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MOBILE MONEY AND THE IMPACT OF MOBILE PHONE REGULATORY ENFORCEMENT AMONG THE URBAN POOR IN TANZANIA

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Abstract: *Mobile money provides a tool for survival, particularly in urban conditions shaped by city regulations that make microvending difficult for the poor. An analysis of 165 interviews conducted in two low-income neighborhoods in Dar es Salaam, Tanzania over 8 years demonstrates how interlocked layers of technology and interaction make mobile money services semiformal. I introduce two mobile money-enabled survival strategies: intrahousehold transfers for day-to-day survival (transfers within the same city) and resource safeguarding through kin remittances of start-up capital (home-based subsistence business capital stored for kin access in emergencies). The recent tightening of mobile phone regulations in the global South has disrupted users' multilevel and formal/informal-hybrid infrastructures of money movement in these communities. Such tougher regulations could result in a new digital divide that hinders rather than facilitates the financial inclusion of the poor.*

Keywords: *Africa, financial inclusion, poverty, mobile phones, women.*



INTRODUCTION

Mobile phones often are the most complex technological device available to persons living in poverty in the global South (Dodson, Sterling, & Bennett, 2013, p. 79; Murphy & Priebe, 2011). The money services enabled by mobile phones have been heralded as a solution to the challenge of financial inclusion of unbanked segments of populations across sub-Saharan Africa, especially the poorest, whom traditional commercial banking institutions tend not to deem as profitable targets (Global Partnership for Financial Inclusion, 2016; World Bank, 2012). The term mobile money in this paper refers to financial transaction services that can be accessed by anyone using a basic feature phone. Services include storing currency in an account, depositing or withdrawing cash via the account, and sending or receiving currency between two people's mobile accounts. The processes use text messages and menu commands and are made secure by the use of personal identification numbers (PINs; Donner & Tellez, 2008). Mobile money services are highly developed in East African countries and have been shown to be useful in improving livelihoods and reducing long-term poverty (Riley, 2016; Suri & Jack, 2016). However, existing studies on this phenomenon typically have focused on rural areas.

The optimism surrounding the potential that mobile money offers for financial inclusion has tended to overlook the fact that mobile technology usage is constrained by the structures and dynamics of everyday life on the African continent. These include the unreliable nature of the mobile technological infrastructure (Comfort & Dada, 2009; Murphy & Priebe, 2011; Uimonen, 2015), the high costs of airtime and services (Comfort & Dada, 2009; Han, 2012; Murphy & Priebe, 2011; Wyche, Nightingale, & Othieno, 2016), low levels of digital and textual literacy (Dodson et al., 2013; Wyche et al., 2016), poor eyesight (Wyche et al., 2016), and specifically gendered factors that disadvantage women (Abraham, 2009; Archambault, 2011; Kyomuhendo, 2009; Stark, 2013; Svensson & Wamala-Larsson, 2015). One rarely mentioned structural barrier to full digital inclusion in Africa is regulation¹—the decisions made by governmental actors regarding the degree to which mobile practices are monitored and how. Following Maurer, Nelms, and Rea (2013, p. 56), I approach mobile money as technology-enabled “infrastructures of money's movement” and the processes surrounding their regulation as political struggles for control over these infrastructures.

Mobile operators in Tanzania initially offered access to mobile money in the spirit of market liberalization advanced by their government's Structural Adjustment Programs (Uimonen, 2015). Little government oversight was apparent (Burns, 2018; de Bruijn, Butter, & Fall, 2017; di Castri & Gidvani, 2014), and mobile vendors typically provided the Subscriber Identification Modules (SIM) card registration. This made the process relatively quick and easy; however, the process resulted in transactions that were not always traceable to individual identities. In 2009, the Tanzanian Communications Regulatory Authority adopted Know Your Customer (KYC) regulations, part of international Anti-Money Laundering standards (di Castri & Gidvani, 2014). At that time, however, the country did not have a functioning national identification card system. It was not until 2013 that citizens began to register for the new national identification cards (Malibiche, 2018). Yet even after 2013, vendors frequently did not demand a personal identification document when registering a SIM card but, for example, could use his/her own identification card when registering a customer lacking documentation (de Bruijn et al., 2017; Uimonen, 2015). Until 2016, Tanzania was highlighted in the research literature as an African country with an enabling regulatory environment for mobile money, argued to be the key to

mobile money's success in the country, a pattern also noted in other East African countries such as Kenya and Uganda (Burns, 2018; di Castri & Gidvani, 2014). In 2016, however, unlicensed or "fake" phones were prevented from connecting to networks via the government's database of International Mobile Station Equipment Identity numbers. That same year, the central government began to link SIM cards directly to subscribers' biometric national identification cards, which featured the holder's name, fingerprints, picture, gender, date of birth, and nationality.

Rigorous enforcement of the 2009 KYC regulation through mandatory registering of SIM cards using biometric identity cards was carried out in the name of reducing fraud, identity theft, money laundering, and illicit financing of terrorist activities (Jentzsch, 2012; Makulilo, 2020; Reuters, 2020). As Jentzsch (2012, p. 611) noted, however, "there are essentially no robust empirical studies that show that such measures make a difference in terms of crime detection as criminals have a number of ways of circumventing rules (Jentzsch, 2012; Omondi Gumba, & Wanyonyi, 2020)." Government surveillance and access to personal data also became a concern to many, especially Tanzanian political dissidents and opposition party members (Jentzsch, 2012; Makulilo, 2020).

In late January 2020, a Tanzanian government regulator announced it had locked out roughly 650,000 mobile users from their phones because they had failed to register their SIM card with their national identity card by the January 20, 2020 deadline (Xinhua, 2020). Local telecoms claimed that even larger numbers of subscribers—into the millions—had been locked out, leading to large losses for these companies in the first months of 2020 (The Citizen, 2020). Because not all low-income mobile users may have been counted and in many households more than one person uses a single mobile device, possibly millions of citizens lost access to mobile phones, with the poorest hit hardest.

In this paper, I examine whether the rhetoric of "financial inclusion for all" aligns with the realities of mobile money use from the perspectives of low-income users. Focusing on two neighborhoods in Dar es Salaam, a port city of 4.36 million inhabitants (National Bureau of Statistics & Office of Chief Government Statistician, 2013, Table 1.2), my analysis focuses on what the poorest in Dar es Salaam use mobile money for and how the regulation of informal practices, including mobile money, affects this usage. *Poorest* here refers to those who pay the lowest rents in the city, have residences typically in flood-prone areas, and live in households that lack food security and the income to obtain medical care in emergencies. None of the interview participants, male or female, received regular wages at the time of the interview. Previous research on financial inclusion for underserved populations in the developing world has focused on mobile money for saving and borrowing. By contrast, I argue that, for the poorest, the simple transaction of transferring money between two persons' mobile phones represents a fundamental means for survival.

Through the analysis of my rich qualitative interview data on mobile phone usage (comprising in-person interviews with 165 participants conducted between 2012 and 2020), it quickly became clear that women were an economically marginalized segment within the chronically poor neighborhoods studied; most were financially dependent on men. Interview participants underscored that even chronically poor Tanzanian men had better access to low-skilled employment, such as jobs in construction and transportation, than did women (see also Plummer & Wight, 2011, p. 378).

Research on the use of mobile money among low-income women in the global South has been biased noticeably toward studies of female entrepreneurs, female vendors in open-air

markets, and women working in agriculture. This focus overlooks large numbers of women in sub-Saharan African cities who are none of these things due to a lack of land, education, aptitude, starting capital, or social networks (Cai, Chew, & Levy, 2015; see also, Cleaver, 2005; Ferguson, 2015; Meagher, 2010). In this paper, I focus on women in two situations: those dependent on household members for income and female vendors who lack the business capital to sell in public spaces but instead sell within the semiprivate spaces of their neighborhoods. I explain the practices within which simple mobile transfers of money become the most valuable function of mobile money for the chronically poor, thereby contextualizing them within larger processes and everyday experiences. Although mobile money transfers usually are understood to mean urban-to-rural remittances or emergency cash sent in sporadic crises, these transfers also are used routinely by some Tanzanians for day-to-day survival.

METHODS

In Dar es Salaam, roughly 70% of the city's inhabitants live in low-income, informal settlements (Baker, 2012, Table 1.3). An estimated 50% of the population in these settlements live on an average income of roughly US\$1.00 per person per day, well below the international poverty line of US\$1.90 (Ndezi, 2009). The physical environment of the neighborhoods in which my interviews took place lacked sanitation, sufficient living space, easily available safe drinking water, durability of structures, storm drainage, and security of tenure, and therefore qualified as a slum under the United Nations Habitat definition (UN-Habitat, 2010).

The people in the neighborhoods I studied covet regular wage work, but this remains beyond the reach of most due to lack of education and/or social connections. Therefore, these residents chose from a variety of informal types of work to obtain income, including vending or working as a day laborer, tailor, or seamstress. Many women with children have turned to sex work when there was no other option. Survival in these neighborhoods require that adults remained able-bodied and to work even in the face of health threats such as malaria, HIV, and high blood pressure, and the high costs of health care.

In sub-Saharan Africa, much chronic poverty can be traced to the Structural Adjustment Programs aimed at neoliberal economic restructuring that were implemented by the International Monetary Fund starting in the 1980s. These programs resulted in high rates of unemployment and the rapid expansion of the urban informal sector (Rakodi, 1997; Tranberg Hansen & Vaa, 2004; UN-Habitat, 2010). Although the most dramatic privatization measures were not implemented in Tanzania until the 1990s, workers' real wages and living standards began to decline dramatically already in the late 1970s and continued through the 1980s (Tripp, 1989, 1994; UN-Habitat, 2010, p. 46). Under the Structural Adjustment Programs in Tanzania, expenditure in education declined by a quarter from 1975 to 1990 (UNICEF, 2000, p. 87). Social sector spending on health care dropped from 2.4% to 1.9% during the period 1974 to 1988, while during the same period, the population of Tanzania rose from 17 million to 22.5 million (Lugalla, 1997, p. 21). These changes left most people paying more for higher education and health care, and the situation has not improved. The erosion of employment and service conditions in Tanzania has meant that persons and families can only survive through ever more strenuous feats of endurance.

Between 2012 and 2018, as a university project leader, I interviewed 165 persons on a broad array of topics related to mobile phone use. My semistructured qualitative interviews were part of

an ongoing, university-funded study, begun in 2012, that examined poverty and gender in two chronically low-income neighborhoods of Dar es Salaam. I refer to these neighborhoods here with the pseudonyms Kijito and Mahalikavu.

Key informants, one woman in each of the two neighborhoods, were identified through local NGOs. The key informants in turn asked persons they knew if they would agree to an interview; they did not exclude anyone on the basis of gender, age, ethnicity, or any other criteria. Only a few persons declined to participate. The language of the interviews was Kiswahili, the national language in which all respondents were fluent. Female interpreters who shared similar socioeconomic backgrounds with the interview participants translated between English and Kiswahili.

Of the 165 persons interviewed, 87% ($n = 144$) were women and 13% ($n = 21$) were men. Significantly more women than men were interviewed because I conducted interviews inside the neighborhoods during daylight hours for security reasons, and women tended to be at home at least part of the day, unlike men, who were generally outside the neighborhood at work or seeking work. Only 14% ($n = 20$) of the women I interviewed had more than a primary-level education, whereas all (100%) of the interviewed men had gone beyond primary school. Ten women (7% of all women interviewed) had no schooling at all. Interviewees self-identified with more than 35 ethnic groups, reflecting the ethnically heterogeneous makeup of these urban neighborhoods. The focus of this paper—married women dependent on their close male relatives for income and female vendors who lack the business capital to sell in public spaces—comprised 73% ($n = 105$) of the 144 women interviewed.

Due to the intense heat year-round, I interviewed in the mornings each day for 4–5 hours, usually under the shade of a tree or at the home of the key informant's family. Although I did not sleep in the neighborhoods I studied due to security concerns (especially theft), when I was with my informants, I walked with these residents through the neighborhoods and listened to the topics they spontaneously brought up, including their most important—albeit infrequent—pleasures (e.g., music, food, nice clothes, celebrations, the Internet) and their all-too-common concerns (e.g., floods, theft, illness, hunger). My approach was ethnographic in the sense that it involved in-depth interviews and some degree of physical presence allowing for observation in the place studied. Ethnography implies a particular way of seeing how people understand their everyday experiences but from a critical standpoint that interprets these representations within their socioeconomic and cultural contexts. Ethnography focuses on the motives and attitudes of the people studied in order to learn not just *what* people do but *why* they do it.

Informed consent was problematic due to the informants' low levels of education. Although each interview started with an explanation of the purpose of my research, some interviewees did not know what a university or research study was, and they remained convinced that I must work for a humanitarian or development organization, the most familiar role for a white woman in Tanzania. Signed consent forms were not collected in order to avoid humiliating those who were nonliterate or revealing to neighbors their low literacy status, which often was kept secret. Because of the ethical challenge inherent in the ambiguous informed consent obtained verbally, I did not audiotape the interviews but rather wrote down their comments so that informants could see what I was doing with the information they provided. I transcribed verbatim as best as possible the conversations as translated by the interpreters; this included my asked questions and the translated answers from my informants. In other words, I wrote down word-for-word everything the interpreter told me the participant had said. I was painstaking in this process, and interviews

proceeded slowly for this reason. During the interview, I typically reviewed my written notes during the interview and asked clarifying questions, for example, about the terms used in Swahili or about an unfamiliar practice or custom.

I began each interview by seeking a holistic understanding of the participant's livelihood, family and residence history, schooling, marital and parental status, as well as the greatest difficulties of living in the slum. Rather than presenting an exact set of questions to all informants, I started with only specific inquiries about each participant's concrete life events and circumstances to encourage them to bring up new topics and information I could not have anticipated. I pursued a single line of questioning until I reached a saturation point (Glaser & Strauss, 1967) on that topic, that is, when no new information appeared in responses. Then we moved to a new line of questioning. Additional data collection consisted of reviewing the interview notes after each session and thinking of continuation questions to ask the next day. I transcribed my handwritten notes to a digital format and, after multiple close readings, recurrent themes in the data were noted and categorized thematically by hand.

The analyzed interview data presented here is not intended to represent all lower income groups in African cities or in Tanzania specifically. Broad variations exist in types of economic opportunities for women, family obligations, and networks of remittance across and within the country and the continent. What this qualitative data from two low-income neighborhoods in one city shows is how mobile money practices, survival, and the regulation of informal businesses are causally connected in the understandings of those living in the same locality and who face the same challenges. Only an ethnographic approach can provide insights into the subjective perceptions that motivate particular uses of mobile technologies.

RESULTS

Everyone in Dar es Salaam depends on cash to survive, but the vast majority of the women I interviewed did not have formal bank accounts. Some had bank accounts in previous decades but had closed them due to high fees. One barrier to banking with a formal institution has been the relatively high cost of opening an account (TSh 20,000²); another has been the minimum balance needed for the account to remain open. By contrast, mobile money accounts cost nothing to open do not require a minimum balance, and do not charge monthly service fees. Until recently, another barrier to physical banking was the geographically sparse dispersal of physical bank branches and ATM machines in the city, unlike the large numbers of mobile agents and subagents operating on nearly every street corner (see also di Castri & Gidvani, 2014, p. 4). By using mobile money, people could thus avoid traveling long distances in congested traffic and waiting in long lines for a bank teller. This latter problem has been solved in part in recent years through personal bank accounts connected to mobile money accounts, thus bypassing the need for a teller or ATM machine. In addition to profiting from the sale of mobile airtime, mobile money providers receive small fees charged for withdrawing cash money from a mobile money account. Customers are not charged for sending money through their mobile phones, as long as they are sending 5 million TSh or less. Mobile agents and subagents, for their part, are incentivized by monthly commissions paid by the mobile money provider, which depend on the number of transactions mediated by the (sub)agent, the size of these transactions, and the overall number of customers

served by the (sub)agent that month. Fees and commissions vary across different mobile money providers and customer plans.

Other important changes in mobile money practices reported by participants over the period 2012–2018 involved the widespread adoption of mobile money in the period of 2012–2013 and the increased number of people using smartphones in the neighborhood in the years 2017–2018. Not all these smartphones were bought new: Many were obtained through networks of theft and fencing that operate in the neighborhood and throughout the city (Stark, in press).

The two neighborhoods were physically similar and adjacent to each other. I spent the most time in Kijito, which unlike Mahalikavu, bordered a small river and was plagued by annual flooding during the rainy season. When entering Kijito from the main road, I saw houses built of cement, arranged haphazardly and connected by outdoor yards and open spaces, where brightly colored cotton wraps hung to dry. Children played barefoot, and women cooked food outdoors over charcoal fires. In some places, corn and local vegetables grew in the open spaces between houses, goats were tethered to trees, and chickens roamed the grass pecking at edible pieces of garbage. Few roads in the neighborhood were large enough for automobiles to pass and most were only paths and corridors between houses. The only vehicles that occasionally entered these spaces were pushcarts and narrow three-wheeled taxis (*bajajis*). Although garbage and waste covered the uneven ground, the predominant smell in the dry season was that of smoke from charcoal fires. In the rainy season, the ground of low-lying Kijito became a morass of foul-smelling water and slippery mud. Although the maps show that Kijito and Mahalikavu are just 5 km from the center of Dar es Salaam, the main impression gained of both these areas is that of rural villages: Palm trees swayed in the quiet breeze punctuated by the occasional blare of music from a radio, and typically only a few residents could be seen walking or carrying out daily tasks in the open spaces. These neighborhoods are not the “African urbanscapes” (Uimonen, 2015) that figure prominently in social media. They have no billboards displaying smart phones or fast Internet access, and the only images that hint at cosmopolitan urban youth or “beautiful, successful urbanites” (Molony, 2008) are the small hand-painted advertisements on the concrete walls of one-room hair salons showing chic haircuts.

Mobile Money Transfers in Tanzania

In 2008, the mobile money service M-Pesa was introduced in Tanzania and spread rapidly due to low taxation and an initial lack of government oversight (Burns, 2018; di Castri & Gidvani, 2014). At first, most mobile money transfers were person-to-person; now, they encompass a broader payment system for utility bills, rent, taxes, school fees, and retail payments (Aron, 2018). Between 2014 and 2016, four Tanzanian mobile network operators (Airtel Money, Tigo Pesa, EzyPesa, and Vodacom M-Pesa) negotiated and agreed on voluntary interoperability of mobile money accounts, which made it easier for people to send or receive money (Financial Inclusion Insights, 2017). As of 2020, Tanzania has a broad and efficient network of mobile money services run by five major telecom operators. According to 2016 data, roughly 83% (21 million) of all mobile subscribers in the country use mobile money (Global System for Mobile Communications, 2016). However, the actual number of beneficiaries and scope of mobile money transfers are not captured in official statistics because persons who do not have a mobile money account often use the accounts of other family members or neighbors. According to interview participants, the most popular mobile money service among low-income users in Dar es Salaam is Tigo’s Tigopesa (*pesa* means money in Kiswahili). In other areas of the country, M-pesa and Airtel Money are more popular.

In Tanzania, mobile money accounts, analogous to checking accounts in other countries, are associated with a mobile phone number accessible by a PIN code (Economides & Jeziorski, 2017; Wamala-Larsson, 2019). A person installs an application onto a SIM card, establishes an electronic money account with a telecom operator, and deposits cash with real-life local agents (*wakala*) in exchange for digital money. Deposited money can be withdrawn as cash, for purchasing mobile phone airtime, or for paying bills. Dialing, for instance, *150*01# provides access to TigoPesa's menu of mobile money services. Each agent has a unique agent number, so when customers wish to withdraw cash, they enter the agent's number into the menu provided on the customer's phone. When the agent receives a phone message confirming the transfer of digital currency from the customer to the agent's account, the agent gives the customer the cash equivalent of the amount digitally transferred for a small service charge. Local agents in shops or on street corners (see Figure 1) thus serve as cash transfer points, equivalent to ATMs or bank automats (Maurer et al., 2013). Money within a customer's mobile account can be saved safely because the money in the user's account is protected by a PIN code, even if the phone is stolen (Economides & Jeziorski, 2017). Customers with mobile money already in their accounts can send money directly to relatives or friends without the need for a mobile money agent.



Figure 1. This shop near Kijito advertised that it functioned as a mobile money agent (*wakala*, see top and bottom left of image). Photo by Laura Stark, 2017.

Mobile money services have been described as “semiformal” because the providers of mobile financial services are not necessarily registered and thus not supervised by the formal financial sector (de Koker & Jentsch, 2013; Shem, Misati, & Njoroge, 2012). In the urban settings I studied, mobile money transactions consist of four components:

- the handset or device itself,
- the technology and practices of the digital finance platform run by the telecom operator,
- the formal financial institution (bank) that provides digital money (e-float) to the agent’s SIM card in exchange for the equivalent currency deposited by the agent in the bank, and
- the “human infrastructure” (Maurer et al., 2013, p. 58) representing the agents on the ground who sell SIM cards and dispense and receive cash. Even without a formal stall, an agent does not need much to register and sell SIM cards and receive and dispense cash: just a few feet of pavement, a mobile phone, and a metal cash box for storing paper money.

Although mobile money agents perform many functions that in other countries might be automated, they also advise, assist, and mentor customers in operations requiring digital finance literacy (Maurer et al., 2013). However, unlike the agents in Maurer et al.’s (2013) analysis who were established and already known in their communities, most full-time mobile money agents in the most trafficked parts of Dar es Salaam are *machinga*: men and women who work as self-employed subagents working under main agents, yet with relatively little oversight from either the main agent or the telecom provider. Due to their mobility and potential transience, these *machinga* may not know their customers, who choose them for the convenience of their location. From the perspective of urban residents who use mobile money, the numerous subagents operating throughout the city offer great convenience and enable them to send, receive, or store money wherever they are—exiting a bank, stepping off a bus, or wherever one does not want to risk theft by carrying cash.

Certainly, the first three levels of mobile money operations listed above could be defined as formal because they follow industry standards and national legislation. However, a significant number of subagents at the fourth level function informally. In Tanzania, in order to be a formally recognized agent of a mobile network operator, such as Tigo, Airtel, or Mpesa, the agent must apply for a customized agent SIM card directly from the operator, for which he/she needs a tax identification number, a national identity card, and a business license. Even if the agents meet these requirements, it can take up to a month for the agent’s SIM card application to be processed. A customized agent’s SIM card can be obtained more easily by buying it directly from another subagent who is leaving the business. In fact, as of late 2020, Tigo and Vodacom no longer issued agent SIM cards, making buying one from another subagent the only way to obtain one.

Subagents must fund their own operations and, in order to make an adequate profit from commissions, they need a minimum of TSh 1 million starting capital, a substantial sum for low-income residents in Dar es Salaam. Subagents deposit TSh 500,000 in the bank as the float in their agent line for customers who want to deposit cash and receive digital currency in their mobile money accounts. Subagents must also have TSh 500,000 in cash on hand for those customers who want to exchange the digital currency in their account for a cash withdrawal. When the costs of an agent SIM card (if bought informally from another agent) and the large

umbrella stand that advertises the telecom operator's brand to customers are added to the above, the start-up costs for an informal subagent can easily be over TSh 1.4 million.

Subagents strive to work in the central areas of the city characterized by heavy foot traffic. A formal stand or kiosk from which to operate could cost TSh 200,000 per month, paid to the owner on whose land the stand is located. This sum represents two thirds of what is considered a decent average monthly income (TSh 300,000) for mobile money subagents. Being unable to afford a formal operating stand, subagents frequently are chased away from prime locations by municipal security guards known as *mgambo* (also *chachavi*; Malefakis, 2015). Further, subagents may be forced to pay fines directly to the *mgambo* under threat of imprisonment. The municipal security guards are tasked by the city with keeping the locations "clean," meaning free from informal vendors. The penalty fines are usually TSh 50,000 each time an informal mobile subagent is caught by the *mgambo*.

In addition to obtaining money for themselves, mobile money users can convert cash to credit via agents in order to send money to relatives or friends. This does not necessarily mean sending money from urban to rural areas. Rather, as population and competition for income within the urban economy increase, some urban inhabitants are so poor that their rural relatives are comparably better off. Among those I interviewed, mobile money was sent in both directions. Interview data indicate that common remittance relationships among relatives involved

- adult siblings sending money to each other, for example, to fund children's school fees or to set up a small business,
- fathers or brothers sending money to daughters/sisters who were not provided for by a husband,
- adult sons and daughters sending money to parents,
- mothers with no possibility to house their child in the city sending money to grandparents who cared for the child in the countryside,
- couples inhabiting a house with renters sending the rental income to their nonresident parent who owned the house,
- relatives in the city sending money to a family member farming family-owned land and thereby maintaining the family's legal claim to it, and
- husbands sending money to their wives when either has traveled from home.

However, my interviews revealed that relatives send mobile money to each other not only under special circumstances such as these. One purpose of sending mobile money was to transfer cash within households in order to carry out daily activities.

Intrahousehold Transfers for Day-to-Day Survival

Literature on female entrepreneurs and even so-called Bottom of the Pyramid (Prahalad & Hart, 2002) businesses typically focus on urban socioeconomic groups whose members possess more resources than those living in the neighborhoods I studied. This literature often is industry driven, infused with a techno-optimism unsupported by the interview responses I received. Within the mobile communications industry, the emphasis on market-led economic growth, encouraged in part by microcredit's promise of the profits to be made from the poor (e.g., Maurer et al., 2013; Roy, 2010) has made the notion of mere survival uninteresting. But survival is dynamic and creative; it is an achievement in itself.

A vast body of literature has shown that the poorest women in the global South often cannot access the wage work that is more available to men. There are many more job opportunities in cities than in the countryside, but even urban jobs for women typically are informal, erratic, and poorly paid. The poorest women also often lack sufficient education needed to be hired or the capital needed to start their own small businesses. Adult women in poverty thus tend to be dependent on money from others, mainly relatives. In contrast to Kusimba, Yang, and Chawla's (2015) study of mobile money in rural Kenya, the women in my data who were dependent on kin for their own and their children's survival received most of their income from their husbands or the fathers of their children and, in rarer cases, from their own fathers. As neoliberal economic restructuring depletes resources from households through higher costs for food, education, and healthcare (Fraser, 2017; Hickel, 2014; Rai, Hoskyns, & Thomas, 2014; Rioux 2014), what used to be known as kin networks in both the anthropological and sociological literature are no longer necessarily robust or extensive social ties. Individuals in these low-income areas typically must rely on a few persons whose support has become meager and unreliable (Cleaver, 2005; Desmond, 2012). Urban settings enable high mobility and anonymity leading to a weakening of the formerly rigorous obligations of solidarity networks (Olivier de Sardan, 1999; Portes & Sensenbrenner, 1993). The women I interviewed reported that networks have become increasingly smaller and weaker, and now in urban areas, it is shameful for married women to ask for help from relatives who expect husbands to provide for their wives.

According to many interview participants, family members in their households were highly dependent—in some cases wholly dependent—on the money earned by male heads of household in informal jobs. The role of the masculine provider is vitally important for Tanzanian men's self-respect, and the authority that men enjoy as heads of household depend on their fulfilling that role, at least to some extent. In the past, husbands left small sums of money for their wives before they left to work in the morning. Sums less than TSh 3000–5000, wives reported, were inadequate to cover the costs of a family's meals for the whole day. In such cases, husbands often were willing to go to great lengths to find a little money in the morning and ensure that it reached home by the middle of the day. This money nearly always was sent via mobile money. Mobile money transfers reduced transaction costs for sending and receiving money, and these costs included the costs of travel, travel time, and waiting time in long queues, as well as coordination costs between individuals. Dar es Salaam is a densely populated city with an insufficient transportation infrastructure, severe traffic congestion, and unmapped city areas that can be difficult to navigate. As a result, bringing home money in person, even to a nearby neighborhood, entails considerable time and effort. Husbands at work in the city, had they needed to deliver the cash themselves, would have faced traveling considerable distances on foot through heavy traffic between work and home. Even a trip in a relatively inexpensive three-wheeled *bajaji* taxi might have cost all the money a husband possessed at that moment, as well as take up to an hour due to traffic jams. Mobile money agents, however, are found readily along roadsides throughout the city—either in small shops or at tables set up on sidewalks—so that income-earners could find, with relative ease, an agent to send money to a wife's mobile account. Mobile money services thus saved men the extra time, effort, and costs they would have had to expend to take money home in person.

Many of the women I interviewed lived in families who possessed no savings, no refrigerators to store food, and no food stocks such as dried beans or rice. Thus, the money sent by husbands via mobile money paid for food consumed the same day. For instance, Aziza's³ husband, a city bus driver, was paid by the bus's owner every evening. If he could not leave

enough money for his wife and two children when he left for work at 4 in the morning, he borrowed money from the bus fares collected by 8 a.m. and sent it to his wife through his phone, using a local agent he trusted along his bus route. Aziza concluded, “If he can’t send money, we can’t eat during the day.”

In a similar case, Zahra⁴ explained that her husband worked as a cook for a wealthy non-Tanzanian family. At times, he was sent to the shop with money to buy food for his employer’s family and was allowed to keep the leftover change from the purchases. If the money from his monthly salary ran out before the end of the month, he sent the extra money to Zahra through Tigopesa so that she could buy that day’s food for their family.

Intrahousehold transfers also were sent by adult children to their mothers who were responsible for the family meals. Fatima,⁵ who lived with her adult children and grandchildren, explained that as soon as her children received small sums of money from their day jobs, they transferred it via mobile money so she could buy food for the evening meal to feed everyone.

My daughters working in the hair salon sometimes send money to me, sometimes in the morning when they go to the job if there is no money for food in the family. They send money through Tigopesa so the family can buy food. The daughters working in the saloon get paid daily.... In the morning, if nobody in the family has any money for food, each goes to the job and if they get roughly TSh 5000, they contact me by mobile phone; they call or text to my younger daughter who has a phone and ask, “Mama, have you found anything yet?” And if not, they send it through Tigopesa and the food is bought and cooked by the time they come home in the evening. [Fatima, aged 58]

The introduction of user-to-user mobile money transfers thus has given rise to the strategy of sending home tiny sums as the money is earned throughout the day so that other members of the household can buy the food needed for the evening meal. Mobile money allows for the moment-to-moment flow of resources within poor families that otherwise would not have been possible. For those persons and households who must use their entire meager income for each day’s food, mobile money is not just a convenience but a necessity for survival.

In this survival-oriented practice, the role of informal mobile money agents, and particularly their ubiquitous presence in the most trafficked parts of the city, is crucial. Mobile money agents can be counted among the multitudes of urban informal workers involved in the day-to-day movement and distribution of resources throughout the city. The cheap labor they provide is crucial for the continued functioning of this sub-Saharan African neoliberal city and keeps down costs of living for those with low incomes (de Oliveira, 1985; Roever & Skinner, 2016). Yet, the demands from the city administration that informal mobile money agents maintain a permanent stall in the city center threatens the availability of the services that these agents provide. Paying rent for such a stall may benefit the landowners in the city, but offers little to the roughly 35% of residents in Dar es Salaam who live below the poverty line and need speedy transfers using mobile money agents in the places they frequent most often.

Resource Safeguarding Through Kin Remittances of Start-Up Capital

Most research on informal vending/microtrading in urban sub-Saharan Africa has focused on street and market vendors selling in fixed, public locations. In reality, a far broader range of informal actors are involved in the day-to-day manufacture and transport of goods throughout Dar es Salaam. Many microtraders do not sell in streets or large public markets but in spaces where

different logics apply (Lappi, 2017; Lappi & Stark, 2013). Of my female interview participants, 35% had been involved in microtrade of goods or skilled services in the past 5 years. To understand what microtrade meant to the women I interviewed, it is important to specify how they perceive the distinctions between various types of self-employed vending, based on the profits that could be generated for the vendor. From most to least desirable, these are

- Owning a permanent shop or stand in a busy marketplace
- Renting a market stall or street vendor's stand
- Being a vendor moving on foot in busy areas of the city
- Selling clothes, food, or other goods to neighbors within an informal settlement.

The most preferred types of self-employed vending requires initial capital investments that are inaccessible for the majority of the residents I interviewed. Vending also requires licenses, fees, and the rental or purchase of a “frame” in which the goods are displayed (Skinner, 2008; Wamala-Larsson & Svensson, 2018). For these reasons, most female vendors I interviewed are not street or market traders but sell goods and foodstuffs within the semiprivate spaces of their neighborhoods, where they can operate under the radar of government regulations (Lappi, 2017; Lappi & Stark, 2013). Such spaces are primarily in front of or beside their dwellings, which means that most of the female vendors I interviewed cook food for and sell goods to their neighbors (see Lappi, 2017, in press). Their neighbors, in turn, sell goods and foodstuffs to them. Neighborhood vending is thus home-based work that either produces or circulates goods for persons living within a relatively small radius of the vendor's home, rather than for the broader market. The most useful item to sell from the vendor's point of view is food because, if business is slow, then a woman's family could simply eat the cooked food or snacks that she had prepared for customers. Yet women also sell a highly diverse assortment of clothing, cigarettes, soap, charcoal, and even beauty products. The result has been a dynamic internal economy of the slum (Lappi & Stark, 2013) that provides income, albeit meager, for roughly 30% of the female residents I interviewed and represents the largest income-generating category among women.

Neighborhood vending not only provides livelihoods, but also makes the neighborhood more livable for all residents. Long distances, traffic jams, and lack of public transportation make it difficult for people to shop farther afield for everyday necessities, even if these would be cheaper in distant open-air markets. Female customers, occupied at home by their own neighborhood vending businesses and domestic tasks, are thus willing to pay the additional markup for goods sold by neighbors. A busy resident needing milk, eggs, or tea could quickly buy small quantities from neighbors rather than walk to the open-air marketplace 20 minutes away, and children could be sent by mothers to neighbors to buy breakfast snacks or *chapattis* (unleavened flat breads, a staple in East Africa) for the family supper if parents were busy. Despite its importance, the internal economy of the slum has been overlooked in policy and research literature. Whereas street and market traders conduct their business in highly visible public areas and have therefore received considerable attention (e.g., Skinner, 2008), neighborhood vending is relatively invisible and inaccessible to outside observers. Even within neighborhoods, a woman cooking food outside her front door may not be recognizable immediately as a vendor (Lappi, in press; Lappi & Stark, 2013).

Although microtrade benefits city residents overall, many barriers exist to neighborhood vendors expanding into public areas. The women informants acknowledged that moving their

vending location to a main street would increase their profits, but this also risked their being noticed by the *mgambo*. Harassment of street vendors by these municipal officers and the destruction of goods and stock are reported to be widespread in sub-Saharan Africa (Lyons & Msoka, 2010; Roever & Skinner, 2016; Skinner, 2008). Among the women I interviewed was Maria,⁶ who sold roasted *cassava* (a nutritious tuberous root from the *Manihot* plant) to residents inside her neighborhood. She felt that a higher-traffic area such as a main road would be more profitable, but a barrier for her was the higher starting capital (TSh 30,000) needed to increase her sales. Another obstacle was the *mgambo*, who did not venture inside the neighborhood but likely would have noticed her if she were selling along the main road.

[The mgambo] don't want people to sell along the road. They may take your things, keep them if they are good things or throw them away if not, and if you don't want them to do that, you need to pay them. [Maria, aged 35]

The municipal council also requires medical check-ups for vendors who cook and serve food—nearly all of whom were female—along roadsides and in marketplaces. The penalty for food providers caught without a health certificate was TSh 50,000. Many unlicensed women in these businesses sought to escape the surveillance of such inspectors who appeared to be more interested in collecting penalty fees than in evaluating the sanitary conditions or health risks posed by the vending site and vendors, as Chiku⁷ explained:

Most people, when they hear that the inspector is coming, they close shop quickly and run away and reopen when they are gone.... When the inspectors come, they don't care if it is clean or dirty; they just want money or they can lock you up. [Chiku, aged 26]

Even for an informal neighborhood vending business, women generally need start-up capital of at least TSh 10,000. Many of my respondents stated that they did not have such a sum. Some women managed to acquire start-up capital through local informal group savings groups, such as ROSCAs (Rotating Savings and Credit Associations). In these groups, all members contribute small sums of money each day (often through their mobile phones) that are kept (often in a mobile money account) by a trusted member who serves as the treasurer. Often these sums come out of the housekeeping money given wives by their husbands. The entire pot of money is then paid out at an agreed time interval, for instance once per day, week, or month, to one member at a time in a prearranged order. The time interval and amount of the pot awarded to one member depended on the number of members paying in each day and what they agreed. The groups in the neighborhoods I studied were known as *mchezo* or *upatu* and were informal and self-organized, with anywhere from three to 96 members each. These savings groups did not solve every woman's needs for ready cash, however, because not all women had money to contribute every day, and not all female neighbors were invited to join a local ROSCA because these associations rely on strong trust among members. Additionally, groups were sometimes organized to run for a limited period only, and frequently the last person in line to get the pot did not receive it because other members were not motivated to pay their daily contributions after they had received the pot for themselves. Therefore, instead of saving through ROSCAs, some women asked relatives, usually living in another part of the city or elsewhere in the country, to send them start-up capital by mobile money transfers. In some cases, husbands give their wives start-up capital, but other male relatives also send money to female relatives to start these small businesses.

In the context of the neighborhood survival economy, however, start-up capital often does not grow because these small-scale neighborhood vendors sell mostly to neighbors who were struggling equally hard to survive. Most female vendors earn only a meager profit, if any. Small vending businesses also fail on a regular basis when the female vendors or their family members faced illnesses, accidents, funerals, marital separations, school fees, or unplanned pregnancies; the female vendors are forced to use the capital from their business to pay the costs arising from these needs. Women then often had to ask the same relatives who had provided the initial start-up capital to replace it, and many did. For instance, Aisha⁸ lived with her three adult children and two grandchildren. She cooked fried snacks from rice flour (*kitumbua*) in front of her home and sold them to neighbors as breakfast treats. Her younger brother, who worked for the government in the capital city of Dodoma, had sent her TSh 50,000 via mobile money to cover the costs of starting her business. Although she did not have a mobile money account of her own, she had used the account of her 25-year-old son who was living with her. The business afforded her a subsistence living, and she sent any extra money onward to her younger brother who was a farmer in the countryside. When her 30-year-old son died, however, she had to stop her business and use its capital to pay for his funeral. The same brother in Dodoma then sent her an additional TSh 50,000 through mobile money to restart her business after the funeral.

Circulated capital thus flowed down from mostly income-earning male relatives toward the most vulnerable female members in the kin network. Yet these vulnerable vendors, in turn, could send the capital stored in their microbusinesses to other relatives in dire need.

Therefore, the purpose of women's small businesses is not necessarily to increase the start-up capital provided to them by brothers, husbands, or cousins. All parties seem to understand the function of start-up capital: to retain this capital for as long as possible while surviving on its meager profits—until the next crisis wipes it out. Mobile money is vital to sustaining these businesses through infusions of cash. This system enables geographically scattered kin groups to distribute quickly their assets within the survival economy to ensure that members of the entire kin network remain able-bodied. If healthy and able to work, each kin member could assist the others and accumulate income for the network, while keeping the network resilient enough to withstand urban shocks. These businesses thus can be viewed as part of broader networks of resource safeguarding by groups who circulate value. The purpose of these networks is not the success of the individual but the survival of the kin group as a whole (Ferguson, 2015; Kusimba, Chaggar, Gross, & Kunya, 2013; Kusimba et al., 2015; Kusimba, Yang, & Chawla, 2016; Meagher, 2005). In the cases I studied, this system of resource safeguarding could operate only under the municipal government's radar, however, because neighborhood vending operated without permits or health inspections.

Impact of Regulatory Enforcement of Mobile Money on the Survival of the Poorest

Beginning in January 2020, new SIM card registration in Tanzania required a national identification card, which many Tanzanians lacked (Stark, 2020; Uimonen, 2015). To obtain a national identity card, applicants needed to show their birth certificates. However, because birth certificates were not needed previously in Tanzanian life, many citizens did not have one (Lichtenstein, 2020). In the global North, citizens' lives tend to be highly documented through driver's licenses, passports, social security numbers, bank accounts, and so forth. In the neighborhoods I studied, by contrast, people rarely used official documentation in their everyday

lives, until recently (see also Uimonen, 2015). Most sources of income in these neighborhoods have been informal, and relations and communication have been face-to-face or through mobile phones. Most people have not had access to computers and have had little or no money for newspapers or books. As long as they traveled within Tanzania, they needed no identification.

Applying for a national identity card has been free of charge, but the process has not been free of problems. In September 2020, when on-site interviews were not possible due to the Covid-19 pandemic, I conducted interviews by phone and email, through a female interpreter, with key female informants. I was told that, even in earlier years, not everyone who applied for a national identity card received one, either because their application had been lost inside the bureaucracy or because the card itself, usually sent by post several months after application, never reached the applicant. Understandably, then, the Tanzanian government's announcement in April 2019 that mobile phone users would be blocked if they did not register SIM cards with biometric national identity cards caused a sudden and dramatic surge in applications that overwhelmed the National Identification Authority, the agency in charge. The backlog included many persons who had recently turned 18 and needed to apply for an identity card for the first time as well as those who had lost their previous identity card and needed a replacement. As a result, large numbers of persons waited 7 or more months to receive their biometric identity cards. Nevertheless, on January 20, 2020, the Tanzania Communication Registration Authority blocked all SIM cards not registered with the national identity card, which meant that persons waiting for their application to be processed were unable to use their SIM cards and thus their mobile phones. This included at least six persons (five women and one man) whom I had interviewed in Kijito on previous visits.

How did these persons who were unable to use their SIM cards receive money or even alert relatives and friends that they needed help? Once again, they were compelled to circumvent official policies and, on the advice of their local government officials, they used a nonsanctioned strategy. Because anyone holding a national identity card legally was allowed to register up to five SIM cards for personal use, people with identity cards began to register new SIM cards under their own names for their relatives, friends, and trusted neighbors. They did this by going to a mobile phone agent operating outside their own neighborhood who did not know them personally and would not know they were circumventing the rules.

Receiving a new SIM card registered in another person's name did not help, however, in cases where contact numbers had been saved to the previous SIM card and the user could not remember them. For example, Jasmin⁹ had to manage 2 months without a working SIM card before a local government official advised Jasmin's mother to register Jasmin in the mother's name. Although Jasmin's mother had the phone information for their relatives, Jasmin did not remember the phone numbers of her friends and could only hope that she would run into them, an improbability in a city of nearly 5 million inhabitants. During the months when Jasmin had no mobile access, she also lost a job opportunity—a loss compounded by the rarity of such an opening in the high unemployment environment. Previously, she had asked a friend working in a hospital cafeteria to alert her if any jobs at the cafeteria became vacant. When a position did open up, Jasmin's friend was unable to contact her, and the job was given to someone else, as her friend told her months later when they happened to see each other at Dar es Salaam's largest open-air market, Kariakoo.

The two mobile money practices discussed above—intrahousehold transfers for day-to-day survival and resource safeguarding through kin remittances of start-up capital—indicate that lenient SIM card registration enforcement in Tanzania actually helped the majority of the

urban poor in their daily survival. Even before the recent drive to enforce KYC regulations (2018–2020), regulatory tightening had been shown to reduce the use of mobile phones among those living below the poverty line (Aron, 2018; van de Walle & Sahai, 2017). The new regulatory tightening has added significantly to the burdens of those who find it difficult to cope financially even one day without mobile phone access. It disrupted the fine-tuned, multilevel, formal/informal-hybrid infrastructures supporting the movement of digital money. By forcibly integrating the quite unprepared National Identification Authority into this infrastructure, the Tanzanian government introduced a weak link that crashed the system. Although the Tanzanian and international media noted this crash, the majority of those affected were low-income residents with lower levels of education and less prominent voices in public affairs, which meant that the full scope of the disruption remains unclear.

DISCUSSION AND CONCLUSIONS

Low-income users in the global South are predicted to remain unbanked by formal financial institutions and thus will continue to rely on mobile money (Aron & Muellbauer, 2019). In urban areas, as indicated by my respondents in Dar es Salaam, Tanzania, mobile money transfers are used for purposes other than just remittances to rural areas or sent as help in crisis situations. Mobile money is used frequently for short-distance transfers within the same city to circumvent or compensate for obstacles such as unreliable road infrastructure and heavy traffic. It also is used to sustain the capital stored in home-based subsistence businesses so that the kin network can access it in emergencies. Such access is important in a context in which health care is unavailable or expensive, crises come in many forms, and few safety networks exist outside of relatives.

This study focused on two mobile money-enabled survival practices used by female residents in two low-income neighborhoods. First, intrahousehold transfers allow members of the poorest households to send money to each other as they earn it so that the whole family can eat on the same day. These “as needed” or “same-day consumption” transfers from income earners to nonearners occurred frequently enough to be nearly routine. The second mobile money survival practice involves resource safeguarding through kin remittances. Money is supplied via mobile phone transfers by relatives to small-scale neighborhood vendors in order to maintain the capital “stored” in their struggling businesses until it is needed for emergencies by the vendor or her relatives. When relatives send start-up capital to women to establish microbusinesses, they are not investing in a business expected to expand. Instead, they are participating in a form of group circulation of resources as a means for the kin group to protect themselves in times of crisis.

As is often the case in the interlocking relationships between formal and informal spheres of urban life in Africa (Wamala-Larsson, 2019), the case I studied in Dar es Salaam demonstrates a clear disjuncture between what is publicly asserted and what is experienced on the ground. Numerous means of officially endorsed surveillance as well as expulsion of independent business operators create barriers to officially stated aims of reaching underserved populations. Mobile money services have been declared by governments and international development organizations to be one solution to the challenges of financial inclusion. Yet at the level where official policy meets the everyday lives of the urban poor, formally sanctioned practices impede the use of informal survival strategies. Municipal security guards demand permits and health inspections

from vendors who venture into more highly trafficked areas seeking customers. If vendors cannot provide these official documents, they risk the security guards threatening them with imprisonment, pocketing coerced fines, and destroying their vendor's stock. Excessive regulation of where informal mobile money agents can operate in the city also hampers the agent–customer interaction that is vital to digital financial inclusion.

The disconnect between official policy and residents' lived realities prevents full use of mobile money by the poor. This was evident in the impact of new regulatory enforcement that demanded biometric identity cards for access to mobile network services. The analysis presented here supports recent literature that cites “enabling” regulatory environments as the key to the growth of mobile money in sub-Saharan Africa (Burns, 2018; di Castri & Gidvani, 2014). It further shows how, precisely, strict enforcement of KYC standards can significantly and negatively impact low-income users. My results point to one of the mechanisms that can go wrong in the implementation of such standards: a lack of coordination across enforcing government agencies. When the separate elements of regulatory enforcement fail to work in synchrony, the poor are those who suffer the most. This may be one reason why regulation seems to negatively impact the poor more than other socioeconomic groups (Aron, 2018; van de Walle & Sahai, 2017) and why it has hindered the growth of mobile money services in countries such as Nigeria, Ghana, and South Africa (Burns, 2018). Such nonsynchrony in the enforcement of regulations can itself represent a barrier to mobile money use by disturbing the delicate mechanisms operating in the semiformal system of mobile money. In the absence of evidence that tougher controls actually reduce criminal monetary transactions through mobile phones, plans for tighter regulation of SIM card usage and mobile money agents' operations should be examined carefully at every stage of the implementation to see whether alternatives exist to achieve the same goals. The indications in my analysis that strict enforcement of KYC guidelines in mobile money can impede financial inclusion of the poorest should raise concerns about the creation of a new digital divide.

IMPLICATIONS FOR RESEARCH, APPLICATION, OR POLICY

The findings from this study of the use of mobile money by poor women in urban Tanzania contribute to knowledge in two important ways: They expand the literature and raise implications for the impact of government mobile regulations on the urban poor. This research underscores the vital role that mobile money plays in the daily lives of poor women in the global South. Two primary uses of mobile money identified in this research—intrahousehold transfers for same-day food purchases and resource safeguarding in the form of kin remittances for informal home-based businesses—contribute to understanding how essential mobile money is for day-to-day living and ongoing kin network support.

At the policy level, this research points to the need for governments and their agencies to consider more closely how regulations and laws play an essential role in either supporting or undermining the financial inclusion of the most economically vulnerable within their societies. In this sense, governments need better understanding of how members of different socioeconomic strata manage the daily challenges of survival. Such knowledge then increases the opportunity for fair and equitable regulations on, for example, mobile phones and mobile money. Without clear comprehension of the impact of regulations on low-income groups in

particular, enforcement of laws can seriously complicate the lives of a country's poorest citizens. This is because the poorest have little flexibility in managing the fallout of regulations that disrupt the socially established financial patterns for their daily survival.

ENDNOTES

1. For exceptions, see Burns (2018) and di Castri & Gidvani (2014).
2. The currency conversion rate of 1,000 Tanzanian shillings (TSh) on 26 March, 2021 was €0.36/US\$0.43. Some currency conversion companies abbreviate the Tanzanian shilling as TZS.
3. Aziza, 24-year-old mother of two children, secondary school education. All names have been changed to protect the anonymity of interview participants.
4. Zahra, 41-year-old mother of two children, primary school education.
5. Fatima, 58-year-old mother of six children, primary school education.
6. Maria, 35-year-old mother of four children, primary school education.
7. Chiku, 26-year-old mother of three children, primary school education.
8. Aisha, 58-year-old mother of six children, no education.
9. Jasmine, 26-year-old mother of one child, primary school education.

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