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## Does social media reduce corruption?<sup>☆</sup>

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#### ABSTRACT

In this paper we study the relationship between multi-way means of communication and corruption by exploring the link between social media and corruption. Using a cross-country analysis of over 150 countries, we document a robust and statistically significant negative relationship between Facebook penetration (a proxy for social media) and corruption. A falsification test for the relationship between Facebook penetration and corruption is also reported. We find that the relationship between Facebook penetration and corruption is strongest for the set of countries with low press freedom. Moreover, we find that social media is complementary to press freedom in regards to its association with corruption Finally, our findings also confirm the negative correlation between internet penetration and corruption.

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#### 1. Introduction

In recent years, the role of "liberation technology" like the internet, mobile phones and social media in empowering individuals, increasing their participation in the political process, facilitating communication and mobilization on social issues, and strengthening an emergent civil society has been widely recognized (Diamond, 2010; Saleh, 2012). Our paper adds to this literature by examining whether social media, a form of ICT, is negatively related to corruption in a country. The argument is simple. It has been shown that a greater access to information is negatively associated with the level of corruption in a country (DiRienzo et al., 2007). Brunetti and Weder (2003) argue that a

free press reduces the cost of fighting corruption, and show that the countries where the press enjoys greater freedom are less corrupt. Further, Hong (2012) provides evidence that online readership of newspapers increase with their adoption of social media. Consequently, it is plausible that providing greater access to social media may be associated with a decline in corruption in a country.

Traditional media (print and broadcast media) only provides the possibility of one-way communication and has often been subject to censor and control by authoritarian regimes, typically either through monopolizing or by regulating the print and broadcast media. Clamping down or controlling digital media is much more difficult since they allow for multi-way communication of information.<sup>3</sup> Indeed, the spread of the internet and social media challenged the monopoly of authoritarian governments on information by making it easily available to the public, and even leading to a regime change in some instances. Often cases of corruption, human rights violations, and police brutality have been taboo subjects for citizens and have been censored in a number of countries such as China, Malaysia, and Iran. Social media and the internet have played an instrumental role in providing unbiased

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<sup>&</sup>lt;sup>1</sup> The term liberation technology comes from Diamond (2010) who defines it as "any form of information and communication technology (ICT that can expand political, social and economic freedom".

<sup>&</sup>lt;sup>2</sup> It is notable that studies have also linked ICT with the economic development of a country. For instance, Vu (2013) finds that Singapore's adoption of the ICT played an instrumental role in driving its economic growth during 1990–2008.

<sup>&</sup>lt;sup>3</sup> Moreover, there is also evidence showing that technological advances (including internet diffusion) have significant impact on democratic outcomes even under strict government controls (see for instance, Sunstein, 2012; Bieber, 2000).

and independent news in these countries (see Diamond, 2010 for a detailed discussion). All these examples further suggest that the increasing use of social media may be associated with lower levels of corruption. Inspired by such facts, this paper explores the possibility whether the increasing use of social media, particularly Facebook, is associated with lower levels of corruption.

There are a number of ways in which social media and Facebook penetration can help reduce the cost of fighting corruption. First, a larger number of social media users would mean a larger audience for the victims of extortive corruption that wish to share a corruption related incident. Second, social media provides cheap and speedy means of sharing information and reaching a larger audience to organize public protests against the corrupt activities of government officials and politicians.<sup>4</sup> Social media can augment the effects of press freedom on corruption by enabling a free press (traditional print and broadcast media, and online news portals) to reach out and disseminate information to a larger population. Finally, interaction in social media platforms is typically among friends and family and this personal touch to information may give it more credibility. In fact, individuals might feel more compelled to act on such information to show solidarity with their near and dear ones, once again underscoring the need to study the relationship between these multi-way channels of communication and corruption.

Studies exploring the relationship between communication technology, particularly social media, and corruption are scarce. The link between internet and corruption, though limited, has at least been studied (we briefly review the related literature in the next section). Perhaps, the biggest obstacle to studying the relationship between social media and corruption is to obtain data on social media users which is quite difficult, especially for developing countries. Since data for the number of social media users is not available, we use Facebook penetration as a proxy for social media and investigate the relationship between Facebook penetration and corruption. The data was obtained from 'Quintly', a social media benchmarking and analytics solution company.<sup>5</sup> Our results show that Facebook penetration and corruption are negatively correlated. Next we show that the relationship between Facebook penetration and corruption is strongest for the set of countries that are identified as having low press freedom. Our results also indicate that there is a complementarity between Facebook penetration and press freedom in the context of their association with corruption. Moreover, we perform a variety of robustness checks of our primary hypothesis including a falsification test. Our falsification exercise shows that while there is no association between Facebook penetration and corruption index prior to the launch of Facebook, the association between the two is highly statistically significant in the year 2012 (8 years after the inception of Facebook).

The rest of the paper is organized as follows. The next section provides a brief review of the existing literature to distinguish our paper from existing studies and help explain the contribution of our paper. In Section 3, we briefly describe our data sources. Section 4 outlines the empirical strategy. In Section 5, we present estimation results and falsification test of the Facebook-corruption relationship. The implications of press freedom on the relationship between social media and corruption is discussed in Section 6. Finally, Section 7 concludes with a discussion of findings and limitations of this study as well as the avenues for future research.

#### 2. Literature review

Studies on corruption mostly use corruption measures that capture the perceptions of corruption rather than the actual phenomenon. An important reason for this is the fact that actual corruption, being an illegal activity by definition, is difficult, if not impossible, to document and measure. Hence the three most commonly used measures of corruption of a country-the Control of Corruption Index (CCI) by the World Bank, Corruption Perception Index (CPI) by Transparency International (TI), and the International Country Risk's Guide's (ICRG) corruption index-are all based on the perceptions of corruption of business experts and individuals in the country. It should however be emphasized that many of the sources that are included in the construction of these indices record responses from business people and individuals that have direct exposure to corruption. It is then not surprising that studies (e.g., Mocan, 2008) have found the perception of corruption to be highly correlated with actual corruption (measured by the percentage of the respondents in the International Crime Victimization Survey (ICVS) that were asked to pay a bribe). Cross-country studies on corruption rely on corruption perception indices since the data on actual corruption (i.e., ICVS data) is available for a much smaller set of countries. Besides, studies, such as Kaufmann et al. (2011), contend that the perception of corruption itself is important as it influences the decisions of both households and businesses. For example, if public officials are perceived to be highly corrupt, individuals will be reluctant to approach them to avail public services. Similarly, the perception of corruption in a country is likely to negatively influence a firm's decision to start operations in that country.

Our paper follows a rich existing literature studying corruption across countries. In his seminal work, Treisman (2000) identifies several factors that determine the level of (perceived) corruption in a country using the CPI as a measure of corruption. The findings of his paper suggest that countries with Protestant traditions, long democratic exposure and British colonial histories are less corrupt. In another significant paper, Brunetti and Weder (2003) investigate the impact of the press freedom on corruption. Their primary measure of corruption is the ICRG corruption index. They classify press freedom as an external mechanism to control corruption - a control exercised by individuals or organizations that are outsiders to the network of corruption, i.e. the bureaucratic system. They argue that press freedom puts a check on corruption by reducing the cost of fighting corruption.<sup>6</sup> Chowdhury (2004) provides further evidence of a significant impact of democracy and press freedom on corruption using alternative empirical specifications including an instrumental variable analysis and dynamic panel estimation. Using Hausman and Taylor's technique, Elbahnasawy and Revier (2012) study the effects of both, time-variant and time-

 $<sup>^{4}</sup>$  A victim of extortive corruption may share the corruption incident on social networking sites to mobilize support for the fight against corruption. Facebook also allows users to create pages dedicated to a certain cause, which can then be followed by others and can be used to communicate and organized events. Users on such pages can share stories, pictures, and videos to support their cause, which can further be promoted by viewers by liking or sharing on their own or others' wall. A Facebook page called "India Against Corruption" was used by social activists in India to mobilize protests against corruption. As of December 7, 2015, this page was liked by more than 1.3 million people. Similarly, other social media platforms such as Twitter, MySpace, Google+, and YouTube can be used to share stories, pictures, and videos as well as organize protests, Howard et al. (2011) discuss the paramount role played by social media in the success of Arab uprising and shed light on how social media was used to disseminate information and organize protests. Digital media also made it possible for the communities to unite against dictators (Howard and Hussain, 2011) and, therefore, has the potential to unite people against corrupt practices.

<sup>&</sup>lt;sup>5</sup> The data was accessed from its website (http://www.quintly.com/facebook-country-statistics?period=1year) on May 10, 2013. The data is no longer publicly available and has to be purchased now.

<sup>&</sup>lt;sup>6</sup> According to Brunetti and Weder a free press is especially more effective in fighting collusive corruption where the internal controls of corruption – the agencies that control corruption within bureaucracy – are likely to be less effective. See Brunetti and Weder (2003) for an excellent discussion of the two kinds of corruption and how a free press is an effective tool against these kinds of corruption.

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