Centre for Development Studies (CDS)
UNIVERSITY OF BATH

Bath Papers in International Development and Wellbeing

No: 57/2018

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Published by:
The Centre for Development Studies University of Bath
Calverton Down
Bath, BA2 7AY, UK
http://www.bath.ac.uk/cds

ISSN 2040-••3151

Series Editor:
Sarah White

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UNIVERSITY OF BATH
CENTRE FOR DEVELOPMENT STUDIES
BATH PAPERS IN INTERNATIONAL DEVELOPMENT AND WELLBEING
NO. 57 – MAY 2018

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1 Introduction

Over the past decade, the diffusion of digital technologies across emerging economies has spurred expectations of transformative change in several fields, from agriculture to health to education. The adoption of innovations such as the internet and mobile telephony is regarded by many governments and development agencies as an opportunity to revamp strategies to advance human development that have hitherto fallen short of delivering on their promises. At the same time, private actors see the penetration of digital connectivity at the Bottom-of-the-Pyramid (BoP) as a lever to expand their customer base. Whether these aspects are aligned or in contrast with each other still remains to be seen and is at the centre of a conversation involving a variety of stakeholders.

This working paper seeks to engage with the above-mentioned debate by teasing out the relationship between the new and fast emerging possibilities to make social protection payments through digital delivery mechanisms and the related pursuit of the policy goal of financial inclusion. Its aim is to provide an overview of dominant perspectives, policies and operational and regulatory approaches that are shaping existing initiatives to digitise social protection programmes across the Global South. It focuses on Government-to-person (G2P) transfers and reviews both grey and academic literature to take stock of how it addresses the following questions:

- To what extent do the transformations brought about by the digitisation of G2P programmes contribute to facilitating poor and vulnerable people's access to formal financial services?
- What are the key operational and regulatory issues emerging from the evidence base?

It is based on the review of 107 works (peer-reviewed articles, industry reports, policy papers and blog posts) discussing specific aspects of financial inclusion and digital G2P programmes and analysing case studies. The materials were mostly sourced from academic online libraries and Google Scholar, using primarily the keywords "financial inclusion" "digital G2P", "digital social protection". Further keywords used for the search were: "digital financial services", "DFS", "digitisation" and "payment ecosystem". Moreover, the websites of the following organisations working on digital financial services and social protection were consulted: Bill and Melissa Gates Foundation, CGAP, Better than Cash Alliance, GSMA, FSDAfrica, Mastercard Foundation, World Bank and UNCDF.

The category of social protection encompasses both government and donor-supported initiatives addressing poor and vulnerable individuals through transfers aimed at smoothing consumption and increasing resilience against livelihood risks[1]. Their long-term goal is to empower socially excluded and marginalized individuals (Devereux and Sabates-Wheeler, 2007). Cash transfers are a typology of payments performed by both state and non-state actors in a situation of emergency (such as in the aftermath of a humanitarian disaster or during a drought) or as a part of a broader social policy strategy. They can be either conditional on the fulfilment of specific requirements (such as education, health and nutrition) or on the beneficiaries providing labour (CCT); or unconditional (UCT). They can also be either universal or specifically targeting population segments considered particularly vulnerable. During the 1990s and 2000s, cash transfers have gradually drawn the interest of policymakers and development practitioners as a cost-effective instrument to "decrease chronic or shock-induced poverty, address social risk and reducing economic vulnerability" (Samson, 2010: 2), taking over the physical delivery of food to poor households as the dominant approach within the policy field of social protection. This shift has been driven by a growing awareness that, among

[1] Social protection is typically divided into two subfields: social insurance and social assistance. The former includes contributory programmes aimed at mitigating the impact of risks. The latter encompasses schemes to reduce inequalities and sustain the consumption levels of poor households (Skoufias et al., 2010). Most of the examples used in this paper fall in the social assistance category.

vulnerable populations, cash transfers present less logistical challenges than food delivery (Radcliffe, 2016), increase the agency and reduce the stigma of marginalised individuals and enhance income for poor households, with positive effects on education, nutrition and health, and, in general, on the achievement of a broad range of development outcomes (Arnold et al., 2011; Babajanian and Hagen-Zanker, 2012; Barca et al., 2013; Dissanayake et al., 2012). G2P payments, the focus of this working paper, concern the transfer of social benefits performed by the state[2]. However, the private sector plays a critical role in the digitisation of these programmes, providing technical and operational capabilities to create and manage the necessary infrastructure.

This changing configuration of public-private partnerships (PPP) raises questions on the ownership and usage of beneficiaries' data for either administrative or commercial purposes. These goals have been increasingly entangled. Indeed, in recent years, the social protection agenda has intersected with that of financial inclusion. This concept has gained centre-stage following the 2005 UN International Year of Microcredit (UNCDF, 2006) and has since become integrated into the development strategy of most emerging economies. The core aim of financial inclusion is to facilitate 'access for all to a wide range of financial services – savings, credit, insurance, and payments – provided responsibly and sustainably by a range of providers in a well-regulated environment' (Porter, 2015). The policies and the approaches to achieve this goal are currently at the centre of a conversation involving a variegated assemblage of players (Schwittay, 2011): state governments, central banks, development agencies, the payment industry, telecommunication companies, consultative organisations such as Alliance for Financial Inclusion (AFI), CGAP, Better Than Cash Alliance and GSMA. This conversation revolves around the idea that having access to formal financial services has the potential to help build resilience to cope with sudden economic shocks, smooth consumption and lay the groundwork for upward social mobility (Demirguc-Kunt et al., 2014; Smith et al. 2015; Zinns and Weil, 2016)[3]. The influence of corporate-philanthropic entities such as the Bill and Melinda Gates Foundation and MasterCard Foundation (Gabor and Brooks, 2016) over the debate on financial inclusion has translated into an emphasis on the role of innovation in bringing financial services to the poor (Beck et al., 2015; Owens, 2013; Duncombe and Boateng, 2009).

The convergence of social protection and financial inclusion thus takes place against a backdrop shaped by a reappraisal of current approaches to cash transfers, the rapid diffusion of digital innovations across the Global South and the growing commitment of resources to financially include the 38 percent of the world's adult population (particularly women, informal workers, rural dwellers) with limited or no access to formal financial services (Demirgüc-Kant and Klapper, 2012; Johnson and Williams, 2016; Schwittay, 2011, 2014). Several countries are currently rolling out pilot initiatives to shift from manual to digital G2P disbursement, with mixed results[4]. Given the early stage of these programmes, the evidence base is still limited. However, it offers insights that can help anticipate future trends and identify possible challenges.

Chapter 2 discusses the link of digital G2P and financial inclusion by examining the argument behind cash transfers, the shift to digital payments, the benefits of digital G2P for efficiency and transparency and the opportunities and limits in advancing a financial inclusion strategy as hitherto

[2] G2P payments include also grant disbursements, salary and stipend payments.

[3] The principles of the financial inclusion agenda are enshrined in the 'Maya declaration', subscribed in 2011 by regulatory institutions have from 76 countries committing to support financial literacy, digital financial services (electronic payments, mobile financial services and agent banking), 'proportional' financial sector regulation and FI data.

[4] According to the GSMA, the MNO industry association, most digital G2P initiatives are currently being rolled out in South Asia (53%), followed by Sub-Saharan Africa (28%) and Latin America & the Caribbean (19%) (Schulist, 2016). In nine developing countries, two thirds or more of the recipients of G2P transfer payments are reported to receive their payments into an account, while in 15 developing countries the rate is between 40 and 61% (Demirguc-Kunt et al., 2015).

emerged from the evidence. Chapter 3 focuses on the operational aspects of digital G2P, discussing the infrastructure through which the payments are made and the identity of the beneficiaries are verified, new frameworks of public-private partnerships (PPP) and the construction of a digital payment ecosystem. Chapter 4 gleans the main regulatory issues in digital G2P programmes and aiming at facilitating the processing and the transfer of the payments while fulfilling Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) requirements and safeguarding citizens' rights. The conclusions offer insights for further research.

2 Digital G2P and financial inclusion

2.1 From manual to digital

In recent years, cash transfers have emerged as a key policy instrument to advance the social protection agenda of many developing economies. A recent ODI review of the impact of cash transfer programmes has counted about 130 low- and middle-income countries that have implemented at least one unconditional cash transfer (UCT) programme, while 63 countries run at least one conditional cash transfer (CCT) programme (Bastagli et al. 2016). The number of programmes is on the rise in Sub-Saharan Africa, where there are currently 40 countries with at least one UCT programmes, up from 20 in 2010 (Honorati et al., 2015). The evidence collected so far points at a link between cash transfers and reduction in monetary poverty and showing an overall improvement in health services, dietary diversity and anthropometric measures, although to different extents according to the programme (Bastagli et al., 2016). The preliminary impact assessments of these programmes also highlight the positive effect of cash transfers on savings, on livestock ownership and/or purchase, and use and/or purchase of agricultural inputs, although this positive impact is "not universal to all programmes or to all types of livestock and inputs" (ibid.: 8).

But the importance of cash transfers is not limited to smoothing consumption and increasing resilience to temporary shocks. Brune (2016), for instance, suggests that cash transfers can sustain self-reliance and create a pathway out of poverty. Drawing on the example of Bangladesh Rural Advancement Committee's (BRAC) Income Generation for Vulnerable Group Development (IGVGD)[5] Programme, Barrientos and Scott (2008) argue that, when linked to savings and credit, social transfers can enable recipients to invest in human capital (through investments in health and education) and economic capital (through the accumulation of assets)[6]. Moreover, as argued by Priyadarshee et al. (2010), by guaranteeing a regular inflow of money, cash transfers have the potential to "make the poor attractive customers to microfinance programmes and other financial service providers" (325). This argument directly links cash transfers to the provision of financial services, suggesting that beneficiaries of social payments are less risky borrowers for financial services providers (FSPs), and therefore are best placed to access formal financial services.

[5] One of the first programmes to link social protection to microfinance, IGVGD was initially established in 1975 as Vulnerable Group Feeding (VGF). It was then revised in 1985 with the help of BRAC to include microcredit. It is jointly led by the government of Bangladesh, the World Food Program (WFP) and the Bangladesh Rural Advancement Committee (BRAC) and targets poor rural women by linking food grain assistance to skill training and financial services in the form of savings and credit. Over a ten years period, more than two-thirds of a million women who have benefitted from the programme have "graduated" from absolute poverty, becoming microfinance clients. (Hashemi, 2001)

[6] The evaluation of these initiatives, however, is nuanced and shows that several factors are at play. Studies on the impact of Brazil CCT Bolsa Familia on women's intra-household decision making, for instance, have stressed a major gap between urban and rural areas, highlighting that, while in the cities CCT appears to strengthen the agency of female beneficiaries, the opposite occurs in the countryside (Suarez and Libardoni, 2008; de Brauw et al., 2013).

More recently, cash transfer proponents have emphasised the role of G2P payments in encouraging more 'virtuous' financial behaviours. Reflecting the growing influence of the 'nudge theory' (Thaler and Sustein, 2008) on public policy, this perspective suggests that social transfers mitigate the mental fatigue induced in the poor by hard financial trade-off decisions (Fernald and Gunnar, 2009) and contribute to behavioural changes by helping recipients develop the habit of saving (Zimmerman and Holmes, 2012; Arnold and Rhyne, 2016). Some initiatives have explicitly associated cash transfers with financial literacy initiatives, not only to induce the recipients to save but also to direct them towards uses of the grants deemed more profitable and sustainable by the implementers of the programme (DFID, 2009).

The delivery of cash through traditional channels, however, presents several challenges. The management and administration of cash payments in challenging environments appear prone to inefficiencies due to duplicates, corruption or ghost beneficiaries. The hiring of additional staff and security to perform and protect the transport and disbursement of the money weighs on the budget (see for instance Jackelen et al., 2011). Moreover, most manual cash transfer programmes require recipients to travel to specific distribution points for them to collect their allowance. This entails costs for beneficiaries in terms of transport and lost labour time and put at disadvantage those with mobility issues (Vincent and Cull, 2011).

As manual methods of cash transfer have shown downsides, policy makers and practitioners have started contemplating more innovative approaches. The backdrop of this reappraisal of the procedures and technologies to deliver cash is the dramatic diffusion of ICTs across the Global South. The construction of strategic infrastructures, such as overseas fibre optic cables (Graham et al., 2015), and the falling cost of digital technologies have made the internet and mobile phones increasingly accessible to an unprecedented number of individuals and firms (Murphy et al., 2014; Carmody, 2012). Leveraging the expectations of greater efficiency and transparency afforded by digital technologies, governments and humanitarian organisations have piloted initiatives to replace the traditional disbursement of cash with the transfer of funds in an electronic format. State agencies have partnered with established financial institutions, such as banks, and new types of financial service providers, such as mobile network operators (MNO), to explore the possibility to funnel G2P payments directly on accounts accessible to the beneficiaries by using either debit or smart cards[7] or, in contexts in which mobile money[8] services were already popular, a SIM card.

A combination of multiple factors lies behind the interest towards the digitisation of social protection programmes. Most policy-related literature on social protection highlights the advantages for the state and for the beneficiaries, while the one on financial inclusion emphasises the long-term implications of cash transfers for introducing the beneficiaries to a wide range of financial services.

2.2 Benefits for the state and citizens

The most cited benefits for the state are efficiency and accountability. Cash transfers are expensive programmes, for states with lean budgets and those facing donor fatigue. The costs are not only related to the transfers themselves but also to their management, and often spike beyond what initially planned because of leakages derived by duplicates, inefficiencies and fund diversion. The organisational and technological arrangements on which digital cash transfers rely can enhance the government's capability to acquire data (Taylor and Schroeder, 2014) and to verify that each

[7] A smart card is a plastic card with an electronic chip recording biometric and other data. It does not require the recipient to have to remember a PIN number to perform operations, with benefits for those with limited numeracy or literacy. The smart card may function also offline.

[8] Kendall et al. (2012) define mobile money as "a network infrastructure for storing and moving money that facilitates the exchange of cash and electronic value between various actors" (49)

payment is well targeted. As the transfer of electronic funds is essentially an information on the value, the recipient and the sender of a payment, digital technologies make it possible to track a payment through the simultaneous emission of metadata related, for instance, to the sending and receiving devices, their geographical location and the fulfillment of specific requirements, such as the entry of a PIN. The adoption of digital technologies is thus seen as instrumental to help poor countries and international development organisations improve the implementation of their social protection agenda (Hanlon et al., 2010).

The greater visibility of transaction flows depends on the digitisation of the recipients' data, the creation of de-duplication checks, the setup of a digital management information systems (MIS), and the implementation of authentication mechanisms for beneficiaries through either biometrics, where available, or card and personal identification number (PIN) readers (UNCDF, 2017). Lindert et al, (2007), for instance, suggest that the usage of a swipe card and agent banking to transfer social payments of the Bolsa Família social welfare programme to over 12.4 million beneficiaries across Brazil has reduced administrative costs from 14.7 percent to 2.4 percent of the total grant value. In Mexico, shifting to digital payments has saved the government nearly 1.3 billion USD each year on its spending on wages, pensions and social welfare (Radcliffe, 2017). In South Africa, according to CGAP (2011), administrative costs of delivering social transfers for the South African Social Security Agency were cut by 54% when the payments were rerouted through commercial bank accounts, accessible through debit cards. The positive assessment of these experiences has encouraged more governments to consider integrating digital technologies in their G2P programmes. Drawing on the outcomes of a pilot project, for instance, Nepal's Ministry of Federal Affairs and Local Development (MoFALD) has estimated that the digitisation of the national SSA payment systems will cut the operational costs by more than 60%, from the actual NPR 1,332,085,514 million (USD 12.483 million) to NPR 475.09 million (USD 4.467 million) (UNCDF, 2016).

Proponents of digital payments point at benefits for the citizens in terms of government accountability and lower transaction costs, both physical (cost of movement), financial (what they have to pay for this) and economic (such as the opportunity costs of time use). Government's accountability is a pressing issue in contexts in which corruption is perceived as widespread. The fund diversion that often marres manual G2P programmes risks exacerbating citizens' distrust towards the government and undermines political participation. By producing a digital record which can be later used for reconciliation, electronic disbursements are seen in the literature as a way to reduce the request of kickbacks by officials in exchange for the release the payment (Gelb and Decker, 2011). For instance, Muralidharan et al. (2014) argue that, in India, shifting from a manual delivery of social security allowances to a digital one, using smart cards, has cut the incidence of bribe demands from government officials by almost 50%, from 3.8% for manual cash payments to 1.8% for digital payments. In Argentina, the introduction of an electronic benefits card for all the beneficiaries of the Jefe welfare programme has reduced the rate of participants admitting to paying a bribe to local officials from 3.6 percent to 0.3 percent (Pickens et al. 2009; Smith et al. 2015).

The assessment of digital cash transfer projects in Niger and Haiti, two countries that present several challenges at infrastructural and security level, has highlighted further advantages for the recipients of the payments in terms of lower travel expenses and increased security (Aker et al., 2015; BFA, 2013). Following the implementation of a cash transfer programme in Niger, for instance, Aker et al. (2015) observed that the delivery via mobile phone reduced travel and waiting time by 75% when compared to manual delivery. Beneficiaries, mostly women, saved 40 minutes for the overall travel. The study suggested that the economic value of the saved time could be devoted to other productive activities and was enough to feed a family of five for a day (ibid.). These conclusions can be generalised to rural settings where infrastructures are poor or absent and travelling to delivery points, often located in regional capitals, is a costly and time-consuming endeavour for recipients of cash payments. Receiving the payment directly on a mobile handset, and cashing out through authorised merchants or roving agents, would save the beneficiary resources that can be directed

towards consumption or income generating activities. Moreover, travelling to remote or crime-ridden areas is most of the time a source of concern for the most vulnerable individuals, such as women, who are often the designated recipients of cash transfers, particularly so once they have picked the cash and carried it back home. The case of regular cash payments, in which the dates and locations of the distribution are fixed, presents further risks. Digital accounts and mobile wallets offer greater security by reducing the need to carry cash. An assessment conducted in Haiti by MercyCorps, an INGO, on *Ti Manman Cheri*, a government-led conditional cash transfer programme transferring cash to 75,000 mothers of school children using mobile money payments through MNO Digicel's TchoTcho Mobile, found that security was one the main perceived benefits for the recipients, along with convenience and trust (Zimmerman et al., 2014).

Also, improving the delivery of cash transfer through electronic means is suggested to lead to a greater preparedness in case of humanitarian emergency. Several studies have pointed at the key role of digital social protection programmes in building up the capabilities to cope with unexpected events such as natural disasters and other types of humanitarian emergencies. A report by the International Rescue Committee (IRC) (2016) argues that there is a strong correlation between the efficiency of emergency cash transfers and levels of preparedness[9].

2.3 Linking cash transfers to financial inclusion

Besides the immediate advantages of digital G2P for smoothing consumption and increasing resilience to shocks, digital payment proponents suggest that cash transfers have the potential to advance a financial inclusion agenda (Smith et al., 2015). Demirguc-Kunt et al. (2015) estimate that "shifting the payment of government wages and transfers from cash into accounts could cut the number of unbanked adults by 160 million—or 8 percent." G2P, and, more broadly, bulk payments, are seen as an "on-ramp" to financial inclusion (Klapper and Singer, 2014; Owens, 2013) because they rest on a technological infrastructure and arrangements that enable beneficiaries to gain familiarity with DFS. Pickens et al. (2009) argue that, by requiring a 'landing spot' to deposit and administer funds for the beneficiaries, digital cash transfer programmes may facilitate financial inclusion by allowing a safer and more accessible storage of funds and increasing the transactional capability of the users. The landing spot of the social payments, whether a bank account or a mobile wallet, set up with the support of the state to receive payments, is seen by FSPs as an opportunity to build a relationship with the recipients and inform and introduce them to a wide range of financial services, such as savings accounts, utility bill payments, international money transfers, credits and insurance (ibid.). Delivering payments directly into mobile wallets or bank accounts helps build familiarity with digital means of payment, thus paving the way to the adoption of more sophisticated products. In Brazil, for instance, 15% of 14 million families from the Bolsa Familia social cash transfers programme receive payments on a no-frills account set up with one of the contractors of the government Caixa bank. As reported by Bold et al. (2012), 40% of Bolsa Família recipients have started using at least one other product of the bank. CGAP (2009) argues that digital cash transfers "create the basis to deliver financial services to recipients via branchless banking channels, such as debit cards and mobile phones."

While the assessments of cash transfer programmes that have shifted from manual to digital delivery appear to corroborate the expectations of greater efficiency, efficacy and transparency for state agencies and improved security for the recipients, the literature on the relationship between digitisation of social protection and financial inclusion provides contradicting examples. As most programmes have been ongoing for not long or are currently in a pilot stage, the evidence is still

[9] IRC uses a preparedness framework to assess the preconditions necessary for making a county's e-payment ecosystem ready to support cash transfers at scale in emergency response.

limited and inconclusive. For instance, while the evaluation of a G2P program in Peru found no correlation between digital payments and saving behaviour, in Mexico the assessment of a G2P Cash Transfer programme established a link between improvement in savings and access to ATMs cards (Barry, 2018). In Pakistan, the evaluation of BISP programme found that, although G2P payments smooth the consumption of the recipients, increase their collateral to obtain informal store credit from local shopkeepers and provide them with seed capital for small investments, there is little evidence of increased formal financial inclusion and regular usage of banking services (even though digital payments are routed through a bank account) (ibid.). A recent CFI study challenges the belief in a linear relationship between digital social protection programmes and financial inclusion, suggesting that, "currently, there is little indication that G2P payments do result in increased financial inclusion through any sort of direct mechanism related to the delivery of those payments through formal financial service providers" (Stuart, 2015).

Analysing the data of the WB Global Findex Database 2014, the World Bank Group Committee on Payments and Market Infrastructures (2015) found that a linear relationship between cash transfer and greater access to transaction accounts can be applied only to some countries with account-based cash transfers, namely Argentina, Botswana, Brazil, Kazakhstan and Ukraine. In other countries, namely Belarus, Botswana, Malaysia and Mongolia, at least 50% of the recipients withdraw the funds only gradually, when they are needed. A World Bank report (2015) suggests that individuals who opened their first account to receive a payment are more likely to be conducting transactions with a formal financial institution than individuals who had no account and received their payment in cash (World Bank, 2015). Moreover, being among the beneficiaries of cash transfers might, in some case, help be better positioned to get loans from banking or microfinance institutions as it provides a collateral (Priyadarshee et al. 2010). However, the registration of either a bank account or a mobile wallet does not seem to ensure per se greater access to financial services, such as loans or mortgages, for which collaterals are required in most cases.

2.4 Limited evidence

So far, the likelihood that owning an account might induce behavioural changes leading to regular savings, greater expenditure in health, education and investment in income-generating activities is based on hypothesis. But the hype surrounding the momentous diffusion of mobile phones and the popularity of mobile money in some emerging economies has seeped into the discussion. Although acknowledging that technological innovations are widening the repertoire of options and methods available to policymakers to reach the target population, Bastagli et al. (2016) observe that "the use of mobile payment technologies may reduce opportunities for physical interaction with beneficiaries, reducing the opportunities for delivery of complementary interventions, messaging and monitoring." The crucial role of social networks to cope with financial needs (Bold et al., 2012; Kusimba et al., 2016; Johnson, 2014; Iazzolino and Wasike, 2015) combines with the deep-rooted distrust towards formal financial institutions and the reliance on cash as a means of payment that enable to diversify storages of value. This helps explain why, very often, the accounts attached to landing spots for the payments remain inactive (Stuart, 2015; Bachas et al, 2014) or have a 'dump and pull' use. Beneficiaries tend to withdraw the whole amount as soon as the payments reach their account, even when the programme allows them to save, because most beneficiaries do not perceive any advantage to secure other services from the FSP which funnel their payment (Almazan 2013).

The beneficial implications of digital cash transfer on the financial inclusion of a favourite target population of social protection programmes, poor women in rural areas, are also debated. In India, for instance, where most cash transfer programmes are designed for women, a study by the Centre for Equity Studies analysed the reasons behind the failure of a conditional maternity benefit scheme named Indira Gandhi Matritva Sahyog Yojana (IGMSY), in which cash was directly transferred to accounts of beneficiaries (pregnant and lactating mothers). The study found that the banks in charge

of the payments applied to women different requirements than to men, such as denying zero balance and keeping instead a minimum deposit (Falcao et al., 2015). This discrimination reflects a broader gender gap in financial inclusion (World Bank, 2016). Widespread lack of identity papers among women is considered by the report a major barrier to access entitlements via banks. Situations of gatekeeping in which women beneficiaries have to depend on local leaders and male relatives to withdraw their grants are not uncommon (Stuart, 2017). Other barriers derive from cultural and religious factors: in many societies, women are strongly reluctant to interact with male banking agents, also to deepen their knowledge of financial services (Scharwatt and Menischetti, 2014).

Moreover, the academic literature on mobile money stresses the fact that this innovation has only partially allowed overcoming some limitations derived from poor infrastructure (Etzo and Collander, 2010). This appears particularly true in the case of the G2P programmes, whose performance mostly depends on state-provided infrastructures like electricity, transportation, and roads. An efficient infrastructure is therefore seen as a crucial element to "expand into the frontier" (Kimenyi and Ndung'u, 2009), a concept encompassing rural population, women, and, more broadly, all swathes of the population with low levels of DFS readiness[10]. The presence, the functioning and the maintenance of infrastructure in rural areas, where most G2P payment beneficiaries are located, is, therefore, a crucial aspect to account for in management of systems both to perform the payments and verify the identity of the beneficiaries (Gilman and Shulist, 2015). Despite the assumptions on the greater reliability of digital means of payment than manual disbursement, the evidence suggests that the capacity to respond to shocks of different nature varies according to the context. For instance, after Typhoon Haiyan ravaged the Philippines, the e-payment infrastructure was so damaged that the government had to resort to manual cash transfers to the recipients in the most affected areas (O'Brien et al., 2018).

3 Operational issues

3.1 Infrastructures of payment

The choice of the delivery channel through which G2P payments are funnelled mostly depends on initial infrastructure installation and recurrent operating costs, along with contextual specificities such as population density and payment recipients' concentration.[11] The administration and

[10] Readiness is considered a critical factor for DFS uptake (Leach and Mensah, 2016). The concept refers to the preconditions necessary to progress on the customer journey for a specific type of financial account. Different preconditions are required to start the customer journey for different types of financial accounts. DFS readiness encompasses six components that may facilitate or hinder the customer journey: having a national ID to comply with KYC requirements, numeracy, literacy, mobile phone ownership, SMS texting abilities and education. These components of readiness correlate with DFS ownership and usage.

[11] A toolkit developed by ISPA (2015) identifies the following types of electronic channels:

- **E-vouchers**: unique serialised vouchers recorded in a database which can be redeemed electronically in exchange for cash or goods by merchants, often using a mobile phone to process the transactions and verify their validity of the vouchers. Typically used for one-off or short-term payments, and traded in exchange for goods such as agricultural inputs, fertiliser, and grain;
- **Payment cards:** different types of payment cards, divided into: prepaid cards; reloadable; Magnetic stripe debit cards (to withdraw cash at an ATM and to pay for goods and services at retail outlets using a POS device); Smart cards (powered by a microprocessor or memory chip, possibly personalized with the holder's biometric information such as a fingerprint or photo);
- **Mobile money:** e-money stored in a digital wallet. Following the success of Safaricom's M-Pesa[11] in Kenya, mobile money payments have catalysed the interest of government bodies and

distribution of cash transfers require the construction of an infrastructure to establish a unique link between a customer and an account; to keep track of transactions towards or out of an account; and to collect and transfer transactions details to an authorizing entity. These 'payment rails' (Mas, 2015) enable to digitise and transfer value and include a wide array of capabilities, spanning from "sending money home, paying for a good or a bill, pushing money into my or someone else's savings account, funding a withdrawal at an agent, or repaying a loan" (ibid.). Digital technologies play a critical role in increasing the speed and the effectiveness to provide payment and reconcile payees' details, improving identity verification solutions and accounting techniques (Vonthron and Almazan, 2014).
A key constraint to the use of digital eco-systems is the limited diffusion of identity documents, such as national ID and voter ID card. Recent years, however, have seen the significant diffusion of digital biometric systems, or advanced human recognition (AHR). Between 2005 and 2010, the biometric market has grown by 34 percent per year in developing countries, mostly for creating beneficiary registries and authenticating cash or in-kind transfers (Gelb and Clark, 2013). The integration of biometric systems of identification into cash transfer programmes is largely seen by policymakers and practitioners as a solution to the problem of duplicates and ghost beneficiaries, a major drain of resources in cash transfers using manual delivery of payments due to the difficulties to verify the identity of the legitimate recipients of the social grants.

Most systems are based on fingerprints or iris recognition and have been used sometimes in conjunction with smart cards to authenticate recipients at the point of service. For instance, in India, the government launched in 2013 the Direct Benefit Transfer (DBT) programme to replace traditional cash transfer schemes based on the manual distribution of money and transfer government benefits directly into recipients' bank accounts in 43 of its 686 districts. The goal of the programme was to minimise delays in the payments and better target the beneficiaries while reducing the risk of duplication and leakages (Bhatia and Baba, 2017). To tackle the widespread lack of identification documents (only 40 % of the Indian population has a birth certificate (UNICEF, 2013)), DBT builds upon the so-called JAM trinity, an initiative that includes the financial inclusion campaign Jan-Dhan Yojana, the world's largest biometric ID system Unique Identification UID/Aadhar, and mobile phone numbers. A platform links the bank accounts of the beneficiaries, their unique 12-digit ID numbers (distributed to 1 billion Indians as of April 2016) and their mobile phone numbers and allows to apply DBT to all government programmes (536 schemes across 65 ministries and departments) involving cash transfers to individual beneficiaries[12].

Also, in Pakistan, the Watan smartcard programme was built upon the existing infrastructure of the National Database and Registration Authority (NADRA) to successfully provide reconstruction grants to 1,5 million families severely affected by flooding (Hunt et al., 2011). Also, the country's largest programme, BISP (see Box 2), was built upon the National Economic and Social Registry but the

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humanitarian agencies because of the capacity they offer to track payments, thus contributing to reducing leakages.

- **No physical payment instrument:** In some cases, a transaction such as a fund withdrawal can be completed by entering biometric information on a POS device.

[12] As of December 2016, though, only 84 schemes were using DBT. Moreover, the preliminary assessments of the programme have highlighted a number of obstacles impinging on the attainment of the financial inclusion goal, such as:

- Lack of adequate banking infrastructure, as, in India, there are 10.5 bank branches for every 100,000 adults;
- The slow process of linking Aadhaar numbers to bank accounts: although around 75% of the Indian population has been enrolled, only 48% of bank accounts opened through the government's financial inclusion program are linked to Aadhaar.
- Poor Network Connectivity: the diffusion of mobile phone and network coverage is still patchy across the country).
- Lack of Grievance Redressal Mechanism (Sharma and Nair, 2016).

system is currently being overhauled in order to rely uniquely on biometrics (thus doing away with smart cards) to verify the identity of the beneficiaries. This change is expected to address issues commonly faced by women, such as having a male relative picking up the grant on behalf of the recipient or handing over the card and PIN to the agent to perform the operation, as it requires agents to register the thumbprint of the recipient in a centralized database and disburse each payment upon biometric identification. The underlying expectation driving this innovation is that the biometrics shift will facilitate the customer journey towards more advanced DFS (Stuart, 2015).

In some cases, the implementers of biometric technology have modified their approach after encountering unexpected operational issues. In South Africa, for instance, social grants were originally disbursed through an off-line card-based system and mobile biometric ATMs (Gelb and Clark, 2013). Later, though, the FSPs in charge of the operations deemed excessive the overhead cost of providing payment points, including through dedicated mobile ATMs. The payments were thus routed through bank accounts, allowing for greater savings on the operational costs. In the Democratic Republic of Congo (DRC), a programme of demobilisation grants to ex-guerrilla fighters shifted from an approach based on pay points to another using mobile ATM because partner merchants in charge of disbursing the payments were constantly short of cash (ibid.). In a few G2P programmes, biometrics technologies are also used to verify conditionality, such as school attendance and health clinic visits. In Mexico, the Mexican National Commission of Social Protection in Health (CNPSS) plans to link a new biometric database called *Sistema Nominal en Salud* (SINOS) in which are enrolled all the beneficiaries of *Seguro Popular* (the national health plan) and of the national cash transfer programme *Oportunidades* to verify, via fingerprints, that beneficiaries are complying with health care requirements (ibid.).

However, despite the declared aim of harnessing the potential of biometrics to extend social protection and render 'legible' to the state segments of the population previously invisible, in some case this goal has proved to be controversial. The above mentioned biometric Aadhar programme has been the target of over 30 challenges in the Indian Supre Court by activists mostly concerned with privacy violation and denial of rights (Bhuyan, 2018). The deployment of the programme has been marred so far by several reports of breaches into the database and theft of biometric data of over one billion people (Safi, 2018). Besides putting privacy at risk, activists also fear that the system might entrench the identity of members of lower castes. For instance, Bezwada Wilson, national president of the Safai Karmachari Andolan, the organisation representing *safai karmacharis*, or manual scavengers, and a petitioner in a Supreme Court case against Aadhar, argues that, since *[Aadhaar facilitates] keeping identity forever "in your Aadhaar, my occupation, where I come from, everything will be there. Once you get the data, you can segregate in any way by means of technology*. (Deshmane, 2017)

3.2 New frameworks for PPP

The routing of social grants to the bank or mobile money accounts of the recipients requires technical and organisational arrangements based on expertise and technical capabilities that state actors often lack. By ushering in new approaches to the provision of a broad range of services, current experiences of digitisation highlight new reconfigurations of public-private partnerships (PPP), in which the private sector takes over functions which were previously a prerogative of the state. According to the recommendation of a report by the World Bank, BTCA and the Bill and Melinda Gates Foundation, "[p]ublic and private sectors can converge around a payment platform, and enable innovation and competition in additional financial services" acting as a "catalyst of financial inclusion [that] will foster adoption of basic financial services at a large scale." (Klapper and Singer, 2014: iv).

FSPs play a critical role in providing the capability for the management and the distribution of digital cash transfers and relieving civil servants from performing disbursement operations. Janis and Shah (2016) point out that, in the most effective and efficient G2P digitisation programmes, such as Brazil's Bolsa Familia and South African Social Security Agency (SASSA) grants, the state has filled technical and organisational gaps by resorting to existing payment providers and leveraging their infrastructure. By contrast, when governments have sought to deliver the payments by itself, costs have increased. This was the case for Colombia's CCT programme Mas Familias en Acción (ibid.). Initially in charge of the distribution of cash, the Colombian government in 2009 opened saving accounts for the programme beneficiaries at a government bank. However, the bank proved unable to cope with the demand for cash, due to its limited agent distribution network, and was forced to rely on a third party. The costs skyrocketed and, according to a 2012 CGAP study, 11.3% of the programme budget was swallowed by administrative costs. In comparison, similar programmes in Brasil and South Africa, which used private service providers, saw between 1.2% and 2.4% used for delivering the payments. Later, in 2012, the Colombian government started also using Banco Davivienda's mobile money platform DaviPlata to pay 900,000 beneficiaries of Mas Familias en Acción directly into their mobile wallets (ibid.).

The private sector has typically shied away from initiatives that might prove costly before turning profitable. Private operators are expected to benefit from the provision of G2P payments in the medium/long-term, as a digital payment ecosystem takes shape[13]. However, they have to face setting up costs that are often difficult to afford (particularly in hard to reach areas), unless they are offered incentives from governments, ranging from a favourable fee structure to tax breaks to investments in infrastructures. According to Porteous (2012), in the early stage, the payment of fees from the government is the single most important factor to make the business financially viable for the service provider.

These expectations translate into calls to policymakers to address regulatory issues to cut red tapes for providers and enhance citizens' financial capability, and work with the private sector to develop infrastructures that can increase access in rural areas – thus creating an enabling environment.

3.3 Building a digital payment ecosystem

A recent ITU report suggests that G2P payments are a tenet of a digital payment ecosystem, shaped by initiatives to enable and encourage merchants to accept digital payments (ITU, 2016a). The ultimate goal of this ecosystem, such as envisaged by digital payment proponents, is to achieve a cashless economy in which cash is rendered increasingly redundant because electronic payments for goods and services are widely accepted. At the centre of the discussion on digital payment ecosystem there is therefore the pursuit of strategies to reduce the number of cash-in/cash-out (CICO) to eventually reach a state of so-called "digital liquidity" (ibid.). The report also lists three main business cases that FSPs derive from their participation in G2P programmes: first, reaping revenues from the fees charged to the government for the disbursement of the payments; second, selling different digital products; and third, acquiring detailed information on the financial behaviours and preferences of the customers. (ibid.)

Once members of poor households have a digital account where the payments are transferred, the FSP in charge of the operations can offer to upgrade it in order to enable a broader range of financial operations (Radcliffe and Voorhies, 2012) and sell a number of products (such as contribution

[13] The GSMA calculates that, in the early stage (1-2 years operation), the revenue that an MNO obtain from DFS is 0.2% of the total MNO revenue while the direct costs, including agent commissions, and indirect costs are respectively 719% and 107% of the total mobile money revenue. However, in an established (over 5 years old) ecosystem the revenue rises to 15% while the direct and indirect costs fall respectively to 65% and 20%. (Vonthron and Almazan, 2014)

pension accounts, insurance products, and other services) to support the beneficiaries' commitment to save (Choi et al., 2004; Ashraf et al., 2010; Karlan et al., 2012; Karlan et al., 2014). This upgrade would be considered risky in economies massively reliant on informality and cash transactions. But a digital payment ecosystem renders transactions traceable and financial behaviours legible and predictable (BTCA, 2016).

Digital payment proponents often portray the construction of a digital payment ecosystems as a win-win situation for both the state and the private sector (Almazan and Vonthron, 2014). The advantages for regulators and state agencies lie in the potential use of the data trails generated by digital payments to police previously opaque channels and enforce financial integrity; accelerate the formalisation of the economy; and improve tax collection, particularly in contexts in which the economy is mostly informal (Demirguc-Kunt et al. 2015; de Koker and Jentz, 2012). For FSPs, digitising payments is expected to unlock the possibility to extract economic value from the sizeable amount of personal data generated by the users and to improve market segmentation in order to predict financial needs and behaviours, identify risky customers and design tailored products (Aitken, 2017). Recent advancements in data analytics have greatly improved the capacity to understand needs and behaviours of the customers in order to develop tailored services. Moreover, by using the digital trails left behind by transactional data and by a number of indicators captured by a wide range of proxies (such as contacts in social networks and GPS locations), FSPs are expected to derive credit scores to minimise the risk derived from lending to individuals with a negative credit history (Aitken, 2017; Kear, 2018)[14].

This points at a situation in which the unproblematic view of a digital payment ecosystem that, at once, works for the poor while benefiting the private sector is called into question. FSPs are driven by the possibility to minimise the costs (thanks to state's incentives and subsidies) while maximising the profits (by leveraging their technological capability). But in markets in which personal data are an increasingly profitable resource, policymakers are increasingly faced with the challenge to design and implement the regulatory instruments to protect the payments' beneficiaries, and the citizens in general, from opaque business practices. As an emerging strand of literature on big data suggests, the interest of the private sector and citizens often diverge, particularly when the business models of FSPs is based on accessing, extracting and storing personal data (Pasquale, 2015; O'Neill, 2016; Srnicek, 2016).

The challenge for regulators presiding over the implementation of digital G2P programme is thus to harmonise the interests of FSPs and citizens.

4 Regulatory Issues

4.1 Enabling and Safeguarding

Most policy reports on the digitisation of G2P consulted for this research review emphasise the need for governments and regulators (central banks and telecommunication authorities) to take a

[14]Faz (2014) argues that data analytics enables financial providers to develop "second generation" DFS building their value proposition on one or more of the following attributes: Digital Data Trail, generated for instance by call records, airtime purchases and other transactional data which provide an indication of an individual's income patterns, to apply for small and very short-term unsecured loans (for example M-Shwari in Kenya); Real-time customer interactions, helping providers stay close to customers at all times, and deliver useful information at the moment it is needed; Smart and customized user interfaces helping customers better understand products and make smarter choices; Location intelligence, helping infer the context of an individual's specific financial transaction, which can improve usability and reduce certain costs; Peer-to-peer connections through voice, text, and apps, which can strengthen the management of financial networks, since social and financial networks often involve the same individuals.

proactive role in shaping an ecosystem featuring low or no friction for digital payments, promoting innovation and balancing financial inclusion and integrity (UNCDF, 2014; di Castri, 2013). DFS experts see a close partnership between government and DFS stakeholders as key to facilitate the digitization of government services and payments, such as salaries to civil servants and person-to-government – P2G – transactions (ITU, 2016a; ADB, 2017).

Besides the commitment to support the maintenance and expansion of the existing ICT infrastructure, digital payment proponents expect governments to craft a policy framework aimed at minimising the economic barriers that make large value "bulk" payments impractical; compensating the service providers managing and operating the payment of social grants; and mitigating the charges to consumers for G2P payments (including cash-out fees). This strategy is buttressed by incentives to pay through digital means and penalties to use cash (ITU, 2016a). A case in point is Nigeria, where the Central Bank (CBN) in 2012 launched "Cashless Nigeria", a two-pronged approach which, on the one hand, established a daily limit on cash withdrawals and a service fee on withdrawals in excess of these limits; on the other, committed banks to scale up the deployment of point-of-service (POS) terminals (Loeb, 2015).

In a recently published paper, "Bulk Payments and the DFS Ecosystem", ITU's DFS Focus Group (2016b) point at the need for policies behind the design and the implementation of G2P systems to address simultaneously technical, logistical, and political challenges. The 2016 G20 High Level Principles for Digital Financial Inclusion inspire the guidelines to balance incentives to innovation, safeguards for customers and the promotion of responsible practices. In fact, while a too strict regulation might stifle competition and erode the profits for FSP, thus deterring them from investing in innovation, a too lax regulation might undermine the safety and efficiency of payment platforms and expose customers to risks derived from the misuse of their data (Janis and Shah, 2016). The policies hitherto designed and implemented to regulate digital G2P programmes can be roughly divided into two broad categories:

- Enablers – to extend the reach of FSPs in hard to reach areas - in particular, branchless banking - and promoting innovation;
- Safeguards – ensuring financial integrity through know-your-customer practices and protecting customers.

The first group includes policies focusing on improving branchless banking; the second group focuses on Know-Your-Customer (KYC) and customer protection policies.

4.2 Facilitating Branchless Banking

Branchless banking refers to "the delivery of financial services outside conventional bank branches, often using agents and relying on information and communications technologies to transmit transaction details – typically card-reading POS terminals or mobile phones" (CGAP, 2010). Widely considered as a key factor behind the successful implementation of G2P programmes, branchless banking is seen by FSPs and think tanks such as CGAP as a transformation gateway for the unbanked (Bold, 2011), facilitating access to customers considered unprofitable by formal brick-and-mortar banks and therefore not worth investing in infrastructures and financial awareness campaigns.

In order to achieve this goal, the DFS sector envisage a regulatory framework that allows non-bank agents to perform financial operations and open accounts while upholding security standards in order to increase the number of service points. Also, this regulation should enable a diverse range of players to contribute to innovating the payment ecosystem by providing payment services and issuing e-money (ibid.). As shown by evidence from different countries, regulations allowing branchless banking through non-bank agents thus play a critical role in determining the successful

implementation of digital G2P programmes (Bold et al., 2012).

In Pakistan, for instance, the success of the country's flagship social protection scheme, BISP, has built upon a branchless banking regulation, approved in 2008, which allows mobile network operators to own financial institutions (CGAP, 2013; Smith et al. 2015). By acknowledging the possibility for a broad and diverse range of FSP (mobile network operators, banks, micro-finance institutions, money transfer operators) to serve as channels for G2P payments, regulators are indeed adopting a flexible approach to take into account local specificities. In a similar fashion, Brasil's Bolsa Família cash transfer programme allows recipients to choose whether to receive the payment through smart cards, direct deposit into a no-frills bank account, or even in cash (CGAP, 2011).

Encouraging interoperability among different platforms and prohibiting agent exclusivity (so that an agent can offer products and services from different operators) are also seen as key steps in regulatory policies that facilitate branchless banking (Klapper and Singer, 2014). Interoperability is based on a view of the system as an open loop which all qualified participants can join (Bill and Melinda Gates Foundation's Level One Project, 2016). It is seen by practitioners as a solution to simplify the task of routine payments. FSP networks might be unequally distributed on the territory and G2P recipients in areas not served by the government's contractor would be penalised. An interoperable digital payment market would allow customers of different MNOs, or even bank and MNO customers, to transfer mobile money to each other at no additional fee.

The prohibition of agent exclusivity allows agents who are not employed by a service provider to sell products from other operators. While this provision facilitates the transfer of value to customers of different MNOs, it has been sometimes contentious. Operators, in particular, have expressed concerns that non-exclusivity might give too much negotiating power to agents (who could, therefore, put more efforts in marketing the services of the providers who offer the highest commissions) (Greenacre and Buckley, 2014). Considered as a tenet of branchless banking, agents are critical to verify the identity of the recipient, disburse the money, and help customers get familiar with digital products. For DFS providers, agent outlets are "the first and most tangible service touch points for most customers" (Mas and McCaffrey, 2015), reaching segments of the population with limited access to financial services such as women and rural residents. In most cases, agent outlets are linked to shops, from which they draw the cash necessary to pay the G2P beneficiaries (Bersudskaya and McCaffrey, 2017). For FSPs, agent networks are instrumental to increase the profits from basic operations, such as CICO, in which cash is converted in e-money, or vice-versa, to customer registration, to the sale and so-called 'cross-selling' of products, making clients aware of - and persuading them to try – other products beyond mobile money (Kendall et al., 2014). For FSPs, investing in the expansion of agent networks is a risky endeavour, as the high investments often required to fill gaps and deficiencies in the existing service infrastructure fail to generate profits in a reasonable time. The GSMA, for instance, estimates that the operational costs of agent networks range between 40 - 80% of the revenue generated from the business (Almazan and Vonthron, 2014). Innovation, in both technology and business models, is considered a key factor in shaping a market for advanced DFS, such as loans and insurance, that would yield greater profit margins. G2P programmes are therefore seen by FSP as an opportunity to leverage their agent networks to negotiate favourable fee schemes with the government, and thus reduce the risk of investing in geographical areas with no immediate economic return.

4.3 Financial integrity meets financial inclusion

In an updated version of the 2010 High-Level Principles for Digital Financial Inclusion released in 2016, the Global Partnership for Financial Inclusion (GPFI) singled out identity and consumer protection as the most pressing issues for policymakers to address in order to harness the potential

of digital cash transfers for financial inclusion. This two-pronged strategy focuses, on one hand, on technological innovations; on the other, on the regulation to oversee the application of these technologies and the use of the data extracted through them.

At regulatory level, KYC policies respond to the need to meet financial integrity requirements, particularly to sanitise financial chanels from the risk of money laundering and terrorist financing (Koker and Jentz, 2013; Chatain et al., 2011; FATF, 2011). However, the attempt to align the objectives of financial inclusion and financial integrity is challenging, particularly in contexts such as rural areas, where too stringent requirements can prevent individuals lacking official ID from opening a digital account and accessing their funds. ITU (2016) points out that the national ID systems, a cornerstone of KYC procedures to guarantee the transparency and the compliance of payment schemes to international standards, is "inherently political". The example of India's Aadhar, previously described, is a case in point. In most countries in which large part of the population (and most beneficiaries of social protection programmes) perform low-value transactions, a risk proportionate KYC system has been created to loosen identification requirements and lower access barriers to financial services (di Castri, 2013). In Mexico, for instance, the Central Bank has adopted in 2011 a tiered KYC approach incorporating different levels of simplified accounts, each with its own requirements and limits, leading to the opening of 9.1 million accounts in the following two years (Faz 2013). In Colombia, low-value accounts can be opened in remote areas (Almazan, 2013). The State Bank of Pakistan for instance has reduced the KYC requirements for low-balance accounts, thus facilitating the registration and account openings for new beneficiaries. (CGAP, 2013)

In recent years, innovations in identity verification, based on biometrics, encryption, distributed ledgers, and smart devices have enabled new models for managing identity. Behind the development of these technologies there are often public-private partnerships, animated by the goal to offer countries lacking a national ID system the possibility of leapfrogging to a fully digital infrastructure (Caribou, 2016). At the same time, the involvement of the private sector in the construction and the management of infrastructures underpinning the provision of public services (including social protection payments) raises new questions on the ownership and the use of citizens' data which should be addressed by consumer protection regulations.

4.4 Protecting customers

Consumer protection is regarded by a number of organisations, such as Better than Cash Alliance (BTCA) and GSMA, as a critical element to build trust in the service, but one that has to be properly harmonised to the development of a financial inclusion agenda. As a policy principle, consumer protection is based, according to the World Bank (2012), on five pillars: transparency, choice, redress, privacy and trust. CGAP sees consumer protection through the lens of 'customer centricity', arguing that poor consumer protection measures, particularly in the cases of recourse mechanisms and fraud, can undermine a G2P system and have repercussions on consumers' perception of DFS (Mazer, 2014).[15]

A recent study of the DFS landscape in Indonesia (Microsave, 2017) argues that digital payment users are particularly concerned about lack of clarity on DFS transaction charge, complaint handling and grievance redressal mechanisms. In India, a country where the digitisation of social protection programmes is at the centre of a national debate (Srinivas, 2017; CIS, 2016), the discussion on the

[15] A CGAP Focus Note (2015) examining evidence from consumer research in 16 low-income markets identifies seven key consumer risk areas that a protection framework should address in order to reinforce customers' trust into the system and thus prepare the groundwork for a smooth digital transition of G2P programmes: Inability to transact due to network/service downtime; Insufficient agent liquidity or float, which also affects ability to transact; User interfaces that many find complex and confusing; Poor customer recourse; Non-transparent fees and other terms; Fraud that targets customers; Inadequate data privacy and protection.

design of an appropriate Ombudsman framework points at a growing concern over the datafication of financial services[16]. Indeed, the collection of digital data derived from the use of DFS raises questions on data privacy and protection which have so far been little addressed by existing regulations (Chen and Faz, 2015). Evidence from the field suggests in fact that in most developing countries DFS users have limited awareness of their data trail, often ending up relinquishing confidential data to agents in order to access loans (Mazer et al., 2014). Moreover, a regulatory framework for data collection and usage appears particularly necessary against a backdrop in which the private sector acts as an essential interface between the government and the citizens, handling highly sensitive data that might increase its leverage over the state. This raises a fresh set of questions on the type of regulatory frameworks that should be designed to hedge against the risk of socialising the risk of innovation while privatising the rewards (Mazzucato, 2013).

5 Conclusions and suggestions for further research

Digital G2P payments are a relatively new phenomenon that is drawing the interest of policymakers, development practitioners and the private sector. Policymakers expect digital technologies to improve the efficiency and the accountability of cash transfers while reducing the financial burden for the state. At the same time, and along with development practitioners, they see DFS as an accelerator of financial inclusion for citizens excluded from formal financial services. FSPs are attracted by the possibility to introduce customers to more advanced, and profitable, DFS and minimise the costs of investing in risky markets by leveraging the government's help through subsidies, tax breaks and investments in infrastructures.

This phase of the debate is mostly speculative. While the assessments of the projects rolled out so far seem to corroborate the expectations of greater efficiency, accountability and saving for the state, there seems to be a flimsy link between the digitisation of G2P payments and the advancement of a financial inclusion agenda. Despite the proliferation of deployments around the world to shift from a manual to an electronic delivery of social payments, the results have not yet matched the expectations of greater uptake of financial services. There is very limited evidence that having a "landing spot" to receive a payment, in the form of a bank account or a mobile wallet, prompts the beneficiary to use their accounts to perform payments or store their savings. More often than not, "electronic delivery itself does not advance financial inclusion, but it does create the basis to deliver financial services to recipients via branchless banking channels" (Pickens et al, 2009; see also Samson et al., 2010). However, in some cases, a correlation was observed between the reception of digital payments and the usage of formal financial services was observed.

Digital payment proponents emphasise that a strategic PPP finalised to the creation of a digital payment ecosystem would enable the alignment of commercial and developmental goals. But the objectives of public and private actors might start to diverge in the future, as some market segments appear more eager to embrace DFS than others, thus providing incentives to FSPs to focus on some beneficiaries who are considered "bankable" while neglecting others who stick to cash and to informal financial institutions. This would reveal a rift in strategies to extend access to formal financial services to the poor and the inherent contradictions of inclusion as intended by the public and the private sector. These contradictions are likely to become evident in the operational and regulatory issues examined in the paper. The discussion around these aspects bring to the fore, on the one hand, the policymakers' attempts to reconcile the inclusive goal pursued by the state with the private sector's need for a business case; on the other, the importance of contextual

[16] Mayer-Schönberger and Cukier (2013) differentiate between digitisation and datafication: the former refers to the adoption of a digital system to store and process information; the latter refers to the potentialities for predictive analytics and value generation unlocked by the coupling of digitisation and enhanced computational capacity.

characteristics in shaping the trajectory, and affect the outcome, of G2P programmes. The relevant academic literature is still inconclusive, but the current situation could help provide insights on future trends. Evidence from digital G2P initiatives around the world highlights the key operational aspects that all stakeholders involved in running the programmes (State, FSPs) have to face in order to ensure a smooth and efficient running of the system. Operational requirements and issues are pertinent to the physical infrastructure for both telecommunication and cash distribution; and to the network of agents in charge of performing basic operations and, according to the operators' vision, accompanying the G2P beneficiaries along the customer journey, from OTC cash withdrawal to, possibly, the opening of a mobile wallet to execute more advanced operations (BMGF, 2016).

On the other hand, there is a growing awareness among policymakers that current regulatory frameworks are inadequate to address issues of customer protection, as the technological infrastructures laid out by FSPs allow increasingly extensive data harvesting.

Further research should follow up on the outcomes of current pilot projects to examine adoption rates of formal financial services among digital cash transfer recipients, including gender and geographic breakdowns, and whether divergence between the state and FSP in the notion of inclusion leads, paradoxically, to the exclusion of poor who appear less likely to shift from cash to DFS. Eventually, the growing datafication of social protection programmes raises question on the changing relationship between the state and the private sector in charge of collecting and processing personal data that render citizens more 'legible' to corporate actors than to the state.

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