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The Effects of Internet use on Political Participation

A Statistical Analysis of the African Context

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Abstract

The internet brings a multitude of opportunities for information access, communication, and mobilization. Many studies point to the democratizing effect of the internet in that it increases political participation among citizens. However, much of this evidence is produced on a Western context where the penetration of the internet is well-established. This thesis examines the effect of internet use on political participation in the understudied region of Africa. By disaggregating the concept "political participation" into conventional and unconventional participation, and building on previous research, the analytical framework lays the foundation for H1: internet use positively predicts political participation and H2: internet use has a stronger positive effect on unconventional forms of participation than on conventional. Modeling ordinal logistic regression using R, survey data from 33 African countries from Afrobarometer wave 5 is examined (n=46 120). The study rejects both H1 and H2 and thus concludes the need for an elaborated version of an analytical framework tailored to the African context. However, the study argues that the disaggregation between conventional and unconventional participation is relevant and applicable. The conclusions from the study illuminates the lack of universality of the processes, mechanisms, and causalities found in a Western context.

Keywords: Democracy, Political participation, Internet, Internet use, Ordinal logistic regression, R, Statistical analysis, Africa, Afrobarometer.

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Table of Contents

List of Tables

List of Figures

List of Appendices

1. Introduction

The introduction and upholding of democracy is today considered a core function of development practices. Some scholars argue the opposite, that the pursuit of development can – and should – be done by authoritarian regimes, with a developmental-dictatorship approach. However, the two concepts of democracy and development are intricately intertwined and depend on each other (Olu-Owolabi, Gberevbie & Abasilim, 2021). The definition of democracy can be contentious, but in this thesis, it is defined as a practice that upholds collective self-rule (Beckman, 2021). Equal rights and opportunities for citizens to participate, that citizens have an understanding of the political agenda which is set by themselves, and all adult citizens are allowed to participate are criteria posed to ensure this collective self-rule (Dahl, 1989 in Beckman, 2021). Other scholars, too, arrive at the conclusion that democracy in essence is about the equal power to participate politically (Goldman, 2015; Olu-Owolabi, Gberevbie & Abasilim, 2021). Political participation, in turn, depends on a multitude of factors. It is contingent on the possibilities for people to access information, express themselves, and connect with people who are both likeminded and with opposing views (Beckman, 2021). These are all things which are made more easily accessible by use of the internet. As such, the internet is a promising aid for enhancing democracy and increasing political participation. The effect of internet use on political participation has been studied rather thoroughly in countries, continents, and contexts with deep penetration of technology, i.e., Western contexts. The research on the phenomenon in places with less established democratic systems and less penetration of digital technologies is largely lacking. Responding to that, this study sets out to investigate the relationship between internet use and political participation in an understudied part of the world, namely Africa.

1.1 Purpose and Aim

Acknowledging the diverse historical, political, and cultural contexts across the African continent, this thesis does not attempt to provide detailed conclusions applicable to every country, region, and village on the continent. Instead, responding to a general lack of literature on the effect of internet use on political participation in Africa, while acknowledging the political and technological characteristics of the continent that make the context unique, this thesis sets out to identify major tendencies and trends. Thus, the purpose of this thesis is to examine how and to what extent internet use predicts political participation in Africa as a whole.

The aim is to provide empirical evidence of how the relationship between internet use and different forms of political participation is manifested across the African continent.

For this purpose, political participation is conceptualized as a way for citizens to exert the power that democracy, by the definition provided above (Beckman, 2021), vests in them. Political participation is disaggregated into two different categories – conventional and unconventional participation. The division between the two is detailed in the analytical framework outlined in chapter 3. The purpose and aim are sought to be achieved by performing a set of ordinal logistic regression analyses. This choice of method enables the study of the effects of internet use on political participation, as well as the controlling for different socioeconomic, demographic and national factors that may influence the results. Opting for a quantitative research method allows for the study of a vast sample from a wide range of contexts. This facilitates an examination of several socioeconomic and structural stratifications across the sample and provides more nuanced insight into the results.

1.2 Research Questions

The aim is condensed and operationalized into two research questions that the thesis seeks to answer.

RQ1: How does internet use affect political participation in Africa?

RQ2: Is there a difference in how internet use affects different forms of political participation?

1.3 Setting the African Scene

This chapter proceeds with a background section briefly detailing the African political and digital context. When examining political participation, it is essential to address and acknowledge the political context in which this participation is taking place. Additionally, the state of democracy is influential and should thus be regarded. Recent data by the CIVICUS Monitor (2021) cast light on the state of democracy and openness of the civic space which is critical in many African nations. They rate only two countries as open, while as many as 24 are rated to be repressed. The African continent is rather unique in that a large amount of its countries are very young, molded into nation states by foreign powers, and freed just a couple of decades ago. The political reality is therefore very different from other places in the world. In the book *Democratic Renewal in Africa*, Adejumobi (2015) provides an overview of the state of democracy in Africa since its nascence. The author highlights how the post-colonial era on

the continent has made it evident that democracy is not something that naturally exists to fill any void that previous rulers leave behind. Instead, military coups and rule have tormented more than a handful of African countries, with different goals. This illuminates the author's second point, that democracy evidently is not something that comes into existence once and for all with the institution of elections. Rather, it requires comprehensive, profound, and continuous reforms that cut through all sectors and strata of a country, including the socioeconomic ones. This includes the notion of ensuring equal political participation among all citizens. Further, Adejumobi (2015) discuss the so-called "national question", which seeks to encapsulate the ethnic conflicts that have arisen as a consequence of the colonial establishment of nation states. Differing opinions about the validity of the state aggravates the democratic project, as does lack of respect for and recognition of ethnic diversity within nation states.

Another dimension of many African political contexts is the existence and legitimacy of traditional political and judiciary systems. Baldwin (2020) report that a majority of citizens surveyed in 18 different African countries respond that traditional authorities have influence on the politics in their local context, especially in rural parts of the countries. Although not elected, the traditional chiefs often play an important role in the community and are in some contexts more present and active than the local government officials. They can act as advocates for their communities and are often more responsive to community needs. In some communities, citizens trust their traditional leaders more extensively than the state officials (Honig, 2019).

Besides the state of democracy, the penetration and dispersion of information and communications technologies (ICT) is fundamental when studying the effect of internet use on political participation. In Africa, ICT penetration is well below the global average. In 2020, only 28.6 % of the African population were estimated to use the internet, compared to 51.4 % globally. Moreover, there are differences in access and use between African countries, as well as within them. The digital divide persists largely along other socioeconomic lines such as the urban/rural and gender (International Telecommunications Union, 2021). The main problem does not seem to lie with lack of infrastructure, but rather the quality of access as well as the high costs for devices (mainly smartphones) to connect to the internet (International Telecommunications Union, 2021).

However, the trends reveal a story of increased, albeit slow, penetration of access to and use of the internet. Despite the large digital divides, a couple of established hubs exists in, e.g., Egypt,

Kenya, Nigeria and South Africa, with an environment that has proved to be conducive to tech start-ups (OECD, 2021). Often, these start-ups seek to increase the dispersion of technological solutions to everyday problems and thereby democratize the use of them. In Kenya, M-Pesa is an example of a fintech solution to mobile banking, responding to a flawed traditional banking system.

Hence, there is a widespread lack of access to the internet for a majority of Africans, but in some places the process of digitalization is rapid. Potentially, this can have ripple effects on societies and countries, especially the solutions that seek to increase the efficiency of other services. The democratic and digital developments on the continent of Africa are features which indicate that the effect of internet use on political participation could differ from other contexts that are more thoroughly studied.

1.4 The Thesis

This thesis proceeds to lay a foundation of previous research conducted on the topic in chapter 2. Following that, chapter 3 outlines the analytical framework used to guide the analysis. Chapter 4 situates the study in the constructivist research paradigm, and proceeds to detail the ordinal logistic regression and its underlying assumptions. The data and descriptive statistics are outlined in chapter 5, and the regression results are presented in chapter 6. Chapter 7 proceeds to discuss the results in light of the analytical framework and the literature review, and presents conclusions and suggestions for further research.

2. Literature Review

The literature review seeks to map out the research field relevant to the purpose of the study. Firstly, the importance of political participation in a democracy is outlined followed by a section describing the characteristics of the political participant. That is, the socioeconomic and resource determinants of political participation. Subsequently, the role of the internet is detailed. The possibilities of the internet for transcending socioeconomic determinants, but also the indications that internet use may not have the democratizing effects that it is anticipated to bring, are presented.

The importance of context is highlighted throughout the literature review. This is done by including academic discussions on the influence of democracy level and the dominance of studies done on Western contexts and absence of non-Western contexts. Additionally, some recent studied done on the Asian and African contexts, respectively, are outlined which puts the findings from Western contexts into perspective.

2.1 Political Participation in a Democracy

Political participation is essential in any democracy. Being able to access information and news freely and to claim one's freedom of expression, assembly, and association are integral and fundamental parts to ensuring that the political participation of citizens is voluntary, equal, and informed (Beckman, 2021). Taking a philosophical perspective on democracy, Goldman (2015) seeks to untangle how political power is operationalized in a democratic setting. Subsequently, the author discusses the "constitution question" of democracy – what is it? – as opposed to the normative question – why is it good? Zooming in on the core of what democracy is, the equality of political power is identified as the fundamental function in a democracy.

Goldman (2015) uses voting as the measurement for exerting political power, but the argumentation applies to other expressions of political power as well. Exploring the border between the political and apolitical, van Deth (2016) describes how political participation can happen at different levels and include many forms of actions. Common for all of them is that they represent different ways for citizens to influence the political landscape using their personal power, which is the same point that Goldman (2015) emanates from. Aiming at providing an operational working definition for different forms of political participation, van Deth (2016) presents one minimalist, two targeted, and two circumstantial definitions of

political participation. A more elaborate description of van Deth's framework is found in chapter 3.

2.2 Determinants of Political Participation

Political participation is an essential pillar of democracy, but not everyone participates equally or in the same way. Interest and knowledge about politics are raised as influential factors determining an individual's level of political participation (Isaksson, 2013). Additionally, socioeconomic factors such as gender, class, domicile (urban/rural place of residence), education, and age are found to be strongly correlated with participation (Lindquist, 1964; Brady, Verba & Scholzman, 1995; Turcinskaite-Balciuniene & Balciunas, 2016; Karreth, 2018). The correlation between socioeconomic factors and participation is elaborated on by Brady, Verba & Scholzman (1995) where the authors find that these socioeconomic characteristics are strongly related to a set of resources that, in turn, predict political participation. Time, money and civic skills are resources that are found to be correlated with socioeconomic factors as well as essential in determining one's level of political participation.

Further, in a case study of Togo, Okey & Djahini-Afawoubo (2020) show that trust in public institutions is decisive in determining voting participation, when controlling for the individual socioeconomic characteristics outlined above. Emanating from rational voter theory, the authors explain their results by claiming that high levels of trust in the governing institutions lowers the cost of voting relative to the benefits. Trusting the vote to be free and fair increases the opportunity cost of not voting, thus increasing voter participation. Additionally, the authors also present evidence that access to public services, such as sanitation, water, education and health, positively predicts voter turnout (Okey & Djahini-Afawoubo, 2020).

2.3 The Role of the Internet in Enabling Political Participation

Bridging socioeconomic divides and counteracting resource and participatory gaps is a considerable undertaking. In this regard, the role of the internet is interesting to investigate. As a new player on the world stage, the internet brought with it an idea of itself as a great equalizer that would increase political participation with its spread (Meesuwan, 2016). Xenos & Moy (2007) show support for this when they claim that there is no significant difference in political knowledge between internet users with varying degrees of interest in politics. The lack of effect of interest on political knowledge indicates the democratizing effect of internet use. Adequate

access to the internet can thus enable fast and cheap ways for citizens to gather information and network with likeminded people. Moreover, internet use has been shown to transcend some of the traditional socioeconomic strata, further supporting its democratizing potential (Jensen, Danziger & Venkatesh, 2007).

Studies show that internet use can increase political participation in different ways. Feezell, Conroy & Guerrero (2016) find that the nature of internet use, together with general citizenship norms, impact the effect that internet use has on political participation. Thus, it matters *how* and *for what* the internet is used. Moreover, Shah et al. (2005) emphasize that online presence can contribute to knowledge and understanding of the political sphere, which they find increases political participation. Further supporting this, Sylvester & McGlynn (2010) show that internet use is positively associated with government interactions, and Tolbert & McNeal (2003) find that internet use increased voting among Americans in the 2000 election.

However, there are studies that point to the fact that the gaps in internet access and use run along the lines of other socioeconomic characteristics. The global digital divide asserts that there is a difference in internet access between countries, between women and men, and between urban and rural places (Sylvester & McGlynn, 2010; Araba & Hafkin, 2019). The inequality in internet access and use can then, instead of being an equalizing force, constitute yet another dimension of inequality that intersects with and exacerbates already existing inequalities (Tewathia, Kamath & Ilavarasan, 2020; Guha & Mukerji, 2021).

Despite the risk of widening socioeconomic inequalities, the internet does bring a multitude of opportunities. As much of the public and political conversation happens on the internet, it is becoming an increasingly important forum for accessing information. Many news media are moving operations online, and the low cost of existing on the internet brings opportunities for smaller actors such as NGOs or idea-driven organizations to increase their reach. In a sense, then, the internet democratizes the spread of information outside of the mainstream and can provide a platform for movements that seek to challenge the ruling elite (Lee, 2017).

2.4 Late Adopters of Technology

Most of the research on the effect of internet use on political participation that has been presented thus far outline the effects in the United States or other Western contexts. There, the

internet has been present for a long time and is used by as many as 91 % of the population (in the United States year 2020) (World Bank Data, n.d.(c)). The same figure for Africa is 28.6 %, well below also the world average of 51.4 % (International Telecommunications Union, 2021). Thus, it cannot be assumed that findings on the effects of internet use on political participation translate directly into the African context.

However, there are studies that support the existence of these patterns also in non-Western contexts. Using a combined measure of political participation, Meesuwan (2016) highlights that internet use leads to a higher level of political participation in Thailand. Mainly, the author finds that internet use serves a mobilizing function among its users – that is, increased participation among internet users. Further, Meesuwan (2016) identifies three different sorts of impact that internet use can have on participation. First, it can serve as a motivator following the abundance of information available. Secondly, the internet decreases costs in terms of both time and money for gathering information as well as connecting with others. Finally, the internet is itself a platform for political participation. These findings align well with what has been found by other studies, cited in the previous sections.

Findings from Lee (2017) indicate that internet use in East and Southeast Asia impacts different modes of political participation in different ways. The study finds that internet use is positively associated with the unconventional modes of participation, but not with conventional. The "anti-mainstream" characteristics of internet use, mentioned above, are cited as the reason. As the internet provides space for smaller actors to organize and promote themselves, it is a conducive breeding ground for unconventional forms of political participation such as joining a public forum, attending campaign meetings, or getting together with others to raise an issue. However, the study does not find a relationship between internet use and conventional forms of participation, such as voting (Lee, 2017). This result contrasts findings from other studies. As reported above, Sylvester & McGlynn (2010) and Tolbert & McNeal (2003) find evidence that internet use increases conventional forms political participation, namely voting and contacting government officials.

Chae, Lee & Kim (2019) conduct a meta-analysis of 63 independent studies from different countries. They claim that there is a lack of consensus among studies of internet use and its effects on political participation. The authors illustrate three different theoretical orientations among scholars: those who argue that internet use increases political participation, those who

claim that it decreases participation, and those who assert that there is no correlation. This is illustrative of the inconsistency in the field and indicates a need for more research on the phenomenon. From their study, Chae, Lee & Kim (2019) conclude that internet use has a weak effect on political participation. However, all 63 studies included in the meta-analysis sampled populations from either North America, Europe or Asia. This provides further evidence of the lack of data, especially from the African context.

2.5 Civic Space and Democracy Level

Besides its direct effects on political participation, the openness of civic space is a determinant of the nature of internet use which, in turn, influences the subsequent effect on political participation. Civic space openness is an integral part of a democratic society, allowing citizens to freely participate and shape their political surroundings (CIVICUS, n.d.). In a report for the Institute of Development Studies, Roberts & Ali (2021) show that there is a higher importance of internet use in increasing political participation in countries with small or shrinking civic space. Considering Lee's (2017) claim that the internet can be an area for elite-challenging practices, this finding is plausible. According to the latest CIVICUS measure of civil society openness, only two African countries qualify as open and four as narrow whereas six countries are assessed as closed, 24 are rated as repressed and 13 have the status of being obstructed (CIVICUS Monitor, 2021).

In a society where traditional opposition media is suppressed, there is an even greater need to find ways around censorship laws and regulations, for which the internet is a convenient tool. This is another reason to practice carefulness when translating findings from countries with high democracy scores and an open civic space to countries that experience closed or shrinking civic space.

2.6 Internet Access, Political Participation and Africa

Bratton, Chu & Lagos (2010) present findings about political participation in non-Western contexts. The authors conclude that the levels of participation (measuring voter turnout) is non-linear with democracy level, and that new or emerging democracies experience higher levels of political participation than more established democracies. Additionally, they find that people residing in rural areas tend to have higher levels of participation than those in urban. This claim finds support in Isaksson (2013), who observes that people living in rural areas of African

countries tend to be more politically active than those in urban areas. This highlights some of the differences between the African context and other, more thoroughly studied places.

Further comparing Isaksson (2013) to other research cited above, the study shows that a high level of resource access does not linearly translate into more extensive political participation. Instead, the study shows that resource poor people in Africa participate more than the resource rich, contradicting the resource model presented by Brady, Verba & Scholzman (1995). Isaksson (2013) discusses the potential reasons behind this counterintuitive result and claim that it might be affected by the overall level of democracy in a country. If the resource rich people do not participate as extensively as the resource poor, Isaksson argues, they may not need to in order to exert their power. That is, they might have other – e.g., corrupt – means of asserting their influence over the political sphere.

Moreover, the effects of introducing or increasing the reach of a new commodity is found to not have a linear effect on people's political behavior. This is illustrated by Brass, Harris & MacLean (2021), who show that the effect of electricity use on political participation is not easily discerned. Access to electricity in the household brings opportunities such as reading after nightfall, using the internet, and watching news on the TV. The authors highlight that electricity access creates new behaviors, but claim that some of these activities include watching television in an air-conditioned home while enjoying a cold drink. Such new behaviors can cause people to refrain from going out, socializing, and participating in the more traditional manner. Considering the possibilities that the internet brings, it is not far-fetched to assume that similar results would be discerned when looking at increased internet use. However, the authors pose the hypothesis that the participation is not decreasing but rather that citizens are changing their modes of participation (Brass, Harris & MacLean, 2021).

Other studies of internet use and its influence on participation in Africa agree with the resource model to a larger extent. Studying participation among youth, Eze & Obono (2018) describe the effects of internet use on participation among approximately 500 people in Lagos. Their findings indicate that consistent internet use over time results in high levels of political participation. Oyedemi (2013) details the amount and quality of internet use among South African university students. The study finds that there are inequalities in access to high-quality internet, often intersecting with other socioeconomic inequalities, that lead to disparities in citizens' opportunities to fully participate in the public life.

In sum, there are some ambiguous results about the effect of internet use on political participation in the African context. Some results align with the findings presented by research on different contexts, while there are some indications that the African context could display different tendencies.

2.7 Why This Study?

The possibilities that the internet brings, in terms of access to information, opportunities for networking, and the relatively low costs of attaining information as well as spreading it, are all factors that make it relevant to study. In the African context, there is not yet enough empirical studies to draw robust conclusions about internet use and its effects on political participation. Considering the continent's political history, colonialism, and the subsequent (sometimes) fragile democracy, it is not unlikely that the patterns of participation differ from other contexts. Thus, it is important to study this context and not just assume that generalized conclusions from other geographical places apply also to Africa.

As outlined in this chapter, there are many strata to the question of internet use and its effects on political participation. It should also be addressed that the context captured in this study is a diverse one and any conclusion that are drawn result from generalizations about the context. As detailed in the introduction, this study aims to map the major tendencies across the African continent regarding the effect of internet use on different forms of political participation. The following chapter builds on the literature review and presents the analytical framework upon which the analysis rests.

3. Analytical Framework

Following the description of previously established relationships between internet use and political participation, this section will outline the theory guiding the thesis. In quantitative research, the theory proposes an explanation for the relationship between the independent and the dependent variables (Creswell, 2014). Thus, it will henceforth be labeled analytical framework to emphasize its practical function in the analysis.

In order to enable an informed analysis of political participation, its core characteristics and definitions first need to be disentangled. This chapter presents the conceptual idea of what political participation is. Subsequently, it outlines the analytical framework which serves as the foundation for the hypotheses that guide the analysis. The analytical framework uses the literature review in chapter 2 as its foundation and operationalizes it by hypothesizing the directions of impact of the different variables.

3.1 Conceptualizing Political Participation

Political participation is a term that attempts to capture the different actions that citizens take to affect politics (van Deth, 2014). This can mean a wide array of actions, ranging from voting to demonstrating to guerilla gardening, complicating the process of defining it. Arriving at one definition that includes all necessary and sufficient features of political participation is not simple. Instead, by building on a model presented at a symposium (van Deth, 2014), van Deth (2016) offers an operational definition consisting of a set of rules to determine if an action is political participation or not.

The rules presented determine if the phenomenon is 1) an action or activity, 2) performed voluntarily, 3) by a non-professional, 4) within the politics/government/state sphere. If the answer to all these questions are yes, as illustrated in figure 1, the action has achieved the minimalist operational definition of political participation (van Deth, 2016). Such participation is sometimes labeled conventional or institutional political participation and includes for example voting, contacting politicians and having a party membership (van Deth, 2014).

Going beyond the minimalist definition, the operational definition is extended with another set of rules to capture other forms of political participation. If the fourth criterion is not met, we ask if the action 5) targets the sphere of politics, government or state, or 6) targets community

problems (van Deth, 2016). These targeted definitions are at times titled unconventional or non-institutional, and civic engagement, respectively, and include actions such as demonstrating, signing petitions and volunteering (van Deth, 2014).

Further, van Deth (2016) offers a set of rules for the circumstantial definitions of political participation. If neither the fourth, fifth or sixth rule is not met, an action can still have the status of political participation if it is 7) placed within the political context, or 8) politically motivated. Circumstantial political participation is commonly labeled expressive political participation or individualized collective action and can include political consumerism, boycotts, etc. (van Deth, 2014).

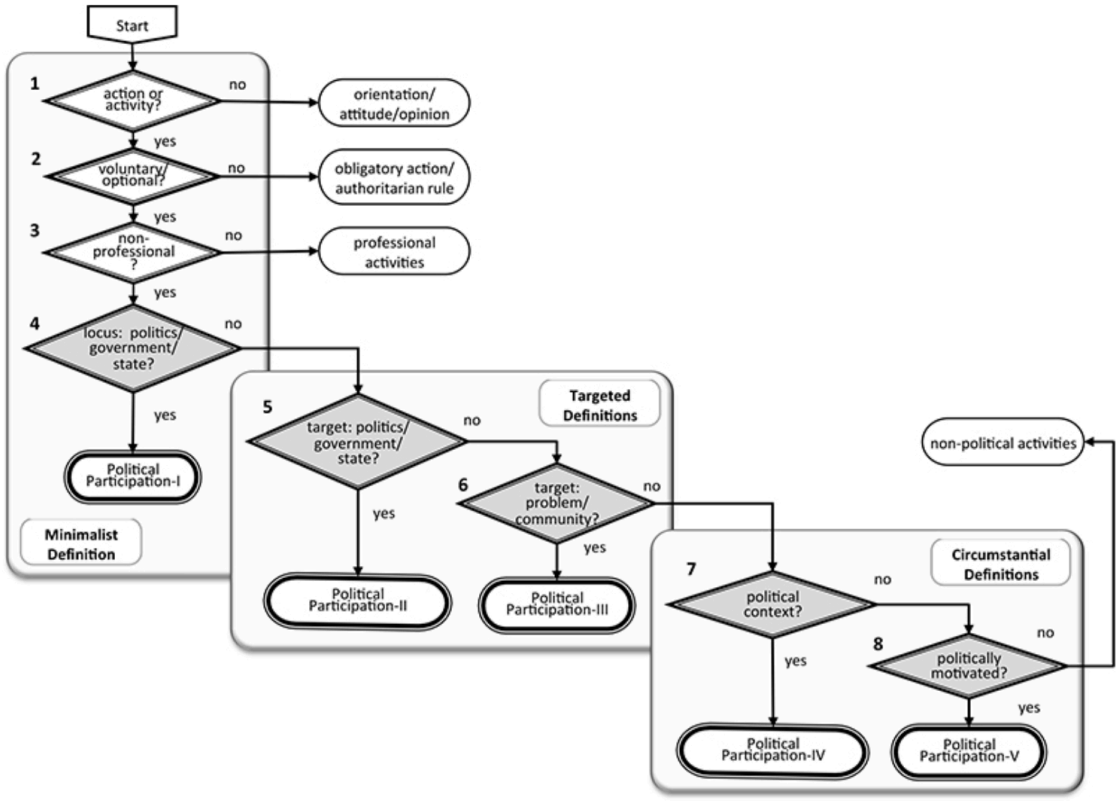


Fig. 1. Adopted from van Deth, 2016, p.12.

The Afrobarometer dataset maps different participatory actions that fall under the minimalist and targeted definitions (Mattes, Gyimah-Boadi & Bratton, 2016). Additionally, previous studies have made a similar disaggregation between conventional and unconventional forms of participation, which correspond to the minimalist and targeted definitions, respectively (Lee, 2017; Karreth, 2018). For these reasons, this study will examine the effect of internet use on a

combined measure of total participation, on conventional participation, and on unconventional participation.

3.2 Operationalization of Analytical Framework

As outlined, this study uses the concepts of conventional (minimal) and unconventional (targeted) political participation and investigates the impact of internet use on them. Based on previous research on the impact of internet use on different forms of political participation, variables delineating socioeconomic status, trust in public institutions, domicile, access to public services, and national level political-economic status are included, in addition to the main variable of interest: internet use. The control variables are divided into different sets corresponding to the analytical level they describe – individual, contextual, and national. These will be introduced in the analysis set by set.

Although previous studies indicate that the effects of internet use on political participation might be different in Africa than in other contexts, the analytical framework is largely based on the knowledge that has been produced on well-researched contexts with a digital sphere that often is more established. The reason for this is that there is a lack of sufficient consensus among scholars regarding the effects in Africa, largely because of the general lack of results produced. The analysis and subsequent discussion is, however, open for rejection of the hypotheses.

3.2.1 Political Participation and Internet Use

Lee's (2017) study concludes that in Asia, internet use is positively associated with unconventional forms of political participation but not associated with the conventional forms. As the internet reduces costs and increases efficiency in information spreading, the effect on unconventional forms of political participation can be explained by the increased availability of information on the internet. The characteristics of online information distribution is beneficial especially for smaller actors whose messages might otherwise not reach the public (Lee, 2017). Further, the study claims that this lack of opportunities and the limited space available for civil society to organize and communicate their standpoints is a reason why the unconventional forms of political participation are more likely to be positively associated with internet use than the conventional, institutionalized forms (Lee, 2017). However, as outlined in the literature review, there are other studies point towards the positive effect of internet use on

conventional political participation (Tolbert & McNeal, 2003; Sylvester & McGlynn, 2010). As such, the analytical framework theorizes that internet use positively affects both conventional and unconventional political participation, but that it has a stronger effect on unconventional forms (see table 1).

Table 1.

	Explanatory variable	Total PP	Conv. PP	Unconv. PP	Source
Main var. of interest	**Internet use**	+	+	++	Xenos & Moy, 2007; Feezell, Conroy & Guerrero, 2016; Sylvester & McGlynn, 2010; Tolbert & McNeal, 2003; Lee, 2017
Individual level	**Gender (female)**	–	–	–	Brady, Verba & Scholzman, 1995; Lindquist, 1964; Turcinskaite-Balciuniene & Balciunas, 2016
	Age	+	+	+	Brady, Verba & Scholzman, 1995; Lindquist, 1964; Turcinskaite-Balciuniene & Balciunas, 2016
	Education	+	+	+	Brady, Verba & Scholzman, 1995; Lindquist, 1964; Turcinskaite-Balciuniene & Balciunas, 2016
	Employment	+	+	+	Brady, Verba & Scholzman, 1995; Lindquist, 1964; Turcinskaite-Balciuniene & Balciunas, 2016
	Interest in politics	+	+	+	Isaksson, 2013
	Discuss politics	+	+	+	Isaksson, 2013
	Trust in institutions	+	++	+	Okey & Djahini-Afawoumbo (2020)
Contextual level	**Domicile (rural)**	–	–	–	Tambe, 2017; Okey & Djahini-Afawoumbo, 2020
	Access to services	+	+	+	Tambe, 2017; Okey & Djahini-Afawoumbo, 2020
National level	**GDP per capita**	+	+	+	Roberts & Ali, 2021; Lee, 2017
	Gini coefficient	+	+	+	Roberts & Ali, 2021; Lee, 2017
	Dem. level	+	+	+	Roberts & Ali, 2021; Lee, 2017

**PP=political participation*

***++ indicates a strong effect*

3.2.2 Hypotheses

Based on the conceptualization of the two different forms of political participation – conventional and unconventional – and the previously outlined research review, the analytical framework above has been derived. Table 1 delineates the expected directions of the effects of the different independent variables on the dependent variables that will be used in the analysis. The relationships between the three dependent variables and the independent variable of interest are formulated as two hypotheses guiding the thesis. These are as follows.

H1: internet use positively predicts political participation
H2: internet use has a stronger positive effect on unconventional forms of participation than on conventional

H1 and H2 relate to RQ1 and RQ2, respectively. RQ1 sets out to investigate the effect of internet use on political participation which is reflected in H1. RQ2 instead seeks to examine the diverse effects of internet use on different forms of political participation, which is manifested by H2.

4. Methodology

This chapter outlines the methodological approach used in the study. Initially, it positions the study in the constructivist research paradigm and details the epistemological and ontological assumptions guiding the study. Secondly, the chapter presents the different data sources used. Further, the ordinal logistic regression and its underlying proportional odds assumption is detailed, and finally, the operationalization of the methodology is described.

4.1 Research Paradigm, Epistemology, and Ontology

This study is situated within a constructivist research paradigm, which highlights the role of context, the researcher, and individual variability in the production of the results (Creswell, 2014). As such, the epistemology assumes that the data included in the study, how the variables are constructed, and how the results are interpreted are constructions (Kivunja & Kuyini, 2017). The ontological standpoint is a realist one. This includes the acceptance of the existence of a material world independent of our observing of it. The realist ontology is closely connected to quantitative research methods, as such methods test hypothesis about the material world (Kivunja & Kuyini, 2017).

Traditionally, quantitative research is positioned within the positivist or post-positivist paradigm (Creswell, 2014; Kivunja & Kuyini, 2017). However, Mahmoud et al. (2018) outline the recurring bridging of problem-solving and critical research in sustainability-focused doctoral theses and highlight the usefulness of such practice. The problem-solving approaches adhere to a positivist or post-positivist research paradigm, whereas the critical standpoints share essential characteristics with constructivist paradigm. The authors argue that it is useful to combine the problem-solving approaches with the constructivist position when studying social change.

This thesis does claim to tell the truth about the data that is examined and argues that the results presented are generalizable across the contexts studied, as overall trends. In that sense, it takes a problem-solving approach which aligns with the realist ontology. However, it recognizes the influence of the study design on the outcome. That is, the data selected, the variables extracted from the dataset, the decisions made in coding the variables, and the literature used to inform the analytical framework work in one way to produce the outputs and the knowledge that result from the analysis. With that in mind, this study adheres to criteria positioning it within the

constructivist paradigm (Kivunja & Kuyini, 2017). Mahmoud et al. (2018) state that one of the essential characteristics of critical research is that it recognizes that knowledge is context-dependent and, subsequently, varies. As emphasized earlier, the justification for the study has its foundation in the assumption that context matters for the issue of internet use and its effects on political participation. As such, it is influenced by the constructivist paradigm in the sense that it does not assume that the theories available fully take into account the contextual differences that exist and influence the outcome.

4.2 Data Source

The main data used to inform the study is retrieved from the round 5 Afrobarometer (Mattes, Gyimah-Boadi & Bratton, 2016). It is a regional project with a longitudinal scope, collecting data in several waves to allow for mapping of trends within the region. There are both advantages and disadvantages of using secondary data sources to inform the analysis. It is difficult to validate the quality and it can be harder to get familiarized with the data (Bryman, 2012). However, the Afrobarometer is a well-established project that collects longitudinal data on Africans' opinions and attitudes about, inter alia, democracy (Conroy-Krutz, 2019). Round 5 of the Afrobarometer includes data from 34 African countries across the continent. Each country is represented by between 1200 to 2400 respondents and the data was collected between 2011 and 2013. The first rounds of the Afrobarometer received criticism for only including countries rated as "free" or "partly free" by Freedom House, as well as very predominantly including Anglophone countries. However, with the expansion of the survey's reach over the rounds, this bias has been somewhat neutralized (Conroy-Krutz, 2019). Making use of this secondary data allows for an analysis with close to 50 000 respondents, randomly sampled, from across an entire continent. This would not have been possible to conduct by a single person, particularly not within the scope of a Master's thesis (Bryman, 2012).

In addition to the Afrobarometer survey data, some country-level variables are included to illuminate any impact that they might have on internet use and political participation. Varieties of Democracy (V-Dem) is an institute conceptualizing the level of democracy in a country by providing different high-level measures. The high-level indicators are made up by several indices that, in turn, consists of different indicators (Coppedge et al., 2022). In this study, data on the democracy level is collected from the year 2014, which is close to the year of surveying for the Afrobarometer. Data on the Gini coefficient and GDP per capita is retrieved from World

Bank Data (World Bank Data, n.d.(a) & (b)). Because of the lack of some data points, values are retrieved from the latest year available. The data ranges from 2003 to 2019 for the Gini coefficient, and between 2007 to 2020 for GDP per capita.

4.3 Ordinal Logistic Regression

As outlined in the analytical framework, the analysis is carried out on three different response variables. As the response variables are qualitative, or categorical, with a natural ordering to them, an ordinal logistic regression is used as the method for analysis (Kleinbaum & Klein, 2010). Using an ordinal logistic regression instead of a binary has the advantage that it allows for more than two categories in the outcome variable, hence presenting more detailed results. Polytomous logistic regression also allows for multiple outcome categories, but the ordinal logistic regression is preferable over the polytomous as it works in a way that preserves the natural order of the categories. The polytomous model allows for several categories but is more suitable when the outcome variable is nominal, non-ordered (Kleinbaum & Klein, 2010). As the outcome variables in this study are ordered – from low to high – an ordinal logistic regression is most appropriate.

4.4 The Proportional Odds Model

The ordinal logistic regression applied is the proportional odds model. As presented above, the method makes use of the ordering of the response variable and calculates the odds of the outcome being in either of the categories. It does so by calculating the *odds ratio* of the outcome being in one of the categories compared to being in any of the other, that is, by dichotomizing the outcome variable at several different points. However, it is not possible to compare the categories arbitrarily; their natural ordering needs to be preserved. That is, if the dependent variable has three categories, the odds of being in the lowest can be compared to the odds of being in either of the middle or high one, and the odds of being in the highest can be compared to the odds of being in the middle or low one. The highest and lowest cannot be compared against the middle one as that would disrupt the natural order (Kleinbaum & Klein, 2010). The proportional odds model is sometimes also referred to as the cumulative odds model, highlighting that it works by creating several dichotomous groups from the response variable, resulting in an outcome of cumulative odds (O'Connell, 2006).

The main underlying assumption of the ordinal logistic regression is the proportional odds assumption. This assumes that the independent variables effect the odds ratio of the dependent variable equally, regardless of where the dichotomization is done (O'Connell, 2006; Kleinbaum & Klein, 2010).

4.5 Operationalization of Methodology

The analyses conducted in this thesis are done using the R programming language in R Studio (R Core Team, 2021). The ordinal logistic regression is computed using the polr function from the MASS package (Venables & Ripley, 2002). The output of polr provides the coefficient for each explanatory (independent) variable. The raw coefficient value is not particularly interpretable in itself, but exponentiated it gives the odds ratio which subsequently can be interpreted. As a value exponentiated by 0 is 1, an odds ratio of 1 indicates that the explanatory variable does not affect the outcome variable. In other words, the null hypothesis assumes an odds ratio of 1. The output of the polr function further provides the standard error and the t-value which are used to calculate the probability value (p-value) and the confidence intervals. As with the odds ratio, 1 is the reference point for the confidence intervals, meaning that if 1 is within the confidence interval, the value is non-significant (Kleinbaum & Klein, 2010).

Finally, the output of the polr function provides the AIC value and residual deviance for the total model. The AIC value is a relative measure of model fit which accounts for both model performance and the number of variables in the model, where a lower value indicates a better fit. For example, if two models have the same model fit then the model with fewer variables will have a lower (better) AIC. The AIC measures will be used to assess model fit by introducing one set of variables at a time and assess the relative model fit. A difference in AIC values of more than 2 between models is typically considered significant. Importantly, AIC values can only be reliably compared between two models when the data used to fit the models is identical and the dependent variable is the same.

As opposed to the ordinal least squares (linear) regression model, there is no associated R^2 value to assess overall model fit. There are, however, measures that imitate R^2 values and attempt to fill the same function. Besides AIC, there are several measures available, proposed by different scholars (see e.g. McFadden, 1974; Cox & Snell, 1989; Nagelkerke, 1991; Tjur, 2009). Kvålseth (1985) presents eight criteria that a good R^2 value should adhere to. Using these

criteria, Menard (2000) argues that the value presented by McFadden (1974) is the most appealing one. As such, McFadden will be the pseudo R^2 measure used to assess model fit in this study. A higher McFadden value indicated a better model fit. Similar to the AIC value, McFadden's pseudo R^2 is a relative measure and cannot be compared on models using different data or different response variables. As with the AIC value, then, the McFadden score will be assessed as the control variables are added to examine whether they contribute to a better model fit. As such, the model fit for total participation cannot be compared to the model fit for conventional or unconventional participation using either AIC or McFadden. Using both the McFadden and the AIC values is a strategy to ensure the robustness of the model fit.

In order to test the proportional odds assumption, a Brant test will be conducted. It measures the probability that the deviations from the regression model are due to chance. The null hypothesis is that the proportional odds assumption holds and, consequently, p-values that are non-significant and outside the confidence interval indicate that the assumption holds. The brant package in R provides the brant function which can be applied to a polr object (Schlegel & Steenbergen, 2020). However, when the sample size is large, a large number of independent variables are included in the model, and when there is at least one continuous explanatory variable included, the Brant test almost always results in non-significant p-values (O'Connell, 2006). This implies that at least one of the variables have differential effects on the dependent variable. In order to get a deeper understanding about what is causing the non-proportionality, one strategy is to assess the underlying binary models that make up the ordinal logistic regression model (Brant, 1990; O'Connell, 2006).

To test the first hypothesis (H1), the full dataset is used to regress the effect of internet use on political participation. Next, the response variable is disaggregated into the two subcategories of participation – conventional and unconventional – detailed in the analytical framework. This division tests the second hypothesis (H2). The effects of internet use on total, conventional and unconventional political participation will be evaluated by assessing the odds ratio of internet use.

In order to assess the robustness of the effects of the independent variables on the three different response variables, the independent variables will be added to the analyses in different sets. First, the main independent variable – internet use – will be included together with the national level indicators. In the next step, individual level demographic variables are included, and,

lastly, the contextual variables. These groups of variables are detailed in the following chapter (5). This way of analyzing variables enables an assessment of the robustness of the effect of the main variable of interest, in this case internet use. If the effect of internet use is consistent as control variables are added, the effect is deemed to be robust and the results credible (Leamer, 1983).

5. Variables and Descriptive Statistics

This chapter presents the variables used in the data analysis along with exploratory statistical descriptions of both the dependent variables, the independent variable of interest, as well as the control variables. The variables are grouped in relevant categories, as defined in the literature review and analytical framework.

5.1 Data Cleaning and Limitations to Data

One of the countries – Swaziland – is omitted from the study as some data points are missing. Thus, data from 33 countries are used in the analysis. In order to provide a just description of political participation, only the respondents aged 18 or older are included. There are, of course, opportunities for people younger than the legal voting age to participate politically, but as the measures of participation include voting it would be misleading to include underage people. After removing non-complete cases, the sample size per country ranges between 961 (Madagascar) and 2322 (Zimbabwe). The full sample size that is used in the regressions is 46 120 observations.

The study will assess the different effects of living in a rural and urban area, respectively. The sample size is however somewhat skewed to include more people in rural than in urban areas (distribution is about 60-40, details in appendix I) which could affect the results slightly. However, the difference is not large enough to bias the results considerably. Another limitation to the data is that the regressions are done on individual respondents, while also including national level measures. This translates into a large imbalance in number of unique data points, as the individual respondents are 46 120, but the national level measures only include 33 unique values. This affects the interpretability of the national level results, but they are still included as they provide a level of control to the regression models.

In order to assess the risk of multicollinearity, a correlation table of all independent variables was computed. The analysis does however not show any remarkably strong correlations and, thus, no variables need to be excluded from the analysis. As mentioned above, the strongest correlation is found between access to services and domicile, at a -0.619. The full correlation table is available in appendix III. For full overview of variable coding, see appendix II. For summary statistics of all variables, see appendix I.

5.2 Dependent Variables

Corresponding to previous research and the analytic framework, three dependent variables are used in the analyses. The variables consist of different measures of participation surveyed by Afrobarometer (Mattes, Gyimah-Boadi, & Bratton, 2016). Details on the questions used to comprise each variable can be found in appendix II. The first response variable attempts to capture all forms of political participation that are mapped in the survey and thus represents a measure of overall, total, political participation. Secondly, the total participation variable is disaggregated into conventional and unconventional participation, based on the analytical framework. All three response variables are grouped into three levels of participation – low, medium and high – resulting in ordered factor variables which is suitable for an ordinal logistic regression analysis.

In all research, there is always the tradeoff between accuracy and interpretability. The results here would have been more specific and perhaps closer to the truth if all the levels of participation were included as response variables. However, preserving all levels would impact the interpretability and dim the clarity of results. For this reason, keeping three levels is a compromise that allows for some specificity while still preserving a high degree of interpretability (Myrianthous, 2021).

Measuring the total level of participation, most people belong to the two lower categories of participation (fig. 2).

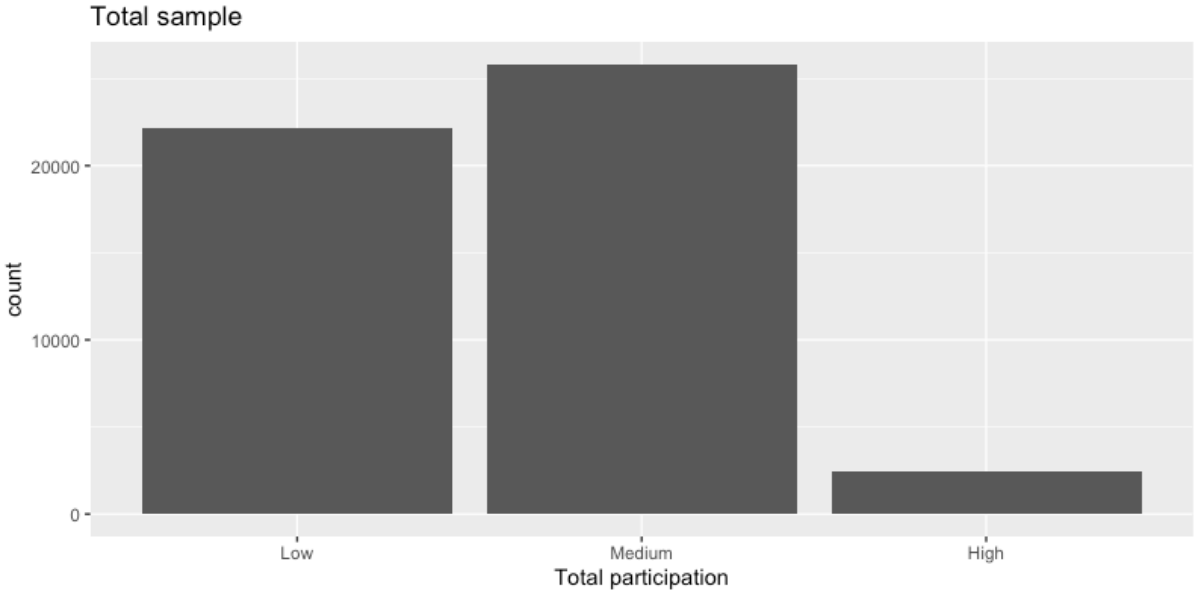


Fig. 2

Examining the distribution more in detail, figures 3 and 4 below show that men are more politically active than women in both urban and rural areas. Additionally, the least active group is women between 18-25 years old, and the most active are men between 34-105.

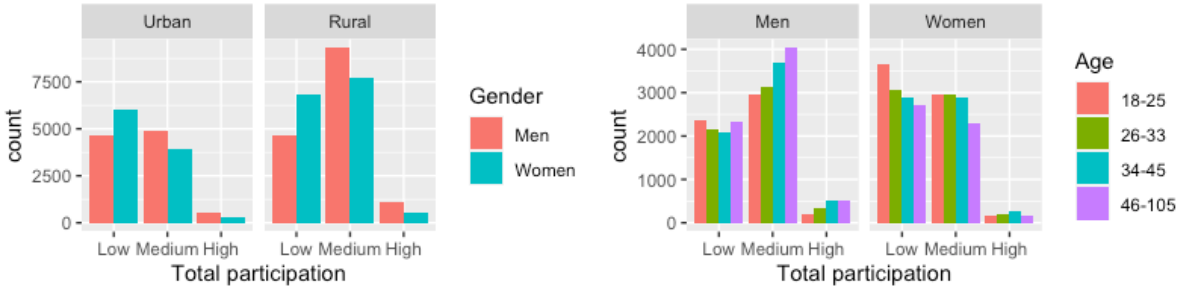


Fig. 3 & Fig. 4

For conventional forms of participation, there is a larger skewness towards low levels of participation.

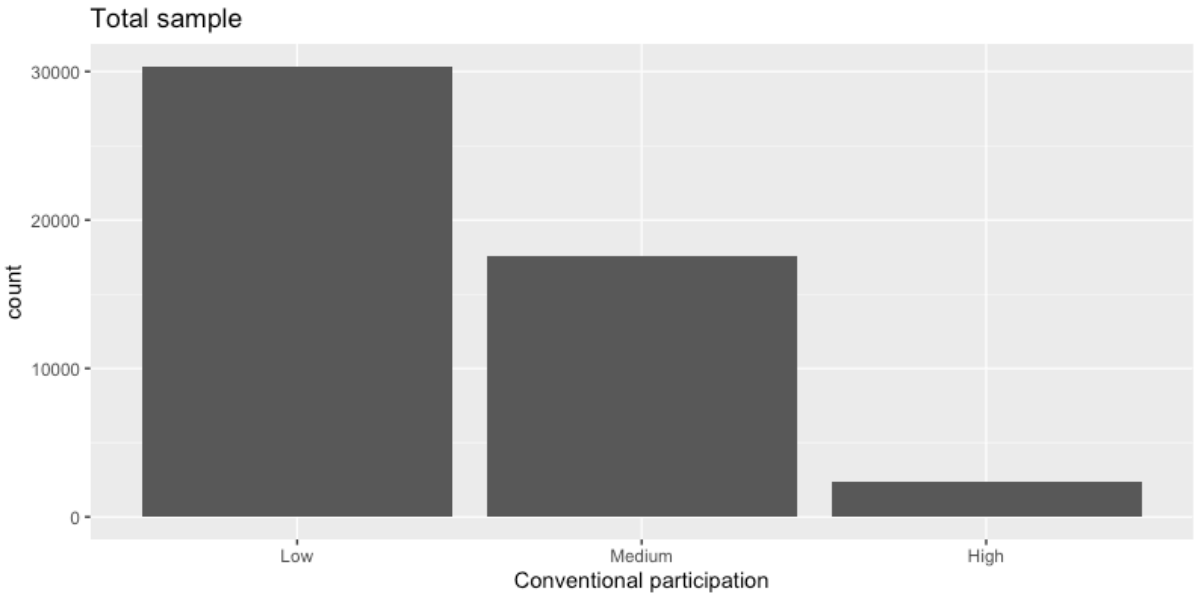
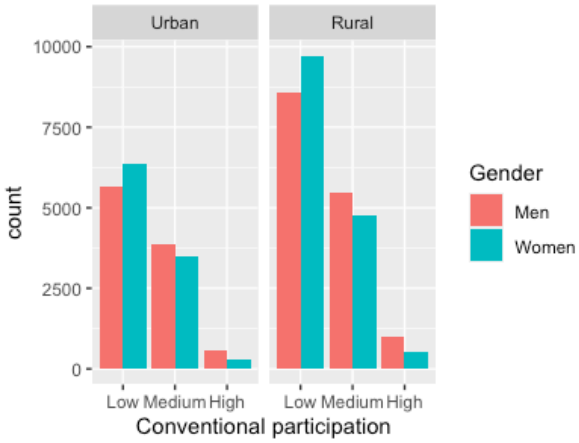


Fig. 5

Disaggregating the sample, the below plots (fig. 6 and fig. 7) show the same trends as for overall participation. Men are overrepresented in the two higher categories of conventional participation both in urban and rural areas. Together with women aged 26-45, older men aged 46-105 are the least active in conventional political activities. The most active group are men in the oldest age group, 46-105.



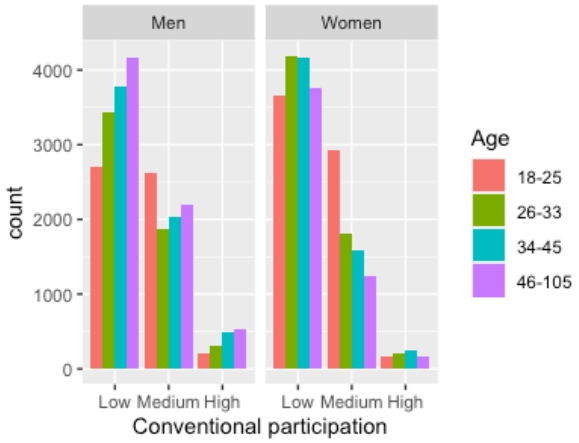


Fig. 6 & Fig. 7

Looking at the unconventional forms of participation, there is instead a large amount of people who have high levels of participation (fig. 8).

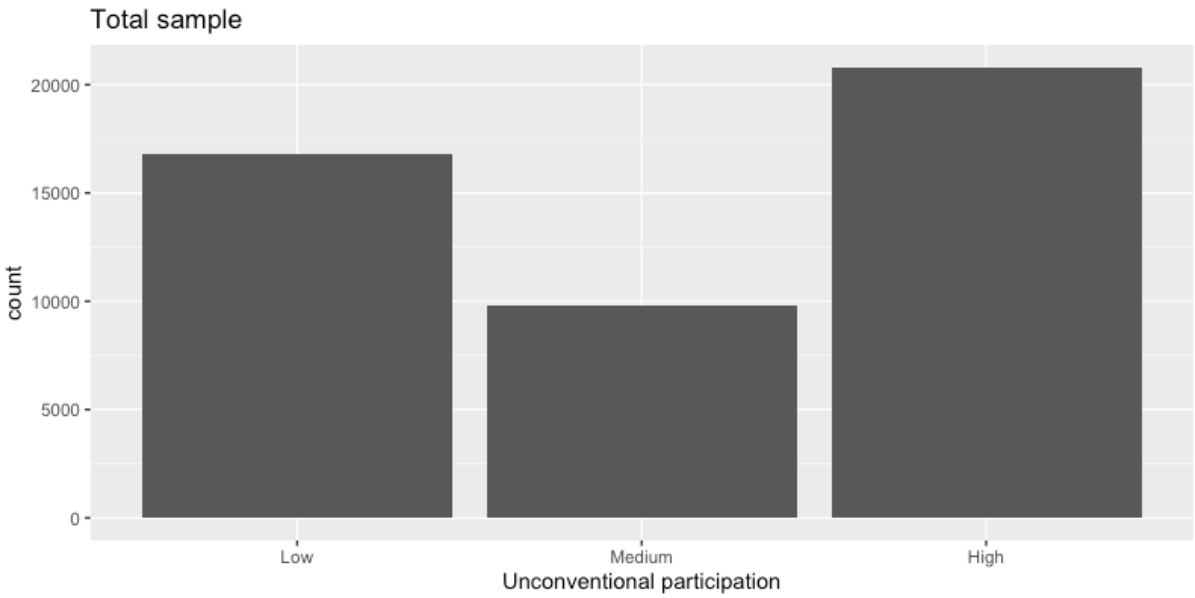
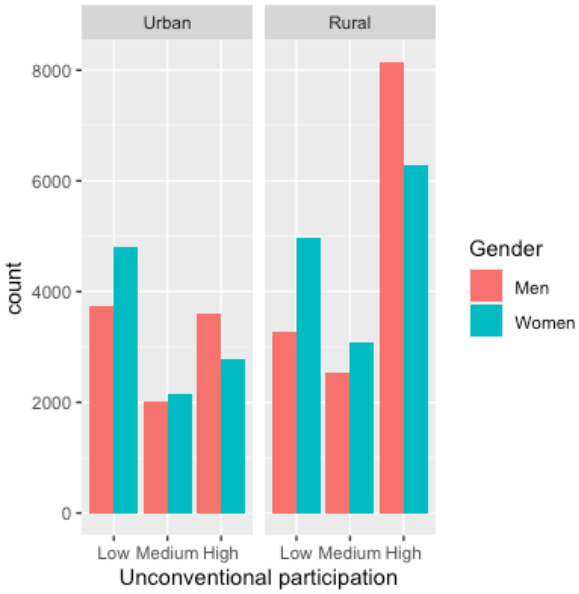


Fig. 8

The tendencies for unconventional participation follow the same demographic lines as the previously outlined for total and conventional participation (fig. 9 and fig. 19). Men are more politically active in both urban and rural areas. Women are overrepresented in the medium group in both rural and urban areas. However, it appears that men instead are inclined to have high levels of participation rather than low. Similar to the total measure of participation, young women are the least active group, and old men are the most active.



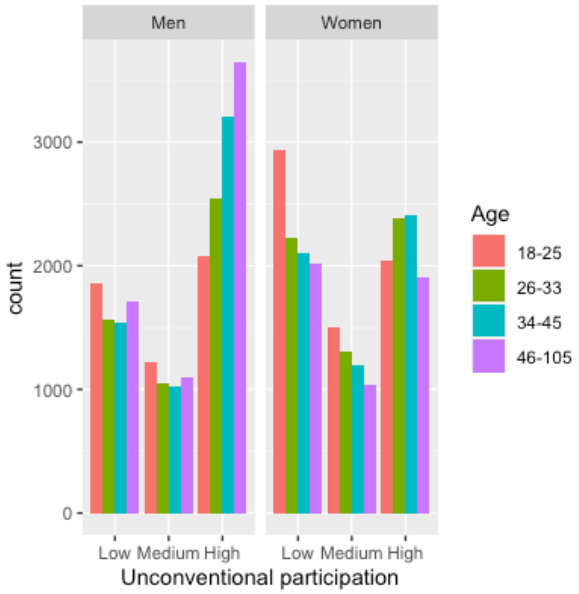


Fig. 9 & Fig. 10

5.3 Independent Variables

5.3.1 Internet Use

The main independent variable of interest is internet use. This is a numeric scale variable describing frequency of internet use, ranging from 1: never to 5: every day. Figure 11 shows that there is a large majority of people who never use the internet. Looking at the distribution more in detail, we see that the trend for domicile look the same both in countries with high and low democracy scores (calculated as the countries above or below the median value of all countries). That is, rural people are overrepresented in the lowest level of internet use and people in urban areas are overrepresented in all the other categories (fig. 12). Disaggregating the data on domicile instead, figure 13 shows that men are using the internet to a larger extent than women both in urban and rural areas.

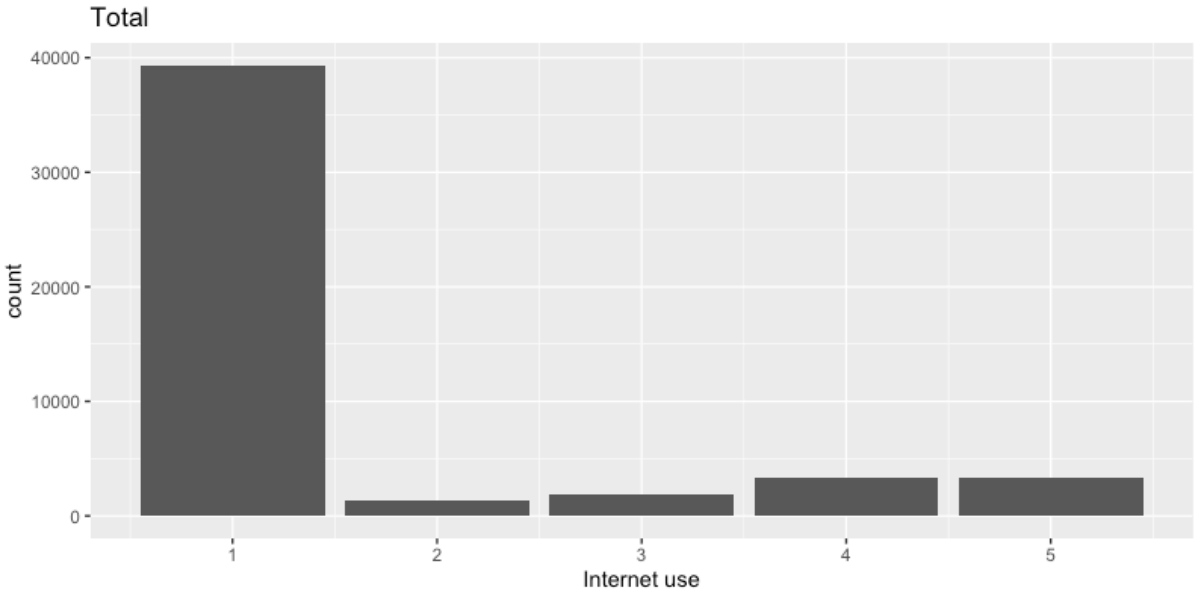


Fig. 11

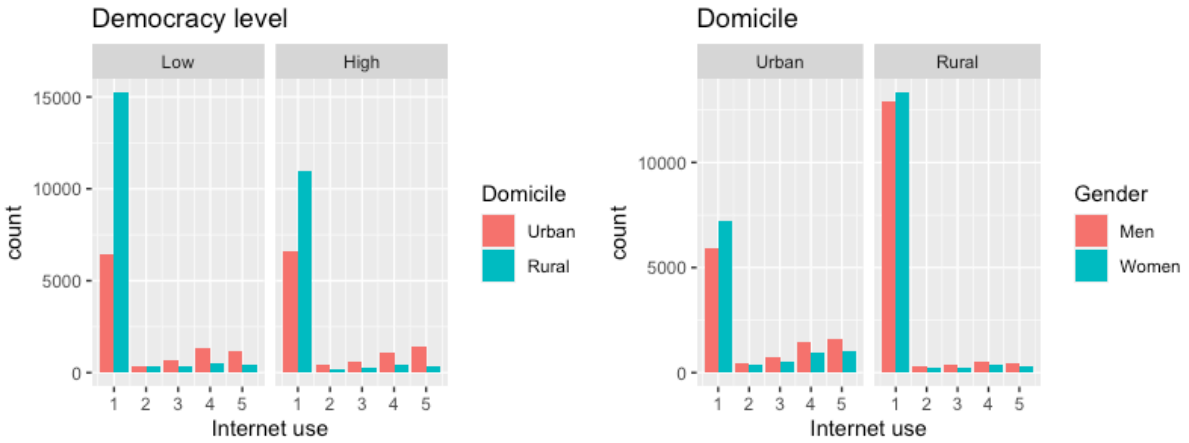


Fig. 12 & Fig. 13

5.3.2 National Level Factors

The literature review highlights the importance of the political context in which the political participation would take place (Isaksson, 2013; Okey & Djahini-Afawoumbo, 2020). Thus, country level political-economic indicators are incorporated. For each country, an index score indicating the country's democracy level is included (fig. 14). Additionally, each country's GDP per capita and Gini coefficient are included (fig. 15 and fig. 16). To aid in some of the descriptive statistics, the democracy score of countries has been divided into two levels, indicated by color in the three figures below.

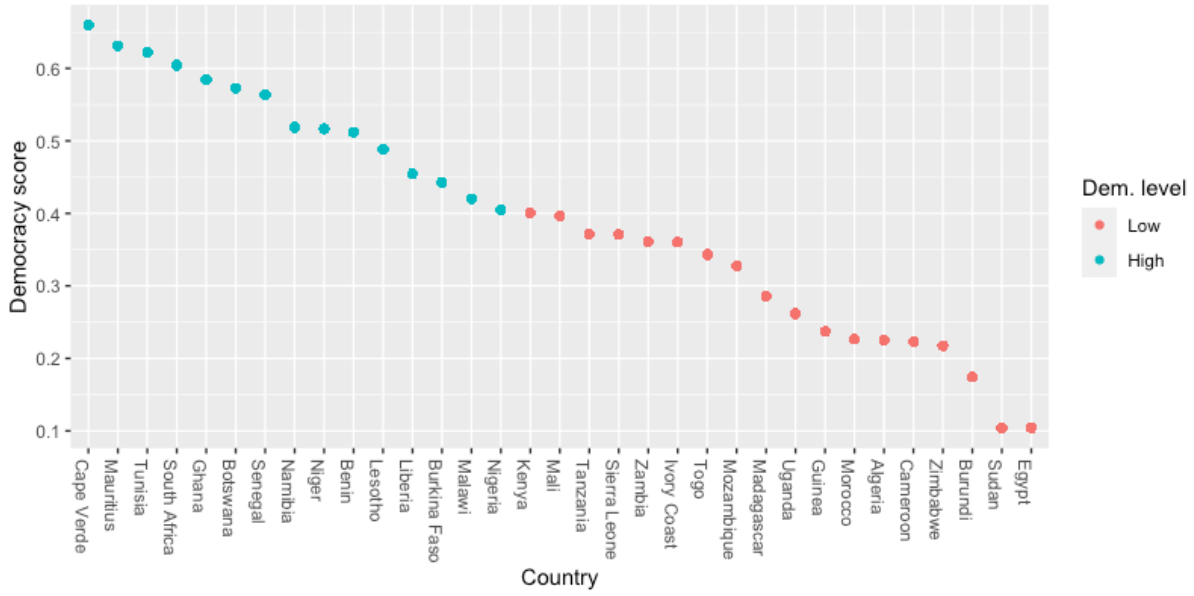

Democracy score
0.6
0.5
0.4
0.3
0.2
0.1
Cape Verde
Mauritius
Tunisia
South Africa
Ghana
Botswana
Senegal
Namibia
Niger
Benin
Lesotho
Liberia
Burkina Faso
Malawi
Nigeria
Kenya
Mali
Tanzania
Sierra Leone
Zambia
Ivory Coast
Togo
Mozambique
Madagascar
Uganda
Guinea
Morocco
Algeria
Cameroon
Zimbabwe
Burundi
Sudan
Egypt
Country
Dem. level
Low
High

Fig. 14

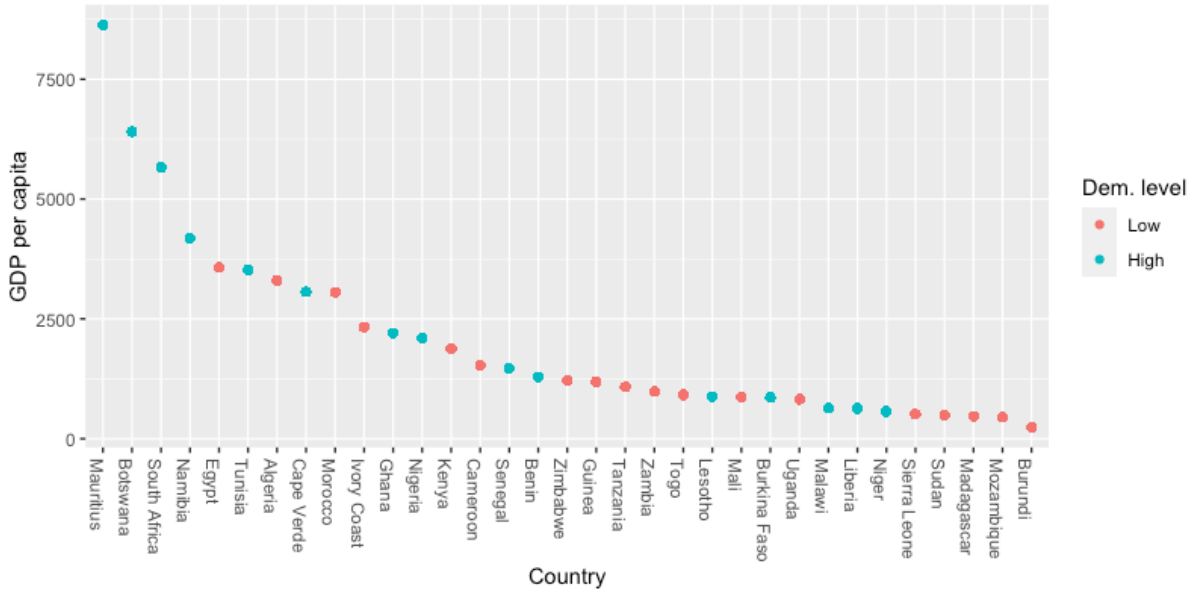

GDP per capita
7500
5000
2500
0
Mauritius
Botswana
South Africa
Namibia
Egypt
Tunisia
Algeria
Cape Verde
Morocco
Ivory Coast
Ghana
Nigeria
Kenya
Cameroon
Senegal
Benin
Zimbabwe
Guinea
Tanzania
Zambia
Togo
Lesotho
Mali
Burkina Faso
Uganda
Malawi
Liberia
Niger
Sierra Leone
Sudan
Madagascar
Mozambique
Burundi
Country
Dem. level
Low
High

Fig. 15

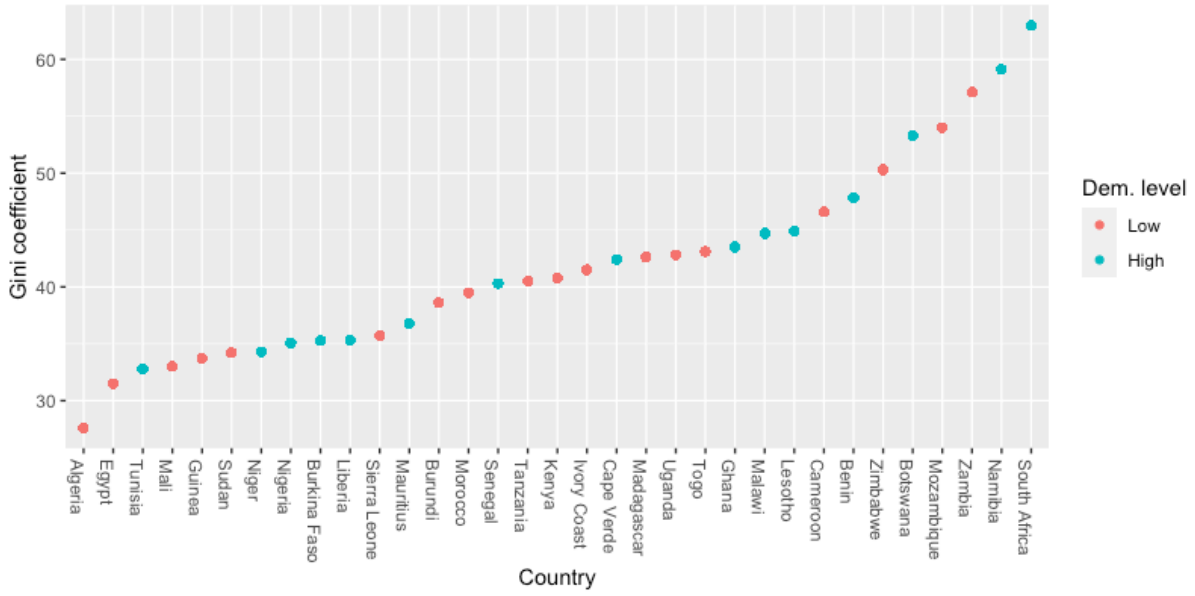


Fig. 16

5.3.3 Individual Factors

Socioeconomic factors on the individual level are widely acknowledged to influence political participation (see e.g. Brady, Verba & Scholzman, 1995; Tambe, 2017; Karreth, 2018). Age, gender, education level and employment status are included as independent variables, as well as general interest in public affairs and the frequency of discussing politics. The last two indicate the respondent's politically relevant social capital which can be contributing factors (Isaksson, 2013). As outlined in the literature review, Okey & Djahini-Afawoumbo (2020) show that trust in institutions is a significant predictor of some forms of political participation. This is included in the analyses as an index variable comprised of ten questions where respondents rated their trust in several different institutions. The frequency and share of the individual level variables are shown in table 2 below.

Table 2.

	level	Overall
n		51,587
Gender (%)	Men	25770 (50.0)
	Women	25817 (50.0)
Age (%)	18-25	12629 (25.4)
	26-33	12123 (24.4)
	34-45	12559 (25.3)
	46-105	12403 (24.9)
Education level (mean (SD))		4.27 (2.13)
Employment status (%)	Unemployed	34326 (66.8)
	Employed	17052 (33.2)
Interest (mean (SD))		2.68 (1.09)
Discuss politics (mean (SD))		1.89 (0.72)
Trust (mean (SD))		2.62 (0.75)

5.3.4 Contextual Factors

In addition to the individual characteristics, contextual factors also play a part in predicting political participation (Tambe, 2017; Okey & Djahini-Afawoumbo, 2020). Acknowledging this, the domicile context is included, as well as an index variable describing the level of access to basic services. The correlation coefficient of the two variables is -0.619, showing that people in rural areas have less access to services (table 3).

Table 3.

level	Overall	
n		51,587
Domicile (%)	Urban	20594 (39.9)
	Rural	30993 (60.1)
Service access (mean (SD))		1.60 (0.32)

6. Results

This chapter presents the results from the regression analyses. First, three models with total political participation as response variable are outlined and the effect of relevant variables and overall model fit are described. Secondly, the same is specified for regression analyses with conventional and unconventional political participation as response variables. Following that, the robustness and validity of the models is evaluated.

6.1 Total Participation

The first model (1) shows the relation between internet use and total political participation, controlling for GDP per capita, Gini coefficient, and democracy index (see table 4). This model shows a significant and positive effect of internet use on political participation. The odds ratio is 1.032 (CI 95 % [1.016, 1.047], $p<0.001$), indicating a 3.2 % increase in the odds of having medium or high levels of participation for each unit increase in internet use.

The democracy index variable has an unexpected effect on political participation. According to the results, for each unit increase in democracy level, the odds of having high levels of participation *decreases* by 99.6 % (OR=0.004, CI 95 % [0.004, 0.004], $p<0.001$). Some potential reasons for this are elaborated on in the discussion section.

The second model (2) adds the individual level control variables (gender, age, interest in politics, frequency of discussing politics, trust, employment status and education status). Interestingly, adding in these variables change the odds ratio of internet use from positive to negative (OR=0.970, CI 95 % [0.952, 0.988], $p=0.001$). This indicates that the other individual variables have a stronger effect on political participation than internet use does. As expected, higher interest in politics, a higher frequency of discussing politics, and higher levels of trust in public institutions positively predict political participation. Older and more educated people tend to participate more, as do men compared to women. Employment status is non-significantly related to political participation and the national level control variables are robust from model 1 (see table 4 for effect sizes and p-values). Thirdly, adding in the contextual variables (domicile and service access) in model 3, internet use becomes an insignificant predictor of political participation ($p=0.306$), all other variables stay robust from the previous model (2). Domicile provides an odds ratio of 1.400 (CI 95 % [.346, 1.456], $p<0.001$), indicating that people living in rural areas have 40 % higher odds of having medium or high

Table 4.

Total participation	*MODEL 1*			*MODEL 2*			*MODEL 3*		
	OR	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**
Internet use	1.032***	1.016	1.047	0.970***	0.952	0.988	1.010	0.991	1.029
GDP per capita	0.999***	0.999	0.999	0.999***	0.999	0.999	1.000***	1.000	1.000
Gini	1.002**	1.000	1.003	1.002*	1.000	1.004	1.003**	1.001	1.005
Dem. level	0.004***	0.004	0.004	0.003***	0.003	0.003	0.005***	0.005	0.005
Interest				1.191***	1.167	1.215	1.182***	1.158	1.207
Discuss politics				1.515***	1.469	1.563	1.523***	1.476	1.573
Age: 26-33				1.163***	1.108	1.221	1.156***	1.117	1.197
Age: 34-45				1.474***	1.405	1.546	1.466***	1.419	1.515
Age: 46-105				1.481***	1.410	1.556	1.534***	1.485	1.586
Employment status: Employed				1.000	0.959	1.043	1.037*	0.994	1.081
Education level				1.023***	1.012	1.035	1.061***	1.049	1.073
Gender: Female				0.622***	0.599	0.646	0.640***	0.615	0.665
Trust				1.101***	1.075	1.127	1.065***	1.039	1.092
Service access							0.571***	0.547	0.598
Domicile: Rural							1.400***	1.346	1.456
Country dummies	Yes			Yes			Yes		
AIC	79024.19			70918.64			70235.40		
McFadden's R^2	0.0569			0.1002			0.1089		

****p<0.001, **p<0.05, *p<0.1*

levels of participation than those in urban areas. The service access variable show that people with less access to services are more likely to participate (OR=0.504, CI 95 % [0.480, 0.530], p<0.001).

6.1.1 Model Fit: Total Participation

The pseudo R^2 McFadden indicator of model fit increases from 5.69 % to 10.89 %, indicating that the goodness of fit increases when adding more control variables. Additionally, the AIC value decreases throughout the models, from 79024.19 to 70235.40, confirming the validity of the control variables used in the model (see table 4).

6.2 Conventional Participation

The second set of models will assess the predictability of internet use on conventional forms of political participation (table 5).

The first model (1) shows a significant positive effect of internet use on conventional participation. The model controls for the national variables GDP per capita, Gini coefficient and democracy index. For each unit increase in internet use, there is a 13.7 % increase in the odds of being in the middle or high categories of conventional participation (OR=1.137, CI 95 % [1.121, 1.154], p<0.001). For conventional political participation, the Gini coefficient has a significant and positive effect with an odds ratio of 1.036. This shows that in countries with high levels of inequality, the people are more likely to have high levels of conventional political participation. The effects of GDP per capita and democracy level are the same as in the total participation models.

Adding in the individual level control variables, the effect of internet use drops slightly but stays positive. In this model (2), a one unit increase in internet use indicate a 2.2 % increase in the odds of having middle or high levels of conventional participation (OR=1.022, CI 95 % [1.004, 1.041], p=0.014). The national level control variables are robust from the first model. Gender, education level, interest and frequency of discussing politics are all performing as rate of participation among men. As opposed to the models of total participation, age has a negative impact on conventional participation, i.e., younger people tend to engage more in conventional political activities than older. Additionally, higher levels of trust in institutions significantly predicts lower levels of participation.

Table 5.

Conventional participation	*MODEL 1*			*MODEL 2*			*MODEL 3*		
	OR	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**
Internet use	1.137***	1.121	1.154	1.022**	1.004	1.041	1.033***	1.015	1.052
GDP per capita	1.000***	1.000	1.000	1.000***	1.000	1.000	1.000***	1.000	1.000
Gini	1.036***	1.035	1.037	1.035***	1.033	1.037	1.035***	1.033	1.037
Dem. level	0.007***	0.006	0.007	0.004***	0.004	0.004	0.005***	0.005	0.005
Interest				1.039***	1.018	1.061	1.037***	1.015	1.059
Discuss politics				1.245***	1.207	1.285	1.246***	1.206	1.286
Age: 26-33				0.603***	0.574	0.634	0.602***	0.572	0.634
Age: 34-45				0.640***	0.609	0.672	0.638***	0.606	0.671
Age: 46-105				0.650***	0.618	0.684	0.655***	0.621	0.690
Employment status: Employed				0.970	0.930	1.012	0.979	0.939	1.021
Education level				1.042***	1.030	1.053	1.051***	1.039	1.063
Gender: Female				0.736***	0.708	0.764	0.742***	0.713	0.771
Trust				0.952***	0.929	0.975	0.944***	0.921	0.968
Service access							0.866***	0.825	0.909
Domicile: Rural							1.086***	1.043	1.131
Country dummies	Yes			Yes			Yes		
AIC	77675.75			71232.59			71192.87		
McFadden's R^2	0.03269			0.0489			0.0495		

****p<0.001, **p<0.05, *p<0.1*

Including the contextual control variables in the third model (3), the odds ratio for internet use rises again to 3.3 % (OR=1.033, CI 95 % [1.015, 1.052], p<0.001). The national and individual level variables are robust from the previous models. Similar to the models of total participation, this shows that an increase in access to services leads to lower levels of conventional participation, as does living in an urban area compared to a rural.

6.2.1 Model Fit: Conventional Participation

McFadden's pseudo R^2 increases from 3.27 % to 4.95 %, indicating that the fit of the model increases as the control variables are added. The same trend is shown by the AIC, which decreases from 77675.75 to 71192.87.

6.3 Unconventional Participation

Continuing to the last set of models, the effect of internet use on unconventional participation is examined (see table 6). The first model (1) asserts that there is a negative relation between internet use and unconventional political participation. A one unit increase in internet use decreases the odds of having medium or high levels of participation by 4.5 % (OR=0.955, CI 95 % [0.941, 0.969], p<0.001). Opposite from the models mapping conventional participation, a high level of inequality in a country decreases the odds of having higher levels of unconventional participation. The effects of GDP per capita and the democracy index follow the same tendencies as the models for the previous response variables.

In the second model (2) for unconventional participation, the individual level variables are included. The odds ratio of internet use indicates a 6.9 % decrease in the odds of being in the middle or high categories of political participation (OR=0.931, CI 95 % [0.915, 0.948], p<0.001). The model once again shows that higher levels of interest and frequency of discussing politics is associated with higher levels of participation. As with total participation, but opposite from conventional participation, age is positively predicting unconventional participation. Men are more likely to participate than women, and higher levels of trust in public institutions once again predicts higher levels of participation. Neither education level nor employment status has significant effects on unconventional participation, and the effect of the national level variables are robust from the first model.

Table 6.

Unconventional participation	*MODEL 1*			*MODEL 2*			*MODEL 3*		
	OR	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**
Internet use	0.955***	0.941	0.969	0.931***	0.915	0.948	0.973***	0.955	0.991
GDP per capita	0.999***	0.999	0.999	0.999***	0.999	0.999	1.000***	0.999	1.000
Gini	0.992***	0.991	0.994	0.992***	0.991	0.994	0.993***	0.991	0.995
Dem. level	0.015***	0.015	0.015	0.013***	0.013	0.013	0.026***	0.026	0.026
Interest				1.197***	1.173	1.221	1.188***	1.165	1.213
Discuss politics				1.392***	1.349	1.435	1.399***	1.356	1.444
Age: 26-33				1.363***	1.299	1.430	1.360***	1.292	1.432
Age: 34-45				1.695***	1.616	1.778	1.692***	1.607	1.782
Age: 46-105				1.718***	1.636	1.805	1.801***	1.706	1.900
Employment status: Employed				0.987	0.947	1.015	1.030	0.987	1.074
Education level				1.005	0.994	1.015	1.047***	1.035	1.059
Gender: Female				0.665***	0.640	0.690	0.686***	0.660	0.713
Trust				1.125***	1.099	1.152	1.086***	1.059	1.113
Service access							0.504***	0.480	0.530
Domicile: Rural							1.430***	1.375	1.487
Country dummies	Yes			Yes			Yes		
AIC	90993.80			81871.46			80936.27		
McFadden's R^2	0.0715			0.1057			0.1160		

****p<0.001, **p<0.05, *p<0.1*

Finally, adding the contextual control variables, the third model (3) still shows a significant negative relation between internet use and participation. The odds ratio show a 2.7 % decrease in the odds of having medium or high levels of unconventional participation (OR=0.973, CI 95 % [0.955, 0.991], p=0.004). The results from the previous models are robust in this one, except for education level which now presents a significant and positive effect on participation. The effect of domicile and access to services are similar to the modeling of the other response variables. That is, people in urban areas are less likely to have high levels of participation compared to those in rural areas, and the higher level of service access a person has, the less likely they are to have high levels of participation.

6.3.1 Model Fit: Unconventional Participation

The last model, including all control variables, indicate the best fit according to McFadden's R^2. The score increases from 7.15 % to 11.60 %. The AIC values confirm this, decreasing from 90993.80 to 80936.27.

6.4 Robustness

The robustness of the results is achieved by adding the variables to the models set by set, starting with a base model and then including individual and contextual control variables (Leamer, 1983). The results are unstable for the first response variable, as the second model indicates an opposing trend in the effect of internet use on political participation that the first (positive in the first model and negative in the second). Additionally, the full, third, model shows an insignificant effect of internet use on participation.

However, disaggregating the response variable into conventional and unconventional participation provides much more coherent results. The fact that the effect of internet use on the response variable is consistent across the models for each of the two response variables indicates that the results are robust. To further ensure the robustness, the country dummies are replaced with region dummies for East, West, North and Southern Africa. This switch increases the variability within the dummy variable and thus tests the robustness. The results stay robust also to this test as the effect of internet use on the response variable is similar to the effect shown in the other models. For full description of this regression, see appendix IV.

6.5 Validity

When testing the proportional odds assumption for the different response variables, the assumption does not hold for most of the variables. As outlined in the methodology chapter (4), for an analysis with a large sample size that includes several independent variables where some are continuous, it is likely that the Brant test indicates that the assumption is not satisfied. However, when the response variable is dichotomized twice, the difference in odds ratios between the two binary models are that large. The biggest difference among the variables that appeared significant in the Brant test is visible in the variables for age and frequency of discussing politics in the model for total participation. For conventional participation, the largest differences are visible for democracy index, age and frequency of discussing politics. Finally, the unconventional model was the one with the least deviations from the proportional odds assumption. The largest differences in odds ratios between the binary models are for the age variable. In order to assess the impact of these variables, regressions were performed without them included. There were slight shifts in the effects of internet use on the response variables, but not enough to shift the direction. For total participation, the effect of internet use stayed non-significant. The AIC and McFadden's pseudo R^2 indicate a worse fit for all models when these variables were excluded. Thus, it is reasonable to keep them in the analysis. The results from the Brant tests and binary models are available in full in appendix V and the ordinal regressions results in appendix VI.

In conclusion, there are some deviations from the proportional odds assumption. However, considering the characteristics of the variables and large sample size as well as the relatively small differences in odds ratios between the binary models with dichotomized response variables, it is reasonable to assume that the proportional odds assumption is sufficiently satisfied.

7. Discussion and Conclusions

This chapter concludes the thesis by, first, presenting conclusions on the results in light of the research questions, hypotheses, and the analytical framework. Secondly, it discusses the findings and conclusions in light of previous literature and suggests routes for further research on the topic.

7.1 Conclusions

Connecting the results presented above to the hypotheses posed, both H1 and H2 are rejected. H1, that internet use positively predicts political participation, is not accepted as the regression models display non-robust results across the models and non-significant effects of internet use on political participation in the full model with all control variables included. Further, H2 predicts that internet use has a stronger positive effect on unconventional forms of participation than on conventional. This hypothesis is also rejected, as internet use displays a consistent negative effect on unconventional participation while having a positive effect on conventional participation. To illustrate the typical unconventional participator, then, it is a person who uses the internet less, lives in a rural area and is older. Contrastingly, a conventional participator lives in an urban area, is younger and a more frequent internet user. Additionally, living in a rural area with little access to public services increases the likelihood of having high levels of both conventional and unconventional participation. Although these results are not in line with the hypotheses derived from the analytical framework, there are some indications from previous studies that support the findings. Bratton, Chu & Lagos (2010) find this to be the case in their study of emerging democracies. Further, Isaksson (2013) discusses the relatively higher participation levels of resource poor people and theorizes that there might be other means to influence the political reality for the resource rich that include means of corruption.

Relating back to the research questions, then, RQ1 can be answered by concluding that internet use has ambiguous effects on political participation in Africa. For RQ2, the short answer is yes. A longer (yet still condensed) version is that it has a negative effect on unconventional forms of participation, but a positive effect on conventional forms of participation. As such, the analytical framework is correct in that it indicated different effects of internet use on conventional and unconventional political participation. This demonstrates that the disaggregation between the different forms of participation is correct and relevant. However,

the part of the analytical framework that predicts the directions of influence of internet use on these different forms of participation does not seem to be applicable on the African context.

7.2 Discussion and Further Research

7.2.1 Acknowledging Context

The literature used to inform the framework is, as previously stated, mainly the product of research carried out on a Western context. The fact that the results from the African context are opposite of the expected results discredits the universality of the analytical framework. This highlights the importance of context specific analyses and emphasizes the need to refrain from generalizing findings and trends from a Western context to other parts of the world. The results from this analysis, however, show some similarities with studies done on a Southeast Asian context (Meesuwan, 2016). These relative similarities indicate the importance of digitalization level and ICT penetration to determine the effect of internet use on political participation. Countries which are relatively late adopters of technology show some similarities in behavior, compared to countries with established and widespread technology access. However, the results presented here also display some similarities with studies carried out in the United States (Tolbert & McNeal, 2003; Sylvester & McGlynn, 2010). As such, no clear conclusions can be drawn on the effect of penetration level of internet from this study.

In the same spirit of acknowledging conext, it is important to once again emphasize that the findings here outline general trends on the African continent and that those are not claimed to be true in every country, city, or village. Further research can and should be done on more specific trends and/or contexts. Besides the physical context, studies highlight the importance of distinguishing between different forms of internet use. Feezell, Conroy & Guerrero (2016) highlight that *how* and *for what* the internet is used influences the effect on political participation. Researching this more thoroughly could also shed light on if the mechanisms outlined by Brass, Harris & MacLean regarding electricity also apply to internet use. A proposed further study is then to more carefully examine the nature of internet use and the consequent effects on political participation.

7.2.2 Disaggregating the Response Variable

A noteworthy discussion about the results is the non-robustness of internet use on the total participation-variable compared to the robust effect on the disaggregated response variables.

The non-robustness is manifested by internet use exhibiting different directions in effect depending on the amount of control variables included, and the non-significance of internet use on the full model (see table 4). For conventional and unconventional participation, however, the results are robust across the models as the effect of internet use is similar regardless of the amount of control variables included. One explanation for the non-robustness of the total variable is that the disaggregated ones are moving in different directions (internet use has a positive effect on conventional participation and a negative effect on unconventional participation). Adding these together, then, gives an unstable effect on the response variable which is visible through the regression results. Connecting this to the analytical framework, it can be argued that the framework for making distinctions about different forms of participation is relevant and shows significant effect on the analysis.

7.2.3 Domicile

The effect of domicile and access to services indicate that people in rural areas with less access to services participate more than those in urban areas with high levels of participation, for both conventional and unconventional forms of participation. At a first glance, this is somewhat counterintuitive and contradicts the socioeconomic status and resource models. However, acknowledging previous research, there are some indicators that suggest the plausibility of this result in the African context. Baldwin (2020) and Honig (2019) highlight the relatively higher levels of trust in and influence of local, traditional leaders in rural areas than in urban areas. Some of the studies on the African context also demonstrate the trend of higher participation in rural than in urban areas (Bratton, Chu & Lagos, 2010; Isaksson, 2013).

7.2.4 Democracy Level

The effect of the democracy level variable is unexpected and requires further discussion. As mentioned, the results from the all models on both total, conventional and unconventional forms of political participation show that for each unit increase in democracy level, the participation scores would decrease by around 99 % (see tables 4, 5 & 6). This, despite the normal looking distribution of the democracy level variable and its distribution across the different levels of the response variable (see appendix VII).

As mentioned in chapter 5, the relatively fewer data points available for the national level variables slightly aggravates the interpretability of these variables. However, one possible

explanation could be that the participation rates in the countries with democracy scores around the median experience higher levels of participation than the high-level democracy countries. To some extent, this trend is supported by previous research. As outlined in the literature review (chapter 2) Bratton, Chu & Lagos (2010) demonstrate that political participation is not increasing linearly with democracy levels. Living in a country with a stable democratic governance may decrease the population's incentives to claim their rights and make their voices heard. In the countries with the lowest democracy scores, democratic action may be suppressed by the ruling power. This leaves the middle-level democracies, which perhaps have a fragile or newly gained democratic regime which the population is dedicated to upholding. This could potentially spur political participation.

Examining the countries around the median level of democracy, there is some support for this claim. Particularly for Kenya and Malawi, there is a larger rate of people in the middle category of participation and a smaller rate in the lowest category, compared to the overall levels (fig. 17). However, no clear conclusions can be drawn from this around the effect of democracy level on political participation. These ambiguous results are something that should be examined more thoroughly in further research where, for example, a mixed effects model can be used to study multilevel variables.

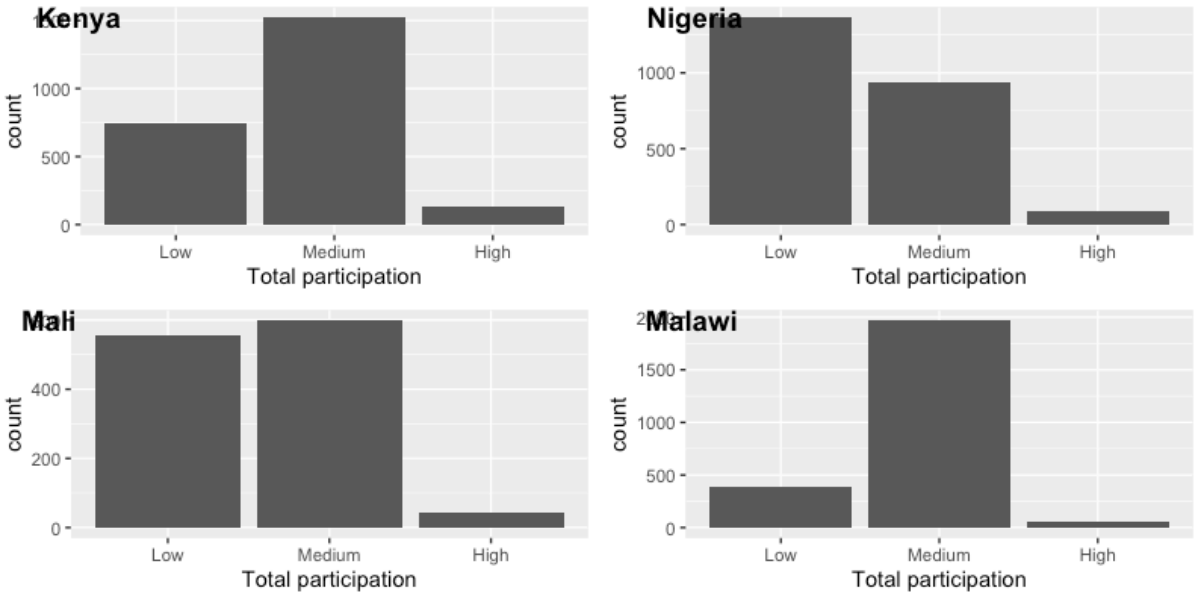


Fig. 17

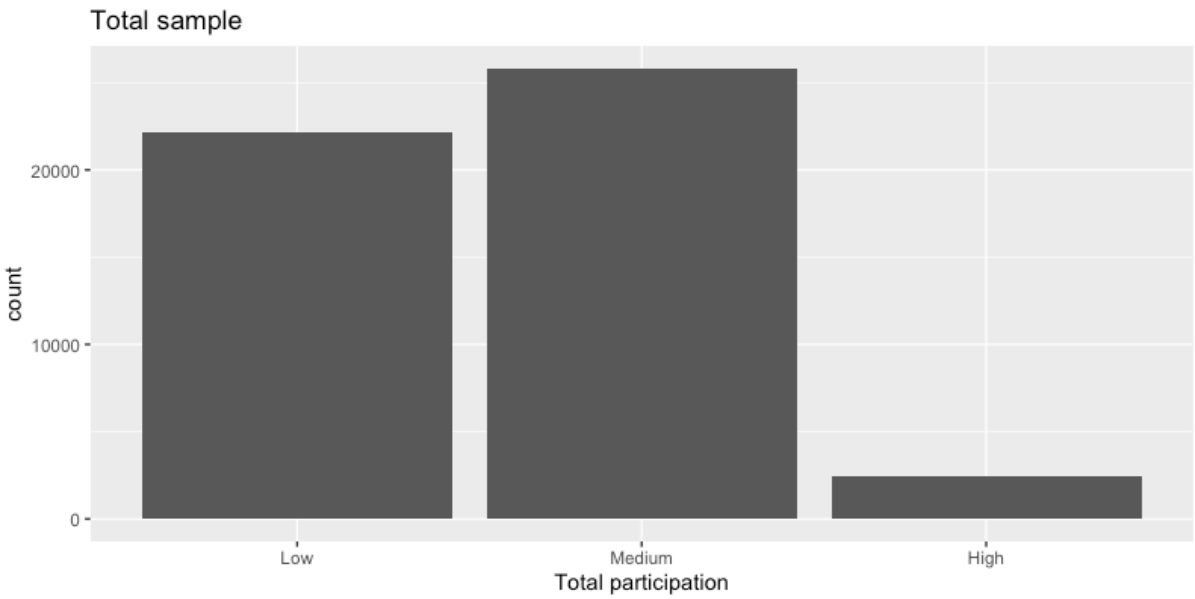

Total sample
20000
10000
0
count
Low
Medium
High
Total participation

Fig. 18

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Appendices

Appendix I: Exploratory Statistics

level	Overall	
n		50,387
Country (%)	Algeria	1204 (2.4)
	Benin	1200 (2.4)
	Botswana	1200 (2.4)
	Burkina Faso	1200 (2.4)
	Burundi	1200 (2.4)
	Cameroon	1200 (2.4)
	Cape Verde	1208 (2.4)
	Egypt	1190 (2.4)
	Ghana	2400 (4.8)
	Guinea	1200 (2.4)
	Ivory Coast	1200 (2.4)
	Kenya	2399 (4.8)
	Lesotho	1197 (2.4)
	Liberia	1199 (2.4)
	Madagascar	1200 (2.4)
	Malawi	2407 (4.8)
	Mali	1200 (2.4)
	Mauritius	1200 (2.4)
	Morocco	1196 (2.4)
	Mozambique	2400 (4.8)
	Namibia	1200 (2.4)
	Niger	1199 (2.4)
	Nigeria	2400 (4.8)
	Senegal	1200 (2.4)
	Sierra Leone	1190 (2.4)
	South Africa	2399 (4.8)
	Sudan	1199 (2.4)
	Tanzania	2400 (4.8)
	Togo	1200 (2.4)
	Tunisia	1200 (2.4)
	Uganda	2400 (4.8)
	Zambia	1200 (2.4)
	Zimbabwe	2400 (4.8)
Country by region (%)	East Africa	8399 (16.7)
	North Africa	5989 (11.9)
	Southern Africa	16803 (33.3)

	West Africa	19196 (38.1)
Service access (mean (SD))		1.60 (0.32)
Trust (mean (SD))		2.62 (0.75)
Gender (%)	Men	25171 (50.0)
	Women	25216 (50.0)
Age (%)	18-25	12304 (25.3)
	26-33	11835 (24.4)
	34-45	12334 (25.4)
	46-105	12066 (24.9)
Domicile (%)	Urban	20330 (40.3)
	Rural	30057 (59.7)
Internet use (mean (SD))		1.58 (1.24)
Employment status (%)	Unemployed	33452 (66.7)
	Employed	16727 (33.3)
Education level (mean (SD))		4.26 (2.13)
GDP per capita (mean (SD))		1,976.87 (1,823.13)
Gini coefficient (mean (SD))		42.77 (8.41)
Democracy level (mean (SD))		0.39 (0.15)
Interest (mean (SD))		2.69 (1.09)
Discuss politics (mean (SD))		1.89 (0.72)
Total participation (%)	Low	22136 (43.9)
	Medium	25824 (51.3)
	High	2409 (4.8)
Conventional participation (%)	Low	30348 (60.3)
	Medium	17598 (35.0)
	High	2345 (4.7)
Unconventional participation (%)	Low	16794 (35.5)
	Medium	9776 (20.6)
	High	20801 (43.9)

Appendix II: Variable Description and Coding

Variable name	Description	Variable type	Range	Corresponding question(s)*	Data source
Total participation	Sum of all forms of participation. Original responses coded as 0:no/never and 1: yes/at least once, then cut into three ordered levels representing low, medium and high levels of participation, respectively.	Ordinal factor	(0,2] < (2,5] < (5,8]	Q26A: In the past year, did you attend a community meeting? Q26B: In the past year, did you get together with others to raise an issue? Q26D: In the past year, did you attend a demonstration or protest march? Q27: Did you vote in the most recent national election? Q30A: In the past year, how often did you contact a local government councilor? Q30B: During the past year, how often did you contact a Member of Parliament? Q30C: In the past year, how often did you contact an	Afrobarometer

				official of a government agency? Q30D: In the past year, how often did you contact a political party official?	
Conventional participation	Sum of conventional forms of participation. Original responses coded as 0:no/never and 1: yes/at least once, then cut into three ordered levels representing low, medium and high levels of participation, respectively.	Ordinal factor	(0,1] < (1,3] < (3,5]	Q27: Did you vote in the most recent national election? Q30A: In the past year, how often did you contact a local government councilor? Q30B: During the past year, how often did you contact a Member of Parliament? Q30C: In the past year, how often did you contact an official of a government agency? Q30D: In the past year, how often did you contact a political party official?	Afrobarometer
Unconventional participation	Sum of unconventional forms of	Ordinal factor	(0,1] < (1,2] < (2,3]	Q26A: In the past year, did you attend	Afrobarometer

	participation. Original responses coded as 0: never and 1: yes, then cut into three ordered levels representing low, medium and high levels of participation, respectively.			a community meeting? Q26B: In the past year, did you get together with others to raise an issue? Q26D: In the past year, did you attend a demonstration or protest march?	
Internet use	Continuous variable ranging from 1: never to 5: every day.	Numeric	1-5	Q91B: How often do you use the internet?	Afrobarometer
Age	Age of respondent, cut into three age groups.	Ordered factor	(18,26] < (26,34] < (34,46] < (46,105]	Q1: Age of respondent	Afrobarometer
Gender	Gender of respondent, 1: male, 2: female	Factor	1, 2	Q101: Respondent's gender	Afrobarometer
Education level	Education level of respondent	Numeric	1-10	Q97: Education of respondent	Afrobarometer

Employment status	Employment status of respondent. 0: no, 1: yes	Factor	0, 1	Q96: Job that pays cash income?	Afrobarometer
Interest	Respondent's level of interest in public affairs. 1: not at all interested to 4: very interested.	Numeric	1-4	Q14: How interested would you say you are in public affairs?	Afrobarometer
Discuss politics	Respondent's activeness in discussing politics with their social network. 1: never to 3: frequently.	Numeric	1-3	Q15: When you are together with friends and family, how often would you say that you discuss political matters?	Afrobarometer
Trust	Index variable capturing trust in different societal institutions.	Numeric	1-4	Q59A: How much do you trust the key leadership figure (president/prime minister)? Q59B: How much do you trust the parliament/national assembly? Q59C: How much do you trust the national electoral commission?	Afrobarometer

				Q59D: How much do you trust the tax department? Q59E: How much do you trust your elected local government council? Q59F: How much do you trust the ruling party? Q59G: How much do you trust opposition political parties? Q59H: How much do you trust the police? Q59I: How much do you trust the army? Q59J: How much do you trust the courts of law?	
Domicile	Urban or rural residence of respondent. Semi-urban recoded as urban. 1: urban, 2: rural.	Factor	1, 2	URBRUR: Urban or rural primary sampling unit	Afrobarometer

Service access	Index variable of access to different infrastructure services available in the sampling area. 1: low to 2: high.	Numeric	1-2	EA_SVC_A: Is there an electricity available? EA_SVC_B: Is there access to piped water? EA_SVC_C: Is there access to a sewage system? EA_SVC_D: Is there access to cell phone service?	Afrobarometer
GDP per capita	GDP per capita, country wise.	Numeric			World Bank Data
Gini coefficient	Gini coefficient, country wise. 0: no inequalities, 1: completely unequal.	Numeric	0-1		World Bank Data
Democracy level	Mean of five different democracy indices. 0: no democracy, 1: full democracy.	Numeric	0-1	Electoral democracy index, Liberal democracy index, Participatory democracy index, Deliberative democracy index, Egalitarian democracy index	V-Dem
Country	Dummy variable	Character		COUNTRY	Afrobarometer

Appendix III: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12
1		0.185	-0.007	0.023	-0.090	-0.194	0.513	0.167	0.139	-0.133	0.336	-0.307
2	0.185		0.226	0.486	0.008	0.072	0.172	0.121	-0.014	-0.028	0.397	-0.179
3	-0.007	0.226		0.259	0.002	-0.031	0.127	-0.006	-0.005	0.105	0.038	-0.054
4	0.023	0.486	0.259		0.005	0.057	-0.031	0.035	0.020	0.113	0.099	-0.111
5	-0.090	0.008	0.002	0.005		-0.090	-0.120	-0.150	-0.186	-0.008	0.007	-0.007
6	-0.194	0.072	-0.031	0.057	-0.090		-0.242	0.035	0.017	0.078	-0.032	0.058
7	0.513	0.172	0.127	-0.031	-0.120	-0.242		0.248	0.191	-0.186	0.336	-0.314
8	0.167	0.121	-0.006	0.035	-0.150	0.035	0.248		0.096	-0.047	0.144	-0.106
9	0.139	-0.014	-0.005	0.020	-0.186	0.017	0.191	0.096		-0.001	0.046	-0.041
10	-0.133	-0.028	0.105	0.113	-0.008	0.078	-0.186	-0.047	-0.001		-0.173	0.154
11	0.336	0.397	0.038	0.099	0.007	-0.032	0.336	0.144	0.046	-0.173		-0.619
12	-0.307	-0.179	-0.054	-0.111	-0.007	0.058	-0.314	-0.106	-0.041	0.154	-0.619	

1: Internet use
2: GDP per capita
3: Gini coefficient
4: Democracy level
5: Gender
6: Age
7: Education level
8: Employment status
9: Discuss politics
10: Trust
11: Service access
12: Domicile

Appendix IV: Robustness Test

Region dummies	*TOTAL PARTICIPATION*			*CONVENTIONAL PARTICIPATION*			*UNCONVENTIONAL PARTICIPATION*		
	OR	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**	**OR**	**2.5 %**	**97.5 %**
Internet use	1.023**	1.005	1.042	1.051***	1.033	1.070	0.986	0.968	1.004
GDP per capita	1.000***	1.000	1.000	1.000***	1.000	1.000	1.000***	1.000	1.000
Gini	1.010***	1.007	1.012	1.007***	1.005	1.010	1.007***	1.004	1.007
Dem. level	0.534***	0.530	0.539	0.697***	0.691	0.702	0.494***	0.489	0.499
Interest	1.150***	1.127	1.174	1.017	0.0996	1.039	1.151***	1.128	1.174
Discuss politics	1.532***	1.484	1.581	1.223***	1.186	1.236	1.412***	1.369	1.457
Age 26-33	1.178***	1.126	1.232	0.629***	0.599	0.660	1.357***	1.295	1.422
Age 34-45	1.452***	1.389	1.518	0.668***	0.636	0.701	1.626***	1.552	1.704
Age 46-105	1.502***	1.437	1.571	0.683***	0.650	0.718	1.710***	1.630	1.793
Employment status	0.989	0.948	1.031	0.976	0.937	1.018	0.956**	0.917	0.997
Education level	1.059***	1.048	1.071	1.058***	1.046	1.070	1.039***	1.027	1.050
Gender: Female	0.642***	0.618	0.667	0.756***	0.727	0.785	0.683***	0.657	0.709
Trust	1.119***	1.091	1.147	0.946***	0.923	0.970	1.159***	1.131	1.188
Service access	0.549***	0.529	0.570	0.791***	0.768	0.815	0.523***	0.506	0.540
Domicile: Rural	1.304***	1.255	1.356	1.020	0.981	1.059	1.342***	1.293	1.394
Regional dummies	Yes			Yes			Yes		

****p<0.001, **p<0.05, *p<0.1*

Appendix V: Validity Tests

Brant test and OR from two binary logistic regressions

Brant test	*TOTAL PARTICIPATION*					
Test for	**X2**	**df**	**probability**	**OR1**	**OR2**	**difference**
Omnibus	661.43	15	0			
Internet use	24.06	1	0	0.986	1.091	-0.104
GDP per capita	72.2	1	0	1.000	1.000	0.000
Gini	93.63	1	0	1.025	0.997	0.028
Dem. level	1.77	1	0.18	0.876	1.117	-0.241
Interest	15.33	1	0	1.142	1.273	-0.132
Discuss politics	32.46	1	0	1.484	1.855	-0.371
Age 26-33	7.81	1	0.01	1.169	1.434	-0.264
Age 34-45	36.69	1	0	1.375	2.098	-0.723
Age 46-105	29.68	1	0	1.419	2.105	-0.686
Employment status	5.2	1	0.02	0.995	1.113	-0.118
Education level	25.59	1	0	1.058	1.131	-0.073
Gender	2.57	1	0.11	0.637	0.689	-0.052
Trust	0.7	1	0.4	1.141	1.172	-0.031
Service access	10.49	1	0	0.432	0.597	-0.165
Domicile	0.56	1	0.45	1.279	1.339	-0.060

Brant test	CONVENTIONAL PARTICIPATION					
Test for	**X2**	**df**	**probability**	**OR1**	**OR2**	**difference**
Omnibus	1023.1	15	0			
Internet use	0.27	1	0.6	1.051	1.062	-0.011
GDP per capita	0.85	1	0.36	1.000	1.000	0.000
Gini	19.38	1	0	1.003	0.991	0.012
Dem. Level	22.92	1	0	0.487	1.121	-0.633
Interest	73.26	1	0	1.008	1.264	-0.256
Discuss politics	79.81	1	0	1.192	1.654	-0.462
Age 26-33	136.12	1	0	0.589	1.352	-0.764
Age 34-45	306.43	1	0	0.605	1.972	-1.367
Age 46-105	321.98	1	0	0.616	2.125	-1.510
Employment status	5.87	1	0.02	0.975	1.091	-0.116
Education level	35.77	1	0	1.051	1.133	-0.082
Gender	1.83	1	0.18	0.760	0.714	0.046
Trust	61.56	1	0	0.932	1.187	-0.255
Service access	15.65	1	0	0.831	0.571	0.260
Domicile	6.96	1	0.01	1.012	1.181	-0.169

Brant test	*UNCONVENTIONAL PARTICIPATION*					
Test for	**X2**	**df**	**probability**	**OR1**	**OR2**	**difference**
Omnibus	146.17	15	0			
Internet use	5.58	1	0.02	0.968	0.947	0.021
GDP per capita	8.41	1	0	1.000	1.000	0.000
Gini	10.63	1	0	1.032	1.028	0.004
Dem. level	0.5	1	0.48	0.914	0.963	-0.049
Interest	0.04	1	0.85	1.151	1.153	-0.002
Discuss politics	1.56	1	0.21	1.378	1.406	-0.028
Age 26-33	8.35	1	0	1.313	1.421	-0.108
Age 34-45	22.9	1	0	1.504	1.716	-0.212
Age 46-105	26.49	1	0	1.569	1.816	-0.247
Employment status	6.55	1	0.01	0.961	1.015	-0.053
Education level	2.15	1	0.14	1.056	1.048	0.009
Gender	7.35	1	0.01	0.704	0.668	0.036
Trust	0	1	1	1.192	1.192	0.000
Service access	46.66	1	0	0.345	0.461	-0.116
Domicile	16.61	1	0	1.265	1.400	-0.135

Appendix VI: Ordinal Logistic Regression After Removing Critical Variables Identified by Brant Test

	TOTAL PARTICIPATION		
	OR	**2.5 %**	**97.5 %**
Internet use	1.005	0.987	1.023
Dem. Level	0.003***	0.003	0.003
Gini	1.007***	1.005	1.009
GDP per capita	1.000***	1.000	1.000
Interest	1.356***	1.333	1.380
Employment status: Employed	1.086***	1.043	1.131
Education level	1.055***	1.043	1.066
Gender: Female	0.593***	0.571	0.616
Trust	1.051***	1.026	1.077
Service access	0.571***	0.545	0.598
Domicile: Rural	1.359***	1.307	1.412
Country dummies	Yes		
AIC	74096.72		
McFadden's R^2	0.0952		

****p<0.001, **p<0.05, *p<0.1*

	CONVENTIONAL PARTICIPATION		
	OR	**2.5 %**	**97.5 %**
Internet use	1.073***	1.054	1.092
Gini	0.999	0.992	1.005
Interest	1.090***	1.071	1.109
Employment status: Employed	0.862***	0.826	0.899
Education level	1.076***	1.064	1.088
Gender: Female	0.743***	0.715	0.772
Trust	0.946***	0.921	0.972
Service access	0.855***	0.782	0.933
Domicile: Rural	1.068**	1.015	1.123
Country dummies	Yes		
AIC	75385.99		
McFadden's R^2	0.0404		

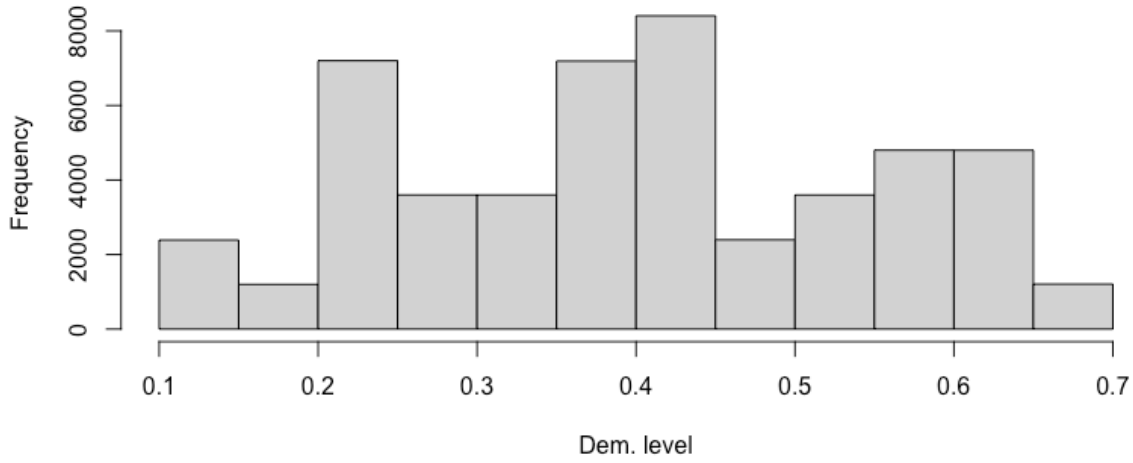
****p<0.001, **p<0.05, *p<0.1*

	UNCONVENTIONAL PARTICIPATION		
	OR	**2.5 %**	**97.5 %**
Internet use	0.950***	0.933	0.967
GDP per capita	1.000***	1.000	1.000
Gini	0.998*	0.996	1.000
Dem. Level	0.014***	0.014	0.015
Interest	1.196***	1.173	1.220
Discuss politics	1.412***	1.369	1.456
Employment status: Employed	1.111***	1.067	1.157
Education level	1.018***	1.007	1.029
Gender: Female	0.665***	0.640	0.690
Trust	1.082***	1.056	1.108
Service access	0.518***	0.494	0.542
Domicile: Rural	1.401***	1.349	1.456
Country dummies	Yes		
AIC	84843.12		
McFadden's R^2	0.1081		

****p<0.001, **p<0.05, *p<0.1*

Appendix VII: Distribution of democracy level across participation levels

Distribution of Democracy level variable



Distribution of Democracy level variable across response variable Total participation