

Towards an African spring?

EXPLORING THE RELATIONSHIP BETWEEN SOCIAL MEDIA AND POLITICAL TRUST IN SUB-SAHARAN AFRICA



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ABSTRACT

Social media platforms are rapidly gaining ground in sub-Saharan Africa. Cheaper smartphones contribute to an increasing use of social media among African citizens. However, African governments strategically use social media in order to reach their own goals. This thesis contributes to the existing literature on the impact of social media in sub-Saharan Africa by exploring the relationship between social media and political trust. A multilevel linear regression model is used on almost 50.000 individuals, living in 384 regions in 32 different countries. Political trust is created by calculating the average level of trust in the parliament, electoral commission and local government for each respondent. We find evidence for a negative relationship between obtaining news from social media and political trust. However, the relationship depends on contextual factors. At the household level we observe that living in an urban area and obtaining news from the radio weakens the relationship, whereas the relationship is stronger in regions in which the education level is lower. We also observe that high levels of corruption and low levels of media freedom contribute to a stronger negative relationship between social media and political trust. We do not find evidence for a causal relationship.

CONTENTS

1. Introduction	4
2. Literature review.....	6
Political trust	6
Media.....	6
Social Media	7
Arab Spring	9
Western Countries.....	10
Sub-Saharan Africa.....	10
3. Theoretical framework	13
General framework	13
Demographics.....	15
Resources	15
Employment	16
Wealth (Distribution)	16
Education.....	17
Corruption & Crime	18
Media Freedom.....	19
Traditional media	20
Interactions	20
Conceptual Model.....	25
4. Data, Methodology & Variables	26
Data	26
Source of data	26
Appropriateness of data.....	26
Methodology	27
Variables.....	27
Dependent variable	27
Independent variable	28
Control variables.....	29
Missing data	31
Interactions	31
5. Results	32
Descriptive statistics.....	32
Analyses	35
Bivariate analysis	35
Multivariate analysis.....	38

Main effect.....	40
Control variables.....	40
The role of context	41
Robustness tests	47
Discussion & Conclusion	48
Appendix A: Variables.....	51
Appendix B: Output robustness tests	54
Appendix C: List of countries.....	64
Bibliography	65

1. INTRODUCTION

The aim of this thesis is to evaluate the impact of social media on political trust in sub-Saharan Africa. Besides research on the role of social media during the Arab Spring (Christensen, 2011; Howard et al. 2011), little research exists on the effect of social media on political trust in Africa (Mutsvairo, 2016). Recent research on European countries provides evidence that citizens obtaining news through social media show lower trust levels in their political institutions (Ceron, 2015). Since sub-Saharan Africa consists of many authoritarian and hybrid regimes (The Economist Intelligence Unit, 2017), it is plausible that the effect of social media on political trust differs from European countries with (flawed) democracies. For instance, functional internet access is included in the European legislation (Davies, 2016), while in many African countries internet access is purposefully hampered by the government (GSMA, 2017). Also, low literacy rates and lack of resources prevent a substantial part of the sub-Saharan African population to use social media (Balancingact, 2014).

Nevertheless, if a similar relationship would exist for sub-Saharan African countries, this could have far-reaching consequences for the continent. Primarily because of the increasing use of social media in sub-Saharan Africa caused by the introduction of cheaper smartphones (Mutsvairo, 2016). Between 2017 and 2023, the amount of smartphone subscriptions is expected to rise from 340 million to 850 million and the total amount of data used by elevenfold (Ericsson, 2017). Furthermore, research on the content of tweets in sub-Saharan Africa showed that politics-related tweets account for 8.6% of the total content, which is relatively high compared to the US and UK in which respectively 2% of the content is related to politics (Portland communications, 2015). This high percentage indicates that social media plays an important role in discussing political performance in sub-Saharan Africa. The adaptation of social media facilitates political and social change in a continent that is predominantly ruled by authoritarian leaders. Since digital activism is on the rise in sub-Saharan Africa (Mutsvairo, 2016), we can wonder whether an increasing use of social media might contribute to widespread revolutions on the continent.

However, the relationship between social media and political trust is very complex and depends on many context-specific factors. For instance, social media is not only becoming popular among citizens, but also among politicians. Since 2010, the election campaigns in various African countries have shown a sharp increase in social media use by politicians. At the same time, governments tend to shut down the internet when protests are expected to happen

(Cheeseman, 2017). Election periods are especially popular moments to shut down the internet or block social media. In Chad, Congo, Ethiopia, Gambia, Mali, Uganda, and Zambia the government blocked access to social media prior to elections (Kuo, 2016; Matfess, 2016). Even in Ghana, which is considered to be one of the most democratic countries of Africa, the government decided to shut down social media for two hours on the day of elections. This to make sure that “misleading” information would not destabilise the country (Matfess, 2016).

Whether social media could lead to widespread revolutions, as we have witnessed during the Arab Spring, depends on many factors and assumptions. However, including all these factors in one model goes beyond the scope of this thesis. Therefore, we zoom in on one aspect of the impact of social media in sub-Saharan Africa. In this thesis, we study the relationship between social media and political trust by answering the following two research questions:

Research Question 1: *What is the relationship between obtaining news from social media and trust in political institutions in sub-Saharan Africa?*

Research Question 2: *How is this relationship moderated by personal characteristics at the household level, and context factors at the district and national level?*

The design of this thesis is as follows: In Chapter 2, we provide a literature overview in which the relationship between (social) media and political trust is explained. Additionally, we provide and compare current examples from different parts of the world, aiming to give the reader a better understanding of the relevance of this topic. In Chapter 3, the theoretical framework is presented. In the same chapter, we formulate hypotheses that are used to answer our research questions. In Chapter 4, the methodological approach is explained. Chapter 5 contains the results of the analyses and in the last chapter of this thesis we provide a conclusion, discussion, and recommendations for further research.

2. LITERATURE REVIEW

In this chapter, we elaborate on the importance of political trust and the role of media in creating trust. Then we explain how social media is changing the relationship between information providers and receivers. Before going into more detail about the role of social media in sub-Saharan Africa, we shortly look at the role of social media during the Arab Spring and the role of social media in Western countries.

POLITICAL TRUST

Political trust is a key element for democracy (Kuenzi, 2008; Mishler & Rose, 2001) and one of the foundations of social order (Misztal, 2013). Trust is also the link between citizens and the political institutions that represent them and therefore legitimates the acts of these institutions (Hetherington, 1998). Confucius already argued that the ability to rule over people depends on weapons, food, and trust. Weapons and food enable the rulers to keep power in the short run, whereas creating trust in the political institutions is the most effective way to maintain power in the long run (Newton et al. 2018). We could say that political trust is the expectation that the political institutions act in the citizens' best interest. Therefore trust is a crucial indicator of the legitimacy of political institutions (Aarts et al. 2012).

A distinction has to be made between two dimensions of political trust. The first one consists of trust in more neutral institutions like the court, the police, and the electoral commission. The second dimension includes trust in government organisations such as the parliament and political parties. In general, more neutral institutions receive higher levels of trust (Newton et al. 2018). However, this distinction seems to become blurred for authoritarian regimes. For example, the court and the electoral system could be suppressed or entirely ruled by the government in authoritarian states.

MEDIA

The media has an essential role in providing information on the performance of political institutions (Ceron, 2015). Traditional media (press news, radio, and television) have primarily fulfilled the role of information provider so far. The media are very effective in shaping trust

in political institutions, mainly because political trust is often learned through the media and not by first-hand experience (Moy & Hussain, 2011). The bigger the distance of citizens to political institutions and the weaker the ties to the representatives, the more dependent people get on the news spread by the media.

Since most of the information on the performance of political institutions is transferred to us by the media, it is important that this information is reliable and correct. However, the objectivity of the traditional media is highly debated (Norris, 2011). Many studies argue that traditional media support the status quo and ignore alternative voices (Ceron, 2015). Researchers often refer to the top-down approach of these media, in which the citizens are the receiver and a small elite is sender (government, journalists, and editors). This top-down approach generally leads to an increase in political trust.

Not all studies point in the same direction. For example, the video malaise theory explains how negative news in the media creates a sceptical view among citizens towards political institutions, which eventually leads to lower trust in political institutions (Avery, 2009). However, this theory is mainly based on the role of commercial television in the US, in which the emphasis is often placed on scandals, conflicts and other negative aspects of politics (Aarts et al. 2012).

The lack of financial funds and freedom of the press in authoritarian regimes undermines the objectivity of media in developing countries more strongly than in developed countries (Tettey, 2001; Reporters Without Borders, 2017). Bailard (2012) describes traditional media in authoritarian states as “a magical mirror reflecting fairy tales”. The news in the media is not a reflection of reality but a carefully controlled story in which the political institutions are praised.

SOCIAL MEDIA

The introduction of social media at the beginning of this millennium has provoked a major change in the media landscape (Ellison, 2007a). Despite the obstacles in sub-Saharan Africa, like poor (technological) infrastructure, the adaptation of social media in sub-Saharan Africa has taken place at a rapid pace (Mabweazara, 2015).

Social media is different from traditional media in the way that it enables citizens (former receivers) to become sender of information. Social media allows for more, faster and cheaper interaction between senders and receivers (Manacorda & Tesei, 2016). Users of social media can create and discuss content on online platforms such as Facebook and Twitter (Weimann, 2014). This bottom-up approach enables citizens to spread their opinion to a broad audience (Benkler, 2006; Ceron, 2015; Lewis, 2012) and at the same time contradict (subjective) news spread by the government (Manacorda & Tesei, 2016). Hackett (2005) refers to the term citizen journalism when talking about news on social media. It addresses the “democratic deficit of traditional media”, he argues. The fact that traditional media largely ignored voices of citizens critical towards the establishment, contributed to the fact that digital activism has flourished (Cammaerts, 2012). Hence, social media platforms could be very effective in providing alternative information in countries where traditional media is in the hands of the government and supports the political elite.

According to Bailard (2012), social media (and internet in the broader sense) facilitates communication and stimulates the circulation of more and diverse information on the actual performance of institutions. Instead of one-sided information, individuals can read critical articles on corruption and malpractices of the institutions. Bailard calls it the mirror-holding mechanism of the internet in which individuals observe that the fairy tales told by the government do not reflect the real world. Additionally, he refers to another effect of digital information, namely that of window-opening. Information obtained will be placed in a more international perspective. Individuals now observe how other countries are performing, affecting their expectations and criteria on which they evaluate the performance of their political institutions.

Another feature of social media is that it reduces the barrier for citizens to interact with politicians. A barrier caused by the inability and fear of publicly confronting the status quo. Social media provides citizens with a powerful tool to challenge the political elite in a relatively easy and efficient way (Mabweazara, 2015).

Nevertheless, governments are able of using social media to their own advantage. By deleting specific content, propagating the news or completely blocking social media, the political institutions in some countries are capable of controlling social media in almost the same way as they do with traditional media (Mozorov, 2012). Furthermore, by means of social media,

states have a new tool to track citizens who are spreading their dissent. It is therefore that Bailard (2012) calls social media a double-edged sword.

ARAB SPRING

As mentioned in the previous paragraph, social media enables citizens to contradict the news of the government. During the Arab Spring, demonstrating citizens used cameras and mobile phones to report on events they attended. By uploading videos and text messages, ordinary citizens were able to spread their reality on the internet (Manacorda & Tesei, 2016). The access of citizens to a larger audience makes the process of mobilization easier. Social media has proved to be a strong tool to inform fellow citizens about the abuses of the authoritarian regime. During revolutions in Egypt, many protests against the political leaders were coordinated by the use of Facebook and Twitter. Western journalists often used the words “Facebook protests” and “Twitter revolution” (Gerbaudo, 2018). Social media increases the knowledge of who else is joining the protests and therefore increases the willingness among citizens to participate (Manacorda & Tesei, 2016). During the revolutions in Egypt, social media has played a dominant role in shaping the public debates and contested the legitimacy of the political institutions (Howard et al. 2011).

However, Wolfsfeld et al. (2013) emphasize that it is impossible to study the role of social media during the Arab Spring without understanding the political environment of the countries. The political, social and economic circumstances are important predictors for how social media could lead to mobilization of large groups. To illustrate, people living in the poorest areas in countries with repressive regimes are less likely to have access to social media and most likely to be monitored and censored at moments they do so. This indicates that the most disadvantaged groups in the society are unable to exploit social media in order to mobilize themselves in large groups. Furthermore, he argues that it is more likely that an increase of social media users is a result of a significant amount of protest instead of social media initiating the protests. To illustrate, the number of Facebook-registrations in Arab countries only increased by significant large numbers once the protests had already started.

WESTERN COUNTRIES

Also in Western countries the connection between social media and political institutions is becoming stronger. During the US elections in 2016, both candidates used social media platforms on a large scale (Graber & Dunaway, 2017). After the elections, in which Donald Trump became president, the role of social media in the outcome has been widely discussed. The spreading of so-called “fake news” on social media in the wake of the elections takes an important place in the discussion. Because 14% of the US citizens call social media their most important source of news, the spreading of fake news could have played a major role in the outcome of the elections (Allcott & Gentzkow 2017). Furthermore, social media bots (accounts driven by algorithms) can affect the directions of online political conversations in order to change the public opinion (Bessi & Ferrara, 2016). In March 2018 a scandal with respect to data of 87 million Facebook users became public (Ram & Kuchler, 2018). Facebook is suspected of selling data of private users to Cambridge Analytica, a company that helped Donald Trump in his race for US presidency by targeting his potential voters with personalised messages (Fildes et al. 2018; Vasu et al. 2018). The example of the US election in 2016 clearly shows how social media has become an important tool for political actors in the West. Since social media increases the amount of alternative information (including fake news), it might affect the trust citizens have in their political institutions.

Research on European countries provides evidence for this relationship. Ceron (2015) found evidence that European citizens obtaining the news through social media have lower trust in political institutions. He argues that “social media will host and favor the circulation of alternative information that negatively affects political trust”. However, he does not give strict evidence for a causal relationship. Distrustful citizens may also be more likely to change their way of news consumption from traditional media to social media.

SUB-SAHARAN AFRICA

After having shortly discussed the role of social media on political trust in Arab and Western countries, we will now focus on our prior region of interest. Despite the relatively limited amount of research on sub-Saharan Africa, an increasing number of researchers is studying the role of social media in this part of the world. The interest in the role of social media in sub-Saharan Africa is caused by the rising number of social media users in the continent. During a

conference at the University of Edinburgh (Marmon, 2017), the “Uses and abuses of social media in Africa” were the central topic. Researchers shared the belief that social media will contest the current political institutions in sub-Saharan Africa.

During the last few years, social media proved to be an effective tool for political and social movement groups to quickly communicate ideas. As mentioned before, a relatively high percentage of the content is politics-related. Online protests could eventually spread from the online to the offline sphere. Some of the protests are referred to as “hashtag protests”, in which slogans are widely shared on various social media platforms. In South Africa #ZumaMustFall (see front-page) and in Zimbabwe #ThisFlag became famous examples of the hashtag protests (Mutsavairo, 2016).

It is mainly the students, middle class, and wealthier groups that are able to exploit social media (Wasserman, 2018). The unequal access to social media only allows certain groups in society to exploit social media successfully. The significant inequalities within African states have prevented the most disadvantaged groups in society to use social media as a tool to share their dissatisfaction (Wasserman, 2018). Besides the economic disadvantage, the lack of freedom of speech also prevents citizens who do have access to social media, to use it in their desired ways. Disobeying the state and participating in online activities could easily lead to imprisonment.

In Ethiopia, prior to the elections in 2015, the members of the *Zone9 bloggers collective* got arrested because they discussed social and political issues on social media, many other bloggers had to flee the country (Mengesha, 2016). It resulted in a lot of criticism by human rights organisations like Amnesty International and Human Rights Watch. However, the Prime Minister of Ethiopia responded by saying: “I don’t think becoming a blogger makes somebody immune if someone involves into this terrorist network that destabilizes my country” (Mutsavairo, 2016). Furthermore, in 2017 the President of Democratic Republic Congo (DRC) shut down the access to internet for three days when protests were expected to happen (CPJ, 2018) and in 2016 the former president of Zimbabwe, Robert Mugabe, warned online activists that he would fight online dissent by using Chinese technologies (Mutsavairo, 2016). In Eritrea, the situation is most extreme. Eritrea is one of the most censored country in the world (CPJ, 2015) and since its independence it never had elections. It is hardly possible to connect a phone with the internet. The only communication is possible through the state provider, fully controlled by the government. To maintain power, the government holds a monopoly on media, threatens and imprisons journalists, and restricts journalists any movement into or within their

country (CPJ, 2015). In many African countries, the political institutions hamper the use of social media among large numbers by constraining the adaptation of mobile communication (GSMA, 2017).

Regarding the evaluation of the impact of social media on African societies, African scholars have often criticized the Western approaches. Many studies have simply ignored the complexities and power relations in sub-Saharan Africa they argue. It is essential to include the cultural, economic, geopolitical and historical contexts in order to understand the impact of social media (Mutsvairo, 2016). By including relevant control factors we aim to determine the impact of social media on political trust as precisely as possible. Furthermore, we include interaction effects to study in which contexts social media has an impact on political trust.

3. THEORETICAL FRAMEWORK

In this chapter, we present the theoretical framework of the thesis. We start by providing our general framework in which the theoretical approach is explained. Then we discuss the expected relationship between our control variables and political trust. In the last part of this chapter, we discuss the expected interaction effects.

GENERAL FRAMEWORK

In order to evaluate the role of social media on political trust in sub-Saharan Africa, it is important to control for characteristics and personal evaluations at the household level and for context factors at the national level (Ceron, 2015; Mishler & Rose, 2001). Additionally, we include context factors at the district level because these variables have more explanatory power compared to variables at the national level (Huisman & Smits, 2015). We could expect significant differences within countries and bringing back context variables to a lower level allows us to better estimate the effects. The theoretical framework in this thesis is mainly based on research of Ceron (2015) and Mishler & Rose (2001).

Ceron (2015) studies the relationship between obtaining the news through social media and political trust in European countries. Political trust as the dependent variable is calculated by taking the average self-reported trust level of four different political institutions: 1) National government, 2) Regional and local government, 3) Parliament and 4) Political parties. In this thesis, we include three different political institutions: The parliament, the electoral commission, and the local government. However, a disadvantage of taking averages is that we cannot determine whether social media affects trust levels in various political institutions differently. By running a robustness test, we control for the different effects on each institution. Newton et al. (2018) argue that more neutral institutions such as the electoral commission receive generally higher trust levels than for example the parliament. It would be interesting to see whether this assumption holds for African countries. Furthermore, it is valuable to investigate whether social media has a stronger relationship with trust in the national or local institutions.

The second study that contributes to our theoretical framework studies the origins of political trust (Mishler & Rose, 2001). The researchers evaluated two different theories that try to explain the determinants of trust.

The first theory emphasizes the role of culture in the creation of political trust. It states that trust in political institutions is formed exogenous, meaning that trust can be explained by someone's culture and beliefs that have already been formed in their early childhood. Therefore, institutional trust is considered to be a reflection of our interpersonal trust. However, this theory faces much criticism (Mishler & Rose, 2001). For example, the assumption that there is a causal relationship between interpersonal trust and institutional trust is questioned (Brehm & Rahn, 1997). Some authors argue that the relationship goes the other way around; that political institutions create interpersonal trust (Mueller & Seligson, 1994).

The second theory takes an institutional approach to explain the origins of trust. This theory seems to have more support in the existing literature (Mishler & Rose, 2001). Proponents of this theory argue that trust is formed endogenous and is a response to the performance of institutions (North, 1990). It makes a distinction between macro-institutional theory and micro-institutional theory. Macro-institutional theory emphasizes the general performance of institutions in explaining trust levels, like national growth rates and political stability (Bouding, 1968; Mishler & Rose, 2001). Micro-institutional theory explains trust levels by looking at personal characteristics and the experienced performance of institutions. The personal evaluations of institutions differ among people and therefore lead to different levels of trust. Personal evaluations have a strong effect on the level of political trust (Ceron, 2015; Mishler & Rose, 2001). Newton et al. (2018) refer to the winner-loser hypothesis when explaining political trust on the micro-level; the winners are those who are rich, healthy, well-educated and have a higher social status. Therefore, they show higher levels of political trust. But citizens in well-established democracies differ in their evaluation of political institutions from those in new democracies. Whereas political institutions of stable democracies are often judged on their political and economic outcomes (Cheibub et al. 1996), new democracies are also evaluated on their efforts in fighting corruption and increasing freedom (Mishler & Rose, 2001).

Based on the literature overview we come up with the main hypothesis of this study:

Hypothesis 1: *Individuals obtaining news through social media tend to have lower trust in the political institutions than individuals who do not obtain news through social media.*

The rejection or acceptance of this hypothesis provides us with the answer to the first research question regarding the relationship between obtaining the news from social media and trust in

political institutions in sub-Saharan Africa. In order to answer the second research question, we hypothesise how the effect of obtaining the news through social media on political trust is moderated by personal characteristics at the household level, and context factors at the district and national level. Before we make predictions about these interactions, we describe the relationship between the control variables and our dependent variable political trust.

In our analysis we apply the institutional-theory, as described above, to discuss the relationship of our control variables with political trust. The control variables are divided into five categories: Demographics, Resources, Corruption & Crime, (media) Freedom and Traditional Media. To incorporate both micro and macro-institutional theory, we include variables at the household, district and national level.

DEMOGRAPHICS

The first category of control variables that are expected to have an effect on political trust is related to demographic characteristics. Social media usage is often linked to people of younger age and living in urban areas (Ephraim, 2013; Wyche et al. 2013). Whereas older people show generally higher levels of trust (Ceron, 2015; Christensen & Lægheid, 2005; Mishler & Rose, 2001), we observe that living in an urban area is related to lower trust levels (Ceron, 2015; Kuenzi, 2008; Mishler & Rose, 2001). Additionally, we observe a gender gap with respect to internet access. African women are 23% less likely to have access to the internet than men (GSMA, 2017), which is partly a consequence of the lower literacy rates among African women (Balancingact, 2014). Therefore we control for age, gender and whether someone is living in a rural or urban area.

RESOURCES

The second factor to control for is the access to and possession of certain resources. Variations in resources among households are expected to influence people's trust in political institutions differently (Ceron, 2015; Kuenzi, 2008). We decided to subcategorize resources in the following three categories: Employment, Wealth (Distribution) and Education.

EMPLOYMENT

Individuals being employed are expected to be more satisfied with political institutions in the country than people who are unemployed. Individuals may argue that government policies are the cause of being unemployed. Earlier studies on European countries support this negative relationship between unemployment and trust in political institutions (Anderson & Singer, 2008; Ceron, 2015; Mishler & Rose, 2001). However, research based on household surveys in Ghana and Nigeria (Kuenzi, 2008) does not show much effect of having a paid job on political trust, suggesting that the relationship between employment and trust is different in sub-Saharan Africa.

Besides looking at the employment status in general, it is interesting to investigate whether the sector in which the individual works has an effect on political trust. In Northern European countries different trust levels exist between citizens employed by the public sector and those employed by the private sector. Christensen & Lægrend (2005) refer to a so-called “public sector class”, having generally more positive attitudes towards political institutions. Since political institutions in Northern Europe and sub-Saharan Africa differ significantly, we could not simply generalize this finding to the countries included in our dataset. To our knowledge, no research so far explicitly accounts for the difference in political trust between public servants and private workers in sub-Saharan Africa. One could argue that public servants show lower trust levels because they experience the inefficiencies of the public institutions on a daily basis. However, Collier and Grunning (1999) argue that many African governments use the public sector for job creation rather than for providing services. It sounds plausible that public servants show higher trust levels since they at least profit from this policy in the way that they receive a salary. Therefore, we expect higher trust in political institutions among public servants than among private workers.

WEALTH (DISTRIBUTION)

Regarding absolute levels of wealth, we observe that in developed countries poor citizens tend to have lower trust levels (Hardin, 1999). Anxiety and insecurity are the main causes of distrust among the poor in the United States (Patterson, 1999).

Although economic development at the national level contributes positively to trust levels of citizens (Hutchison & Johnson, 2011), it seems that personal evaluations of the economy play

a more important role. There is broad evidence that individuals with more positive expectations on the country's economy are likely to have more political trust (Ceron, 2015; Chanley et al. 2000; Mishler & Rose, 2001).

Perhaps an equally important factor in sub-Saharan Africa is the distribution of wealth and income. An equal distribution of wealth and income is positively connected to trust (Newton et al. 2018). For example, Anderson & Singer (2008) investigated the relationship between inequality and the satisfaction with political institutions in 20 European countries. By using the Gini coefficient as a measurement tool of inequality, the authors provide evidence for a strong negative relationship between inequality and support for political institutions. The authors expect the relationship between income inequality and trust to be stronger in developing countries, because the absolute level of poverty is higher. Besides situations of economic downturn (Hutchison & Johnson, 2011), high levels of inequality increase the chance of protest against political institutions (Boix, 2003).

EDUCATION

Various studies have analysed the effect of education on political trust. Some authors argue that higher educated citizens have more trust in political institutions because they better understand how the public services are organized. However, being higher educated also generates a more critical attitude towards the political institutions and could therefore reduce trust (Christensen & Lægreid, 2005). Mishler & Rose (2001) did not find a significant relationship between the level of education and political trust in post-Communist countries.

When studying the effects of education on political trust it is vital to consider differences between democracies and authoritarian regimes (Croke et al. 2016). In authoritarian regimes, a deliberate disengagement from the political system takes place among higher educated citizens (Acemoglu et al. 2005; Croke et al. 2016). By not voting, avoiding political contacts and community meetings, higher educated people express their dissent and lack of trust in the political institutions (Croke et al. 2016). Furthermore, higher educated citizens with greater economic potential are more likely to be disappointed and frustrated by the authoritarian regimes and therefore show lower trust in political institutions (Campante & Chor, 2012).

In Zimbabwe (Croke et al. 2016), Ghana, and Nigeria (Kuenzi, 2008) a negative relationship between education and political trust is observed. Research in South-Africa finds a similar

relationship (Chingwete, 2016). However, the results differ with respect to people with no formal education at all, showing lower levels of trust in political institutions than people attended primary education. The authors do not come up with an explanation regarding this finding. A possible explanation could be that individuals with no formal education do not experience any support from the government and therefore show lower trust levels in the political institutions.

Based on these previous studies on African countries, we expect that higher levels of education are related to lower trust levels in political institutions. However, people without any formal education could be an exception to this relationship.

CORRUPTION & CRIME

The third factor expected to have an influence on political trust is the level of corruption and crime. Corruption is one of the major problems in sub-Saharan Africa. It slows down or prevents development and economic growth. Furthermore, it lowers trust in political institutions and the accountability of governments (Lavallée et al. 2008). A majority of the people living in sub-Saharan Africa believes corruption is increasing and they do not believe that the government is effectively fighting it. In 2015 around 64% of sub-Saharan Africans believed that their government was doing a poor job in fighting corruption (GCB, 2015). With respect to elections, almost 38% of the Africans think votes are often not counted (Morlin-Yron, 2016).

Political corruption can be defined as “individual departures from rules and norms of public office for reasons of private gain” (Huntington, 1968; Warren, 2004). It leads to worse performing governments, unable to fulfill the demands of the citizens. This contributes to lower trust in the political institutions (Della Porta, 2000). For instance, citizens in post-Communist countries with the highest levels of corruption at the aggregate level show the lowest levels of trust in their institutions (Mishler & Rose, 2001). Furthermore, citizens who perceive and experience a higher level of corruption are likely to show lower levels of trust in their political institutions (Chang & Chu, 2006; Seligson, 2002)

However, where corruption always leads to negative outcomes in countries with effective institutions, in countries with ineffective institutions corruption could eventually lead to more efficiency (Méon & Weill, 2006). This is the so-called Efficient Grease Hypothesis. By paying

bribes, citizens get access to scarce services and subsidies that are normally inaccessible for them. Furthermore, bribery could effectively speed up long-lasting bureaucratic processes. Therefore corruption could lead to higher levels of trust in political institutions. However, this theory has been rejected by most of the recent studies (Lavallée et al. 2008).

Besides corruption, also other forms of crime and conflict contribute to lower levels of political trust. Most research studying the role of crime on political trust focused on the US. Chanley et al. (2000) find evidence that trust in the government is influenced by public perceptions of crime. Rising crime rates contribute to declining trust in political institutions. Hutchison & Johnson (2011) analyse the effect of internal violence on political trust in sub-Saharan Africa. They find evidence that higher levels of internal violence contribute to lower trust in the government because it shows that the government is unable to mediate between conflicting interests in the society.

MEDIA FREEDOM

The fourth factor we discuss is media freedom. Citizens' perceptions of the political world are shaped by media restrictions (Schedler, 2013). A high level of media freedom enables journalists to investigate and publish about manipulative strategies and malpractices of the government. Governments in non-democratic states are well-aware of the fact that media manipulation is an effective way to win the elections or prevent protests (Kerr and Lührmann, 2017). Therefore, media are often repressed and censored by authoritarian regimes with the aim of influencing the public opinion or prevent mass mobilization when protests are expected to happen. Besides repression and censoring of media, some African governments use a third strategy to restrict citizens' access to online media. By keeping connection fees and costs of mobile data artificially high, governments limit the reach of critical voices online (Freedom House, 2016). In countries with the least media repression and censorship in combination with low connection and data fees, citizens have the most potential to express their dissent online (Wasserman, 2018). High costs and the risks of spreading anti-government voices prevent the majority of citizens in authoritarian regimes to use social media in the same way as it is used in established democracies (Mutsvairo, 2016).

TRADITIONAL MEDIA

As we described in Chapter 2 in more detail, we expect traditional media to be supportive of the status quo. One-sided information provided on the television, radio, and newspapers contributes to positive attitudes towards the government. Bailard (2012) uses the metaphor of “a magical mirror reflecting fairy tales” to describe the traditional media in authoritarian regimes. Although in some African countries the traditional media landscape is liberating in the last few years (Balancingact, 2014), being openly critical towards the establishment is in many of them not accepted (Mutsvairo, 2016).

Furthermore, we should not overlook the impact of high illiteracy rates in sub-Saharan Africa. The African population consists of a high percentage of individuals who are unable to read. Because a television is often too costly and requires electricity, most people in (rural) Africa are completely depending on the news they obtain through the radio (Yordy, 2008). In regions in which the education level is low, access to internet does not exist or is privileged to the rich, and contact with the outside world is relatively limited, it is very likely that one-sided information spread through the radio contributes to high levels of trust in the political institutions.

INTERACTIONS

In the previous paragraphs, we provided the expected relationships between our control variables and political trust. It is important to include these control variables in our analyses in order to make correct statements about the role of social media on political trust. However, these control variables on itself are not our prior topic of interest. We are mostly interested in how the effect of obtaining the news through social media on political trust is moderated by the context in which individuals live. Besides interactions at the individual level, we control for cross-level interactions. Using cross-level interactions helps us to explain which characteristics at the regional and national level influence the relationship between social media and political trust (Hox et al. 2017).

There are a wide range of factors that determine if and how social media has an effect on political trust. Existing literature is not specifically accounting for context-specific relationships between social media and political trust in sub-Saharan Africa. Thereby,

relationships found in developed countries are in many cases not applicable to sub-Saharan Africa (Mutsvairo, 2016), as we illustrate by giving an example.

In developed countries, we might expect that the negative effect of obtaining the news through social media on political trust is stronger among the poor because the least wealthy groups in society are likely to be overlooked by the traditional media. According to Newton (2018), the poor people are the “losers”, showing lower levels of trust in the political institutions. Therefore, social media provides an ideal alternative for this group to raise their marginalized voices and spread their dissent to a broad audience. However, we observe two essential differences between the poor in developed countries and those in developing countries. Whereas literacy rates are high in developed countries, we observe low literacy rates among the poor in sub-Saharan Africa, making this group unable to exploit social media. Additionally, those who can read are very likely to lack the financial resources to get access to the internet. This is a different situation than in developed countries, in which even the least wealthy groups are generally still able to exploit social media. Taking the difficulties of such interactions into account, we come up with the following interaction hypotheses.

Firstly, we hypothesize that the relationship between obtaining the news through social media and political trust is stronger for younger people. Younger people tend to have a preference for activism in the online sphere (Ellison et al. 2007b), making it more likely that the news they obtain and share is critical towards the political institutions. Thereby, a study in the US showed that younger individuals regard online media as more credible, suggesting that the news from social media affect this group more strongly (Johnson & Kaye, 2000). Therefore, we expect younger people to be stronger affected by social media.

Hypothesis 2a: *The negative relationship between social media and political trust is stronger for younger people.*

Regarding the relationship between social media and urbanization, we expect to observe a stronger effect of social media on urban citizens. Social media plays a more dominant role in the daily life of urban citizens (Ceron, 2015; Kuenzi, 2008) and thus the circulation of more and diverse information is higher among this group. Furthermore, rural areas often lack the facilities to use social media in an optimal way. For instance, in rural areas the network coverage is limited and the speed of the internet is generally slower and unstable (Wyche &

Baumer, 2017). A study in rural South-Africa concluded that users of social media in rural areas are to a lower extent familiar with the applications and hence do not use the more advanced features of social media (Nelson et al. 2016). The limitations of social media usage in rural areas lead to the expectation that social media shows a stronger relationship for urban citizens.

Hypothesis 2b: *The negative relationship between social media and political trust is stronger for people living in urban areas.*

The next interaction hypothesis is related to education. Education is widely believed to teach individuals critical skills and values (Meyer, 1977) and therefore enables individuals to reflect on the information they receive. Citizens in the United States with higher levels of education tend to be more critical to the news they obtain than individuals with lower levels of education (Johnson & Kaye, 2000; Kohut et al. 2007). Traditional media in sub-Saharan Africa are likely to consist mainly of one-sided news that is supportive of the establishment. Because lower educated citizens are less likely to question the objectivity of the traditional media, they are more likely to show higher levels of trust.

When it comes to social media, it is also important to place the information in perspective since everyone (having access to social media) is able to spread news on the platform (Benkler, 2006; Lewis, 2012). Although news on social media might be more diverse, it often consists of subjective and false information, aiming to manipulate the reader (Bailard, 2012). As we said, lower educated citizens reflect less critically on the news they obtain. Therefore, we expect to observe a stronger negative relationship between obtaining the news from social media and political trust for this group. Furthermore, living in a region with lower educated citizens around makes it less likely that the information circulating is critically discussed or cross-checked (Balancingact, 2014).

Hypothesis 3a: *The negative relationship between social media and political trust is stronger for citizens with lower levels of education.*

Hypothesis 3b: *The negative relationship between social media and political trust is stronger for citizens living in a context in which the average education level is lower.*

Regarding corruption, we predict a stronger negative effect of social media on political trust in countries scoring low on the World Governance Indicator (WGI) Control of Corruption. In authoritarian regimes, often correlated with high levels of corruption, it is very unlikely that traditional media report about corruption by the political institutions. Once social media provides citizens with more and diverse information, it makes the receivers of this information aware of the actual level of corruption in the country, the so-called mirror-holding effect (Bailard, 2012). Social media users are the ones that are most likely to obtain information about corruption in their country. The higher the level of corruption users observe, the stronger the negative effect of social media on political trust is expected to be. This leads to our fourth hypothesis.

Hypothesis 4: *The negative relationship between social media and political trust is stronger for citizens who live in a context with more corruption.*

Our next hypothesis is regarding media freedom. One could argue that citizens living in countries with higher levels of media freedom are more likely to receive news that is critical towards the political institutions because critical opinions are to a higher extent tolerated (Kerr & Lührmann, 2017). This potentially leads to a stronger negative relationship between social media and political trust in countries with relatively high levels of media freedom. On the other hand, we might deal with a selection bias in countries with low levels of media freedom. In countries scoring poorly on the Press Freedom Index, it is more difficult to get access to social media. Governments hamper the adaptation of social media among large groups by constraining access to the internet or making it very costly (GSMA, 2017). It also demands knowledge to circumvent government control through Virtual Private Networks (VPN), which is not without risks (Mutsvairo, 2016). Therefore, the individuals who still achieve access to social media on a frequent base are likely to be more critical towards the political institutions.

Hypothesis 5: *The negative relationship between social media and political trust is stronger for citizens living in a context with less media freedom.*

An additional factor influencing the effect of social media on political trust is the use of traditional media. Individuals obtaining the news through social media are likely to also obtain the news through traditional media like newspapers, radio, and television. Since we assume

that traditional media are generally pro status quo in sub-Saharan Africa, we could expect the negative effect of social media on political trust to be weaker for those also obtaining news through traditional media. Therefore, we come up with our last hypothesis in which we expect the use of traditional media to weaken the negative effect of social media on political trust.

Hypothesis 6: *The negative relationship between social media and political trust is weaker for people also obtaining the news from traditional media.*

CONCEPTUAL MODEL

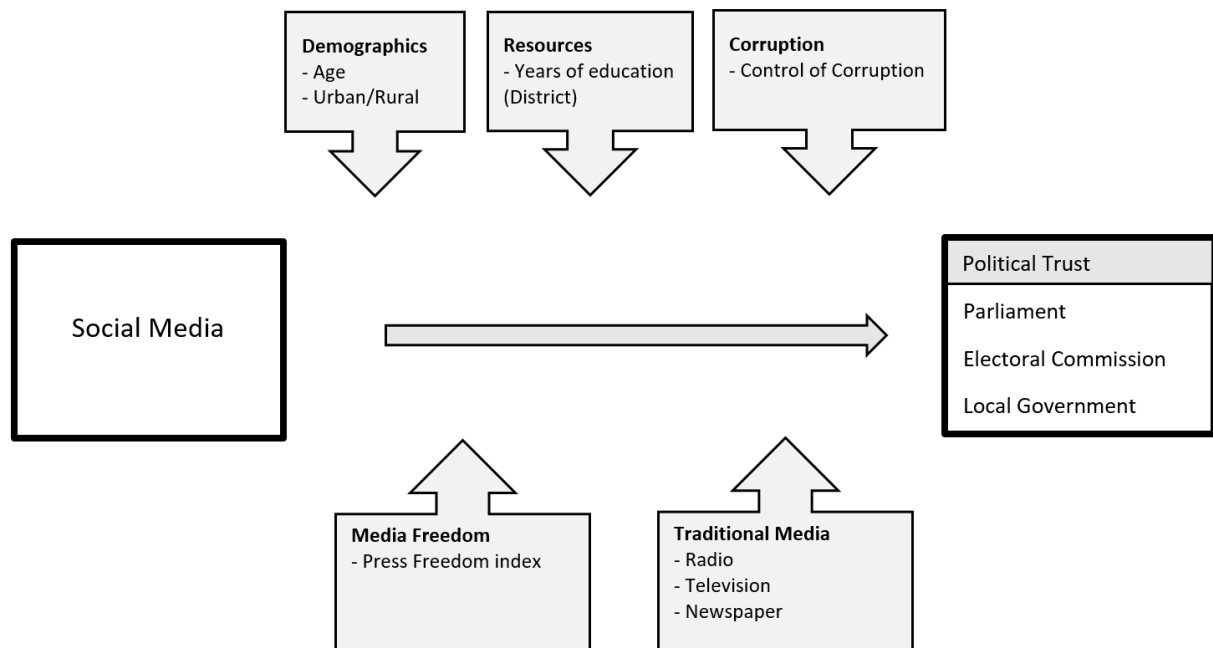


Figure 1 Conceptual model of the relationship between social media and political trust in sub-Saharan Africa

4. DATA, METHODOLOGY & VARIABLES

DATA

SOURCE OF DATA

Data in this thesis is obtained for 49,137 individual respondents, living in 384 regions, distributed over 32 countries in sub-Saharan Africa (Appendix C). For household level data, we used data from Afrobarometer round 6 (www.afrobarometer.org). Afrobarometer collects data on social, political and economic topics. For every country, a randomly selected sample between 1200-2400 individuals is included. The data is conducted by face-to-face interviews with citizens who are 18 years and older. Afrobarometer aims to give every citizen an equal chance of being selected in the sample, making the data set as representative as possible. Since the population size of regions differs within countries, the samples of each region are proportionate to population size. Household data for the International Wealth Index (IWI) is obtained from the Global Data Lab (www.globaldatalab.org) and merged with the household data of Afrobarometer based on household identity. District level variables are generated by taking the average value of a specific household variable for each region. National level data is obtained from the World Bank (www.worldbank.org) and the Press Freedom Index (www.rsf.org).

APPROPRIATENESS OF DATA

Since social media is a relatively new phenomenon in sub-Saharan Africa, it is vital that our data is up to date. Since Afrobarometer round 6 refers to the year 2016, we argue that this dataset is appropriate for our analyses. The IWI is based on the same survey as Afrobarometer and therefore related to the same year. Because the district variables are computed from the household data, we work again with data for 2016. With respect to national level data, we use data for the Press Freedom Index of 2017 since that year covers a larger percentage of the countries included in our research compared to the data of 2016. The two world governance indicators included in our model are based on the year 2016.

METHODOLOGY

In this research, we make use of multilevel linear regression analysis. The model contains three levels which are determined by the geographical context. The first level is the household level, in which data is based on the individual respondents. The variables included in this level contain characteristics and personal evaluations of individuals. The second level contains the regions in which the individuals are nested. The third level is the national level in which we control for the role of socioeconomic and the political factors at the country level. We include the regional and national level in order to control for influences of the context in which individuals live because trust levels are also depending on regional and national characteristics. We make use of a mixed effects model in our analysis; using random intercepts for countries and regions. By using this method, we assume all individuals to have the same coefficients at the household level but trust levels to vary among regions and countries.

VARIABLES

DEPENDENT VARIABLE

Our dependent variable is created by taking the average trust level of three different political institutions. The respondents are asked how much they trust the 1) parliament 2) electoral commission and 3) local government. Answers range between “not at all” (0) and “a lot” (3). We take the standardised version of trust in the parliament, the electoral commission, and the local government, to compute the variable: Average political trust. In order to get a normal distribution around the mean, we standardise the outcome for average political trust again.

In the ideal situation, Afrobarometer provides us with an answer to all three questions regarding political trust for every individual. Unfortunately, this is not the case. In our dataset, 4.232 observations (8.6%) are missing one or more answers to the questions regarding trust. Observations with missing values for the three components of average trust are problematic and are removed from our dataset. However, we observe a high correlation between trust in the three different political institutions. In the situation in which one of the three trust components of average trust is a missing case, we replace this missing by taking the average trust level of the other two components of political trust. In case only one of the answers is provided we include this answer as the average trust level. By doing this, we can keep a significantly higher

number of observations in our dataset. Instead of losing 8.6% of our observations, we now remove only 2.2% of our observations. We acknowledge that some authors are critical towards including observations with missing data in the dependent variable (Allison, 2001), but in this case we believe it to be appropriate because of the strong correlation between the different components of the dependent variable. To control whether these observations substantially change our results, we did a robustness check in which we removed the cases with missing values for one or two components of political trust. As we expected, the results hardly change (Appendix B, Table 4). This suggests that we deal correctly with missing data in our dependent variable.

Because we compute the dependent variable, average political trust, by taking the average score for each of the three political institutions, we obtain relatively many categories. We may argue that we deal with a continuous variable rather than with an ordinal variable. According to Pasta (2009), using the linear relationship is generally a more powerful approach than keeping the variable categorical. However, a concern about treating the categorical dependent variable as a continuous variable is that we do not know whether a one unit increase in the low trust values is similar to a one unit increase in the high trust values. Pasta (2009) states that in practice the results are in most cases very insensitive to the distance between ordinal variables; only in very extreme cases it would significantly change the results. Therefore, we use a multilevel linear regression instead of a multilevel ordered logit. To control for differences in the results due to the method we use, we ran a multilevel ordered logit as a robustness test. As we expected, we do not observe any substantial changes to our results (Appendix B, Table 5)

INDEPENDENT VARIABLE

The main independent variable in our model is the use of social media. Individuals are asked how often they get the news from social media such as Facebook and Twitter. The options are never (0), less than once a month (1), a few times a month (2), a few times a week (3), and every day (4).

However, if we take a look at the distribution over the 5 categories, we observe the following: 75.4% never obtain news through social media, 2.3% obtain news through social media less than once a month, 3.2% obtain news through social media a few times a month, 7% obtain news through social media a few times a week, and 12.1% obtain news through social media

every day. We argue that categories, to which only 2.3% and 3.2% of the sample size belongs, are too small to treat as a category on itself. Therefore, we create a dummy variable in which we make a distinction between individuals obtaining the news from social media “not more than a few times a month” (0,1,2) and individuals obtaining the news from social media “at least a few times a week” (3,4). Because the frequency of usage of the first group is so low, we place these individuals in the category of non-users. Obtaining the news at least a few times a week makes it plausible that trust levels are affected by social media. Therefore, individuals in the two highest categories are considered to be users of social media.

Yet, there is some arbitrariness to this categorisation. To control for the categorisation, we run robustness checks in which we change the distribution of the categories (Appendix B, Table 6). For example, in Model 9 we run the same regression again, but here we include individuals using social media at least a few times a month in the category indicating that this person is obtaining the news through social media. However, the results do not change substantially, indicating that our findings are robust against changes in the categorisation.

CONTROL VARIABLES

We include five categories of control variables. The first category is related to demographics. We control for the respondent’s age, whether this person is a male (1) or a female (0) and whether this person is living in a rural (0) or urban (1) area.

The second category of control variables is related to resources. The employment situation is described as whether someone has a paid job or not. We make a distinction between respondents that have no paid job (0), have a paid job in the public sector (1) or have a paid job in the private sector (2). Furthermore, we include the Gini coefficient to account for the inequality in a country. Instead of using the Gini coefficient at the country level, we generate the Gini coefficient for each region based on the IWI. We do this because the Gini at the regional level is a more powerful predictor variable than the Gini at the national level. Then we control for the respondent’s evaluation of the economy of the country, which is expected to influence the level of trust significantly (Ceron, 2015; Mishler & Rose, 2001). The respondents are asked to give their expectation on the economic conditions in the country in the next twelve months. The possible answers range between being much worse (1) to much better (5). Since income is often troublesome to measure in sub-Saharan Africa and could give a distorted

picture of the actual wealth situation, we include the IWI. The IWI is a comparable measurement tool based on the assets of a household. Using the IWI enables us to compare the economic situation of households (Smits & Steendijk, 2015). Households possessing all selected assets and having the highest quality of housing, obtain an IWI value of 100. Having none of the included assets from the IWI and living in the lowest quality of housing gives an IWI value of 0. We also create an average IWI value for each region in order to describe the economic situation of the region. With respect to education, Afrobarometer included ten different education levels in the questionnaire. These levels range from no formal schooling (0) to postgraduate (9). However, including categories for every single educational level reduces the power of our analysis (Pasta, 2009). By transforming the educational levels into years of education, we make the education variable continuous. For example, no formal schooling (0) is transformed into 0 years of education, finished primary education (3) becomes 6 years of education, and postgraduate (9) becomes 18 years of education. In order to test for a non-linear relationship between education and trust, we also run the regression with a quadratic term for education, but we do not observe a significant relationship.

The third category of control variables is related to corruption & crime. At the national level, we include two variables from the world governance indicators. The first indicator is Control of Corruption and reflects to what extent public power is used for private gain. The second indicator, Political Stability, is accounting for the stability of the government, politically motivated violence, and terrorism in the country. Both indicators are measured on a scale ranging from weak (-2.5) to strong (2.5) performance. As we mentioned earlier in this thesis, citizens in new democracies judge the political institutions not only on the absolute level of corruption but also on their efforts in fighting it (Mishler & Rose, 2001). Therefore we include a variable in which respondents are asked whether they believe corruption has increased, decreased or stayed the same in the past year. Answers range between increased a lot (1) and decreased a lot (5).

The fourth category is related to freedom. At the household level, we include a variable indicating to what extent the respondent feels free to say what he/she thinks, ranging between not free at all (1) and completely free (4). At the national level, we use the Press Freedom Index. Scores are ranging between 0 and 100. The higher the score on this scale, the lower the press freedom in the country.

Our last category of control variables indicates whether or not someone is obtaining the news from traditional media. We created a dummy variable for respondents obtaining the news from the radio, television, and the newspaper at least a few times a week (1) and respondents obtaining the news a few times a month or less through these channels (0).

MISSING DATA

To deal with missing data in the independent and control variables we considered the use of listwise deletion and the dummy variable adjustment procedure. The recommended method by Williams (2015) is listwise deletion as this method works in most cases as good or better than any other method that deals with missing data. Also Allison (2001) is critical towards the use of the dummy variable adjustment procedure for missing data since it might produce a biased estimation of the regression coefficients (except for non-existing data). However, by using listwise deletion we lose a large number of observations because some control variables contain a relative high percentage of missing cases. We decide to use listwise deletion for the missing data of the main independent variable (social media) because we want to avoid any bias in this coefficient. Furthermore, for control variables with a small number of missing data we consider listwise deletion the best method as well. However, we use the dummy variable adjustment procedure for the control variables with relatively high numbers of missing data. This is the case for the control variables: economic evaluation, experienced corruption and experienced freedom. The fact that this method allows us to work with a significantly larger dataset outweigh the negative effect of the possibly biased estimates of the coefficients for the three affected control variables. To make sure it does not affect our results substantially we run a regression in which we leave out these observations. This does not substantially change our results (Appendix B: Table 4). We keep 45.696 observations in our main model (Table 3), which is 93% of all observations.

INTERACTIONS

Regarding the interaction analyses, we include the centered versions of the variables. This means that the main effect can be interpreted as the average effect. Only the significant interaction terms are included in our model.

5. RESULTS

Before we proceed to the analyses, we discuss the descriptive statistics in order to get a better picture of how the dataset looks like. Then we discuss the bivariate analysis. In order to gain understanding of the underlying mechanisms in the model, we run a multivariate analysis. Furthermore, we discuss the significant interaction effects. The last part of this chapter contains a short discussion of the robustness tests we performed.

DESCRIPTIVE STATISTICS

In Table 1, we present the descriptive statistics of our data. By inspecting the statistics, we observe that average trust levels for the three different institutions are closely related. The level of trust in the electoral commission is slightly higher than trust in the parliament and local government, which is in line with the theory of Newton (2018), suggesting that the more neutral institutions generally receive higher levels of trust. The average level of political trust ranges between “Just a little” (1) and “Somewhat” (2).

Looking at the use of social media, we observe that around 19% of the individuals included in our dataset obtain news from social media. However, the percentage of individuals obtaining news from social media differs significantly across countries. For example, we observe that in South Africa, Namibia, and Cape Verde over 40% obtain news through social media, while this is less than 2.5 % in Niger and Burundi (Appendix C). Furthermore, we observe that only 11% of the rural citizens are using social media as a news source, while 33% of the urban citizens obtain news from social media.

Regarding the control variables at the individual level, we observe that almost 40% of the individuals are living in an urban area. Furthermore, 6% of the individuals have a paid job in the public sector and 31.4 % have a paid job in the private sector. This low number of employed citizens could be explained by the fact that many people in rural areas are self-employed and therefore do not receive a salary. The experienced level of corruption is close to 2 (increased somewhat). This score implies that a majority of the individuals believes that corruption is rather increasing than decreasing in their country. Regarding the experienced freedom, we observe an average score of 3.2, indicating that the average person believes that he/she is somewhat free to say what he/she thinks. This is remarkably high since only a handful of

countries in sub-Saharan Africa openly tolerate dissent (Mutsvairo, 2016). Taking a close look at the statistics of traditional media use, we observe that 73% of the population obtain news from the radio, 48% from the television, and 22% obtain the news through newspapers. This indicates that radio is the most widely used medium to obtain the news among citizens in sub-Saharan Africa.

When inspecting the district level variables, we observe an average score on the IWI of 47,6 which is below the IWI-50 poverty line. To illustrate, a score of 50 on the IWI closely relates to the Poverty Headcount Ratio of \$2.00 a day (PPP) (Smits & Steendijk, 2015). The average years of education is 7.3 which indicates that the average person in our data sample completed primary school (6 years) and followed 1.3 years of secondary education. Furthermore, we observe an average Gini coefficient at the regional level of 24.7. This coefficient might look very low, but one should realise that this is the Gini coefficient at the district level, measuring the inequality within a district and not inequality within a country.

With respect to the national level variables, we observe a negative number for political stability and control of corruption, indicating that the average score for sub-Saharan African countries is closer to weak performance than to strong performance. The average score on the Press Freedom Index is 52.5 (partly free). However, the differences between countries are relatively large. In Sudan, we observe a score of 86 meaning that there is little to no freedom of the press. On the contrary, we observe a score of 27 for South Africa, indicating that there is freedom of the press (Reporters Without Border, 2017).

Table 1 Descriptive statistics of the variables included the analyses

	%, Mean	Min	Max	SD
Dependent Variable				
Average Trust	1.53	0	3	0.93
Trust Parliament	1.53	0	3	1.09
Trust Electoral Commission	1.56	0	3	1.11
Trust Local Government	1.50	0	3	1.07
Independent Variable				
Social Media	19.1%	0	1	0.39
Demographics				
Age	37.1	18	105	14.52
Male	49.7%	0	1	0.50
Urban	39.6%	0	1	0.49
Recourses				
Job situation				
Public	6.0%	0	1	0.24
Private	31.4%	0	1	0.46
Economic Evaluation	3.30	1	5	1.25
IWI	47.59	0	100	26.63
IWI (District)	47.60	3.15	94.24	18.84
GINI (District)	24.67	0.04	65.9	0.10
Years of Education	7.33	0	18	4.94
Years of Education (District)	7.33	1.20	13.25	2.66
Corruption & Crime				
Experienced Corruption	2.19	1	5	1.28
Control of Corruption (National)	-0.55	-1.61	0.93	0.56
Political Stability (National)	-0.47	-2.38	1.09	.807
Freedom				
Experienced Freedom	3.18	1	4	.98
Freedom of Press (National)	52.48	27	86	15.15
Traditional Media				
Radio	72.8%	0	1	0.44
Television	47.9%	0	1	0.50
Newspaper	21.7%	0	1	0.41
<i>N</i>	49.137			

ANALYSES

BIVARIATE ANALYSIS

In Table 2, we provide the first model in which we present the outcomes of the bivariate analysis. We run separate regressions between the predictor variables and political trust. The beta coefficient shows the degree of change in political trust if the predictor variable changes with one unit.

We observe that individuals obtaining the news from social media show significantly lower levels of trust in the political institutions. This finding is in line with our first hypothesis in which we predicted individuals obtaining the news from social media to show lower levels of trust in political institutions. The relationship is both significant and relatively strong. Individuals living in an urban area show significantly lower levels of trust in their political institutions. Furthermore, older people tend to have more trust in the political institutions than young people do. Regarding the personal evaluations of individuals of the economy, the level of corruption and the amount of freedom, we observe the expected relationship. A more positive score on each of these three variables is related to a higher level of political trust and vice versa. To illustrate, individuals believing that the level of corruption has decreased a lot and stating that they feel completely free to say what they want, show very high levels of political trust. Surprisingly, obtaining the news from traditional media is related to lower trust levels. This finding is contradicting much of our theory in which we argued traditional media to be supportive of the status quo and therefore increases the level of trust among individuals. However, as we will see in the multivariate analysis, this unexpected relationship does not remain.

Regarding predictor variables at the district level, we observe that individuals living in districts with a higher score on the IWI and more years of education tend to be less trusting. However, the relationship between trust and the IWI is weak. Inequality within a district shows the opposite relationship with trust as we predicted. According to the bivariate analysis, individuals in more unequal districts show higher levels of trust in political institutions.

At the national level, we only observe a significant positive relationship between control of corruption and political trust. Individuals in countries dealing better with corruption tend to have higher levels of trust in the political institutions.

The bivariate analysis shows that there is variance between individuals, districts and countries. However, it has the disadvantage that it does not control for underlying mechanisms. Variables are expected to be related to each other. For example, we observe a strong negative relationship between obtaining news from television and political trust. However, in African countries higher educated people are more likely to have access to a television. Since this group is generally less trusting towards political institutions, we cannot say whether it is the news on television that leads to lower trust, or that people with lower levels of trust are just more likely to watch television. Therefore, we should include the predictor variables in the same model. We do this in the next section by running a multivariate analysis.

Table 2 Coefficients of the bivariate linear regression analysis with average level of political trust as dependent variable

	Model 1	
	B	SE
Political Trust		
Independent Variable		
Social Media	-0.2416***	(0.0116)
Demographics		
Age	0.0055***	(0.0003)
Male	-0.0158	(0.0091)
Urban	-0.3569***	(0.0092)
Recourses		
Job Situation		
“No paid Job” Ref.		
“Public Job”	-0.0981***	(0.001)
“Private Job”	-0.1661***	(0.0395)
Economic Evaluation		
“Much Worse”	-0.305***	(0.0173)
“Worse”	-0.1642***	(0.0162)
“Same” Ref.		
“Better”	0.1882***	(0.0133)
“Much Better”	0.3472***	(0.0162)
IWI	-0.0058***	(0.0002)
IWI (District)	-0.0098***	(0.0002)
GINI (District)	0.0003***	(0.0005)
Years of education	-0.0347***	(0.0009)
Years of education (District)	-0.0817***	(0.0017)

Table 2 Continued

	Model 1	
Corruption & Crime		
Experienced Corruption		
“Increased a lot”	-0.3592***	(0.0133)
“Increased somewhat”	-0.02	(0.0152)
“Stayed the same” Ref.		
“Decreased somewhat”	0.2659***	(0.0161)
“Decreased a lot”	0.6160***	(0.0228)
Control of Corruption (Country)	0.0524***	(0.0082)
Political Stability (Country)	0.0016	(0.0056)
Freedom		
Experienced Freedom		
“Not at all free” Ref.		
“Not very free”	0.2019***	(0.0193)
“Somewhat free”	0.4127***	(0.0178)
“Completely free	0.5639***	(0.0167)
Press Freedom Index (Country)	0.0009	(0.0003)
Traditional Media		
Radio	-0.0261*	(0.0103)
Television	-0.2792***	(0.0091)
Newspaper	-0.1312***	(0.0110)
Observations	45696	

***p < 0.001

**p < 0.01

*p < 0.05

MULTIVARIATE ANALYSIS

In order to deal with the underlying mechanisms that determine the level of political trust, we run a multivariate analysis. In Table 3, we provide our second model in which we present the results of the multivariate multilevel analysis. We include random intercepts at the regional and national level. The variances at both the national level and district level are significant, indicating that the effect of social media differs across districts and countries. This supports our decision to include random intercepts for these levels. In Model 3, we present the results of the multivariate multilevel analysis including the significant interaction effects.

Table 3 Multilevel linear regression of the effect of obtaining the news through social media on political trust in sub-Saharan African countries. In Model 3, the significant interaction effects are included in the model.

	Model 2		Model 3	
	β	SE	β	SE
Average Trust				
Independent Variable				
Social Media	-0.0104	(0.013)	-0.0656***	(0.016)
Demographics				
Age	0.00293***	(0.000)	0.00295***	(0.000)
Male	-0.0134	(0.008)	-0.0120	(0.008)
Urban	-0.0958***	(0.011)	-0.0930***	(0.011)
Recourses				
Job Situation				
“No paid Job” Ref.				
“Public Job”	0.0966***	(0.018)	0.0938***	(0.018)
“Private Job”	0.00660	(0.010)	0.00521	(0.010)
Economic Evaluation				
“Much Worse”	-0.210***	(0.016)	-0.209***	(0.016)
“Worse”	-0.0974***	(0.015)	-0.0978***	(0.015)
“Same” Ref.				
“Better”	0.157***	(0.013)	0.158***	(0.013)
“Much Better”	0.229***	(0.016)	0.230***	(0.016)
IWI	-0.000565*	(0.000)	-0.000554*	(0.000)
District IWI	-0.00387	(0.002)	-0.00392	(0.002)
District GINI	-0.364	(0.284)	-0.377	(0.283)
Education in Years	-0.0104***	(0.001)	-0.0101***	(0.001)
Education in Years (District)	-0.0235*	(0.012)	-0.0227	(0.012)

Table 3 Continued

	Model 2		Model 3	
Corruption & Crime				
Experienced Corruption				
“Increased a lot”	-0.308***	(0.013)	-0.308***	(0.013)
“Increased somewhat”	-0.0522***	(0.014)	-0.0521***	(0.014)
“Stayed the same” Ref.				
“Decreased somewhat”	0.171***	(0.015)	0.172***	(0.015)
“Decreased a lot”	0.424***	(0.022)	0.424***	(0.022)
Control of Corruption	0.269*	(0.132)	0.269*	(0.131)
Political Stability	-0.0631	(0.076)	-0.0629	(0.075)
Freedom				
Experienced Freedom				
“Not at all free” Ref.				
“Not very free”	0.148***	(0.018)	0.146***	(0.018)
“Somewhat free”	0.269***	(0.017)	0.267***	(0.017)
“Completely free	0.367***	(0.016)	0.364***	(0.016)
Press Freedom Index	0.00689	(0.004)	0.00698	(0.004)
Traditional Media				
Radio	0.0150	(0.010)	0.0196	(0.010)
Television	0.000749	(0.012)	0.00732	(0.012)
Newspaper	0.0216	(0.012)	0.0203	(0.012)
Interactions				
Social Media x Urban			0.0879***	(0.023)
Social Media x Education			0.0129*	(0.005)
in Years (District)				
Social Media x Control			0.0511**	(0.018)
of Corruption (National)				
Social Media x Radio			0.0719**	(0.027)
Constant	-0.277***	(0.047)	-0.286***	(0.047)
Random-effect parameters				
<i>Country</i>				
Variance Intercept Trust	0.0496***	(0.1405)	0.0486***	(0.0138)
<i>District</i>				
Variance Intercept Trust	0.0543***	(0.005)	0.05423***	(0.005)
Variance Residual	0.7311***	(0.0048)	0.7305***	(0.0049)
Observations	45696		45696	

***p < 0.001

**p < 0.01

*p < 0.05

MAIN EFFECT

We start by interpreting the effect of social media on the average level of political trust. Whereas in the bivariate model (Model 1) social media users show significantly lower levels of trust, we observe that in Model 2 this significant relationship does not hold. After including the significant interaction terms in Model 3, we obtain a significant negative effect of social media on political trust, supporting our main hypothesis. However, the fact that the relationship only becomes significant after adding the interaction variables in the model suggests that the effect of social media on political trust depends on the context in which individuals live. Before discussing these interaction variables, we first discuss the findings of our control variables.

CONTROL VARIABLES

In order to interpret the direct effects of social media on political trust, we control for variables that are expected to affect the level of political trust. The relationship between the control variables and political trust either confirms our predictions or do not show a significant relationship. We observe that a higher age and working in the public sector have positive effects on political trust. Also obtaining the news from the radio contributes to more trust, but the effect is just not significant at a 95 percent confidence interval. At the national level, we observe that countries with higher scores on the WGI Control of Corruption, receive higher levels of trust. Furthermore, living in an urban area, being higher educated, and living in an area with a higher average level of education contribute to significant lower trust levels.

Regarding personal evaluations, we also observe the expected relationships. The better someone's evaluation of the country's economy, the lower the experienced corruption, and the more positive the perception of freedom, the more likely it is that this person shows a higher level of political trust. Furthermore, we see that the personal evaluations are showing the strongest relationship with political trust, which is in line with findings of Ceron (2015) and Mishler & Rose (2001). They observe the same strong relationship between personal evaluations and political trust. However, one concern about these strong relationships is the fact that personal evaluations might be formed simultaneously with trust. In other words, someone evaluating his/her situation very poorly is likely to reflect this negative feeling into political trust as well. Instead of one variable affecting the other, these variables are formed at the same time based on a general feeling of negativity (or the other way around). We run a

robustness test in which we omit these variables from the model (Appendix B: Table 7), but we do not observe any substantial changes to the results.

The other control variables included in our analysis do not show a significant relationship with political trust. In the next section, we present the interaction variables and discuss in which context social media affects political trust.

THE ROLE OF CONTEXT

In Model 3, we include the significant interactions with social media. At the household level, we observe that urbanization and whether someone obtains the news through the radio provide a significant interaction effect with social media. Additionally, at the district level, we observe that average years of education in the district also moderates the relationship between social media and political trust. Finally, we observe that at the national level, the WGI Control of Corruption moderates the relationship between social media and political trust. Once we omit the interaction of social media with Control of Corruption from the model, we obtain a significant interaction between social media and the Press Freedom Index. However, this effect is weaker than the interaction with Control of Corruption. Therefore, we include Control of Corruption as a moderator in the model and leave the interaction between social media and the Press Freedom Index out of the model. Because interaction effects could be confusing to interpret, we include figures in which the interaction effects are visualised.

DEMOGRAPHICS

We start by discussing our second hypothesis in which we expected demographic characteristics to moderate the effect of social media on political trust. We expected a) the relationship between social media and political trust to be stronger for younger people and b) the relationship between social media and political trust to be stronger for people living in an urban area. With respect to Hypothesis 2a, we do not find a significant interaction effect, meaning that we do not find evidence that age moderates the effect of social media on political trust. Regarding Hypothesis 2b, we find the opposite relationship as we expected. As we can see in Figure 2, the negative relationship between social media and political trust is stronger for people living in rural areas. Although the relationship between social media on political trust is still negative in urban regions, the effect of social media becomes weaker. This is an

interesting finding since we predicted the existing barriers to an optimal use of social media to weaken the negative effect of social media on political trust in rural areas.

However, reconsidering the interaction between urbanization and social media, we believe that one crucial aspect may have been overlooked. The mirror-holding effect of social media might play a more important role in rural areas than in urban places. The dynamics of urban life allow individuals to have a complete picture on what is actually going on in the country. Urban citizens have access to a wider range of (digital) television and radio channels, making them more likely to obtain diverse information. Rural citizens live a more isolated life and might have less knowledge on how their national institutions are performing. No electricity (and resources) prevents most rural citizens from using television, and newspapers often arrive late or not at all (Balancingact, 2014). This makes the radio the most important source of information. Thereby, low literacy rates contribute to the importance of the radio, since many rural citizens only obtain news through spoken word (Yordy, 2008). We observe that almost 80% of the rural citizens who are not using social media, obtain the news at least a few times a week from the radio. It is likely that the “fairy tales” spread on (the few) radio channels available in rural areas, lead to relatively high trust levels among rural citizens (Bailard, 2012). Once rural individuals get access to diverse and critical information on the performance of their leaders by means of social media, they are likely to alter their evaluation of the institutions. This could lead to significantly lower trust levels among users of social media in rural areas.

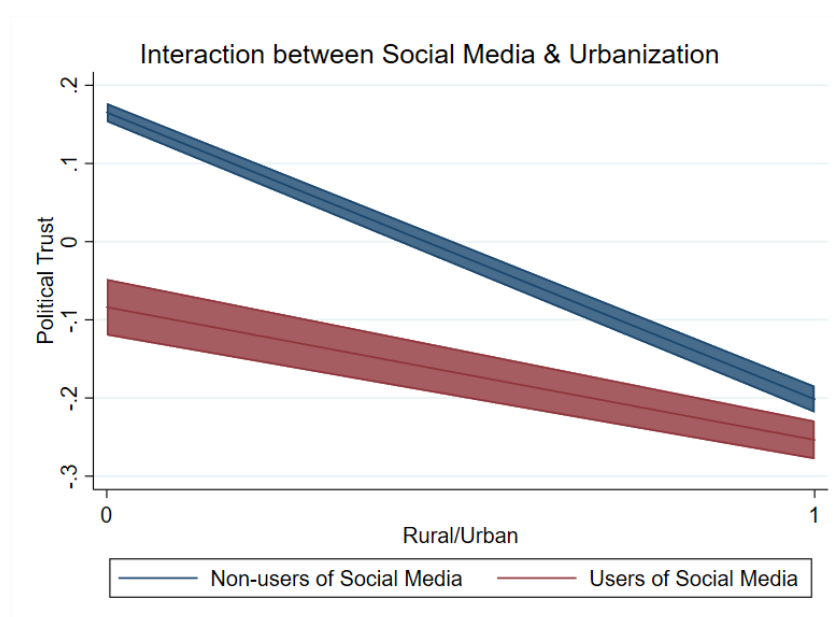


Figure 2 Interaction between social media and urbanization. The x axis indicates whether the relation is based on a rural (0) area or on an urban area (1). The standardised version of political trust is used. Results are based on a 95% confidence level.

EDUCATION

Regarding the role of resources, we hypothesised that lower educational levels at a) the individual level and b) the district level contribute to a stronger negative relationship between social media and political trust. Only education at the district level shows a significant positive interaction with social media. This finding supports Hypothesis 3b in which we expect social media users in regions with lower levels of education to be stronger affected by the news on social media. Information individuals obtain is often cross-checked or discussed with people living around them (Balancingact, 2014). However, when no one around can tell you whether information is reliable or not, it becomes difficult to evaluate this news correctly. Therefore, citizens in lower educated regions might be more sensitive to the news they receive, either positively or negatively.

We also observe a turning point, in regions in which the average education level is 11 years or higher, we see a positive effect of social media on political trust. This turning point suggests that once the average education level in a region reaches a certain level, individuals seem to be positively affected by the news on social media. However, this is only the case in a small percentage of the districts.

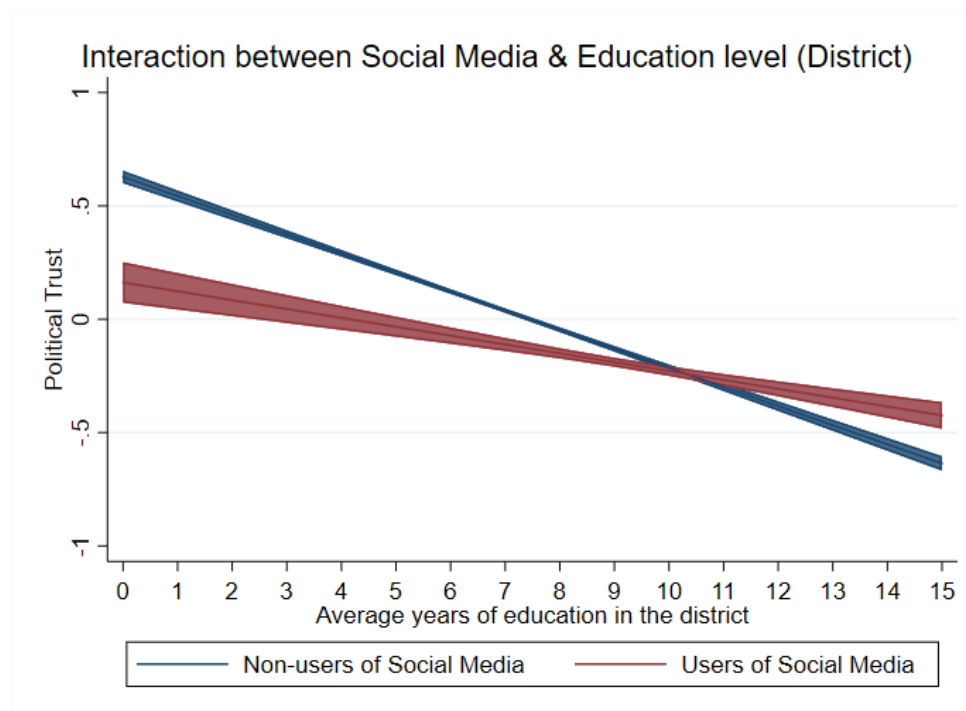


Figure 3 Interaction between social media and average years of education in the district. The standardised version of political trust is used. Results are based on a 95% confidence level.

CORRUPTION

In our fourth hypothesis, we expected that higher levels of corruption contribute to a stronger negative effect of social media on political trust. We find a significant positive interaction effect between social media and control of corruption at the national level, supporting our hypothesis.

When we inspect Figure 4, we observe that for non-users of social media the political trust levels are hardly affected by the national score of the WGI Control of Corruption. This may be explained by the fact that citizens in highly corrupt countries are unable to make accurate evaluations on the quality of political institutions due to the one-sided information they obtain from traditional media (Coffeé, 2016). However, looking at the trust levels of social media users we observe a big difference between countries with low and high scores on the WGI Control of Corruption. The negative relationship between social media and political trust is very strong in countries in which the government scores poorly on this indicator, while the effect of social media on political trust tends to disappear in countries that score high on this indicator. This supports our earlier argument, that social media will host critical and alternative information on the quality of political institutions, leading to a decrease in political trust. This gives evidence for the existence of the mirror-holding effect, in which citizens obtain diverse information that is needed to form quality judgements on the performance of institutions.

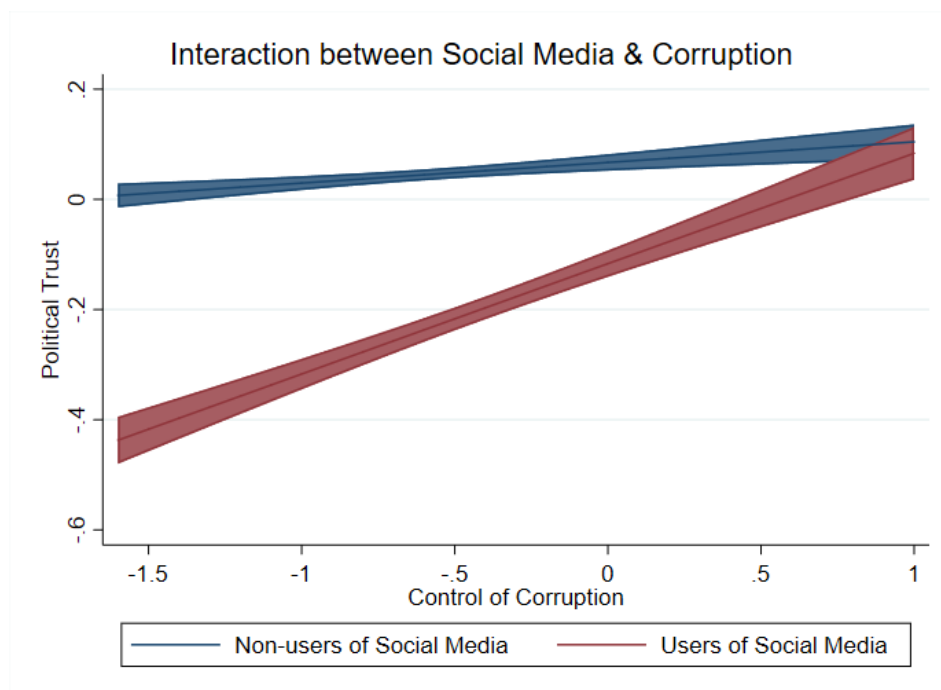


Figure 4 Interaction between social media and corruption. The x axis indicates the score on the World Governance Indicator “Control of Corruption”. The standardised version of political trust is used. Results are based on a 95% confidence level.

MEDIA FREEDOM

In our main model (model 3) we do not observe an interaction effect between social media and the Press Freedom Index. However, once we omit the interaction between social media and Control of Corruption we obtain a significant interaction effect. This suggests that we deal with a correlation between media freedom and corruption. Analyzing the correlation between the Press Freedom Index and the WGI Control of Corruption, we indeed observe a high correlation. Heavily corrupt countries are likely to have higher restrictions on the media. Since the interaction related to corruption turned out to be stronger, we decided to leave the interaction between social media and press freedom out of the main model. We do not observe substantial changes to the model in which the interaction between the Press Freedom Index and social media replaces the interaction between Control of Corruption and social media.

Looking at the interaction effect in Figure 5, we observe that countries with low levels of media freedom show a stronger negative relationship between social media and political trust. This supports our prediction for selection bias. Getting access to social media in countries with limited media freedom is likely to be more costly (GSMA, 2017) and risky (Mutsvairo, 2016). At the same time, more knowledge is needed to bypass the internet censorship (Freedomhouse, 2017). These three elements might lead to selection bias in which distrustful citizens are most likely to use social media.

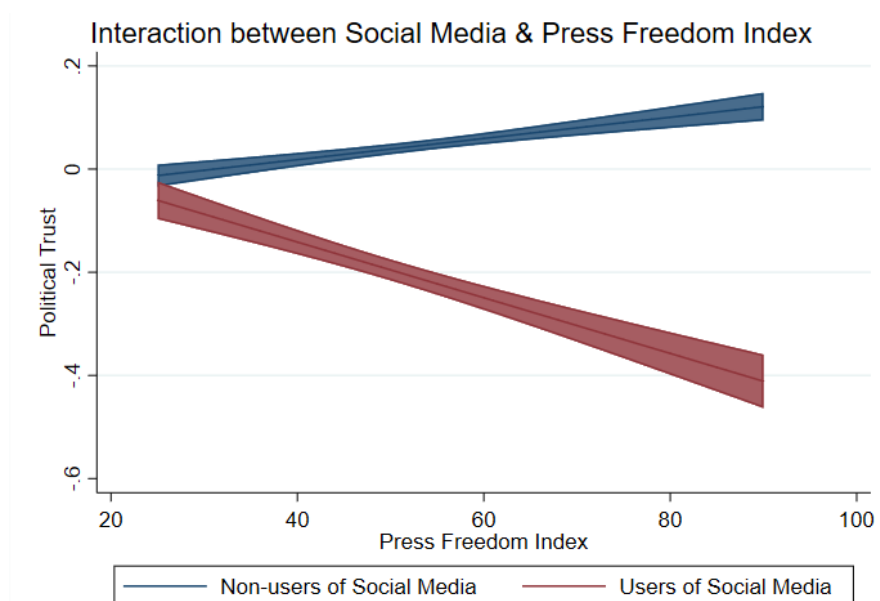


Figure 5 Interaction between social media and the Press Freedom Index. The x axis indicates the score on this index in which 0 indicates that the press is completely free and a score of 100 indicates that there is no press freedom at all. The standardised version of political trust is used. Results are based on a 95% confidence level.

TRADITIONAL MEDIA

Our last significant interaction effect is related to the use of the radio. Obtaining news through television and newspapers do not show significant interaction effects. However, getting news from the radio weakens the negative relationship between social media and political trust, supporting our last hypothesis. Looking at Figure 6, we observe that social media users who are not using the radio have the lowest trust in political institutions. However, political trust increases when individuals use both social media and the radio, suggesting that news received from the radio is positive towards political institutions and therefore weakens the negative effect of social media on political trust.

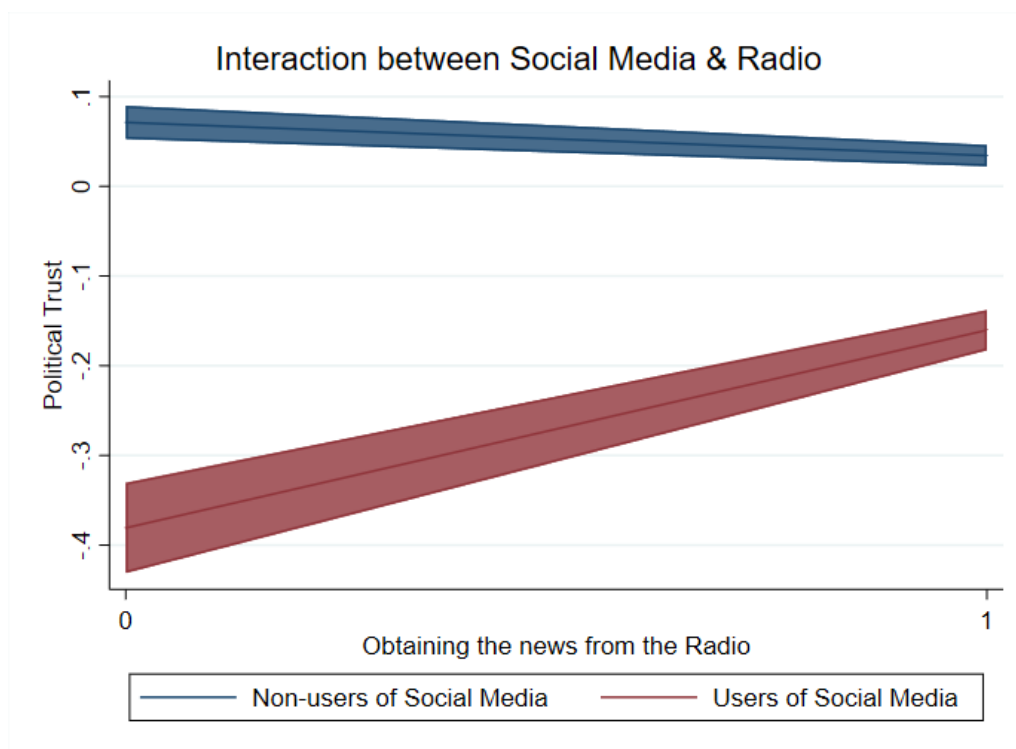


Figure 6 Interaction between social media and obtaining the news from the radio. The x axis indicates whether the relation is based on individuals not obtaining the news through the radio (0) or individuals who do obtain the news through the radio (1). The standardised version of political trust is used. Results are based on a 95% confidence level.

ROBUSTNESS TESTS

In this research, we did several robustness tests. We first tested whether our results change once we remove all observations that miss one or two of the components of the dependent variable, average political trust (Table 4). In our second robustness test, we tested whether we correctly treated our dependent variable as a continuous variable by comparing our multilevel linear regression to a multilevel ordered logit (Table 5). Then we changed the categorisation of whom we consider as a user of social media, to see whether this affects the outcome of our analysis (Table 6). As a fourth robustness test, we checked whether the personal evaluations of the economy, level of corruption, and experienced freedom, might have been formed simultaneously with our dependent variable, average political trust (Table 7). However, none of the robustness tests substantially changes the results of our model.

However, there is one robustness test we would like to discuss in more detail. This is the model in which we tested for different effects of social media on each of the three chosen political institutions. By running a model for each institution independently, we tested whether social media has different effects on trust. We find evidence that social media does not have the same relationship with each of the three political institutions.

The results in Table 8 show that the relationship between social media and trust in the electoral commission and local government remain significant negative. However, we observe an insignificant and weaker effect of social media on trust in the parliament. This suggests that political institutions are differently affected by news on social media. Since social media is an important platform for interaction and discussion in the wake of elections, it might explain why this institution is strongly affected by social media. News circulating on social media, in which the independence of the electoral commission is questioned, is likely to reduce trust levels in this institution. Regarding the local government, it seems plausible that citizens feel most affected by the policy executed by the local representatives and express their opinion about it by means of social media. Therefore, the circulation of critical news on the performance of local institutions might lead to a decrease in trust. The reason why the parliament provides no significant effect might be explained by the fact that the role of the parliament is somewhat invisible for citizens in African countries. African politics is often characterized by “politics of the big man” (Azevedo-Harman, 2011).

6. DISCUSSION & CONCLUSION

This thesis aims to shed more light on the relationship between obtaining the news from social media and political trust in sub-Saharan Africa. Most research so far on this topic has been focused on developed countries. However, the most recent continent-wide survey of Afrobarometer (2016) includes a specific question about the usage of social media among individuals. This allows us to analyze, for the first time, the relationship between social media and political trust for a large number of African countries. Based on data of almost 50.000 individuals, spread over 384 regions, in 32 countries, we find evidence for a negative relationship between obtaining news from social media and political trust. However, the relationship depends on the context in which individuals live.

We observe that the negative relationship between social media and political trust is stronger for rural citizens. The mirror-holding effect of social media is expected to play a major role in this relationship (Bailard, 2012). Instead of one-sided information, mainly obtained through the radio, rural citizens have now access to a diverse and more critical source of information on the performance of institutions. This might explain why the negative relationship between social media and political trust is stronger for rural citizens.

Furthermore, we find support for a stronger relationship between social media and political trust in lower educated regions. Since low educated citizens lack the critical skills to evaluate on the objectivity and validity of the information obtained (Kohut et al. 2007), they are likely to be stronger affected by the critical content spread on social media. Living in a higher educated region makes it more likely that citizens are aware of the fact that news on social media is often subjective and false.

Additionally, we find evidence that the relationship between using social media and political trust depends on the actual level of corruption in the country. The negative relationship between social media and political trust is significantly stronger in countries with high levels of corruption. This suggests that heavily corrupt countries have most to fear for widespread use of social media. Therefore, a strong correlation between media restrictions and the level of corruption does not come as a surprise. Only if we omit the interaction between social media and control of corruption from the model, we obtain a significant interaction effect between social media and the Press Freedom Index. Countries with lower levels of media freedom show a stronger negative relationship between social media and political trust. We expect this to be

caused by a selection bias in which distrustful citizens are more likely to switch to alternative news sources outside the traditional media.

Furthermore, we observe that citizens who obtain the news by means of social media but not through the radio show lower levels of political trust than those who obtain the news from both news sources. This suggests that the negative relationship between social media and political trust becomes weaker once an individual also obtains news through the radio.

However, some caution is needed when interpreting the results. Firstly, the concern of causality. In this thesis, we tested for the effect of obtaining the news from social media on political trust. However, it is possible that we deal with a reverse relationship, in which distrustful citizens are more likely to start with or switch to social media. Research exploring the relationship between social media and political trust in other parts of the world provides evidence for a similar negative relationship between social media and political trust as we find, but none of them provides strict causal evidence (Ceron, 2015; Mutsvairo, 2016; Wolfsfeld et al. 2013). Because we use cross-sectional data, we are unable to shed more light on this issue. However, based on the literature review and our empirical results, it seems plausible that news on social media contains different information than news spread by traditional media and therefore has a negative effect on political trust. Controlled field experiments that study the effect of social media on political trust could be a valuable addition to this research, and perhaps find evidence for a causal relationship.

Another point that deserves attention is the different effect of social media on each of the political institutions. On the one hand it is a limitation because analysing only one institution, for example the electoral commission, could have given more specific results. On the other hand it is a strength as it shows that there is a different relationship between social media and each of the political institutions. This has been neglected in previous work.

Then it is important to realise that not everyone having access to social media in sub-Saharan Africa is using it for activist purposes (Mutsvairo, 2016). The fact that 9% of the content on Twitter is related to politics indicates that social media is an important platform for political discussion, but also that 91% of the content is not related to politics. Most people are using social media platforms for work, life and entertainment (Mabweazara, 2015).

Furthermore, I want to mention that this thesis has been written partly from a Western perspective. African authors have warned for the different environment in which social media

is used in sub-Saharan Africa (Mutsvairo, 2016). However, due to limited scientific research on the relationship between social media and political trust in sub-Saharan Africa, I partially depended on research based on developed countries. Therefore, we might have included some Western narratives in this thesis.

One of these Western narratives is (purposefully) included in the title to illustrate the potential limitations of applying Western findings in an African context. In the title, I asked the question whether the increasing use of social media could contribute to an African Spring. Firstly, by generalising Africa as a whole, we completely ignore the historical differences between African countries and recent political developments (Keita, 2014; Mutsvairo, 2016). Secondly, the term Spring is a popular metaphor in Western countries when referring to political change, but this is not the description that African scholars would give to political renewal on the continent, they even reject the use of it as spring is not a season in sub-Saharan Africa (Keita, 2014). Using this term shows a lack of cultural knowledge, while this is vital for studying the impact of social media in sub-Saharan Africa.

Looking ahead, we might expect more friction between citizens and political institutions in sub-Saharan Africa as a consequence of social media. An increasing number of social media users, globalisation, high levels of corruption, and new ways to bypass censorship might contribute to more activism in sub-Saharan Africa, in both the online and offline sphere. On the other hand, increasing efforts are made around the world by governments to manipulate citizens through social media, and African countries are not an exception in this (Freedomhouse, 2017). Thereby, new technologies might help governments to achieve more control over social media.

Researchers should closely follow new developments regarding social media in sub-Saharan Africa. Thereby not overlooking the context-specific factors in African countries. Also zooming in on one aspect of the impact of social media could be useful. This thesis contributes to the existing literature by providing evidence for a negative relationship between obtaining news from social media and political trust in sub-Saharan African countries. Because the relationship depends on contextual factors, researchers should always include the context in which social media is used.

APPENDIX A: VARIABLES

Variable name	Variable description
Dependent	
Political Trust	<p>How much do you trust each of the following institutions?</p> <ul style="list-style-type: none"> - Parliament - National electoral commission - Metropolitan, Municipal, District Assembly <p>Values: 0-3</p> <p>Value labels 0=Not at all, 1=Just a little, 2=Somewhat, 3=A lot,</p>
Independent	
Social Media	<p>How often do you get news from social media such as Facebook or Twitter?</p> <p>Values: 0-4</p> <p>Value Labels: 0=Never, 1=Less than once a month, 2=A few times a month, 3=A few times a week, 4=Every day</p>
Control	
Demographics	
Age	<p>How old are you?</p> <p>Values: 18-105</p>
Gender	<p>Respondents gender</p> <p>Values: 0, 1</p> <p>Value Labels: 0=Female, 1=Male</p>
Urban/Rural	<p>Urban or Rural Primary Sampling Unit</p> <p>Values: 0, 1</p>

	Value Labels: 0=rural, 1=urban
Resources	
Job situation	<p>Do you have a job that pays a cash income? In which sector?</p> <p>Values: 0-2</p> <p>Value Labels: 0=No, 1=Yes, public sector 2=Yes, private sector</p>
Economic evaluation	<p>Looking ahead, do you expect economic conditions in this country to be better or worse in twelve months time?</p> <p>Values: 1-5</p> <p>Value Labels: 1=Much worse, 2=Worse, 3=Same, 4=Better, 5=Much better</p>
Wealth (Distribution)	<p>Gini based on the International Wealth Index for each district</p> <p>Values: 0-100</p> <p>Value Labels: 0 = none of the items and lowest quality housing</p> <p>100 = household has all items and highest quality housing</p>
Education	<p>What is your highest level of education? *Levels are computed into years of education</p> <p>Values: 0, 3, 6, 9, 12, 14, 16, 18</p> <p>Value Labels: 0=No formal schooling, 3=Informal schooling only (including Koranic schooling), 6=Primary school completed, 9=Intermediate school or Some secondary school / high school, 12=Secondary school / high school completed, 14=Post-secondary qualifications, other than university e.g. a diploma or degree from a polytechnic or college, 16=University completed, 18=Post-graduate</p>
Corruption & Crime	
Experienced corruption	<p>In your opinion, over the past year, has the level of corruption in this country increased, decreased, or stayed the same?</p> <p>Values: 1-5</p> <p>Value Labels: 1=Increased a lot, 2=Increased somewhat, 3=Stayed the same, 4=Decreased somewhat, 5=Decreased a lot</p>
Control of corruption	World Governance Indicator: Control of Corruption

	<p>Values: -2.5 to 2.5</p> <p>Value label: -2.5= very weak, 2.5=very strong</p>
Political stability indicator	<p>World Bank: Political Stability</p> <p>Values: -2.5 to 2.5</p> <p>Value label: -2.5=very weak, 2.5=very strong</p>
Freedom	
Experienced freedom of speech	<p>In this country, how free are you: To say what you think?</p> <p>Values: 1-4</p> <p>Value Labels: 1=Not at all free, 2=Not very free, 3=Somewhat free, 4=Completely free</p>
Press Freedom index	<p>Reporters Without Borders: Press Freedom index</p> <p>Values: 0-100</p> <p>Value labels: 0=Not free at all, 100=Completely free</p>
Traditional Media	
Traditional Media	<p>How often do you get news from the following sources:</p> <ul style="list-style-type: none"> - Radio - Television - Newspaper <p>Values: 0-4</p> <p>Value Labels: 0=Never, 1=Less than once a month, 2=A few times a month, 3=A few times a week, 4=Every day</p>

APPENDIX B: OUTPUT ROBUSTNESS TESTS

Table 4 Multilevel linear regression of the effect of obtaining the news through social media on political trust in sub-Saharan African countries. In Model 5 the significant interaction effects are included in the model. All observations missing one of the components of average trust are excluded in this model.

	Model 4		Model 5	
	β	SE	β	SE
Average Trust				
Independent Variable				
Social Media	-0.0164	(0.013)	-0.0722***	(0.017)
Demographics				
Age	0.00276***	(0.000)	0.00279***	(0.000)
Male	-0.0118	(0.009)	-0.0104	(0.009)
Urban	-0.0901***	(0.012)	-0.0876***	(0.012)
Recourses				
Job Situation				
“No paid Job” Ref.				
“Public Job”	0.102***	(0.019)	0.0991***	(0.019)
“Private Job”	0.0108	(0.010)	0.00941	(0.010)
Economic Evaluation				
“Much Worse”	-0.211***	(0.017)	-0.211***	(0.017)
“Worse”	-0.0991***	(0.015)	-0.0994***	(0.015)
“Same” Ref.				
“Better”	0.159***	(0.013)	0.159***	(0.013)
“Much Better”	0.238***	(0.016)	0.239***	(0.016)
IWI	-0.000440	(0.000)	-0.000431	(0.000)
District IWI	-0.00458*	(0.002)	-0.00465*	(0.002)
District GINI	-0.474	(0.290)	-0.487	(0.290)
Education in Years	-0.0107***	(0.001)	-0.0104***	(0.001)
Education in Years (District)	-0.0222	(0.012)	-0.0214	(0.012)
Corruption & Crime				
Experienced Corruption				
“Increased a lot”	-0.308***	(0.013)	-0.308***	(0.013)
“Increased somewhat”	-0.0441**	(0.015)	-0.0442**	(0.015)
“Stayed the same” Ref.				
“Decreased somewhat”	0.175***	(0.015)	0.175***	(0.015)
“Decreased a lot”	0.424***	(0.022)	0.424***	(0.022)
Control of Corruption	0.279*	(0.130)	0.278*	(0.129)
Political Stability	-0.0629	(0.075)	-0.0624	(0.074)

Table 4 Continued

Table 4 Continued

	Model 4		Model 5	
Freedom				
Experienced Freedom				
“Not at all free” Ref.				
“Not very free”	0.150***	(0.018)	0.149***	(0.018)
“Somewhat free”	0.275***	(0.017)	0.273***	(0.017)
“Completely free	0.371***	(0.017)	0.369***	(0.017)
Press Freedom Index	0.00685	(0.004)	0.00693	(0.004)
Traditional Media				
Radio	0.0225*	(0.010)	0.0264*	(0.010)
Television	-0.00330	(0.012)	0.00340	(0.012)
Newspaper	0.0254*	(0.013)	0.0244	(0.013)
Interactions				
Social Media x Urban			0.0890***	(0.023)
Social Media x Education			0.0137**	(0.005)
in Years (District)				
Social Media x Control			0.0489**	(0.019)
of Corruption (National)				
Social Media x Radio			0.0657*	(0.028)
Constant	-0.277***	(0.047)	-0.287***	(0.047)
Random-effect parameters				
<i>Country</i>				
Variance Intercept Trust	0.0479***	(0.1369)	0.0470***	(0.0135)
<i>District</i>				
Variance Intercept Trust	0.057***	(0.005)	0.0569***	(0.005)
Variance Residual	0.7242***	(0.005)	0.7236***	(0.005)
Observations	42804		42804	

***p < 0.001

**p < 0.01

*p < 0.05

Table 5 Multilevel logistic regression of the effect of obtaining the news through social media on political trust in sub-Saharan African countries. Model 7 includes the significant interaction effects. Average Trust is not standardised in these models because we want to keep the categories.

	Model 6		Model 7	
	β	SE	β	SE
Average Trust				
Independent Variable				
Social Media	-0.00421	(0.026)	-0.120***	(0.034)
Demographics				
Age	0.00610***	(0.001)	0.00617***	(0.001)
Male	-0.0313	(0.017)	-0.0286	(0.017)
Urban	-0.193***	(0.023)	-0.188***	(0.023)
Recourses				
Job Situation				
“No paid Job” Ref.				
“Public Job”	0.193***	(0.037)	0.187***	(0.037)
“Private Job”	0.0267	(0.020)	0.0239	(0.020)
Economic Evaluation				
“Much Worse”	-0.447***	(0.034)	-0.447***	(0.034)
“Worse”	-0.191***	(0.030)	-0.192***	(0.030)
“Same” Ref.				
“Better”	0.305***	(0.026)	0.306***	(0.026)
“Much Better”	0.481***	(0.033)	0.483***	(0.033)
IWI	-0.000983	(0.001)	-0.000972	(0.001)
District IWI	-0.00792	(0.005)	-0.00804	(0.005)
District GINI	-0.717	(0.602)	-0.744	(0.601)
Education in Years	-0.0211***	(0.002)	-0.0205***	(0.002)
Education in Years (District)	-0.0519*	(0.025)	-0.0502*	(0.025)
Corruption & Crime				
Experienced Corruption				
“Increased a lot”	-0.636***	(0.026)	-0.636***	(0.026)
“Increased somewhat”	-0.119***	(0.028)	-0.120***	(0.029)
“Stayed the same” Ref.				
“Decreased somewhat”	0.346***	(0.031)	0.347***	(0.031)
“Decreased a lot”	0.983***	(0.047)	0.981***	(0.047)
Control of Corruption	0.337***	(0.273)	0.596*	(0.271)
Political Stability	-0.157	(0.156)	-0.157	(0.155)
Freedom				
Experienced Freedom				
“Not at all free” Ref.				
“Not very free”	0.333***	(0.037)	0.329***	(0.037)
	0.574***	(0.035)	0.569***	(0.035)

Table 5 Continued

	Model 6		Model 7	
“Somewhat free”	0.781***	(0.035)	0.775***	(0.035)
“Completely free	0.537***	(0.089)	0.527***	(0.089)
Press Freedom Index	0.0148	(0.008)	0.0150	(0.008)
Traditional Media				
Radio	0.0276	(0.021)	0.0360	(0.021)
Television	0.00746	(0.025)	0.0220	(0.025)
Newspaper	0.0377	(0.025)	0.0352	(0.025)
Interactions				
Social Media x Urban			0.199***	(0.047)
Social Media x Education			0.0252*	(0.011)
in Years (District)				
Social Media x Control			0.101**	(0.037)
of Corruption (National)				
Social Media x Radio			0.146**	(0.056)
Cuts				
cut1	-1.842***	(0.098)	-1.825***	(0.098)
cut2	-1.392***	(0.098)	-1.374***	(0.098)
cut3	-1.358***	(0.098)	-1.340***	(0.097)
cut4	-0.869***	(0.098)	-0.851***	(0.097)
cut5	0.0157	(0.098)	0.0343	(0.097)
cut6	0.494***	(0.098)	0.513***	(0.097)
cut7	0.534***	(0.098)	0.553***	(0.097)
cut8	1.029***	(0.098)	1.048***	(0.097)
cut9	1.923***	(0.098)	1.943***	(0.098)
cut10	2.426***	(0.098)	2.446***	(0.098)
cut11	2.470***	(0.098)	2.490***	(0.098)
cut12	2.901***	(0.099)	2.921***	(0.098)
<i>Country</i>				
Variance Country	0.210***	(0.060)	0.207***	(0.059)
<i>District</i>				
Variance District	0.248***	(0.023)	0.248***	(0.023)
Observations	45696		45696	

***p < 0.001

**p < 0.01

*p < 0.05

Table 6 Multilevel linear regression of the effect of obtaining news through social media on political trust in sub-Saharan African countries. Each model specifies the group that is considered to be “user” of social media.

	Model 8		Model 9		Model 10		Model 11	
	“All users”		“Monthly users”		“Weekly users”		“Daily users”	
	β	SE	β	SE	β	SE	β	SE
Average Trust								
Independent Variable								
Social Media	-0.0452**	(0.014)	-0.0555***	(0.015)	-0.0656***	(0.016)	-0.0722***	(0.020)
Demographics								
Age	0.00299***	(0.000)	0.00297***	(0.000)	0.00295***	(0.000)	0.00294***	(0.000)
Male	-0.0123	(0.008)	-0.0119	(0.008)	-0.0120	(0.008)	-0.0124	(0.008)
Urban	-0.0938***	(0.011)	-0.0930***	(0.011)	-0.0930***	(0.011)	-0.0937***	(0.011)
Recourses								
Job Situation								
“No paid Job” Ref.								
“Public Job”	0.0934***	(0.018)	0.0938***	(0.018)	0.0938***	(0.018)	0.0956***	(0.018)
“Private Job”	0.00576	(0.010)	0.00535	(0.010)	0.00521	(0.010)	0.00577	(0.010)
Economic Evaluation								
“Much Worse”								
“Worse”	-0.209***	(0.016)	-0.209***	(0.016)	-0.209***	(0.016)	-0.210***	(0.016)
“Same” Ref.								
“Better”	0.158***	(0.013)	0.158***	(0.013)	0.158***	(0.013)	0.157***	(0.013)
“Much Better”	0.230***	(0.016)	0.230***	(0.016)	0.230***	(0.016)	0.229***	(0.016)
IWI	-0.000560*	(0.000)	-0.000550*	(0.000)	-0.00055*	(0.000)	-0.00055*	(0.000)
District IWI	-0.00388	(0.002)	-0.00390	(0.002)	-0.00392	(0.002)	-0.00390	(0.002)
District GINI	-0.372	(0.283)	-0.374	(0.283)	-0.377	(0.283)	-0.369	(0.283)
Education in Years	-0.0102***	(0.001)	-0.0101***	(0.001)	-0.0101***	(0.001)	-0.0102***	(0.001)
Education in Years (District)	-0.0229*	(0.012)	-0.0228*	(0.012)	-0.0227	(0.012)	-0.0231*	(0.012)
Corruption & Crime								
Experienced Corruption								
“Increased a lot”								
“Increased somewhat”	-0.308***	(0.013)	-0.308***	(0.013)	-0.308***	(0.013)	-0.308***	(0.013)
“Stayed the same” Ref.								
“Decreased somewhat”	0.172***	(0.015)	0.171***	(0.015)	0.172***	(0.015)	0.172***	(0.015)
“Decreased a lot”	0.424***	(0.022)	0.424***	(0.022)	0.424***	(0.022)	0.424***	(0.022)
Control of Corruption	0.268*	(0.130)	0.268*	(0.130)	0.269*	(0.131)	0.269*	(0.131)
Political Stability	-0.0628	(0.075)	-0.0621	(0.075)	-0.0629	(0.075)	-0.0631	(0.075)
Freedom								
Experienced Freedom								
“Not at all free” Ref.								
“Not very free”	0.147***	(0.018)	0.146***	(0.018)	0.146***	(0.018)	0.147***	(0.018)
“Somewhat free”	0.267***	(0.017)	0.267***	(0.017)	0.267***	(0.017)	0.267***	(0.017)
“Completely free”	0.364***	(0.016)	0.364***	(0.016)	0.364***	(0.016)	0.365***	(0.016)

Table 6 Continued

	Model 8		Model 9		Model 10		Model 11	
Press Freedom Index	0.00700	(0.004)	0.00700	(0.004)	0.00698	(0.004)	0.00695	(0.004)
Traditional Media								
Radio	0.0190	(0.010)	0.0192	(0.010)	0.0196	(0.010)	0.0171	(0.010)
Television	0.00695	(0.012)	0.00720	(0.012)	0.00732	(0.012)	0.00463	(0.012)
Newspaper	0.0179	(0.012)	0.0190	(0.012)	0.0203	(0.012)	0.0226	(0.012)
Interactions								
Social Media x Urban	0.0764***	(0.021)	0.0722***	(0.022)	0.0879***	(0.023)	0.0524	(0.028)
Social Media x Education in Years (District)	0.0107*	(0.005)	0.0142**	(0.005)	0.0129*	(0.005)	0.0149*	(0.006)
Social Media x Control of Corruption (National)	0.0544**	(0.017)	0.0497**	(0.018)	0.0511**	(0.018)	0.0483*	(0.021)
Social Media x Radio	0.0518*	(0.024)	0.0596*	(0.025)	0.0719**	(0.027)	0.0555	(0.033)
Constant	-0.157***	(0.003)	-0.286***	(0.047)	-0.286***	(0.047)	-0.282***	(0.047)
Random-effect parameters								
<i>Country</i>								
Variance Intercept Trust	0.0482***	(0.137)	0.0484***	(0.1376)	0.0486***	(0.0138)	0.0489***	(0.134)
<i>District</i>								
Variance Intercept Trust	0.0541***	(0.005)	0.0541***	(0.005)	0.05423***	(0.005)	0.0542***	(0.005)
Variance Residual	0.7305***	(0.005)	0.7305***	(0.005)	0.7305***	(0.0049)	0.7308***	(0.0049)
Observations	45696		45696		45696		45696	

***p < 0.001

**p < 0.01

*p < 0.05

Table 7 Multilevel linear regression of the effect of obtaining news through social media on political trust in sub-Saharan African countries. Excluding the predictor variables: “Economic evaluation”, “Experienced corruption” & “Experienced freedom”. Model 13 includes the significant interaction effects.

	Model 12		Model 13	
	β	SE	β	SE
Average Trust				
Independent Variable				
Social Media	-0.0110	(0.013)	-0.0710***	(0.017)
Demographics				
Age	0.00283***	(0.000)	0.00285***	(0.000)
Male	-0.0123	(0.009)	-0.0107	(0.009)
Urban	-0.119***	(0.012)	-0.116***	(0.012)
Recourses				
Job Situation				
“No paid Job” Ref.				
“Public Job”	0.118***	(0.019)	0.115***	(0.019)
“Private Job”	-0.000544	(0.010)	-0.00203	(0.010)
IWI	-0.0000165	(0.000)	0.00000306	(0.000)
District IWI	-0.00413	(0.003)	-0.00416	(0.003)
District GINI	-0.360	(0.333)	-0.373	(0.332)
Education in Years	-0.0125***	(0.001)	-0.0122***	(0.001)
Education in Years (District)	-0.0362**	(0.013)	-0.0354**	(0.013)
Corruption & Crime				
Control of Corruption	0.332*	(0.133)	0.332*	(0.132)
Political Stability	-0.0843	(0.076)	-0.0839	(0.075)
Freedom				
Press Freedom Index	0.00522	(0.004)	0.00532	(0.004)
Traditional Media				
Radio	0.0180	(0.010)	0.0238*	(0.011)
Television	0.00891	(0.013)	0.0157	(0.013)
Newspaper	0.0207	(0.013)	0.0189	(0.013)
Interactions				
Social Media x Urban			0.0889***	(0.024)
Social Media x Education in Years (District)			0.0146**	(0.005)
Social Media x Control of Corruption (National)			0.0513**	(0.019)
Social Media x Radio			0.0907**	(0.029)
Constant	-0.0147	(0.043)	-0.0268	(0.043)

Table 7 continued

	Model 12		Model 13	
Random-effect parameters				
<i>Country</i>				
Variance Intercept Trust	0.0471***	(0.1422)	0.04611***	(0.014)
<i>District</i>				
Variance Intercept Trust	0.081***	(0.0071)	0.0809***	(0.0071)
Variance Residual	0.8098***	(0.0054)	0.8091***	(0.0054)
Observations	45696		45696	

***p < 0.001

**p < 0.01

*p < 0.05

Table 8 Multilevel logistic regression of the effect of obtaining news through social media on trust in the Parliament (Model 14), trust in the Electoral Commission (Model 15) and trust in the Local Government (Model 16), in sub-Saharan African countries.

	Model 14 Parliament		Model 15 Electoral Commission		Model 16 Local Government	
	β	SE	β	SE	β	SE
Trust						
Independent Variable						
Social Media	-0.0610	(0.035)	-0.134***	(0.036)	-0.138***	(0.035)
Demographics						
Age	0.00554***	(0.001)	0.00501***	(0.001)	0.00479***	(0.001)
Male	-0.0242	(0.018)	0.0101	(0.018)	-0.0436*	(0.018)
Urban	-0.151***	(0.024)	-0.185***	(0.025)	-0.149***	(0.024)
Recourses						
Job Situation						
“No paid Job” Ref.						
“Public Job”	0.131***	(0.039)	0.214***	(0.040)	0.153***	(0.039)
“Private Job”	-0.0205	(0.021)	0.0633**	(0.022)	0.00880	(0.021)
Economic Evaluation						
“Much Worse”						
“Worse”	-0.440***	(0.036)	-0.405***	(0.036)	-0.306***	(0.035)
“Same” Ref.						
“Better”	0.284***	(0.027)	0.306***	(0.027)	0.218***	(0.027)
“Much Better”	0.453***	(0.034)	0.454***	(0.035)	0.369***	(0.034)
IWI	-0.00127*	(0.001)	0.0000689	(0.001)	-0.000869	(0.001)
District IWI	-0.00510	(0.005)	-0.00958	(0.005)	-0.00709	(0.004)
District GINI	-0.965	(0.597)	-0.900	(0.636)	-0.317	(0.538)
Education in Years	-0.0167***	(0.003)	-0.0210***	(0.003)	-0.0163***	(0.003)
Education in Years (District)	-0.0588*	(0.024)	-0.0300	(0.025)	-0.0456*	(0.022)
Corruption & Crime						
Experienced Corruption						
“Increased a lot”						
“Increased somewhat”	-0.595***	(0.028)	-0.558***	(0.028)	-0.496***	(0.028)
“Stayed the same” Ref.						
“Decreased somewhat”	0.346***	(0.033)	0.323***	(0.033)	0.244***	(0.033)
“Decreased a lot”	0.989***	(0.051)	0.873***	(0.051)	0.765***	(0.050)
Control of Corruption	0.339	(0.263)	0.777**	(0.244)	0.422	(0.235)
Political Stability	-0.0287	(0.151)	-0.215	(0.139)	-0.149	(0.134)

Table 8 Continued

	Model 14		Model 15		Model 16	
Freedom						
Experienced Freedom						
“Not at all free” Ref.						
“Not very free”	0.315***	(0.039)	0.307***	(0.040)	0.266***	(0.039)
“Somewhat free”	0.555***	(0.037)	0.556***	(0.038)	0.396***	(0.037)
“Completely free”	0.726***	(0.036)	0.747***	(0.037)	0.562***	(0.036)
Press Freedom Index	0.0138	(0.008)	0.0120	(0.007)	0.0135*	(0.007)
Traditional Media						
Radio	0.0340	(0.022)	0.0657**	(0.022)	0.0128	(0.022)
Television	0.0161	(0.026)	0.00492	(0.026)	0.0107	(0.026)
Newspaper	0.0275	(0.026)	0.0440	(0.027)	0.0475	(0.026)
Interactions						
Social Media x Urban	0.133**	(0.049)	0.207***	(0.049)	0.161***	(0.049)
Social Media x Education	0.0130	(0.011)	0.0130	(0.011)	0.0356**	(0.011)
in Years (District)						
Social Media x Control	0.0967*	(0.039)	0.0791*	(0.039)	0.0912*	(0.039)
of Corruption (National)						
Social Media x Radio	0.0914	(0.059)	0.104	(0.060)	0.155**	(0.059)
<hr/>						
Cut						
Cut 1	-0.938***	(0.096)	-0.835***	(0.091)	-1.011***	(0.088)
Cut 2	0.497***	(0.096)	0.500***	(0.091)	0.437***	(0.088)
Cut 3	1.920***	(0.096)	1.881***	(0.091)	1.867***	(0.088)
<hr/>						
Country						
Variance Country	0.194***	(0.056)	0.156**	(0.048)	0.154***	(0.045)
<hr/>						
Region						
Variance District	0.237***	(0.023)	0.286***	(0.026)	0.182***	(0.018)
<hr/>						
Observations	44935		44141		44711	

***p < 0.001

**p < 0.01

*p < 0.05

APPENDIX C: LIST OF COUNTRIES

Table 9 List of countries included in the dataset. Additionally, the number of observations per country, the number of regions and the percentage of social media users (weekly users) are included.

	Observations	Regions	% Social media
Benin	1200	12	6.2
Botswana	1200	24	26.2
Burkina Faso	1200	13	5.2
Burundi	1200	17	2.2
Cameroon	1182	12	18.7
Cape Verde	1200	5	41.1
Cote d'Ivoire	1199	32	17.2
Gabon	1198	9	33
Ghana	2400	10	15.7
Guinea	1200	8	9.3
Kenya	2397	8	24.4
Lesotho	1200	10	11.4
Liberia	1200	15	22.5
Madagascar	1200	22	2.6
Malawi	2400	3	5.4
Mali	1200	10	5.9
Mauritius	1200	10	40.5
Mozambique	2400	11	19.8
Namibia	1200	14	40.5
Niger	1200	8	2.4
Nigeria	2400	37	30.7
São Tomé and Príncipe	1196	2	34.1
Senegal	1200	14	19.1
Sierra Leone	1191	4	11.4
South Africa	2390	9	43
Sudan	1200	6	31.1
Swaziland	1200	4	33.2
Tanzania	2386	30	8.4
Togo	1200	6	10.4
Uganda	2400	5	7
Zambia	1199	10	12.9
Zimbabwe	2400	10	16.9

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