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Social Networks of Mobile Money in Kenya

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Abstract

With mobile money technologies, people use mobile phones to send money to friends and relatives, connect to bank accounts, and make payments. This research examines the role of mobile money in Kenyans' social and economic networks. Research reported was conducted in Bungoma and Trans-Nzoia Counties in Kenya, and among Kenyans living in Chicago, Illinois in the summer of 2012.

Although mobile money services are often described as a form of "banking," most users in Western Kenya use mobile money as a social and economic tool through which they create relationships by sending money and airtime gifts. A wide range of mobile money uses includes social gifting, assisting friends and relatives, organizing savings groups, and contributing to ceremonies and rituals.

Even though mobile money was designed for person-to-person transfers, its practices are best understood as created by collectivities and groups. In savings groups, groups of siblings and other relatives, and communities who contribute to ceremonies, users "save with others" through the entrustment of value to kin and friends and create new groups and communities based around the "floating world" of mobile technology. Individuals balance their social and economic capital in order to create marginal gains and mediate the conflicts created between social obligations and personal economic betterment. Ties to and through mothers are prominent in social networks of mobile money flows. Matrilineal kinship ties are a means of sharing or circulating money among those marginalized from access to other resources and forms of value.

Keywords: Mobile Money, Kenya, Kinship, Social Networks

Introduction

In 2010, among a Kisii polygynous family in Kenya, the oldest son used SMS messaging to organize a payment schedule among twenty-two siblings and half-siblings for a father's prostate operation, which amounted to close to 300,000 Kenyan shillings. Each child was expected to give at levels of 30000 shillings, 20000, and so on. A sister in her late 20s explains:

Julia: So now those who are able, they will pay 30000, then they came to 20000, 10000, 5000, 2000, and 1000. That was the least. Those who are looking for a job, they were told at least to look for 1000, and see that they have appreciated to contribute.

SK: Your sisters in the United States, how did you estimate their contribution, what did you decide?

Julia: They were the ones given the highest of 30000.

Julia went on to explain that her brother would use M-PESA, a mobile money service based on mobile phone text messaging, and a visit to Western Union to gather his siblings' contributions, who live throughout Kenya and the United States.

In Kenya today, use of mobile phones and mobile money services is creating new forms of social and communal life. Mobile money systems, such as Safaricom's M-PESA money sending service (Omwansa and Sullivan 2012) allow people to send money to friends and family securely and cheaply using mobile phone text messages. Using mobile money enables people to share resources and smooth uneven incomes (Suri, Jack, and Stoker 2012). New forms of social interaction around mobile money recast long-standing traditions of reciprocity and are subject to cultural rules and debates; in the above example, the oldest son took a leading role in organizing his younger siblings' participation, but soon ran up against fault lines of resentment among half-siblings in a polygynous family.

Kenya might be the only country in the world where mobile money has become a part of daily life. Five years after Safaricom first developed M-PESA in 2007, the Government of Kenya reports there are now more than 30 million mobile phones in this country of 40 million people and almost 20 million mobile money accounts. Since May 2011, a Safaricom-Western Union partnership allows remittances from 43 countries to the telephone handsets of M-PESA subscribers.

The purpose of this research is to examine cultural practices in the use of mobile money in Kenya, especially how remittances circulate in social networks and construct social relationships. Although mobile money been implemented in Kenya and elsewhere in the hopes of financial inclusion and provision of banking services to the unbanked (Maurer 2012), most users in Western Kenya use mobile money to access their social networks of friends and relatives. Although mobile money technology is designed for person-to-person transfers, it is more accurately a tool of *individuals who see themselves as parts of groups or collectivities*, whether these be savings groups, groups of siblings and cousins, or extended families who amass contributions for public ceremonies. Sending and receiving mobile money is a part of a culture of entrustment (Shipton 2007) whereby people save through others, contributing what effectively is a pool of resources. Mobile money strengthens and makes visible the ties among siblings, their mothers, and mothers' relatives in these patrilineal societies, revealing through "uterine kinship" (Wolf 1972) a support network of women and their children. These networks inspire questions about the relationship between mobile money and gendered flows of other forms of value. Through mobile communication persons and groups gain social and economic capital through roles as brokers and bridges in social networks and mobilize new social networks that are spatially dispersed, informal and transient (Gergen 2010). Constant requests for remittances create conflict with individual needs and wants, to which people have responded with a variety of strategies for deflecting requests. In particular, asymmetrical exchanges of value between mobile money and other kinds of currency or value – such as cash, airtime, and even their own persons in terms of their presence at family meetings or ceremonies - offer “marginal gains” (Guyer 1995).

Research reported here was conducted in the summer of 2012 in Bungoma and Trans-nzoia Counties in Kenya, specifically the urban centers and agricultural hinterlands of Bungoma, Kitale, and Kimilili towns and in Naitiri market, a rural community. The region is Kenya’s agriculturally productive and densely populated “bread basket.” About 80% of the residents are still rural farmers, although growing urban centers have important business communities and the civil service employs teachers and other government employees. Ethnically Bungoma County is dominated by the Luhya peoples, especially the Bukusu subgroup, although many other communities including the Kikuyu, Luo, and Asian communities participated. The research employed participant observation, research interviews and survey questionnaires with more than 300 Kenyans in and around the towns and agricultural hinterlands of Kimilili, Kitale, and Bungoma in Western Kenya, and the agricultural villages of Naitiri, a farming community about 60 km northwest of Kitale in Western Kenya. We also interviewed and collected questionnaire data from the United Kenyans of Chicago and the Kenyan Women’s Support Group.

Among the Luhya, the main wealth holding groups in the past were patrilineal corporate groups, which controlled the inheritance of land and other important assets. Claims to the use and custody of such assets cast a wide net among relatives and friends both male and female. In East Africa, there are strong and persistent connections between social ties and economic cooperation. Extended family networks for the reciprocal exchange of wealth, money and other gifts and materials are still vitally important for economic survival. For example, Pokot pastoralists gift a significant portion of their livestock to communicate their generosity; “livestock friends” assist each other in times of stress (Bollig 1989).

Social networks or “wealth in people” (Guyer 1993) have long been important in Western Kenya. “Weak ties” with in-laws created by exogamous marriage are celebrated with ritual visiting and nurtured as allies. Social payments ritualize the exchange and circulation of resources and are expected of particular kin at funerals, weddings, or coming of age ceremonies. Family relationships are created over time through bridewealth exchange and inheritance of land, cattle and other forms of value, transferring wealth across generations (Wagner 1975; Makila 1978). Men and women participate in frequent borrowing and lending of value during ceremonies or other public special occasions and in everyday contexts. Through these exchanges, social relationships are created by debts and obligation, a culture of entrustment (Shipton 2007) in which value that is both economic and social is stored or saved through gifts to others until it is repaid at an unspecified time in the future – often in a different form or value. In practices of entrustment, ownership is a kind of temporary custody of wealth which circulates over time. In spite of an ethic of reciprocity, relationships are not equal - rights, obligations, and expectations of kin roles historically depended on seniority (especially among siblings), generation, and gender. Today prestige and its attendant responsibilities to carry others can also come from employment, education, assets, and urban or international migration.

Mobile Phone Banking and Airtime in Daily Life

Safaricom’s initial success with mobile money transfer has spurred the interests of development economists, governments and organizations in harnessing mobile phone technology for the purposes of “financial inclusion” of unbanked persons in developing settings (Donovan 2012). Mobile money stakeholders such as development banks, development NGOs, and telecommunications companies have sought individual and female economic betterment through electronic money sending and payment services (Maurer 2012). Safaricom and other companies have also developed other financial services for mobile phones. These include phone to bank money transfers, savings mechanisms such as mobile wallets or links to a savings accounts, insurance, bill payment directly to utilities, companies and schools, pay as you go solar power, and microloans. Most recently, a service called M-Shwari began offering mobile-phone based savings accounts and microloans in 2012. The hope of many mobile money stakeholders in the private sector and in development organizations is to go beyond money sending to provide financial inclusion through bank-like or bank-lite services in a country where at least 60% of adults are unbanked.

The provision of money sending services and bank linkages has been a boon to people in rural areas. Mobile money is used for a variety of one-to-one transactions, including payment of merchants or payment of utility bills or school fees. As an example, consider the sketches below based on interviews with two women from Kitale town. Both of them were gainfully employed and possess bank accounts, like around 25% of Kenyan citizens, and can manage money decisions, link to their bank accounts, send money to friends and relatives in need, account and earmark, and pay school and utility bills directly:

A thirty-eight year old married mother of four is a nurse at the Kitale District Hospital. In response to her husband's alcoholism, she bought a farm with a bank loan which her younger brother helps her manage. She uses M-PESA on a near-daily basis to send money to her children's school in Nairobi for their fees; to her suppliers of farm products; to her brother who manages the farm and pays the workers; to her mother for upkeep; and to receive money from her customers of her farm products, from her brother in Nairobi who supports her regularly, and from her friends from time to time. She also repays her farm loan monthly through M-PESA's M-KESHO service which links her to her bank account at Equity Bank.

A 67 year old widow and retired soda vendor uses M-PESA to receive upkeep from her daughters and grandchildren who help her maintain her farm. She in turn sends money to one of her daughters who "has not done very well in life"; she purchases airtime and sends money to her bank account via Pesa Pap, a mobile money service, which saves her time taking public transportation into town and queuing at the bank; she reviews her transactions on her phone's memory to aid in budgeting and accounting; and she likes to send mobile money to her bank account as it helps her to save.

For the two women above who are "banked," and for relatively affluent Kenyans who are salaried or receive other regular sources of money such as remittances, mobile money can serve diverse functions which fulfill directives and objectives of financial inclusion, including access to a formal bank account, credit services, and money management (Rhyne 2012).

Does mobile money serve financial inclusion? Our surveys in Western Kenya show that a small number of Kenyans employ mobile money services for diverse financial services described in the above examples. In the Naitiri Village, where most people are subsistence farmers, we found only 1-2% of people have bank accounts. In Bungoma and Kimilili where up to half of respondents report income to supplement or replace farming, from 8% of people had bank accounts. Most Kenyans explained that they did not have enough money to establish bank accounts, which are still seen as a place to put large amounts of money not needed in daily life. Many were aware of prohibitive account fees. Our team found that at least 75% of transactions are used to send money to friends and relatives (Table 1). Rather than using a mobile as an electronic wallet or bank liaison, people cash in and out quite quickly, and they purchase e-money in anticipation of sending, usually to a friend or relative. Johnson, Brown, and Fouillet (2012), working in Kenya's Central Province, found that on average users reported they kept about 300 Ksh. (about $4.00) on their phones.

Table 1. Purpose of Remittances among 47 questionnaire respondents in Kimilili Town

Females		Males	
To help friend or relative	69	To help friend or relative	59
Business	5	Business	15
Bill Payment	4	Bill Payment	3
Total	78	Total	77

Mobile money is for the majority a method of reaching out to traditional economic support networks – friends and family. It is more profitably understood not as "banking" but as an adjunct to the mobile phone. Sending and receiving money is closely connected to the practice of speaking or texting, and transfers almost always follow a call, text or flash (intentional missed call, where the caller hangs up after allowing several ringtones) between the two parties. Mobile money and airtime transactions are a form of social contact that follows the etiquette of mobile phone use. For example, in response to my queries about the relative rarity of in-law transfers, a man explained that sending text messages to your parents-in-law was rude. It is also said that remittances are most comfortable with close partners and generational equals, such as intimate friends or siblings.

In Kenya, as in many places and cultures, cellular phones strengthen close and intimate relationships, reach new connections, and help coordinate and plan the experience of time (Ling 2008; Shrum et al. 2011). Mobile communication creates an "absent presence" of perpetual contact (Gergen 2002) and organizes community from moment to moment, regardless of geography, among a dispersed, transient yet intimately bonded sphere of close contacts which Gergen (2010) has called a "floating world." By constituting an intimate sphere, the mobile connection may exclude others (Gergen 2010), as anyone who has been physically present but outside a mobile phone conversation can attest.

Creative practices of mobile communication shape new communities and social bonds in Kenya and other societies (Hoflich and Hartmann 2006). For example, airtime gifts playfully enhance the intimacy of close relationships. Kenyans go to great lengths to conserve their own airtime: many keep very little airtime on their phones regardless of economic station and grudgingly "top up" in small amounts of 5-50 shillings. Flashing (the caller hangs up after a few rings, saying "call me" without using airtime) can spur others with the appropriate social position or gender to pay for the call whenever possible (Donner 2007). Conserving airtime is also accomplished through short conversations with abrupt hellos and no goodbyes. Paradoxically, even as people seek to conserve their own airtime, they are avid senders of airtime gifts. A modest airtime gift is converted into a brief phone call to the sender, thereby rekindling a friendship or connection. Safaricom's advertising uses the image of a sliced cake to encourage people to use its *Sambaza* (Kiswahili: to spread) menu item to "Send airtime to friends and family!" Two internet advertisements aimed at Kenyans in the USA encourage them to "Send airtime to friends and family back home" and to "Surprise loved ones in Kenya: Recharge their mobile – fast and easy transfer!"

At Egerton, students in intimate relationships often gift their partner with texting bundles that Safaricom sells on promotion at 100 text messages for 10 shillings. Students will use these 10 shilling bundles up by texting their romantic partner throughout the night. In the morning, the opposite partner will reciprocate the gift of another 100 shilling bundle. Male students at Egerton University often commented about females' frequent requests for airtime, which have a romantic insinuation. A student, age 25, explained: "Mostly girls start it out with airtime. The girl begins asking you for airtime." Gifting follows courtship's gender roles. He continues: "Once the relationship has progressed either one can send airtime. But at the beginning. . . it is always the lady who will ask." Airtime is not cashed out or exchanged for other value very often, but rather circulates within a separate sphere, being on average ten times smaller than mobile money remittances.

Kenyan popular culture frequently satirizes the uncomfortable effects of mobile money sociality – disruption and exclusion. In a Safaricom television advertisement, a businessman appears to furtively sweet-talk several women via mobile while his secretary looks on suspiciously; the females are revealed to be egg-laying hens on his rural farm. A woman farmer in her 50s highlighted the role of mobile money in disrupting relationships through inappropriate connections:

"Mostly marriages are breaking with this service. A man may send 1000 without you noticing…..There is a bond that begins when you have sent the 1000 to the other lady. It goes on until the marriage breaks. I wish it would be just for women. Or sometimes the SMS may get in; you find and say a certain amount has been sent to so and so. If you tried to inquire, that person is not related to him, not sister or cousin, how come you send money to her? It is really destroying marriages."

Remittances and Meanings

Many studies of remittances, especially international remittances, have focused on the motivations of senders –, such as altruism, self-interest, perceived obligation, and prestige. In Zimbabwe, "gift remittances" from urban workers to rural kin include blankets and household items of low cost, and their true value is in mediating social relationships (Cliggett 2003). I would suggest that airtime is such a gift remittance. In terms of mobile money, our study in fact found that 2/3 of both in-country and international mobile money remittances were initiated by a specific request by the receiver, and were made more than once over a series of conversations, especially when large remittances and commitments such as school fees were involved. That most remittances are initiated by the recipient implies that individuals do have acknowledged personal rights to their money; and that requests are embedded in relationships of entrustment and reciprocity within families (Åkesson 2011;Kankonde 2010).

In East African families, generation, gender and seniority (Fleisher 2007; Shipton 2007; Tembo 2010) all shape why and how emigrants remit. Mobile phones are an important part of these relationships; they can increase the breadth of social that influence how and to whom requests are made. The first kind of request that is made is an immediate need. These requests are made in an emergency: one is stranded without bus fare; one's child has been sent home from school for lack of fees. The larger the need, the more closely emotionally related the individual requested from will be. In most cases people either respond quickly with some or all of the requested funds if they answer the call – although the least awkward way to refuse such a request is to refuse to answer. In March of 2010, a high school teacher used his cell phone to solicit contributions in preparing his daughter for her first term in secondary school. He explained that many were not picking up his phone because, given the time of year, the reason for his request would be known and many people were without money at this time. That many mobile money transfers are associated with immediate need also supports the finding that mobile money use tends to smooth the incomes of the poor and offer risk reduction in the face of shocks (Jack and Suri 2011).

The second kind of request is an anticipated need. In this case a series of conversations, either in person or over the phone, will establish a plan to prepare a plot for planting maize, to mobilize labor for weeding, or to send a child to a particular secondary school. Significant sums will be gathered through the contributions of several family members, or one person with a strong affective tie to the recipient will accept the full payment, for example the paying of school fees, which can easily cost between 10,000 and 40,000 Kenyan Shillings per term US $150-500). Often one contribution of fees will be interpreted as a commitment to the full education of the individual and thus should not be taken on lightly, because such an obligation will be difficult to avoid until the child's education is finished.

The social economy of remittances relies on entrustments associated with certain kinds of relatives. For the most part, people will reach out to a generational equal- either a friend or cousin or sibling, especially in the case of an urgent need. Even family decisions regarding anticipated needs rely on the receiver's expression of a request, especially from generational equals such as siblings and cousins. Interestingly, unsolicited "gift remittances" are generally smaller in amount and often sent to those of a different generation – either to an older relative such as a parent, aunt or uncle, or to a child, grandchild, niece or nephew.

A third form of request is a donation to a public ceremony. In Western Kenya today two kinds of ceremonies are still vitally important community affairs: funerals and coming of age ceremonies for young men, which traditionally feature circumcision by a ritual expert. While age sets and age grades have receded in importance these ceremonies still mark the relationship between generations and in the case of funerals, the relationship between the living and the dead ancestors. Both events can often involve thousands of people and rely on community support, participation and resources. Attendance is a way of establishing belonging and connection to a community and a family. Contributions are made at public gatherings associated with the ceremony, and often a book records each person's name and contribution, underscoring the importance of the social value, good will and prestige associated with the contributor. The role of remittances and mobile money in these ceremonies has been a part of the rapid change in the meaning and performance of these ceremonies over the past few years, as more and more people send remittances in lieu of their own attendance. People of Luo ethnicity in Chicago report that a funeral donation is the second most common remittance request after school fees.

Remittances, the Dual System, and International Migration

Urban-rural remittances were important for the first rollouts of M-PESA, which connected residents of Kibera in Nairobi with their home areas in Western Kenya. Within months of the first use of mobile money, it became clear that connections of social support and money sending also went from rural to urban areas (Morawczynski 2009). Our research found that urban-rural remittances were still important in helping Kenyans manage "the dual system" - a product of colonial history whereby urban migrant workers and rural farming kin create a dual economy of wage work and rural farming (Morawczynski 2008). The more economically successful urban migrants are, the more significant their economic and social investments at home (Ross and Weisner 1977), which necessitate returning for harvest time or for funerals, in short balancing economic and social lives in two worlds for many in the urban middle class. Significant ambivalence surrounds the relationship between urban and rural kin. In Nigeria, urban kin who return home to Igboland for funerals are both: "rewarded and resented for success; encouraged to show off their wealth and jealously begrudged for their achievements; and expected to pursue ambitions beyond the village but also frequently suspected of betraying their loyalties to home (Smith 2004)." Rural folk are aware of accusations of excessive dependency and strive to organize farm work or assist with the investments of their urban kin. In different contexts rural and urban kin support and defend each other or participate in berating each other over issues such as visiting or involvement in family issues in general.

Not surprisingly remittances are often not enough or too much, and they are often uncomfortably accepted in lieu of a migrant's presence at ceremonies or other family events. Remitting materializes the affective sentiments of family relationships and can be loaded with meanings. For urban migrants from Western Kenya in the 1960s, bringing or sending money home was often more important than physical presence in preserving relationships (Ross and Weisner 1977). Stay behinds praise their relatives for remitting, calling them useful, successful, and caring. A sixty-two year old whose oldest son has lived in Kansas for twelve years described his ongoing presence in her life, insisting that "He is very useful around here - very useful. He bought me a gas cooker . . . and pays my workers." Remittances symbolize a child's success and can also be used to conceal a child's failure. In one case among a Luo family a first born, who became illegal in the USA after his student visa expired, came upon hard times. His two younger siblings used M-PESA to send their mother money from Nakuru upon occasion, but they tell her the remittance is from her son in Texas. Such remittances put the mother's mind at ease, who is not aware that her first-born has, as a younger son put it, "gone underground." One son's remittances stopped after the father took a second wife against the grown sons' wishes, as did his payments of school fees for nieces and nephews. With their greater role as remitters, some appear to assert their greater leverage in family debates such as whether to buy land or make certain investments. As payers of school fees they also have the ability to support or deny young peoples' plans at various colleges or training opportunities.

Cultural ideas about family in many African societies stress flexibility, unity, and individual achievement for the good of self and family (Coe 2008) . These practices deemphasize the role of distance and physical space, elements that suit Kenyan families in creating rural-urban and transnational ties and interactions. Stay-behinds in Western Kenya see international migration as an extension of the rural/urban dynamic and of traditional expectations that young adults prove themselves through achievement outside the natal community (Kankonde 2010). A single mother who raised her children as a potter has a daughter in Germany who is a fashion designer: "Children are supposed to go out there. They are fending for themselves, and in time they will bring it home to me." An elderly man who had studied in the United States in 1960 as part of a small group of Kenyan students now has five children in the United States and Europe: "Let them be educated; equipped and able to live their life; not mine. Education is the process of equipping yourself for life." Mobile money and communications technologies not only support migration and investment strategies of the "dual system" but help create identities within these rural-urban and transnational frames (Oiarzabal and Reips 2012). Mobile money connections are not limited to these frames, but also connect local, regional, and international distances: remittances are sent within households and urban or rural settings, internationally, and from rural to urban or urban to rural settings. Mobile money spans gaps of income, resources, or the debts of some prior entrustment, rather than particular geographic settings.

Social Decisions, Remittances and Social Networks

Most studies of mobile money take individual strategies and decisions as a starting point. Indeed mobile money systems as they are currently used can only accommodate transfers from one person to another or from one person to a bank or other financial institution. Furthermore the mobile phone handset allows people to make personal and private decisions about saving, sending, or cashing out mobile money, and to receive money directly and privately. Nevertheless, our data on remittances indicates that most people participate in the frequent sending and receiving of small remittances as a member of a small and interconnected group core group. Effectively, mobile money circulates among individuals connected as extended families, savings groups, and other collectivities. Individuals' stated income, for example, shows no clear relationship with the amount of remittances they send or receive, although people who report monthly income above 15,000 Ksh a month (about US $200) send money more often than those who earn less than this (Table 2). Even Kenyans with little or no stated income reported sending remittances. Kenyans receive income from a variety of resources, including remittances, and a large part of our sample did not know how much money they earned monthly, or said that the number was so variable that they could not give an average figure (Table 2).

Table 2. Number and Amount of Remittances Sent in Kimilili Town by Persons of Different Income Levels.

Stated Monthly Income in Kenyan Shillings	Number of Persons	Average number of MPESA Remittances in the Past Month	Amount of Average Remittance in Kenyan Shillings
0	1	3	667
1500	1	3	1400
2000	1	4	1875
3000	2	3	1542
4000	1	3	1000
5000	6	2	1311
6000	2	2.5	2400
8000	2	2.5	2460
10000	10	2.4	1281
12000	1	3	1267
15000	2	4.5	1667
20000	2	4.5	1933
30000	1	8	1625
40000	1	5	1800
50000	2	7	2963
70000	1	8	9929
Unknown or refused	11	31	2952
Total	47	155	

Decision-making about remittances is embedded in the individual's knowledge of other family members' social and economic relationships. Therefore, I use a social network perspective to examine how people are connected to others through mobile money transfers, and how peoples' positions within social networks may influence their remittance decisions. A social network consists of a set of actors or nodes – in this case individuals – and the relations or a tie between them – in this case flows of mobile money transactions (Wasserman and Faust 1994). The network of ties amongst individuals is a snapshot in time, and might be said to shape the social structure over time (Foster and Seidman 1981).

One approach to understanding how individuals create ties argues that individuals seek connections to maximize social capital, or "the sum of resources, actual or virtual, that accrue to an individual or group by virtue of possessing a durable network…..of mutual acquaintance (Bourdieu 1985:248)." Simply put, social capital is about seeking advantage for oneself or others (Burt 2005). Individuals and groups maximize the benefit of their positions within groups, which shapes the social network.

Mobile money requests are based on relationships of emotional closeness, on ties of obligation and entrustment, and on calculations of the sender's ability to pay. Individuals also consider their social capital. To cite one example, requests to friends and relatives have very different implications. I was told that requests to friends do not "come back to the family." However, I was also told that friends are hard to make contact with and they frequently do not pick up the phone. Requests to relatives might have the opposite set of implications: other close relatives will learn of the remittance, which may or may not lead to difficulties, but in general relatives are much more likely to respond to a request with at least a partial donation towards meeting the needs at hand. Table 3 below shows that friends and other non-relatives seem to be preferred partners for mobile money transfers. Privacy, obligation, and reciprocity seem to define the choice of friends versus relatives when seeking remittances. Table 4 below suggests that males may have more open networks and more mobile money sending with friends than women.

Table 3. Sources of Remittances for Men and Women in Kimilili Town.

FEMALE RESPONDENTS (N=23) RECEIVE REMITTANCES FROM :		MALE RESPONDENTS (N=24) RECEIVE MONEY FROM :	
friend	26	Friend	18
customers	9	business partner	15
Sister	7	Brother	11
Husband	6	Sister	8
brother	6	Uncle	7
Father	5	Cousin	4
Mother	5	Mother	3
Cousin	5	Father	3
Son	3	sister-in-law	3
daughter	2	Son	3
brother-in-law	1	Wife	2
grandmother	1	Aunt	2
Nephew	1	Cousin	4
Niece	1	youth group	1
brother-in-law	1	Pastor	1
		savings group	1
		Daughter	1
		grandmother	1
Total	78	Total	77

Table 4. Recipients for Mobile Money Transfers Initiated in Kimilili Town.

RECIPIENTS OF MOBILE MONEY OVER THE PAST MONTH IN KIMILILI TOWN			
Female Senders (N=23)		Male Senders (N=24)	
Recipient	Number of Remittances	Recipient	Number of Remittances
sister	15	friend	17
Mother	12	business partner	10
Brother	9	Brother	8
Son	8	Sister	7
Friend	7	mother	5
Daughter	6	son	5
Utility Bill	7	wife	5
Niece	7	cousin	4

Father	2	father	4
grandmother	2	brother-in-law	2
Husband	2	daughter	2
Uncle	1	Utility Bill	3
		mother-in-law	1
		sister-in-law	1
		step brother	1
		uncle	1
		youth group	1
Total	78	Total	77

Remittance flows modeled as networks can reveal the density and patterns of social connections and document the potential for social capital associated with particular places in the social network. Two patterns in social networks imply social capital: closure and brokerage (Burt 2005). The more connections exist among a group of individuals, the more closure in the group. Closure lowers the risk of cooperation and fosters trust through the possibility of collective sanctions. Groups of densely connected individuals are effective at distributing resources and information, evening out inequalities among the individuals concerned. These dense groups often represent the maintenance and strengthening of close ties (Lin 1998).

The second form of social capital in networks is brokerage. Weak connections - few ties – between groups are "holes" in the social structure. An individual whose network spans or connects the holes can broker flows of information or resources from one group to another. In connecting across bridges to "weak" or rarer ties, these "entrepreneurs" of social capital often connect to new individuals, bringing new information or resources and exchanging value from one form to another in profitable ways (Burt 2005; Lin 1999).

Social network drawings were created for several families who send and receive mobile money by interviewing between 3 and 10 individuals connected by mobile money transfers. Each individual was asked to name relatives to whom they had sent and received money in the past year. Most individuals quickly named between 5 and 9 individuals. Whenever possible, the individuals named by the first individual were contacted and the same questionnaire filled out, which resulted in the network diagrams that follow. Interestingly, several interviews the research team had with siblings demonstrated that many people in a group are aware of ties among their alters; that is, they know quite a bit about who is sending money to whom within their close group of contacts. The resulting matrices were entered into the program R for the drawing of social networks.

Bungoma Family 1. To create this family mobile money network, the following individuals were interviewed:

Bungoma Family 1 Family Interviewees

Name	Age	Gender	Occupation	
A	55	Male	Retired HS Teacher	Brother
B	44	Female	Businesswoman	half – sister
C	72	Female	Farmer	Mother
D	28	Male	IT Manager	Son
E	46	Male	Farmer	Ego
F	37	Male	Teacher	sister's son

G	48	Female	Agricultural Field Officer	Sister
H	28	Male	Contractor - Public Works	sister's son
I	52	Female	Accountant	Sister
J	40	Male	Hotel Manager	Brother

Table 5. Bungoma Family 1 Interviewees

For each individual, a list of persons they send and receive money from the most – in the past year – was collected. Figure 2 below allows us to examine the relationship between kinship and the sending and receiving of money. This polygynous family included twelve wives altogether, of which five (in red) are part of the connections named by our ten interviewees. One wife (red square) and her nine children form a dense network at the center of this diagram along with their children and in some cases their spouses. Certain individuals are important bridges to other co-wives and their children and grandchildren.

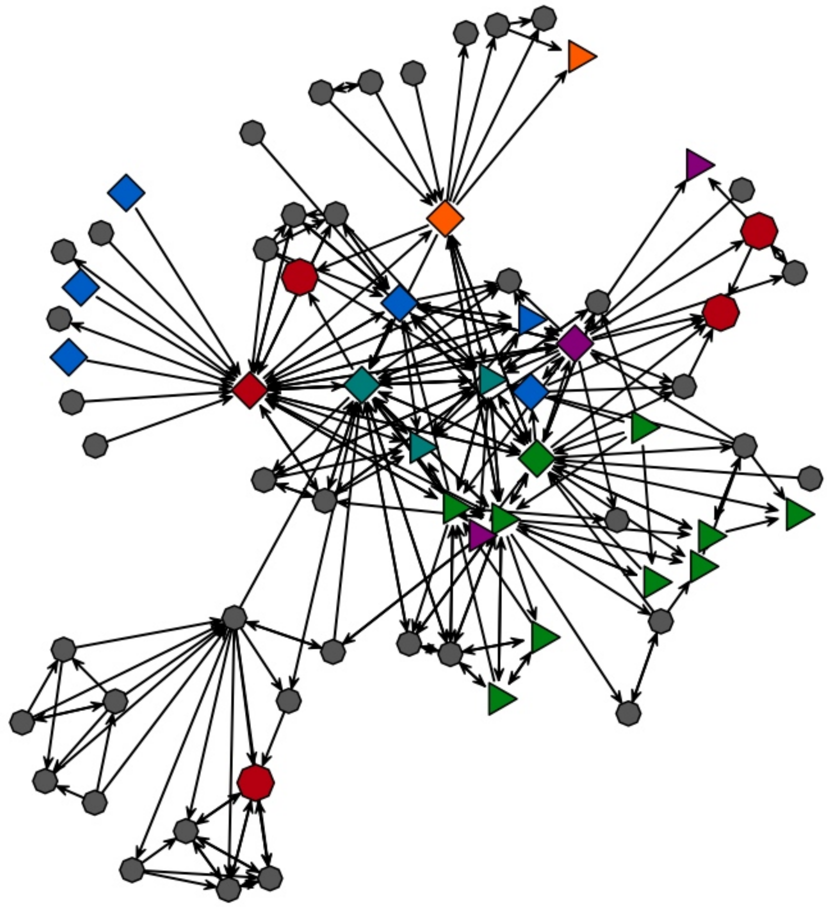

Figure 1: The Bungoma Family 1 network is based on cousin, sibling, and maternal ties. It is centered on a woman (red square) and her nine children (squares), and their children (triangles), with paths to four co-wives (red circles) and their children. Connections to fathers and paternal uncles are rare or absent; instead men are mother's brothers, brothers or cousins.

Counting the types of kin relationships that form paths in Bungoma Family 1 allows us to see what kinds of kin relationships are especially associated with mobile money transfers as drawn in Figure 1. As one can see in the table below, one finds that cousin, brother and sister relationships are especially common means through which people send and receive mobile money. The preponderance of cousin ties is especially interesting, as in most kinship systems in East Africa there is no commonly used word for cousin, the term brother or sister instead being used. Most informants explained that when brothers and sisters have a close relationship, their children will have a close relationship in which no distinction between siblings and cousins is made.

Relatively rare bridges exist between the dense networks of support created by the children of one mother. Mothers are more central than fathers, who are often not named in questionnaires at all. Brothers, sisters, cousins, and occasionally half-siblings are all connected through the bonds of mobile money. Sibling ties, maternal ties, and in some cases cousin ties, are the most important kin relationships, while marriage and-in-law ties are relatively rare (Table 6).

Table 6. Kin relationships of recipients to senders in Bungoma Family 1 social network graph.

Bungoma Family 1	
Relationship of Recipient to Sender	Number of Ties in Social Network Graph
Cousin	39
Brother	30
Nephew	22
Sister	22
Mother	16
Son	14
daughter	13
Niece	9
grandmother	8
grandson	8
half-brother	7
stepmother	7
other “aunt”	6
maternal uncle	6
sister-in-law	6
brother-in-law	5
other “uncle”	5
Wife	5
granddaughter	4
daughter-in-law	3
Father	3
Husband	3
mother-in-law	3
unknown “relative”	2

half-cousin	2
paternal aunt	2
paternal uncle	2
co-wife	1
daughter-in-law	1
great-grandson	1
half-sister	1
son-in-law	1
step-grandmother	1
Total Ties	258

Bungoma Family 2. A set of siblings and one-in-law form the basis of this network:

Name	Age	Gender	Occupation	Relationship
A	62	Male	Farmer	Ego
B	39	Female	Businesswoman	Sister
C	45	Male	Motorbike Driver	Brother
D	52	Female	Farmer	Sister
E	56	Male	Retail Shop Owner	half-brother
F	68	Male	Plumber	sister's husband's brother
G	22	Male	Student	sister's son
H	62	Female	Farmer	Sister

Table 7. Interviewees in Bungoma Family 2 Social Network.

Ties in Bungoma Family 2 connect siblings to the children of these siblings and to their parents. Note that the dense group of three sisters and a brother form the basis of a clique connecting their children, and that they also connect to their three brothers and in turn to these three brothers' wives and children (Figure 2). Finally, several patrilineal and in-law ties connect the central group to one sister's husband's family on the left side of the diagram. In field interviews, one of the three sister's sons explained that he sees his patrilineal relatives at funerals; but that the men who have helped him with fees and other investments in his future have been his mother's brothers. Figure 3 below redraws Bungoma Family 1 distinguishing matrilineal from patrilineal and in-law ties. Three brothers are bridges in this network, spanning the closed groups of their three sisters and brother with that of their own wives and children.

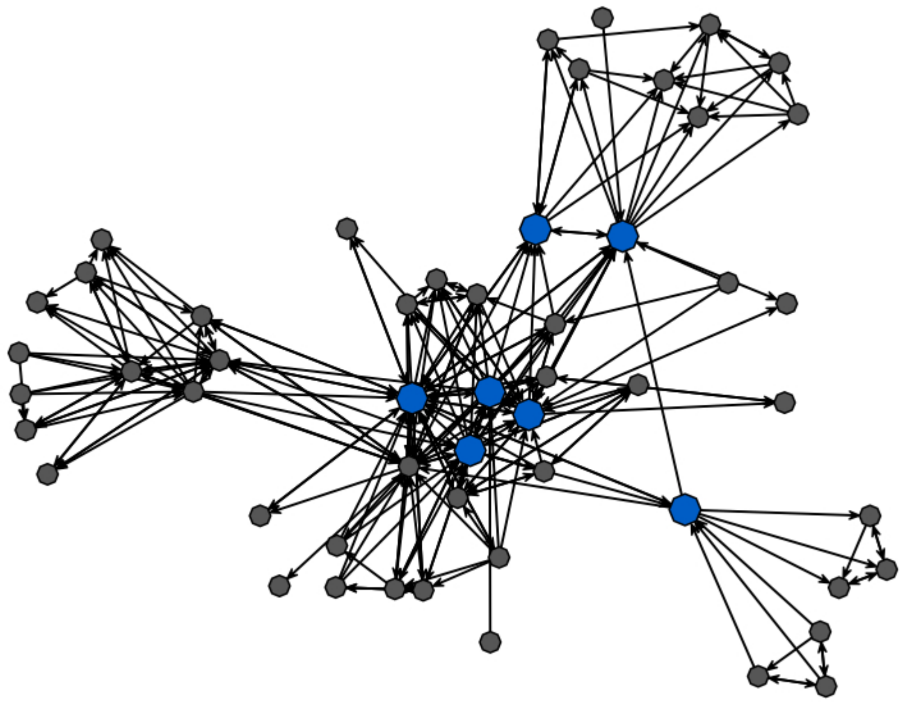

Figure 2. In Bungoma Family 2, significant asset and income inequality exists among seven siblings (in blue). Three sisters and a brother are part of a dense network of frequent ties (center), giving individuals several pathways to share resources. Paths connect them to three other brothers and their wives and children (on right side of the drawing) and to a sibling's husband and his relatives (left side).

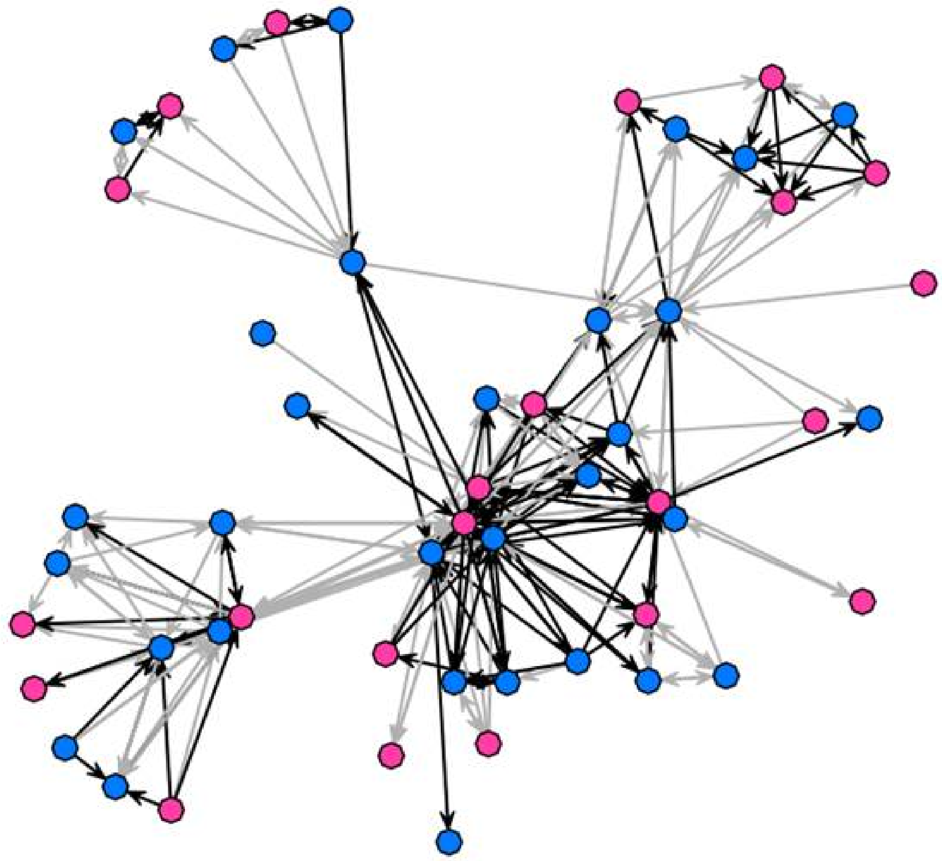

Figure 3: Maternal Ties in Bungoma Family 2 are in black. Paternal or in-law ties are in grey. Males and females and blue and pink. Three brothers are bridges between the central group and groups formed by their wives and children.

Table 8. Relationships of Recievers to Senders in Bungoma Family 2.

Mobile Money Transactions in Bungoma Family 2			
Number of Female ties to a…..		Number of Male Ties to a…..	
Brother	17	Cousin	22
Son	12	Brother	16
Cousin	9	Sister	13
Mother	8	maternal aunt	9
Nephew	7	Nephew	8
Daughter	6	Wife	8
brother-in-law	5	maternal uncle	7
maternal aunt	5	Mother	7
Sister	5	Niece	6
Husband	4	sister-in-law	4
Niece	4	brother-in-law	3
Uncle	4	Daughter	3
half brother	3	paternal cousin	3
in law	3	Son	3
Father	2	Father	2
Grandmother	2	great uncle	2
husband's brother's wife	2	mother-in-law	2
maternal uncle	2	Uncle	2
mother-in-law	2	Aunt	1
paternal uncle	2	brother-in-law	1
sister-in-law	2	daughter-in-law	1
daughter-in-law	1	father-in-law	1
father's brother's wife	1	father's brother's wife	1
Grandson	1	Granddaughter	1
great nephew	1	Grandmother	1
husband's brother's son	1	Grandson	1
husband's paternal nephew	1	great aunt	1
paternal aunt	1	great nephew	1
paternal cousin	1	half brother	1
		half nephew	1
		half sister	1
		In-law	1
		paternal nephew	1
		paternal uncle	1
		sister-in-law's brother	1
		sister-in-law's daughter	1
		sister-in-law's son	1
Total Female-Sent MM Ties	114	Total Male-Sent MM Ties	139

Table 9. Relationship of Male and Female Recipients to senders in Bungoma Family 2

Members of Bungoma Family 2 receive money from……			
Male Recipients		Female Recipients	
Brother	32	Sister	18
Cousin	17	Mother	15
Nephew	15	maternal aunt	13
Son	15	Cousin	12
maternal uncle	12	Daughter	9
brother-in-law	8	Niece	9
Father	4	Wife	7
half brother	4	sister-in-law	6
husband	4	mother-in-law	4
paternal cousin	4	Grandmother	3
other type of in-law	3	daughter-in-law	2
paternal uncle	4	father's brother's wife	2
grandson	2	Granddaughter	1
great nephew	2	maternal great aunt	1
maternal great uncle	2	husband's brother's wife	1
father-in-law	1	husband's paternal nephew	1
half nephew	1	other type of in-law	1
husband's brother's son	1	paternal aunt	1
husband's brother's wife	1	sister-in-law’s daughter	1
Niece	1		
paternal nephew	1		
sister-in-law's brother	1		
sister-in-law's son	1		
Male	137	Female	109
Total Recipients 246			

<u>Naitiri Family 1</u> This family includes a 67-year old farmer, mother of eight and grandmother of 44. In the network, she is a bridge connecting her network of her children and grandchildren, including her sons- and daughter-in-laws, to family of her deceased sister’s oldest daughter, who in turn is connected through money transfers to her sisters and their children (Figure 3). Her network also receives international remittances from the United States from two individuals.

In fact, the children of the two sisters in Naitiri Family 2 have created a family association to collect school fees for the children and grandchildren of this pair of sisters. At the deceased sister’s funeral (often a time when social groups and generations reconstitute themselves, and when discord is displayed and assuaged), the children of these two women, who live in Naitiri, Kimilili, Chicago, and Nairobi, discussed the high cost of education. On the spot, they formed a credit and savings group in which each of them agreed to contribute 1000 shillings a month to a common savings account from which school fees would be paid on a rotating basis. The members meet once a month for a meal, where they also contribute 1000 Ksh. each towards a banked fund for school fees. Mobile money services are used by some at the meeting to send mobile money to the treasurer - from Chicago, a daughter uses Western Union.

Sender	Age	Gender	Occupation	Relationship
A	53	Female	Farmer	daughter
B	47	Male	Teacher	son
C	70	Female	Farmer	ego
D	56	Male	Businessman	son
E	23	Male	retail shop owner	grandson
F	46	Female	Farmer	sister's daughter

Table 10. Interviewees in Naitiri Family 1.

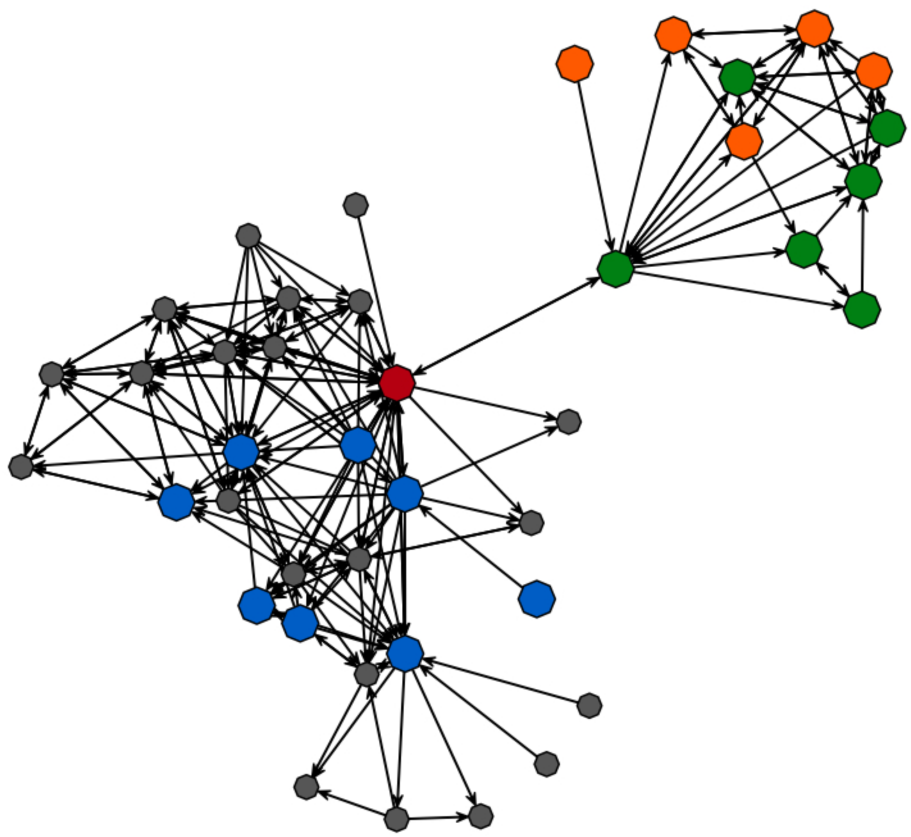

Figure 4. Naitiri Family 1 is based in Naitiri, Nairobi, and Chicago. A sixty-seven year old grandmother (red) is a bridge connecting her children (blue), daughters-in-law and grandchildren (grey) to her deceased sister's oldest daughter (green), her children (orange) and her other siblings (green). Her son and her daughter in Chicago are embedded within her network and send remittances via Western Union, sometimes directly to their relatives' MPESA accounts.

4) Naitiri Family 2. Mary is a Luo trader and seller in the marketplace at Naitiri, a settlement scheme of mostly subsistence farmers. Although Mary is married, she does not use M-PESA with her husband, but instead named her sister Atieno, her children, and her sister's children in her network of senders and recipients drawn below (they requested to be named). Mary and her sister Atieno send equally to their own children and their nieces and nephews.

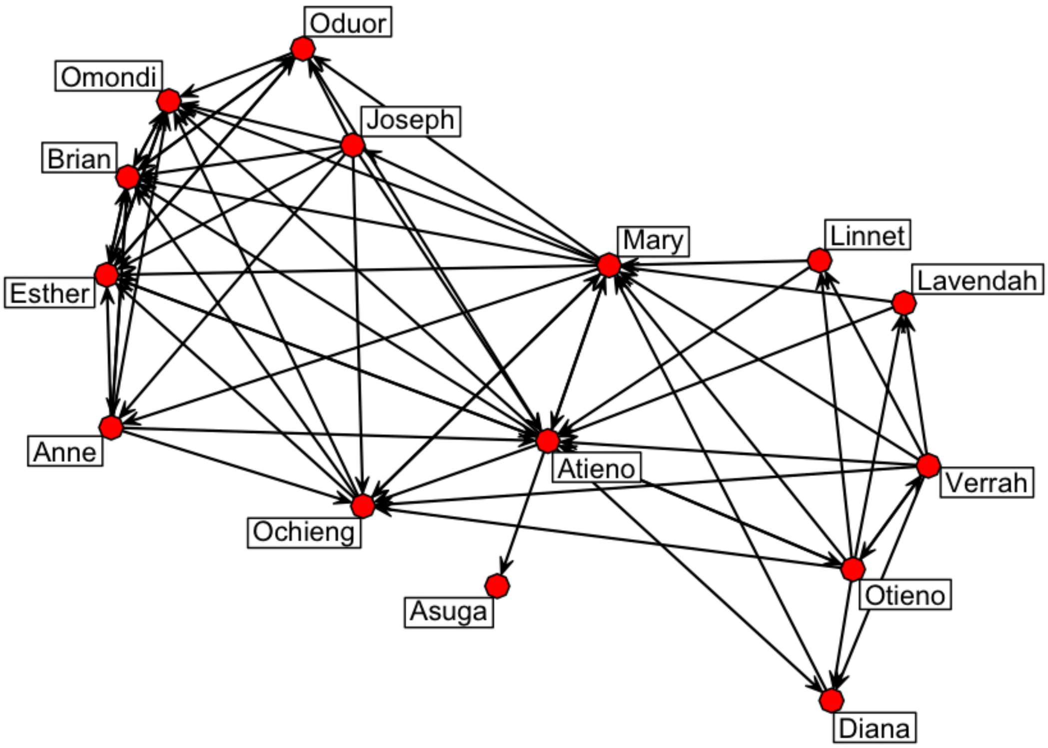

Figure 5. Naitiri Family 2: Mobile money network of two women, Atieno and Mary, and their children.

The four families mapped above show important similarities in terms of structure and types of ties. All show an emphasis on maternal and sibling ties. Sets of siblings show "closure" or dense ties and include mothers and their children. In many of these families, certain individuals have regular salaries or income from farming, shops or rental housing, while others do not. Mobile money circulations serve as an equalizing mechanism whereby individuals have a greater number of potential ties or links through which they can access the wealth of a family. In both Bungoma family networks, matrilineal kin create dense networks of closure. Although patrilineal and in-law ties are rare, they are important, as weak ties often are, in filling structural holes. Weak ties over bridges move resources into and out of tightly connected groups and bring new resources into groups. In Bungoma Family 1, these bridges are between half-siblings; in Bungoma Family 2, bridges are in-law and patrilineal ties. Bungoma Families 3 and 4 are predominantly made up of matrilineal ties.

Anthropologist Margery Wolf, in patrilineal Taiwan in the late 1950s, described how women in patrilineal societies build their own social networks based on building ties to friends, siblings, and children, which she called "uterine kinship" (Wolf 1972). Uterine kinship often exists outside the public, patrilineal sphere and describes flexible and personal mother- and sibling-centered ties. At marriage, a young woman newly moved in to her husband's community creates her own social ties through friendship, through her children, and through preservation of ties to her own siblings, particularly her brothers. Uterine kinship involves both men and women equally, through ties among siblings to mothers and mothers' relatives.

Cellular phones and mobile money restore the relationships of uterine kinship; and in so doing, disrupt relationships of marriage and affinal ties. Among 33 women farmers in the rural outskirts of Kitale town, the privacy, secrecy, and autonomy of mobile money was used to strengthen friendship and kinship ties with blood relatives at the expense of spouses and affines. These women hide money from husbands and privately send money to their mothers and sisters to educate nieces and nephews. The common occurrence of teenage pregnancy means role overload for maternal grandmothers as their daughters' husbands reject children not biologically their own(Kilbride and Kilbride 1997); women leverage uterine kinship to support their children or grandchildren born before marriage. In many families, especially Bungoma Family 2 above, the greater part of remittances to mothers are supporting illegitimate children.

Polygynous marriage networks like Bungoma Family 1 are rapidly fragmenting into networks like Bungoma Family 2 that develop around siblings. Historically, half-siblings shared several "mothers" and were brought together by rights of residency, inheritance, and seniority (Wagner 1975). In Bungoma Family 1, half-sibling and co-mother ties are relatively rare (Table 6), but as weak ties connect the central clique to co-wives and half-siblings (Figure 1). More commonly today, polygynous marriage is contestedor practiced secretly (Kilbride, Suda, and Njeru 2000), and the oldest son or *simakulu* often provides economic support when a father has "moved on." The absence of fathers and husbands is a feature of both Bungoma families, but particular resentment seems to exclude the polygynous father from remittance networks. A Kisii woman in her late twenties working as a secretary described her ambivalence about remitting to her ill father:

"My father had four wives. Mother is number two. We are 22 altogether. In our family the co-wives did not work together. They are not on good terms. In our family we were sidelined by our father. It was my mom who used to support us with her farming. My father could support the last two families. So us, we were dependent on our mother until our first born brother, second in the family, joined the university and started paying our school fees with the university boom…. He (Father) was unfair to us. Since we were his children, we didn't take it kindly. Sometimes there is an occasion – right now Dad is on treatment. He needs that support. When you call people to come together…we are so bitter. You get called. So now, we are called upon…you get so bitter. He didn't help us."

Women restore ties of uterine kinship when polygyny and widowhood complicate or threaten their access to marriage resources. A retired policewoman described "a lot of wrangles over money" with her two co-wives. She explained her husband would forcibly take her cash to support his favorite co-wife. She relies on secret remittances from her brother and son to support her farm activities. A 52 year old widow was forced off her husband's land at his death; she returned to her father's land where she assists her brother and his wife. Her brother remits her childrens' school fees unbeknownst to his wife – "who despises my presence here. . . . With this (M-PESA account) I have been able to educate my children with my brother's help without his wife discovering." Brothers and mothers' brothers also invest in and benefit from uterine kinship. Both men and women may be caught in between their blood relatives and their spouses and affines, like the three brothers in Figure 3.

The centrality of women in their mobile money networks of children and matrilineal kin could empirically support the "Empowerment Story" mobile money stakeholders often tell (Maurer 2012), which posits an often female "poor" subject who finds economic betterment through e-money . Social networks do demonstrate the social capital of certain women. Mothers are often visible in network drawings as receiving many ties from others (Figures 6, 7, and 8). In Naitiri Family 1, a mother and grandmother bridges a structural hole, connecting resources from her network, which includes large international remittances, with that of her sister's children.

Both women and men leverage the social and economic capital of uterine kin. However, the secret and illicit nature of these ties challenges the "Empowerment Story". Uterine kinship ties are constituted largely as disruptions of the public and often patrilineal sphere, particularly when it supports illegitimate children. Women keep secret phones and SIM cards from their husbands. In extreme cases husbands prevent women from accessing e-money services. For example, a forty-five year old lady is without an identity card, so she is dependent on her sister in Kansas for an account with M-PESA. Her husband destroyed the phone she received remittances from her sister on, and she had to wait for that sister to visit and buy her a new phone, which she now hides from him. Furthermore, second challenge to the Empowerment Story is the predominant use of remittances to circulate small transactions for consumption and emergency use. The average remittance among 47 people in Kimilili who reported 155 remittances in the past month was 1800 Ksh (about US $20.00); in rural Naitiri 25 people reported 37 remittances, with an average value of 700 Ksh (US $9).

When I commented to one lady that she did not name her husband as an e-money contact she clucked in annoyance – and pointed out her farm and chickens, entrusted to her by her husband and mother-in-law. Her reaction suggested that Kenyans themselves view remittances as a means of coping rather than true economic "empowerment" - what a forty-seven year old father described as "a gift that keeps on giving: land and healthy animals, or a rental house, where it gives me something every month." A successful dentist in Kimilili town is nevertheless determined to develop farmland he inherited from his father. He explained, "With a real investment… you will never be poor." The visible and sharable wealth-building resources that the people of Western Kenya truly value - such as productive farmland, real estate, or livestock-are still largely transferred through male inheritance (Budlender and Alma 2011; Nasimiyu 1997). The uterine kinship of mobile money conveys the secrecy and marginality of connections to and through women as distinct from forms of wealth that are publicly entrusted, socially embedded, and appreciated on symbolic and emotional levels in this patrilineal society. In strengthening uterine kinship, then, mobile money may fix these relationships outside of the public sphere or even serve to justify exclusion. The relationship between the public and private sphere may hinge on the exchanges between them made by men, who participate in both the uterine and the public spheres of kinship.

ROSCAs and Mobile Money

Rotating Savings and Credit Associations (ROSCAs) or *chamas* have been an important feature of Kenyans' monetary practice for decades at least (Ardener 1995). Entrustment also underlies the enthusiasm with which Kenyans participate in *chamas*. As mobile money remittances circulate among a group of siblings, so too in a *chama*, practices of lending to others are in fact a way of saving for the future (Gugerty 2007). Goals of *chama* participation are to gain income for daily use, make significant investments, nurture friendships, and feel the merriment of monthly meetings, where one can also air one's problems and seek consolation (Calomiris and Rajaraman 1998). ROSCAs have historically been made up of women in Kenya and throughout the world (Bouman 1994).

Among thirty-six ROSCAs the research team profiled, members use mobile money to send contributions to a treasurer, earmark or save monthly contributions, buy airtime to communicate with members, save the groups' contributions, and deposit to a group bank account. Some members receive money and check their account balances via mobile. Nevertheless long established groups value the physical closeness and sociality of periodic meetings and parties. The Barina women's group near Kitale has 25 members. Over more than ten years, they have circulated a contribution over several cycles, involving their parents and other women's groups in frequent feasting, visiting, gift-giving and merriment, using funds to supplement their monthly incomes, maintain households, and establish fish ponds, poultry keeping, greenhouse farming, and small shops. They use e-money to assist needy members who are out of town; send their monthly contributions if they are absent; and buy airtime to notify the group of events and changes in activities. But they discourage members from sending remittances in lieu of meeting attendance. Building social bonds through meetings and parties is often very important for women's groups in particular (Ardener 1995;Bouman 1994;Calomiris and Rajaraman 1998;Gugerty 2007;Nelson 1995).

Some *chamas* are composed of relatives or siblings; family welfare groups or family associations, such as that formed by Naitiri Family 1, are essentially very dense or closed groups of relatives. Another family association formed in Naitiri, also after the death of one of their members. A young man was set upon by thieves and beaten to death - "slaughtered like a chicken," his mother told us. His devastated parents had no savings with which to bury him. His siblings, parents and maternal aunt formed an association for mutual assistance and benefit. Each member contributes 250 Ksh. a month; half is presented to a member in turn and half is saved for emergencies. A family that includes George, age 61, a farmer and village elder outside Bungoma, his wife, four sons and four daughters-in-law lives in Mombasa, one in Kitale, and one near Bungoma. Using M-PESA, each member contributes 500 shillings monthly; the circulated "win" has paid school and medical costs.

As mobile money practices become more common among ROSCAs, they are reshaping these groups as social networks. As reported in the January 13 edition of *Africa Review*, men are increasingly participating in these groups, no longer dismissing them as "dens of gossip". Both single gender and mixed groups are using a variety of connections, both personal and through mobiles, to constitute communality. Three groups we worked with use mobile communication for almost all of their interactions. Twenty-two male 22 male *matatu* (minivan) owners contribute 1000 Ksh. daily at 4 pm to one of their members each day. On the 23rd day, the contributions are banked, and the cycle starts all over again. After four years, the members have been able to pay off their loans for the *matatu* they purchased, and the group will purchase a new *matatu* with the banked funds. They are rarely in the same place at 4 pm each day, and rely on mobile money to send their contributions to the treasurer.

Similarly, a group of 23 Eldoret Express bus drivers including both genders contributes 1000 shillings weekly to a fund. Half (11,500 Ksh) goes to one member and the other half (11,500 Ksh) goes to a bank account. As bus drivers they are rarely in the same place on payday when contributions are due and the "win" is apportioned – always via mobile. Finally, seven female and five male students at Moi University, Kitale Campus, contribute 500 shillings each Friday, circulating the win amongst themselves, to discourage "partying" and frivolous expenditure. They operate exclusively on e-money to receive and give out contributions and only contribute during the 12-week semester, reconstituting themselves at every new semester with occasional new members. One member uses her money to run a school supplies shop in her dormitory room.

How can a group that circulates mobile money with minimum physical contact maintain the necessary trust? Social bonds provide the confidence that discourages freeloading in ROSCAs (Gugerty 2007). Our team discovered that diverse and informal ROSCAs form around homophily in profession, residence, ethnicity, gender, relationship or hobbies such as weightlifting, and begin with conversations and discourses of complaint at the marketplace, at school, at the workplace and the gym over common financial concerns. Groups sustain their cohesion - often in spite of physical distance - through the unique communality that is created by mobile phone use. Indeed the ROSCAs heavily dependent on mobile communication are "floating worlds", tightly knit through an "absent presence". They form and reform easily around time frames of weeks or semesters. The bus and *matatu* drivers' groups have frequent short conversations throughout the day, updating each other on locations, mechanical problems, weather and road conditions, passenger numbers and fares gained, and planning the circulation of contributions and wins. Mobile communication enhances such "micro-coordination" in groups, allowing adjustment of actions, thoughts and plans; and even their "hyper-coordination", the integration of emotional experience and self-definition (Ling and Yttri 2002). As Gergen (2012:19) writes, "With continuous communication, those within the circle can develop a high degree of mutual trust and support."

Remittances, Mobile Money, and Coming of Age and Funeral Ceremonies

The final way people use mobile money as members of groups is as contributors to public and community ceremonies, which today include diverse gifts of cash, foodstuffs, objects and animals, and mobile money. Among the Bukusu funerals and coming of age ceremonies (performed in August of even years) celebrate the solidarity of communities, circulate resources and build relationships of support (Egesah 2009). Circumcision ceremonies last several days and involve hundreds or even thousands of guests. For several weeks before the ceremony, the initiate visits the homes of relatives wearing bells and dancing to announce the event. These days the boy will often use public transportation for these visitations, accompanied by age mates and collecting from each home a small donation of 100 shillings ($1.50) or so.

The boy's father and his brothers, mother's brother, paternal aunt and other relatives make particular donations to create the ceremony and for building of the boy's *esimba* ("lion's den"), required because man can no longer sleep in his mother's house. Many gifts are prescribed. The mother's brother, for example, is expected to provide a bull which represents the just return of the brideprice animal given at the marriage of the boy's parents. A recalcitrant mother's brother may refuse to repay; in this case, the mother should begin looking for one of her brothers or relatives to take over this debt. Poor relations with-in-laws, however, or between the parents of the boy could jeopardize this important gift. The father should provide an abundant feast that includes at least one sacrificial animal and pay of the circumcision fee and medicines. The paternal aunt, a symbolic mother to the boy but a member of the patrilineal group the boy now enters as an adult, must give him the gift of a goat and cook for him while he recovers. Three months after his circumcision the boy must attend a public coming out ceremony, where the process of transition to adulthood is fully completed. At this time the boy's paternal aunt provides the boy with new clothes and another feast, the quality of which will speak to the worth and status of the household.

Successful coming of age ceremonies depend on large investments from the father or his brothers or other age mates. Many families no longer have standing herds to take from in planning circumcisions and instead purchase animals. A bull costs from 18,000-20,000 Ksh (up to $300). Hospital circumcisions in early adolescence have replaced traditional procedures in most parts of Kenya and among half of the Bukusu families of Bungoma County (Egesah 2009). In Kimilili a prominent Christian mission has campaigned against circumcisions, citing their high expense. As early as the 1950s such ceremonies were conducted most often by well to do families (Heald 1998). In 2009, a circumcision feast with more than 2000 participants celebrated the son of a prominent civil servant, who received 19 cattle as gifts from his father's friends and political associates. For many families a successful circumcision ceremony with many guests is still an ideal. It shows a strong social network and economic status for the family and is also an expression of Bukusu ethnic identity, as many surrounding communities never did or no longer participate in the practice.

Money and wealth are prominent parts of the circumcision ceremony. Mzee Nathan, who has circumcised 13 sons, told us that the father begins preparations drawing up budget in Kenyan shillings for the ceremony and finding resources of his own or seeking assistance from brothers and age mates, the *bakoki*. Assuming livestock must be purchased, the total costs of the ceremony can reach between 40,000 and 80,000 Ksh ($500-1000). The whole affair is a display of the family's generosity, solidarity, love for their son, politeness towards their in-laws, economic status, and social importance. Mzee Nathan says:

"If the parent is really prepared for the boy to be circumcised, he has to spend. But it depends. A father's love to the boy is tested when the boy is cut. The dad may give the boy a live cow, which is not less than 15,000 shillings (about $200.00), but he has already spent 15000 for the slaughtered bull (that is eaten by the community at the feast). The family bull – that is 15000, the (maternal) uncle's cattle15000, the dad adds another 15000. Mothers may incite the boy to continue standing until the dad has showed him his love."

Especially if she is a second or third wife, the mother will stand with the boy to demand adequate gifts if necessary. The research team met a recent initiate who felt his mother forced him into a traditional ceremony due to rivalry with her co-wives.

To offset the ceremony's costs, the boy and his family will recieve gifts and contributions. The father's *bakoki* must also make traditional gifts to the boy, such as animals, blankets or foodstuffs. Since at least the 1950s (Heald 1998), cash donations and gifts have been accepted alongside or in lieu of some of the animals traditionally presented as gifts for the boy. Mzee Nathan explains that when your age mate comes to your son's circumcision ceremony, his donation will be recorded in a book. In turn, when you attend his son's circumcision, you must reciprocate with double his contribution.

Contributions are increasingly being given in cash and in mobile money. More and more, the ceremony is a way to contribute to school fees. The feasting bull is now sometimes given live rather than slaughtered, so that its market value might be preserved for a sale conversion into cash. As Mzee Nathan puts it, "Economically today, many consider if indeed they can slaughter or preserve for the boy's school fees." In his day, he explained, refusing to slaughter a sacrificial animal would cause curses to remain in the family. The spatial ground that needs to be covered in amassing the visitors to a ceremony is being covered through mobile money and mobile phones. In some cases a mobile money remittance replaces the giver's presence at the ceremony and phone calls replace the several days of visiting and bell ringing that precede the ceremony. Mzee Nathan explains that his older sons, two of whom live in the United States, have sent him money for the ceremonies and are still involved through communications and the internet:

-*Gabriel: Since M-PESA has been in operation, have you ever received money maybe from a friend as a gift to the boy?*
-*Mzee Nathan: They do send me. His siblings send me.*
-*Gabriel: Do they send through M-PESA?*
-*Mzee Nathan*: Yes, on M-PESA. I withdraw and buy meals. So they do give me. They have assisted in so many cases. They have helped me for the last 3-4 years because they may not be able from where they work. So they may send like 1000 or 1500 to buy something like sugar instead of travelling (to attend the circumcision). This cuts the costs. Sometimes they may be funerals during hard times of life. My child may send me money to cater for the costs and try to find some time for him to come. He is supposed to come and witness an event within a couple of minutes and get back. It is better he sends the 3000 (with M-PESA) and continues with his activities. If he gets time he will come even after the occasion…. So they send. . . . . One vital thing . . . is that when you are circumcising a son in the home, the whole family is concerned. Even the ones in the US are involved on the internet. He may ask the progress, is he circumcised, can you take his photo? They are very inquisitive from wherever they are: Tanzania, Uganda, America. They will just know that that day has come. You will also monitor them on phone, e. g., even if it is at 8:00 am, you will be informed that here he is already circumcised.

In 2011, Peter, a 15 year old boy and youngest of eight, was circumcised in a ceremony lasting several days in August and ending with a formal "coming out" as an adult in December. After telling his father and older brother of his readiness, preparations for the event began several weeks before the ceremony with traditional visiting. He told us that most of his friends and age mates who accompanied him on the visiting "took off with much of the contributions" - the small cash gifts to the dancing boy. He listed the most important contributions his relatives made for his event, including the paternal aunt's "goat" – a mobile phone! He explained that on his coming out day in December, his phone held 84,000 Ksh ($1000.00) in mobile money gifts, enough for two years of secondary school fees. In Peter's case, mobile money, livestock, foodstuffs, and cash gifts were all accepted as contributions

(Table 11).

Table 11. Gifts presented and shared at Peter's 2010 circumcision ceremony, Bungoma.

Item Donated for Peter's 2010 Circumcision, Bungoma	Giver of Item	Source /Value
A young bull	Paternal grandfather	Grandfather's herd
A slaughtered bull for feast	Father	Purchased for 18,000 Ksh.
Maize flour, 2 sacks for feast	Father and sister	Purchased and from farm
Rice, 30 kg for feast	Mother	Purchased for 3,000 Ksh.
Millet, 80 kg for traditional beer	Father	Purchased for 4,000 Ksh.
Medication and food	Two brothers	Purchased for 10,000 Ksh.
"Maternal bull"	Maternal uncle	Maternal uncle
Money gifts via M-PESA from brother in Sudan	Brother in Sudan	5,000 Ksh.
Mobile phone	Paternal aunt	3,500 Ksh.
Home constructed for initiate	Oldest brother	50,000 Ksh.
Other money gifts at circumcision	*bakoki*, friends, neighbors	8,000 Ksh. – by mobile money and cash to Peter
Other money /M-PESA gifts given in between the August ceremony and the "coming out" in December	*bakoki*, friends, neighbors	"After all the process of celebrations, my (M-PESA) account was loaded with 84,000 (Ksh)"

Bitter Mobile Money

The culture of entrustment is not without its burdens. Although mobile money is often described as a form of mobile "banking," on the contrary many people see their phones as a means through which money can be scattered, often using the word "Sambaza" or to spread, which is the name of Safaricom's airtime transfer service but also conveys the ease through which money on one's phone can be frittered away in response to the small requests of friends and family over the course of a day. Part of the ways in which people participate and shape mobile money networks is not just in the maintenance or forging of connections but in the avoidance or refusal of ties. People use a variety of strategies to avoid the redistributive pressures of friends and relatives. Kenyans often have more than one phone or phones with multiple SIM card address books as a way of managing types of connections or types of requests. To avoid a call or connection, people will hide a phone, refuse to answer it, turn it off, discontinue their M-PESA registration, or feign having lost or misplaced a phone when the contact in question appears or finds them later on. One awkward meeting involved claiming one's phone had fallen down the outhouse. On the international level especially, stay behind relatives fear when their relative abroad has "become lost," which occurs when he or she no longer makes contact or responds to phone or email messages. Excessive pressure to remit was thought to lead to "becoming lost", which can be countered by offering emotional support, starting a business for the relative, or building him a house on the family land as a symbol of his belonging (see also Horst 2011).

"Nowhere to hide" and "it is a curse more than a blessing" are some of the sardonic idioms one hears about mobile money's relentless demands. Part of this ambivalence reflects the burden of dealing with requests from friends and relatives and the sense that people's affections have become monetized. Should one travel home or send the money one would use on transport to one's mother or brother? The ambivalence also emerges out of frustrated desires to make tangible and significant investments in the future: "the gift that keeps on giving". *Bitter Money* (Shipton 1989) described East Africans' mistrust of cash and capitalism in the early 1980s. The bitterness of e-money is the conflict it creates between personal and collective, between spending and saving. Many people avoid storing money on their phones, feeling that it leads to excessive purchases or capitulations to requests. Several people with bank accounts preferred to transfer money off their phones and into their bank accounts as often as possible, in spite of the significant fees for such transfers. A dentist in Kimilili earns about 2000 Ksh. a day – although he receives significant additional income from other sources - which he transfers into his bank account at the end of each day at a cost of almost $1.00 for each transaction. Most people explained to us that they keep very little money on their phones, due to the temptation to cash it out and to respond to the many remittance requests they receive[1].

In the face of the ubiquitous circulation of mobile money, another level of creative practice seeks to turn the culture of entrustment to one's advantage – that of using exchanges of different kinds of value to extract a small profit or "marginal gain" (Guyer 2004). Unequal exchanges of value between mobile money and other kinds of currency or value – such as cash, airtime, and even their own persons in terms of their presence at family meetings or ceremonies - offer marginal gains. The transformation of monetarily small airtime gifts into valuable sociality and a preference for the gifting of airtime - and extracting greater social value at no extra cost-are examples of marginal gains.

Mzee Nathan explained the use of marginal gains in the politically highly charged arena of public ceremonies. Here, he said certain individuals attempt to avoid an animal gift by giving a smaller donation through mobile money. He identified the maternal uncle as a frequent culprit, an outsider to the lineage being celebrated. Today 1000 or 2000 shillings may be given in lieu of an animal, especially the maternal bull - even though the whole animal is priced at ten times as much. As he put it: "the phone may be destroying norms in this manner: I may deny you a bull with reason that I am sending you money."

-*Gabriel:* Is it bad if you sent me money to buy the bull?
-*Mzee Nathan:* No, he may opt to bank for you than give you a bull, which is proper. It is not destroying (our traditions). We are now moving out of that heavy expenditure because of education needs. We don't see why we should spend that and after a week we are supposed to pay 10,000 for his school fees. The days when someone would move to Tongaren (a town on the frontiers of Bukusu country) to invite his relatives are gone. We can call the community in the village and invite the one in Tongaren on phone!

Even a traditionalist like Mzee Nathan sees the value in the use of mobile technologies to cover distances and ease the costs of contributions – while still providing significant and valued assistance towards increasingly monetized needs.

The most entrepreneurial will juggle the many registers of value to their advantage (Guyer 1993) - using marginal gains to lower the monetary costs of social networks while still staking their claim to the culture of entrustment. Wafula, a fifty-year old Nairobi resident explained that at his point in life, he is reaching a high point of remittance demands, as nieces and nephews seek school fees and job placement, and as elderly folk continue to need support. He explained that he has a "system" for dealing with celebrations. He explained how it worked during the 2012 circumcision of his nephew (who would refer to him as "father"):

"As the day approached I refused my brother's calls and those of my sister in law. I just kept quiet. I missed the whole thing. But then during the passing out (which took place three weeks later) I called my sister-in-law a few days before that. I asked her to prepare a shopping list of everything that would be needed for that meal. She sent me an SMS with the list that came to 6,000 shillings. I sent her that (via M-PESA). So there was a big feast and that

[1] On the other hand, our team heard from others that mobile money was an aid to earmarking or saving for specific future uses, such as merry-go-round contributions.

6,000 paid for everything. My brother called me to say thank you."

By refusing to attend the ceremony, Wafula saved himself as much as 20,000 Kenya shillings, avoiding the cost of transport and numerous requests for assistance before and during an event attended by several hundred people. It is expected to give money to older women for their "sugar"; many will need transport back home; churches will request donations; money will inevitably be short for food, the boy's medical costs, and so on. Wafula explained that his "system" allows him to extract maximum social capital with minimum expenditure. Initiating the call during the passing out and allowing his sister-in-law to set the price of the remittance makes him appear infinitely generous, even as his own estimates, he explained, would end up too high for the actual cost of groceries in the rural areas. All the attendees acknowledged his contribution of a public and shared feast. Through the creative use of mobile phones, social networks and remittances, cobbled together into a "system," people extract marginal gains as they convert and balance their social and economic capital – transformations that are changing the meaning of money itself.

Conclusion

Africans have long been comfortable with using different forms and registers of value through their involvement with regional, Indian Ocean and European trade networks (Guyer 2004; Kusimba, Kusimba, and Wright 2005). Mobile money and airtime are the newest forms of value – value that can be offered in lieu of one's presence or emotional involvement, and that can be transformed into cash, airtime, goods, information, social relationships, or the emotional effect of connecting to a loved one. Traditions of entrustment - in which ownership is a kind of temporary safekeeping of wealth which circulates across the passing generations –reflect themselves in the new mirror of e-money. Using mobile money means storing or saving value through its entrustment to relatives, friends, or savings groups on a local, urban-rural, and even transnational scale. By recording one's gift in a public ceremony's record, a claim is staked toward a future recompense – as Mzee Nathan explained, this gift must be doubled upon its return. As long as Kenyan banks continue to charge prohibitive fees, the concept of saving through entrustment makes a great deal of sense.

Even though mobile money has been designed for person-to-person transfers, it is used by collectivities or groups – women's and men's savings groups, family associations, and dense networks of kin, especially siblings. Remittances have centripetal effects that create sociality among close intimates, but are socially dangerous because they exclude others. Networks of remittances follow the private and personal paths of uterine kinship, as distinct from indivisible resources which are socially embedded and more culturally valued. Mobile communities –shaped by "absent presence" and the "floating world" - are fundamentally changing Kenyan social life. Ceremonies create geographically dispersed social networks of more superficial participation; mobile ROSCAS micro-coordinate social action and emotional affect without physical connection. Although creative and entrepreneurial practices with mobile money enhance the pleasures of relationship, create social capital and extract marginal gain, it remains to be seen if these transformations and circulations will eventually achieve the "gifts that keep on giving" for the many who seek them in Western Kenya.

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