# Mobile money and financial inclusion in Mali: what has been the impact on saving practices?

Mariam Sangaré

Research associate, CESSMA,

University of Paris 7 Diderot /Institute for Research on Development-IRD), France.

## Introduction

The research project aimed to assess the potential of mobile banking in favour of financial inclusion in a context where access to formal finance is limited, and with particular consideration of its impact on users' saving practices. Saving as a focus stems from the results of our previous work on microfinance in Mali (Sangare, 2013), which applied field research to highlight surveyed clients' preferences for savings services.

The Malian context is characterized by a low bank penetration, where only 8% of the population holds a formal bank account, or 11% if we include the decentralized financial systems (SFD)<sup>1</sup> access. This low bank access, common to other countries in the UEMOA<sup>2</sup> zone, led to greater regulatory reactivity, which resulted in the development of a mainly mutualist microfinance through the SFD. The regulatory interest is also expressed in the mobile financial services sector, the zone experiencing, since 2013, the first example of authorized international transfers through the mobile network between several countries with "Orange Money Transfer International" (Scharwatt and Williamson, 2015). In Mali, mobile networks presently cover more than 40% of the territory, and 40% of the population uses a mobile phone. Over the past three years, Mali and the UEMOA zone in general, are witnessing an increasing supply and use of mobile financial services.

Two mobile network operators (MNOs) share the Malian market (Malitel and Orange-Mali) and offer mobile transfer and payment services. Like in the beginnings of microfinance expansion, savings services are rarely taken into account in current mobile financial services offerings. However, many studies, mainly focused on microfinance services, have demonstrated the great interest of low-income populations in savings. That can also be

<sup>&</sup>lt;sup>1</sup> Regional name for non-bank institutions authorized to exercise some traditional bank activities.

<sup>&</sup>lt;sup>2</sup> Mali is one of the 8 countries members of the West-African Economic and Monetary Union (UEMOA), which stands on the uniqueness of the currency (CFA franc) and banking and financial regulation.

assessed, in the case of Mali, through the culture of savings with ROSCAs (SANGARE, 2013). Thus, in addition to understanding users' needs and utilization of mobile financial services, the research also questions the potential of mobile services in access to and diversification of means of savings: can the mobile wallet be used as means for saving and thus be included in the financial strategies of targeted populations? For which type of savings could it be adapted?

In this paper, some theoretical aspects on poor' savings and the connection with mobile financial services are first approached. In the following, the study's methodology and data collection are presented. Then the last part details the first results of the research about the social, economic and financial profiles of the users, their use of mobile financial services in general, and the links with saving practices in particular.

### 1. Theoretical potential of mobile banking in savings development

The interest of low-income population in savings services has been largely proven by field surveys throughout the world. Their financial strategy is particularly affected by the research for adequate means of savings (Collins and al. 2009; Guerin an al. 2011). However, the offer of formal savings services intended for this population is very limited, which results in a situation of "undersaving" (Karlan and al. 2014). Several constraints undergone by the suppliers are advanced to explain their weak incentive to propose savings services to low income populations: high costs of transaction, informational and legal barriers, and behavioral bias—expressed, for example, in the appreciation of prices and interest rates. In the case of Mali, weak infrastructures combined with potential clients' low income are assumed to induce high transaction costs, thus explaining a low bank penetration in the country. The expansion of mutual microfinance with a wide branch network has partially resolved this problem. Concerning behavioral bias, the meaning clients ascribe to interest rates is illustrative: the majority consider an interest rate to be a fixed commission not related to time, often called "the price of money". For that reason, it is difficult to attract customers through interest bearing savings.

Access to the mobile network can contribute to financial inclusion through, at least, three possible channels. First, mobile financial services can increase the range of available financial services, reducing the constraints in choice of services and, eventually, lowering prices. A greater range of services can benefit the entire population, independently of access (or not) to banks or other financial service networks. The second channel impacting financial inclusion

can result from the linkage of banks to mobile users, facilitating their access to bank accounts for example by reducing information requirements. Finally, a third effect may come from the incentive of banks, as a result of competitive pressure, to get these new customers by developing services competing with or complementing mobile services.

Mobile money is perceived as being able to improve access to savings because of its capacity to lower transaction costs by reducing geographical distance, which is often a great obstacle to a greater access to formal financial services. Actually, convenience and affordability are major assets of mobile services (Scharwatt and Williamson, 2015). The other strong point of mobile phones is the storage of information making it possible to identify the users. Indeed, digital information could substitute for physical documents of identification where in certain contexts these are unavailable, thus facilitating new bank access (Lonie and Wagner, 2013). Some examples of bank services like credit or remunerated savings, developed thanks to the access to mobile digital data are more widely known nowadays. The case of M-Shwari in Kenya is illustrative as regards to digital information sharing and banking innovation in the credit scoring calculation (Cook and McKay, 2015).

Thus, with good aesthetics and an appropriate platform of service, mobile is able to promote development of savings (Taylor, 2015). However, this potential appears under-exploited for the moment (WWB, 2015). Actually, even if mobile financial services are not specifically intended to facilitate savings, their accessibility tends to incite customers to use their electronic wallet as an additional means for short and medium term saving (GSMA, 2015). Our research described here provides lessons on this phenomenon in Mali.

This study is structured by two assumptions on the relation between mobile money and savings. First of all, **the use of the mobile wallet for savings and its full integration in users' financial habits depends on the characteristics of mobile services**. The targeted populations are accustomed to juggling between multiple financial relations, and they can use certain services in a nonconventional way with the aim of readapting them to their needs. Geographical proximity, a broad network of agents and low transaction costs are elements that can facilitate this appropriation of mobile services and their integration in people's financial strategies.

Our second assumption stipulates that the potential of mobile money in the expansion of services other than transfer depends on its linkage with other formal and informal financial actors and services. This interaction allows the development of savings and credit

services by, for example, a coordination between banks and microfinance institutions while at the same time, allowing mobile users to benefit from a broader suite of financial services.

# 2. Methodology

Field research through Orange Money users' surveys is an important component in this project. For an optimal investigation of the listed issues, the field research combines three different areas in Mali: the urban area of Bamako, the Sahelian and emigration region of Kayes, and the agricultural region of Sikasso.

Bamako, besides being the country's administrative capital, is also at the heart of its economy, in the tertiary sector in particular (crafts and trade). It is better equipped with infrastructure and installations, and thus better served by banks, microfinance institutions and the mobile phone network. Observing mobile money use in Bamako is of interest for various reasons. First, given that financial exclusion is not just a rural phenomenon in Mali, our study sheds light on its urban dimension. Second, Bamako is the host city of the rural exodus. Money transfer to the rest of the country is a particular financial need that mobile banking is supposed to meet. Thus, a customer survey in Bamako allowed us to obtain information on the use of the service in both urban and rural areas. The second area is the region of Kayes in the west of the country, which has a Sahelian climate and is the main international emigration area. Remittances are this region's main source of income. The region of Sikasso in the south of the country is the final area. It is considered the country's granary, and is watered by several tributaries of the Niger River, which gives the region the most favourable agricultural conditions in the whole country. Cotton cultivation is particularly well developed, and the region accounts for two thirds of national production.

By a voluntary sampling procedure<sup>3</sup>, 300 users of Orange Money transfer and payment services were selected to respond to the questionnaire in the three cities<sup>4</sup>, in February-March 2015. The questionnaire was set up in three parts: the first section elicits data to create a clients' social, economic and financial profile (whether they use a formal bank account, what their informal financial network is like, and what their financial choices and constraints are). The second asks about mobile money usage and its interaction with other financial services

<sup>&</sup>lt;sup>3</sup> The pollsters were installed in front of targeted points of Orange Money service and they explained the purpose of the study to customers who just performed an operation. Those who agreed to participate in the study were selected to respond to the questionnaire.

<sup>&</sup>lt;sup>4</sup> 100 interviews were completed in each city.

(frequency and purpose of usage, service characteristics in terms of discretion, liquidity and social prestige in comparison to other services, etc.). The final section investigates mobile money use for savings purposes (primary and secondary use: precautionary, consumption or investment, etc.).

Preliminary results of the survey are detailed below.

## **3.** Findings from the fieldwork

The mobile money market is expanding in Mali, the country occupying the 2nd rank in the zone in terms of transactions value, that is to say 20% out of 3760 billion CFA francs. It is the first country in terms of P2P transfers, realizing 47.48% of the value of operations in this category (BCEAO, 2015).

Because of the newness of the market, users' social and economic data are limited; however they are necessary to direct strategies of financial inclusion through mobile finance. One of the objectives of this research is to partly fill this gap. As things stand, the description of the collected data gives interesting information on the profiles of the respondents (Table 1).

## a) Social, economic and financial profile of the users

The majority of the sample is made up of men (78%). This figure is similar to those observed in studies on the use of bank and microfinance services (Sangaré, 2013). Factors such as low level of education, irregular and informal incomes, lack of legal documents of identity, as well as time and mobility constraints (WWB, 2015) are often advanced to explain the weak usage of mobile services by women. In the case of Mali, it appears that time and mobility constraints are fully in play. Indeed, we had some informal discussions with several women who confided that they are using mobile money services more often than what is apparent, by sending a trusted person for the errand<sup>5</sup>. This person is generally a young man. These "over the counter" (OTC) operations are frequent even for women who own a mobile money account, for which the explanations advanced for sending someone to make the transaction were mobility and time constraints. In addition, a limited "technological affinity" could also explain this practice and, consequently, the weak use of mobile financial services by women.

<sup>&</sup>lt;sup>5</sup> We met about 30 women at the monthly meeting of their ROSCA (Rotative Saving and Credit Association) in Bamako. As we observed during the field study that women often used mobile transfer for payment of their contribution when they cannot be present at the meeting, our goal was to learn more about how they manage their mobility constraint.

Variables	Number/gender		Percent	mean	Standard dev.	Nb/obs.
	men	women				
GENDER						
men	230		77.7			230
women		66	22.3			66
						296
AGE	33*	27.6*		31.8	11.4	295
EDUCATION						
never at school	80	12	31.08			92
primary level	49	8	19.26			57
secondary level	56	25	27.36			81
graduate	45	21	22.3			66
						296
MARITAL STATUS						
single	78	27	35.59			105
married	150	36	63.05			186
other	1	3	1.36			4
						295
PROFESSION						
farming	3	0	1.01			3
crafts	7	1	2.7			8
Wholesale /retail trade	87	30	39.52			117
Self employed	30	2	10.81			32
salaried	32	7	13.18			39
students	16	15	10.47			31
other	51	3	18.24			54
unemployed	4	8	4.05			12
						296
INCOME/month (CFA francs)						
0-30 000	36	39	25.43			74
30-60000	57	13	24.05			70
60-100 000	71	6	26.46			77
100-150 000	43	3	15.81			46
> 150 000	20	3	7.90			23
						296

# Table 1: Descriptive statistics

\* Mean of age.

The impact of education level must be qualified in the case of our sample. At first sight (Table 1), the distribution of the sample by the level of education follows a kind of "U" curve. The "never been at school" users are most numerous (31%), those with a primary school level

account for 19%, and the secondary school level goes up to 27%. We tried to clarify this effect by a test of dependence (Pearson's chi2) between the level of education and the period of use of the services (Table 2). The rejection of the independence hypothesis (Table 2) implies a probable correlation between the two variables, which means that the more the respondents have a high level of education, the more they are likely to be long duration users of mobile services. The effect of education appears even more obvious for women, as 71% of them have at least a secondary school level (table 1), compared with 43% for men.

With regard to the users' age, the average is low (31 years and 27 for women); nevertheless the age distribution extends from 17 to 70 years, showing use spread across multiple generations.

Concerning professional profiles, tradesmen account for 40% of the sample, most of which are retailers that use the mobile wallet for their commercial activities. The use of the mobile wallet by tradesmen influences their financial habits, as they can now reduce their use of cash for the benefit of mobile money transfer in purchasing and the sale of goods. They are also more likely to keep money in their mobile account for a long time.

The monthly incomes of the respondents are weak, about 49.4% earning less than 60,000 CFA francs monthly  $(102 \text{ USD})^6$  and 76% less than 100,000 CFA francs (170 USD).

## b) Relation between mobile services and the access to other financial services

If one takes a look at the financial profile of the respondents, we can observe that 40% hold a bank account (table 2); this figure is largely above the level of bank access in the total population. It attests to the users' financial dynamism in spite of the weakness of their incomes. Moreover, it appears that this rate is increasing with the utilization period: from 10% for the 6 months-or-less users to 30% for the 6-12 months and 45% for the 12 months-and-more users. Indeed, the Pearson dependence test retains the dependence assumption between the utilization period of mobile account and the holding of a bank account. We can suppose here the occurrence of a "banking education" effect that could easily drag people accustomed to banking relationships towards mobile financial services. But the inverse relation does not seem to apply, as none of the bank customers have stressed that they got a bank account because of the use of the mobile account.

<sup>&</sup>lt;sup>6</sup> The average income is very low in Mali, around 55 USD for 2013 (World Bank, 2015).

Furthermore, the gender dimension of bank access is significant here: 73% of women in the study do not have a bank account compared to 56% of men (figure 1), despite the higher education level of women.

Duration of											
use	Gender			Education					Bank account		
	men	women	Total	never	primary	secondary	graduate	Total	yes	no	Total
<= 6 months	84%	16%	19	32%	26%	32%	11%	19	11%	89%	19
6-12 months	70%	30%	43	12%	9%	46%	33%	43	30%	70%	43
>12 months	79%	21%	234	35%	20%	24%	21%	234	44%	56%	234
Total	78%	22%	296	31%	19%	28%	22%	296	40%	60%	296
Pearson ch2	2,144			19,534					10,481		
Pr	0.342			0,003					0,005		

	Table 2:	Duration	of use,	gender,	education	level a	and ban	k account	holding.
--	----------	----------	---------	---------	-----------	---------	---------	-----------	----------



One other noticeable fact from respondents' financial profile is their use of informal saving groups: 32% of the sample respondents are members of groups like ROSCAs or savings associations (figure 2). This figure is quite high<sup>7</sup>, especially as women who are culturally more accustomed to take part in these clubs (67% of them are members here), are less represented in the sample (22% of the sample).

Figure 2: Informal financial groups membership

<sup>&</sup>lt;sup>7</sup> But this figure is close for example to those of the Global Findex data, according to which between 24 and 40% of adults in Sub-Saharan Africa reported saving semi-formally by using informal savings clubs in 2014 (Demirgüç-Kunt and al. 2015).



Mobile financial services offerings are presently focused on P2P transfer. Users who were interviewed were questioned regarding their access to other means of transfer. In the sample, 88% asserts having access to other services of transfer, from bank counters to paying and nonpaying informal networks (road hauler, hand-to-hand, etc.). However, only 30% asserts using these other means; hence the data show a nuanced difference between access to a service and its suitability for addressing needs leading to its effective use.

## c) Characteristics of the services and utilizations

As mentioned above, the characteristics of mobile services play an important role in their integration in the financial practices of the targeted populations. In this case study, four dimensions are notable in users' appreciation of the services (figure 3): accessibility (quoted by 75% of the sample), ease of use (58%), safety (47%) and affordability (26%). Concerning their inconveniences (figure 4), the principal point raised is the cost of the services, which are too high for 29% of the users.

It is important to keep in mind that only withdrawals of money (including withdrawals of received money transfers) are charged, while deposits and sending transfers are free. Pricing is made on the basis of withdrawal brackets, the first bracket from 1,000 to 10,000 CFA francs (1.52 USD-15.2 USD) being charged 350 CFA francs (0.53 USD), which corresponds to a commission between 35% and 4%. The last pricing bracket (from 1,400,005 to 1,500,000 CFA francs<sup>8</sup>, or 2,134.29-2,286.74 USD) is charged 39,600 CFA Franc (60.37 USD), approximately 3% of commission. Since the end of 2015, a new pricing bracket has been added by the operator, which costs 200 F (0.30 USD) for withdrawals between 500 F (0.76 USD) and 5,000 F (7.6 USD), or between 40% and 4% of commissions. This so-called "fall in prices" may be understood as the current response of the operator to clients' frequent claims about the high costs of the service. As the market is non-competitive, operators set the prices.

<sup>&</sup>lt;sup>8</sup> Currently, regulations limit the amount of mobile transfers to 1,500,000 CFA francs.

The government's present actions place less emphasis on these more practical aspects of the service like price levels. More emphasis is placed instead on its regulatory oversight and role in ensuring the protection of consumers' data.



Mobile services more and more are having an impact on financial practices in countries with low banking penetration. Mobile money offerings are also changing, particularly in the most mature markets. In Mali, services are still limited to transfer (P2P), deposit, withdrawal and payment. In the UEMOA zone, deposits and withdrawals on mobile wallets account for 79% of all operations in 2014 (BCEAO, 2015). But our data on the Malian market shows some specificity when compared to these regional data. Indeed, in our sample (figure 5), 93% of the respondents assert that they are primarily using transfer services (sending and receiving), while 51% use payment services (mainly for purchasing airtime credit). At the time of the interview, only 4% of the users had just made a deposit on their mobile account. The low deposit levels suggest that in Mali mobile money is kept in the mobile circuit for a longer period of time; transfers are therefore funded more often by mobile money rather than by new cash deposits. It is also a way to avoid payment of withdrawal cost every time. Based on these results, the importance of P2P transfers in Mali is clear, with Mali occupying first place in this category of transactions in the UEMOA zone.



Legend. S1/2: transfer services; S3: payment

(airtime); S4: payments (bills); S5: deposit; S6: withdrawal; S7: other

#### d) Mobile money and savings

Regional data from MNOs (BCEAO, 2015) show that 20.13% of the deposited funds are kept in the electronic wallets in the form of savings, and that 86% of the deposited funds are withdrawn in cash without making any transfer or payment transactions. Thus, despite the focus on payment and transfer services, the mobile accounts are also used to store money. The mobile wallet allows users to keep aside a surplus of money to deal with unexpected expenses or payments in a context of higher income uncertainty and volatility. Easy access to mobile money seems to be the main explanation for this attitude, because it is difficult to find an informal savings means that combines security with the much-desired liquidity. For this reason, users are willing to pay for these qualities (security and liquidity), while saving money when keeping it in the system since as already noted withdrawals from the mobile account are subject to charges.

In the case of Mali, the use of the mobile wallet for money storage is confirmed in our sample by several facts:

- The positive balance of the users' mobile wallets: more than half of the users (57%) has a positive balance, with an average balance of 17,500 CFA francs (30 USD), even though most respondents had just transacted at the time they were interviewed. In terms of transfer profiles (figure 6), 49% of the shippers have a positive balance after sending money, and 57% of the addressees after the withdrawal of a transfer.
- The voluntary use of the wallets for saving: 67% of the sample declares using the electronic wallet to save (including 46% for short-term<sup>9</sup> saving and 21% for longer terms) (figure 7). If we consider this result in parallel with the prevalence of transfer

<sup>&</sup>lt;sup>9</sup> Short-term is considered here to be less or equal to 1 month.

operations, one can conclude that a part of the received funds remains in the circuit and will serve as a form of precautionary savings.



Figure 7: Savings with mobile account.



3) *The estimated evolution of savings with the use of a mobile account:* 39% of the surveyed population affirms noting a rise in their savings due to the use of a mobile account, even if 60% did not consider their savings to have changed (figure 8).

Figure 8: Changes in savings practices with mobile account



Thus, one can notice that the characteristics of mobile services such as accessibility, ease of use and affordability lead to mobile wallet use as an effective means for "hiding" a small surplus today in order to face the unforeseen tomorrow. Moreover, the circuit of transfers also

sustains mobile saving. As withdrawing from the mobile account is very easy and accessible almost all the time, users seem willing to pay for features that are flexible in facing emergencies but also enable a certain discipline of saving. The recent evolution of Orange Money services towards international transfer not only between the monetary zone countries but also with western countries of immigration (Scharwatt and Williamson, 2015) could have an important effect in the feeding and development of mobile savings.

But for now, MNOs are not allowed to offer savings products per se, much less ones that would allow for future investment and possibly remuneration. Only banks are able to offer savings services. Unless the mobile phone succeeds in creating a more sustainable relationship between its users and banks, its effect will be minimal in generating full client access to adequate savings services. For this reason, current discussions among regulators, banks and the MNOs regarding the organization of the market are of central importance to the future of mobile money in Mali.

## Conclusions

Mobile services are on track to achieve greater integration in the financial habits of the population in Mali, while meeting a real need for P2P transfer services. For this reason, mobile banking is playing an important role in financial inclusion. In addition, our study shows that mobile is used not only to partly fill a need for savings, but that transfer services are feeding practices of strategic saving. Concerning the expansion of bank access, the current cooperation between MNOs and banks is limited to the required guarantee of electronic money by the central bank. As such, the use of a mobile account has so far not improved access to banks for new populations in Mali.

But, as this evolution of mobile money expands in more mature markets, the first recommendation of this study is for MNOs and banks to pursue more synergistic operating models that facilitate information and experience sharing in order to develop a wider range of bank services that can be extended to mobile money users. International transfers and their potential for feeding savings is a compelling reason for banks to work with this digital market. Other financial actors, particularly microfinance institutions, which are currently poorly represented in the mobile finance sector, should also be included in these operating models. Microfinance has played an important role in the increase of financial and bank access, especially through leading in saving services offers in the UEMOA zone; their experience and culture of proximity can have a leveraging effect in the mobile finance sector.

The second recommendation is related to the regulation aspect. Regional regulation has been until now encouraging concerning electronic money. However the sector is expanding quickly. For this reason regulation must also evolve quickly on some crucial issues such as the protection of users, guidelines for the use of personal data in the context of digital data sharing between banks and MNO, and the possibility for banks to access mobile data with the aim of increasing bank accessibility for low-income users. This could allow greater access to savings and credit options for a portion of current mobile money customers.

The last recommendation concerns market structure and regulation. The price of mobile services remains high for customers even if they are potentially lower than those charged by traditional money transfer operators. Generally an increase in the level of competition in this market always results in a notable fall of prices. A more competitive mobile services market would benefit African populations by reducing the cost of international money transfers, which represent an important share of their income. A small market like the Malian one (17 millions inhabitants) would benefit from a competitive market at the regional level, and from interoperability between the two MNOs currently present on the market. Indeed, it is currently not possible for users to send money through one mobile network and recipients to withdraw it through the other. Thus, the majority of mobile money users own two sim cards because they don't want to be penalized by this lack of communication between the two networks. But by doing so, they bear increased costs for using mobile phones. Other financial operators could be allowed to offer transfer and other financial services through mobile networks. Regulators should encourage a higher level of competition that can lower costs in the interest of financial inclusion. Lastly, better connection to Internet networks, which are still limited in Africa, will certainly bring change not only in mobile service offerings, but also in price structures for these services.

Some important aspects relevant to the findings above, such as the comparison between rural and urban areas could not be addressed in this study due to a difficult political context at the time of field research that prevented planned research in the rural areas (noted above). Nonetheless, forthcoming articles will detail further results from our research, in particular findings about the relation between mobile account use and other circuits of savings, and the use of mobile transfers in the funding of income generating activities.

# References

BCEAO, (2015), Situation des services financiers via la téléphonie mobile dans l'UEMOA, BCEAO ; 24 pp.

CGAP, (2015), Doing Digital Finance Right: The case for stronger mitigation of customer Risks, Focus Note n° 103; 40 pp.

Collins D., Morduch J., Rutherford S., Ruthven O. (2009), « Portfolios of the Poor: how the world's poor live on \$2 a day », *Princeton University Press*, Princeton, New Jersey; 281 pp.

Cook T., McKay C., (2015), *How M-Shwari works: The story so far*, CGAP, Access to Finance Forum Report n°10; 24 pp.

Demirgüç-Kunt A., Klapper L., Singer D., Van Oudheusden P., (2015), *The Global Findex Database 2014: Measuring Financial Inclusion around the World*, World Bank Policy Research Working Paper 7255; 97 pp.

Guérin I., Morvant S., Servet J.-M. (2011), Understanding the diversity and complexity of demand for microfinance services: lessons from informal finance, In Armendariz B. and Labie M. (eds) "Handbook of Microfinance», London/Singapore: World Scientific Publishing, pp. 101-122.

GSMA (2015), *State of the Industry: Mobile Financial services for the Unbanked*, 2014 Report, <u>http://www.gsma.com/</u>

Karlan D., Ratan A-L., Zinman J., (2014), *Savings by and for the poor: A research review and Agenda*, Review of Income and Wealth, Series 60, Number 1, March 2014; 43 pp.

Lonie S., Wagner I. (2012), *Transformational banking from transformational relationships: Case study of a bank and mobile network operator partnership*, Journal of Payments Strategy and Systems, Volume 6- Number 4.

Sangaré M. (2013), « La microfinance: quels liens entre les modèles de financement des institutions et la qualité des services offerts aux clients? », Ph.D in Economics, Université Toulouse Capitole ; 342 pp.

Scharwatt C., Williamson C., (2015), *Mobile money crosses borders: New remittances models in West Africa*, GESMA- MMU working paper; 25 pp.

Taylor E., (2015), Mobile money aesthetics: Text, display, and the cultural logics of concealment, www.charisma-network.net

WWB, (2015), *Digital Savings: The key to women's financial inclusion*?, Women's World Banking, 13 pp.