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Trust in Government during COVID-19 Pandemic in Bangladesh: An Analysis of Social Media Users' Perception of Misinformation and Knowledge about Government Measures

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ABSTRACT

The study aims to understand social media users' trust in government during the early phase of the COVID-19 pandemic in Bangladesh. Social Media Users' trust in government is analyzed based on their perceived misinformation and knowledge about government measures taken to deal with the pandemic at that earlier stage. The study found that social media users who perceive a lesser amount of misinformation have a higher knowledge of government measures. Consequently, more knowledge about those measures predicts a higher level of trust in government. The study also demonstrates that a higher level of trust in government can help people secure more knowledge about government measures amidst misinformation. The results suggest that predisposition to trust based on government performance evaluation, individual and societal level values and beliefs, and culture of trusting institutions could play a pivotal role in determining how people perceive misinformation and knowledge about government measures.

KEYWORDS

Bangladesh; Covid-19; knowledge; misinformation; trust in government

Introduction

Public trust in government becomes crucial because it offers an understanding of compliance with public order (Im et al., 2014; Jimenez & Iyer, 2016; Lee & Schachter, 2019; Tyler, 1990). Public noncompliance has been an issue in Bangladesh during the COVID-19 pandemic (Anwar et al., 2020). Before digging deep into the aspect of the complying behavior of the public, it is essential to know the situation in Bangladesh during the early phase of the COVID-19 pandemic.

The first COVID-19 case in Bangladesh was detected on March 8, 2020. It is important to note that from March 8 to May 25, 2020, the total number of cases was 12,530, with 501 deaths (World Health Organization WHO, 2021). During the first couple of months of the pandemic in 2020, the government of Bangladesh: a) extended general shut down of public and private institutions till May 30; b)asked the garment industry workers to quarantine for fourteen days before joining their work; c) recruited 5000 temporary nurses to treat the COVID-19 patients; d) announced for stimulus package worth of BDT 6750 million; e) provided cash assistance before Eid-ul-Fitr (religious festival for Muslims) to mitigate the sufferings of the jobless people. Needless to say, a study on how these measures might have affected the behavior of the public during the early phase of the pandemic is a need of time.

This is also because, identifying public behavior patterns at the early pandemic stage will help public managers to devise necessary mechanisms to boost policy actions to minimize the gaps in the next phase of pandemic management (Gabarron et al., 2021; Michelle Driedger et al., 2018; Vinck et al., 2019).

Recent research identified that the public did not effectively comply with the government measures when the pandemic was in the embryonic stage in Bangladesh (Hosen et al., 2021; Islam et al., 2020).Hossain et al. (2020), Hossain M. J. et al. 2021 while studying the public compliance during the early phase of the COVID-19 pandemic in Bangladesh, showed that more than half of the people failed to comply with the public measures due to their lack of knowledge about different policy decisions, taken by the government in order to control the pandemic situation.

Public noncompliance indicates the chronic absence of citizens' trust in government in Bangladesh (Askvik & Jamil, 2013; Baniamin et al., 2020a; Islam & Mahmud, 2015; Jamil & Muhammad Baniamin, 2020). Not many studies were conducted in an emergency situation like the

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COVID-19 pandemic. Thus, Baniamin et al. (2020b) emphasized that in order to understand the impact of the COVID-19 related government measures and their success, one needs to consider the extent of "trust" in government. Understanding trust in government is crucial when an abundance of misinformation about a new disease outbreak unfolds in society to paralyze the whole phenomenon of public compliance (Michelle Driedger et al., 2018; Van der Weerd et al., 2011; Vinck et al., 2019).

Different countries had a torrid time dealing with the epidemic of misinformation about the disease during the first phase of the COVID-19 pandemic (World Health Organization WHO, 2020). Gabarron et al. (2021) performed a meta-analysis of studies investigating misinformation sources during the pandemic's early phase. They found that thirty percent of the total amount of misinformation was spread through social media. It implies that social media users, being educated and having access to different media, i.e., print and electronic, have more exposure to misinformation. For example, poor and uneducated population with lesser internet access may only be exposed to misinformation through family and social networks (see Lewandowsky et al., 2012). Therefore, in order to examine the correlation between misinformation and public trust, this study focuses on the behavioral aspect of social media users, which is a selectively segregated population group that has more propensity to receive misinformation.

The analysis of behavioral elements would contribute to the impending actions and approaches of public managers, since they need to realize how people, who have a higher probability of being exposed to misinformation, may behave regarding the spread of misinformation at a later stage of the pandemic. Hence, this study contributes to the scholarship on misinformation and its impact at the individual level and propels the emerging field of behavioral public administration. It is important to note that the growth of behavioral public administration requires more studies on specific population groups to determine multifarious complexities of public administration and management, especially when public compliance appears as an essential factor (Ali & Altaf, 2021). Moreover, Baekgaard et al. (2020) demonstrated that citizens' trust tends to trickle down to most government organizations during the COVID-19 pandemic, impacting a higher level of public compliance of regulations. Therefore, this study would add to the existing dialogue on trust in government as it focuses on two essential variables like 'misinformation' and 'knowledge about government measures.'

The path between misinformation, knowledge about government measure and trust in government

The fundamental focus of this study includes misinformation, the level of knowledge about government measures, and trust in government. Prior empirical research demonstrated that, in a pandemic situation, misinformation could impact the level of personal knowledge about different government measures taken to address the pandemic (Michelle Driedger et al., 2018; Van der Weerd et al., 2011; Vinck et al., 2019). Similarly, psychological research argued that knowledge comes from information we receive (Bose, 2004; Graves, 2016; Vraga & Bode, 2020). Knowledge is categorized as declarative and procedural (Hartl & Hartlová, 2010). Declarative knowledge means the declaration of an individual that an individual knows something. On the other hand, procedural knowledge signifies information about how particular things happen and occur. However, both declarative and procedural knowledge receive impact from contextualized information (Bose, 2004). Since the broader context of this particular study is COVID-19, hence in this case, knowledge is an outcome of information that is context-specific. Thus, it is likely that misinformation can also influence the level of knowledge. Here, the level of knowledge means the knowledge about government measures taken during the early stage of the COVID-19 pandemic.

Misinformation is defined as messages that conflict with the best available evidence (Krause et al., 2020). In other words, misinformation is conceptualized as a combination of individuals' perceived accuracy of the information based on expert consensus (Vraga & Bode, 2020). Importantly, expert consensus is also information that is often decoded by laypersons when they perceive the level of knowledge about what the government does and decides to trust the government or not (Graves, 2016).

Therefore, misinformation is, as individuals may perceive, how individuals interpret the information they receive based on the expert consensus to perceive the accuracy of a piece of information. Individuals often assess information subjectively. Thus, a specific piece of information is not perceived as accurate to everybody in a society. Such a variation in perception occurs as individuals use their beliefs and ideologies while perceiving information's accuracy based on four features, i.e., consistency, coherency, credibility, and general acceptability (Lewandowsky et al., 2012). Here, consistency refers to an individual's perception about a piece of information, whether it is consistent with their belief as they assess the information at a cognitive level

(Winkielman et al., 2012). For example, suppose a person believes that wearing a mask does not prevent the spread of the disease. In that case, they will perceive the information about the mask's effectiveness and face-covering as inconsistent. Coherency means an individual's assessment of a piece of information's logical strength. Importantly, Lewandowsky et al. (2012) argued that people tend to assess the logic behind a piece of information based on their beliefs and the influence of social networks. For instance, an individual may perceive the information about the effectiveness of wearing a mask as illogical if they believe the experts or social network who continuously emphasize how face-covering trap harmful particles that come through the breath.

The credibility of information sources is perceived at the individual level based on ideology and belief (Lewandowsky et al., 2012). If someone supports political party X, they may not perceive a piece of information as accurate if it comes from the political party Y. It implies that ideological affiliation also plays a vital role in perceiving the source's credibility. The general acceptability element referred to the perceived broader societal level acceptability of the information (Lewandowsky et al., 2012). For example, individuals tend to perceive a piece of information as generally acceptable if the information is generally approved in society based on the expert consensus. Overall, the process of assessing information accuracy indicates how individuals gain knowledge based on information within a specific context. So, during the early phase of the COVID-19 outbreak in Bangladesh, individuals possibly went through the behavioral process described above to learn about different government measures taken to deal with the pandemic. Thus, this study hypothesizes that misinformation related to the COVID-19 pandemic and its management negatively affects the level of knowledge about government measures.

H1: Misinformation negatively affects the level of knowledge about government measures taken to deal with the COVID-19 pandemic.

Additionally, Alam (2020) argued that misinformation influences the perception of the government's trustworthiness during the COVID-19 pandemic in Bangladesh. However, while studying the COVID-19 pandemic's early stage in Bangladesh, Alam (2020) and Joarder et al. (2020) did not explicitly discuss the impact of knowledge about government measures on public trust in government. Nevertheless, they argued that trust in government requires empirical investigation to understand the government's role in disseminating information about their responses to deal with the pandemic at its nascent stage.

Knowledge about government measures affects social trust, which ultimately influences the decision to trust the government, especially when an emergency unfolds (Siegrist & Zingg, 2013; Robbins 2012). Grimmelikhuijsen (2012) demonstrates a possible linkage between information and trust in government through knowledge about what the government does. However, Grimmelikhuijsen (2012) distinguished knowledge about government measures and government performance outcomes. According to Grimmelikhuijsen (2012), government measures are policy decisions, whereas performance outcomes are objective indicators that help a person evaluate the government (Van Ryzin, 2007). However, while studying the pandemic situation, Vinck et al. (2019) and Michelle Driedger et al. (2018) argued that government measures are also the indicators of performance related to the management of the pandemic situation.

Van de Walle and Bouckaert (2003), and Van Ryzin (2007) showed that better performance positively affects public trust in government. However, the public needs to be informed about those performance outcomes. Hence, Baekgaard and Serritzlew (2016) found that information about government performance disseminated through diverse sources influences the knowledge about different measures taken to deal with public problems. Therefore, misinformation can negatively affect the knowledge about government measures, which can negatively affect trust in government.

Interestingly, Esau (2016) argued that increased knowledge about what the government is doing allows the citizens to be more discerned and often skeptical about government performances. It means, more knowledge about government policy actions would result in lesser trust in government. However, a few studies showed that people often rely on prior and current performance, beliefs, and cultural values to decide to trust the government (Jamil & Muhammad Baniamin, 2020; Baniamin et al., 2020a; Askvik & Jamil, 2013; Dinesen, 2013; Robbins, 2012; Freitag & Traunmüller, 2009; Uslaner, 2002). Importantly, without knowing much about the government's performance, people may not perceive that their political belief is similar to the party in power (Robbins, 2012). It means, without knowledge about government performance, which ultimately can shape beliefs, people would not trust the government. In other words, more knowledge about government measures will predict higher trust in government. Additionally, during a pandemic situation, when people tend to look up to the public sector for necessary policy measures, lesser knowledge about government measures would influence people's perception of the government not doing much to fight the disease. Hence, this study hypothesizes that lack of knowledge predicts lesser trust in government.

H2: A Lack of knowledge about government measures taken to deal with the COVID-19 pandemic predicts lesser trust in government.

The moderating role of trust in government

Trust in government does not appear suddenly. Instead, trust in government incorporates both short- and long-term performance evaluation along with the predisposition to trust (Keele, 2007). Although Kampen et al. (2006) controlled the predisposition while running an analysis to examine the relationship between citizens' satisfaction and trust in government at a given point of time, the controlling indicates a possible impact of predisposition on trust in government.

Trust in government is an expression and decision that the public makes based on current and past evaluations of the institution, even though studies measure the level of trust at a specific time (Hardin, 2013). Thus, understanding a particular segment of a population's trust in government at a given point in time would necessarily combine the current and previous performance (Christensen & Lægreid, 2005). Notably, the public often refers to their culture, beliefs, and ideologies that are learned through political socialization to evaluate the current and past performances (Jamil & Muhammad Baniamin, 2020; Baniamin et al., 2020a; Askvik & Jamil, 2013; Dinesen, 2013; Robbins, 2012; Freitag & Traunmüller, 2009; Uslaner, 2002).

Culture, beliefs, ideologies, and performance evaluation are antecedents of social and political trust (Robbins, 2012; Keele, 2007). Both social and political trust determine trust in government ((Robbins, 2012; Keele, 2007; Newton & Norris, 2000). Social trust refers to a generalized predisposition to trust others across in and out-groups (Uslaner, 2002; Hardin, 2002). On the other hand, political trust denotes the assessment of how political institutions (e.g., government) perform to meet public demands and expectations (Zmerli & Newton, 2017; Hardin, 2002).

Notably, the generalized predisposition to social trust is developed based on the interaction between a particular trust-based relationship and general perception of a group or an institution's trustworthiness (Zmerli & Newton, 2017). For example, an individual having a trust-based relationship with an executive or minister may generally trust the government. Significantly, such particularized social trust, as formed in the past, can influence the perception about the present political performance of an individual and institutions (Robbins, 2012; Uslaner, 2002).

Additionally, a culture of trusting the government is predominant political behavior in a developing country like Bangladesh (Baniamin et al., 2020a; Jamil & Muhammad Baniamin, 2020). Notably, culture incorporates the tendency to rely on individuals' beliefs and ideologies to form social and political trust in different groups and institutions that ultimately determine trust in government (Jamil & Muhammad Baniamin, 2020; Baniamin et al., 2020a; Robbins, 2012; Uslaner, 2002). For example, socio-economically marginalized people often perceive that trusting the government is a culture eventhough they think its performance is not satisfactory (Baniamin et al., 2020a). At the same time, people with more education and higher socio-economic status tend to rely on political parties' beliefs and ideological attachments to determine whether they should trust the government (Christensen & Lægreid, 2005). Nonetheless, it can be argued that the influence of culture, ideologies, and beliefs on social and political trust should not be differentiated based on education and socio-economic status in a developing country like Bangladesh, where the society has a collectivist nature of relationship across different generations. It implies that younger generations are likely to take clues from their older generations' predisposition when deciding to trust political institutions (Wang & Senzaki, 2019). In other words, in a collective society like Bangladesh, different generations likely influence each other when evaluating government performance. Therefore, trust in government cannot always be the exclusive outcome of knowledge about government measures during a specific emergency like the COVID-19 pandemic. So, trust in government could be a moderator between misinformation and the level of knowledge about government measures. Thus, while considering the hypothesis 1, this study builds further hypothesizes that trust in government can moderate the negative effect of misinformation on the level of knowledge about government measures.

H3: Trust in government moderates the negative effect of misinformation on the level of knowledge about government measures taken to deal with the COVID-19 pandemic.

Research method

Data and procedure

The purpose of the study was to investigate the relationship between the variables' Trust in Government', 'Misinforma tion Related to COVID-19′, and 'Knowledge about Government Measures related to COVID-19 Pandemic' at the individual level. To analyze the relationships between the variables at the individual level and test the three

hypotheses, a '*Google Form*' was used for a cross-sectional survey conducted from May 5 to May 20, 2020. Participants were recruited through Facebook. Due to strict social distancing guidelines and travel bans in March-May, 2020 in Bangladesh, the data could not be collected in person with the participants who do not use Facebook. The research team realized that it would not get enough responses through mail surveys as many people might not go to the post office to drop their responses due to the fear of spreading the virus.

Additionally, this study did not receive any funding from any source. Thus, this study adopted the 'push out' strategy of recruiting survey participants through social media that does not incur any cost (Antoun et al., 2015). It is important to note that Facebook posts and advertisements often outperform postal surveys regarding response, diverse pool of participants, and cost (Batterham, 2014; Carlini et al., 2015). The survey questionnaire in Google Form was distributed to different Facebook open groups where only Bangladeshi people have memberships. It is important to note that the survey was distributed to a Facebook group called *'Coronavirus Emergency Response Bangladesh*.' This group provides an interactive platform to the COVID-19 survivors and infected persons to share their stories and suggestions for others to deal with the pandemic in the context of Bangladesh's health system and administrative capacity. Thus, the survey reached out to a population that experienced the COVID-19 attack. Moreover, 38 million people in Bangladesh use Facebook (The Daily Prothom Alo, 2021). Thus, this study had the opportunity to reach a diverse group of participants through Facebook open groups during a lockdown and social distancing situation when in-person data collection was difficult from a larger population group.

The survey questionnaire was translated from English to Bangla for the participants' convenience and to capture responses from more diverse sections of the population. For the study variable sections of the questionnaire, the study used four-point Likert scale items. However, the four-point Likert scale does not make any difference in reliability and validity compared to the five and eleven-point Likert scale, including a mid-point (Leung, 2011).

Finally, the survey received n= 819 responses. A power analysis test using the statistical software '*R*,' as Schoemann et al. (2017) suggested, determined the sample size at the given statistical power of the inference. The power analysis result generated that n= 600 sample size is required to achieve 90% of the power of statistical inference at a 95% confidence level. Thus, the response size of n= 819 was more than the minimum requirement for the sample size.

It is important to note that this study was conducted during the early phase of the COVID-19 outbreak in Bangladesh. Thus, one can argue that during that period, the government even could not assess the situation and develop necessary intervention strategies with its fragile health service system, and the mass level of concern and awareness were also very among the public. Nevertheless, a recent study showed that the overall preparedness for fighting the pandemic was 69% during the first three months of the COVID-19 outbreak (Hossain, M. B. et al., 2020). Hossain, M. B. et al. (2020) accounted for individual, family, and social level preparedness to study the overall preparedness as they also talked about how the government took different measures to fight the pandemic during those first three months.

Moreover, Hossain et al. (2020); Hossain, M. J. et al. (2021) described several government measures that had been taken at the initial stage of the outbreak. In addition to that, Hossain et al. (2020); Hossain, M. J. et al. (2021) reviewed the web pages of the Cabinet Division, the Ministry of Health, and the Prime Minister's Office to find COVID-19 related policy measures. As a result, they found eight different policy measures to provide healthcare, food, and cash assistance to the poor and unemployed people and financial incentives to the affected businesses due to the nationwide lockdown. Therefore, the previous research and government measures taken during that period imply that neither the society nor the government was completely unprepared, unaware, and ignorant to assess the severity of the disease at that stage of the pandemic in Bangladesh. Hence, this study is valuable to further understanding the variables examined in the proposed models. As a supplement, this study reviewed the news articles published in major newspapers and online news portals in Bangladesh to contextualize the findings. The study included a search for such reactions/feedback in the Daily Prothom Alo, The KalerKontho, The Daily Jugantor, The Daily Star, The New Age, The Dhaka Tribune, BDNews24.com, and Banglanews24.com published between April 30-May 20, 2020.

Measures

Misinformation related to COVID-19 pandemic

The study followed Lewandowsky et al.'s (2012) four dimensions of misinformation (consistency, coherency, general acceptability of the information, and credibility of the source) to measure 'misinformation at the individuallevel. This study focuses on gauging participants' perceptions about information. It means whether the participants perceive the information they receive as

misinformation. Additionally, the survey asked the participants, '*How frequently do you seek information related to COVID 19 from different sources?*' to gauge their response to the amount of information they receive. A four-point Likert scale for that question was used (*1 = Never, 2 = Sometimes, 3 = Most of the time, 4 = Always).*

The survey included questions to know the responses about the consistency, coherency, and general acceptability of the information using a four-point Likert scale (*1 = Very Low, 2 = Low, 3 = High, 4 = Very High)*. The questions were: *To what extent do you think the information related to COVID 19 you receive is consistent with your existing belief?"; "To what extent do you think the information related to COVID 19 you receive are coherent?"; "To what extent do you think that the information you receive from various sources is generally acceptable?"* The survey used the declarative response for these three questions (Schwarz, 2004).

There were four questions, one for each source, to get the experiential response about the credibility of the sources like traditional media, including newspaper and television, social media and online portals, family and friends, and government agencies. The survey considered participants' reliance on different sources to gauge those sources' credibility. The questions were: *"To what extent do you rely on national Newspapers and Television to get information related to COVID 19 pandemic?"; "To what extent do you rely on national social media and online portals to get information related to COVID 19 pandemic?"; "To what extent do you rely on your family and friends to get information related to COVID 19 pandemic?"; "To what extent do you rely on government organizations and webpages to get information related to COVID 19 pandemic?"* Like previous items, the questions had a four-point Likert scale (*1 = Very Low, 2 = Low, 3 = High, 4 = Very High for those items).*

Knowledge about government measures related to COVID-19 pandemic

The survey followed the experiential type of response by asking five questions with binary response options (i.e., *Yes* and *No*) for assessing the knowledge about government measures. The study planned to incorporate the variable as an observed variable to gauge individual-level knowledge about government measures. Additionally, the study followed the 'declarative approach' to measure the knowledge using binary response items, as Hartl and Hartlová (2010) described. It means asking participants if they know about a particular measure government took. The five measures were identified taken by different government agenciesduring March-May 2020. A content review of policy measures from the Cabinet Division's web page, Ministry of Health, and The Prime Minister's office was used to select five crucial measures. The questions were: *"Do you know the government's decision to extend the general holiday in the country till May 30, 2020?"; "Do you know that government has asked the garment workers returning from Dhaka, Narayanganj and Gazipur region to their home-town must be quarantined at their home?"; "Do you know that the government has recruited 5000 temporary nurses to treat COVID 19 patients?"; "Do you know that Prime minister of Bangladesh announced a stimulus package of BDT 6750 million for public expenditure, social safety net, and monetary supply?"; and "Do you know that the government would provide cash assistance before Eid-ul-Fitr (religious festival for Muslims) to mitigate the sufferings of those turned jobless amid the Coronavirus outbreak?"*

Trust in government

Trust in government is a perceived performance evaluation of the government as influenced by culture, political ideology, beliefs, and moral values, as pointed out (Robbins, 2012; Christensen & Lægreid, 2005; Van de Walle & Bouckaert, 2003). However, this study did not intend to investigate the impact of those socio-political factors on government trust in this study. Instead, trust in government was measured with the items that gauge the perception of the government's trustworthiness based on the three-component measures like competence, benevolence, and honesty, as discussed by Tschannen-Moran and Hoy (2000) (see Table 1). Grimmelikhuijsen and Knies (2017) also suggested that competence, benevolence, and integrity components can be used to measure trust in government.

Data analysis

A Covariance-Based (CB) Structural Equation Modeling (SEM) was conducted to test the hypotheses (i.e., H1and H2). A moderation analysis was performed to explain *hypothesis 3* (H3). STATA 16 was used to run the SEM and the moderation analysis. A missing data analysis showed that there was less than 2% of missing data.

Before running the SEM model, Exploratory Factor Analysis (EFA) with both 'Promax' and 'Varimax' syntax was run to identify the latent constructs. Both *promax* and *varimax* extracted identical results showing four factors with Eigenvalues larger than 1.00, and those factors were retained (Brown, 2009) (see Table 2). Harman's single factor score test in SPSS showed no CMB issue. The single factor test showed that a single factor is responsible for 23% variance, which shows no CMB in the dataset (see

Table 1. Measures of trust in government.

Features/ Components	Questions/Items	Scale
(1) Competency	To what extent do you think the government effectively delivers public services and maintains the rule of law during the Pandemic COVID-19?	1 = Very Low, 2 = Low, 3 = High, 4 = Very High
	Do you think the chief of the government is successfully managing the public affairs during this pandemic?	1 = Never, 2 = Sometimes, 3 = Most of the Time, 4 = Always
	Do you think the political personnel of the party in power is successfully managing the public affairs during this pandemic?	1 = Never, 2 = Sometimes, 3 = Most of the Time, 4 = Always
(2) Benevolence	How much caring and concern do you perceive the government is towards managing the public services during the pandemic?	1 = Very Low, 2 = Low, 3 = High, 4 = Very High
(3) Honesty	To what extent generally the government delivers services and provides information to the public with honesty?	1 = Very Low, 2 = Low, 3 = High, 4 = Very High
	The government has followed the 'Standard Operating Procedure' rules and laws in delivering services and disseminating information during the pandemic.	1 = Never, 2 = Sometimes, 3 = Most of the Time, 4 = Always

Table 2. Exploratory factor analysis results.

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	3.84	1.96	0.27	0.27
Factor 2	1.91	0.60	0.14	0.41
Factor 3	1.28	0.20	0.09	0.50
Factor 4	1.08	-	0.08	0.58

Note: chi2(91) = 3094.38 Prob>chi2 = 0.00

Podsakoff et al., 2003). Additionally, the '*validscale*' syntax in STATA 16 was used to identify the convergent and discriminant validity of the measures.

The EFA analysis with both *promax* and *varimax*rotation was conducted by factor loading greater than 0.5 (see Table 3). Factor loading greater than 0.5 is significant to define a factor (Kline, 2013). However, the analysis showed that Factor 4 only has one item. Thus, the other three factors with more than two items were taken into accountto determine the latent variables for SEM. Factor 1 is comprised of the constructs that measure the latent variable called 'Trust in Government.' Factor 2, comprising the three items, i.e., consistency, coherency, and general acceptability, measured information's perceived accuracy at the individual level. Factor 3 was defined as a latent variable called 'More Information from Mainstream and Social Media.' However, the item 'information from the government sources' did not load to any of the significant factors. As a result, it was omitted from the convergent and discriminant validity analysis.

The convergent and discriminant validity, internal consistency test showed that the latent variable 'More Information from Mainstream and Social Media' suffers from a lack of validity and consistency as the correlation of the items with their own dimension is below 0.40 and greater than those computed with other scores (Perrot et al., 2018) (see Table 4). Hence, the SEM was performed with the latent variables' Accuracy of Information Related the COVID-19 Pandemic' ($\alpha = 0.65$) and 'Trust in Government' ($\alpha = 0.88$) because their items correlated with their own dimension at values greater than 0.40 and lesser than those computed with other scores with accepted Cronbach alpha level (see Perrot et al., 2018). It is to be noted that the five items to measure the knowledge about government measures were not included in the EFA for understanding their latent variable.

The analysis incorporated the observed variable called 'knowledge about government measure' in the SEM analysis. The observed variable was created by

Table 3. Rotated factor loadings (pattern matrix) and unique variances.

	Factors				
Construct	1	2	3	4	Uniqueness
Information Frequency			0.74		0.45
Information Consistency		0.74			0.37
Information Coherency		0.77			0.38
Information from Newspaper and TV			0.55		0.46
Information from Social Media and Online portal			0.60		0.50
Information from Family and Friends				0.79	0.35
Information from Government Sources					0.66
General Acceptability of Information		0.69			0.45
Competency of the Government	0.75				0.40
Competency of the Chief Executive	0.78				0.35
Competency of the Political Leaders of the Party in Power	0.80				0.30
Benevolent Public Service	0.78				0.33
Honesty in Public Service Delivery	0.76				0.40
Standard Rules and Procedures Followed	0.72				0.43

Note: Blanks represent loading<0.5

Table 4. Convergent and discriminant validity of the latent variables.

Item	Accuracy of Information	More Info from Mainstream and Social Media	Trust in Government
Consistent Information	**0.51**	0.20	0.36
Coherent Information	**0.43**	0.09	0.30
Generally Acceptable Information	**0.42**	0.15	0.36
Frequency of Information	0.08	0.19	0.05
Information from Mainstream Media	0.25	0.18	0.20
Information from Social Media	0.04	0.17	−0.02
Competency of the Government	0.35	0.08	**0.67**
Competency of the Chief Executive	0.36	0.09	**0.70**
Competency of the Political Leaders of the Party in Power	0.40	0.07	**0.74**
Benevolent Public Service	0.40	0.10	**0.72**
Honesty in Public Service Delivery	0.30	0.11	**0.66**
Standard Rules and Procedures Followed	0.30	0.16	**0.60**

extracting the binary items' sum score on government measures to deal with the COVID-19 pandemic. The SEM used the maximum likelihood with missing values and bootstrap methods to understand the indirect effect between variables while controlling for gender, age, occupation, location, income, and education (Mallinckrodt et al., 2006). The results showed that the SEM model is an adequate or marginal fit to the data ($x2$ = 470.81; df = 88; p= .00; n= 819; AIC = 27968.01 < BIC = 28010.386; RMSEA = 0.07; CFI = 0.88; TLI = 0.85) (Hair et al., 2010). Since an EFA was conducted before SEM, the analysis can have confidence because the model adequately or marginally fits the data. It is also important to note that the goodness of fit did not show a poor fit to the data. Thus, the analysis has the potential to be considered for the discussion of the results. After running SEM, moderation analysis was performed to test *hypothesis 3* (H3). Average scores of the latent construct were used to generate two observed variables- 'Accuracy of Information Related the COVID-19 Pandemic' and 'Trust in Government'for the moderation analysis.

Finally, a content analysis was performed to review the newspaper and online news articles. The content analysis was conducted on NVivo. The analysis followed the three-phase coding process (Grbich, 2012) to generate the themes focusing on reaction to government measures related to the pandemic management.

Findings

The descriptive statistics show that most of the participants were male (70%). Additionally, nearly 90% of the respondents had a bachelor's or higher degree, whereas almost half of the participants (47%) responded that they live in the city. Thus, the demography of the respondents does not merely represent the city-dwelling people. However, a significantly higher percentage of respondents with tertiary-level education signifies that the analysis results could be better generalizable among the educated population with an access to internet and social media. The descriptive statistics also show that seventy percent of the respondents are male. Hence, the findings of this study could represent male more than the female. In terms, model variables, Table 5 shows that fifty percent or more respondents perceived accurate information based on the criteria of consistency, coherency and general acceptability as described by Lewandowsky et al. (2012). The Table 5 also depicts that the respondents know about four government measures out of the five that this study considered for analysis. It means, their knowledge about government measure is quite high. However, the latent indicators of trust in government shows that most of the respondents have a low level of trust in government.

The SEM results show that there is a significant positive association between the accuracy of information and knowledge about government measures taken to deal with the pandemic (β = 0.23, SE = 0.11, z= 2.08 p = .03; 95% CI [0.01, 0.45]) (see Table 6). The result suggests that if people perceive a higher-level accuracy of information related to the COVID-19 pandemic, they will know more about government measures. This finding shows that if the information is accurate, then people will have more knowledge. In other words, if the people perceive that they received misinformation, i.e., inaccurate information as Kumar and Geethakumari (2014) argued, about the COVID-19 pandemic, they tend to perceive that they know less about government measures. Thus, *hypothesis 1* (H1) was accepted as misinformation is negatively associated with knowledge about government measures.

The analysis further shows that there is a significant positive relationship between knowledge about government measures and trust in government (β = 0.09, SE = 0.01, z= 6.32 p = .00: 95% CI [0.06, 0.12]) (see

Table 5. Descriptive statistics.

Variable	Frequency (*n*)	Percentage (%)	*Mean*	*SD*	Min	Max
Control Variables						
Gender						
Male	578	70.70				
Female	239	29.30				
Age						
Below 18	4	0.50				
18–35	759	92.70				
36–50	51	6.20				
51+	5	0.60				
Education						
Secondary School Certificate	2	0.20				
Higher Secondary Certificate	85	10.40				
Bachelor's and above	729	89.30				
Location						
Village	222	27.10				
Small Town	73	8.90				
Large Town	139	17.00				
City	384	46.90				
Occupation						
Unemployed	38	4.60				
Student	418	51.00				
Entrepreneur	10	1.20				
Business	18	2.20				
Government job	161	19.70				
Private job	125	15.30				
Others	49	6.00				
Income (Bangladeshi Taka)						
0–10000	145	17.70				
10001–30000	94	11.50				
30001–60000	193	23.60				
60000+	58	7.10				
Not Applicable	329	40.20				
Model Variables						
Latent Variables						
Consistency of Information						
Very low	96	11.80				
Low	380	46.70				
High	308	37.80				
Very High	30	3.70				
Coherency of Information						
Very low	61	7.50				
Low	275	33.90				
High	398	49.00				
Very High	78	9.60				
General Acceptability of Information						
Very low	94	11.50				
Low	302	37.00				
High	367	45.00				
Very High	53	6.50				
Competency of the Government						
Very low	213	26.10				
Low	345	42.30				
High	207	25.40				
Very High	50	6.10				
Competency of the Chief Executive						
Never	245	30.10				
Sometime	380	46.60				
Most of the Time	143	17.50				
Always	47	5.80				
Competency of the Political Leaders of the Party in Power						
Never	473	58.10				
Sometime	266	32.70				
Most of the Time	61	7.50				
Always	14	1.70				
Benevolent Public Service						
Very low	167	20.40				
Low	286	35.00				
High	276	33.80				
Very High	88	10.80				
Honesty in Public Service Delivery						
Very low	246	30.10				

(*Continued*)

Table 5. (Continued).

Variable	Frequency (*n*)	Percentage (%)	*Mean*	*SD*	Min	Max
Low	347	42.40				
High	180	22.00				
Very High	45	5.50				
Standard Rules and Procedures Followed						
Not at all agree	228	27.90				
Somewhat agree	430	52.70				
Agree	132	16.20				
Strongly agree	26	3.20				
Observed Variable						
Knowledge about Government Measures	812		3.93	1.07	0	5

N = 812

Table 6). In other words, people with more knowledge about government measures would have a higher level of trust in government. This finding corroborates Hardin's (2013) claim that a higher level of trust requires more knowledge about government agencies. Thus, *hypothesis 2* (H2) was accepted. It means individuals' perception of misinformation impacts the knowledge about government measures, and such knowledge influences people's perception of the government's trustworthiness.

The moderation analysis found that there is no significant direct effect of misinformation on knowledge about government measures (β = −0.07, *SE* = 0.09, *t*= −0.77 p > .05: 95% CI [−0.25, 0.11]) (see Table 7). Thus, the result depicts that trust in government significantly moderates the relationship between misinformation and knowledge about government measures (β = 0.07, *SE* = 0.02, *t*= 3.46 p = .01: 95% CI [0.03, 0.11]) (see Table 7). Importantly, the descriptive statistics (see Table 5) showed that social media users generally would have received information that they perceived as inaccurate, which is misinformation. Thus, the moderation analysis suggests that the perceived inaccuracy of the information/misinformation's effect on knowledge about government measures would change based on their trust in government. So, a higher level of trust in government helps people know more about government measures when more misinformation is perceived. Therefore, the analysis accepted *hypothesis 3* (H3).

The review of the news articles depicted that most news articles did not explicitly portray any reaction/feedback of the public on the government measures. Those major newspapers and online news portals merely described the government measures and the prime minister's statements, the health minister, and the Cabinet Division Secretary's assertions on those measures. For example,

> *"The government of Bangladesh adopted many initiatives to prevent and control the spread of COVID-19, involving the extension of the general holiday and lockdown, increased number of ICU, recruited and trained 2000 doctors and 5000 nurses, provided safety measures for healthcare workers" (*BDNews24.com, 2020; Rahman, 2020).

In one of the other articles, it was reported that the Prime Minister announced four new financial stimulus packages (US$ 7.98 billion) in addition to the stimulus package for export-oriented industries (US$ 588.70) (The Daily Prothom Alo, 2020). A massive number of marginalized people lost their jobs during the pandemic. The government initiated to provide cash aid to 3.6 million COVID-affected families (30 US$ per family) directly to their mobile banking accounts (Dhaka The Daily Jugantor, 2020; Tribune, 2020). The government simultaneously took four programs to be implemented in phases categorized as "immediate, short, and long-term." The four programs included increasing public expenditure, formulating a stimulus package, widening social safety net coverage, and increasing monetary supply. However, Khatun (2020) explicitly mentioned that the Prime Minister of Bangladesh doubts the transparent and accountable implementation of the stimulus package. Moreover, The Daily Kaler Kontho published an article depicting a survey result that showed that

Table 6. Structural equation modeling results.

	β	*SE*	Z	*P*-value	[95% CI]	
Structural						
Knowledge About Government Measures						
Accuracy of Information Related to the COVID-19 Pandemic	0.23	0.11	2.08	0.03*	0.01	0.45
Trust in Government						
Knowledge about Government Measures	0.09	0.01	6.32	0.00**	0.06	0.12

Note: * = *P* < *0.05*, ** = *P* < *0.01*

Table 7. Moderation analysis results.

	β	*SE*	t	*P*-value	[95% CI]	
Knowledge about Government Measures						
Accuracy of Information	−0.07	0.09	−0.77	0.443	−0.25	0.11
Trust in Government #	0.07	0.02	3.46	0.01**	0.03	0.11
Accuracy of Information						
Const_	3.70	0.17	21.39	0.00	3.37	4.05

Note: * = $P < 0.05$, ** = $P \leq 0.01$

ninety three percent of the respondents of a survey thought that the government should extend the shopping mall shut down (The Daily KalerKontho, 2020). It implies that the public was not satisfied with the initial measures and demanded more stringent actions. However, it was not clear what was the demographic characteristics of the respondents of that survey. Because many poor and middle-income household suffered from loss of income due to the shutdown (Hossain et al., 2020); (Hossain, M. J. et al., 2021).

Discussion

The finding depicts that if people perceive more misinformation about the pandemic, they will likely have less knowledge about what the government does to deal with the pandemic. The result also demonstrated that lesser knowledge about government measures would generate lesser trust in government. It is essential to realize why and how the perceived misinformation could affect knowledge about government measures.

The popularity of information sources could explain why and how more misinformation decreases the probability of knowing about government measures during a pandemic (Michelle Driedger et al., 2018; Vinck et al., 2019). For example, during the COVID-19 pandemic, people mostly received information about the disease and its management through social media (World Health Organization WHO, 2020). It is important to note that social media users are connected with their family and friends. People use social media to browse different pages to get information, connect with their family and friends, and receive information and updates. Such a pattern makes social media the most popular source of information. Hence, people would not preferably visit government web pages, read the daily newspaper and watch TV news regularly or at all. Instead, they would try to fetch information on social media and through interaction with family and friends, the two most prominent sources that spread misinformation (Gabarron et al., 2021). Additionally, politicization of news media in Bangladesh could discourage many people from seeking information through newspapers in the age of social media (Roy, 2020).

This study found that there was no significant critical analysis of different government measures in the mainstream newspapers. Therefore, the social media users could have acknowledged that the newspapers were reporting about the government measures to politically benefit the party in power as political elites own many frontline newspapers. It means, newspaper articles had minimal influence over their perceptions, and they mainly preferred social media to get information.

So, the more people seek information through social media than government web pages, newspapers, and TV news, the more they could perceive that information as misinformation. Hence, people perceiving more misinformation through popular sources like social media could hinder their knowledge about government measures. Previous research suggested that when people perceive more misinformation, they lose interest in searching for accurate information from official sources like government organizations' webpages (Lewandowsky et al., 2012; Vinck et al., 2019). In that case, having a lesser interest to get accurate information, the social media users would merely stick with the information that matches their belief. Because looking for generally acceptable information and having scientific expert consensus is time-consuming and might need an advanced or higher level of prior knowledge about the phenomenon (Lewandowsky et al., 2012).

However, in the last few years, the government of Bangladesh launched social media pages for its different ministries and organizations. Nevertheless, this study did not find any active social media page of the Prime Minister's office, Cabinet Division, Ministry of Health. This study looked for social media pages of those offices as the initial government measures were published on the official page of those offices.

Earlier research showed that the citizens use the information to increase their knowledge about specific government operations or performance outcomes, which is beneficial for building trust in government

(Ma & Christensen, 2019). Therefore, the finding demonstrating a path between the three study variables corroborates earlier inferences from Michelle Driedger et al. (2018), Siegrist and Zingg (2013), and Grimmelikhuijsen (2012). The existing relationship between information, knowledge about government measures, and trust in government emphasized the value of transparency for better service delivery and citizens' satisfaction which essentially augment the discussion on behavioral public administration (see Porumbescu, 2016; Grimmelikhuijsen & Knies, 2017, 2012, 2009).

This study also investigated if trust in government moderates the relationship between perceived misinformation related to the pandemic and knowledge about government measures. The result shows that trust in government significantly moderates the relationship. This result suggests that prior and current government performance evaluation, culture, and social and political networks/relationships would create a predisposition to trust institutions at the individual level. It is important to note that scholars showed that factors like performance evaluation, culture, belief, social and political allegiance, and relationship define social and political trust that ultimately determine trust in government (Jamil & Muhammad Baniamin, 2020; Baniamin et al., 2020a; Askvik & Jamil, 2013; Dinesen, 2013; Robbins, 2012; Freitag & Traunmüller, 2009; Van de Walle & Bouckaert, 2003; Uslaner, 2002).

According to the moderation analysis result, it can be said that people use clues from the earlier good performance of the government, cultural values that teach to trust institutions, and/or social and political affiliation/allegiance and relationships with people working in the government. For example, a person supporting the opposition political party would not trust the government. As they do not trust the government due to their political belief and affiliation, they will perceive that they do not know if the government is taking different policy measures to fight the pandemic. They could say that they merely receive misinformation. On the other hand, if a person or a group trusts the political party in power due to political belief and affiliation, they will perceive any accurate information about corrupt practices in the government as misinformation because of their political belief and affiliation. So, in a perception study like this, it is highly likely that people will perceive a piece of information as misinformation if that contradicts the level of trust they have in government.

Moreover, a person perceiving better performance from a government organization would trust the government (Van de Walle & Bouckaert, 2003). As they trust the government, they would perceive that the information about government measures to fight the pandemic is accurate, and thus they would know about those measures. At the same time, the culture of trusting institutions, as Jamil and Muhammad Baniamin (2020) in Bangladesh, would not impede people from perceiving information about government measures as misinformation. Therefore, they will know about the government measures.

So, previous research studies and the result of the moderation analysis suggest that evaluation of the performance of specific policy measures can affect trust in government. Although this study did not precisely measure trust in government based on the government measures related to the pandemic, the moderation analysis result could help suggest a framework for future research. The framework is shown in Figure 1. This framework would be helpful if future research intends to measure trust in government solely based on any pandemic or emergency-related policy measures and their implementation.

Thus, in Figure 1, at time t_1, it is seen that increase in misinformation predicts lesser knowledge about government measures. Then, the knowledge about government measures affects trust in government. That trust would contribute to a predisposition of social media users when they perceive further misinformation later, i.e., t_2. In other words, overall trust in government at a specific time during the early phase of the pandemic would become a predisposition in the future phases of the pandemic, e.g., t_2. Such a predisposition to trust the government can help social media users navigate misinformation and know more about what the government is doing. The framework indicates the potential of a longitudinal study to understand whether a higher level of trust in government due to the perception of lesser misinformation and higher knowledge about government measures at t1 influence the people perceive a piece of information as misinformation at t_2.

Conclusion

This study investigated the perception-based behavioral pattern of social media users in Bangladesh. The primary focus of this study was to find how perceived misinformation affects trust in government. Additionally, the study examined if trust in government moderates the effect of perceived misinformation on knowledge about government measures. The perspective of Bangladesh helps to understand a possible behavioral pattern of a highly prone group to information that is often perceived as misinformation in a developing country setting. However, this study has some limitations like other

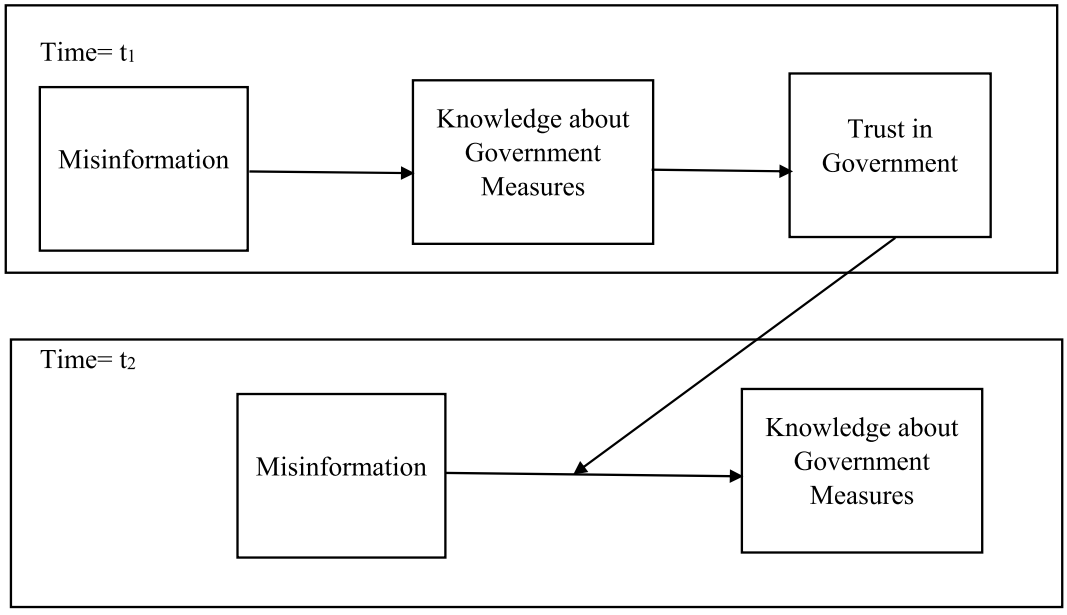

Figure 1. Theoretical framework for future studies.

research in behavioral public administration that try to understand complex relationships between variables based on the perception of the research participants.

First, this study did not reach out to a larger population in Bangladesh. Thus, the findings need to be realized from the perspectives of the social media users in Bangladesh. However, understanding a specific population's potential behavioral pattern based on their perception of certain phenomena would contribute to future studies to compare two different sample populations. Notably, seventy percent of the social media users are male in Bangladesh (The Daily Prothom Alo, 2021). Nevertheless, the study findings would be significant due to the patriarchal social relationship in the society (Ghose et al., 2017; Jahan, 2018; Murshid, 2018). It means it is highly likely that the perception of the males would impact the females. In other words, according to previous research (see Ghose et al., 2017; Jahan, 2018; Murshid, 2018), the male segment of social media users' perception of the government, information, and knowledge about the pandemic would impact the female's predisposition to trust in government and perception of information and knowledge about government measures.

Second, this study focused on understanding the relationships between variables using a cross-sectional survey design. A longitudinal study would be required to track the difference between pre-and post-pandemic trust in the government to elaborate on discussing the predisposition to trust and the impact of different government measures on the perception of government's trustworthiness. Furthermore, it is essential to note that this study did not focus on investigating or assessing the impact of different government measures related to the COVID-19 on trust in government with two sample populations from a longitudinal perspective. Hence, additional study is needed to understand the impact of specific government measures on the level of trust in government from a longitudinal plateau as the framework in Figure 1 suggested.

Finally, this study empirically did not gauge the respondents' political allegiance, which could be an essential factor in determining the predisposition to trust specific government regimes (Keele, 2007; Newton & Norris, 2000). For example, someone aligned with the political ideology of the current Awami League (AL) government in Bangladesh may perceive the regime as trustworthy. Thus, that person will perceive a piece of information that portrays the AL government's initial measures on the COVID-19 pandemic as accurate. On the other hand, people aligned with non-AL political ideology perceive similar information as rumor or misinformation.

Nevertheless, this study argues the dialogue on perception-based behavioral public management and administration in a developing country's context during the early phase of the pandemic. Public administrators in a developing country like Bangladesh pledged a solid resolution to fight misinformation during the COVID-19 pandemic (Shawki, 2020). Public administrators and policymakers need to understand the potential behavioral patterns of social media users as they are the population that is often exposed to different information, which could

be perceived as misinformation. Social media users are the consumers and producers of information that often gets considered as misinformation. Previous studies found a connection between misinformation and trust in government which affects overall compliance of public measures to deal with a pandemic (Michelle Driedger et al., 2018; Vinck et al., 2019). The findings of this study suggests that predisposition to trust is an important factor that trickle down from one organization to another due to the influence of culture, belief and political affiliation as Baekgaard et al. (2020) argued. Therefore, this study suggests that the public administrators and policymakers need to recognize that government should be concerned with the overall public management so that their performance does not contribute to creating a predisposition to distrust.

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