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The role of governance in mobile phones for inclusive human development in Sub-Saharan Africa



Simplice A. Asongu^{a,*}, Jacinta C. Nwachukwu^b

^a African Governance and Development Institute, P.O.Box 8413, Yaoundé, Cameroon

^b Department of Economics, Finance and Accounting, Faculty of Business, Environment and Society, Coventry University, Priory Street, Coventry CV1 5DH, UK

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ABSTRACT

This study assesses the synergy effects of governance in mobile phone penetration for inclusive human development in Sub-Saharan Africa with data for the period 2000–2012. It employs a battery of interactive estimation techniques, namely: Fixed effects, Generalised Method of Moments and Tobit regressions. Concepts of political (voice and accountability and political stability/no violence), economic (government effectiveness and regulation quality) and institutional (corruption-control and rule of law) governance are employed. The following findings are established. The previously apparent positive correlation between mobile phones and inclusive development can be extended to a positive effect. Although political governance is overwhelmingly not significant across estimated models, the average effects from economic governance are higher relative to institutional governance. On the interactions between mobile phones and governance variables, while none are apparent in Fixed effects regressions, there are significant synergy effects in Generalised Method of Moments and Tobit estimations, notably, from: regulation quality in the former and political stability, voice and accountability and rule of law in the latter. There is consistent evidence of convergence in inclusive human development. Policy implications are discussed.

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1. Introduction

There are at least four reasons for investigating the synergy effects of governance in mobile phone penetration for inclusive human development in Sub-Saharan Africa (SSA). The terms, 'mobile phone penetration', 'mobile telephony', 'mobile' and 'mobile phones' are used interchangeably throughout the paper.

The April 2015 World Bank report on attainment of the Millennium Development Goal extreme poverty target has revealed that poverty has been decreasing in all regions of the world with the exception of Sub-Saharan Africa (World Bank, 2015; Asongu and Kodia-Tedika, 2015).

Whereas high-end markets in North America, Europe and Asia are experiencing some degree of stabilization in the growth of mobile phones, there are still substantial business opportunities in developing African markets (Asongu, 2015a). Moreover, according to Penard et al. (2012), Africa has been experiencing an uneven development in mobile phone *versus* internet penetration. Consistent with this account, as of 2010, mobile and internet

penetrations had reached saturation points in developed countries, whereas in Africa the phenomena has been characterised by an asymmetric development, notably with 41% of mobile phone penetration and 9.6% of internet penetration.

Government quality has been substantially documented to be associated with higher living standards, especially in the: improvement of the quality of life by more efficient allocation of economic resources (Fosu, 2013a, 2013b; Anyanwu and Erhijakpor, 2014), principally for the deprived elderly (Fonchingong, 2014) and consolidation of a solid foundation for societal change (Efobi, 2015). In essence, the role of institutions in Africa's economic recovery has motivated a recent book by Fosu (2015a, 2015b) that is focused on assessing whether the recent growth resurgence experienced in the continent from the mid-1990s (Fosu, 2015c, p. 44) is a myth. The notion of myth in the book fundamentally builds on the fact that economic prosperity has not been trickling down to the poor. We aim to extend this strand of the literature by examining the synergy effects of governance in mobile phones for inclusive development in Sub-Saharan Africa: a sub-region with 45% of countries off-track from the MDG extreme poverty target.

Mobile phones in Africa have been shown to be more associated with the informal economic sector, as opposed to its formal component (Asongu, 2013a) and mitigate income-inequality (Asongu, 2015b). This is consistent with the growing literature on

* Corresponding author.

E-mail addresses: asongusimplice@yahoo.com (S.A. Asongu), jacinta.nwachukwu@coventry.ac.uk (J.C. Nwachukwu).

inclusive development benefits from mobile phones, *inter alia*, for the: empowerment of women (Ojo et al., 2012; Maurer, 2008); promotion of financial inclusion (Singh, 2012, p. 466; Kirui et al., 2013); improvement of health services for the poor (Kliner et al., 2013); bridging of the rural-urban divide (Chan and Jia, 2011, pp. 3–5; Qiang et al., 2011, pp. 14–26); elimination of agricultural waste through the mitigation of supply- and demand-side constraints as well as demand-supply mismatches (Muto and Yamano, 2009; Aker and Fafchamps, 2010); efficiency in the management of households (Al Surikhi, 2012; Asongu, 2014a, 2015c) and the enhancing of business opportunities (Ondiege, 2010, p. 11; Mishra and Bisht, 2013, p. 505).

The above justifications are linked to the present inquiry in that, with good governance, the growth potential of mobile phones can be harnessed to address the policy syndrome of inclusive human development in Sub-Saharan Africa. Moreover, there has been growing requests in scholarly circles for more research on the development outcomes of mobile phones in the recent past. This is partly because the phenomenon has been cautioned not to be considered as a silver bullet for development (Mpogole et al., 2008, p. 71; Asongu and De Moor, 2015). In order to investigate the synergy effects of governance in mobile phones for inclusive development, we articulate the three main governance categories (represented by six indicators), namely: political governance (comprising political stability/no violence and voice & accountability); economic governance (involving government effectiveness and regulation quality) and institutional governance (covering corruption-control and the rule of law). Political governance is defined as the election and replacement of political leaders. Economic governance is the formulation and implementation of rules that enable the delivery of public goods and services. Institutional governance is the respect of the state and citizens of institutions that govern interactions between them. Whereas the evolving literature substantiating the need to unbundle governance indicators is discussed in Section 2; the relevance of such separation is to provide room for more policy implications.

In the light of the above, the main contribution of this investigation is to extend the existing literature by assessing the role of governance in the inclusive human development benefits of mobile phone penetration. By contributing to the macroeconomic literature on managing technology for inclusive human development, the positioning of the inquiry deviates from mainstream corporate or microeconomic technovation literature on managing technology for entrepreneurial opportunities. Some recent narratives in the mainstream strand have included: focus on a set of entrepreneurial innovators who are continuously innovating because of growing skills and financial resources (Best, 2015); opportunity creation and opportunity discovery within the framework of disruptive innovation (Hang et al., 2015; Wan et al., 2015); technological innovation offering new avenues as a result of patent road-mapping (Jeong and Yoon, 2015); entrepreneurial opportunities from ageing population (Kohlbacher et al., 2015) and emerging ecosystems (Overholm, 2015); opportunity identification by scientific entrepreneurs (Maine et al., 2015) and research collaborators (McKelvey et al., 2015).

Therefore, the inquiry instead extends the strand of literature on the distributional consequences of emerging technologies (Cozzens, 2011). Within the strand, this study is closest to an evolving stream of technology management literature on the importance of mobile phones in development outcomes and social change (Islama and Meadeb, 2012; Brouwer and Brito, 2012; Mira and Dangersfield, 2012). This stream of literature has been documented on both developed (Thakar, 2012) and developing countries (Sonne, 2012; Gupta and Jain, 2012). Therefore, we extend this literature which articulates the use of ICT for inclusive and

sustainable development (Alkemade and Surrs, 2012) by assessing the role of governance in mobile phones for inclusive development in Sub-Saharan Africa.

The remainder of the paper is presented as follows. The literature on governance, mobile phones and inclusive development is covered in Section 2. The data and methodology are discussed in Section 3. Section 4 presents the empirical results. Section 5 concludes with implications.

2. Governance, mobile phones and inclusive development

2.1. Controversial views and debates on the conception of governance

This section comprises three main parts, namely: definitions of the concept of governance, controversial views on governance measurements in mainstream literature and the imperative of unbundling the concept of governance in the development literature.

In accordance with Asongu (2016), various definitions of the concept of governance have been documented. For brevity, we limit the discourse to four main definitions from recent literature. Economic governance has been defined by Dixit (2009) as the ‘... structure and functioning of the legal and social institutions that support economic activity and economic transactions by protecting property rights, enforcing contracts, and taking collective action to provide physical and organizational infrastructure’ (p.5). Tusalem (2015) conceives governance as an embodiment of corruption, rule of law, political stability, bureaucratic effectiveness and regulatory quality. According to Fukuyama (2013), the concept of governance can be improved by adopting four principal approaches through which ‘state quality’ can be understood. They are: procedural measures, output measures, bureaucratic autonomy measures and indicators of capacity which are an embodiment of both resources and the degree of professionalism involved. To the best of our knowledge, the most widely employed governance indicators from Kaufmann et al. (2010) can be classified into three main categories (see Andrés et al., 2015). They consist of: Political governance which measures the election and replacement of political leaders and is approximated by voice and accountability and political stability/non-violence. Economic governance is defined as the formulation and implementation of policies that deliver public goods and services and is proxied by regulation quality and government effectiveness and Institutional governance is reflected in the quality of institutions that govern interactions between the State and citizens. This is measured by the rule of law and corruption-control.

We devote space to briefly engaging several criticisms in academic circles that have arisen from the use of governance indicators from Kaufmann et al. (2010). As far as we have reviewed, the most notable of these criticisms is the debate between the underlying authors on the one hand and ‘Andrew Schrank and Marcus Kurtz’ on the other. The argument is discussed in four streams, namely: ‘models, measures and mechanisms’, ‘a reply’, ‘a defense’ and ‘a rejoinder’.

Kurtz and Schrank (2007a) have raised doubts about the consensus that good governance is positively associated with economic development by presenting a case for rethinking the mainstream confidence enjoyed by the mainstream governance indicators in the empirical literature on the governance-growth nexus. The authors have concluded that the underlying governance measurements are problematic because they are clouded with a number of issues, *inter alia*: sampling adverse selection, perceptual biases and conceptual conflation with choices of policy.

Kaufmann et al. (2007a) have replied with a three point

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