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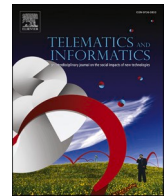
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Why DO citizens engage in government social media accounts during COVID-19 pandemic? A comparative study

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ABSTRACT

The worldwide COVID-19 outbreak that crushed the global economy and healthcare increased the public willingness to acquire more information and enthusiasm to engage online among billions of users through social networks. As more towns, cities, and regions turn to lockdown, government social media accounts (GSMAs) develop as a trustworthy source to obtain information about the COVID-19 pandemic. Thus, investigating the determinants and consequences of citizens' participation behavior on GSMAs is essential. Drawing on the self-determination theory (SDT) and civic volunteer model (CVM), we examine the influence of motivational factors (i.e., intrinsic extrinsic) on citizens' participation behavior on GSMAs, which leads to online civic behavior. Comparative research between China and Pakistan is carried out using data collected through an online survey. This study shows that information-seeking, political benefits, self-development, altruism, and perceived reciprocity are the critical antecedents of citizens' participatory behavior on GSMAs in both countries, resulting in online civic behavior. Furthermore, moderating results reveal that perceived connectivity moderates the relationship between certain motivational factors (intrinsic and extrinsic) and citizens' participatory behavior on GSMAs, whereas trust in government moderates the relationship between participatory behavior on GSMAs and online civic behavior during COVID-19. Theoretical and managerial implications are discussed in detail.

1. Introduction

From the start of 2020, COVID-19 hit the world surprisingly, forcing citizens to stay home and maintain social distancing at work and at marketplaces (Islam et al., 2020). Given the unknown future, online social media are used to seek information and updates about COVID-19 on popular social applications and resulted in an abrupt increase in use. For instance, App Annie reports that the total time per day consumed on social apps increased by 20% in the first quarter of 2020. Similarly, Statista conducted a global survey in

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March 2020 and reported a 70% increase in Italians' social media usage since the COVID-19 outbreak. In addition, on March 24, 2020, Facebook revealed a 50% increase in messages during the COVID-19 pandemic. Thus, social media play a significant role in keeping people or users connected and updated about COVID-19. Social media also fulfill human needs and wants, such as status and information seeking, social COVID-19 generates new potential opportunities for media and other sectors. Mainly, governmental organizations use social media to update and share information about the general public's critical conditions within a minimum time. Natural disasters (e.g., tsunami, earthquakes, and chemical explosions) pose severe challenges to governments and crisis management teams. In crisis management, circulating important information to all main stakeholders such as community citizens, government officials, hospital staff, and non-governmental organizations (NGOs) is critical to minimize loss. In such an emergency, anxiety and confusion, timely, reliable, and efficient information becomes a significant element in crisis management. During the crises, maintaining the reliability and effectiveness of data remains a large question. Fortunately, based on Web 2.0, social media provides a platform where the audience or users can interact with the government. The media industry is rapidly developing with the application of Internet technology. Among all kinds of social media accounts, the government account as the official media brings considerable convenience to people's lives and plays a vital role in promoting society's mainstream values in the era of financial media. Various government social media accounts (GSMAs) enrich publicity of government affairs and become a new channel close to and serving the masses. A Chinese ranking list excellent GSMAs (from Weibo), which considers three indicators: communication (number of reading), interaction (number of forwards, comments, and likes), and service (number of active replies, private letters, microblogs, and original microblogs). During Covid-19, these government media also play an important role. In nearly four months, several related information is released or forwarded (see Table 1). Of course, despite the previous top ranking, significant differences remain in these government media performances. However, those government media not on the list may be far behind the top streaming media and social expectations during significant events such as the pandemic (see Fig. 1).

Government organizations and officials have observed a noticeable increase in social media. For example, Lachlan et al. (2016) government organizations prefer social media to disseminate information during crises to update citizens, identify victims' families, and assess the current crises conditions, prevent fake news, and to distribute donations among the affected people. To attain these goals, government organizations create their official GSMAs to build an online government profile on different social networks (Bertot et al., 2012). For example, civic skills, emotional support, rumor control, external political efficacy, and mobilization are the critical determinants of the participatory user behavior on GSMAs in the Tianjin, China explosion. Specifically, crisis management literature found that GSMAs are the best sources for providing updated and timely information in crucial situations, users' best online platform to share views, and most importantly, to reduce citizens' stress or anxiety (Mergel, 2016). Moreover, GSMAs have a significant role in handling the crises digitally because sharing and participation are essential sources of user feedback and possible suggestions on various government activities (Liu and Xu, 2018).

Moreover, past literature during crises uses social media to address two main objectives: for sharing information and community

Table 1
Top 10 City's Government microblog account performance in China.

City	Government microblog account				Number of microblogs*			Account scores before and after the outbreak of COVID-19**			
	中文	English	Starting time	Number of fans*	Total	About COVID-19 (新冠肺炎)	About epidemic situation(疫情)	2019-11	2019-12	2020-01	2020-02
Shanghai	上海发布	none	2011/11/18	9,218,334	74,744	255	727	78.30	74.83	77.00	78.09
Beijing	北京发布	none	2011/11/17	8,564,228	66,265	452	1005	72.43	72.28	70.15	68.52
Shenzhen	深圳微博发布厅	none	2012/7/10	2,417,318	84,814	449	930	70.44	75.90	67.01	69.62
Guangzhou	中国广州发布	none	2011/12/19	5,102,590	61,718	305	573	77.15	72.95	70.44	71.06
Chongqing	重庆发布	none	2011/5/8	1,851,846	45,916	571	930	64.99	64.91	63.92	60.79
Soochow	苏州发布	none	2012/9/28	2,348,305	92,596	389	1005	73.69	73.34	72.25	71.54
Wuhan	武汉发布	none	2013/7/5	3,781,040	127,441	1004	1004	79.84	78.59	77.25	77.23
Chengdu	成都发布	none	2010/6/23	8,160,163	104,775	437	1005	82.07	82.19	81.17	82.95
Hangzhou	杭州发布	none	2014/8/19	3,658,639	54,564	283	588	74.67	71.39	69.54	69.71
Tianjin	天津发布	none	2011/11/25	2,558,298	85,770	723	1003	70.29	74.03	68.98	67.90

Note: *The statistical deadline is May 11, 2020; **: See Appendix for scoring rules.

Source: <https://bang.weibo.com/>.

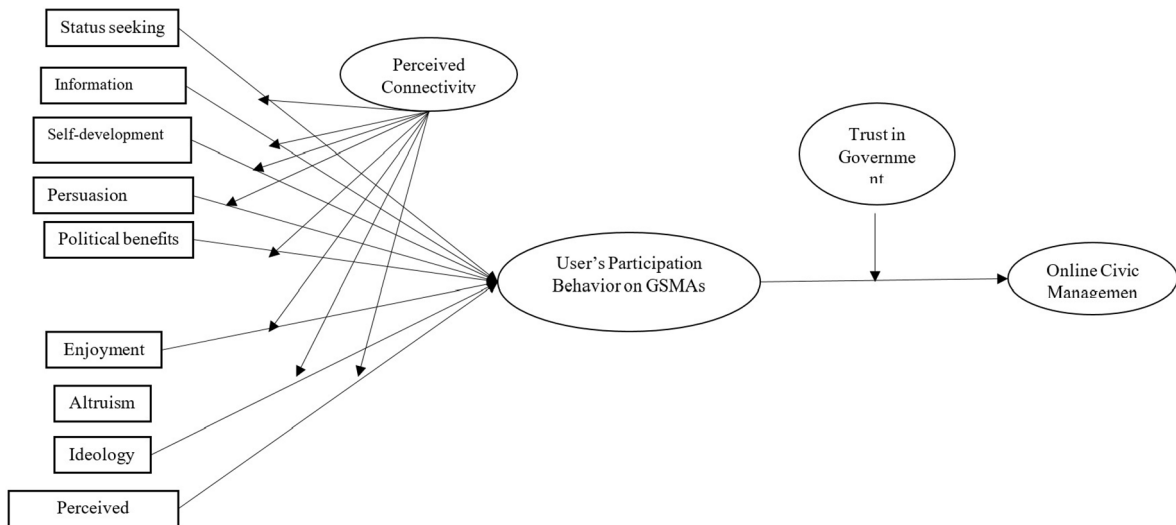


Fig. 1. Conceptual Framework.

response to crises. Most of such studies are limited to a small number of people and for a short time period. For example, KFC and McDonald's use social media effectively to handle their China crises (Guo et al., 2021; Veil et al., 2011). This study empirically validates the underlying mechanism of users' participation in GSMAs during COVID-19. In general, to our best knowledge, online users' participatory behavior on GSMAs during crises is an under-researched area. No single study has focused on the pandemic, such as COVID-19, where governments also want to learn from users' various experiences and motivate them to actively participate in GSMAs to collect preliminary information regarding the pandemic. In China, the government effectively uses its social media platforms to disseminate information to citizens and to the international public. Thus, social media is a blessing for the world during the COVID-19 outbreak, when social media platforms (e.g., Wechat, Facebook, Twitter, Weibo, YouTube, Tencent, and Instagram) help governments and the World Health Organization (WHO) to keep updating citizens.

Moreover, citizen participation on social media pages shows several benefits: political, persuasion, and entertainment (Heldman et al., 2013; Lee et al., 2003; Zhu, Anagondahalli and Zhang, 2017). Therefore, based on the self-determination theory (SDT), the present study drives from motivation literature to examine the underlying mechanism on the citizens' participation in GSMAs during the COVID-19. In addition, SDT addresses factors that either help or hurt motivation, both extrinsic or intrinsic (Ferguson et al., 2015) and reveals that people are self-motivated, vital, and curious (Khan et al., 2018). At their best, people are encouraged, learn new skills, strive to learn, and use their expertise responsibly. In today's world, the use of technology (e.g., social media) has made the growing participation environment possible and the competence to use these environments to fulfill intrinsic or extrinsic benefits. In information system (IS) literature, SDT plays a significant role in demonstrating different motivational factors and investigating their influence on technology acceptance or e-adoption. However, to our best knowledge, no original cross-culture research has examined the motivational factors on citizens' participatory behavior in GSMAs and their outcomes.

Furthermore, existing literature on GSMAs is limited to motivational factors that are responsible for citizens' adoption (Criado et al., 2013; Guo et al., 2021; Smith and Gallicano, 2015). To our best knowledge, no single study has examined the outcome of citizens' participatory behavior on GSMAs during crises, especially COVID-19. As a result, a dearth of need for research in this context. Past research suggests that social media are taking the driving seat in active engagement and mobilization among citizens for civic activities because digital activism allows them to share civic, social causes. During COVID-19, when countries are under complete lockdown and citizens are restricted to stay at home, social media empowered them to address social issues. Given that the COVID-19 is a pandemic, citizens engage in professional and civic activities to solve the significant challenges locally and globally. Extant literature has addressed the civic activities for handling national crises such as the United States and China earthquakes (Kirlin and Kirlin, 2002; Warren et al., 2015). At present, civic engagement actions include working with citizens vulnerable to COVID-19, monitoring and sharing relevant information, and implementing the social distancing and masks-wearing laws being used to fight the pandemic. Additionally, past literature views government institutes' trust as a commitment or confidence of citizens towards government policies. Public administrators believe that government trust is necessary for civic behavior among citizens toward government institutes. Extant literature finds that higher trust in government institutions positively relate to civic engagement (Lee and Kwak, 2012). Thus, the present study hypothesizes that higher confidence in government institutions increases citizens' participation on GSMAs as online civic behavior.

Based on the abovementioned literature review, this study suggests that examining the influence of intrinsic and extrinsic motivation factors responsible for citizens' active participation in GSMAs that leads to online civic behavior during COVID-19 is a promising research topic in the field of crisis management. Extant literature has examined the citizens' participation behavior using social media and has identified the various determinants that positively influence the user or citizens' social media (Dolan et al., 2016; Khan, 2017). Given that the present study context is aligned with crisis management, we centered on intrinsic or extrinsic factors and

several underlying mechanisms that generate active civic behavior among citizens. Thus, this leverages the lens on SDT and CVM examines the influence of motivational factors on citizens' participation behavior on GSMAs and its underlying mechanism with online civic behavior. Consequently, the present study makes several contributions to past literature. First, to our best knowledge, this study extends the extant literature by examining and validating a conceptual model that incorporates the intrinsic and extrinsic factors on citizens' participatory behavior on GSMAs, which aims to assist the citizens' participation regarding COVID-19. Second, existing literature focuses only on the influence of various factors on the users' or citizens' behavior in social media or GSMAs. However, the present study explores the outcomes of active participation in GSMAs such as online civic management. Third, this study also uses the moderating effect of trust in government in the relationship between citizens' participatory behavior on GSMAs and online civic management to understand its role in generating civic behavior. Fourth, this study provides empirical proof to the hypothetical model based on the SDT that intrinsic and extrinsic factors increase the citizens' participatory behavior in GSMAs, which later increases online civic behavior. Finally, this study is the first to focus on the COVID-19 pandemic and provide critical guidelines to government officials, NGOs, digital influencers, and those working directly or indirectly on the deadly virus.

2. Theoretical framework

2.1. Self-Determination theory

SDT of motivation is extensively researched in psychology, consumer behavior, and IS adoption research (Deci and Ryan, 2008; Gagné and Deci, 2005). Extrinsic motivation is recognized as improved productivity and performance, confirming that SDT is the theory of one's motivation characterized to rely on the tendency to which they are self-governing: the degree to which they emerge from the self, which results in willful action (Deci and Ryan, 2012). Xu and Li (2015) illustrate the design of motivation is illustrated as a continuation of SDT, which is defined as "humans have the basic propensities to be intrinsically motivated, to assimilate their social and physical worlds, to integrate external regulations into self-regulations, and, in so doing, integrate themselves into a larger social whole." SDT is categorized into two distinguished forms. First, intrinsic motivation leads to the specific behavior that inherently generates the experience of pleasure. SDT argues that intrinsic motivation provides empirical and theoretical support when three significant and human psychology needs—competence, relatedness, and autonomy—are fulfilled. Improved intrinsic motivation is associated with enthusiasm is used on a particular task, generates positive energy, results in productive learning, and leads to a specific behavior. Extrinsic motivation is engaging in a particular behavior to attain benefits, such as managing rewards or avoiding punishments.

SDT theory builds on the approach of aims and motivation to illustrate human internal needs that may influence experiences and outcomes in a particular situation (Deci and Ryan, 2008). In IS literature, SDT is widely used and validates the online users' technology adoption motivation empirically and theoretically (Gagné and Deci, 2005; Grolnick et al., 1997). However, limited research examines participatory user behavior on GSMAs except (Guo et al., 2020). For instance, in the current study, intrinsic motivation means that citizens might actively participate in GSMAs that provide entertainment or altruism and satisfy internal needs due to individual motivation. By contrast, citizens are extrinsically motivated when they focus on external rewards (Ryan and Deci, 2000). Online users actively participate in social media due to their reputation, political benefits, and self-development (Razmerita et al., 2016). Community participation in Wikipedia shows that self-development is the key determinant of social media (Xu and Li, 2015). Similarly, information and status-seeking are positively associated with the online policy deliberation forums.

Furthermore, SDT is suitable for two significant reasons. First, the SDT framework provides empirical and theoretical support for the present research model. For instance, the extant literature on IS extensively applies SDT for technology adoption and use (Rezvani et al., 2017; Sørebo et al., 2009). Perceived enjoyment is the most significant motivation for user online participation. Additionally, the role of status-seeking, self-development, and altruism is examined and characterized as crucial antecedents of user's motivation to participate in social groups. Second, SDT provides a comprehensive and strict framework to investigate the intrinsic and extrinsic factors influencing citizens' participation in GSMAs. Thus, SDT can forecast the different outcomes such as adoption, learning, and user satisfaction, highlighting the users' participation factors on GSMAs.

2.2. Civic voluntarism model (CVM)

Extant literature extensively studied CVM in public administration studies, which examined the prerequisite of political participation. For instance, past research suggests that resources, motivation, and mobilization is the most studied factors in the context of political participation (Guo et al., 2020). For instance, Phang et al. (2015), by using the CVM model, researched the online policy deliberation forums and found that contributors are affected by political efficacy motives and political career benefits. Similarly, based on the CVM model, Oni et al. (2017) identified the main factors responsible for the Citizen or user participation in the political systems. Furthermore, the CVM is quite famous and providing theoretical support of citizens' participation in the online context, especially during the election campaign and crisis management (Ali et al., 2020; Seyd et al., 2001). Therefore, this research used the CVM model because past literature empirically and theoretically validates the users' participation behavior for various purposes.

In today's world, the abrupt increase in the SNSs (i.e., Wechat, Facebook, Twitter, Instagram, etc.) has been observed among online users' (Sheikh et al., 2019). Past research proposes that the main idea of SNSs is to provide a virtual environment where online users can comment and share personal experiences, interests, and shared activities (Liu et al., 2016). Consequently, the governments are also adopting the latest ways to interact with their citizens to share and update the latest and breaking news, and within minimum time can take greater reach (Guo et al., 2020; Raza et al., 2020). Social media is a unique technology and changes the business operation model

(Ali et al., 2020). Extant literature found a significant influence of social media on individual decision-making, living standards, and operational activities (Sheikh et al., 2017). For example, through various innovative technologies, online users are in a better position to share their personal experiences, provide feedback, and suggest the best way to perform the same function (Phang et al., 2015). Similarly, governments are aggressive in creating the GSMAs to facilitate the citizens, transparency, and direct connection with citizens. Guo et al. (2020) researched the Chinese citizens and found that motivation, civic skills, and mobilization are the critical determinants of citizens' participatory behavior on GSMAs.

COVID-19 is a pandemic and spread to more than 180 countries worldwide, killing over 20,000 people and confirmed close to three million cases. During COVID-19, towns, cities, regions, and states are under complete lockdown, which resulted in global crises. As a result, through their social media, governments work with local partners to update their citizens regarding how the COVID-19 pandemic spreads, how to stay safe, and what to do when concerned about having viral symptoms. Governments require help from volunteers (i.e., medical doctors, nurses, and social media influencers) to create online content related to COVID-19 on the GSMAs to protect their citizens. During this pandemic, citizens' participation on the GSMAs is the best credible platform for obtaining the required information and sharing it with online peers. Based on the CVM, extant literature found that GSMAs allow citizens to create an online group, obtain all the necessary information, and help victims. Therefore, during the COVID-19, GSMAs push online users to express their views and share information with their peers.

2.3. Hypotheses development

SDT seeks to demonstrate why citizens use specific online forums in terms of particular motivations, desires, or purposes (Islam et al., 2017; Phang et al., 2015). It explains various intrinsic or extrinsic motivational factors responsible for the users' participatory behavior on the various social media accounts (Islam et al., 2018b; Xu and Li, 2015). Also, scholars advocated that individuals integrate specific communication channels, i.e., traditional media and social media, in their lives to fulfill their gratifications because social media facilitate users with different features to actively participate in different communities (Guo et al., 2020). These features might be cognitive or affectively driven (Zafar et al., 2019). This cognitive and affective behavior might link to information seeking, status-seeking, and self-development. As people's participation in social media allied to their psychological enticements consists of self-interest and community support (Fu et al., 2017). Krause et al. (2014) argued that individuals are dedicated and highly motivated to contribute to social networking sites. However, people's social media participation largely depends on the type of content (e.g., health information, news, and knowledge) (AlQarni et al., 2016; Islam et al., 2018a, 2019; Moghavvemi et al., 2017). Past research highlighted that users incline to participate in social media during the crisis for status-seeking and information seeking (Jin et al., 2014). Additionally, Xu and Li (2015) researched the motivational factors responsible for Wikipedia engagement. They found that self-development significantly influences knowledge sharing and contribution as community members grasp self-learning during the knowledge contribution, exploring new areas, and ultimately self-development (Chen et al., 2018; Vandenbosch and Eggermont, 2016). Accordingly, this study argued that users might participate in a particular community during the Coronavirus crisis, i.e., GSMAs, to realize their different types of hedonic, utility, and social gratifications. Therefore, this study posited the following hypotheses.

H1: Status-seeking is positively related to the User's participation behavior on the GSMAs.

H2: Information seeking is positively related to the User's participation behavior on the GSMAs.

H3: Self-development is positively related to the User's participation behavior on the GSMAs.

Such a massive usage of the social media from the citizens do not catch the intention of the competitive commercial firms but also the governmental organizations such as elected politician, government officials to update and be notified by the general public because capabilities to reach mass segment and ease the interpersonal and group communication. Scholars found that individuals may engage in political and civic activities to improve their prospects of achieving an approach to a more important political aspect (Phang et al., 2015). For example, the citizens interested in the local community's crucial leadership or build relationships with political parties' workers or leaders can actively participate in the online debate at various forums to get a better political career (Hong, 2013). Similarly, Guo et al. (2020) found that the willingness to participate in the GSMA forum actively is directly related to one's political future. Additionally, past research suggests that citizens may engage in political and civic activities to boosts their prospects of acquiring access to a more critical political position (Warren et al., 2014b). As a result, extant literature found that politically highly motivated individuals perusing others to change the general public's views regarding the government or particular institutes (De Zúñiga et al., 2014). For example, Phang et al. (2015) researched the online policy deliberation forums. They found that persuasion benefits positively associated with the willingness to engage in an online forum for lurkers. Therefore, during the COVID-19 outbreak, based on the SDT and CVM, the present research hypothesized that political and persuasion benefits might be related to citizens' participatory behavior on the GSMAs. Thus, we hypothesized that

H4: Political benefits are positively related to the User's participation behavior on the GSMAs.

H5: Persuasion benefits are positively related to the User's participation behavior on the GSMAs.

According to the SDT, extrinsic factors are the key determinant to participate in volunteer activities like knowledge generation and community help (Xu and Li, 2015). Psychologists believed that generating a positive image of one's personality is motivated to engage in volunteer activities for the community development purpose (Seyd et al., 2001). Extant literature suggested that users may contribute to Wikipedia due to intrinsic and extrinsic motivational factors, e.g., altruism, ideology, reputation building, and enjoyment (Xu and Li, 2015). Scholars have confounding results regarding people's motivations in online communities (Kelley and Alden, 2016). However, several empirical studies identified that enjoyment and altruism might play a vital role as an intrinsic motivational factor to engage in information systems adoption (Ha et al., 2007; Zafar et al., 2019, 2020). For instance, Choi et al. (2011) researched the

determinants responsible for adopting the particular SNSs and found that enjoyment has a significant factor in adopting the specific app due to recreational features. Similarly, past literature highlighted that online users' who experience pleasure from the particular activity are more willing to use the activity such as SNSs addition, online participation behavior, and adoption of the particular technology (Chen, 2013).

Based on the SDT, the psychologist found that enjoyment, altruism, ideology, and perceived reciprocity are mostly studied intrinsic motivational factors (Xu and Li, 2015). Additionally, CVM concluded that altruism is a volunteer behavior that resulted in the other person (Ma and Chan, 2014). Altruism is defined as "doing something for others at some cost of oneself" (Xu and Li, 2015). Smith (1981) illustrated that altruism a particular feeling that arises when citizens are internally motivated to helping others without any demand in return. In addition, Xu and Li (2015) researched the various knowledge contributors' factors on Wikipedia motivated by altruism based on their wish to assist others. Extant literature found that altruism drives from the positive experiences, processes, and investigating positive elements leading to help others. In the COVID-19 outbreak, where everyone under high stressed and lacked information regarding the pandemic; thereby altruism may be considered a key antecedent to actively participate in the GSMAs because citizens are motivated to help other citizens. In addition, scholars found that ideology has a significant influence on knowledge-sharing behavior (Ingrams, 2017). For instance, people actively share knowledge to update the latest information on a volunteer basis (Beauchamp, 2018). During the COVID-19, people are under strict lockdown and seeking online information regarding the pandemic from the GSMAs and other SNSs. Therefore, during the COVID-19, motivated by ideology, exchanging valuable information through the GSMAs is an individual responsibility. It is because they may perform activities to improve internal satisfaction without external benefits. Thus, we hypothesises that:

H6: Altruism is positively related to the User's participation behavior on the GSMAs

H7: Enjoyment is positively related to the User's participation behavior on the GSMAs.

H8: Ideology is positively related to the User's participation behavior on the GSMAs.

Reciprocity illustrates that an individual facilitates others due to his reciprocated belief (Xu and Li, 2015). In other words, the persons who were assisted should reciprocate the benefits. Scholars confirmed that reciprocity has a significant role and the critical antecedent of active participation behavior in the online environment (Yang, 2019). Belanche et al. (2019) found that reciprocity may enhance users' expectations for receiving valuable feedback in return. Guo et al. (2020) researched the Chinese context and found that reciprocity positively correlates with users' participation in the online environment during crises. This study also found that citizens actively engage in the GSMA post and help many audiences on the page. They conducted similar research and found that during the crisis, reciprocity has a significant influence on the sharing of online information through WeChat. Extant literature confirmed that reciprocity is a crucial determinant of citizens' participation in the online community (Islam et al., 2020; Kwahk and Park, 2016; Wu et al., 2020). According to Buunk et al. (1993), reciprocity is considered a mutual indebtedness and obligation. Different online communities contribute the content due to the intellect of fairness and recompense the other participants (Moghavvemi et al., 2017). Accordingly, the current study hypothesized that Corona is a new pandemic exponentially spread globally, and practitioners, scholars, and government officials having inadequate information on this, increased the reciprocity on the GSMA to know about this deadly virus. Thus, we can hypothesize:

H9: Perceived reciprocity is positively related to the User's participation behavior on the GSMAs.

Perceived connectivity is the comfort of reaching others who share analogous interests or apprehensions through technology (Kumar and Benbasat, 2002). Scholars posited that modern technology enables people to connect, motivating them to use these technologies (Liu et al., 2016). Phang et al. (2015) identified that perceived connectivity with other people directly impacts the user's participation behavior in such communities during the investigation of online feedback forms. However, it has been argued that perceived connectivity may appear differently. It may depend on the user's circumstances because the contributor wants acknowledgment to inform his post's reposting due to dedicated cognitive efforts. Joyce and Kraut (2006) suggested that if a contributor receives the response, there is more probability of reposting him in the same community. It depicts that perceived connectivity play a vital role in online participation. However, perceived connectivity may vary according to the online community and its members. Therefore, this study posited that during the COVID-19 pandemic, perceived connectivity would influence the users' participation in GSMAs.

In the COVID-19 outbreak, social media and TV are the only means to get authentic information for the general public. Citizens with high perceived connectivity admit their participation behavior on GSMAs welcome by a broader online community (Guo et al., 2020). As a result, citizens who actively participated are identified by the group of people who want to grab information. For instance, Phang et al. (2015) found that citizens may quickly get the required information and be actively involved in the ongoing discussion topic in the case of higher perceived connectivity. Scholars found that perceived connectivity has been considered important antecedents of users' participatory behavior or IS adoption (Akhtar et al., 2020; Dong et al., 2017). Therefore, citizens' high perceived connectivity during the COVID-19 must be recognized against their efforts. Consequently, the current study proposes that a high perceived connectivity attitude moderate the relationship between determinants (information seeking, status-seeking, and self-development) and citizens' participatory behavior on GSMAs. Thus, we hypothesized that:

H10: The positive relationship between status-seeking and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

H11: The positive relationship between information-seeking and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

H12: The positive relationship between self-development and User's participation behavior on the GSMAs is moderated by

perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

Perceived connectivity might be a key element during the attaining process of different benefits from users' participation in online communities. Extant literature postulated that people get involved in different communities to expand their political careers and attain persuasion benefits (Phang et al., 2015). During the crises, citizens from various geographic locations may experience the same anxiety and provide immediate assistance to the victims. Past research proposed that GSMAs play a significant role in managing crises through citizens' active participation (Guo et al., 2020). Additionally, following the platform's nature, it can be argued that participants of GSMAs may receive diverse kinds and degrees of response from the political or other members. Therefore, during the Corona pandemic, members with a high proclivity of perceived connectivity will be more inclined to participate in the GSMAs communities than the lower ones. Moreover, this moderating hypothesis suggests that high perceived connectivity strengthens the relationship between antecedents (i.e., political and persuasion benefits) and citizens' participatory behavior on GSMAs. Hence, this study postulated the following hypotheses.

H13: The positive relationship between political benefits and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

H14: The positive relationship between persuasion benefits and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

Recently, the abrupt increase in social media has provided the opportunity to connect with peers, employees, buyers, and sellers around the globe (Liu et al., 2016). As a result, in the modern era of technology, governments are also using social media to provide updated information regarding policy matters and crises if it occurs (Guo et al., 2020). Extant literature researched and found that social media is creating the opportunity to bring together users of similar thoughts and experiences (Phang et al., 2015). For example, Wamba and Akter (2016) revealed that social media's connectivity characteristics provide a unique platform and support online users'. Similarly, Sheikh et al. (2019) found that high connectivity among users regarding the particular product or services experience increases online participation. Specifically, Phang et al. (2015) researched the crises and found that high connectivity among citizens enhanced the users' involvement. Leong et al. (2015) found that high perceived connectivity helps citizens get the commonly and latest available information, which resulted in better control of the crises. Thus, citizens will help the target community promptly and get intrinsic benefits or individual satisfaction. Phang et al. (2015) suggested that individuals may have different perceptions while posting in online communities. Besides, members of online communities have their motivations and deliberation about perceived connectivity. Accordingly, this study argued that the influence of users' gratification and self-determination factors during the Corona pandemic in the GSMAs would be interacted by their perceived connectivity in the following postulated way.

H15: The positive relationship between altruism and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

H16: The positive relationship between enjoyment and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

H17: The positive relationship between ideology and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

H18: The positive relationship between perceived reciprocity and User's participation behavior on the GSMAs is moderated by perceived connectivity, such that the relationship is stronger when perceived connectivity is higher and weaker when perceived connectivity is lower.

Scholars of public administration believed that social media has a significant role in encouraging citizens for civic actions (Warren et al., 2014b), allowing anyone to comment and share social issues through social media (Guo et al., 2020). Past research suggests that social media is the best choice for political and governmental institutes for the digital activities of various societal problems (Gil de Zúñiga et al., 2012). For instance, Kavanaugh et al. (2012) researched the importance of social media accounts in the USA earthquake. Similarly, Bertot et al. (2012) examined social media's role to measure citizens-government-communication effectiveness. In addition, extant literature has highlighted the impact of social media on different social problems: fundraising (Auter and Fine, 2018); to promote the cause (Paek et al., 2013; Qureshi, 2016); organizing the protest (Visvanathan and Visvanathan, 2012); to spread the relevant information battle against HIV (Warren et al., 2014a); for community services (Xu and Li, 2015). During the COVID-19, social media has captured attention globally, particularly among WHO, government institutes, and online users. Statista reported that a 20% increase in internet usage had been noticed. Warren et al. (2014b) found that social media is a key determinant of online civic engagement, and the research on the GSMAs in crisis management is limited. Thus, the current research hypothesized that citizens' active use (sharing and commenting) on the GSMAs leads to online civic management. Therefore, we hypothesized that:

H19: Citizens' participatory behavior on GSMAs has a significant positive relation with online civic behavior.

2.4. Trust in government

According to public administration research, citizens' trust in government is a primary concern, and government officials are always worried about its decline and continually working to gain their citizens' trust. Social scientists have measured the various

determinants affecting government trust (Santa et al., 2019). For instance, they have determined the citizen's socio-psychological features, perception of government institutes transparency (Porumbescu, 2016), accomplishments of government (Ingrams, 2015), government efforts, dedication, and competency to satisfy the citizens' needs and complaints, and social experience and socialization all are closely associated with trusting in government (Mahmood et al., 2019; Warren et al., 2014b). As a result, governments are trying to facilities their citizens and customize the various strategies to rebuild and enhance their various institutions' trust. Scholars considered that trust is a compound social and managerial variable. Wheeless and Grotz (1977, p. 251) defined trust as "Trust occurs when parties holding certain favorable perceptions of each other allow this relationship to reach the expected outcomes." Past research suggests that trusted individuals, firms, or governmental institutes will be released from anxiety and examine the other's party behavior (Levi and Stoker, 2000, p. 496). Thus, trust is the best way for declining transaction costs in political, economic, and interpersonal relationships. Information communication technology (ICT) has entirely changed the way citizens', governments, and organizations perform their essential functions through it become a necessary means to spread information about goods and services (Kavanaugh et al., 2012). Specifically, scholars found that crisis management cells and governments use GSMAs to immediately reach relevancy and citizens' engagement (Guo et al., 2020). For instance, Warren et al. (2014b) found that social media is a crucial determinant responsible for civic behavior among citizens and enhanced government trust. Additionally, past research proposes that trust is essential for civic management among individuals and government institutes (Porumbescu, 2016). Warren et al. (2014b) found that government trust has a primary role in creating a social building.

Furthermore, Cook et al. (2015) revealed that government trust has key antecedents to the leading social order. However, government institutes' failure of citizens' trust can have severe outcomes such as low reputation, financial loss, and preparation for the vast strikes. Therefore, during emergencies, government institutes' trust is essential for crisis agencies to calm down the general public. If they trusted their respective governments, they would follow the guidelines provided by the concerned departments. Extant literature found that social media active participation is positively related to online civic management. However, the emergency literature less examined the role of trust in government on civic engagement through GSMAs (Guo et al., 2020). Therefore, during the COVID-19, the current research hypothesized that high trust in government institutes moderating the relationship between citizens' participatory behavior on GSMAs and online civic engagement. Mainly, COVID-19 is an infectious disease. Governments are trying to convey various information through their GSMAs, such as social distancing, wear masks, and strictly follow the emergency cells' rules from time to time. For instance, people are coming forward to support their government as well as citizens about COVID-19 through different actions like fundraising, generate online pages to aware the ordinary person, online youth activism, working online and Thus, we hypothesized:

H20: The positive relationship between User's participation behavior on the GSMAs and online civic management is moderated by trust in government, such that the relationship is stronger when trust in government is higher and weaker when trust in government is lower.

3. Methodology

The abovementioned literature and reports on GSMAs have significant importance during and post crises. COVID-19 is a dangerous pandemic that killed more than 1 Million citizens and approximately infected 33 Million. This ongoing pandemic presents lifelong consequences for the modern world, spreading to more than 180 countries and causing the lockdown of more than 5 billion people in their homes. Most people are unaware of pandemic symptoms and precautionary measures; therefore, searching for a credible source to find the right information about COVID-19 is challenging. Thus, this study examines the possible determinants of citizens' participatory behavior on GSMAs and outcomes. For empirical validation and a conceptual framework, data are collected from China and Pakistan. China is famous for its considerable mobile penetration and is then confirmed as the first site of COVID-19. Similarly, the Pakistani Government is also doing pretty well in this pandemic.

3.1. Measures

All the constructs are adapted from the extant literature. Based on SDT, the present study uses intrinsic and extrinsic factors to influence citizens' participatory behavior in GSMAs. For instance, intrinsic factors include information seeking, status-seeking, self-development, political, and persuasion benefits. Information seeking is measured using two items from Park et al. (2009). Status seeking is measured using three items from Park et al. (2009). Political benefits are measured using three items from Clary et al. (1998) and Seyd and Whiteley (2002). Self-development is measured using two items from Nov et al. (2010). Persuasion benefits are measured using four items from (Phang et al., 2015). In addition, extrinsic benefits consist of enjoyment, altruism, ideology, and perceived reciprocity. Enjoyment is measured using the three items from Agarwal and Karahanna (2000). Altruism is measured using three items from Wasko and. Ideology is measured using two items from Wasko and Faraj (2005) and Kankanhalli et al. (2005). Perceived reciprocity is measured using three items from Wasko and Faraj (2005) and Yu et al. (2011). Perceived connectivity is measured using four items from Phang et al. (2015). Similarly, trust in government is measured using four items from Phang et al. (2015). Online civic behavior is measured using the five items from. Participatory behavior on GSMAs is measured using the four items from Wasko and Faraj (2005).

A five-point Likert scale is used, ranging from strongly agree (5) to strongly disagree (1) to measure all the questionnaire variables. This cross-country research targets two countries with different governmental structures and COVID-19 situations. The constructs used are adapted from past literature and initially constructed in English and then back-translated into Chinese (Brislin, 1980). Data are collected from Chinese citizens with Mandarin as the official language. Past research suggests that demographics may impact the

citizens' participatory behavior in GSMAs and civic behavior (Hameed et al., 2019; Liu et al., 2016). On this basis, this study uses demographics (i.e., age, gender, education, and income) as control variables. Table 2 presents the demographics in detail.

3.2. Survey design

During the COVID-19, the infectious disease forces towns, cities, and countries into complete lockdown. Collecting data from online users through the survey is the best research strategy and is a more effective technique to reach the sample. Therefore, this study collected data from online users through a survey to empirically examine the conceptual framework. IS research scholars conclude that the online survey method is a suitable approach to measure online behavioral responses. China is considered a social commerce and technology innovation hub. For the research context, Weibo and Wechat are the leading SNSs in China. By the second quarter of 2020, Wechat has more than 1.2 billion monthly active users. Online users on various SNSs belong to various demographics such as income, age, and education. Furthermore, during COVID-19, SNSs help various stakeholders and effectively communicate information to end-users. Beyond encouraging online business, these SNSs help the various government agencies to spread the right information to the general public during COVID-19. As a result, the strict lockdown survey might be the right sampling method to collect data from China and Pakistan. Liu et al. (2016) report that an online survey has several benefits: a broader reach and a higher response rate. Additionally, during COVID-19, collecting data from any other approach such as focus group and experiment is not appropriate.

3.3. Data collection

Data are collected from respondents of two countries where Internet usage penetration is over 20%. Among the countries, China is among those with high mobile penetration. App Annie reports that over 800 Million smartphone users on various mobile apps. Thus, the government launched various apps to provides online services to its citizens during crises. According to the WHO, the Chinese Government and related departments such as hospitals, transport, and pharmaceutical companies acted responsibly during this pandemic, providing timely and updated information shared through different media channels. The current research data are collected from online users with registered accounts on SNSs and liked GSMAs for sharing and commenting posts. Additionally, the data are collected from Pakistani online users with online SNSs (i.e., Facebook, Twitter, and Instagram) and subscribe to the government pages. During COVID-19, the Pakistani Government spread information to subscribers regarding the pandemic outbreak through various government official pages. For the data analysis, 369 valid responses are obtained from China and 340 from Pakistan. Table 1 reports the demographic profiles of each country's respondents. Tables 3 and 4 show the descriptive statistics such as mean, standard deviation, correlation, and Cronbach's alpha values of the primary constructs as the model and demographic variables. To examine the results, we reduced all the framework's continuous variables into composite mean scores shown in Table 3.

4. Results

4.1. Measurement model

This study proposes a theoretical framework for validity and reliability objectives using different statistical analyses, including validity, reliability, and factor loading. Drawing on Hair et al. (2011), we use confirmatory factor analysis (CFA) as the research measurement model. Notably, the measurement model is analyzed by investigating discriminant, content, and convergence validity. The content validity is measured by verifying past research and pilot testing of the measure. Similarly, convergent validity is assessed

Table 2
Demographic.

Constructs	China		Pakistan	
	N	%	N	%
Gender				
Male	236	64.0	212	64.0
Female	133	36.0	119	36.0
Age				
Between 21 and 30	193	52.0	175	53.0
Between 31 and 40	148	41.0	134	40.0
Between 41 and 50	28	7.0	22	7.0
Education				
College or Bellow	48	13.0	40	12.1
Under-graduate	158	43.0	151	45.6
Masters	163	44.0	140	42.3
Income				
Less than 300 \$	35	9.0	34	10.0
300–999 \$	129	35.0	109	33.0
1000–1499 \$	114	31.0	106	32.0
1500 \$ and above	91	25.0	82	24.0

Note: The data collected from the both in their local accepted currencies but presented here in the International accepted money format.

Table 3
Results of measurement analyses.

Constructs	China					Pakistan				
	Items	Factor Loadings	Cronbach α	CR	AVE	Items	Factor Loadings	Cronbach α	CR	AVE
Status Seeking behavior	3	0.64–0.90	0.80	0.81	0.59	3	0.78–0.93	0.88	0.87	0.70
Information seeking	2	0.67–0.83	0.74	0.79	0.56	2	0.84–0.88	0.88	0.90	0.74
Self-development	2	0.75–0.79	0.75	0.75	0.60	2	0.87–0.89	0.84	0.88	0.78
Political benefits	3	0.71–0.83	0.76	0.88	0.71	3	0.77–0.88	0.85	0.88	0.71
Persuasion benefits	4	0.71–0.84	0.74	0.83	0.62	4	0.69–0.86	0.79	0.83	0.63
Altruism	3	0.69–0.82	0.74	0.79	0.56	3	0.74–0.90	0.84	0.88	0.71
Enjoyment	3	0.81–0.84	0.79	0.88	0.65	3	0.83–0.92	0.87	0.92	0.80
Ideology	2	0.83–0.86	0.77	0.84	0.74	2	0.82–0.85	0.79	0.83	0.71
Perceived Reciprocity	3	0.65–0.84	0.75	0.82	0.53	3	0.75–0.82	0.76	0.84	0.56
Perceived Connectivity	4	0.60–0.90	0.84	0.88	0.65	4	0.71–0.89	0.87	0.91	0.72
Trust in Government	4	0.64–0.88	0.84	0.87	0.63	4	0.74–0.89	0.88	0.90	0.71
Online Civic behavior	5	0.60–0.89	0.77	0.85	0.54	5	0.67–0.86	0.81	0.87	0.57
Participation behavior on GSMAs	4	0.60–0.89	0.81	0.92	0.75	4	0.62–0.91	0.90	0.91	0.74

by evaluating the factor loading values, average variance extracted (AVE), and composite reliability (CR). Convergent validity investigates the degree to which a factor is associated with the other constructs of the proposed conceptual model. The proposed minimum threshold levels for AVE, CR, and Cronbach’s Alpha are 0.70, 0.50, 0.70, respectively (Fornell and Larcker, 1981; Hinkin, 1998). Past research treated Cronbach’s Alpha and composite reliability as consistent statistical approaches for measuring construct reliability, which is considered acceptable if the alpha and CR values exceed 0.70 (Fornell and Larcker, 1981). The findings in Table 2 show that all CR and alpha values are higher than 0.70 (Fornell and Larcker, 1981), while those in Table 3 show that discriminant validity, the inter-correlation value between variables, is less than the square root of AVE for each variable.

4.2. Common biased method

This study collected data through a survey approach through the rotating link. Thus, a common method bias (CMB) may exist in the two countries’ collected data (Fornell and Larcker, 1981). Different approaches are used to investigate CMB and to remove this problem from the data files. First, this study uses Herman single factor test to examine the possibility of CMB. The results of these data set collected from Pakistan, and China shows that a single factor has a value of less than 22.52% and 21.25% of the variance, respectively. Table 3 designates that all the variables’ inter-correlation is less than 0.90 (Pavlou and El Sawy, 2006), which also shows that CMB is not a serious concern in this study.

4.3. Hypothesis testing

The research model of the study has been analyzed using PROCESS Macro tool as suggested by Hayes (2007). We used model 4 of PROCESS to test the all the hypothesis including moderation analysis as indicated in Table 5. Results of both the analysis indicated that most of control variables have insignificant effect on dependent variable. Table 4 results indicated that Information seeking [Pakistan: ($\beta = 0.422, t = 7.326, p < .001$), China: ($\beta = 0.416, t = 7.468, p < .001$)], Self-development [Pakistan: ($\beta = 0.235, t = 3.699, p < .001$), China: ($\beta = 0.253, t = 4.089, p < .001$)], Political benefits [Pakistan: ($\beta = 0.249, t = 4.450, p < .001$), China: ($\beta = 0.260, t = 5.071, p < .001$)], Perceived Reciprocity [Pakistan: ($\beta = 0.3.156, t 5.427, p < .001$), China: ($\beta = 0.360, t = 5.833, p < .001$)], Altruism [Pakistan: ($\beta = 0.474, t = 8.762, p < .001$), China: ($\beta = 0.0.440, t = 8.244, p < .001$)], Ideology [Pakistan: ($\beta = 0.104, t = 1.961, p > .05$), China: ($\beta = 0.115, t = 2.205, p > .05$)] are positively related to Participation behavior on GSMAs. However, Status Seeking behavior [Pakistan: ($\beta = 0.0.085, t = 1.432, p > 0.05$), China: ($\beta = 0.091, t = 1.600, p < .05$)], Enjoyment [Pakistan: ($\beta = 0.051, t = 1.156, p > .05$), China: ($\beta = 0.050, t = 1.286, p > .05$)], Persuasion benefits [Pakistan: ($\beta = -0.034, t = -0.531, p > .05$), China: ($\beta = -0.020, t = -0.347, p < .05$)] have insignificant effect on Participation behavior on GSMAs. Results also indicated that Participation behavior on GSMAs [Pakistan: ($\beta = 0.428, t = 7.480, p < .001$), China: ($\beta = 0.391, t = 7.922, p < .001$)] is positively related to Online Civic behavior. Table 4 presented the moderating effect of perceived connectivity and trust in government in detailed. Table 5 shows that the interaction of perceived connectivity with intrinsic and extrinsic factors was measuring in predicting citizens’ participatory behavior on GSMAs. Specifically, perceived connectivity has significant interaction terms with Information seeking [Pakistan: ($\beta = 0.158, t = 2.16, p < .05$), China: ($\beta = 0.138, t = 2.010, p < .05$)], Self-development [Pakistan: ($\beta = 0.211, t = 2.355, p < .05$), China: ($\beta = 0.215, t = 2.624, p < .05$)], Political benefits [Pakistan: ($\beta = 0.257, t = 2.432, p < .001$), China: ($\beta = 0.262, t = 2.782, p < .001$)], Altruism [Pakistan: ($\beta = 0.157, t = 1.991, p < .05$), China: ($\beta = 0.0.166, t = 1.971, p < .05$)], are positively related to participation behavior on GSMAs supporting the various moderating hypotheses. In addition, trust in government positively moderate the link between Participation behavior on GSMAs and Online Civic behavior because the interaction terms of [Pakistan: ($\beta = 0.158, t = 2.16, p < .05$), China: ($\beta = 0.138, t = 2.010, p < .05$)]. However, perceived connectivity has insignificant moderating effect on status seeking behavior [Pakistan: ($\beta = 0.047, t = 0.516, p > .05$), China: ($\beta = 0.035, t = 0.040, p > .05$)], perceived reciprocity [Pakistan: ($\beta = -0.169, t = -2.134, p > .05$), China: ($\beta = -0.182, t = -2.413, p > .05$)], enjoyment [Pakistan: ($\beta = -0.010, t = -0.174, p > .05$), China: ($\beta = 0.006, t = 0.113, p < .05$)], ideology [Pakistan: ($\beta = 0.0911, t = 1.654, p > .05$), China: ($\beta = 0.0.010, t = 1.651, p > .05$)], Persuasion benefits

Table 4
Correlation matrix and Mean, Standard Division.

China																			
Construct	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1- Status Seeking behavior	3.70	1.01	0.76																
2- Information seeking	3.98	0.70	0.11	0.76															
3- Self-development	3.71	0.83	0.02	0.25	0.77														
4- Political benefits	3.76	0.71	0.04	0.24	0.20	0.84													
5- Persuasion benefits	2.74	0.92	0.17	-0.16	0.02	0.04	0.78												
6- Altruism	4.01	0.70	0.04	0.05	0.14	0.17	-0.16	0.74											
7- Enjoyment	3.81	0.83	0.11	0.03	0.03	-0.06	0.14	0.03	0.80										
8- Ideology	3.69	1.01	0.09	0.10	0.13	0.16	0.15	0.04	0.10	0.86									
9- Perceived Reciprocity	3.46	0.73	0.15	0.17	0.04	0.08	0.31	0.18	-0.00	0.10	0.72								
10- Perceived Connectivity	3.26	0.80	0.15	0.27	0.12	0.14	-0.02	0.28	-0.04	0.08	0.26	0.80							
11- Trust in Government	3.23	0.81	0.20	0.28	0.12	0.16	0.01	0.28	0.00	0.15	0.27	0.33	0.79						
12- Online Civic behavior	3.90	0.61	0.32	0.39	0.32	0.37	0.06	0.36	-0.05	0.30	0.34	0.28	0.28	0.73					
13- Participation behavior on GSMAs	3.87	0.80	0.12	0.38	0.14	0.23	-0.02	0.41	0.03	0.12	0.33	0.31	0.30	0.46	0.86				
14- Income	NA	NA	-0.12	0.07	-0.12	-0.08	-0.09	0.07	-0.05	-0.08	0.28	0.08	0.09	0.12	0.11	NA			
15- Education	NA	NA	0.04	-0.03	-0.04	-0.07	0.19	-0.07	0.09	0.08	-0.01	0.02	0.02	0.02	0.11	-0.14	NA		
16- Age	NA	NA	-0.14	-0.01	-0.01	-0.01	-0.10	0.00	0.04	-0.11	0.08	0.04	0.02	-0.05	-0.08	0.16	-0.32	NA	
17- Gender	NA	NA	0.04	0.066	0.13	0.13	0.10	-0.08	0.08	0.03	0.01	-0.06	-0.15	-0.13	-0.11	-0.20	-0.16	-0.17	NA
Pakistan																			
Construct	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1- Status Seeking behavior	3.75	1.03	0.83																
2- Information seeking	4.04	0.68	0.09	0.86															
3- Self-development	3.78	0.78	0.02	0.24	0.88														
4- Political benefits	3.83	0.67	0.03	0.22	0.33	0.84													
5- Persuasion benefits	2.81	0.94	0.18	-0.15	0.04	0.05	0.79												
6- Altruism	4.05	0/	0.04	0.14	0.16	0.17	-0.17	0.84											
7- Enjoyment	3.89	0.80	0.14	0.04	0.02	-0.05	0.13	0.04	0.89										
8- Ideology	3.68	1.02	0.09	0.08	0.14	0.16	0.18	0.02	0.11	0.84									
9- Perceived Reciprocity	3.47	0.75	0.12	0.18	0.06	0.09	0.28	0.19	0.01	0.09	0.74								
10- Perceived Connectivity	3.29	0.81	0.14	0.26	0.13	0.16	-0.01	0.27	-0.02	0.08	0.27	0.84							
11- Trust in Government	3.25	0.77	0.19	0.27	0.14	0.17	0.01	0.27	0.01	0.14	0.27	0.35	0.84						
12- Online Civic behavior	3.94	0.58	0.29	0.37	0.30	0.34	0.07	0.37	-0.04	0.28	0.34	0.28	0.28	0.75					
13- Participation behavior on GSMAs	3.95	0.77	0.11	0.39	0.14	0.24	-0.03	0.44	0.04	0.11	0.32	0.29	0.29	0.47	0.86				
14- Income	NA	NA	-0.15	0.05	-0.12	-0.08	-0.10	0.08	-0.06	-0.10	0.28	0.08	0.08	0.11	0.09	NA			
15- Education	NA	NA	0.08	-0.02	-0.03	-0.05	0.21	-0.07	0.09	0.11	-0.01	0.01	0.01	0.02	0.07	-0.18	NA		
16- Age	NA	NA	-0.17	-0.01	-0.00	0.00	-0.11	0.01	0.02	-0.13	0.10	0.04	0.02	-0.04	-0.06	0.16	-0.31	NA	
17- Gender	NA	NA	0.04	0.014	0.14	0.11	-0.08	0.10	0.04	0.01	-0.05	-0.14	-0.12	-0.11	-0.16	-0.17	-0.14	0.07	NA

Table 5
Moderation and Mediation Analysis.

	B	SE	t	R ²	B	SE	t	R ²
Outcome: Participation behavior on GSMAs				0.11				0.14
Constant:	-0.003	0.049	-0.078		-0.023	0.047	-0.507	
Status Seeking behavior	0.085	0.059	1.432		0.091	0.057	1.600	
Perceived Connectivity	0.26	0.0723	3.676**		0.28	0.070	4.033**	
Status Seeking behavior * Perceived Connectivity	0.047	0.092	0.516		0.035	0.089	0.400	
Income	0.071	0.049	1.446		0.091	0.046	1.972	
Education	0.050	0.060	0.830		0.066	0.055	1.205	
Age	-0.048	0.052	-0.934		-0.58	0.048	-1.199	
Gender	-0.088	0.047	-1.876		-0.118	0.044	-2.645	
Outcome: Participation behavior on GSMAs				0.25				0.26
Constant:	-0.030	0.046	-0.659		-0.047	0.044	-1.053	
Information seeking	0.422	0.057	7.326**		0.416	0.055	7.468**	
Perceived Connectivity	0.166	0.073	2.266*		0.182	0.072	2.529*	
Information seeking * Perceived Connectivity	0.158	0.073	2.161*		0.138	0.074	2.010*	
Income	0.031	0.043	0.728		0.048	0.042	1.141	
Education	0.319	0.043	0.724		0.059	0.049	1.219	
Age	-0.044	0.046	-0.949		-0.051	0.043	-1.181	
Gender	-0.165	0.043	-3.807		-0.186	0.041	-4.500	
Outcome: Participation behavior on GSMAs				0.16				0.19
Constant:	-0.021	0.047	-0.458		-0.040	0.044	-0.914	
Self-development	0.134	0.059	2.368*		0.145	0.062	4.089**	
Perceived Connectivity	0.235	0.064	3.669**		0.253	0.062	4.089**	
Self-development * Perceived Connectivity	0.211	0.090	2.355*		0.215	0.082	2.624*	
Income	0.077	0.047	1.629		0.095	0.044	2.139	
Education	0.361	0.055	0.647		0.049	0.050	0.971	
Age	-0.058	0.052	-1.127		-0.069	0.048	-1.431	
Gender	-0.089	0.045	-1.960		-0.119	0.043	-2.749	
Outcome: Participation behavior on GSMAs				0.20				0.23
Constant:	-0.030	0.047	-0.641		-0.049	0.043	-1.127	
Political benefits	0.249	0.056	4.450**		0.260	0.051	5.071**	
Perceived Connectivity	0.203	0.0617	3.292**		0.219	0.059	3.694**	
Political benefits * Perceived Connectivity	0.257	0.105	2.432**		0.262	0.094	2.782**	
Income	0.083	0.046	1.807		0.099	0.043	2.294	
Education	0.519	0.054	0.949		0.069	0.049	1.394	
Age	-0.063	0.049	-1.276		-0.068	0.046	-1.471	
Gender	-0.098	0.043	-2.278		-0.128	0.041	-3.095	
Outcome: Participation behavior on GSMAs				0.19				0.22
Constant:	0.032	0.043	0.741		0.015	0.041	0.383	
Perceived Reciprocity	0.347	0.063	5.427**		0.360	0.061	5.833**	
Perceived Connectivity	0.194	0.061	3.156*		0.207	0.058	3.530*	
Persuasion benefits * Perceived Connectivity	-0.169	0.079	-2.134		-0.182	0.075	-2.413	
Income	-0.012	0.049	-0.259		0.003	0.047	0.078	
Education	0.030	0.054	0.555		0.049	0.049	0.996	
Age	-0.057	0.048	-1.181		-0.056	0.045	-1.247	
Gender	-0.108	0.047	-2.306		-0.182	0.044	-3.071	
Outcome: Participation behavior on GSMAs				0.28				0.30
Constant:	-0.030	0.044	-0.693		-0.043	0.042	-1.019	
Altruism	0.474	0.541	8.762**		0.440	0.053	8.244**	
Perceived Connectivity	0.145	0.0725	2.010*		0.165	0.072	2.281*	
Altruism * Perceived Connectivity	0.157	0.080	1.958		0.116	0.085	1.357	
Income	0.028	0.042	0.674		0.056	0.041	1.360	
Education	0.066	0.052	1.257		0.085	0.049	1.705	
Age	-0.043	0.046	-0.941		-0.050	0.044	-1.144	
Gender	-0.151	0.041	-3.659		0.056	0.041	1.360	
Outcome: Participation behavior on GSMAs				0.11				0.11
Constant:					-0.0189	0.044	-0.426	
Enjoyment	0.051	0.044	1.156		0.050	0.040	1.268	
Perceived Connectivity	0.284	0.071	4.006		0.305	0.068	4.429	
Enjoyment * Perceived Connectivity	-0.010	0.060	-0.174		0.006	0.056	0.113	
Income	0.068	0.050	1.354		0.087	0.047	1.825	
Education	0.043	0.061	0.705		0.057	0.056	1.013	
Age	-0.058	0.052	-1.106		-0.069	0.049	-1.406	
Gender	-0.087	0.047	-1.829		-0.113	0.045	-2.522	
Outcome: Participation behavior on GSMAs				0.13				0.16
Constant:	-0.0439	0.442	-0.0993		-0.030	0.045	-0.670	
Ideology	0.104	0.054	1.916		0.115	0.055	2.205	
Perceived Connectivity	0.224	0.065	3.405**		0.238	0.064	3.687**	
Ideology * Perceived Connectivity	0.173	0.104	1.654		0.169	0.099	1.760	

(continued on next page)

Table 5 (continued)

	B	SE	t	R ²	B	SE	t	R ²
Income	0.071	0.051	1.392		0.087	0.046	1.910	
Education	0.062	0.087	0.710		0.058	0.053	1.096	
Age	-0.118	0.086	-1.372		-0.083	0.049	-1.688	
Gender	-0.173	0.098	-1.772		-0.111	0.049	-2.486	
Outcome: Participation behavior on GSMAs				0.13				0.15
Constant:	-0.110	0.460	-0.240		-0.022	0.044	-0.501	
Persuasion benefits	-0.034	0.064	-0.531		-0.020	0.060	-0.347	
Perceived Connectivity	0.287	0.068	4.211**		0.302	0.066	4.576	
Persuasion benefits * Perceived Connectivity	-0.159	0.078	-2.031		0.150	0.075	1.991*	
Income	0.065	0.051	1.273		0.081	0.046	1.768	
Education	0.058	0.086	0.678		0.053	0.053	1.001	
Age	-0.075	0.085	-0.874		-0.055	0.049	-1.118	
Gender	-0.199	0.098	-2.031		-0.123	0.044	-2.749	
Outcome: Online Civic behavior				0.33				0.33
Constant:	-0.056	0.372	-0.151		-0.065	0.036	-1.791	
Participation behavior on GSMAs	0.428	0.057	7.480**		0.391	0.053	7.922**	
Trust in Government	0.153	0.046	3.279**		0.165	0.044	3.746**	
Participation behavior on GSMAs * Trust in Government	0.230	0.073	3.11**		0.235	0.061	3.827**	
Income	0.035	0.034	1.030		0.039	0.031	1.257	
Education	0.039	0.068	0.571		0.005	0.042	0.125	
Age	-0.086	0.074	-1.221		-0.072	0.04	-1.736	
Gender	-0.026	0.073	-0.358		0.002	0.034	0.081	

Note: *p less than 0.05, **p less than 0.01.

[Pakistan: ($\beta = -0.159, t = -2.031, p > .05$), China: ($\beta = 0.150, t = 1.910, p > .05$)].

Furthermore, we used graphical procedures to understand the moderating role of perceived connectivity and trust in government. Figs. 2a, 3a, and 4a for China and Figs. 2b, 3b, and 4b for Pakistan, respectively. The graphical presentation indicated the moderating effect of perceived connectivity and trust in government.

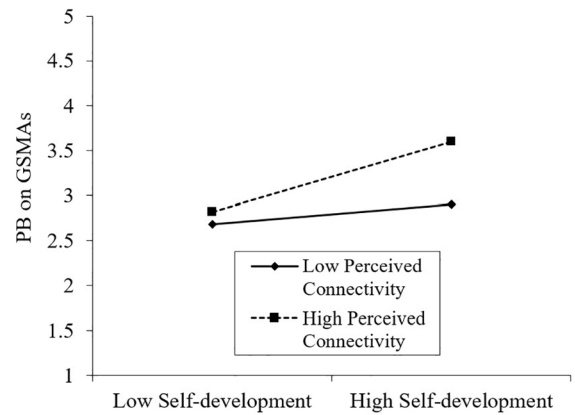
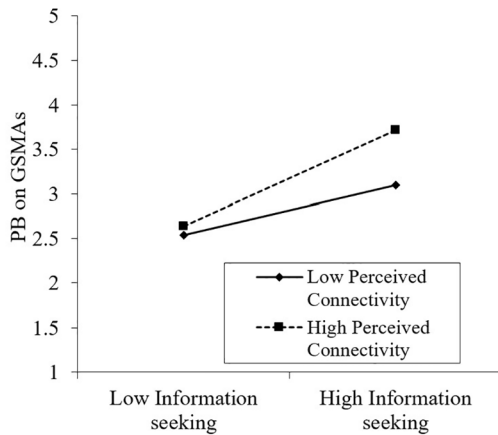
5. Discussion

This research’s main objective was to examine the role of GSMAs in the real pandemic or crisis-an an area that is yet to be unexplored. To provide a better understanding of the GSMAs in the global outbreak. We draw on the SDT and CVM, which highlight the significant role of motivational factors to enhance the citizens’ participation in the GSMAs, which resulted in online civic behavior. Furthermore, during the pandemic outbreak, this research is the pioneer to understand the underlying mechanism to promote the citizens’ participatory behavior on GSMAs that leads to online civic behavior. Besides, this research is cross country (i.e., China and Pakistan) where high mobile penetration has been noticed, and smartphone and related functions play an important role in the country’s economy and medium of fast delivery of messages case of China. During the COVID-19, the lockdown government faces various challenges to increase the citizens’ participation in GSMAs regarding the update and latest information. As a result, social media has a crucial role in achieving the required results. Our results supported the proposed hypotheses, aligned with the past research literature (Chen et al., 2018; Guo et al., 2020; Phang et al., 2015). Additionally, in both countries’ cases, the moderating finding reveals that government institutes’ high trust moderated the relation between citizens’ participatory behavior and online civic behavior. The current finding shows that empirical and theoretical models were well supported, with only a few exceptions where some hypothesis is a weak relationship or insignificant. Furthermore, this research is conducted in the global pandemic; therefore, findings from the present empirical investigation have raised practical implications.

Based on China-Pakistan’s survey data, this research reveals that intrinsic and extrinsic factors are positively related to citizens’ participatory behavior on GSMAs except for specific effects. For instance, information-seeking, self-development, political benefits, perceived-reciprocity, altruism, and ideology are significantly positively related to the participation behavior on GSMAs, and the rest of the hypotheses having insignificant values in the case of both countries. By providing the empirical evidence of extrinsic and extrinsic role on GSMAs, this study’s results align with past literature that highlights the positive role of social media during the COVID-19. Our research results support the hypothetical relationships and contend that both extrinsic and intrinsic motivational factors are the precursor to user participation in GSMA. For example, this study finding shows that perceived reciprocity is significantly related to users’ participation behavior on GSMA.

Contrary to Guo et al. (2017), where perceived reciprocity does not support the commenting behavior as, during crises, a flood of comments on GSMA passes through, and even though users know that their comments may not be getting any attention from the following users; thereby less motivated to participated on GSMAs. In the present circumstances, citizens are internally motivated to participate in the GSMAs because Covid-19 has become a global challenge for governments and other business stakeholders and communities. So, for self-development and getting political benefits, the community actively invests in the user’s participation in GSMA. More specifically, during the present crises of COVID-19 online civic management has emerged as the need for time to bridge the gap between the community and public institutions. GSMAs are a source to spread authentic information, and during the crisis period, citizens’ participation in these forums is believed to be the engine of information and status-seeking. Our results reveal that

a: China



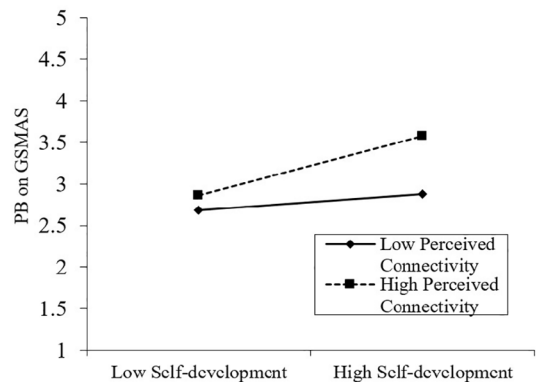
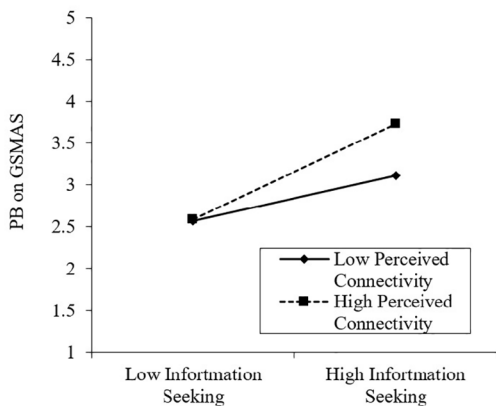
Moderating role of Perceived Connectivity with the relationship between Information seeking and PB on GSMAS

Moderating role of Perceived Connectivity with the relationship between Self-development and PB on GSMAS

Note: PB on GSMAS = Participation behavior on GSMAS

Note: PB on GSMAS = Participation behavior on GSMAS

b: Pakistan



Moderating role of Perceived Connectivity with the relationship between Information seeking and PB on GSMAS.

Moderating role of Perceived Connectivity with the relationship between Self-development and PB on GSMAS).

Note: PB on GSMAS = Participation behavior on GSMAS

Note: PB on GSMAS = Participation behavior on GSMAS

Fig. 2.

most hypotheses are statistically supported in our research setting.

Moreover, turning now on the moderating effect of perceived connectivity in the relationship between extrinsic and intrinsic benefits and citizens' participatory behavior, our results propose that perceived connectivity plays a significant role in the relationships of antecedents of user participation and user's participation on GSMA except some effects. Therefore, our findings reveal that perceived connectivity is central to an overall framework in the mobile age and for the smooth flow of information and the smart functioning of GSMA. Users easily associate with those keen on the same type of information through online platforms. In addition, during the COVID-19, the findings mentioned that the perceived connectivity role has abruptly increased because everyone is interested in pandemic-related information. For instance, perceived connectivity moderated the relationship between information seeking and citizens' participatory behavior on GSMAS in both countries' contexts. Our findings support the moderating hypotheses shown in Table 1, consistent with past literature (Phang et al., 2015). Furthermore, our findings contrast Guo et al. (2020) research, which found that perceived connectivity has no moderating effect in the relationship between motivational factors and citizens' participation behavior on GSMAS. This study extends Phang et al. (2015) findings by demonstrating the underlying mechanism through which intrinsic and extrinsic factors are associated with citizens' participatory behavior on GSMAS. It is because perceived connectivity is a critical factor in predicting individuals' or groups' online participatory behavior during crisis management.

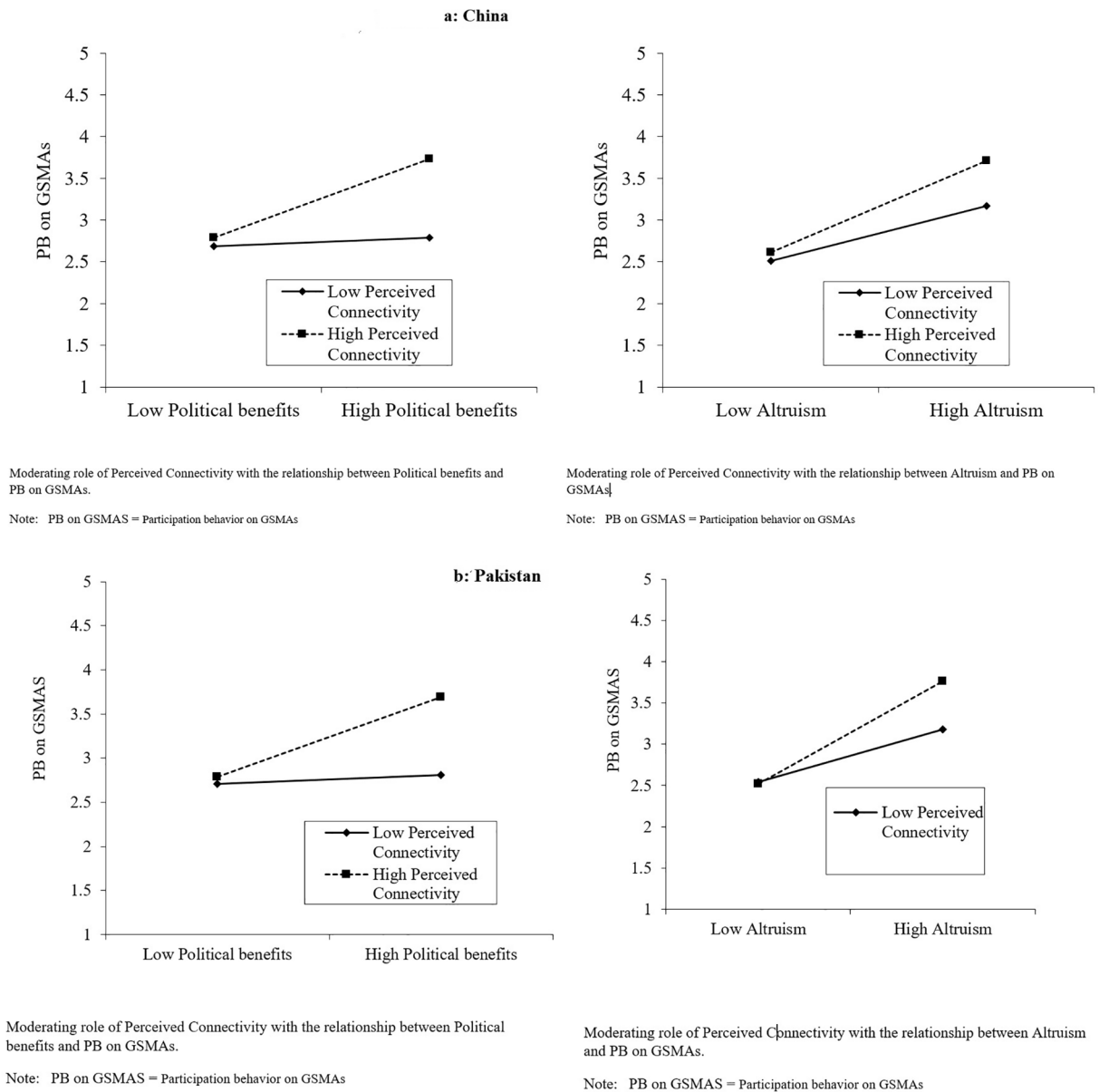
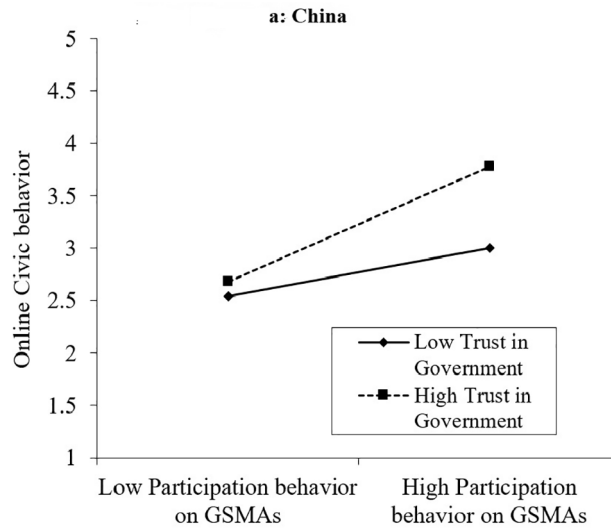


Fig. 3.

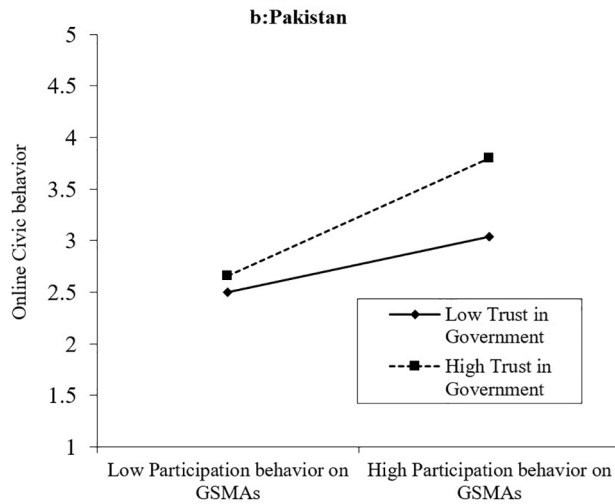
Technology is the key attribute of social media, and during crises like Covid-19, masses are supposed to connect each other through reliable, interconnected, and speedy networks making the smooth flow of information from government to the general public. The moderation analysis reveals that perceived connectivity significantly moderates most of the hypothesis, indicating the relationships between different motivational antecedents and GSMA participatory behavior.

This study research finding reveals that participation of GSMAS significantly positively influences growing online civic behavior over time because of the global situation, strict lockdown, uncertain situation, easily available internet or ICT is provoked the strong GSMAS influence on online civic engagement during the COVID-19 over a while. We tested hypotheses from both countries (I.e., China & Pakistan). Our findings show that both countries' citizens' active participation is positively related to online civic behavior. Furthermore, during the COVID-19, this research empirically tested and validated that trust influences the association between citizens' participation in GSMAS and online civic behavior in government. The online civic behavior tendency is lower when the citizens' have less trust in government institutes of particular countries, in contrast with higher trust in government institutes, strengthening citizens' participation in GSMAS with online civic behavior. During the COVID-19, our moderating results confirmed that Chinese and Pakistani citizens do trust in their governments. Even in the real crisis, Like fellow Chinese citizens. Pakistani citizens are extra conscious and wholly followed the standard operating procedures (SOPs) (i.e., social distancing, wear masks, and follow-down) provided by the government. Additionally, as per reported results, the Chinese have the highest trust in their government and



Moderating role of Trust in Government with the relationship between Participation behavior on GSMAs and Online Civic behavior

Note: PB on GSMAS = Participation behavior on GSMAs



Moderating role of Trust in Government with the relationship between Participation behavior on GSMAs and Online Civic behavior

Note: PB on GSMAS = Participation behavior on GSMAs

Fig. 4. .

political systems than any other country worldwide. Therefore, due to people’s devotion and government commitment, the new local cases have zero per WHO is weekly reporting. During the COVID-19, China has emerged as a different nation because China’s government won the hearts of billions in the fight against infectious disease. Therefore, government institutes’ trust is a significant construct, especially in the crisis, heightening online civic behavior.

5.1. Theoretical contribution

The present research makes various significant contributions to the extant literature. First, this research explores the past literature on the constructs mentioned above by analyzing and validating the conceptual model that, based on the SDT intrinsic and extrinsic factors, increases the citizens’ participatory behavior on GSMAs and civic behavior during the COVID-19. Intrinsic and extrinsic factors

are significant determinants of the citizens' participatory behavior on GSMAs and civic behavior during the COVID-19. Furthermore, the extrinsic and intrinsic factors (e.g., status-seeking, information, self-development, political benefits, altruism, perceived reciprocity, etc.) play a significant role in the user's participation GSMAs, which is consistent to virtual reality. Only a few studies have analyzed the antecedents of citizens' participatory behavior in the crises, specifically from the perspective of COVID-19. Thus, this research enriches the literature on the underlying mechanism of the citizens' participatory behavior on the GSMAs, which later leads to civic behavior. To the best of our knowledge, this research first empirically examines the determinants (intrinsic and extrinsic factors) on citizens' participation in GSMAs during the COVID-19. Second, the IS literature conducted various studies related to community participation through social media in the crises. Drawing on the SDT and CVM, this research advances the literature and understanding of the various constructs that influence citizens' participation in GSMAs during the COVID-19. Past literature of IS highlighted the significance of SDT theory (intrinsic and extrinsic factors) in measures the users' participation in the SNSs. Thus, this study extends [Guo et al. \(2020\)](#) findings by illustrating the underlying mechanism that increases the citizens' participation in GSMAs during the COVID-19 pandemic.

Third, this research explores the understanding of the SDT what factors stimulate participation in GSMAs what later generate civic behavior. For instance, we empirically investigated and found that information seeking, status-seeking, political benefits, enjoyment, perceived reciprocity, and altruism are responsible for citizens' participation in GSMAs. Citizens are under lockdown due to COVID-19 and taking precautionary measures as suggested by the government. COVID-19 is an infectious disease, and people are using the GSMAs to grab some preliminary information regarding the latest update about the pandemic. As more and more cities, regions, and countries implement lockdowns, panic has emerged as a reliable feature of the Coronavirus outbreak. Therefore, the current research provided the comprehensive underlying mechanism of citizens' participation in GSMAs, leading to civic behavior. For instance, [Phang et al. \(2015\)](#) found that political career and persuasion benefits were the critical determinants of the online policy deliberation forums.

Similarly, [Guo et al. \(2020\)](#) researched the crisis management China issues and found that emotional support and mobilization are the key determinants of the citizens' participatory behavior on GSMAs. Furthermore, this study highlights additional variables, i.e., ideology, self-development, and perceived reciprocity, introduced based on the extant literature to measure the participatory behavior on GSMAs. Finally, we conducted comparative research between China and Pakistan and found a significant difference between citizens as limited research was done on comparing two countries with different cultures and governing systems. This research enriches the literature on the GSMAs at cross country level.

5.2. Managerial implication

This study has various practical implications on such an essential construct of citizens' participatory behavior on GSMAs during the COVID-19 pandemic. First, during the COVID-19 pandemic, billions of people around the lockdown as it is an infectious disease. Therefore, the present research empirically conducts research on such an important topic to help governmental officials, WHO staff, NGOs, crisis management agencies, and the most important citizens'. In the global crises, which restricted citizens to their hometown and social media are the only means of delivering important information to the citizens. This research provides the guidelines to all major stakeholders about the determinants responsible for the citizens' participatory behavior on the GSMAs and outcomes. It can give a holistic view to understand the mechanism to spread timely information during the crisis.

Second, In the IS, extant literature comprehensively conducted studies to measure the determinants responsible for the SNSs adoption. Thus, with our best knowledge, this study first develops a theoretical model to understand the underlying mechanism of citizens' participation in the GSMAs during the COVID-19. Governmental officials and crisis management people may need to work on the citizens' confidence level and moral responsibility and encourage them to participate in the global challenge to help the government officials. COVID-19 is an infectious disease and killed more than 1 million people globally, and still responsible authorities are struggling. As a result, citizens' participation in the GSMAs provides the latest update regarding this pandemic. For example, citizens can share any information beneficial to other people provided by the GSMAs during crises. In the case of COVID-19, Citizens' can share videos of any activity that may cause this pandemic to spread and help the general public restrain such responsibility for spreading the COVID-19. IS scholars believed that social media is a global platform where billions of users are connected. Information communication technology has emerged as the most substantial network in the history of mankind.

Third, Statista reported that internet consumption abruptly increased during the COVID-19. Online users use social media for various functions such as entertainment, joy, work-related activities, and collecting information regarding the COVI-19. Extant literature has examined the negative role of social media usage on the users' well-being (i.e., mental health problems, low life satisfaction, negative appraisal, etc.) ([Ali et al., 2020](#); [Islam et al., 2018b](#); [Liu et al., 2016](#); [Luqman et al., 2017](#)). This research examines the positive aspect of the citizens' participation in the GSMAs, intending to help governments eradicate the deadly pandemic. Crises departments are continuously providing various preventive measures on their social media accounts. Based on the SDT, this study finding reveals that status-seeking, political benefits, enjoyment, and altruism are the main antecedents of the citizens' participation in the GSMAs that lead to online civic behavior. This study provides a comprehensive outline to the government officially look at various intrinsic and extrinsic factors and identify which factor has significant associated with the citizens' participatory behavior on GSMAs. Fourth, government officials or crisis management team members should also highlight extrinsic benefits such as status-seeking, political benefits, and self-development against the citizens' volunteer efforts. For example, they can select some of the citizens who volunteer themselves to share the required information and answer the various queries on the GSMAs during the OVID-19. The government should appreciate such active citizens through their official GSMAs for their positive behavior in eliminating the pandemic.

Fifth, these research findings provide complete guidance to the officials of disaster agencies. It can help them to understand the

productive use of online participation in GSMAs. The findings offer a better understanding of determinants and consequences required for participation behavior on GSMAs during the pandemic. Disaster management agencies need to boost the users' confidence level that their active participation in the GSMAs can genuinely help the concerned departments. This objective can be achieved by convincing online users that their participation matters during crises. Finally, this study presented new insights regarding how GSMAs' participation is creating online civic behavior. In the crises management literature, GSMAs has initiated new patterns of online civic engagement during the COVID-19, such as governments are rotating the messages through their GSMAs like share photos, links of the pandemic to create proper awareness; citizens, on the other hand, motivated to arrange the civic activities (i.e., collecting the charity, donating, various coordinate activities, and contacting public figures, and create an online campaign on the crises). Extant literature only examined the role of general media influence on online civic behavior. However, the present research specifically examined the role of citizens' participation in GSMAs on online civic behavior during the CIVID-19. The findings suggest that crisis management agencies may invest in their accounts on social media because their pages (i.e., GSMAs) can generate online civic behavior, which can eradicate the crises.

Limitation and Future Research

Even though the current research is empirically examined and validates the proposed framework that contributed to the extant literature, but it also has several limitations. First, COVID-19 is a pandemic and severely hit approximately more than 200 countries globally; therefore, data were collected through a survey approach that can lead to the citizens' participation in the GSMAs. Future studies should research using other data collection methods such as experimental design or the combination of qualitative and quantitative research methods. For example, When the pandemic will be under control and things would be normalized, governments may be willing to provide the big data actual participation on GSMAs. Second, this research targeted the two countries (I.e., China and Pakistan) that recognized their high mobile penetration. For instance, China has more than 800 Million smartphone users and the world's most considerable social commerce SNSs.

Similarly, Pakistan is an emerging nation and ranked 2nd in mobile consumption. Consequently, governments are very well aware of social media importance and prepared well. Thus, the present research conceptual framework findings could be various in the other countries because the institutional working style significantly varies worldwide due to various cultural and political systems, which may raise the generalizability issue. However, future research on GSMAs in the other crises and other countries with local context may increase the present research findings' validity. Third, current research centered on the two most famous SNSs (i.e., Weibo and Facebook) to measure the citizens' participatory behavior on the GSMAs. Future researchers should consider other information technology platforms such as government websites, portals, and online complaint cell, and the crises online pages to examine the citizens' participatory behavior. Future researchers can also include the local contexts in combination with local pages' measure the participatory behavior on GSMAs. Finally, future researchers should target psychological variables such as anxiety, stress to investigate the elements that may increase the users' participation behavior on the GSMAs.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix. Scoring rules of daily index*

Dimension	Item	Explain
Communication Interaction**	Number of reading	The sum of the increment of the number of microblogs read in the last 7 days
	Number of forwards	The total number of forwarded microblogs in the last 7 days, excluding spam users
	Number of comments	The total number of commented microblogs in the last 7 days, excluding spam users
Service	Number of likes	The total number of liked microblogs in the last 7 days, excluding spam users
	Number of active replies	The number of active replies of the government microblog users on that day
	Number of private letters	The number of private letters sent to users by the government microblog on that day
	Number of microblogs**	Number of microblogs sent by the government microblog user on that day
	Number of original microblogs***	Number of original microblogs sent by the government microblog user on that day

Note: *The total score is calculated and added by each index. Monthly data will be converted into daily average data for calculation.

**The same account for the same user to forward/commented/liked multiple times, only counted once a day.

***It is not that the higher the number of blogs, the higher the index, and the higher the frequency of screen swiping will cause the index value to drop.

Source: <https://bang.weibo.com/>

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