



Communications of the
Association for **I**nformation **S**ystems

Accepted Manuscript

Social Media as a Source of Citizens' Communicative Power: Relating Social Media Diffusion, E-participation, and Corruption

Jithesh Arayankalam

Information Systems Area

Indian Institute of Management (IIM) Kozhikode
Kerala, India

Satish Krishnan

Information Systems Area

Indian Institute of Management (IIM) Kozhikode
Kerala, India

Please cite this article as: Arayankalam, Jithesh; Krishnan, Satish: Social Media as a Source of Citizens' Communicative Power: Relating Social Media Diffusion, E-participation, and Corruption, *Communications of the Association for Information Systems* (forthcoming), In Press.

This is a PDF file of an unedited manuscript that has been accepted for publication in the *Communications of the Association for Information Systems*. We are providing this early version of the manuscript to allow for expedited dissemination to interested readers. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered, which could affect the content. All legal disclaimers that apply to the *Communications of the Association for Information Systems* pertain. For a definitive version of this work, please check for its appearance online at <http://aisel.aisnet.org/cais/>.



Social Media as a Source of Citizens' Communicative Power: Relating Social Media Diffusion, E-participation, and Corruption

Jithesh Arayankalam

Information Systems Area

Indian Institute of Management (IIM) Kozhikode
Kerala, India

Satish Krishnan

Information Systems Area

Indian Institute of Management (IIM) Kozhikode
Kerala, India

Abstract:

The utility of social media as an anti-corruption mechanism, although widely acknowledged, is less investigated, both empirically and theoretically. Accordingly, in this study, through a cross-country panel analysis and grounding our arguments on Habermas's theory of democracy, we explore the relationships among social media diffusion, e-participation, and corruption, in addition to the evolution of these relationships over time. Our results indicate that social media diffusion has a positive relationship with e-participation, which, in turn, has a negative relationship with corruption. Further, results show that the strength of these relationships wanes over time. These findings can help policymakers make informed decisions regarding the strategies for controlling corruption by increasing social media diffusion and e-participation.

Keywords: Social media, E-participation, Corruption, Evolution, Communicative power.

[Department statements, if appropriate, will be added by the editors. Teaching cases and panel reports will have a statement, which is also added by the editors.]

[Note: this page has no footnotes.]

This manuscript underwent [editorial/peer] review. It was received xx/xx/20xx and was with the authors for XX months for XX revisions. [firstname lastname] served as Associate Editor.] or The Associate Editor chose to remain anonymous.]

1 Introduction

Corruption, defined "as an act that subverts the public good for particularistic gain" (Gerring and Thacker, 2004, p. 300), is an age-old societal problem that has puzzled policymakers for centuries. Such a tenacity of this societal ill, regardless of periods, is apparent in the words of the ancient Indian philosopher, Kautilya, who said, "just as it is impossible not to taste the honey (or the poison) that finds itself at the tip of the tongue, so it is impossible for a government servant not to eat up, at least, a bit of the king's revenue" (Kangle, 1972, p. 91). While the nature of corruption may have changed from Kautilya's times, the tentacles of this menace in various metamorphosed forms still permeate our society, resulting in damaging consequences, such as slower economic growth (Gyimah-Brempong, 2002), reduced investments (Habib and Zurawicki, 2002), societal inequity (Absalyamova, Absalyamov, Khusnullova, & Mukhametgalieva, 2016), and the weakened rule of law (Lopez-Valcarcel, Jiménez, & Perdiguerro, 2017), among others. The World Economic Forum (WEF) estimates that the yearly global cost of corruption is around \$2.5 trillion (Dutta, Geiger, & Lanvin, 2015). Realizing the need for a global effort to combat corruption, the United Nations (UN) General Assembly has included corruption control in its sustainable development goals (SDG) and asks all countries to 'substantially reduce corruption and bribery in all their forms.' Without any doubt, corruption is a critical social problem that needs to be solved for a better world. However, a recent Transparency International (TI) report notes that "corruption levels remain at a standstill worldwide, with 86 percent of countries making little to no progress in the last 10 years." (TI, 2022). Such slow progress in containing corruption is concerning, making it an academic imperative in widening our understanding in tackling this global menace.

As corruption is said to be multi-faceted and multi-disciplinary (Ellis, 2019), measures to combat it have been investigated in various disciplines, such as political science, sociology, economics, and information systems. While studies in political science have identified various factors related to politics, such as the stability of the political system (Asongu & Nwachukwu, 2015a), civil society involvement (Jenkins, 2007), and accountability (Lederman, 2005), in reducing corruption, studies in sociology and economics have identified societal and economic factors, such as education (Asongu & Nwachukwu, 2015b) and income (Ali & Isse, 2002), in combating corruption. And studies in information systems (IS) have identified various ICT-related factors, such as e-government (Arayankalam, Khan, & Krishnan, 2021; Kim, Kim, & Lee, 2009), e-participation (Silal & Saha, 2021), and social media (Bertot, Jaeger, & Grimes, 2010; Enikolopov, Petrova, & Sonin, 2018; Jha & Sarangi, 2017), that can mitigate corruption. While these studies have advanced our understanding of corruption, policymakers globally are still struggling to deal with this age-old menace. One reason could be that corruption changes shapes with changing contexts and advances in technologies (Seldadyo & De Haan, 2011), necessitating a renewed understanding of the phenomenon. Despite social media becoming a ubiquitous technology, its role in reducing corruption is yet to be explored in depth. This gap is conspicuous despite overwhelming evidence on the role of social media in empowering citizens to influence various entities, such as the government, in their fight for various social causes. For instance, in Singapore, citizens, through various social media platforms such as Facebook, could pressure the government to change their immigration policy, which they felt was unjust (Goh & Pang, 2016). Similarly, social media helps negate excessive media power by enabling citizen participation on various governance and social issues, promoting a healthy democracy (Kaur, 2015; McGrath, Elbanna, Hercheui, Panagiotopoulos, & Saad, 2012). Notably, studies have also explored the critical role of social media in reducing corruption by promoting openness and transparency in the government (Bertot et al., 2010), by improving press freedom (Jha & Sarangi, 2017), and by exposing the corrupt activities of public servants (Enikolopov et al., 2018). In short, these studies indicate that with social media becoming "interwoven in the everyday fabric of sociality" (Marlowe, Bartley, & Collins, 2017, p. 88), it has started playing a critical role in empowering citizens to solve various societal issues.

However, these studies lacked in three respects. First, most studies stress social media's ability to enable wider participation as the fundamental mechanism to drive societal change; however, it gives only one side of the story by focusing more on citizens' informal participation. In other words, these studies consider how citizens discuss and deliberate on issues on an informal platform, such as social media, empowering them to act for solving societal problems. In a stable democracy, such informal participation needs to be complemented with a formal governmental mechanism for citizens' participation (Flynn, 2004). A formal governmental mechanism of citizens' participation includes channels promoted and supported by the government to make citizens part of governance processes. One example of such a mechanism is e-participation. Along with citizens, as the government is also an essential stakeholder in

society, the interplay of such informal and formal participative mechanisms is vital to understanding the true power of social media in reducing corruption. Second, most of these studies were atheoretical, with no sound theoretical background to understand why or how social media reduces corruption. A sound theoretical grounding is essential to grasp the nuances of underlying mechanisms through which social media reduces corruption. And third, the above studies do not explain if the strength of the relationships among the variables of interest changes over time. However, past studies point to the non-linear nature of technology diffusion, which may impact the relationship strengths over time.

To fill this gap, we conceptualize social media as an empowering mechanism that allows citizens to fight societal issues, such as corruption, by enabling participation in public deliberations. We believe such a conceptualization is essential as social media has many features, such as groups and many-to-many communications, that democratizes power in society by increasing participation (Jacobson et al., 2019). Further, as mentioned earlier, it is also critical to understand how the government, another critical stakeholder in formalizing this participation, plays a crucial role in channeling citizens' power to reduce corruption. One crucial way of formalizing citizens' participation is by implementing e-participation by the government (UN, 2018). Formally, e-participation is defined as "the process of engaging citizens through ICTs in policy, decision-making, and service design and delivery to make it participatory, inclusive, and deliberative" (UN, 2018, p. 112). In other words, it is both the capacity and the willingness of a country to encourage citizens in participatory decision-making in public policy and governance processes (WEFGITR, 2016). Accordingly, we investigate how the government's implementation of an electronic participation (e-participation) system mediates the relationship between social media and corruption. Thus, to unravel the nature of relationships mentioned above, in this study, we specifically focus on the relationships between social media diffusion, defined as the extent to which social media platforms are used in a country (Krishnan & Lymm, 2016), e-participation, and corruption in a country. Accordingly, we ask the following research question (RQ):

RQ1: What is the relationship between social media diffusion, e-participation, and corruption in a country?

RQ2: Do the strength of relationships among social media diffusion, e-participation, and corruption in a country change over time?

To answer the above RQs, we draw on Habermas's theory of democracy (Habermas, 2015) to argue that increased social media diffusion increases citizens' communicative power, which is channelized through e-participation, an institutional mechanism by the government, helping in combating the societal issue of corruption. We tested our hypotheses using publicly available three-year panel data for 85 countries, and the results supported our hypotheses. Accordingly, we contribute to the literature on social media, e-participation, and corruption in many ways. First, we theorize the role of social media as a source of the communicative power of citizens. Second, drawing on Habermas' theory of democracy (Habermas, 2015), our study contributes to the e-participation literature by positioning e-participation as an effective institutional mechanism to channel citizens' communicative power from social media platforms to the formal governance system. Third, our study contributes to the corruption literature by showing that e-participation reduces corruption by removing information asymmetry within the government. And fourth, our study shows that the strength of the relationships between social media diffusion, e-participation, and corruption weakens over time.

2 Background Literature

Social media refers to "a group of internet - based applications that build on the ideological and technical foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan & Haenlein, 2010, p. 61). Its various affordances, such as user-control of data and many-to-many communication (Porter, 2008), provide novel means of social interactions that were previously impossible with other one-way communication platforms, such as telephones. Such networked interactions on social media facilitate faster information sharing and a higher level of participation, enabling citizens to solve societal problems collectively. With the increase in the use of new-age communication devices, such as smartphones, and the rising affordability of the Internet, social media use has been rising worldwide, although not uniformly.

Such increasing influence of social media on everyday life (Marlowe et al., 2017) empowers citizens to solve various deeply ingrained problems persisting in society by enabling them to organize collectively. For instance, women's inequality is a deep-rooted societal problem, and their issues are generally less

highlighted in mainstream political debates. However, social media provides citizens a non-formal mechanism for networking at a low cost and influencing the political agenda, contributing to reducing women's inequality (Seibicke, 2017). Similarly, Subramanian (2021) explored how social media has been used for political engagement and activism to fight against deeply rooted caste discriminations in Indian society by creating online content related to anti-caste assertions. Further, Leong et al. (2019) highlighted the role of social media in empowering citizens to be more proactive in driving a social movement against various societal problems, such as environmental degradation. According to them, social media empowers citizens by facilitating a "connective action" (Leong et al., 2019, p. 173), which allows dispersed individuals to spontaneously organize even if they lack a shared identity (Vaast et al., 2017). Recently studies have also looked into empowering the citizens through social media to check the government's abuse of power, such as corruption, which is the focus of this study.

Researchers have attempted to understand the link between social media and corruption. However, earlier studies in this area were primarily descriptive or anecdotal, albeit indicating the ability of social media to reduce corruption. For instance, Bertot et al. (2010) opined that social media could combat corruption by increasing openness and transparency and reducing the government's central control of information. Similarly, Ionescu (2016) suggested that social media enable other ICT mechanisms to control corruption. Further, according to Prabowo, Hamdani, and Sanusi (2018), social media enables citizens to actively participate in anti-corruption movements, facilitating the eradication of corruption due to its networked nature. While we acknowledge the importance of these studies in suggesting the potential role of social media in tackling corruption, only a few studies have met the need for an empirical investigation.

Among the few empirical studies, most have inquired into the direct relationship between social media and corruption and found that social media plays an essential role in reducing corruption. For instance, in their study, Enikolopov et al. (2018) found that social media enables citizens to share information about corrupt activities by public servants, resulting in reduced corruption. Jha and Sarangi (2017) noted that free media is necessary to control corruption. The cross-country analysis with 150 countries found that social media provided a complementary channel to traditional media, such as television and press, in countries with low media freedom, thereby improving information access and reducing corruption. Further, Tang, Chen, Zhou, Warkentin, and Gillenson (2019), in a panel study with 62 countries, found that social media makes it difficult for public servants to conceal corruptive activities, in addition to making it easier for citizens to participate in anti-corruption activities. However, they also found that this relationship may not hold in societies with tight societal norms as people in such societies may be reluctant to act against corruption (Tang et al., 2019).

In addition to the studies mentioned above that inquired into the direct relationship, some studies have investigated the moderating effect of social media on other factors in reducing corruption. For instance, in their study, Arayankalam et al. (2021) found that social media diffusion enhances the negative relationship between e-government and three corruption dimensions, namely, legislative, executive, and legislative corruption, by increasing transparency and accountability. Although these studies play a huge role in advancing our knowledge on social media-corruption links, most of these studies were atheoretical, with only one study using a theoretical lens to explain the role of social media. For instance, Arayankalam et al. (2021) conceptualized social media as a Habermasian public sphere to explain its moderating effect on the relationship between e-government maturity and corruption. Such an atheoretical nature of the literature on this relationship may not be sufficient to reveal a nuanced understanding of the phenomenon. Further, the implicit assumption in most of the extant studies is that citizens' public participation in societal issues will eventually reduce corruption. Habermas (2015) believes such participation originates in the informal public sphere and needs to be given a formal color through institutionalized mechanisms for societal benefits. In other words, the participation of citizens, an important stakeholder in society, on social media need to be channeled or mediated through various mechanisms of the government, another important stakeholder in society, to reduce corruption effectively. However, past studies have overlooked the possibility of such mediating factors in the relationship between social media and corruption.

Given the above gaps, in this study, through a country-level study and by grounding our arguments on Habermas' theory of democracy (Habermas, 2015), we investigate how the level of social media diffusion in a country reduces corruption in it through e-participation. The following section discusses this theory and its contextualization in detail.

3 Theory and Hypotheses

3.1 Theoretical Background

In answering the RQ of our study, we draw on Habermas' theory of democracy (Habermas, 2015). It is worth noting that this theory has been employed in analyzing various phenomena in online settings. For instance, Holst and Moe (2021) adapted this theory to understand online democracy and its processes in Norway. Further, Gimmler (2001) argued using Habermas' theory that the Internet could be an efficient political instrument by allowing deliberative democracy if it allows "free and open discourse within a vital public sphere" (p. 21). Similarly, drawing from Habermas' ideas, Froomkin (2002), in his study on the Internet standards processes, emphasized the importance of peoples' participation in decision making to increase the legitimacy of rules. Further, Gimmler (2001) argued using this theory that the Internet could be an efficient political instrument by allowing deliberative democracy if it allows "free and open discourse within a vital public sphere" (p. 21). As social media is a public sphere in this digital age, allowing free and open discussions (Arayankalam et al., 2021), in line with the above studies, we consider Habermas' theory an apt theoretical framework to investigate our research question.

As per this theory, communicative power, which is the unhindered communicative freedom of citizens, is the key resource for legitimizing the government's actions and preventing the government from overstepping its powers. Three aspects can characterize communicative power. First, it requires free discussion of topics and public information processing, focusing on an outcome. Second, this power has to be exercised collectively by the citizens, creating a shared belief that can act as a driving force to continue deliberations among them. Third, it is a power of common will to act in concert (Arendt, 1970). Such communicative power is generated in an undistorted and informal public sphere, a space where people are free to engage in deliberations by placing citizens closer to real-world problems and informing them about problems that need to be solved.

However, a mere presence of communicative power is insufficient to influence the government and solve these problems. Instead, as per Habermas (2015), there is a need for institutional mechanisms to channel this power into the formal governance system, increasing government accountability to citizens. It is worthy to note that the government's actions are only legitimate if they are bound to this communicative power. Although Habermas (2015) presented the aforementioned institutional mechanisms as law, later scholars have expanded it by also including "existing institutions, conditions and practices" that provide citizens with "the power to question" the government (Kreide, 2016, p. 484). Further, Sormanen and Dutton (2015) noted that the presence of enough communicative power would get translated into meaningful societal impacts by empowering citizens to bypass and hold powerful institutions (e.g., government) of society accountable (Sormanen & Dutton, 2015). To summarize, citizens can channel their communicative power from an informal public sphere to drive societal changes by channeling this power through various institutional mechanisms. Based on the above arguments, we present our conceptual framework (Figure 1), which we will use to derive our hypotheses.

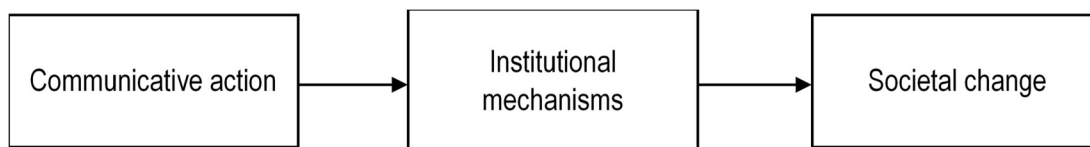


Figure 1. Conceptual framework

As discussed earlier, communicative power has three aspects: open public discussion on an outcome, shared belief, and a common will to act. We argue that social media is a source of such communicative power as it facilitates conditions that equate with these three aspects. To elaborate, past studies (e.g., Arayankalam et al., 2021) show that social media is an informal public sphere where citizens can freely engage in deliberations and discussions over a common issue. Further, these platforms bring together citizens with collective interests, creating a shared belief (Bessi et al., 2015). In addition, these platforms facilitate the translation of such shared beliefs into a common will to act in concert to solve a collective issue (Bakardjieva, 2015). Thus, by being an informal public sphere, social media platforms are also a source of the communicative power of citizens to pressure the government to solve societal problems, such as corruption. However, in line with the above conceptual framework, such communicative power from social media needs to be channeled through a proper institutional mechanism for driving societal

change. As e-participation is a formalized means by the government to increase citizen engagement in information sharing, governance, and policy-making, it can be considered an institutionalized mechanism for channeling the communicative power of the citizens for solving societal problems, such as corruption. Accordingly, to understand the relationship between social media diffusion (a source of communicative power) in a country, e-participation (an institutional mechanism), and corruption (a societal issue), in this study, we use the above conceptual framework to derive our hypotheses.

3.2 Relating Social Media Diffusion and E-participation

Legitimacy in the eyes of citizens for any government action, such as framing of law or its implementation, is critical for effective governance (Gilley, 2009). It gives citizens a notion that the government is "by the people, for the people, and of the people" (Hobolt, 2012, p. 92), and this notion is vital for a stable democracy (Habermas, 2015). Habermas (2015) states that to increase the legitimacy of governmental actions, the government needs to actively listen to the public sphere, where citizens actively share information on various issues, deliberate on these issues in an inclusive way, and generate opinions and ideas. And using specific institutional mechanisms, it needs to channel the communicative power from the public sphere to the formal governance system. The emergence of social media as a popular communication platform is drastically altering this citizens-government interaction in two ways. First, with the emergence of social media as an informal public sphere, more citizens can now engage in deliberations, discussions, and debates on governance matters (Arayankalam et al., 2021), increasing the communicative power to influence the government. Second, the government also is actively turning to social media to understand the pulse of the people and grassroots problems as social media, by allowing broad participation of citizens, represents a microcosm of society. Thus, when social media use by citizens is high in a country, their communicative power will be felt more by the government, prompting it to establish an effective institutional mechanism where they can share valuable information with the government and participate in decision making and policy matters. To this end, e-participation, as a tool for promoting citizens' engagement by encouraging information sharing and involvement in decision-making, institutionalizes citizens' participation in the governance and channels their communicative power from social media to the governance system, legitimizing citizen-government interactions. In other words, e-participation responds to the demand for citizens' participation in the governance process by supplying the Internet-mediated platforms (Krishnan, Teo, & Lymm, 2017) that channel the communicative power of the citizens from social media towards participation in decision and policy-making. In sum, in line with the conceptual framework (Figure 1), we argue that when social media diffusion is high in a country, citizens' communicative power to influence the government will be high, prompting the government to increase e-participation to enhance the legitimacy of citizen engagement in governance. Accordingly, we hypothesize:

Hypothesis 1a: Social media diffusion is positively associated with e-participation in a country.

We also predict that the positive effect of social media diffusion on e-participation may decrease over time due to the diminishing marginal effect of technologies. To elaborate, as per Rogers (1995), the network innovations such as social media follow an S-shaped pattern, with early adopters of the technology leading the way in showing how it is useful. Once its use case has been established, its use will witness a rapid surge, eventually flattening out while growth remains positive (Rose, 2005). Extending this idea to the context of social media as a source of communicative power, in the initial periods of social media diffusion, active publics who will use social media for deliberating on public issues will be high, leading to a rapid surge in communicative power. Active public refers to the citizens who are aware of a societal issue and will organize to solve it (Kim & Grunig, 2011). Due to such an increase in communicative power, the government will increase the implementation of e-participation to channel that power to the governance system. However, in the later periods of social media diffusion, the number of active publics who will use social media for deliberations increases slower than in previous periods. Thus, the increase in communicative power will be less, although positive. Because of a slower increase of active public on social media, the effect of social media diffusion on e-participation, although positive, will reduce over time. We, therefore, hypothesize that:

Hypothesis 1b: The effect of social media diffusion on e-participation will decrease over time.

3.3 Relating E-participation and Corruption

One of the prime reasons for corruption is the excessive power of the government, as it makes the public officials less accountable for their actions (Lederman, Loayza, & Soares, 2005). When they are less accountable, the possibility of misusing the public office for private gain is also high. Thus, it's essential to have measures that can keep a check on such unbalanced power to control corruption. One such measure is e-participation as it enables the citizens' participation in the governance. Studies indicate that citizens' participation makes the government more accountable, so we propose that e-participation increases government accountability in two ways. First, by participating in the decision- and policy-making processes through the e-participation's ICT-mediated platforms, they can keep a close watch on the activities of public officials (Halachmi & Greiling, 2013; Nam, 2019; Sindane, 2007). Aware of continuous scrutiny by citizens, public officials will be more reluctant to misuse public office for private gain. Second, e-participation equips citizens with more information on the working of the government as they are closely associated with the governance processes and public officials (Themistocleous et al., 2012). As information asymmetry between the public officials and the citizens is also a reason for power asymmetry (Krishnan et al., 2013), when e-participation in a country improves, it provides more information, thereby empowering citizens while dealing with the government. Thus, through its roles as a watchdog and information asymmetry remover, e-participation increases the ability of citizens to keep the government accountable, thereby reducing corruption in a country. In sum, in line with the conceptual framework (Figure 1), we argue that when e-participation is high in a country, citizens' ability to hold the government accountable will be high, reducing corruption. Accordingly, we hypothesize:

Hypothesis 2a: E-participation in a country is negatively associated with its corruption.

We argued that e-participation would reduce corruption in a country by enabling citizens to keep a close watch on the activities of the public officials and by removing the information asymmetry. However, such an effect of e-participation on corruption will fade over time due to the adaptive behavior of corrupt public officials. To elaborate, according to Cornish and Clarke (2014), corrupt public officials, being "reasoning decision makers" (p. 13), act rationally and adapt their actions to the changing situations and find new ways to engage in corruption. Thus, although e-participation will reduce corruption, its effect will be less than in previous years as the corrupt public officials may adapt to the new situation and learn new ways to misuse public office for private gains (Banerjee, Hanna, & Mullainathan, 2012). Accordingly, we hypothesize:

Hypothesis 2b: The positive effect of e-participation on corruption will decrease over time.

Having stated the direct relationship between (1) social media diffusion and e-participation and (2) e-participation and corruption, based on the conceptual framework, we propose one mediation hypothesis. We argue that when social media diffusion in a country is high, it will increase e-participation, which will reduce corruption. To elaborate, social media diffusion in a country enables its citizens to deliberate upon various governance issues, generating communicative power to hold the government accountable. Such power from citizens puts pressure on the government to involve them in the governance process by increasing their participation, with one effective measure being e-participation. When citizens participate more in governance, they can keep a close watch over the activities of public officials and remove information asymmetry, thereby reducing corruption. In sum, we contend that social media diffusion in a country indirectly reduces corruption by improving e-government participation. Accordingly, we hypothesize:

Hypothesis 3: Social media diffusion in a country indirectly reduces corruption through e-participation.

The research model depicting the hypotheses is presented in Figure 2.

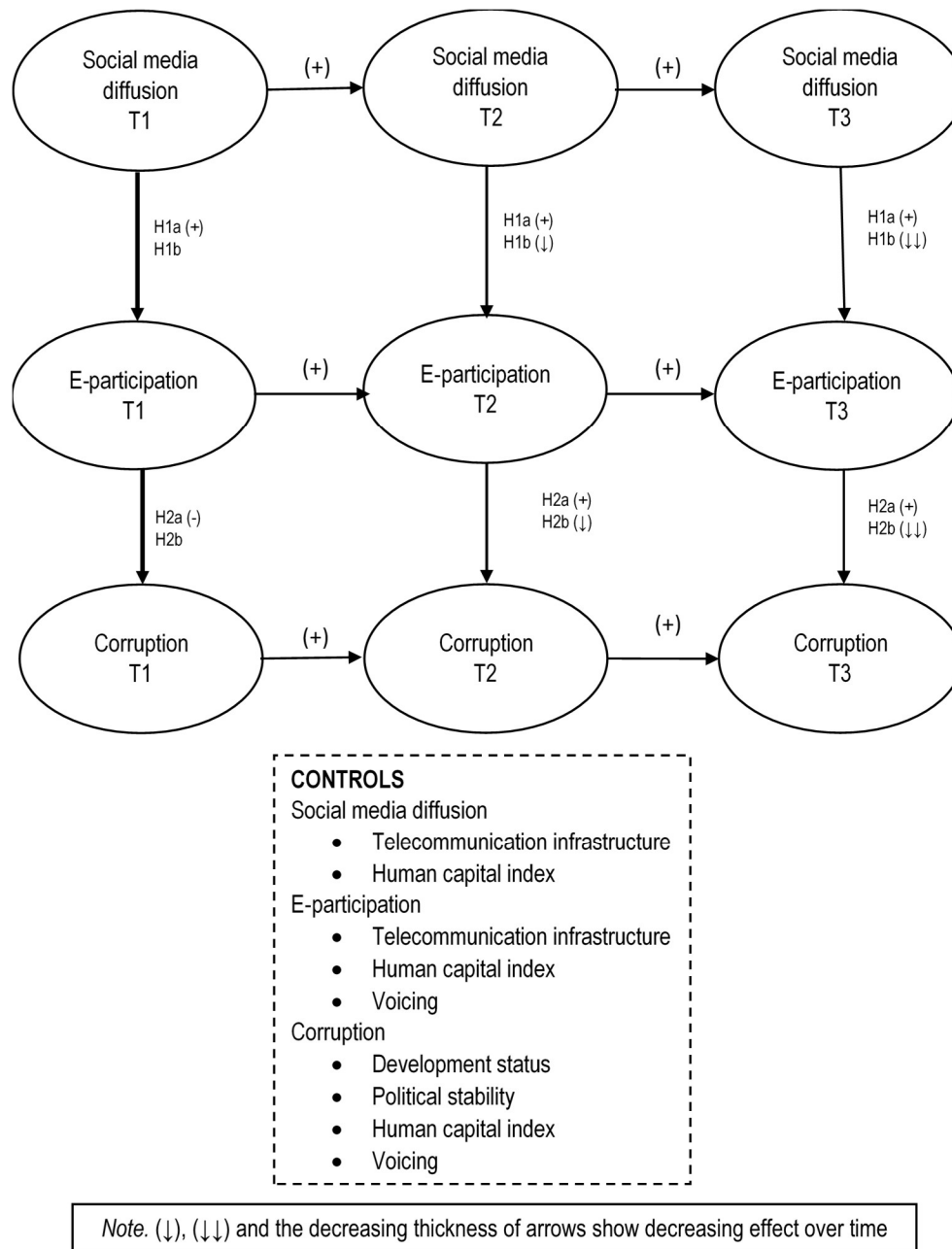


Figure 2. Research Model

4 Research Methodology

4.1 Data

We tested the proposed model using a secondary dataset collected by various reputable agencies, such as World Economic Forum (WEF) and the United Nations (UN), for 2012–2016, with a gap of two years. Studies have shown that a panel of data from three subsequent years was sufficient to investigate the hypothesized relationships and their evolution (Serva, Kher, & Laurenceau, 2011). Further, employing a longitudinal analysis based on panel data helps establish causality between the variables (Wunsch et al., 2010). These data sources contain information on social media diffusion, e-participation, corruption, and other country-level indicators relevant to our research. The data availability for the study variables determined the periods and countries we chose, yielding 85 data points. Please refer to Appendix A for countries included in this study.

4.2 Measures

The *dependent variable* in this study is corruption, which was operationalized using the corruption perception index (CPI) scores created by Transparency International (TI) (TI, 2012, 2014, 2016). Its values ranged between 0 (high corruption) and 100 (low corruption). To make this variable's values more intuitive, we reverse coded the score, thus making a higher value the country in which corruption is high and a lower value the country in which corruption is low. This index is one of the most widely accepted measures of corruption at the national level and has been used in many past studies on corruption (e.g., Krishnan et al., 2013).

The *independent variable* in this study is social media diffusion, the values of which were sourced from the data reported in Global IT reports (WEFGITR, 2012, 2014, 2016). The variable was measured by asking the respondents, "In your country, how widely are virtual social networks (Facebook, Twitter, LinkedIn, etc.) used?" The indicator was anchored on a 1-to-7 scale with "1" representing "not at all used" and "7" representing "used extensively." Several past studies involving social media diffusion (e.g., Arayankalam et al., 2021; Krishnan & Lymm, 2016; Wang & Sun, 2013) have used this measure in understanding the national-level effects of social media.

The *mediating variable* in this study is e-participation, operationalized using the United Nations' e-participation index (EPI) (UN, 2012, 2014, 2016). It captures "the extent to which governments use the Internet for disseminating information about its proposals and activities, consulting with citizens on matters of public policy, and allowing for direct citizen participation in decision-making" (Girish et al., 2014, p. 528). While this index is a widely used measure of e-participation at the country level, it is worth noting that it has been criticized for changes in survey questions, countries, and methodology. However, in the period of our analysis (2012-2016), the survey and its methodology were very consistent. Further, as per Wilson (2020), "the EPI remains the best source of comparative data on government use of technology to engage with the public" (p. 3). Also, several past studies (e.g., Girish, Williams, & Yates, 2014; Wilson, 2020) involving e-participation have used this measure in exploring the phenomenon.

To remove any influence of confounding variables on the results, in line with past studies, we employed five control variables, namely: (1) telecommunication infrastructure; (2) human capital; (3) development status; (4) political stability; and (5) voicing. Details of these variables are presented in Table 1. As indicated by past studies, telecommunication infrastructure, such as the Internet and telephone penetration (Dwivedi, Ismagilova, Rana, & Raman, 2021), and human capital, such as the educational level of the population in a country (Gao & Lee, 2017), influence social media diffusion in a country. Accordingly, we controlled the effects of the above two variables on the independent variable of social media diffusion. Further, telecommunication infrastructure, human capital affect (Krishnan et al., 2013), and citizens' perception about freedom to express and participate in selecting the government (voicing) (Åström, Karlsson, Linde, & Pirannejad, 2012) influence e-participation. Thus, we controlled the effects of telecommunication infrastructure, human capital, and voicing on the mediating variable of e-participation. Lastly, as (1) the developmental level of a country has a direct influence on corruption (e.g., Avnimelech, Zelekha, & Sharabi, 2014), (2) the presence of a stable political system can keep a check on corruption by preventing excessive power in the government (e.g., Schumacher, 2013), (3) educated citizens can hold the government accountable and reduce corruption (e.g., Asongu & Nwachukwu, 2015), and (4) freedom to express and participate in selecting the government (voicing) reduces corruption (e.g., Kock & Gaskins, 2014), we controlled for the respective effects on the dependent variable of corruption using the indicators, namely, (1) development status, (2) political stability index, (3) human capital index, and (4) voicing and accountability index.

Table 1. Variables and Measures

Variables	Measures	Source
Social media diffusion	In your country, how widely are virtual social networks used (e.g., Facebook, Twitter, LinkedIn)? [1 = not at all used; 7 = used extensively]	WEF's Global IT report
E-participation	E-participation index: Measures the degree of e-participation in a country	UN e-government survey report
Corruption	CPI: Measures the extent of corruption in a country	TI

Telecommunication infrastructure	Telecommunication Infrastructure Index (TII): Based on five indicators: (i) estimated internet users per 100 inhabitants; (ii) number of main fixed telephone lines per 100 inhabitants; (iii) number of mobile subscribers per 100 inhabitants; (iv) number of wireless broadband subscriptions per 100 inhabitants; and (v) number of fixed broadband subscriptions per 100 inhabitants	UN e-government survey report
Human capital	The Human Capital Index (HCI): based on four components, namely: (i) adult literacy rate; (ii) the combined primary, secondary and tertiary gross enrolment ratio; (iii) expected years of schooling; and (iv) average years of schooling	UN e-government survey report
Development status	Developed/developing	UN classification based on income and development
Political stability	Political stability index: Captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means	World bank
Voicing	Voicing and accountability index: Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media	World Bank

4.3 Reliability and Validity

The key variables in our study came from the UN's e-government survey and the WEF's Global IT Report. Both authorities undertook meticulous measures to ensure the data's reliability and validity while collecting data. In the case of the UN, to assure data reliability, the survey team stringently reviewed and modified questions to reflect current trends on citizens' participation in governance and policy-making. To this end, the UN requested each country provide information about their government portals, which researchers carefully examined. In addition, the survey questions were translated into six different languages to accommodate regional variations. Further, the survey team was given proper training related to procedures and methodology to ensure the reliability and validity of data.

Similarly, strict procedures were followed by the WEF while gathering and compiling the country-level data to ensure the representativeness of the sample. In addition, they adopted a randomized sampling process to eliminate the risk of biases. Several tests were run following the data collection to ensure reliability and validity. Further, the data team retained only the surveys with at least 80% of the same answers and removed those with a completion rate of less than 50% to reduce response bias. Further, the data team aggregated the individual responses at the country level by calculating a simple average and also checked for any excessive perception bias. And finally, they conducted outlier checks further to establish the reliability and validity of the data.

5 Results

As shown in Table 2 depicting the descriptive statistics of the variables, correlations between the variables were below 0.8, which is below the threshold, suggesting that possibility of multicollinearity in the model is low (Gujarati & Porter, 2009). Further, we found that variance inflation factor (VIF) values were less than 6.5, which was less than the acceptable threshold level of 10 (Belsley, Kuh, & Welsch, 2005; Gujarati, 2003). In sum, we confirmed that the issue of multicollinearity affecting the results was minimal.

Table 2. Correlations between the Variables

	CR12	CR14	CR16	DEVS	EP12	EP14	EP16	HC12	HC14	HC16	PS12	PS14	PS26	SM12	SM14	SM16	TI12	TI14	TI16	VO12	VO14	
CR12	1																					
CR14	0.994	1																				
CR16	0.986	0.992	1																			
DEVS	-0.588	-0.595	-0.634	1																		
EP12	-0.588	-0.602	-0.583	0.299	1																	
EP14	-0.582	-0.593	-0.582	0.283	0.755	1																
EP16	-0.646	-0.657	-0.665	0.565	0.663	0.742	1															
HC12	-0.572	-0.574	-0.584	0.603	0.481	0.525	0.594	1														
HC14	-0.668	-0.671	-0.683	0.671	0.57	0.567	0.651	0.968	1													
HC16	-0.685	-0.693	-0.706	0.668	0.546	0.549	0.647	0.948	0.976	1												
PS12	-0.779	-0.781	-0.78	0.597	0.399	0.351	0.501	0.63	0.682	0.683	1											
PS14	-0.777	-0.78	-0.779	0.557	0.401	0.374	0.481	0.613	0.655	0.657	0.936	1										
PS16	-0.731	-0.732	-0.733	0.514	0.403	0.354	0.44	0.601	0.642	0.633	0.923	0.971	1									
SM12	-0.679	-0.686	-0.689	0.403	0.546	0.575	0.55	0.569	0.597	0.594	0.493	0.494	0.465	1								
SM14	-0.65	-0.659	-0.654	0.397	0.53	0.524	0.493	0.584	0.602	0.617	0.526	0.489	0.457	0.884	1							
SM16	-0.652	-0.664	-0.666	0.457	0.585	0.553	0.56	0.65	0.664	0.667	0.556	0.526	0.49	0.835	0.88	1						
TI12	-0.803	-0.807	-0.824	0.776	0.656	0.619	0.752	0.777	0.847	0.851	0.712	0.685	0.652	0.693	0.653	0.714	1					
TI14	-0.814	-0.824	-0.837	0.723	0.709	0.657	0.752	0.79	0.864	0.87	0.722	0.701	0.673	0.692	0.666	0.73	0.971	1				
TI16	-0.811	-0.821	-0.832	0.699	0.689	0.658	0.745	0.81	0.874	0.878	0.717	0.701	0.666	0.684	0.671	0.748	0.957	0.986	1			
VO12	-0.812	-0.822	-0.823	0.685	0.43	0.45	0.604	0.63	0.705	0.709	0.727	0.722	0.682	0.659	0.637	0.591	0.739	0.734	0.719	1		
VO14	-0.781	-0.79	-0.798	0.669	0.384	0.425	0.578	0.611	0.679	0.679	0.716	0.711	0.671	0.64	0.608	0.551	0.7	0.694	0.675	0.988	1	
VO16	-0.764	-0.774	-0.785	0.66	0.375	0.431	0.565	0.604	0.67	0.669	0.699	0.693	0.665	0.641	0.602	0.543	0.688	0.681	0.661	0.976	0.994	1

Note. Numbers at the end of each variable denote the year (e.g., CR12 is corruption for the year 2012); CR: Corruption; DEVS: Development status; EP: E-participation; HC: Human capital; PS: Political stability; SM: Social media diffusion; TI: Telecommunication infrastructure; VO: Voicing; All the values are significant at $p < 0.05$ (two-tailed).

We relied on the variance-based PLS-SEM technique using the statistical software package SmartPLS (version 3.3) to test our model. As the estimation method, PLS was appropriate for our study for the following reasons. First, PLS-SEM is a suggested method to test models that use secondary data (Benitez, Chen, Teo, & Ajamieh, 2018; Gefen, Rigdon, & Straub, 2011). Second, past studies in the Marketing area have shown that PLS estimation is also appropriate for testing models that employ longitudinal data (e.g., Johnson, Herrmann, & Huber, 2006). Third, unlike covariance-based SEM, PLS-SEM places minimum restrictions on the assumptions concerning the sample size and the data distribution (Hair, Ringle, & Sarstedt, 2011). Fourth, this method gives robust results even in the presence of issues related to skewness and omitted variables (Cassel, Hackl, & Westlund, 1999). Fifth, as the research linking social media diffusion, e-participation, and corruption is in an exploratory stage, PLS-SEM is an appropriate method for data analysis (Hair et al., 2011). Finally, it is worth noting that the PLS technique has been commonly used in IS studies (Benitez et al., 2018; Rai et al., 2006).

5.1 Hypotheses Testing

To estimate the path coefficients and effect sizes, we ran the bootstrapping algorithm with 500 subsamples. The results of the PLS estimation are shown in Figure 3 and Table 3.

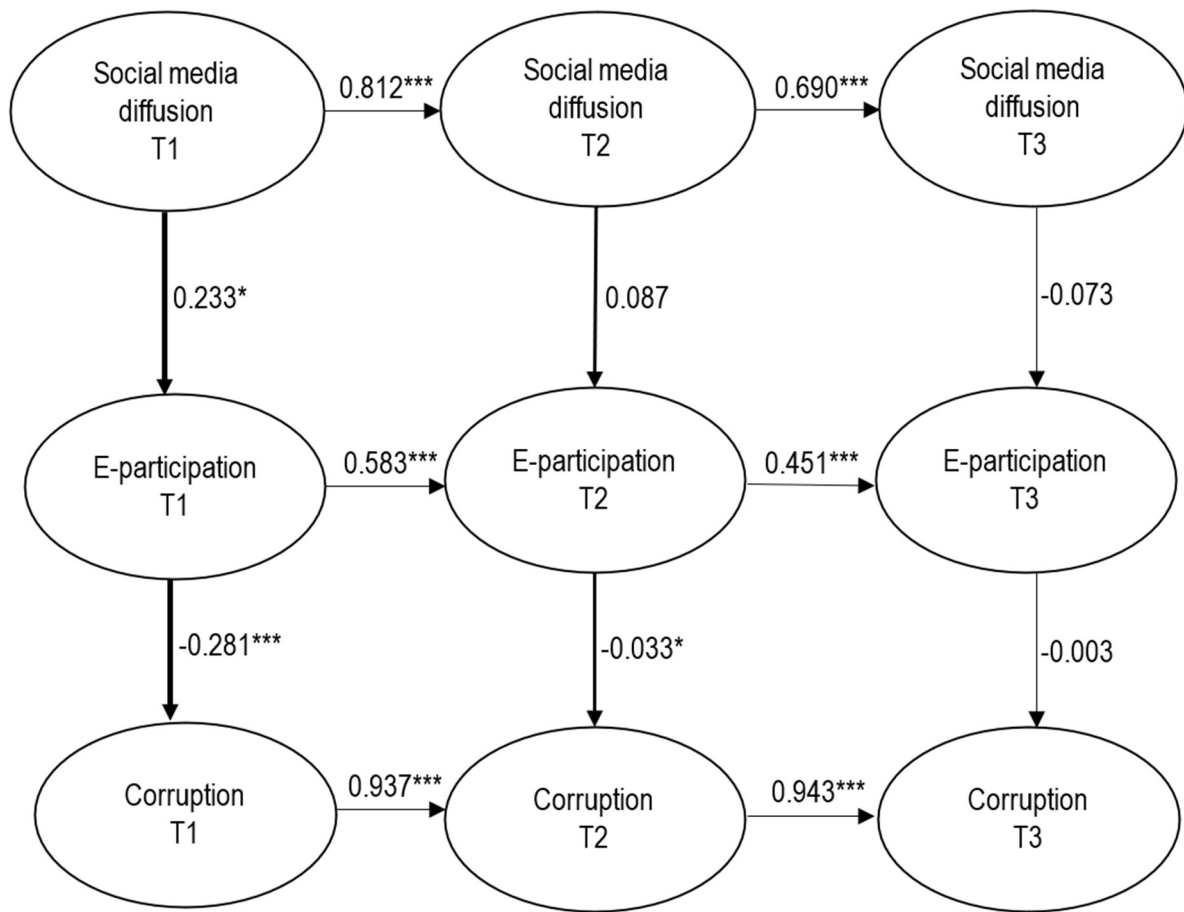


Figure 3. Summary of the Results from Hypotheses Testing

Table 3. Results of the PLS Estimation

Relationship	Beta	f ² value [#]	Effect size
Hypothesized relationship			
Social media diffusion _{t1} → E-participation _{t1}	0.233*	0.048	Small
Social media diffusion _{t2} → E-participation _{t2}	0.085	0.009	Very small
Social media diffusion _{t3} → E-participation _{t3}	-0.073	0.007	Very small
E-participation _{t1} → Corruption _{t1}	-0.281***	0.248	Medium
E-participation _{t1} → Corruption _{t2}	-0.033*	0.052	Small
E-participation _{t1} → Corruption _{t3}	-0.003	0.000	Zero
Control variables			
Telecommunication infra index _{t1} → E-participation _{t1}	0.685***	0.231	Medium
Telecommunication infra index _{t2} → E-participation _{t2}	0.166	0.004	Very small
Telecommunication infra index _{t3} → E-participation _{t3}	0.432*	0.091	Small
Human capital index _{t1} → E-participation _{t1}	-0.065	0.003	Very small
Human capital index _{t2} → E-participation _{t2}	0.079	0.004	Very small
Human capital index _{t3} → E-participation _{t3}	-0.026	0.000	Zero
Human capital index _{t1} → Corruption _{t1}	0.094	0.020	Small
Human capital index _{t2} → Corruption _{t2}	0.017	0.008	Very small
Human capital index _{t3} → Corruption _{t3}	0.000	0.000	Very small
Voicing _{t1} → E-participation _{t1}	-0.188	0.027	Small
Voicing _{t2} → E-participation _{t2}	0.025	0.001	Very small
Voicing _{t3} → E-participation _{t3}	0.143	0.033	Small
Voicing _{t1} → Corruption _{t1}	-0.579***	0.333	Medium
Voicing _{t2} → Corruption _{t2}	-0.052	0.033	Small
Voicing _{t3} → Corruption _{t3}	-0.007	0.000	Zero
Political stability _{t1} → Corruption _{t1}	-0.415***	0.344	Medium
Political stability _{t2} → Corruption _{t2}	-0.027	0.018	Very small

Political stability _{t3} → Corruption _{t3}	0.001	0.000	Zero
Developmental status → Corruption _{t1}	-0.018	0.001	Very small
Developmental status → Corruption _{t2}	-0.012	0.006	Very small
Developmental status → Corruption _{t3}	-0.065	0.147	Small
Telecommunication infra index _{t1} → Social media diffusion _{t1}	0.631***	0.305	Medium
Telecommunication infra index _{t2} → Social media diffusion _{t2}	0.009	0.000	Zero
Telecommunication infra index _{t3} → Social media diffusion _{t3}	0.321***	0.091	Small
Human capital index _{t1} → Social media diffusion _{t1}	0.079	0.005	Very small
Human capital index _{t2} → Social media diffusion _{t2}	0.110	0.015	Very small
Human capital index _{t3} → Social media diffusion _{t3}	-0.041	0.002	Very small
Non-hypothesized relationship			
Social media diffusion _{t1} → Social media diffusion _{t2}	0.812***	3.558	Large
Social media diffusion _{t2} → Social media diffusion _{t3}	0.690***	3.445	Large
E-participation _{t1} → E-participation _{t2}	0.583***	0.395	Large
E-participation _{t2} → E-participation _{t3}	0.451***	0.351	Large
Corruption _{t1} → Corruption _{t2}	0.937***	15.991	Large
Corruption _{t2} → Corruption _{t3}	0.943***	15.710	Large
<i>Note.</i> #As per Cohen (1988), $f^2 \geq 0.02$, $f^2 \geq 0.15$ and $f^2 \geq 0.35$ represent small, medium, and large effect sizes, respectively. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$ (2-tailed).			

As indicated, social media diffusion at t_1 is positively and significantly related to e-participation at t_1 ($\beta = 0.233$; $p < 0.05$), thereby supporting H1a. This relationship was not found to be significant at t_2 ($\beta = 0.085$) and t_3 ($\beta = -0.073$). To explore this further and test H1b, in line with Benitez et al. (2018), we examined the evolution of effect sizes of this relationship (f^2 values) over time. As per Cohen (1988), $f^2 \geq 0.02$, $f^2 \geq 0.15$, and $f^2 \geq 0.35$ represent small, medium, and large effect sizes, respectively. As can be seen from the table, the effect size of the relationship between social media diffusion and e-participation reduced over time. In other words, social media diffusion had a positive impact on e-participation, which became less substantial over time, indicating support for H1b. Further, e-participation at t_1 and t_2 are negatively and significantly related to corruption at t_1 ($\beta = -0.281$; $p < 0.001$) and t_2 ($\beta = -0.033$; $p < 0.05$), respectively, thereby supporting H1a. This relationship was not found to be significant at t_1 ($\beta = 0.003$) and t_3 ($\beta = -0.073$). To explore this further and test H2b, in line with Benitez et al. (2018), we examined the evolution of effect sizes of this relationship (f^2 values) over time. As can be seen from the table, the effect size of the relationship between e-participation and corruption reduced over time. In other words, e-participation had a negative impact on corruption, which became less substantial over time, indicating support for H2b.

In line with the works of Benitez et al. (2018), Zhao et al. (2010), and Nitzl et al. (2016), we conducted a mediation analysis to examine the indirect effects involved in the proposed model. To this end, in line with Benitez et al. (2018), in the proposed model, we connected: (1) social media diffusion_{t1} and corruption_{t1}, (2) social media diffusion_{t1} and e-participation_{t2}, and (3) social media diffusion_{t1} and e-participation_{t3}. As there are potentially many indirect effects due to multiple paths, we selected the more critical mediation effects for want of parsimony (Henseler, 2015). The analysis shows that the direct effect of social media diffusion on corruption is negative and significant ($\beta = -0.185$; $p < 0.05$) was significant. Further, the indirect effects of social media diffusion on corruption through e-participation were also significant. That is, social media diffusion at t_1 indirectly reduced corruption at t_1 through e-participation at t_1 ($\beta = -0.054$, $p < 0.05$). Also, social media diffusion at t_1 indirectly reduced corruption at t_2 through e-participation at t_1 ($\beta = -0.050$, $p < 0.05$). And social media diffusion at t_1 indirectly reduced corruption at t_3 through e-participation at t_1 ($\beta = -0.047$, $p < 0.05$). These results suggest the partial mediation of e-participation_{t1} in the relationship between social media diffusion and corruption. This analysis underscores the results obtained earlier on main hypotheses and indicates that the impact of early social media diffusion on corruption over time is substantial.

On the effects of the control variables, as shown in Table 3, while telecommunication infrastructure had a significant positive association with social media diffusion (at t_1 and t_3) and e-participation (at t_1 and t_3), human capital did not have any effect on both variables. Similarly, voicing also did not have any effect on e-participation. Further, while political stability had a significant and negative relationship with corruption (at t_1), human capital, voicing, and development status did not have any effect. Finally, it is noteworthy that the R^2 values show the model's explanatory power, with values higher than 0.200 indicating good explanatory power of the model's endogenous variables (Chin, 2010). The R^2 values for these relationships ranged from 0.464 to 0.989, indicating a good explanatory power for the model.

5.2 Additional Analysis

Based on the recommendation of Roemer (2016), we conducted a multigroup PLS analysis to check if the changes in path coefficients (i.e., H1b and H2b) are statistically significant. Accordingly, we generated a bootstrap confidence interval for all the path coefficients. If the coefficient at time t+1 is within the CI of the coefficient at time t, there is no significant difference between the coefficients and vice versa. Accordingly, we checked if the beta coefficient of the effect of social media diffusion on e-participation in time t is within the bootstrapping CI of the effect of social media diffusion on e-participation in time t+1 and vice versa. Table 4 shows the results of our analysis, which shows that the change in the effect of social media diffusion on e-participation in t₂ and t₃, and t₁ and t₃ were statistically significant. The analysis further indicated that the change in the effect of e-participation on corruption in t₁ and t₂, in t₂ and t₃, and in t₁ and t₃ were statistically significant. Reading these results along with the results from the effect size analysis establishes partial support for H1b and strong support for H2b.

Table 4. Results of Test of Significance on the Changes in Beta Coefficients

Type	Time	Effect	Path coefficient	Size of change	Bias corrected CI	Comparison of path coefficient t+1 with CI t and path coefficient t with CI t+1	Path coefficient t+1 inside CI t? Path coefficient t inside CI t+1?	Significant change?
Direct effect	t1	SM _{t1} → EP _{t1}	0.233	-0.148	(0.020, 0.402)	0.020 < 0.085 < 0.402	Yes	No
	t2	SM _{t2} → EP _{t2}	0.085		(-0.072, 0.245)	-0.072 < 0.233 < 0.245	Yes	
	t2	SM _{t2} → EP _{t2}	0.085	0.158	(-0.072, 0.245)	-0.073 < -0.072	No	Yes
	t3	SM _{t3} → EP _{t3}	-0.073		(-0.291, 0.141)	0.141 > 0.085	No	
	t3	SM _{t3} → EP _{t3}	-0.073	-0.306	(-0.291, 0.141)	0.141 < 0.233	No	Yes
	t1	SM _{t1} → EP _{t1}	0.233		(0.020, 0.402)	-0.073 < 0.020	No	
	t1	EP _{t1} → CP _{t1}	-0.281	0.248	(-0.400, -0.155)	-0.155 < -0.033	No	Yes
	t2	EP _{t2} → CP _{t2}	-0.033		(-0.067, -0.003)	-0.281 < -0.067	No	
	t2	EP _{t2} → CP _{t2}	-0.033	0.030	(-0.067, -0.003)	-0.003 = -0.003	No	Yes
	t3	EP _{t3} → CP _{t3}	-0.003		(0.299, 0.608)	-0.033 < 0.299	No	
t3	EP _{t3} → CP _{t3}	-0.003	0.278	(0.299, 0.608)	-0.281 < 0.299	No	Yes	
t1	EP _{t1} → CP _{t1}	-0.281		(-0.400, -0.155)	-0.003 < -0.400	No		
Carry-over effects	t1/t2	EP _{t1} → EP _{t2}	0.583	-0.132	(0.368, 0.773)	0.368 < 0.451 < 0.773	Yes	No
	t2/t3	EP _{t2} → EP _{t3}	0.451		(0.299, 0.608)	0.299 < 0.583 < 0.608	Yes	No
	t1/t2	CP _{t1} → CP _{t2}	0.937	0.006	(0.886, 0.986)	0.886 < 0.943 < 0.986	Yes	No
	t2/t3	CP _{t2} → CP _{t3}	0.943		(0.901, 0.989)	0.901 < 0.937 < 0.989	Yes	No

Note. CI = Confidence interval; SM: Social media diffusion; EP: E-participation; CP: Corruption.

6 Discussion

Our study focused on social media diffusion and investigated the impact of social media diffusion on e-participation and corruption and the evolution of these relationships by conducting a panel data investigation on a sample of 84 countries. The results indicated that (1) social media diffusion has a positive effect on e-participation and this effect decreases over time; (2) e-participation has a negative impact on corruption, and this effect decreases over time; and (3) social media diffusion in a country indirectly reduces corruption in it by improving e-participation.

This study makes critical contributions to the knowledge base of social media, e-participation, and corruption, and several vital recommendations from a practical standpoint (see Table 5 for a summary), the details of which are discussed in the following sub-sections.

Table 5. A summary of study contributions

Contribution	State of the literature	Relevance	
		Theory	Practice
Extends our understanding of social media and its societal impact by theorizing it as a source of citizens' communicative power using Habermas' theory of democracy (Habermas, 2015).	While some prior studies (e.g., Sormanen & Dutton, 2015) have acknowledged the communicative power of social media, a proper theorization on it is missing.	✓	
Conceptualize e-participation as an effective institutional mechanism to channel citizens' communicative power from social media platforms to the formal governance system.	While some studies have pointed to the critical role of social media in e-participation for enhancing citizens' participation (Khan & Krishnan, 2017; Pflughoeft & Schneider, 2020), there is no clarity on how it happens due to a lack of theoretical understanding.	✓	✓
Contributes to the corruption literature by establishing how e-participation reduces corruption by removing information asymmetry within the government.	Prior studies have highlighted that citizens' participation in governance increases accountability and reduces corruption (Krishnan et al., 2013).	✓	✓
Contributes to the social media literature by showing that the effect of social media diffusion wanes over time.	According to Kaaya (2004), the adoption of e-government is not uniform, showing a rapid increase in the initial periods and a slow increase in the later periods. However, there is no clarity in the existing literature on the nature of the adoption of e-participation.	✓	✓
Contributes to the corruption literature by establishing that the effect of e-participation in reducing corruption wanes over time.	While past studies (e.g., Bhattacharjee & Shrivastava, 2018; Elbahnasawy, 2014) have established that ICT plays a crucial role in reducing corruption, they fall short of explaining how its role changes over time.	✓	✓
Recommends taking measures to increase social media diffusion in a country to increase the involvement of citizens in solving societal problems.	The UN has recommended using social media and its tools for supporting the governments in their development strategies (Lallana, 2014).		✓
Recommends investing in the digital infrastructure necessary for creating a mature e-participation mechanism in a country.	The UN has recommended creating IT infrastructure to improve e-participation (Le Blanc, 2020).		✓
Recommends taking proactive measures at the later periods after implementing e-participation due to the waning effect.	As past studies indicate that technology diffusion may follow a non-linear pattern (Rogers, 1995), it becomes essential to look into the waning effect of social media diffusion over time.		✓
Recommends to constantly renew the strategies against corruption as officials adapt their behaviors.	As per UNODC (2003), it is crucial to adapt the anti-corruption strategies to the changing scenarios.		✓

6.1 Theoretical Contributions and Implications for Future Research

Our study contributes to the knowledge base of social media, e-participation, e-participation, and corruption in five ways. First, by grounding the discussion on Habermas' theory of democracy (Habermas, 2015), our study contributes to social media literature by establishing the role of social media as a source of the communicative power of citizens. While a few studies (e.g., Sormanen & Dutton, 2015) have acknowledged the communicative power of social media, there is an apparent lack of proper theorization on it. To plug this theoretical gap, based on the theory of democracy (Habermas, 2015), we argue that social media facilitates three aspects necessary for communicative power, namely, (1) the free discussion, (2) the creation of shared belief, and (3) the common will to act. Thus, our study differentiates from extant

studies on social media and its societal impact by theorizing it as a source of citizens' communicative power.

Second, drawing on Habermas' theory of democracy (Habermas, 2015), our study contributes to the e-participation literature by positioning e-participation as an effective institutional mechanism to channel citizens' communicative power from social media platforms to the formal governance system. Although not theoretically stated, many past studies have acknowledged the importance of social media in e-participation for improving the governance mechanism. For instance, according to Khan and Krishnan (2017), social media sets "a new stage for user participation in public and societal affairs" (p. 48) by enabling a two-way interaction between citizens and the government. Similarly, Pflughoeft and Schneider (2020), drawing on the multiple hierarchy stratification perspectives, found that social media enhances citizens' participation in governance. While these studies reaffirmed the critical role of social media in e-participation for enhancing citizens' participation, there is no clarity on how it happens due to a lack of theoretical grounding. Our study fills this theoretical gap by arguing that e-participation is an effective institutional mechanism that translates the communicative power from social media to the governance system.

Third, our study contributes to the corruption literature by establishing how e-participation reduces corruption by removing information asymmetry within the government and empowering citizens to keep a close watch on the activities of public officials. Past studies have found that information asymmetry in the citizen-government interaction is one of the causes of corruption as it gives more chances for officials to misuse public office. According to Krishnan et al. (2013), information asymmetry can be controlled through technologies, such as e-government, and hence, corruption. Also, when the governance is closed from the public, it becomes difficult to keep a check on misuse of power. Past studies have shown that citizens' participation keeps the public official accountable for their actions, thereby reducing corruption. Our study adds to the existing literature on corruption by establishing that e-participation is an effective institutional mechanism to combat corruption by removing information asymmetry and increasing citizens' control over public officials.

Fourth, our study contributes to the social media literature by showing that the effect of social media diffusion is not constant, and it wanes over time due to the S-shaped pattern of technology diffusion. In past studies, the effects of such a pattern have been observed in other related technologies, such as e-government. For instance, in a study, Kaaya (2004) found that the adoption of e-government is not uniform, showing a rapid increase in the initial periods and a slow increase in the later periods. A similar finding has also been observed in our study, which found that the increase in e-participation due to increased social media diffusion is not uniform and reduces over time, thereby adding to technology diffusion literature.

And lastly, our study finds that the effect of e-participation on corruption reduces over time due to the ability of corrupt public officials to adapt to new situations. Past studies have established the critical role of ICT in governance in containing corruption (Datta, 2020; Raghupathi & Wu, 2011). For instance, Elbahnasawy (2014) found that e-government reduces corruption by improving information access in the citizens-government interaction. Similarly, Bhattacharjee and Shrivastava (2018) found that ICT reduces corruption by increasing the certainty and celerity of punishment. While these studies impart crucial insights, they do not explain how such an effect changes over time. Accordingly, through our study, we add to this knowledge-base by establishing that the negative effect of e-participation on corruption decreases over time.

6.2 Managerial and Policy Implications

Findings from our study are important for policymakers. Firstly, while citizens and the government are important stakeholders in society, involving citizens in solving societal problems is always a challenge for policymakers. Our study established that social media could bring citizens together to deliberate upon various issues and generate their communicative power, which is critical for driving societal change. Thus, by knowing the role of social media as a source of communicative power, policymakers may take measures to increase social media diffusion in a country to increase the involvement of citizens in solving societal problems, such as corruption. Secondly, while citizens' communicative power is critical for solving societal issues, such as corruption, our study also points to the importance of proper institutional mechanisms to channel this power to the governance system. Such mechanisms ensure that citizens and the government, as partners, can contribute to solving societal problems. Accordingly, by being aware that e-participation is an effective institutional mechanism to achieve this purpose, policymakers may

accelerate reforms to incorporate technologies that can increase citizen-government interaction. Thirdly, the finding that e-participation reduces corruption by removing information asymmetry within the government is vital from the policy perspective. While past studies have identified many technical solutions, such as e-government and Right to Information laws, to reduce information asymmetry, digitally involving citizens directly in the governance process through formal mechanisms will give another tool to policymakers to combat corruption. Accordingly, we suggest policymakers invest in improving the digital infrastructure necessary for a mature e-participation mechanism in a country. Fourthly, the findings show that the effect of social media diffusion on e-participation wanes over time as the number of active publics who use social media for societal change will reduce over time. Being aware of this change will help policymakers take proactive measures at the later periods after implementing e-participation. Fifthly, our study finds that the negative effect of e-participation on corruption reduces over time due to the adaptation of corrupt public officials to new situations. This knowledge is vital for policymakers in their fight against corruption as it underscores the need to be constantly innovative in framing strategies against corruption.

6.3 Limitations and Future Research Opportunities

This study has some fundamental limitations. First, being a macro-level study, caution must be maintained while generalizing the findings to the micro-level. While we have controlled many country-specific factors in our study, a micro-level study focusing on a specific country may give a more nuanced understanding of the phenomenon. While we acknowledge this as a limitation, future studies can use our research as a springboard and extend it further. Second, the effect of technology may take more time to show its full effect. Thus, the findings of this study should be seen within the context of three-year longitudinal data. We were constrained in our analysis as some of our key variables did not have more than three years of data. Despite this limitation, our study imparts crucial insights on how social media diffusion can reduce corruption in a country through e-participation. We urge future researchers to extend this study by testing its validity over a more extended period when more data becomes available. Third, due to data limitation, the focus of our study was government corruption, measured at a country-level rather than business corruption¹. However, we understand that business corruption is too big of a problem to ignore. For instance, vendors may pay more for a better location in Google search, and/or hotels may provide better or different services to those who rate them highly. Thus, we suggest future studies to look into the relationship between social media and business corruption. And fourth, there is a possibility of large technology firms influencing social policies². For instance, excessive lobbying by influential corporate houses plays a significant role in influencing public policies (Woll, 2019). However, as our study is at the macro-level, we had to choose the most reliable data for corruption, and TI's CPI was the obvious choice. It measures the perceived levels of governmental corruption at a country-level. While controlling for the possibility of large technology firms' influence on social policies is the right way, we are limited by the unavailability of such data. However, we believe that this is an exciting possibility. To this end, a micro-level study using primary data will give better control over the variables and improve upon the insights drawn from our study.

7 Concluding Remarks

This research investigated the impact of social media diffusion on e-participation and corruption and the evolution of such impacts by performing a panel data investigation on a sample of 85 countries. Findings from the study reveal that social media diffusion has a positive effect on e-participation that decreases over time and that e-participation has a negative impact on corruption that decreases over time. The key implication of the finds is that social media diffusion in a country reduces corruption by driving e-participation. However, such effects decrease over time due to the non-linear nature of technology diffusion and the adaptability of public officials to new situations.

¹ We thank the EIC for suggesting a possible link between social media and business corruption.

² We thank the EIC for this idea.



References

- Absalyamova, S., Absalyamov, T., Khusnullova, A., & Mukhametgalieva, C. (2016, August). The impact of corruption on the sustainable development of human capital. In *Journal of Physics: Conference Series* (Vol. 738, No. 1, p. 012009). IOP Publishing.
- Ali, A. M., & Isse, H. S. (2002). Determinants of economic corruption: A cross-country comparison. *Cato Journal*, 22, 449.
- Arayankalam, J., Khan, A., & Krishnan, S. (2021). How to deal with corruption? Examining the roles of e-government maturity, government administrative effectiveness, and virtual social networks diffusion. *International Journal of Information Management*, 58, 102203.
- Arendt, H. (1970). *On violence*. Boston: Houghton Mifflin Harcourt.
- Asongu, S., & Nwachukwu, J. (2015a). A good turn deserves another: political stability, corruption, and corruption-control. *Economics Bulletin*, 35(4), 2037-2048.
- Asongu, S., & Nwachukwu, J. (2015b). The incremental effect of education on corruption: evidence of synergy from lifelong learning. *Economics Bulletin*, 35(4), 2288-308.
- Åström, J., Karlsson, M., Linde, J., & Pirannejad, A. (2012). Understanding the rise of e-participation in non-democracies: Domestic and international factors. *Government Information Quarterly*, 29(2), 142-150.
- Avnimelech, G., Zelekha, Y., & Sharabi, E. (2014). The effect of corruption on entrepreneurship in developed vs. non-developed countries. *International Journal of Entrepreneurial Behavior & Research*, 20(3), 237-262.
- Bakardjieva, M. (2015). Do clouds have politics? Collective actors in social media land. *Information, Communication & Society*, 18(8), 983-990.
- Belsley, D. A., Kuh, E., & Welsch, R. E. (2005). *Regression diagnostics: Identifying influential data and sources of collinearity*. New Jersey: John Wiley & Sons.
- Banerjee, A., Hanna, R., & Mullainathan, S. (2012). 27. Corruption (pp. 1109-1147). Princeton University Press.
- Benitez, J., Chen, Y., Teo, T. S., & Ajamieh, A. (2018). Evolution of the impact of e-business technology on operational competence and firm profitability: A panel data investigation. *Information & Management*, 55(1), 120-130.
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, 27(3), 264-271.
- Bessi, A., Coletto, M., Davidescu, G. A., Scala, A., Caldarelli, G., & Quattrociocchi, W. (2015). Science vs conspiracy: Collective narratives in the age of misinformation. *PloS One*, 10(2), e0118093.
- Bhattacharjee, A., & Shrivastava, U. (2018). The effects of ICT use and ICT Laws on corruption: A general deterrence theory perspective. *Government Information Quarterly*, 35(4), 703-712.
- Cassel, C., Hackl, P., & Westlund, A. H. (1999). Robustness of partial least-squares method for estimating latent variable quality structures. *Journal of Applied Statistics*, 26(4), 435-446.
- Chin, W. W. (2010). How to write up and report PLS analyses. In *Handbook of partial least squares* (pp. 655-690), Berlin, Heidelberg: Springer.
- Cornish, D. B., & Clarke, R. V. (2014). *The reasoning criminal: Rational choice perspectives on offending*, New York: Springer-Verlag
- Datta, P. (2020). Digital transformation of the Italian public administration: A case study. *Communications of the Association for Information Systems*, 46(1), 252-272.
- Dutta, S., Geiger, T., & Lanvin, B. (2015). *The global information technology report 2015*. World Economic Forum (Vol. 1, No. 1, pp. P80-85).

- Dwivedi, Y. K., Ismagilova, E., Rana, N. P., & Raman, R. (2021). Social media adoption, usage and impact in business-to-business (B2B) context: A state-of-the-art literature review. *Information Systems Frontiers*, 1-23.
- Elbahnasawy, N. G. (2014). E-government, internet adoption, and corruption: an empirical investigation. *World Development*, 57, 114-126.
- Ellis, J. (Ed.). (2019). *Corruption, Social Sciences, and the Law: Exploration across the disciplines*. Oxfordshire: Routledge.
- Enikolopov, R., Petrova, M., & Sonin, K. (2018). Social media and corruption. *American Economic Journal: Applied Economics*, 10(1), 150-74.
- Flynn, J. (2004). Communicative power in Habermas's theory of democracy. *European Journal of Political Theory*, 3(4), 433-454.
- Froomkin, A. M. (2002). Habermas@ discourse. Net: Toward a critical theory of cyberspace. *Harvard Law Review*, 116(3), 749-873.
- Gao, X., & Lee, J. (2017). E-government services and social media adoption: Experience of small local governments in Nebraska state. *Government Information Quarterly*, 34(4), 627-634.
- Gefen, D., Rigdon, E. E., & Straub, D. (2011). Editor's comments: an update and extension to SEM guidelines for administrative and social science research. *MIS Quarterly*, 35(2), iii-xiv.
- Gerring, J., & Thacker, S. C. (2004). Political institutions and corruption: The role of unitarism and parliamentarism. *British Journal of Political Science*, 34(2), 295-330.
- Gilley, B. (2009). *The right to rule: How states win and lose legitimacy*. New York: Columbia University Press.
- Gimmler, A. (2001). Deliberative democracy, the public sphere, and the Internet. *Philosophy & Social Criticism*, 27(4), 21-39.
- Girish, J., Williams, C. B., & Yates, D. J. (2014). Predictors of online services and e-participation: A cross-national comparison. *Government Information Quarterly*, 31(4), 526-533.
- Goh, D., & Pang, N. (2016). Protesting the Singapore government: The role of collective action frames in social media mobilization. *Telematics and Informatics*, 33(2), 525-533.
- Gorta, A. (1998). Minimising corruption: Applying lessons from the crime prevention literature. *Crime, Law and Social Change*, 30(1), 65-87.
- Gyimah-Brempong, K. (2002). Corruption, economic growth, and income inequality in Africa. *Economics of Governance*, 3(3), 183-209.
- Habermas, J. (2015). *Between facts and norms: Contributions to a discourse theory of law and democracy*. New Jersey: John Wiley & Sons.
- Habib, M., & Zurawicki, L. (2002). Corruption and foreign direct investment. *Journal of International Business Studies*, 33(2), 291-307.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed, a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Halachmi, A., & Greiling, D. (2013). Transparency, e-government, and accountability: Some issues and considerations. *Public Performance & Management Review*, 36(4), 562-584.
- Henseler, J. (2015). *Is the Whole More than the Sum of Its Parts? On the Interplay of Marketing and Design Research*, Enschede: the University of Twente, pp. 1-40.
- Hobolt, S. B. (2012). Citizen satisfaction with democracy in the European Union. *JCMS: Journal of Common Market Studies*, 50, 88-105.
- Holst, C., & Moe, H. (2021). Deliberative systems theory and citizens' use of online media: testing a critical theory of democracy on a high achiever. *Political Studies*, 69(1), 129-146.
- Ionescu, L. (2016). E-Government and Social Media as Effective Tools in Controlling Corruption in Public Administration. *Economics, Management, and Financial Markets*, 11(1), 66-72.

- Jenkins, R. (2007). India's Unlikely Democracy: Civil society versus corruption. *Journal of Democracy*, 18(2), 55-69.
- Jha, C. K., & Sarangi, S. (2017). Does social media reduce corruption?. *Information Economics and Policy*, 39, 60-71.
- Johnson, M. D., Herrmann, A., & Huber, F. (2006). The evolution of loyalty intentions. *Journal of Marketing*, 70(2), 122-132.
- Kaaya, J. (2004). The emergence of e-government services in East Africa: Tracking adoption patterns and associated factors. In *Proceedings of the 6th international conference on Electronic commerce* (pp. 438-445).
- Kaur, K. (2015). Social media creating digital environmental publics: Case of Lynas Malaysia. *Public Relations Review*, 41(2), 311-314.
- Khan, A., Krishnan, S., & Dhir, A. (2021). Electronic government and corruption: Systematic literature review, framework, and agenda for future research. *Technological Forecasting and Social Change*, 167, 120737.
- Kim, J.-N., & Grunig, J. E. (2011). Problem-solving and communicative action: A situational theory of problem-solving. *Journal of Communication*, 61(1), 120-149.
- Kim, S., Kim, H. J., & Lee, H. (2009). An institutional analysis of an e-government system for anti-corruption: The case of OPEN. *Government Information Quarterly*, 26(1), 42-50.
- Kock, N., & Gaskins, L. (2014). The mediating role of voice and accountability in the relationship between Internet diffusion and government corruption in Latin America and Sub-Saharan Africa. *Information Technology for Development*, 20(1), 23-43.
- Kreide, R. (2016). Digital spaces, public places, and communicative power: In defense of deliberative democracy. *Philosophy & Social Criticism*, 42(4-5), 476-486.
- Krishnan, S., & Lymm, J. (2016). Determinants of virtual social networks diffusion: Insights from cross-country data. *Computers in Human Behavior*, 54, 691-700.
- Krishnan, S., Teo, T. S., & Lim, J. (2013). E-participation and E-government maturity: A global perspective. In *International Working Conference on Transfer and Diffusion of IT* (pp. 420-435). Springer, Berlin, Heidelberg.
- Krishnan, S., Teo, T. S., & Lymm, J. (2017). Determinants of electronic participation and electronic government maturity: Insights from cross-country data. *International Journal of Information Management*, 37(4), 297-312.
- Lallana, E., C. (2014). Social Media for Development. In *Academy of ICT Essentials for Government Leaders*. United Nations Asian and Pacific Training Centre for Information. <https://www.unapcict.org/sites/default/files/2019-08/Academy%2020Module%202011.pdf>
- Le Blanc, D. (2020). *E-participation: A quick overview of recent qualitative trends*. The United Nations. https://www.un.org/esa/desa/papers/2020/wp163_2020.pdf
- Lederman, D., Loayza, N. V., & Soares, R. R. (2005). Accountability and corruption: Political institutions matter. *Economics & Politics*, 17(1), 1-35.
- Leong, C., Pan, S. L., Bahri, S., & Fauzi, A. (2019). Social media empowerment in social movements: power activation and power accrual in digital activism. *European Journal of Information Systems*, 28(2), 173-204.
- Lopez-Valcarcel, B. G., Jiménez, J. L., & Perdiguero, J. (2017). Danger: local corruption is contagious!. *Journal of Policy Modeling*, 39(5), 790-808.
- Marlowe, J. M., Bartley, A., & Collins, F. (2017). Digital belongings: The intersections of social cohesion, connectivity, and digital media. *Ethnicities*, 17(1), 85-102.
- McGrath, K., Elbanna, A., Hercheui, M., Panagiotopoulos, P., & Saad, E. (2012). Exploring the democratic potential of online social networking: The scope and limitations of e-participation. *Communications of the Association for Information Systems*, 30(1), 239-254.

- Nam, T. (2018). Examining the anti-corruption effect of e-government and the moderating effect of national culture: A cross-country study. *Government Information Quarterly*, 35(2), 273-282.
- Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial management & Data Systems*, 116(9), 1849-1864.
- Pflughoeft, B. R., & Schneider, I. E. (2020). Social media as E-participation: Can multiple hierarchy stratification perspectives predict public interest?. *Government Information Quarterly*, 37(1), 101422.
- Porter, J. (2008). *Designing for the social web (Vol. 1)*. Berkeley, CA: New Riders.
- Prabowo, H. Y., Hamdani, R., & Sanusi, M. Z. (2018). The new face of people power: an exploratory study on the potential of social media for combating corruption in Indonesia. *Australasian Accounting, Business and Finance Journal*, 12, 19-20.
- Rai, A., Patnayakuni, R., & Seth, N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *MIS Quarterly*, 30(2), 225-246.
- Raghupathi, W., & Wu, S. J. (2011). The relationship between information and communication technologies and country governance: An exploratory study. *Communications of the Association for Information Systems*, 28(1), 181-198.
- Rogers, E. M. (1995). *Diffusion of innovations*. New York: Simon and Schuster.
- Rose, R. (2005). A global diffusion model of e-governance. *Journal of Public Policy*, 25(1), 5-27.
- Schumacher, I. (2013). Political stability, corruption, and trust in politicians. *Economic Modelling*, 31, 359-369.
- Seibicke, H. (2017). Campaigning for Gender Equality Through Social Media: The European Women's Lobby. In *Social Media and European Politics* (pp. 123-142). London: Palgrave Macmillan.
- Seldadyo, H., & De Haan, J. (2011). Is corruption really persistent?. *Pacific Economic Review*, 16(2), 192-206.
- Serva, M. A., Kher, H., & Laurenceau, J. P. (2011). Using latent growth modeling to understand longitudinal effects in MIS theory: A primer. *Communications of the Association for Information Systems*, 28, 14.
- Silal, P., & Saha, D. (2021). Impact of national e-participation levels on inclusive human development and environmental performance: The mediating role of corruption control. *Government Information Quarterly*, 101615, 1-20.
- Sindane, A. M. (2007). Sustaining good governance: is ethics and anti-corruption initiatives and agencies the answer?. *Journal of Public Administration*, 42(5), 121-221.
- Sormanen, N., & Dutton, W. H. (2015). The role of social media in societal change: Cases in Finland of Fifth Estate activity on Facebook. *Social Media + Society*, 1(2), 2056305115612782.
- Subramanian, S. (2021). Bahujan girls' anti-caste activism on TikTok. *Feminist Media Studies*, 21(1), 154-156.
- Tang, Z., Chen, L., Zhou, Z., Warkentin, M., & Gillenson, M. L. (2019). The effects of social media use on control of corruption and moderating role of cultural tightness-looseness. *Government Information Quarterly*, 36(4), 101384.
- TI. (2012). Corruption Perception Index 2012. Transparency International. <https://www.transparency.org/en/cpi/2020/index/nzl>
- TI. (2014). Corruption Perception Index 2014. Transparency International. <https://www.transparency.org/en/cpi/2020/index/nzl>
- TI. (2016). Corruption Perception Index 2016. Transparency International. <https://www.transparency.org/en/cpi/2020/index/nzl>

- TI. (2022). 2021 Corruption perceptions index reveals a decade of stagnating corruption levels amid human rights abuses & democratic decline. *Transparency International*. <https://www.transparency.org/en/press/2021-corruption-perceptions-index-press-release>
- Themistocleous, M., Azab, N. A., Kamal, M. M., Ali, M., & Morabito, V. (2012). Location-based services for public policy-making: The direct and indirect way to e-participation. *Information Systems Management, 29*(4), 269-283.
- UN. (2012). United Nations E-Government Survey Report 2012. The United Nations. New York: United Nations.
- UN. (2014). United Nations E-Government Survey Report 2014. The United Nations. New York: United Nations.
- UN. (2016). United Nations E-Government Survey Report 2016. The United Nations. New York: United Nations.
- UN. (2018). United Nations E-Government Survey Report 2018. The United Nations. New York: United Nations.
- UNODC. (2003). *United Nations Guide on Anti-Corruption Policy*. United Nations Office on Drugs and Crime. https://www.unodc.org/pdf/crime/corruption/UN_Guide.pdf
- Vaast, E., Safadi, H., Lapointe, L., & Negoita, B. (2017). Social media affordances for connective action: An examination of microblogging use during the Gulf of Mexico oil spill. *MIS Quarterly, 41*(4), 1179–1206.
- WEFGITR. (2012). Global Information Technology Report 2012. World Economic Forum. http://www3.weforum.org/docs/Global_IT_Report_2012.pdf
- WEFGITR. (2014). Global Information Technology Report 2014. World Economic Forum. http://www3.weforum.org/docs/WEF_GlobalInformationTechnology_Report_2014.pdf
- WEFGITR. (2016). Global Information Technology Report 2016. World Economic Forum. <https://www.weforum.org/reports/the-global-information-technology-report-2016>
- Wilson, C. (2020). The socialization of civic participation norms in government?: Assessing the effect of the Open Government Partnership on countries' e-participation. *Government Information Quarterly, 37*(4), 101476.
- Woll, C. (2019). Corporate power beyond lobbying. *American Affairs, 3*(3), 38-55.
- Wunsch, G., Russo, F., & Mouchart, M. (2010). Do we necessarily need longitudinal data to infer causal relations?. *Bulletin of Sociological Methodology, 106*(1), 5-18.
- Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206.

Appendix A: List of Countries Included in Data Analysis

Albania, Argentina, Australia, Austria, Bangladesh, Belgium, Bolivia, Bosnia, Botswana, Brazil, Bulgaria, Cambodia, Cameroon, Canada, Chile, China, Colombia, Croatia, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Georgia, Germany, Ghana, Greece, Guatemala, Hungary, India, Indonesia, Iran, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Lebanon, Madagascar, Malawi, Malaysia, Mexico, Mongolia, Morocco, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Romania, Russia, Serbia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Thailand, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe.; $N = 85$.

About the Authors

Jithesh Arayankalam is a doctoral student in the Information Systems Area at the Indian Institute of Management (IIM) Kozhikode. His research includes social media, fake news, cyberloafing, e-government, and e-business. He has published in reputed journals such as the International Journal of Information Management, Australasian Journal of Information Systems, Technological Forecasting and Social Change, and Information Systems Frontiers, and preeminent conferences, including the International Conference on Information Systems (ICIS), Pacific Asia Conference on Information Systems (PACIS) and International Federation for Information Processing (IFIP). He has served as a reviewer in journals and conferences such as the International Journal of Information Management, Information Systems Frontiers, Internet Research, Academy of Management (AOM) Annual Conference, ICIS, and IFIP. He received the Best Reviewer Award for Governance, Strategy, and Value of IS track at ICIS, Munich, Germany, 2019, and the Best Reviewer Award for Technology and Innovation Management Division at AOM Annual Conference, Vancouver, Canada, 2020.

Satish Krishnan received his PhD in Information Systems from the National University of Singapore. He is the Chair Associate Professor of Information Systems at the Indian Institute of Management (IIM) Kozhikode. His research includes IT resistance, fake news and disinformation, gender gap, e-government, e-business, virtual social networks, technostress, cyberloafing, and cyberbullying. He has published in leading journals, such as the Journal of Applied Psychology, Organizational Behavior and Human Decision Processes, Information and Management, Information Systems Frontiers, Journal of Association for Information Science and Technology, International Journal of Information Management, Computers in Human Behavior, Human Resource Development Review, Journal of Global Information Technology Management, e-Service Journal, and others. He is on the editorial boards of various journals such as Internet Research, Technological Forecasting and Social Change, Information Systems Frontiers, International Journal of Information Management, and Computers in Human Behavior. He also serves at various conferences such as PACIS and ICIS as Track Chair or Review Coordinator or Associate Editor. He won the Outstanding Associate Editor Award for ICIS 2017 and 2019.

Copyright © 2022 by the Association for Information Systems. Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and full citation on the first page. Copyright for components of this work owned by others than the Association for Information Systems must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists requires prior specific permission and/or fee. Request permission to publish from: AIS Administrative Office, P.O. Box 2712 Atlanta, GA, 30301-2712 Attn: Reprints are via e-mail from publications@aisnet.org.