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IMTFI research project on Mobile banking in the context of cross-border transfers between Ivory Coast and Burkina Faso- Final report

Research project funded by IMTFI, UC-Irvine, CA, USA.

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1. Background and context

Mobile money has developed extensively from the end of the 2000s raising hopes in improving the financial inclusion (lower cost, security issues, etc.) among the most marginalized population segments especially in Sub-Saharan Africa where most countries have witnessed a rapid growth of mobile phone usage.

Since then, the strong growth of MM has been driven by domestic remittances flows in the context of rural to urban labor migration dynamics and the ‘send money home’ livelihood strategy (Heyer and Mas, 2010; Johnson, 2013). If the potential of scaling up lies in the domestic dynamics that drive urban to rural wealth flows, remittances in the context of international or sub-regional labor migration contexts represent a highly under tapped market potential. Actually, according to Heyer and Mas (2010), 65% of the 23 millions African migrants are *regional* as opposed to trans-continental migration with West Africa hosting major sub-regional corridors (Isaacs 2008).

Ivory Coast is one of the countries with the largest long-standing diasporas from the neighboring countries especially the Burkinabè diaspora that amounts for almost 3 millions people. Remittances between the two countries are a major component of the flows between migrants and their family fellows in Burkina Faso (OIM, 2000¹). Most of the flows go from Ivory Coast to Burkina Faso but recent trends indicate the rising importance of remittances from Burkina Faso to Ivory Coast, driven by young Burkinabè born in Ivory Coast but studying in Burkina Faso (Neya, 2016).

This context seems conducive for the launch of mobile money services that would allow tapping these sub-regional remittances flows. Ivory Coast and Burkina Faso are among the few countries where such services have recently been implemented targeting one of the largest diaspora in Sub-Saharan Africa. The interoperability between MM companies in both countries has been implemented since 2014. The former allows populations living in Ivory Coast to perform international transfers to their home-country.

According to GSMA 2015 report, the recent launch of MM services to transfer money from Ivory Coast to Burkina Faso "was the first case of two operators from separate groups agreeing to interoperate their mobile money services to facilitate crossborder transfers" (GSMA, 2015: 4). Our study took advantage of the recent launch of this service to look at patterns of usage of MM for remittances.

The key findings of our study are:

¹ http://publications.iom.int/system/files/pdf/etude_sur_la_diaspora_burkinabe_fr.pdf

- There is a strong spatial diffusion of mobile banking retailers **in remote rural** areas in both countries : where the migrants live and where the migrants' families live in Burkina Faso.
- In terms of financial inclusion being digital or through formal banks, users of formal banks are not necessarily the users of MM. We observe a limited overlap of the two dynamics
- MM usage is not only rooted in international remittances but also in other kind of services needed in that specific area: cash-in and cash withdrawals.
- We show that MM allows to socially and spatially diversify the end-beneficiaries of international remittances
- Balancing mobile money with CFA Francs is still a central issue in rural areas
- Women seem to remain heavily excluded from Mobile money usage except women who use these services for their own business-trading activities
- Intermediation being through local agents to perform the transfer or informal intermediaries to perform the last mile are key in the delivery process of MM-CFA francs cross-border transfers.

1) Context and research method

a. Context

According to GSMA (2015), sub-Saharan Africa accounts for 52% of the total live mobile money services worldwide. The geographic diffusion of MM services exhibits a concentration in low-income countries where financial inclusion (banks and Microfinance Institutions) is low. According to GSMA, the growth of active agents was twice the growth in SSA as elsewhere.

In Ivory Coast, according to GSMA estimates, 6 million people over 23 million total population (between 12 and 13 million adults) hold a MM account with 2 million active users (GSMA 2015). The trend is very similar for Burkina Faso (more than 2 million account holders). In both countries inter-regional disparities may be strong however. Beyond geographic coverage, the diversification of services exhibits different patterns according to each region and country (paying school fees, account-to-account operations, receiving G2P, cross-border remittances, etc.). Interoperability to perform cross-border remittances is only available in a few countries. Because of the presence of a large Burkinabé diaspora in Ivory Coast rooted in a long-standing migration flow from Burkina Faso to Ivory Coast combined with a low financial inclusion (34% according to Findex) in the remote areas where those migrants mainly live, the context seems conducive to the expansion and up-take of mobile money services for cross-border remittances.

b. Research method

The study relies on a combination of tools to gather first hand data in both Ivory Coast and in Burkina Faso.

Since we are looking at patterns of usage of MM for sending money from rural settings towards Burkina Faso, it was instrumental to take into account the following factors when designing our data collection strategy:

- Look closely at the main characteristics of the provision of such services in both the sending and receiving countries. For instance:
 - o The spatial distribution of MM providers compared to other services,
 - o The characteristics of the providers and the main challenges they face.
- It was also instrumental to go beyond the sending conditions and take into account the receiving conditions.

The research team has followed several steps all along the data collection process.

The research team started by conducting a **spatial analysis/census** of the local providers of international transfer services in the two regions of the study (30 to 60 kilometres around the main urban centre). We then conducted a first survey with 150 migrants in five villages located in the southwest of Ivory Coast (Meagui is a very dynamic agricultural region composed of cocoa, rubber tree and coffee producers).

This survey allowed us to collect information about transfer practices by the migrants and to identify two main regions where they were sending their money. We then built the survey sample in Burkina Faso, using the information gathered during the interviews with the migrants in Ivory Coast.

We thus rely on four different data sets to draw our conclusions:

- 1) Spatial analysis in Ivory Coast and Burkina Faso: surveys and the geolocation of financial services providers. More than 200 mobile money providers were recorded and interviewed. This allowed us to obtain detailed information on the number of MM providers in each locality in the regions where the study was conducted. The quick survey questionnaire with the MM providers included the following items :

- Starting date of the MM activity
- Number of clients per day and the main services customers requested
- Main difficulties the providers face

- 2) The migrant survey sample in Ivory Coast includes 150 households including 384 transfers

Drawing from information gathered on remittances' destination we identified two regions in Burkina Faso where 54% of the transfers have been sent to by our respondents.

In Burkina Faso individual interviews were conducted with 100 transfer receivers in these two region. This allowed us to gather information on 255 transfers.

We completed our investigation with qualitative interviews with students in Ouagadougou, informal providers of MM in small villages, spouses of migrants who live in Burkina Faso and migrants who were visiting their family fellows in Burkina Faso.

Table 1 below provides a detailed description of the different data sets we have built.

Table 1. Sample of the different components of the study

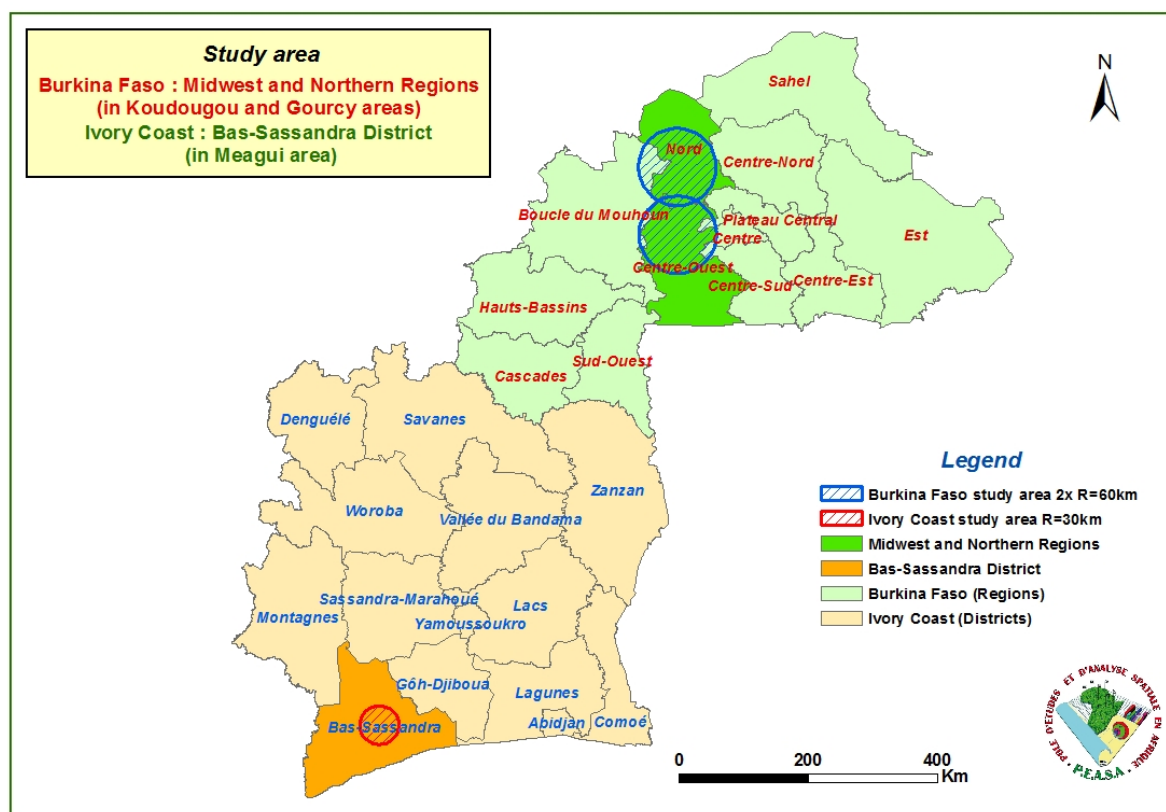
Number of observations	Spatial Analysis	Household Surveys	Journals of Transfers
Ivory Coast	> 200 observations	145 (valid)	384
Burkina Faso	> 200 observations	100	255

Methodological limitation

Our inability to match 100% of the initial sample induces strong methodological limitations for our study. It actually means that the sample of 30 households we could interview in Burkina Faso may be strongly biased towards close family members. This technical problem prevents us from matching the two samples and therefore limits our capacity to build strong evidence at the household level.

Another methodological limitation deals with the period covered by the journal of transfers. Due to intense transferring patterns, the team only recorded transfers performed over a three months period instead of one year. This induces some bias in the information. However we are able to cross-check the usage of specific remittance services by a specific household with the journal of transfers.

Map 1. Regions where the study was conducted



Source: Open StreetMap

PEA SA Sàrl (September 2016)

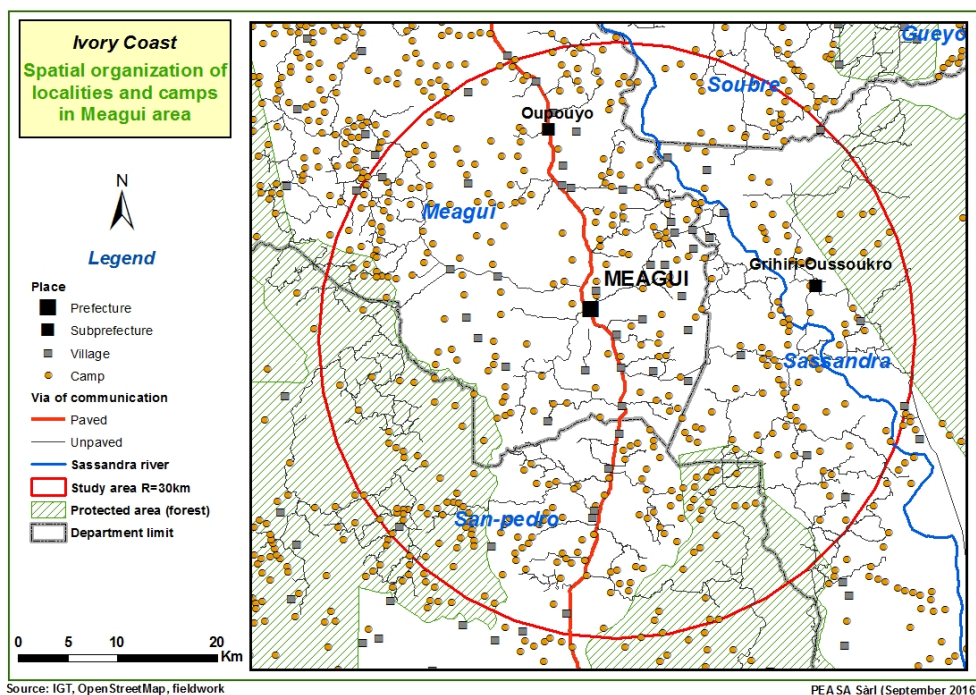
2. Main findings of our study

A) Socio-economic context in Ivory Coast

In Ivory Coast, Meagui region where the research was conducted is an agricultural region with main cash crops such as cocoa, coffee, rubber tree, palm oil. Indeed, the region contributes to 34% of the national production of Cocoa, which represents 10% of the Ivorian GDP, 40% of the export earnings and occupies more than 600'000 small-holder farmers (Tano 2012). This economic development makes this region one of the most prosperous in the country, where the poverty prevalence rate is the lowest (37% compared to 46% for the national average) and a starting point for many national and international financial flows. Mainly directed to other countries in the sub-region (mainly Burkina Faso and Mali to a lesser extent).

The local agricultural dynamism relies on national labor coming from the central and eastern regions as well as labor force coming from neighboring countries (Burkina Faso and Mali). These waves of internal (Baoulé) and above all international (Burkinabè and Malian) migrants have been the major contributors to the exponential population growth that characterized this area over the period 1980- 2010 (Kouadio Yao 2015). In 2014, according to the last census available (INS-CI 2014), foreigners represent 43% of the 132'294 inhabitants of the department of Meagui, plus 37.5% of internal migrants. These newcomers attracted by the agricultural potentialities of the region and the possibilities of access to new arable land have strongly influenced the dynamics of settlement of the region marked by a strong spatial dissemination and the atomicity of the locations illustrated by the following map 2. Note that Meagui is a small town of around 50'000 inhabitants.

Map 2. Spatial organization of localities and migrants camps in Meagui area



B) The supply perspective

When looking at the supply side, we highlight a clear (impressive) increase of the number of MM suppliers between 2012 and 2014 and an improvement in MM coverage including the most remote localities in **both countries**. MM reaches not only the sub-regional economic centers but also more remote localities and even migrant camps in Ivory Coast. The map below illustrates the strong presence of all services in the main urban center Meagui while small and remote localities are only reached by MM services. It is however important to underline that many local MM retailers have very low number of clients. For instance in Burkina Faso, among the 2.1 millions users, only 25% (500 000) are active users and the number of users per agent is around 33 across the country (Airtel dataset 2015).

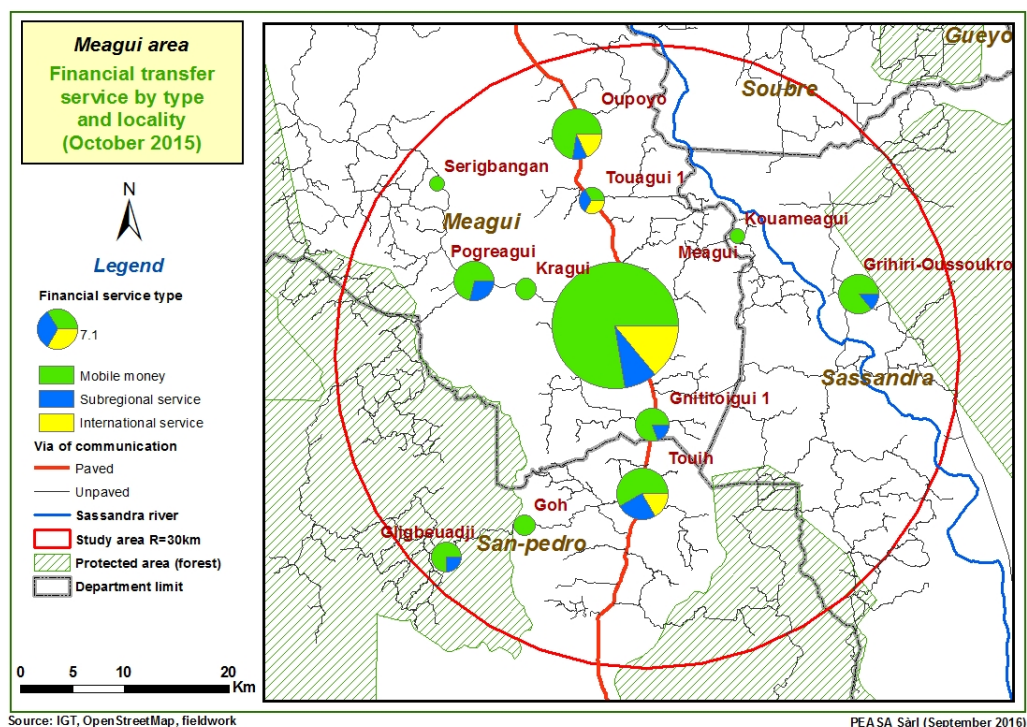
1) Ivory Coast

In Ivory Coast, MM reaches not only the sub-regional economic centers but also more remote localities and even migrant camps.

In this region different categories of providers offer remittance services such as: International operators (Western Union, Money Gram); Local operators (QuickCash and W@ri-Senegal) and Mobile Money operators (Orange Money; MTN Money; Flooz).

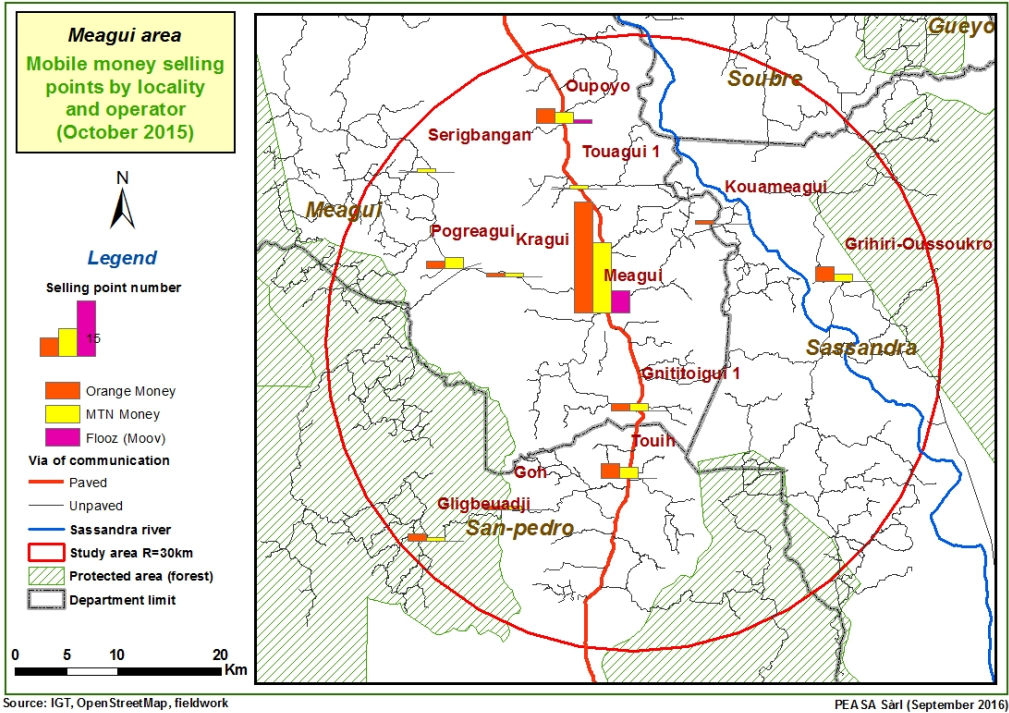
The figure below illustrates the strong presence of all services in the main urban center Meagui while small and remote localities are only reached by MM services. Last but not least banks and postal services do offer remittance services while informal remittance services go between friends and the social network to transport companies between Ivory Coast and Burkina Faso.

Map 3. Spatial distribution of different providers of international remittance services



MTN and Orange compose the bulk of the supply (80% of the total remittance selling points), either provided separately (88% of the selling points) or jointly (12%).

Map 4. Spatial distribution of different providers of Mobile Banking services

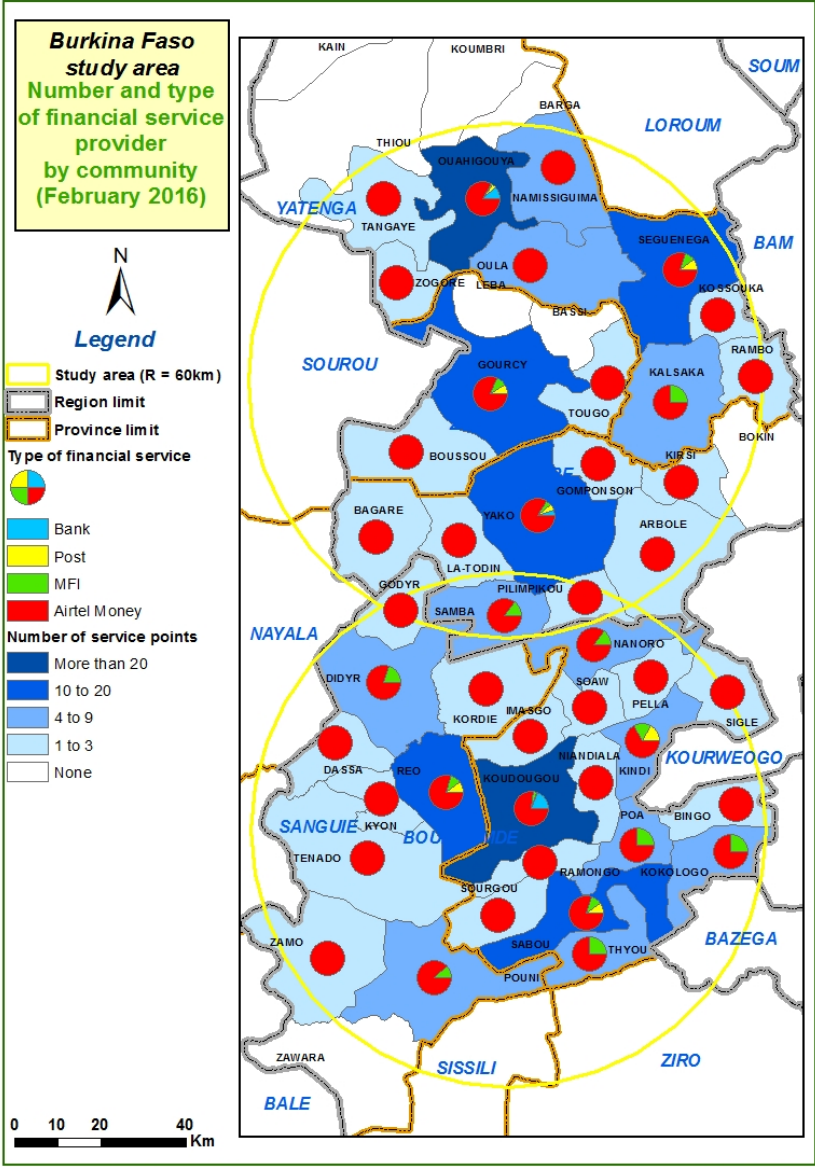


In spite of the limited extent of the study area, the distances travelled are important therefore the risks are relatively high for depositing cash. If the mobile money proves to be the solution of proximity, it is not always the preferred solution of the clients which therefore often commute to Méagui to send remittances. Out of the sample surveyed in the five locations offering transfer services, Mobile Money is used to perform 25 to 50% transfers except for in Gnititoigui. For the latter, the explanation could be the proximity of Méagui or Touih with international services and an asphalt road linking them. The case of Grihiri-Oussoukro, on the other hand, is characterized by the use of informal forms of transfers in about one third of cases, a situation probably due to the isolation of the locality from Méagui (cut off by the Sassandra river) and the bad travelling conditions. Sub-regional services (20 to 50% of transfers) also seem to be highly valued in Pogréagui. International services cover between one third and two thirds of transfers in the localities along the Soubré-San Pédro asphalt axis, probably performed in Méagui or Oupoyo where these services are available.

Map 5 below provides a representation of circuits of money in the region when looking at MTN MM network:

- end-user to local MM agent then local
- agent to MM dealer in a more important "urban center"
- and then the MM dealer to the bank (Eco-Bank).

Map 6. Remittances services across localities in Burkina Faso



Our results highlight that:

1. MM is supplied by a great variety of local agents : very small to more formal agency
2. Challenges faced by MM suppliers in Ivory Coast and in Burkina Faso are different when dealing with international transfers:
 - o In Ivory Coast MM suppliers are over-liquid (cash-in), bringing cash to the closer bank is risky (this is done thanks to the support of the dealer)
 - o In Burkina Faso, MM suppliers face cash-shortages : they need to cash-out the transfers so they often combine this activity with other business that allows them to get cash

C) The demand side perspective

The analysis of the survey and the journal of transfers allow us to formulate some observations with regards to :

- The characteristics of the migrants' family living conditions that seem conducive for the MM up-take for remittances. Such as:
 - o Family composition and bi-national families meaning that part of the nuclear family lives in Burkina faso
 - o The former translates into the central role played by money transfers to support family fellows in Burkina Faso and maintain strong ties with the home country
 - o MM account holders represent
- The characteristics of financial needs and remittances patterns: since 80% of our sample relies on agricultural income implying strong income seasonality (2/3 of the sample gets cash 3 or 4 times a year only). The former translates into specific needs in terms of financial services: securing important amounts of cash once or twice a year and has strong incidence on remittances patterns (seasonal)

Our results show that :

1. Migrants living patterns are transnational

As pointed out by De Haas (2007) internal and international migration flows within the African subcontinent should be acknowledged as a livelihood strategy not aimed at increasing welfare but instead at securing it through income diversification.

Moreover, it has also been widely acknowledged in the literature that international migration doesn't translate into a population decline in the village where the migrants come from. On the contrary, De Haas (2007) acknowledges the crucial role played by international migration and remittances in the livelihood strategy (at least reproduction) of migrants' family members this is also the central argument of Ferguson (2015).

Besides a long-standing migration flow, old migrants born in Burkina Faso and young ones born in Ivory Coast exhibit quite similar family patterns: several members of the nuclear family live in Burkina Faso.

Table 1. Sociodemographic characteristics of the sample in Ivory Coast

Mean or % for dummies	Total
Age	48.16
Type of family	
Monogam	45.81
Polygam	48.39
Other	5.81
Ethnicity	
Moore	78.71
Lyele	14.84
Other	6.45
Education	
None	51.61
Basic	38.06
High school	10.32
Muslim	72.26
Farmer	79.35
Number of members of the nuclear family in Burkina Faso	
Ivory Coast	9.83

Burkina Faso	3
Number of young people (<15 years) in the nuclear family	
Ivory Coast	2.29
Burkina Faso	0.97
Total	3.26
Observations	155

The transnational composition of migrants' families is strong in our sample:

- a. Most migrants (even the youngest ones) maintain very strong ties with Burkina Faso. Our data show that:
 - i. 70% of the households exhibit a **transnational living pattern**: meaning that some members of the nuclear family (spouse, children) live in Burkina Faso.
 - ii. Maintaining strong ties with Burkina Faso is supported by: sending money home, phone calls, sending goods, receiving goods, visiting family members in Burkina Faso for specific occasions (funerals, weddings, etc.). Moreover, some migrants send their children to University in Burkina Faso after they completed high school.
 - iii. More than 90% of the households we interviewed in Ivory Coast **send money** to family fellows in Burkina Faso.
- b. In Burkina Faso dependency towards remittances is strong: 95% of the interviewed households in Burkina Faso, receive remittances from Ivory Coast.

2. Financial inclusion and remittances

In Ivory Coast, bank account holding is quite high in the sample (30%) compare to other rural areas. This is due to the fact that cocoa producers receive their income through the cooperative on a bank account. Almost half of the sample (43%) own a mobile money account while very few (4%) have access to a microfinance institution. It is worth underlying that the overlap between bank account holders and Mobile money account holders is small. Not surprisingly, Mobile money account holders exhibit the following socioeconomic profile: they are younger, with more regular but lower incomes.

Unlike other contexts where mobile money uptake is mostly driven by urban to rural transfers (sending money home) cash in and cash out operations Usage of MM by the members of the diaspora we interviewed:

- To make deposits:
 - o Medium term deposits: to secure the cash coming from the sale of Cacao production
 - o Short term deposits: when travelling and then withdrawal upon arrival at destination. For instance, car-drivers used to carrying money for the migrants (informal delivery channels) now use MM to secure the money while travelling: cash-in in IC and cash-out in BF.

- National transfers (42%) so as to send cash to members of the household in other plantation areas in Ivory Coast and / or to agricultural inputs suppliers
- International transfer (28% or our sample) Sending money to communities of origin. However this low usage for international remittances may be partially explained by the recent inception of this service.
- Purchase of telephone units = Payment via MM of telephone units

With regards to the journal of transfers, 35 % of the recorded transfers are channelled via Mobile phone. Some migrants (37%) do send money through mobile phone even if they do not hold a MM account. This echoes Maurer 2015 when he argues that ownership and usage of MM should be distinguished.

Who is the final recipient?

If we compare the characteristics of the transfers performed via MM with other services, we show that the amounts sent are significantly lower. Also, what is interesting is that members of the nuclear family do not account for the majority of recipients and transfers via MM target a more extended social network: extended family, friends and business relations than transfers performed via other services (table 2).

This result is quite surprising since we highlighted above that part of the nuclear family (migrant's dependents) live in Burkina Faso. The variety of recipients seems to indicate a pattern of extended solidarity rather than just the nuclear family.

Very often the recipient is the brother (50% of transfers) or any other masculine figure or young adults (students), only a few women do receive directly remittances.

Table 2. Mean comparison between transfers via MM and other channels

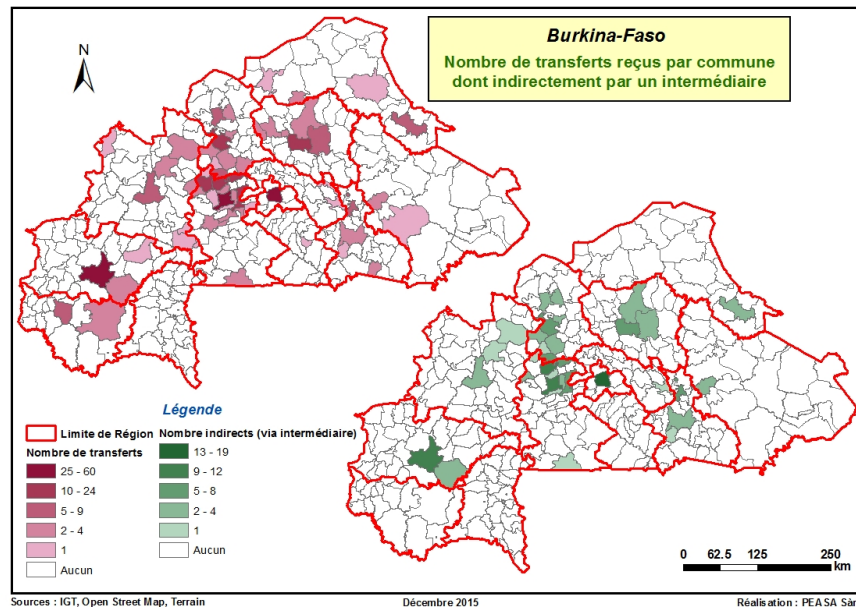
Mean or % for dummies	Transfers via MM	Other transfers
Amount	98917.39	142803**
Sender: young household member	8.70	7.43°
Direct transfer	66.09	60.59°
Final recipient		
Household	35.65	44.24°
Extended family	53.91	50.19°
Friends/ social network	5.22	2.97°
Business relations	5.22	1.86*
Other	0	0.74°
Observations	115	269

** When the difference is statistically different, ° otherwise

Is the transfer direct or indirect?

Part of the transfers reaching Burkina Faso are then redistributed (38% of the transfers target several people within the family): are channeled by professionals (MM local providers or informal channel) or extended family members (see Map 3 below, built with the data of the households survey results).

Map 3. Number of transfers received in Burkina Faso across localities (red) and indirectly (green)



The last mile: balancing “monies”: Converting remittance surpluses into goods

As far as the uptake of mobile money for remittances is concerned we argue that the spatial spread of mobile money retailers in remote areas of both countries allows to overcome the migrants and remittances' recipients lack of knowledge of the mobile phone technology. We also highlight that social intermediation remains key in overcoming challenges related to performing the withdrawal of international remittances from the mobile money account both from the MM providers and from the users.

Local retailers play a key role in sending and receiving Mobil money remittances

When looking at the supply side, we highlight an impressive increase in the number of MM suppliers between 2012 and 2014 and an improvement in MM coverage including the most remote localities in both countries. MM suppliers cover not only the sub-regional economic centers but also more remote localities and even the migrant camps found in Ivory Coast. The spatial diffusion allows to convert cash to MM so as to perform mobile money transfers. Actually, in Ivory Coast, 50% of mobile money transfers are performed by relegating this task to the local MM agents/ retailers. Thus, while mobile banking is supposed to enhance peer to peer banking relationships using the new technology, local MM retailers still play a key role in performing MM transactions. In Ivory Coast where the migrants live, the presence of local retailers allows the head of the family to use this new technology without relegating it to younger more educated family members. This allow them to maintain control over such financial decisions. In Burkina Faso, the crucial step deals with, who and where to cash out remittances.

Accessing cash and balancing monies, a key issue for MM providers

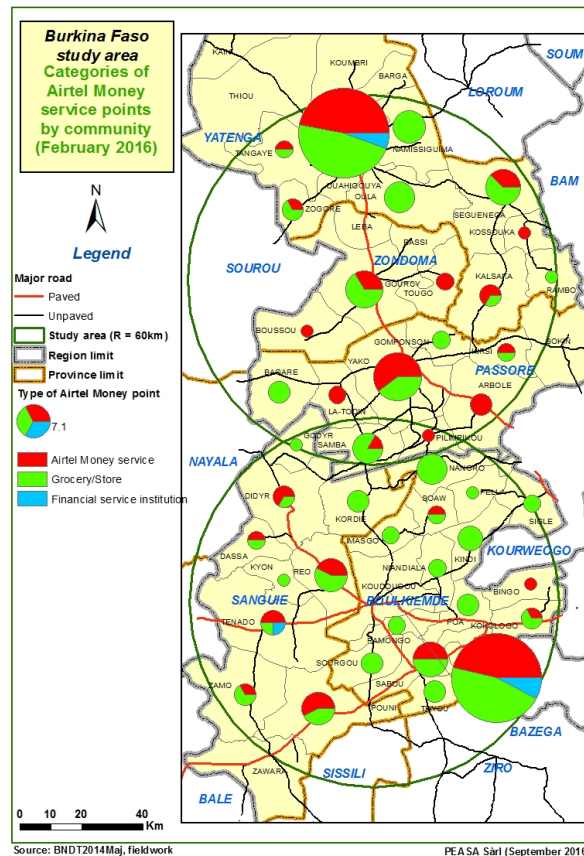
However, "sending money home" via mobile phones from Ivory Coast to Burkina Faso strongly implies *cashing in* and *cashing out* CFA Francs. Actually, deriving most part of their income from farming activities, migrants use the cash they get from the harvest to send money home. Meanwhile, remittances received in Burkina Faso rural settings are always converted to cash. In that context, most mobile money agents in Burkina Faso often end up short in CFA Francs while in the Ivory Coast the problem is where to deposit cash. The former translates into different constraints: in Ivory Coast, the problem of carrying cash for the local MM retailer is considerable while in Burkina Faso the issue is finding a way to regularly access cash. Far from a peer to peer transaction, the *last mile* (from the retailer to the bank and from the retailer to the end-user) is therefore very problematic for MM remittances and cash is a main constraint local MM retailers face in establishing reliability with their clients. Hence, when deciding how to send money "home" (either informally or through mobile or international services), Burkinabé migrants living in Ivory Coast do take into consideration the capacity of the local agent in Burkina *to cash out* the Mobile money remittances. This is critical for larger sums of money (above 1 million CFA Francs). Therefore, the issue of the *last mile* deals mostly with the ability to balance CFA Francs with Mobile money. In short, in Burkina Faso, local mobile money providers have to find a way of balancing the two monies to be able to provide remittance services to the local population. This



Our census in the regions where we conducted the research highlights that mobile money agents often combine Mobile banking services with commercial activities involving buying, selling, and trading goods. It is striking that in Ivory Coast only 12% of the MM providers are shopkeepers while this is the case for 50% of local MM providers in Burkina Faso.

The difference is explained by the fact that in Burkina Faso, the shop is used as a means to access cash that is then used to cash out MM remittances. In remote villages, MM services are exclusively provided by shopkeepers. MM transfers are also provided by local shopkeepers

who do not own a MM seller sim card and instead make use of their own sim-card to perform remittances withdrawals. The location of MM providers according to different selling point characteristics is illustrated by the figure below, built from our own census in Burkina Faso where the study was conducted.



Solving liquidity constraints while avoiding security issues: creating a non-official and local MM payment system

But accessing cash in remote areas also implies managing security. The problem is the following: a selling point in a remote setting faces difficulties supplying the necessary cash for large withdrawals because of a weak capacity to access large amounts of cash. To overcome this constraint, one strategy we found in this region is that the shopkeeper uses mobile money to buy goods in semi-urban settings, from a MM dealer who is also a shopkeeper. This enables him to reduce his mobile money by getting goods. He then sells these converting these items into cash, which is available for future mobile remittances.

Therefore in that context, the linkage with Cash remains an important challenge to strengthen MM services in rural areas. Buying goods with mobile money enable the MM selling point to balance the cash-in and cash out transactions. This problem is critical for international remittances that tend to involve large amounts of money compared to the local standard of living making it even more challenging to maintain a constant balance between mobile money and cash (cash scarcity).

The key role played by social intermediaries in channelling remittances

This may also explain why mobile money remittances are found to target semi-urban areas instead of directly reaching rural ones as well as the frequent use of *intermediaries*. Actually 50% of the transfers first go through intermediaries before reaching the end-beneficiary. Beyond local MM agents, intermediaries involve people from the extended family who are able to master the new technology and access cash (again) such as young students (female and male) in Ouagadougou. Usually these students come from Ivory Coast but left their family there to study in Burkina Faso where they play a central role in strengthening the ties between family members in Burkina Faso and the migrants in Ivory Coast. Cashing out remittances and delivering them is key to this process. Another central figure (masculine) is the uncle or the brother.

These intermediaries are also instrumental when the recipient lacks a MM account, which according to our interviews is unrelated to mastering the technology since “the local agent can help!”. Most transfers are performed at the MM selling point. This is illustrated by a young female student who formerly was in charge of carrying the money sent by her father to her grandma, but she says that now she has my own account!

Finally the cashing out constraint is illustrated by the percentage of remittances sent by mobile phone that reach semi-urban regions compared to the number of traditional sending services that do.

Conclusion

Mobile phone companies show a (very) strong interest in the development of a payment platform to enable the usage of Mobile money to perform payments and act as a payment device instead of being only a value transfer device (not only able to perform transfers but also to perform payments). In Burkina Faso, Mobile money is not yet a mean of payment because of the limited scope of the payment platform. However, some local usages by the shopkeepers allow its usage as a mean of payment.

We show that the situation in Ivory Coast and Burkina Faso is still mainly driven by cashing in and out CFA Francs instead of making direct use of MM. In that context our study shows that the diffusion of mobile money services (mainly used to perform national and international transfers) in rural settings is mostly shaped by the provider's ability to access to cash. Shopkeepers are therefore key in this process. This capacity of converting mobile money into CFA Francs contributes to limit the expansion of Mobile money usage in rural settings.

Finally, contrary to what is being argued in the literature use and ownership of mobile phones do not play a central role in mobile banking usage and up-take to perform remittances. The

lack of knowledge and lack of mastery is partially compensated by relegating the task to local retailers and/or social intermediaries.

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