepted	There is a significant positive relationship between the influential public/media user and the levels of social media adoption

The Factors Influencing Social Media Adoption in Public Organization of Bangladesh

The multiple regression model was estimated along with the OLS method in order to determine the factors affecting social media adoption in the public organization of Bangladesh. In doing OLS estimation, it was assumed that the level of social media adoption, measured in combined social media use, is a linear function of a set of 7 different factors or specific characteristics. These results are presented in Table 8.

Table 7. Factors Influencing Social Media in Public Organization of Bangladesh (Results of the Multiple Regression model estimated OLS method)

Factors	Coefficient	Robust Std. Err.	T	P>|t|
Perceived usefulness				
PU_1	0.118***	0.049	2.39	0.017
PU_2	0.038***	0.011	3.26	0.001
PU_3	0.0019	15.7	0.00012	0.4999
PU_4	1.342***	0.313	4.292	0.000
Perceived risks	-0.8162	481.81	-0.00169	0.4993
Perceived Ease of Use				
PEOU_1	2.24***	0.97	2.32	0.020
PEOU_2	1.34	3.81	0.35	0.726
PEOU_3	0.07	0.10	0.74	0.460
PEOU_4	0.00003***	0.000014	2.38	0.018
PEOU_5	1.48	0.91	1.61	0.108
Performance Expectancy	0.73***	0.26	2.86	0.004
Effort Expectancy	2.62	2.34	1.12	0.263
Attitude towards Social Media	0.128***	0.05	3.31	0.001
Intention to Use Social Media	0.198**	0.09	2.17	0.030

F_ Prob. > F = 0.0000; R-squared =0.87; VIF=1.28
Note: *** indicate 1% significance level

The OLS estimation results provided in Table 7 shows that about 87% of the variations in the dependent variable are explained by the variation in the explanatory variables incorporated in the model, which is shown by the value of R-square. The overall significance and fitness of the model were checked with the F value, accordingly, (Prob.>F = 0.0000) which indicates that the independent variables reliably predicted the dependent variable. Initially, results of the model revealed that there was the problem of heteroscedasticity. However, robust action was taken to remedy the problem. Moreover, the VIF test were performed to see if the model suffers from the problem of multicollinearity and incorrect specification. These tests show that the model was free from such problems.

According to Table 7, three representative questions of perceived usefulness and two representative questions of perceived ease of use with performance expectancy factors have a statistically significant relationship with the dependent variable. These are PU_1= social media makes it easier to ðnd information, PU_2= social media improves my information-seeking, PU_4= I ðnd social media useful in my information seeking, PEOU_1= my interaction with social media is clear and understandable, PEOU_4= I ðnd social media to be easy to use and

Performance expectancy. All these variables exhibit hypothesized signs and significant at level 1%. The explanation of the significant factors of social media identified in OLS estimation results is presented in the following subsections.

Perceived Usefulness

Perceived usefulness is a significant factor that has a positive impact on social media adoption in the public organization of Bangladesh. This factor is measured by observing the answers to four basic questions. The respondents' responses are depicted in the following figure.

Figure 3. Respondents' Responses against the Four Basic Questions to Determine the Perceived Usefulness
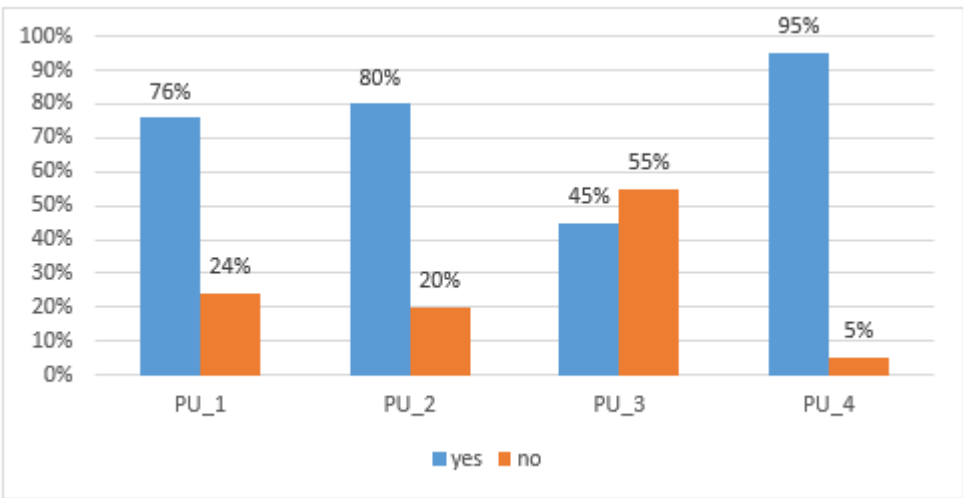

Figure 3 shows that most of the respondent organizations think that social media has significant benefits in finding information. The estimated results in Table 5 indicate that if the public organization of Bangladesh perceives that social media is a useful, improved and easier tool to ðnd information, the level of social media adoption will be increased. This result is in line with the findings of Sharif et al. (2015). They found that perceived usefulness has a positive impact on management drive with social media adoption across local governments in Australia.

Although the factors perceived risk are not significant, they have negative impact on the social media adoption in public organizations in Bangladesh like the study of Sharif et al. (2015).

Perceived Ease of Use

Results presented in Table 8 show that if public organization perceives that social media is clear, understandable and easy to use, the level of social media adoption will be increased significantly. That is, perceived ease of use is a positive and significant factor of social media adoption in public organizations of Bangladesh. This finding of relative advantages and its easiness to handle is the same as the findings of Araújo et al. (2016) and Riyami and Ashrafi (2016), but the study of Araújo et al. (2016 was on the analysis of the factors that lead companies to adopt social media. The following figure shows the distribution of respondents' responses regarding five basic questions

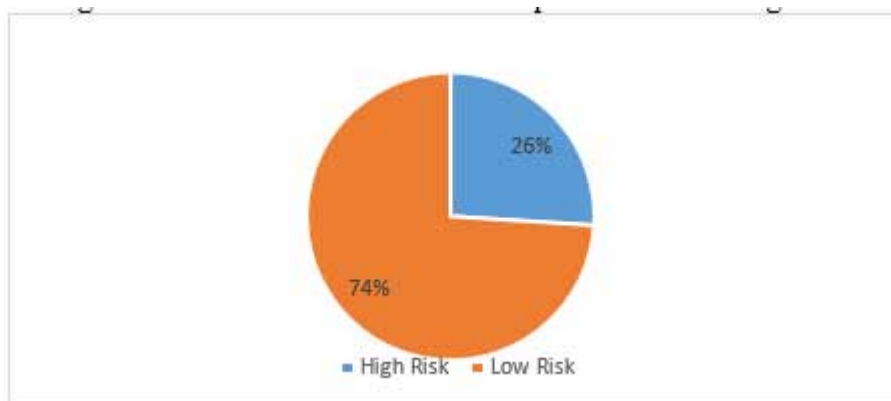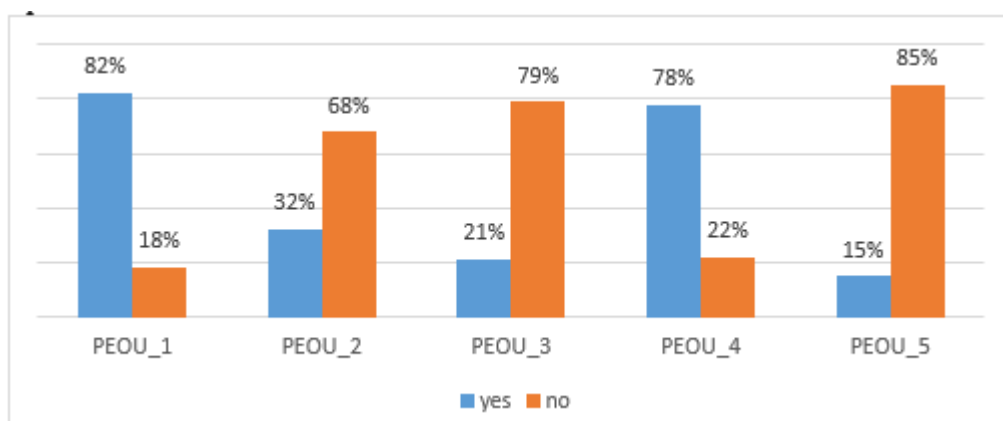Figure 4. Perceived Risks in Social Media Usage

Figure 5. Respondents' Responses against Five Basic Questions to Determine the Perceived Ease of Use

Performance Expectancy

Performance expectancy is one of the significant and positive factors of social media adoption in public organizations in Bangladesh. Alraja et al. (2016), Kurfalı et al. (2017), However, Rodrigues et al. (2016), and Zawaideh (2016) found the same findings but inconsistent with the result findings of Mensah (2019).The results of OLS estimation obtained by the service delivery system using social media along with the level of social media adoption in public organizations of Bangladesh will be increased significantly. Performance expectancy, according to Venkatesh et al. (2003), is the perception of the user that the use of particular technology will assist or enable him or her to accomplish a particular job performance. It has been established that performance expectancy is a determinant of the intention in using technology-related applications (Davis, 1989; Venkatesh et al., 2003). It is obtained that 97% organizations think that their service delivery system has been improved after using social media (Figure 6).

Figure 6. Respondents' Responses Performance Expectancy (is service delivery system improved?)
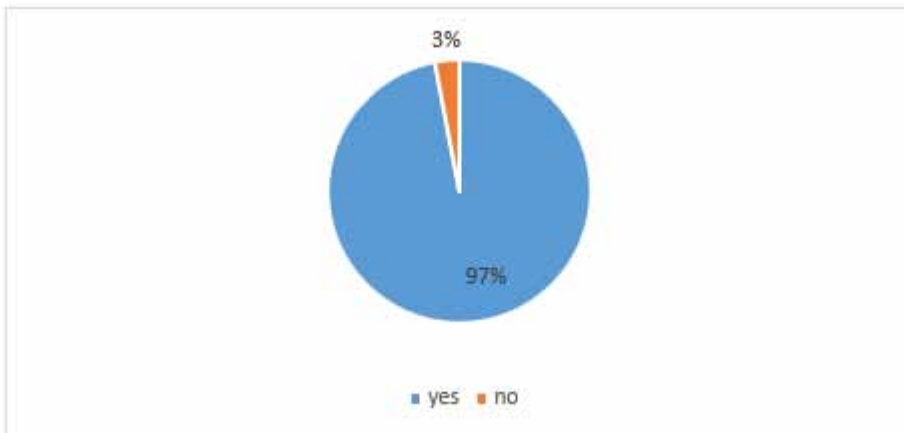
Effort Expectancy

The effort expectancy is positively related to the social media adoption in public organizations of Bangladesh. That is, if the customers of a certain organization think that social media is a feasible medium in their practical lives, they will adopt social media in their service delivery system as it is useful. This result is in line with the findings of Alraja et al. (2016) However, defers from the findings of Mensah (2019). The perception and feelings of Citizens about the use of e-government do not require much effort would be attracted to use e-government services. Moreover, earlier studies found that effort expectancy is a strong predictor of the intention to adopt and use e-government services (Kurfalı et al., 2017; Lu and Nguyen, 2016; Rodrigues et al., 2016; Zawaideh, 2016). But the factor is appeared as insignificant in OLS estimation because most of the respondents of different surveyed organizations think that customers are yet not willing to interact through online platforms (Figure 2).

Figure 7. Respondents' Responses Effort Expectancy (are customers live in online interaction?)
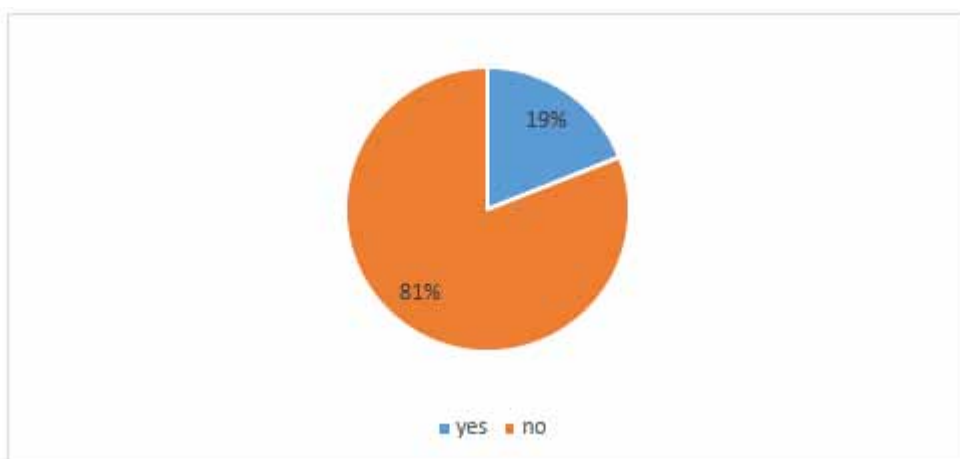
EMPIRICAL IMPLICATION

The results of the study have important implications for many stakeholders including public-private sector policymakers, social media and communication strategies, and political parties in the context of a developing country like Bangladesh. The results of the study will be used for the development of various government departments, agencies, planners, and enhancing .policy-makers to address the future challenges for e-government applications and service delivery in Bangladesh. If these recommendations are implemented, the government would highly be benefitted the cyber relationship between the government and the public.

FUTURE RESEARCH

Future studies should focus on investigating the impact of social media adoption in government organizations in Bangladesh; factors influencing citizen's expectations about social media communication by the government agencies; technological administrative risks and threats of adopting social media platforms in government organizations.

RECOMMENDATIONS

The research recommends that the government should develop a social media strategy in keeping with the following issues: organizational objectives and goals, target audience, allocation of adequate resources including personnel and facilities, feedback and content moderation policy, and privacy and security of issues.

- This research recommends public organizations including government departments and agencies should assign dedicated social media desks under the public relations department.
- The study recommends that the government should incorporate social media issues in the professional training of civil officials in order to ensure responsible and professional use of the platforms.
- This study recommends that the government should build an appropriate strategy, policy, and mechanism to monitor the social media activities by government departments and agencies.
- This research recommends that the government should recruit professional communication experts at its different departments and agencies. The recruitment may be through Bangladesh Civil Service's information cadre or graduates in journalism, communication, and media studies.
- This research recommends that the government should take necessary steps to change government agencies' management attitude toward the use of social media platforms, and engagement and feedback to the citizens.

CONCLUSION

Social media offer the governments a new approach to improve transparency and accountability, involving increasingly citizens to participate and collaborate in decision making to improve information management and access as public service. This study contributes to the better understanding of tools used in social media in order to increase the level of governments' social media adoption while providing gauging insights about the digital integration of social media links and actual presence on social media. The adoption of social media applications in government organizations is still at an early stage in Bangladesh. The public sector of Bangladesh is trying to apply social media platforms for service delivery system. Facebook is the mostly used social media by different organizations. The focuses of social media communication of the organizations are on information dissemination and

connection. Most organizations do not have a clearly outlined social media strategy. However, public organizations have favorable attitudes on social media adoption. Most of the respondents agreed that the organizations are getting lucrative benefits from using social media. There is a positive trend towards attending meetings in public organizations re done using social median. Although political trust and levels of social media are positively related, there is no significant relationship between the decentralized organizational culture and the levels of social media adoption in public organizations in Bangladesh. Moreover, resources, faith in technology along with more innovative management may help to increase the levels of social media adoption. It was revealed that there is positive and negative impacts of social media. Thus, willingness to engage citizens in the participation process is another important positive factor of the levels of social media adoption. There is no significant relationship between good prior engagements with citizens and the levels of social media adoption. It was revealed that there is no significant relationship between the knowledge to engage in the deliberative process and the levels of social media adoption while there is a significant positive relationship between the influential public/media user and the levels of social media adoption. Most of the organizations are adopting social media by the force of central policies of digital Bangladesh. Perceived usefulness and perceived ease of use play a significant in the process of adoption of social media platforms at government organizations in the country. The challenges, strategies, and outcomes of using social media in a public organization in Bangladesh. The public organization of Bangladesh is trying to apply social media platforms for the service delivery system. This is an interesting and insightful study on the topic from the context of Bangladesh. However, the current study investigates the phenomena at multiple public organizations.

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REFERENCES

Adolf, M., & Deicke, D. (2015). New modes of integration: Individuality and sociality in digital networks. *First Monday*.

Agostino, D. (2013). Using social media to engage citizens: A study of Italian municipalities. *Public Relations Review*, *39*(3), 232–234. doi:10.1016/j.pubrev.2013.02.009

Al Riyami, F., & Ashrafi, R. (2016). Factors impacting social media adoption in public sector organizations: Case of Oman. *International Journal of Computing & Information Sciences*, *12*(2), 167–177. doi:10.21700/ijcis.2016.120

Al-Tarawneh, J. M. (2019). Technology acceptance models and adoption of innovations: A literature review. *International Journal of Scientific Research*, *9*(8), 833–857.

Araújo, J. B. D., & Zilber, S. N. (2016). What factors lead companies to adopt social media in their processes: Proposal and test of a measurement model. *BBR. Brazilian Business Review*, *13*(6), 260–290. doi:10.15728/bbr.2016.13.6.5

Azad, A. K., Hoque, S., Mahmud, M., Mahiuddin, K. M., & Kamal, M. (2016). *Use of Social Media in Government for Improving Service Delivery and Government-Citizen Interaction: The Case of Bangladesh*. Academic Press.

Bennett, L. V., & Manoharan, A. P. (2017). The use of social media policies by US municipalities. *International Journal of Public Administration*, *40*(4), 317–328. doi:10.1080/01900692.2015.1113182

Bovaird, T. (2007). Beyond engagement and participation: User and community coproduction of public services. *Public Administration Review*, *67*(5), 846–860. doi:10.1111/j.1540-6210.2007.00773.x

Brady, W. J., Wills, J. A., Jost, J. T., Tucker, J. A., & Van Bavel, J. J. (2017). Emotion shapes the diffusion of moralized content in social networks. *Proceedings of the National Academy of Sciences of the United States of America*, *114*(28), 7313–7318. doi:10.1073/pnas.1618923114 PMID:28652356

Brems, C., Temmerman, M., Graham, T., & Broersma, M. (2017). Personal branding on Twitter: How employed and freelance journalists stage themselves on social media. *Digital Journalism, 5*(4), 443-459.

Chun, S., Shulman, S., Sandoval, R., & Hovy, E. (2010). Government 2.0: Making connections between citizens, data and government. *Information Polity, 15*(1-2), 1-9.

Creswell, J. W., & Zhang, W. (2009). The application of mixed methods designs to trauma research. *Journal of Traumatic Stress, 22*(6), 612-621.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace 1. *Journal of Applied Social Psychology*, *22*(14), 1111–1132. doi:10.1111/j.1559-1816.1992.tb00945.x

Ellison, N. B., & Danah, B. M. (2013). Sociality Through Social Network Sites. In The Oxford Handbook of Internet Studies. Oxford University Press.

Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, *5*(6), 00149. doi:10.15406/bbij.2017.05.00149

Falco, T. (2011). Taking social media public: Social media for successful citizen relationship management. *IBM Global Business Services*, *2011*, 2–7.

Fiľa, M., Schwarczová, L., & Mura, L. (2015). Citizen satisfaction survey as a tool of citizen relationship management of local government in Slovakia. *Serbian Journal of Management*, *10*(1), 117–129. doi:10.5937/sjm10-7147

Fuchs, C. (2014). *What is social media, Social Media: A Critical Introduction*. Sage.

Guillamón, M. D., Ríos, A. M., Gesuele, B., & Metallo, C. (2016). Factors influencing social media use in local governments: The case of Italy and Spain. *Government Information Quarterly*, *33*(3), 460–471.

Guzman, L. A., Arellana, J., Oviedo, D., & Aristizábal, C. A. M. (2021). COVID-19, activity and mobility patterns in Bogotá. Are we ready for a '15-minute city'? *Travel Behaviour and Society, 24*, 245-256.

Hand, L. C., & Ching, B. D. (2011). "You Have One Friend Request" An Exploration of Power and Citizen Engagement in Local Governments' Use of Social Media. *Administrative Theory & Praxis*, *33*(3), 362–382. doi:10.2753/ATP1084-1806330303

Jin, Y., Liu, B. F., & Austin, L. L. (2014). Examining the role of social media in effective crisis management: The effects of crisis origin, information form, and source on publics' crisis responses. *Communication Research*, *41*(1), 74–94. doi:10.1177/0093650211423918

Kamruzzaman, M., Chowdhury, A., Van Paassen, A., & Ganpat, W. (2018). Extension Agents' Use and Acceptance of Social Media: The Case of the Department of Agricultural Extension in Bangladesh. *Journal of International Agricultural and Extension Education*, *25*(2), 132–149. doi:10.5191/jiaee.2018.25210

Khan, A., Muttakin, M. B., & Siddiqui, J. (2013). Corporate governance and corporate social responsibility disclosures: Evidence from an emerging economy. *Journal of Business Ethics*, *114*(2), 207–223. doi:10.1007/s10551-012-1336-0

Kumar, V., Mukerji, B., Butt, I., & Persaud, A. (2007). Factors for successful e-government adoption: A conceptual framework. *Electronic*. *Journal of E-Government*, *5*(1).

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

Lee, G., & Kwak, Y. H. (2012). An open government maturity model for social media-based public engagement. *Government Information Quarterly*, *29*(4), 492–503. doi:10.1016/j.giq.2012.06.001

Lee, M. K., Cheung, C. M., & Chen, Z. (2007). Understanding user acceptance of multimedia messaging services: An empirical study. *Journal of the American Society for Information Science and Technology*, *58*(13), 2066–2077. doi:10.1002/asi.20670

Loukis, E., Charalabidis, Y., & Androutsopoulou, A. (2017). Promoting open innovation in the public sector through social media monitoring. *Government Information Quarterly*, *34*(1), 99–109. doi:10.1016/j.giq.2016.09.004

Masrom, M. (2007). Technology acceptance model and e-learning. *Technology (Elmsford, N.Y.)*, *21*(24), 81.

Matheson, D. (2018). The performance of publicness in social media: Tracing patterns in tweets after a disaster. *Media Culture & Society*, *40*(4), 584–599. doi:10.1177/0163443717741356

Mohsin Ali, R., Bin Bali Mahomed, A. S., & Binti Raja Yusof, N. (2017). Impact of culture on social media usage within public-private organizations using technology acceptance model. *Science International (Lahore)*, *29*(6), 1225–1230.

Nam, T. (2012). Suggesting frameworks of citizen-sourcing via Government 2.0. *Government Information Quarterly*, *29*(1), 12–20. doi:10.1016/j.giq.2011.07.005

Ndou, V. (2004). E–Government for developing countries: Opportunities and challenges. *The Electronic Journal on Information Systems in Developing Countries*, *18*(1), 1–24. doi:10.1002/j.1681-4835.2004.tb00117.x

O'Reilly, T. (2005). *Web 2.0: Compact definition*. Academic Press.

Patel, U. R., & Bhattacharya, S. (2003). *The Financial Leverage Coefficient: Macroeconomic Implications of Government Involvement in Intermediation.* Center for Research on Economic Development and Policy Forum Working Paper (No. 157).

Picazo-Vela, S., Gutiérrez-Martínez, I., & Luna-Reyes, L. (2012). Understanding risks, benefits, and strategic alternatives of social media applications in the public organization. *Government Information Quarterly*, *29*(4), 504–511. doi:10.1016/j.giq.2012.07.002

Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: An empirical study on Facebook. *Journal of Enterprise Information Management*, *27*(1), 6–30. doi:10.1108/JEIM-04-2012-0011

Seigler, D. J. (2017). Social media responsiveness in the public sector: A study of social media adoption in three functional areas of local government. *International Journal of Organization Theory and Behavior*, *20*(1), 72–99. doi:10.1108/IJOTB-20-01-2017-B003

Serrat, O. (2017). Social network analysis. In *Knowledge solutions* (pp. 39–43). Springer. doi:10.1007/978-981-10-0983-9_9

Sharif, M. H. M., Troshani, I., & Davidson, R. (2015). Public sector adoption of social media. *Journal of Computer Information Systems*, *55*(4), 53–61. doi:10.1080/08874417.2015.11645787

Tække, J. (2017). Crisis Communication and Social Media. A Systems-and Medium-Theoretical Perspective. *Systems Research and Behavioral Science*, *34*(2), 182–194. doi:10.1002/sres.2451

Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, *22*, 960–967. doi:10.1016/j.promfg.2018.03.137

Umrani, F., & Ghadially, R. (2008). Gender and decision-making in technology adoption among youth: A study of computer learners in India. *Psychology and Developing Societies*, *20*(2), 209–227. doi:10.1177/097133360802000204

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204. doi:10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Vitak, J., & Ellison, N. B. (2013). 'There's a network out there you might as well tap': Exploring the benefits of and barriers to exchanging informational and support-based resources on Facebook. *New Media & Society*, *15*(2), 243–259. doi:10.1177/1461444812451566

Wittel, A. (2001). Toward a network sociality. *Theory, Culture & Society*, *18*(6), 51–76. doi:10.1177/026327601018006003

Zaman, A. K. M. H., Alam, K. M. T., & Islam, M. J. (2010). Urbanization in Bangladesh: Present status and policy implications. *ASA University Review*, *4*(2), 1–16.

Wang Guohua received his Ph.D. in 2000 from the Institute of Public Finance of the Ministry of Finance, Beijing, China in 2006. He is a full Professor of Public administration at Huazhong University of Science and Technology, Wuhan, Hubei, China. His research interests are Public Policy Analysis, Public Opinion, E-Government, Management and Innovation and Technology.

Muhammad Atique received his Master's degree in Public Administration from the Huazhong University of Science and Technology, Wuhan, Hubei, China in 2018. He is now doing his Ph.D. in Public Administration at the Huazhong University of Science and Technology, Wuhan, Hubei, China. His research interest is E-government, Media governance.

Bikram Biswas received his Master's in Administrative Management from the Huazhong University of Science and Technology, Wuhan, Hubei, China in 2018. He is now working as a lecturer at the department of educational Administration, Noakhali Science and Technology University, Noakhali-3814, Bangladesh. His research interest is E-government, public administration, leadership, education, governance.

Shariful Islam received his Ph.D. in Journalism from the School of Journalism and Information Communication, Huazhong University of Science and Technology, Wuhan, Hubei, China in 2020.