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ARTICLE

Development finance 2.0: do participation and information technologies matter?

J. P. Singh

Professor of International Commerce and Policy, Schar School of Policy and Government, George Mason University, Arlington, VA, USA

ABSTRACT

This essay critically examines the discourse of participation in development finance directed at the poor in the Global South from national and international development agencies. This discourse, often termed financial inclusion, posits the ability of development actors to reach the poor involving them in important economic decisions affecting their lives, provides access to products that improve their material conditions, and ensures their credit worthiness through highly nuanced information technology and social media tools. The paper presents evidence from two ethnographically inspired studies undertaken by the author in India and Kenya to ascertain the ways in which the participatory discourse in finance is understood among societal participants themselves. The paper presents relevant epistemes for analyzing what 'grassroots' actors understand as their participation in development-oriented financial inclusion projects. The study forwards two major conclusions: (1) 'habits of authority' among various development actors thwart effective participation; (2) technology platforms that allow for successive innovations and interconnections from businesses and other organizations encourage financial inclusion.

KEYWORDS Participation; inclusion; finance; infrastructure; development; poverty

This essay examines the meaning and effectiveness of participatory practices for new financial mechanisms directed at the developing world's poor to facilitate transactions, liquidity, and loans. *Participation* refers to the ways development agencies *include* or *address* the poor and other beneficiaries in the decisions that affect their lives (Crafts, 2001; Heller & Rao, 2015). *Participatory inclusion* can range from 'cooperative' stakeholder consultations to 'confrontational' advocacy against development practices (Singh & Flyverbom, 2016). Participatory practices now co-exist and challenge the expertise-led model of development to emerge as 'a central concept underpinning development practice and theory in many post-colonial countries' (Gaynor, 2010, p. 3). Nevertheless, the scope and effects of participatory inclusion are unclear.

The participatory practices in finance, or development in general, reflect the critique of efforts in the post-war era that shaped development in top-down technocratic ways (Baiochi et al., 2011; Escobar, 1994; Easterly, 2014; Mansuri & Rao,

CONTACT J. P. Singh jsingh19@gmu.edu Professor of International Commerce and Policy, Schar School of Policy and Government, George Mason University, 3351 Fairfax Drive MS 3B1 Arlington, VA 22201-4426, USA

2013; Singh, 2017). From the beginnings of microfinance to the recent developments in financial inclusion, the new vocabularies of financial mechanisms are touted, though not always practiced, among global developmental practitioners for: (1) their ability to reach the poor and the marginalized though mechanisms such as mobile money transfers, micro loans and ease of utility payment systems; (2) involving the poor in decisions that affect their lives from the user-oriented design of infrastructure to the services that flow across them, and (3) assessing credit worthiness of the 'excluded' through highly nuanced information technology and social media tools.

This essay explores participation at a cultural level, in the spirit of development anthropology, to discern collective understandings of these terms among developmental benefactors and receivers. While we know how development agencies prioritize participation, very little is known about how the beneficiaries understand participatory practices. To the poor, it can mean access to much needed credit, ability to send money for distant needs, and make payments for bills. Equally, such inclusion also makes the poor financial 'subjects' of businesses, governments, and international actors who govern the provisioning (several essays in this SI).

This paper presents evidence from a grounded theory exercise involving two ethnographically-inspired studies undertaken by the author in India and Kenya to develop concepts for what societal actors understand to be participation in development-oriented financial technology projects. As explained later, grounded theory employs participant observation and conversational interviews to identify the ways people code their world (Bryant & Charmaz, 2010; Charmaz, 2014). Based on these codings, grounded theory inductively develops theoretical suppositions. Therefore, while the researcher starts with existing knowledge, the field research allows for an insider's view of the way people experience their world. Based on its field research, this study concludes with two theoretical suppositions for further tests:

1. 'interoperable' technology platforms allow for successive innovation from businesses and other organizations and provide access to financial services. Infrastructural interoperability means the expansion of networks in society and the ability to connect many services via an information technology network. It encourages financial inclusion through reaching the poor in imaginative and flexible ways, and almost ubiquitously through mobile phones. But the poor may be mostly 'recipients' and 'consumers' of this access; their involvement in the shape of these networks and technologies is limited.
2. 'habits of authority' among various development actors – states, businesses, international and non-governmental actors – thwart effective participation. The poor are able to 'access' financial services and obtain credit. However, development actors assert their domination in many ways including their control of infrastructures and not ensuring their economic sustainability for communities, especially in rural areas.

The propositions above are 'discovered' rather than 'verified' in this essay, to use the terms employed for ethnographic research by the development anthropologist Riall Nolan (2002). The conceptualization and the methods presented in the next two sections provide the context for undertaking field research rather than for generating preconceived hypotheses. In the subsequent sections, the fieldwork

discussion presents the cultural understandings of the infrastructures among development actors, and the patterns of authority that seep through them.

The empirical evidence does not lead to a grand Foucauldian conclusion about governmentality, meaning that the governance reach of the infrastructure are so diffused and normalized that the beneficiaries hardly understand the infrastructural intrusion.[1] Authority entails obedience to governing institutions in a Weberian sense, but also the complex everyday interactions that reproduce its workings in the minds of the governors and the governed (Lukes, 2005; Scott, 1998). While acknowledging that power operates at this subconscious level, this essay leans more toward the kind of context specific understanding that other anthropologists have emphasized. In the words of Gardner and Lewis (2015, pp. 137–138): 'Since technology is usually produced, distributed, used and controlled by different sets of people' the resulting changes in social and economic relations lead to 'varying amounts of power and status, according to each cultural context.' Thus, the infrastructural and governance technologies that produce habits of authority are represented as the relative position and subjective understandings of actors with respect to the apparatus of finance, and in terms of function rather than just form (Bernards & Campbell-Verduyn, 2018).

Historical and conceptual context

This section places key terms of this paper – participation and technology led financial inclusion – in historical context and existing literatures. The latter informed my field research strategy but as the methodological section explains later, the field research aimed to produce codes for the way people understand inclusion and interoperability. The existing literature is attuned to issues of power and hierarchies, and technological progress and failure. However, it provides much less by way of localized understandings of technologies and inclusion.

The early literature on technology and development starts with models of development which assume a benign view of state-led development that affects technological diffusion and its distributional effects in society. In the immediate post-colonial era, the consensus in development thought, reflecting European and American economic histories, was to replicate the industrial model to produce 'modernization' in these societies (Gerschenkron, 1962). Development was narrowly defined in terms of economic growth, which resulted from hastening industrialization (Rostow, 1960). The central planning models in the developing world, in China or India or elsewhere – reflecting the Soviet 5-year Gosplan models, accepted the top-down instrumental logic (Lange, 1961; Rosensteien-Rodan, 1943). Neither top-down central plans nor industrial technologies yielded the planned growth rates. Cozzens et al (2008, pp. 793–794) write that 'over the past half century' development paradigms in science and technology 'shared an assumption of strategy and action: some set of actors in the context of a poor country should take a specified set of steps toward "development"'.

Some attention was accorded to information infrastructures such as radio and television but technology's role was mostly imagined as broadcasting modernization messages to people (Lerner, 1958; Rogers, 1962; Schramm, 1964). Many societies literally tuned-out these messages that sought behavioral changes in health (e.g. immunization campaigns), birth control, education, and civic engagement.

Interestingly, telephone infrastructures, at the forefront of what are now termed information technologies, were ignored in these models as being elitist and irrelevant to development (Saunders et al., 1994; Singh, 1999). Where communication infrastructures existed, they were often neither operational nor interoperable. The diffusion rates for telephony were below 1 telephone per 100 population in most low income developing countries prior to 2000. As for interoperability, the provision of telephony was not linked to anything other than voice telephony.

The conception of participation in development and technology initiatives also reflected the history of community participation in contexts such as the United States where participatory ideology may have been manufactured to recruit participants in New Deal projects (Selznick, 1984, 1949) or follow the 'misunderstandings' of liberal 'activist social scientists' during President Johnson's war on poverty (Moynihan, 1969). This ideology carried over into the paternalistic P.L. 480 food distribution and the green revolution initiatives from U.S. Agency for International Development and the Rockefeller Foundation (Cullather, 2010). They also informed Johnson appointee Robert McNamara's basic needs agenda as the World Bank President from 1968–1991.

The current emphasis among development practitioners on shaping technology with societal participation thus contrasts with a top-down expertise-led model of technology and development in the post-war period (Anderson & Adams, 2008; Shrum & Shenav, 2001; Sarewitz, 1996). It reflects everything from protests against top-down models, to exploring various forms of empowerment that enable individuals and communities to access processes that bring them material comforts and human dignity (Brecher & Costello, 1994; Keck & Sikkink, 1997; Nussbaum, 2011). Experts believed top-down approaches work like magic wands, which would seamlessly deliver on the desired results: workers would produce industrialization; farmers would adopt 'superior' technologies; children would learn from wise teachers. Workers, farmers, or children, however, did not take ownership. As Scott (1998) has noted, the state imagined a "prostrate" civil society. More recently, the deliberative democracy literature has also examined the difficulty of transferring participatory mechanisms from one context to another (Baiocchi et al., 2011; Heller & Rao, 2015) or the efficacy of participatory mechanisms altogether without adequate institutional support (Mansuri & Rao, 2013).

The dominant approaches to development, often associated with the World Bank, still conceive goals in material terms such as resolving hunger, increasing life expectancy, or expanding literacy rates (Hulme, 2010; Yusuf, 2009). But these material goals are now placed in a context of human incentives and empowerment (Appadurai, 2015; Nussbaum, 2003; Sen, 2000), as seen in UNDP's 'human development' approach. They also reflect the increasing emphasis on participatory approaches as ethically desirable (Gotoh & Dumouchel, 2009; Murphy, 2006; Pogge, 2007).

The salience of participatory discourses in development does not imply consensus. Scholars posit participatory techniques as varying from empowering (Heeks, 2009, 2018) to being 'the new tyranny' to coopt society into consenting to neoliberal market-driven domination (Cooke & Kothari, 2000). Based on these perspectives, Singh and Flyverbom (2016) identified four types of participation discourses in Information and Communication Technologies for Development along two dimensions: (1) whether the discourse is top-down from development agencies or bottom up from societal actors and (2) whether these discourses are

Table 1. Participation discourses in international development (with examples from Financial Development).

	Structured/Hierarchical	Agentic
Consensual (state or business dominated)	Stakeholder Discourse Some civil society consultations at beginning of development *Examples:* Often implicit in UN led or national projects in financial development	Network Consensual Discourse Inclusion for service delivery *Examples:* Business led financial development project. eg. M-Pesa
Conflictual (societal pressures)	Performative Mobilization Discourse Civil society and media mobilization against dominant actors *Examples:* Protests from local community and service providers in India such as the Aadhar card court cases	Oppositional Discourse Provision outside of business and (sometimes) dominant state networks *Examples:* Community-led finance platforms, including forms of crowdsourcing

Adapted from Singh and Flyverbom (2016).

consensual or conflictual. Based on these dimensions, we identified four different types of participatory discourses (Table 1, which also provides examples from India and Kenya discussed later).

Participation is an ambiguous concept but its 'policy discourse generates mobilizing metaphor' for practitioners in development (Mosse, 2005). The discourses presented in Table 1 are academic but furthered through the ideological machines of the Global North. For example, liberal internationalist practitioners often favor the network discourse while, as already identified, critical scholars favor the oppositional discourse. Based on its evidence, this essay finds that 'reality' is more complex. Depending on the context, one may find many worldviews co-existing at the societal level. Doreen, whom I met in the Mathare slum, applies for microfinance loans and relies on her smart phone for many tasks.[2] She is equally involved in many forms of community organization and resistance. Sanjeev, a community service center operator in Himachal Pradesh, India, is actively involved in challenging government policies in India but also works with the government supplied technologies. Therefore, instead of synthesis or a new (grand) theory, this essay incorporates the top-down/bottom-up and the consensual/conflictive dimension of participation to inform the two mid-level categories derived from its field research: (1) 'habits of authority' appear frequently in the way that actors position themselves in infrastructures or how development actors such as the state or international organizations 'see' the world; (2) networks that allow for 'interoperability' among technological infrastructures tend to proliferate and get adopted among societal, business and state actors. Both statements are compatible with a liberal internationalist or a critical perspective. Nevertheless, this paper cautions against such monolithic theorization in its conclusion.

Grounded theory approach

The proliferation of participation discourses and practices allow researchers an opportunity to build theory from the ground-up (Bryant & Charmaz, 2010;

Charmaz, 2014; Glaser, 1978, 2005; Glaser & Strauss, 1967). The grounded-theory approach in this essay counters the notion of participation as an intellectually top-down 'discourse', making bold suppositions from scant evidence. Most research on participation in the past tended to examine what participation meant to elite organizations and academics, rather than what it means to grassroots actors. This article draws attention to both vibrant and passive forms of participation at the societal level, and the technologies that are shaped by and, in turn, facilitate new endeavors.

The steps involved in a grounded theory approach are simple but emphasize field research comprising ethnographic and interview practices. My field research on Indian information infrastructures started in India 1992 and in Kenya in 2015. Social sciences are aware of overgeneralizing from local to global contexts but a parallel movement in anthropology emphasizes multiple sites to examine 'how do different people confront common problems' (Nash, 2006, p. 2). Therefore, the choice of Kenya and India, and the multiple sites within these two countries, are important for the suppositions advanced in this essay. In striving to understand the cultures of participation, the fieldwork helped to discover the 'linkages among things' (p. 14) and 'the concerns and interests of the people themselves' (p. 15) (Nolan, 2001).

The method is ethnographically inspired (similar to Morawczynski, 2009). I was not trained as an anthropologist; neither do I speak Swahili or Tamil – widely spoken in a few areas where I conducted research. However, my field research did entail spending hours participating and observing the world of my informants and talking to them in languages we both understood (English in Kenya along with an interpreter at times, and Hindi, Punjabi, Pahari dialects in India). In both India and Kenya, I spent extensive time with community participants. In Kenya, a presentation on my on-going research at I-Hub, a technology incubation and design center, gave me access to how young entrepreneurs were thinking of user-centered design. Hours at a government community service center in Solan, India, at one point resulted in the clerks asking me to come sit with them so I could observe the computer systems as they processed financial payments from customers.

The interviews conducted for the research included a few elite public officials. Most often, they were with 'users' and 'beneficiaries' and local level government officials about whose world we know very little. Ethnography and interviews are not mutually exclusive and in grounded theory approach, they are commonly practiced together. Grounded theory emphasizes 'recursive conversations' (Charmaz, 2014, pp. 41) rather than the one-off elite interview common to some field research.[3] In traditional ethnographic research, interviews are often secondary to 'naturally occurring, situated interaction in which local meanings are created and sustained' (Emerson et al., 1995, pp. 140). Therefore, grounded theory recommends interviews that follow the rhythm of regular conversations. This was especially important to cover the poorest of the poor during slums visits to Avadi/North Chennai and Nairobi.

The next step in grounded theory is to code the field notes and write memos to oneself to draw out broad thematics. Both the fieldwork and the subsequent analytic work is informed with 'process of discovery rather than verification' (Charmaz, 2014). Working through the fieldwork, the codings spoke both to hierarchies and obstacles that do not seem to go away (for beneficiaries) and I also

observed assertions of hierarchy among development actors (including government, NGOs, businesses). Participants also spoke to the ease of use of some networks and their ability to connect with people and reduce costs for everyday activities such as financial transactions and paying utility bills. Eventually, my codings and memo-work led to grouping my codings under 'habits of authority' and 'technological interoperabilities'.

A further note is needed here on multisited field research. A multisited ethnography 'moves out from the single sites and local situations of conventional ethnographic research designs to examine the circulation of meanings, objects and identities in diffuse time-space' (Marcus, 1995). Therefore, to understand collective meanings about financial inclusion and participation, I studied multiple communities in India and Kenya that included businesses, governments, NGOs, tech-centers, community activists in rural and urban areas, elite buildings and slums, and included social stratifications like caste, gender, and age. While I visited both Kenya and India on multiple occasions, the ethnographic approach has also meant keeping in touch with my informants through social and electronic media, reading documents and websites that speak to their world, and meeting with officials in the 'Global North', whose development undertakings include India and Kenya.[4]

There are several reasons for choosing India and Kenya as the cases, apart from geographic variation and size of the countries. Both are developing countries with similar gross national income per capita at current U.S. dollars: in 2016, $1380 in Kenya and $1680 for India. Importantly, for this essay, the two countries have similar mobile and Internet penetration rates: respectively, 85.2 percent and 29.5 percent in India, and 80.4 percent and 26.0 percent for Kenya (World Bank, 2018b). Politically, both are pluralist systems, and socially multi-religious and multi-ethnic. However, *the primary difference* is the relatively permissible environment for doing business in Kenya and the success of its mobile money platforms, while India provides a case of state domination in development despite recent liberalization.

Data on financial and digital inclusion were also important for this paper, which rank Kenya much higher than India due to the business-led success of Kenya's mobile money platforms (Lewis et al., 2017; Villasenor et al., 2015, pp. 17). Brookings data covered 21 countries for 2015 and 26 for 2017. The Kenyan ranking of 2 versus India's ranking of 16 in 2015, and Kenya as 1 and India as 12 in 2017 further helped define the differences in my choice of cases for the fieldwork.

India: Information infrastructure and authority[5]

The term *sarkar* or government in Hindi, India's official language, historically carried connotations of an authority to be looked up to and obeyed, meeting the Weberian criterion of legitimacy or a consolidated state. The post-colonial state, including many leaders of the Indian nationalist movement, commanded moral authority in the public sphere of governance (Rudolph & Rudolph, 1987). The *sarkar* now commands neither due obedience nor moral authority: India features 'ineffectual governance and a patchy record on civil liberties' 70-plus years after postcolonial rule and a state that is 'heavy on paperwork and light on essential services' (Khosla & Vaishnav, 2017). The state maintains a vast infrastructure of governance – 21 million government officials – that seep down to India's

720 districts and 5410 subdivisions (*tehsils*). Importantly, officials at the lower levels of governance exercise their authority with the formal instruments of rules and procedures, and sanctions and coercions thereof, but also through a battery of informal mechanisms.

The process of service provision in Indian government offices can include many forms of harassment, delays, denials of requests, demands on time and resources – that reproduce authority and hierarchy at an everyday level. However, within and beyond these habits of authority may be located not just forms of subordination but also challenges from marginalized societal and business voices, at once impatient with India's dysfunctional statehood and demanding better governance. James Scott employs the term, 'hidden transcripts' to connote resistance coming from the subordinate (Scott, 1990). In India, the transcripts can be explicit and vocal. Scott also notes that domination requires sequestered social sites and social milieus (Chapter 5). In many ways, the challenges to habits of authority come from the interoperable information networks that connect people with each other and afford them a set of services and information exchange they lacked before.

This section deals with two possibilities: government moves toward provision of an information infrastructure and development finance and, second, the introduction of a new type microfinance service that was unsuccessful because of bureaucratic and management obstacles. An information technology infrastructure changes the way authority operates. In the early 20th century, British colonial offices in India resisted installation of telephones because it would cut out the role of the office peons in uniform who conveyed orders from higher-ups to those lower in the hierarchy. Technologies arrive with embedded social relations but, in turn, facilitate emergent interactions. Earl and Kimport (2011) employ the concept of 'affordances' to convey the relations of information infrastructures to their environment. The new types of financial inclusion in India through the affordances of an information infrastructure need to be understood similarly.

Telecommunications, e-governance and community kiosks

Development finance in India reflects the expansion and reordering of two infrastructures in telecommunications and banking. Both sectors were heavily government-run or controlled until market liberalization in the 1990s. Neither was particularly inclusive in even providing basic access. The teledensity rate in India, or mainlines per 100, was less than 1 percent until the early 1990s. Financial inclusion became a national priority in 2006. While early figures for personal bank accounts are not available, there were 41.8 accounts per 100 population (age 15+) and only 2.5 percent of the population had a mobile bank account in in 2014 (World Bank, 2018a).

The story of the telecommunication infrastructure follows intense demands from society, though arguably middle-income and business groups led the way since the 1980s. It took a while for telecommunication reform to get a hold: Indian telecommunication liberalization in the 1990s was driven by a state whose capacity and consensus frittered away over the last fifty years under the weight of pluralistic pressures and personalistic rule (such as under the so-called Nehru-Gandhi dynasty). The phenomenal growth rate in mobile telephony, from 0.34 mobile subscriptions per 100 people in 2000 to 85.2 in 2016, followed not just liberalization of

the Indian mobile market but also the separation of policy, regulatory and dispute settlement functions in Indian telecommunications.

E-governance and the subsequent rollout of financial services in India was a top-down maneuver. The story of National Informatics Centre at the central (federal) level is instructive for the origins. NIC was created in 1976 with $4.1 million UNDP funding just as the central Indian government began to contemplate the potential of information technologies for government. One of its first networks was low cost satellite VSAT-based NICNET, which connected 55 departments of the central government, with 35 provincial and 540 district headquarters. NICNET never achieved its purpose of providing an effective network for government interactions and decision-making but epitomizes the post-colonial state's involvement in science and technology, and an early instance of state-led development in introducing an electronic culture. The bureaucrats associated with NIC, including the founder N. Seshagiri, were champions of pushing the vision of an electronic culture in Indian government (Gautam, 1996). Measures from NIC reached fruition in the last decade. The National E-Governance Action Plan, approved in 2006, assigned a central role to NIC.

NIC has worked with states to introduce e-governance at local levels, many of which include e-payment platforms. I studied the rollout of community service centers at the district and sub-district level in the state of Himachal Pradesh (H.P.) in North India. H.P. is a relatively prosperous state with the second highest rate of literacy (after Kerala) in India. Its 6.5 million people had 8.5 million mobile phones in 2014. Due to the mountains, short distances are time-consuming. Provision of e-governance can cut transaction costs while the state's relative prosperity and education make it an interesting case of 'if not here, then nowhere else'.[6]

Two types of service centers, both with software developed at NIC, provide a variety of e-governance services in the state.[7] These include payment of electric utility, copies of land records, renewal of drivers and vehicle licenses, and birth and death certificates. At the district level, these centers are known as 'Sugam' and were started with a small UNDP fund of Rs 15 million in 2004 (roughly U.S. $265,000 in June 2004). They are governed through the state level Department of Information Technology and a para-statal body known as the Society for IT and e-Governance (SITEG) to make the telecenters sustainable through their own revenue collection. UNDP funds were distributed through the National Institute for Smart Governance. The UNDP wanted them outsourced to private agencies, but national and state governments decided to provide the service themselves (UNDP also provided funding for a few other states). Sugam Centers were initially established in three district headquarters in HP and by 2015 they existed in 10 out of the 12 districts in the state.

The government also licensed privately run service centers from the district to the village level, known as Lok Mitra Kendras (LMK). Estimates of the number of LMKs are hard to provide, but a list from the government in four of the 12 most populated districts listed 63 operators. More than half of these may be non-functional due to reasons listed below.[8] My estimate would be that there are probably over 100 LMKs in Himachal Pradesh.

Several contrasting narratives of authority can be constructed from the ground level of Sugam and LMK rollouts that also speak to national plans. In the 'official' narrative, government officials deliver on developmental aspirations. The National

e-Governance Plan (NeGP) in 2006 envisioned 100,000 community service centers or kiosks at the village level with budgets made available from the five-year plans. By 2011, in fact, 119,000 villages had Internet connectivity though that does not mean they had information kiosks.[9] For example, the Western Indian state of Gujarat initiated the e-gram (gram in Hindi means village) project in 2003 and computerizing 13,753 Panchayats (Sinha, 2008) and other states have followed. The state also introduced another project, Gyan Ganga (meaning Knowledge Ganges), that established information kiosks for service delivery but impact assessments listing tangible benefits to governance and services delivery are hard to find.[10]

In Himachal Pradesh's 'official narrative', Sugam cuts costs and time and makes citizens' lives easier. It provides employment to Village Level Entrepreneurs (VLEs) and at the Lok Mitra Kendras. In its own terms, the government works very hard for the poor: 'they expect us to climb electricity poles for them,' as one official told me. People like coming to government offices such as those of Sugam because of their 'viability'. Over 500 people go through the Sugam center in Solan, Himachal Pradesh daily on six business days of the week. The government has designed a user-friendly platform through NIC, involved private firms in software development (GNG and Zoom in HP), and allowed VLEs to flourish in the LMKs, while employing its own staff in the Sugam Centers. Nevertheless, a government job carries prestige. 'we have to tell LMKs not to act like government officials,' said one government employee. 'These are not government jobs.'

This narrative of service provision also reveals several habits of authority in the e-governance centers. In Solan, before providing service, the official staff often ask people to perform many 'disciplinary' tasks such standing in queue, asking them to wait, or to bring clean and orderly files with additional materials. An occasional stern warning or a remonstration directed at the customer is not uncommon. But rather than just resignation and compliance, customers are also satisfied that things do get done even if the waiting time is long and the process somewhat opaque. Before the service centers arrived, minor tasks such as paying a utility bill at a government office could take more than one day.

A few other demographics about the employees and customers reveal the enduring influence of other social hierarchies. Most people in lines are men and from low to middle-income groups. Going to a government office is still primarily a man's job and the rich can afford to send their representatives, or pay directly through an online system. Most employees at government-run IT centers performing clerical and data-entry work are women.

The LMKs reveal another narrative about service provision. They paid license fees to the government to set up their service centers. These fees are about Rs 17500–27000 (US $300–400). The LMK operators can charge 1.25–1.75 percent for payment of electricity bills, and upwards of Rs 10–100 (15 cents to $1.5) for printing land records that are online.[11] However, the business model with fixed fees only works in towns and cities. It is hard to generate enough revenues from 200–300 households in a village from small commission amounts. One LMK operator told me: 'Kimat ek rupyaaa, aamdani adha rupaya' or 'I earn half a rupee for everyone rupee it costs me to provide the service.' Apart from the fees to the government, the VLEs must purchase expensive equipment and despite the government's estimates and assertions, the business model for LMKs is broke. Therefore, the VLEs have found ways to enhance their incomes: they sell charge

cards for mobile phones, serve as cyber cafes, and impart training on their computers.

Most VLE's also note that it is hard to run the software without a college degree as opposed to government claims to involve high-school graduates. The LMKs get brief training from GNG or the government but on the job training and prior education count. They are also often the local knowledge brokers – people come to them with issues ranging from how to operate their phones to sending an email to a distant relative or friend.[12] The LMK operators perform several tasks that multiple government offices would have executed in the past including the electricity office for bill payments, the land records office, or various administrative offices for birth and death certificates.

The Sugam and LMK implementation models were implemented in a top-down fashion. UNDP carried out a needs assessment survey before establishing Sugam Centers. None of the government officials can recount anything that was found in the survey. They also cannot recount any current customer suggestion or input. Even after implementation, while government officials speak regularly about serving customers, LMK operators I met showed emails that were regularly unanswered. One VLE asks why the government portals are only available 10AM–5PM in a digital environment. Servers going down and Internet speeds are also frequently cited problems, though the latter continue to improve. Contrary to the government narrative, customers prefer the privately run centers for service provision.

There is a disconnect between the government's position about LMK profitability, and the problems that the LMKs face. In the Bilaspur District of Himachal Pradesh, they mobilized and persuaded the Bureau Chief of *Punjab Kesri*, the widely read Hindi newspaper, to publish an article about their difficulties, which was then picked up by other newspapers. This eventually reached the agenda of the state legislative assembly. The intent was to put pressure on the DoIT but *sarkar* does not budge easily in India. One of their demands was that if the LMKs provide government services, they should receive monthly salaries (they asked for Rs 3000 or US $50 per month). Demands like these make the government officials note jokingly that the LMKs want to act like the government. Being the government is reserved for those who are formally admitted. Therefore, not even the contract workers in SITEG are government. People in Sugam centers carefully pointed out to me who was a government worker and who was not. The aspiration to be *sarkar*, as well as the pushback from *sarkar*, reveal the enduring hold of state instruments in India.[13]

Financial inclusion

Financial inclusion in India has followed rather than led state directives. I conducted field research on a 'financial inclusion' project that sought to provide credit ratings for low-income households using a state-of-the-art mobile technology application. In this case, the project was privately-run and technologically innovative but succumbed to opposition from India's banking sectors, and the business' own habits of authority. Recent success with mobile money access and transfers has followed the government's directives in regulation and its development of a new platform.

The California-based business InVenture, started in 2011, is the creation of Indian-American Shivani Siroya, a former public health professional with the United Nations and an investment banker. The software team is based in New York and California. The project manager for India was located in Mumbai and the rollout happened around Chennai, Tamil Nadu. The India project entailed Insight, a mobile application that allowed low to middle-income households to report on daily incomes, expenses and financial transactions for 30 days. This information was used to produce a credit score that would help small businesses access loans, especially microfinance. USAID provided seed funding ($100,000), and the InVenture story was covered widely in media, microfinance reports, and trade periodicals including PBS, Huffington Post, Wall Street Journal, and Fortune. The USAID website describes the project goals best:

‘ … InVenture will pilot the InSight tool in India, where it aims to serve 10 financial institutions and reach 500,000 individuals by 2014. India’s 145 microfinance institutions, with 31.7 million active borrowers, is a market that is projected to grow by 10% per year … .Within five years, InVenture aims to help 10 million people who currently rely on the informal financial sector obtain credit scores.’[14]

InVenture’s software team is located in Santa Monica, California, and extended Intuit’s txtWeb platform to develop the Insight tool for gathering financial data. Both the project manager in Mumbai and the regional manager in Chennai carried out a needs assessment through a survey and personal conversations involving 103 households, which helped them determine mobile phone use, average education (8th grade), and average income (around $250), and several other demographic features. Jagan Selverai, the Chennai manager, worked in low-income low-caste (dalit) slums north of Chennai around the Avadi area and persuaded households to start reporting their expenses.

InVenture represents the new development model where networks of individuals and organizations can leverage resources to undertake social development, while also operating, in many cases, as private entrepreneurs.[15] The pioneer was Grameen Bank starting in Bangladesh in the early 1980s and associated with Nobel Laureate Muhammad Yunus, which opened the possibility of a movement associated with needs-based microfinance and led to the current term "financial inclusion." As opposed to government officials, InVenture staff were able to list and analyze the findings of their needs assessments. The manager in Chennai had established personal relationships with Insight users.

InVenture and Insight were not successful in India. From 2011–2014, the InVenture website for India featured brochures, media packets, and donor testimonials. By December 2014, the India pages had disappeared, and the India project was closed. Three issues were paramount for the InVenture failure in India. First, financial inclusion in India is being mapped onto an existing financial imprint wherein accounts in traditionally run banks remain central to financial services provision. The government imprint comes with a national plan – InVenture could not work around the Indian banking regulations requiring people to have a bank account for mobile money transfers. Conversations with bankers also revealed that traditional banks or even Micro Finance Institutions (MFIs) would be hesitant to accept credit scores from an unknown organization such as InVenture. The second issue relates to the international development networks and the difficulties they experience in managing projects such as InVenture. The team in Santa Monica was

technically savvy but may have underestimated the local realities in Tamil Nadu where it took door-to-door efforts to convince people to use Insight. One staff member in India bluntly noted that while Shivani's sense of social purpose is clear, her staff did not translate that into technology. Often the Indian staff felt that the Santa Monica team was pushing them to do things that were unrealistic. Third, the technology platform in India was clunky and not interoperable. The mobile phone reporting was time-consuming and unrelated to other parts of people's lives in a way that something like mobile money in Kenya is not. As we will see in the next section, InVenture worked with a different technology and network model in Kenya, which seems to be working much better than the India experiment.[16]

Meanwhile, a decade after 'financial inclusion' became a national priority in India, the government-led solution reveals other habits of authority, one where the government retains supervision over the e-banking sector. Instead of mobile-money platforms facilitating transactions, the Modi government pushed for opening savings bank accounts, notably in a national scheme since 2014 known as *Pradhan Mantri Jan Dhan Yojana* (PMJDY/Prime Minister's People's Wealth Scheme) led from the Ministry of Finance. The government notes: 'The plan envisages universal access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension facility.'[17] PMJDY aims to be a one-stop shop for all financial transactions for the poor including remittance of pensions, money transfers and debit cards. In a future iteration, the illiterate might have their bank accounts linked to their national identity *Aadhar* cards with biometric recognition, which will allow them to make payments via fingerprint recognition.[18] The government's habits of authority underscore such financial inclusion. Nevertheless, within four years, as of 1 August 2018, the PMJDY website notes that 322.5 million bank accounts were opened of which 10 million were in private banks and the rest in public sector and rural banks.[19] In addition, 242.7 million debit cards have been disbursed.

The bank-based mobile payments systems in India did take off after Modi government's famous demonetization in November 2016 which removed large denomination rupee notes from circulation. Existing mobile money providers could fill the void. The Immediate beneficiary was Paytm, which added 20 million customers end 2016 and is today India's biggest mobile money transfer provider with over 100 million customers. Paytm is an app that uploads money from bank accounts. In 2018, the Indian government introduced the Unified Payments Interface (UPI) that can transfer monies without an app. WhatsApp, which has 210 million customers in India, has been experimenting with WhatsApp Pay that will soon pose a challenge to app–based systems such as Paytm. However, the Indian government has demanded that the servers used to process the transaction will be based in India rather than WhatsApp servers in California.

India's Tolstoyan landscape features habits of authority that exist elsewhere in the world but take on distinctly state-led characteristics that are often traced to colonial rule. The grounded theory account above, while not as optimistic as trade accounts trumpeting India's information revolution, contrasts with critical accounts. The scope of participation in development finance is not always clear but this essay has outlined both positive affordances and also the reigning imprint of authority. In ascertaining the degree of participation, Mazarella (2006) interprets e-governance and inclusion as populist maneuvers that resolve the contradiction

between "inclusivity" and "consumerism" through the veneer of state-led development. In India's e-governance, he locates a corporatist image and populist messages. Darron and Jeffrey (2013) note that the disruptive technologies like the phone in India have positive benefits but do not re-order society (pp. 121). Their analysis accounts for the consumers but also for the thousands of retailers, middlemen, policies and governments that enabled 900 million mobile phones in India within a decade.

Kenya: Interoperability and mobile money[20]

The Kenya case was chosen for its 'exceptionalism' or the relative importance of economic and market incentives in Kenya compared to its neighbors like Uganda and Tanzania. The capitalist embrace in Kenya also contrasts with other developing countries that adopted some mix of socialist policies in the immediate postcolonial period. Bates (1989) points out that agrarian reform in the 1960s and 1970s created property rights favoring markets, though at the behest of President Jomo Kenyatta's (1964–1978) ruling KANU party that included many agrarian capitalists from the fertile Highland Region and the Rift Valley. At meetings with businesses, government and society groups, people frequently speak about Kenyan entrepreneurship, though this needs some context and limits explained below.

The Kenyan state is not without its habits of authority or paternalism. Further, an account of centralization of power concerning information technology policies described it as 'a stultifying culture of centralized decision-making observed at the top' in several ministries (Eldon, 2005, pp. 54). However, the Kenyan state features both domination and fractionalization. It arose from the moral economy of small overlapping groups, based largely on sharing and exchange, that British colonial rule coalesced into ethnic tribes. The historian John Lonsdale (1992, pp. 93) describes the Kenyan state as 'a Hapsburg Empire, a prisonhouse of nations.' State formation has always been segmented and incomplete making it difficult to achieve centralization of authority. Kenyatta adopted *Harambee* or self-reliance as a unifying national motto but turned to the power of small groups and specifically capitalist entrepreneurs within them to foster development (*maendeleo*). Haugerud (1993) provides a fascinating ethnography of state consolidation in Kenya through large political assemblies (*barazas*) that affirmed the rule of national leaders through symbolic and routinized oratorical rituals. These everyday acts of domination, that Haugerud connects with James Scott's notion of everyday resistance, reproduce the state through patronage, paternalism, and distribution of resources but barazas pose an enormous risk: 'state authority rests in part on its capacity to deliver the benefits of development (*maendeleo*) on exchange for citizen compliance and obedience' (p. 101).

The dominant language of *harambee* and Kenyan exceptionalism are the official mantras about small groups and private capital in ways that distinguish the Kenyan case from that of India. The 'Desired Outcomes by 2017' in the Kenya National ICT Master Plan included establishing 55 ICT companies, recognition of Kenya as a regional ICT Hub, and the development of at least 10 commercial applications that are along the lines of Kenya's vaunted mobile money platform M-Pesa. Officials in the Ministry of Information, Communication and Technology praise

mobile money platforms such as M-Pesa but also speak of government's 'Enterprise Kenya' that will propel Kenya's ICT innovations forward.[21]

Kenya's ICT infrastructure follows the pattern in other countries, namely the transformation from a public utility to a liberalized market. The two key differences are that in late 1990s, Kenya was a relatively late entrant for telecommunications prioritization, but subsequently fast emerged as an IT innovation hub in the developing world. The 2006 National ICT Policy envisioned community service centers known as Pasha Centers (Pasha means 'to inform' in Swahili) in each of the 290 Kenyan Parliamentary constituencies. By 2013, there were only 63 Pasha Centers in place and most of them were not economically sustainable, and closed down subsequently – thus, not that different from India. The loans from the Kenyan ICT Board, which governed the Pasha Centers, failed to jump start private entrepreneurship and the centers experienced numerous technical problems (Akoth et al., 2014). The next phase of the e-government services delivery is the setting up of Huduma Centers in Kenya where several government services can be accessed from one point. There were 17 Huduma Centers in 2015, which were coordinated through the Ministry of Devolution and Planning, and in 2017 the government began to partner with MasterCard to issue 'Huduma cards' to provide financial access linked to customer bank accounts (again, similar to India's PMJDY scheme).[22]

I visited the Nairobi Huduma Center in 2015 located on the ground floor of the old General Post Office building and housing several ministries upstairs including the Ministry of Information and Communications. The Nairobi Huduma Center provides 18 services from 10 government agencies and caters to about 500 people daily. The Huduma website mentions that 2500 customers visit national Huduma Centers daily. The services include payment of utility bills, land records, police and parking, business registration, and health (social security and insurance) cards. Officials note that Pasha Centers were not well-promoted and people were not making money, but Huduma envisages a different kind of delivery platform, where government officials rather than private entrepreneurs provide the service. Interestingly, on the day I visited one of the most crowded service stations was Search and Registration of Business Names. Two women entrepreneurs told me that before the Huduma Center opened they would have gone to the Sheria House, a government building which housed the Registrar of Companies, where it could take a whole day to get a business name approved which now takes only a couple of hours. Coincidentally, that same week there was an editorial from Anne Waiguru, the Cabinet Secretary for the Ministry of Devolution and Planning, where she emphasized that 'Kenya's liberal property rights regime incentivises investors and entrepreneurs to pursue business opportunities' (Waiguru 4 June 2015).

Government officials speak of initiatives such as Huduma centers as broadening participation in civic life. The participation here is more about access to services and cutting transaction costs than decision-making with (or contesting) the state. Haugerud (1993) writes that the culture of citizen participation in Kenya was 'a pose' (p. 91) and 'a rhetorical gesture' (p. 105). However, just as a baraza assembly may affirm state presence without any immediate reward, the visit to a Huduma center also affirms the state but this time in more of a reciprocal concession to the citizens.

Interoperable networks

The state developed in Kenya through a system of patronage and resource allocations. Its early story in telecommunications parallels that of other developing countries when it was not prioritized. In the last two decades the infrastructure has experienced exponential growth along with the development of a mobile money platform with remarkable interoperability for other services. The 'permissive' business environment explains the recent growth as also the incumbent monopoly position of Safaricom in the national market. A business executive described Safaricom's monopoly as being the biggest taxpayer in Kenya.

The teledensity in 1999 was 0.95 percent for the population. Private providers were allowed into Kenya in 2000 and by March 2018, four mobile operators divided the 44.1 million mobile subscriptions among themselves: Safaricom (67%), Airtel (19.7), Telecom Kenya (8.6%), and Finserve Africa (4.4%) [Communications Authority of Kenya March 2018]. In 1999, the mobile penetration rate was 0.08 percent. By 2016, this rate was 80.4 percent. Internet penetration increased from 0.11 percent in 1999 to 26.0 in 2016 (World Bank, 2018b).

Mobile money, which works via transfer of credit from one SIM card to another, is ubiquitous in Kenya. Nearly 202,244 agents provided mobile money subscriptions to over 29.1 million mobile subscribers in March 2018. Of these, Safaricom's M-Pesa is the pioneer and most popular. M-Pesa has nearly 156,534 agents and over 23.6 million subscriptions (Communications Authority of Kenya 2018). When I visited Kenya in 2015, there were 83,690 M-Pesa agents for 20 million subscribers (Communications Authority of Kenya 2015).

M-Pesa was launched in March 2007, partly with funding from UK's international development agency DFID and assistance from Vodapahone. M-Pesa initially developed with the need to payback Microfiance Institutions but a pilot showed that users were employing it to transfer funds to relatives West and North of Kenya (Morawczynski, 2009). Since then M-Pesa has evolved as a financial platform for transfers, loans, savings, and payments. M-Pesa initially targeted urban workers in Nairobi who wanted to transfer money to their families in other parts of Kenya; it was marketed as 'Send Money Home' (Hughes & Lonie, 2007). The service grew exponentially and, despite attempts from traditional banks to slow it down, M-Pesa is now accepted in every part of Kenya. A letter of exemption from the Communication Commission of Kenya allowed Safaricom to operate and innovate. 'We can't stop M-Pesa,' said one high level official to me, 'It's its own force.'

In a country without an adequate transport infrastructure, and violence in the slums, M-Pesa fulfills many needs. A Masai man in the Olamutiai viallge in the Mara region of Western Kenya said he prefers payments in M-Pesa, because it is easy, safe, and transportable. In the slums of Kibera and Mathare, I also heard several accounts of how M-Pesa is safe but carrying liquid cash is not. One history of mobile money in Kenya described Kibera as a 'beehive of M-Pesa activity' where 'M-Pesa agents line the dirt streets; people queque up to fill their phones with e-money and/or collect cash' (Omwansa & Sullivan, 2012, pp. 11). Hughes and Lonie (2007), who were involved with M-Pesa from its inception, recount the story of the M-Pesa start-up and how the service improved with successive customer concerns and input. One difficulty was that agents would not easily give out cash

because they were afraid to run out of liquidity. Eventually the problem resolved itself as the network grew and everyone accepted M-Pesa rather than cash as a form of payment. Nevertheless, several M-Pesa agents told me that they lose customers when they may not have money on hand to cover the 'float' in poor areas.

Once a platform becomes ubiquitous, it can be either copied or used for further innovations. Other networks provide their own mobile money as recounted above. However, availability of liquidity and transfers has enabled electronic services to grow. One of these is M-Kopa (Kopa means 'to borrow'), which provides 'pay-as-you-go' solar energy to over 600,000 homes with almost 500 people added everyday. Customers buy a solar energy kit through installments and pay with an M-Pesa chip for approximately $0.45 per day. M-Kopa has a state-of-the-art customer services facility in Nairobi and its management (including two Americans who met in Oxford, UK, while doing their MBA) speak of the early days of the Sears entry in America as their model for customers owning their appliances. Nick Hughes, who pioneered M-Pesa, is also a shareholder in M-Kopa and helped to start the business. M-Kopa management is careful to point out that it is a business but is also aware that ICTs and social entrepreneurship are part of its business model. 'I don't know what you mean by participation,' said one of its top management, 'I'm just doing business.'

Participation on M-Pesa networks has meant access and availability of services. Pilot studies, customer input, and surveys from businesses are a form of inclusion but the link to participation is indirect. Even in Nairobi's famous I-Hub, the technology innovation lab, the design of user interfaces often takes place without any participation from those who might utilize the application later. Therefore, Hughes and Lonie's (2007) summation that M-Pesa 'project inherently appealed to people' and about participation as meeting customer demands. But there are also disconnects in meeting demands. Both businesses that develop applications on the M-Pesa platform and customers who use M-Pesa complain about its rates. Stephen in Kibera was forthright: 'they don't understand us. They don't want people to give feedback.' Irene who is an M-Pesa agent described her daily life as follows: 'my goal is to eat and get some rent.'

Jonathan Donner (2015) writes that in analyzing ICT4D networks, we must take into account both positive and negative consequences for people. Similarly, it is important that even while analyzing the 'financial lives' of M-Pesa users, we remember that the lives of people are not only about finance. A poor elderly woman in Kibera told me emphatically about how her phone was her lifeline to people. 'It's my office', she said. 'I cannot live without it.' Sending money through M-Pesa to families and relatives is also about maintaining social ties and relationships. It is also about safety and, during violence and elections, the only way of exchanging liquidity for everyday needs (Morawczynski, 2009).

Microfinance

M-Pesa dominates Safaricom operations at its two corporate headquarter buildings in Nairobi. Its officials speak to the permissive regulatory environment which enabled M-Pesa. There is constant innovation and development of new interfaces with user involvement. M-Shwari was launched in 2012 as a saving and loans platform and nearly 15 percent of the M-Pesa subscribers now also use M-Shwari. It

operates in partnership with Bank of Africa. A new M-Shwari platform, with promises seamless connectivity to banks, was launched in late 2015.

InVenture that operated with difficulty in India has had some success in Kenya. The application in Kenya was initially called M-KopoRahisi, which generated credit scores for customers through customer permitted access to their Facebook profiles.[23] The manager in Nairobi noted in 2015 that more than 60 percent of the Kenyan mobile subscribers have smart phones and social media use is so high that people regularly refer to the internet as Facebook or Whatsapp. The M-KopoRahisi (Kopo mean loan and Rahisi means easy) loans were a maximum of 4000 Kenyan shillings (US $40), given for 21 days, and made through M-Pesa. As I prepared to do research in Kenya, CEO Shivani Siroya sent an email asking me to take a look at MKopo Rahisi's "Wall of Love" that lists hundreds of unsolicited testimonials from satisfied customers.[24] MKopoRahisi had 14,000 unique customers to whom 20,000 loans were made as of June 2015 and many had taken loans for the fourth or fifth time.[25]

Inventure changed its name to Tala in 2017, and its new manager in 2018 described the strategy as appealing to the emerging middle class in Kenya. Instead of Facebook algorithms, Tala website notes access to data from customers' Android phones though with a detailed data privacy statement that explicitly notes the firm's ethical policies.[26] Tala teams work round the clock in New York, Los Angeles, and Nairobi to approve loans applications (InVenture utilized virtual profiles– Lucy, Mary and Joseph – to answer customer questions). Now Tala is a well-known brand, at least in Nairobi, and competes with M-Shwari.

The microfinance platforms in Kenya also compete with small association groups known as *chama* (association in Swahili) or *vayama* (plural). Informally referred to as "merry-go-round" in English, the vayama pool resources of 8-25 members to advance small loans for business or social needs such as births and funerals. The vayama took off in times of economic scarcity in the 1980s and their logic of small group provision is linked to the types of moral economies often emphasized in Kenyan political economies and history (Nairie and Muiruri, 2016). With the new forms of microfinance, many people appreciate the ease with which they can get loans but also belong to vayama. By one estimate, nearly one in three Kenyans is part of a chama (*ibid*).

Just as M-Pesa is more than just finance, the chama symbolically represent more than just a way to pool finances. Officials in Safaricom referred to chama to point out the characteristic of Kenyan exceptionalism. Linking entrepreneurship with chama, one M-Pesa official recounted a personal story: 'All Kenyans are entrepreneurs. Everyone has a side business.' Business books in Kenya speak of chama as a uniquely Kenyan and African solution to investments (Wainaina, 2013).[27] Ronald Maira, Inventure's Ugandan-born manager in Nairobi, also spoke of chama as an inspiration for creating M-KopaRahisi. The new manager at Tala similarly spoke to how customers will often speak of themselves as 'members' of Tala. Coming from Washington, DC, this surprised him but his customers speak the chama language. Chama also represent a social organization that MFIs cannot as yet replace. Joyce tells me in Mathare: in chama 'it's easy to fight with people who lend you money.' She likes the longer loan repayment period in chama as opposed to MFIs.

There are other concerns about MFIs. Credit reports are not shared among them allowing people to access multiple loans from several MFIs raising the

chances of default, at which point defaults are reported to Kenya's Credit Reference Bureau. There is also a brewing concern about privacy and data access. Not a single Tala customer I met had ever read Tala's data privacy agreement though many acknowledged that this is a price they must pay to be gain 'trust'. However civil society groups, business associations, and government have raised concerns and are aware of the problem with biometric financial scoring mechanisms.

Conclusion

The field research in India and Kenya provides an important understanding related to participation, which carries varied meanings ranging from access to services, connections to financial and social networks, and the ability to apply pressures on those who embody authority. Equally, participation is embedded in social and political hierarchies. On the basis of ethnographic evidence, the study forwards two major suppositions for further research, especially outside of anthropology where cultural suppositions are often sidelined:[28]

1. 'Habits of authority' among various development actors thwart effective participation: while development literature at large touts the benefits of participation, the projects studied in India and Kenya arrived more or less 'preconceived'. The participation was mostly about the ease or difficulty of using infrastructural platforms, and providing access to services.
2. Interoperable technology platforms allow for successive innovation from businesses and other organizations encourage financial inclusion. The Kenyan case is especially instructive in this regard, where regulations seem to have trailed innovation. India offers a contrasting story where mobile money only proliferated after being linked to bank accounts that the government demanded.

Taken together, the two suppositions inform the functioning of financial infrastructures. State-led habits of authority can run counter to interoperable technology platforms. The habits of authority of the Indian state initially stifled digital financial innovation for mobile money, whereas in Kenya's case the interoperability has allowed financial inclusion but almost without regulation. While businesses favor large networks, habits of authority can also persist through these networks. Safaricom's monopoly power and pricing, and concerns about data privacy reveal further habits of authority that seep through financial infrastructures. Socially conscious businesses from the Global North can also bring paternalistic assumptions. In Kenya's case, both M-Pesa at a macro level and Tala at a micro level provide a cultural narrative about a network and connections in Kenya.

These findings do not easily conform to grand theories of development especially ones that either critique the state for many failures of development (Easterly, 2014) or locate all development failure in the so-called neoliberal model (Weigratz et al., 2018). Kenya features emergent platforms such as M-Pesa that have captured the public imaginaries and allowed for a variety of applications to develop. Given their embeddedness in social relations (even when counter to the logic of chama or vayama groups), they are not entirely about neoliberal businesses and consumers.

The India case shows that 'habits of authority' are more complex than instituting or rolling back state interventions, and definitely extend beyond the state to business actors, and in the expectations and aspirations of state conduct in the social imagination. Borrowing from James Scott (1998), seeing like a state in a social and anthropological sense reveals its endurance in an infrastructural sense.

This essay can confirm the critique of current development practices as the creation of neoliberal ideologies. The essay offers many examples of market forms, businesses interventions, and attendant ideologies, to provide solutions to people's daily lives, and instances where the neoliberal subjects are not consulted. Three counter-critiques of this thinking should make us pause. First, the resilience of state presence in India is not a neoliberal artefact and predates to colonialism and post-colonial experiments in socialist planning. Second, the ethnography above reveals many types of agency and affordances on part of society than the critique of neoliberalism as grand ideology accords them. Third, material comfort is important to the poor, something that a critique of neoliberalism as grand ideology tends to ignore. The tremendous growth of the mobile phone infrastructure and the impact on social and economic networks is not easily dismissed.

As infrastructures include materiality and functions, they accord a position to human actors in the assemblage of credit pipelines, worthiness, and financial flows. The 'taken for granted' form and function of financial infrastructures can reveal deep power relations (Bernard and Campbell-Verduyn, this issue). This essay provides a mid-level empirical analysis of these assemblages from grounded theory in which states, businesses, and society – depending on the context – either thwart or encourage the involvement of the poor in decisions that affect their lives. Finance is a salient issue in the developing world and its links with participatory development and information and communication technologies are often touted as positive and salient features. Participation in development finance seems to be about access to financial services and interoperable networks, but ones that bring some material comfort to their lives. There are also instances of protest and local organization. Access or inclusion overloaded with 'habits of authority' is a distant cousin to effective participatory development but a step in the right direction.

Notes

1. James Ferguson (1994) uses the concept of post-development to characterise the global 'neo-liberal' intrusions in everyday life that can hardly be noticed. For a critical discussion of this concept within the reach of broader developmental anthropology see, Edelman and Haugerud (2004) and Mathews (2016).
2. Most names of local informants have been changed in the transcription here.
3. See Garsten and Sörbom (2018) for examples of elite interviews in ethnographic research. When conducting elite interviews, such as I-Hub in Kenya, I drew from Holmes and Marcus (2008) notion of 'collaboration' and 'dialogical conversations' with intellectual partners in elite settings.
4. See Appadurai (1996) for ethnographies of global 'scapes'. For my field research on India and Kenya, I met with representatives of the global mobile service providers association (GSMA) in London, Barcelona, and Nairobi, and my conversations with international development officials in Washington, DC, and elsewhere are equally important.

5. Most of the ethnographic evidence was collected from field research in India during summer 2014, December 2014-January 2015, and summer 2016. However, the first part of this sub-section also reflects prior fieldwork in India (See Singh 1999).
6. Odell (2006) and George and Bennett (2005) call this a theory-infirming case.
7. The NIC software has been rolled out in various Indian states but is known by a different name.
8. For the ethnography I visited LMKs in 5 districts: Bilaspur, Hamirpur, Kangra, Shimla, and Solan.
9. Current Affairs & Analysis. August 12, 2011. 'E-Panchayats.' Available at http://currentaffairsappsc.blogspot.com/2011/08/e-panchayats.html. Accessed July 31, 2012.
10. A government informational video, albeit in Gujarati language, describing the e-gram initiative can be found at http://www.youtube.com/watch?v=nWeztbn-usQ Accessed July 28, 2012.
11. Land records are important: more than three-fourths of land in India may be in dispute. In the past, it could take a day or two to get land records.
12. One VLE I interviewed got to know the entire village and is now the head of the Village Assembly (Panchayat).
13. In a different context, Chhotray (2011) shows that supposedly depoliticized 'watershed communities' for soil and water conservation, started by India's Ministry for Rural Development, tended to reinforce dominant politics rather than foster genuine participation.
14. https://www.usaid.gov/div/portfolio/insight-mobile-accounting.
15. Kiva.org, the microfinance platform is well-known. Popular accounts are Mortensoen and Relin (2006) and Novogratz (2010).
16. InVenture renamed itself Tala in 2016 and now operates in Kenya, Tanzania, Philippines. Recently it has ventured in Mexico and re-ventured in India (http://tala.co/). It continues to generate a great deal of media buzz about its activities. See, for example, coverage in Forbes (https://www.forbes.com/sites/forbestreptalks/2016/08/29/how-tala-mobile-is-using-phone-data-to-revolutionize-microfinance/#6deae7d12a9f) and Financial Times (https://www.ft.com/content/05e65d04-3c7a-11e6-9f2c-36b487ebd80a)
17. https://www.pmjdy.gov.in/about. Accessed 26 June 2018.
18. Successive legal challenges in India have also sought to restrict the use of Aadhar on grounds of privacy and surveillance. India's Supreme Court ruled in September 2018 that mobile phone companies or banks cannot require customers to furnish or link their service to their Aadhar cards.
19. https://www.pmjdy.gov.in/account Accessed 3 August 2018.
20. Field research in Kenya was conducted June 2015 and May-June 2018.
21. Enterprise Kenya refers to 'Vision 2030', developed through a participatory multi-stakeholder process, that seeks to propel Kenya into a thriving middle-income country: see www.vision2030.go.ke.
22. https://www.hudumakenya.go.ke/card.html Accessed 6 June 2018.
23. MKopaRahisi uses an algorithm to generate credit scores from Facebook, which includes customer posts about their education, the kinds of media they access (those who read newspapers generate higher scores), and also their browsing history.
24. See MKopo Rahisi Wall of Love at http://inventure.com/love
25. Its Facebook Page listed 11,400 "Likes" on 29 August 2015 and lists MKopoRahisi as a Bank/Financial Institution. Customer commentaries list questions and feedback, and all queries are answered on the page. By 2018, the Facebook page had disappeared.
26. https://tala.co/dataethics Accessed 6 August 2018. In general, interviewees noted concerns in 2018 about the use of these data for election and political manipulation, and Tala explicitly notes the categories of data they exclude that would potentially be of use for political purposes.

27. Natile (2016) writes that the emphasis on entrepreneurship in Kenyan mobile-finance systems may provide funds to women but only a politics of redistribution can address structural inequalities.
28. My own research in a forthcoming book codes a large-n dataset of 207 World Bank projects for participatory codings reported in this essay to test the findings at an international level.

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Notes on contributor

J. P. Singh is Professor of International Commerce and Policy at the Schar School of Policy and Government, George Mason University, and Richard von Weizsäcker Fellow with the Robert Bosch Academy, Berlin. He specializes in culture and political economy. Singh has authored or edited ten books, and published over 100 scholarly articles. His latest monograph is Sweet Talk: Paternalism and Collective Action in North-South Trade Relations (Stanford, 2017).

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