Project “Spatial Complementarity of Mobile Financial Services, Business Correspondents and Banking Infrastructures: Accounting for Mobile Financial Services Ecosystems in India”

Activity Report - March 2015

I. Schedule

October 2013

- First field work (2 weeks) in Dharmapuri and Chennai (Tamil Nadu) to collect qualitative data on business correspondents and, more generally on microfinance and banking sector.

November 2013 – January 2013

- Review of literature.

February – April 2014

- Second field work (12 weeks) in Trichy and Chennai (Tamil Nadu) to collect quantitative data on business correspondents and qualitative data on microfinance and banking sector.

May – July 2014

- Transcription of taped interviews and analysis.

August 2014 – December 2014

- Data collection and treatment for the index of financial inclusion at national level.

- Analyze the collected qualitative data with quantitative data emerging from our local as well as our national analysis.

January 2015 – March 2015

Writing of the final report on a multidimensional understanding of spatial dimensions of mobile financial services ecosystems in India.

II. Preliminary findings

Drawing on economics and geography, our research project focused on the study of spatial dimensions of financial inclusion process in India. We explored this issue by considering two levels of analysis: the national level and the district level.

At the national level, we extracted data from the Reserve Bank of India and built an Index of Financial Inclusion (IFI) with the last updated data at our disposal (March 2013 which have been received only at the end of October 2014). From a cartographic analysis, we propose several hypotheses for future investigations.

At the district level, during our first fieldwork in Dharmapuri district (Tamil Nadu, India), we conducted interviews with lead bank managers for the Dharmapuri district, regional bank managers, field-level executives of banks, NGOs directors, business correspondents, clients, and local officials. Based on the discussions with these officials, we decided to focus our attention on Business Correspondents and to prepare a questionnaire. Our survey was conducted between February and April 2014 among 143 Business Correspondents in Trichy district. We present the preliminary results of this survey.

At the national level – building an index of financial inclusion

This section presents the preliminary results of a long-term study on the geo-economic analysis of financial inclusion process in India and, more specifically, the development of a new concept, the financial exclusion trap.

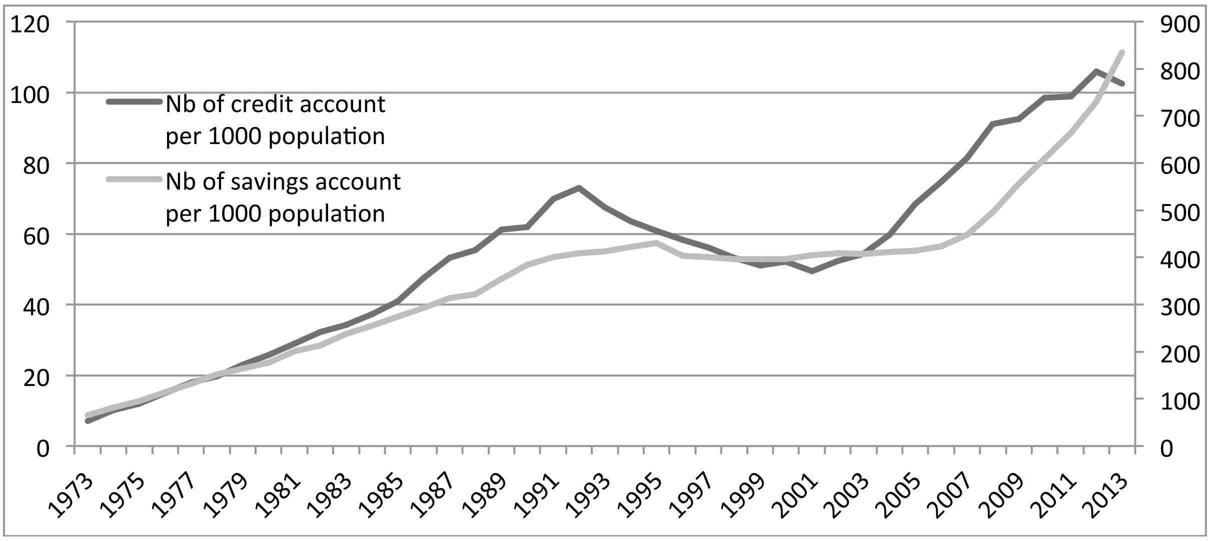
A considerable body of literature has been accumulated over the past years documenting and monitoring the development of financial inclusion (Fuller et Jonas, 2002; Kempson et al., 2004; Anderloni, 2007; Beck et al., 2007a, 2007b; Copestake, 2007; Howard et al., 2007; Hanohan, 2008; Jones, 2008; Allen et al., 2014; Anzoategui et al., 2014; Beck et al., 2015). Based on the macro as well as the household survey data, previous studies highlight the risk of increasing inequalities in financial services availability as well as access and use (Ardic et al., 2011; Sarma and Pais, 2011; Demirgüç-Kut et al., 2013)

However, the researchers feel that till date, the issues of spatial inequalities and the reasons therefore, has not been adequately addressed in the literature, despite the presence of public policy frameworks available for the entire nation/region to eradicate/reduce the growing financial inequalities.

Since 2004, India is experiencing a huge expansion in terms of households linked to regulated financial services (Graph 1). Apart from the aggregate numbers, very little is known about the spatial distribution and evolution of the financial inclusion process across India. We attempted to fill this void by applying the most recently released and available district data (March 2013) to empirically explore the spatial evolution and distribution of the development of financial inclusion process in India. Mapping analysis is an excellent tool to visualize the spatial distribution and evolution of financial exclusion trap in India, and with which to initiate debate.

The data sources and software used are as follows: boundaries files have been adapted from the FAO-Global Land Cover Network data (www.glcn.org) and geo-localisation of main cities from the Global Rural-Urban Mapping Project (GRUMP) (IFPRI, 2004). Socio-economic information at the district level in terms of the number of households, literacy rate, percentage of scheduled tribes, schedules caste, etc., come from the 2011 census of India (Census, 2013). Banking data in terms of the number of banking agencies, credit and savings accounts, etc., has been accessed from the Reserve Bank of India (RBI, 2014). Discretization (the division of a statistical series into classes), mapping and spatial analysis was performed with software ArcGis 9.2. Layouts of maps have been made under Inkscape, a free and open-source vector graphics editor.

Graph 1. Evolution of the process of financial inclusion in India, national level (1973-2013)



Sources: Calculated from RBI (various years)

In order to specify a level of financial inclusion all Indian districts, we based our work on the methodology developed by Sarma (2008) which identify three dimensions to the financial inclusion: i) access; ii) availability; and iii) use.

We calculated these dimensions as follows:

i) The banking access or banking penetration has been calculated by dividing the number of savings accounts by the total adult population;

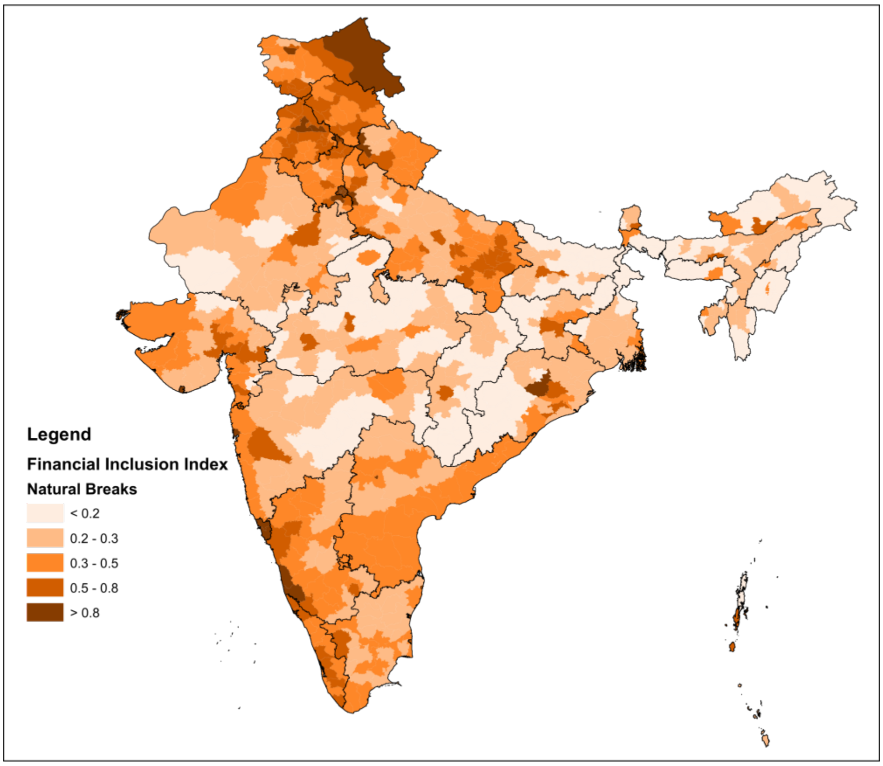
ii) The availability of the banking services calculated as the number of bank agencies divided by the total adult population;

iii) The use of the banking system is calculated by dividing the average amount of savings by the annual per capita consumption expenditure.

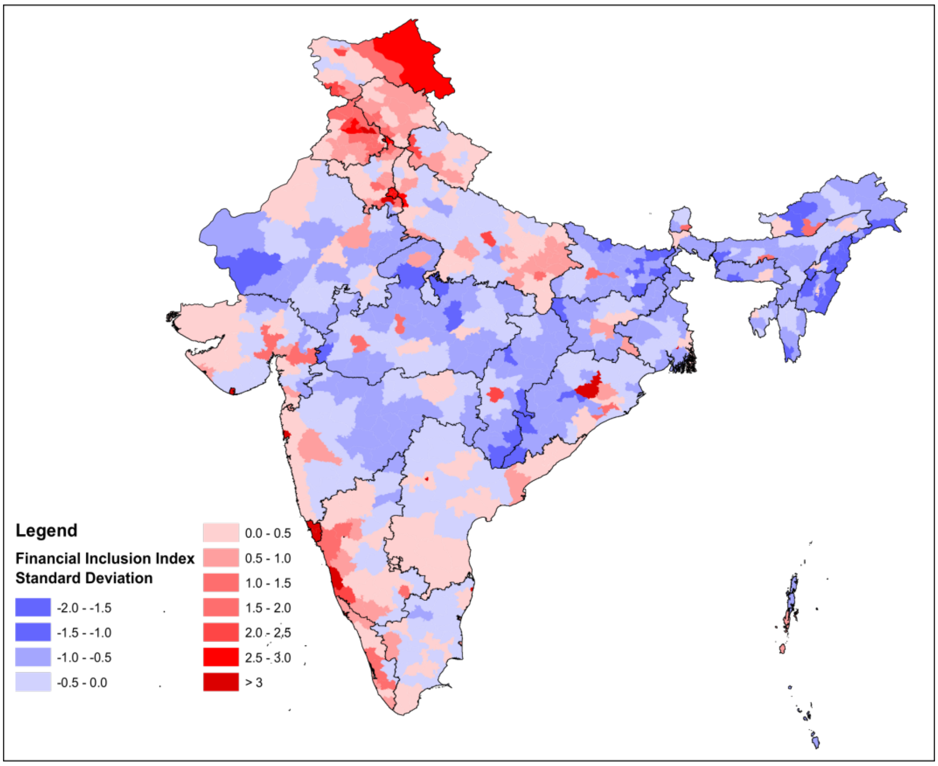
Then, we built an indicator to measure the level of financial inclusion for all Indian districts (662 units). This indicator is presented as a composite index without unity between 0 and 1. While this indicator is probably a better indicator of the level of financial inclusion as one dimension alone, however it is not free from weakness. It would probably take into account more qualitative criteria including, for example, information on temporality and quality of financial services but we do not have access to this data at the district level.

From our new database, we produced a cartographic representation of this index of financial inclusion using different methods of discretization (standard deviation and natural breaks) (Maps 1 and 2) and, the local indicators of spatial association to identify local autocorrelation and clusters (Moran, 1948; Anselin, 1995) (Map 3).

Map 1. Financial Inclusion Index, India, district level (2013) (method of natural breaks)



Map 2. Financial Inclusion Index, India, district level (2013) (method of standard deviation)



Financial inclusion is subject to considerable territorial inequalities. Cartographic representations and symbol maps permit us to visualize the extremely heterogeneous situations. For the data on India, it was confirmed that at the district level, financial inclusion is not distributed randomly throughout the country (spatial autocorrelation is strong).

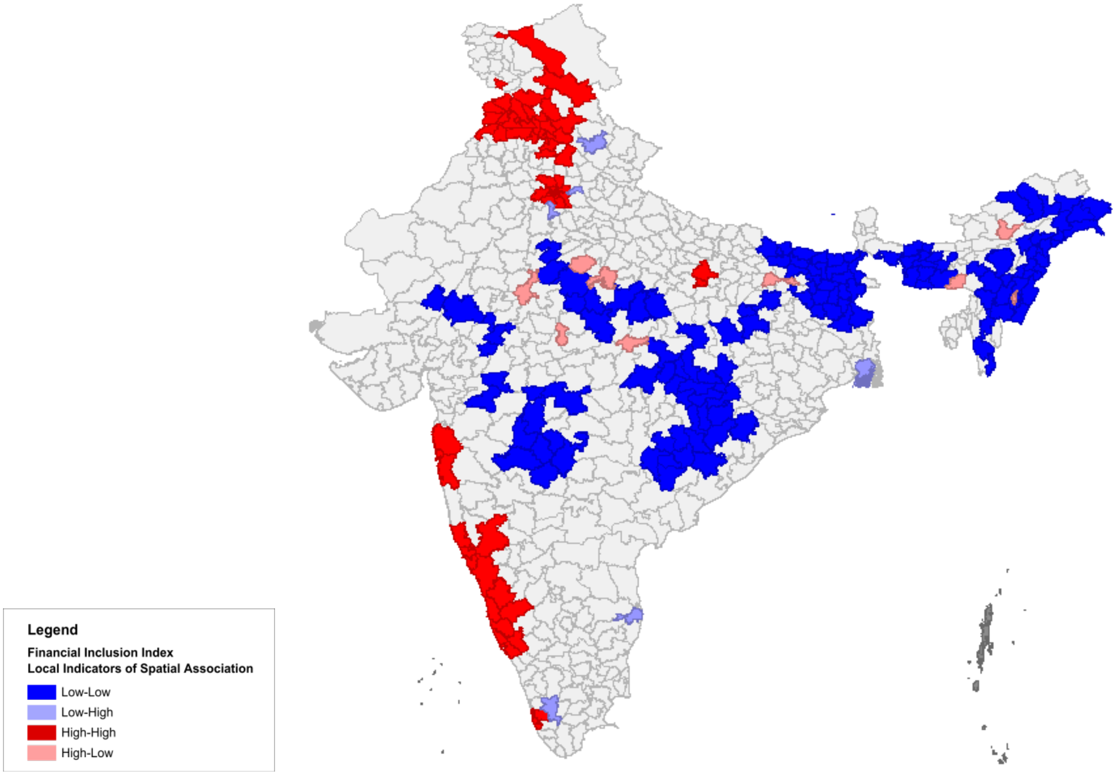
Qualitatively, we can use different levels of observation. Firstly, we can identify several clusters, which are associated with an index of financial inclusion above the national average. Our data pointed three important clusters: the first cluster around the region closer to Delhi, specifically covering the states of Himachal Pradesh, Punjab, Uttaranchal, Uttarakhand, Uttar Pradesh, and to some extent Jammu and Kashmir; the second cluster covering the corridor between Mumbai and Ahmedabad and the third cluster along the Arabian Sea from Goa to the extreme south of Kerala.

Secondly, contrasting with these clusters, we could identify two kinds of peripheral areas. Peripheral areas are the ones, which are associated with an index of financial inclusion below the national average. The first kind of peripheral areas are internal peripheries on a North-West/South-East axis, from Rajasthan (desert of Thar) to the South-West of Orissa. This axis expanding to the South until the North of Karnataka and, to the North, in direction of the East of the Gangetic plain, in Uttar Pradesh and Bihar. The second kind of peripheral areas are the external peripheries, which include conflict areas like in Chhattisgarh and more largely in what the press calls “the red belt” or “red corridor” (Shah, 2010). These external peripheries also include areas with a weak control of the State coupled with a strong independence or rebel movement like in the Northeast region in Assam, Nagaland, Manipur and Mizoram (primarily the seven sister region).

Beyond this first picture, it will be possible to concentrate our analysis on the influence of the green revolution bastions and the influence of some landowners like the caste of the Reddy or the Kamma Naidu in Andhra Pradesh. It will also be possible to concentrate our analysis on the role of the proximity and number of urban centers and industrial centers in the particular regions.

Previously, we underlined an axis in the Gangetic plain but this is valid if only we remove from our observation all the urban centers as Lucknow, Kanpur, Patna (note that we can apply for all India). It would be also possible to speak about the influence of the Mumbai-Pune corridor, which is now more, an Ahmedabad-Pune or even a Pune-Delhi corridor, which profits due to the presence of industrial regions and good infrastructure facilities along the region, which have been made possible due to huge investments in both these sectors. It would be also possible to speak about the influence of littoral and main rivers and, to assess the influence of remittances in the process of financial inclusion (for example, in some blocks of Kerala, more than 50% of the GDP is explained by remittances, 20% at the State level and 3.7% at the National level!).

Map 3. Local Indicator of Spatial Association applied to financial inclusion index, India, district (2013)



So, using the Local Indicators of Spatial Association (LISA) developed by Luc Anselin (1995), we can identify local autocorrelation and clusters (Map 3). Empirical analysis confirms, consolidates and reinforces our previous qualitative observation. We can clearly identify some pockets of financial exclusion (in blue) and some islands of financial services delivery (in red).

Primarily, based on the socio-economic profiling of the islands of financial services delivery, it is very clear that the western Karnataka and Konkan region is dominated by the banking services (as many as 4 of the 19 nationalized banks have their origin to this region) and also people from this region also work in senior management position in other banks. In addition, this region receives abundant rains during the monsoon season, which also helps in increased agricultural income in the region, which gets tapped by the financial system.

The western Maharashtra region is financial capital of the country, with Mumbai as its base. In addition to banks, it also has all the major stock exchanges, regulators and head offices of major industries. This also helps in achieving financial inclusion in particular and the financial system in general.

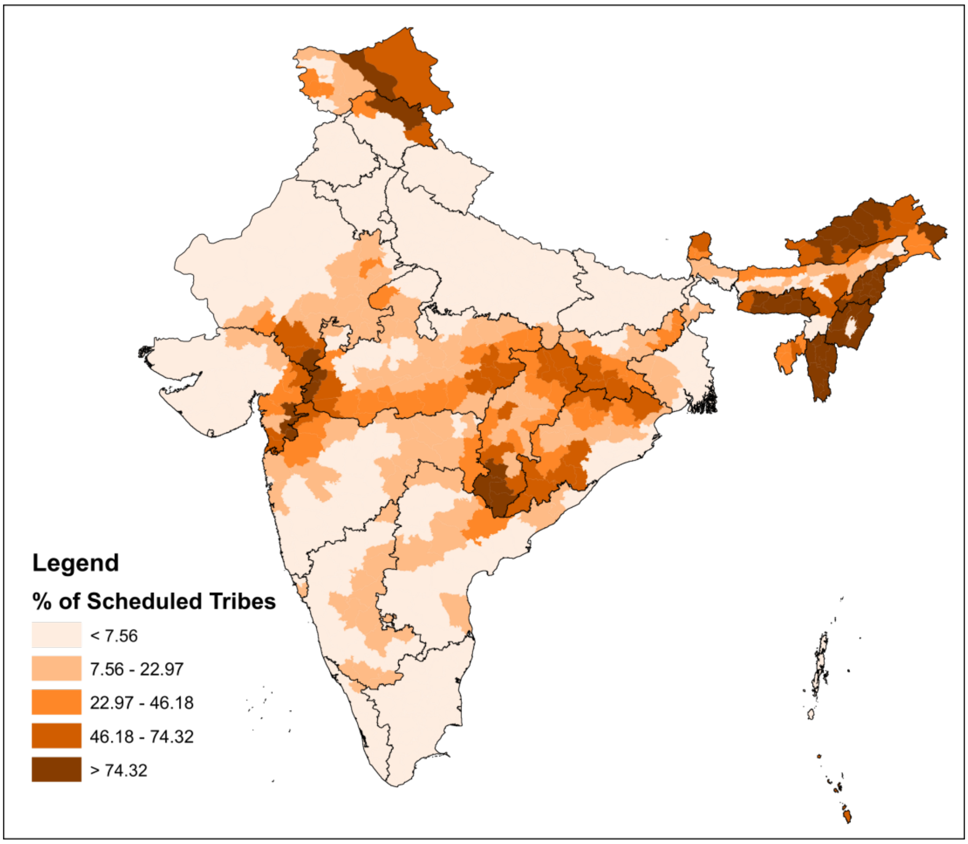
The region around Delhi, including Punjab, Haryana, Uttaranchal, and some parts of Jammu and Kashmir, has Ganga and Brahmaputra rivers, which are perennial rivers. This region also has fertile soil, which leads to higher agricultural productivity and higher incomes, leading to financial inclusion.

Similarly, the region in Chhattisgarh, Odisha, Madhya Pradesh, Maharashtra and the Northeastern regions, which are pockets of financial exclusion, suffer due to lack of economic opportunities (northeastern region and Madhya Pradesh), abundance of natural resources that are cornered by a few capitalists (Odisha and Chattisgarh), and shortage of rain leading to lower economic conditions (Maharashtra).

In addition to these preliminary socio-economic observations, we are also suggesting a list of hypotheses, based on demographic profiling. When we compared our maps of financial inclusion with socio-economic maps as the spatial distribution of scheduled tribes (see map 4), we can suggest several variables which could be tested by future researches: i) proportion of rural areas per districts; ii) the proportion of Scheduled Tribes in the population per district (noted ST); iii) the proportion of Scheduled Caste in the population per district (SC); iv) the proportion of literate people per district; v) proportion of rural areas per districts.

The spatial distribution of financial inclusion in India seems to be driven by the rural-urban divide and this despite the Social Banking movement of the 70's and 80's and, the implementation of different rural credit schemes. The financial inclusion process seems also to be drive by different dimensions of development in terms of literacy and livelihood. The last but not the least explicative variable, the proportion of Scheduled Tribes per district, seems to confirm a segregate process. Several studies observed and quantified at the local level the exclusion of Scheduled Tribes from all kind of public services as education but also from the schemes specially dedicated to the financial inclusion of the population (through, for example, the well known Rural Employment Guarantee Programme) (Sa-Dhan, 2010).

Map 4. Spatial distribution of the proportion of Scheduled Tribes, India, district (2011) (method of natural break)



Spatial econometric estimations could confirm it at the national level. So, our next step will be to capture empirically the determinants of this spatial distribution. To do it, we will apply multivariate regressions and some spatial regressions using the spatial lag model and distance between Indian districts.

The concept of spatial financial exclusion trap

We can define a financial exclusion trap as any reinforcing mechanism that causes financial exclusion to persist. Spatial financial exclusion traps can be regarded as areas where households are, and remain financially excluded in a given geographical circumstance, and would not be, if given different geographical circumstances.

Spatial financial exclusion traps may be low potential areas or marginal areas with poor infrastructures, low economical potential, politically less favoured or weakly integrated into the nation state. Areas remote from dynamic social change and from an active civil society as some Bihar districts, for example, could also present an adverse integration. Social dimensions such as insecurity and conflict are also important financial exclusion drivers. In some circumstances, some remote rural or urban areas are deliberately left with poor governance to let the people in power to cash-in on illegal business opportunities as informal lending. These factors have been identified based on the socio-economic-political circumstances prevalent in India.

Having identified the factors responsible for spatial financial exclusion traps, our next step will be to test this concept empirically and analyse its dynamic in India. We think this concept can help us to identify the spaces and dynamics of a process of accumulation by dispossession in financial services access, as defined by David Harvey (1995).

In some previous works, we were able to calculate financial inclusion indicators for 1991, 1996, 2001 and 2006 (Fouillet, 2009). We showed that implementing the reforms in the banking sector in the 1990's, the banking networks in India contracted, causing a part of the population to see their access to banks cut off (13.5 millions of households between 1991 and 2001, i.e., 21% of the people with the bank account in 1991 have lost access to banks). While the liberalisation of the sector favoured urban and semi-urban zones, rural areas have suffered. Moreover, zones already underserved prior to the 1990's reforms seem to have been particularly affected by this banking retreat.

The low levels of financial inclusion in the region signify the concept of financial exclusion trap. This concept becomes relevant in defining the political economy of financial inclusion. The purpose of this concept is to help us identify the spaces and dynamics of a process of accumulation by dispossession in financial services availability, access and use. There is another dimension to this discussion. There have been many instances where some regions are excluded from financial inclusion, by the sheer neglect and intentions of the financial institutions as well as the administrative set up within a particular region. When we address this issue, we would get an insight into the political dimension of the problem. The space of the financial exclusion traps is not disembodied. It is not just a geographical phenomenon. Some dynamics, some trajectories are explained by human decisions, business decisions and also the political and ethnological decisions.

Our goal is to continue building a financial inclusion database allowing us to conduct a dynamic analysis of the process of financial inclusion in India. Our purpose will be to test statistically for the existence of spatial financial exclusion traps. To achieve this goal, we will rely on empirical studies conducted on the spatial dimensions of poverty traps (Jalan and Ravallion, 1997, 2002; Nord, Luloff and Jensen, 1995; Carter and Barrett, 2006; Bird et al., 2010; Giesbert and Schindler, 2012; Galvis and Meisel, 2013).

At the district level – Survey preliminary results and attempt to put into perspective the existing Business Correspondents model proposed by the Reserve Bank of India

In this section, first we present the main results of our survey of BCs. The analysis is still on-going and all the results have not yet been explored. In a second step, we will put the model of BCs in perspective in order to understand how these programs launched by the RBI are part of India's State-building process.

Survey preliminaries results

Descriptive statistics:

- 143 interviews;
- Age average: 38 years old;
- 43% of female, 57% of male;
- Backward caste (44%); Scheduled caste (17%); Upper castes (24%); Muslim (2%); Christian (13%);
- Education: 10th (3%); 12th (27%); Diploma (48%); Graduate (19%); other (3%);

This questionnaire consisted of close-ended and open-ended questions. These have enabled us to obtain detailed information and to 'hear' the words chosen and used by BCs to describe different situation mentioned.

One important result of our survey is related to the security deposit that Business Correspondent have to provide to the organisation that employed them (State Bank of India, Oxygen, Canara Bank, India Overseas Bank). According to our results, an average security deposit of Rs.35,181/- has been remitted by BCs. This deposit is collected to ensure that the BCs are provided with the necessary permissions to operate as such, to provide access to the technological inputs (including software, machines, etc.), and also to safeguard the bank against the possible default by the BCs.

In another related study conducted by the RBI in 2009, it was revealed that the BCs have to make a cash deposit of Rs.5,000/- rupees. However, our study concludes that the average deposit that the BCs have been making in the Trichy region of Tamil Nadu is around Rs.35,181/-, which is significantly higher than the RBI data. 13% of our sample also declared that the security deposit provided them is more than Rs.45,000/-. The possible explanation for this is that the RBI data is a national level data, while the data that we have gathered is a regional data. Also the banks operating in this region are traditionally known to be risk-averse and hence expect to be de-risking themselves through this security deposit. This amount is very important and appears as one of the key challenges faced by BCs.

In addition to this, the BCs have to incur substantial operating costs. For example, banks charge interest to the BC for the temporary overdraft provided by banks to them. All BCs had to invest in laptop, motorcycle, etc., to start their activity. They are also required to incur the monthly expenses like rental charges for the building, safety deposit lockers, electricity charges, etc.

Another challenge faced by BCs is the financial viability of their activity. According to our survey in Trichy district, 57% of them declared they have suffered losses especially during the initial phases of their operations. This is a standard phenomenon as they are getting used to the business of BCs, they are getting trained in running this business, they would not have sufficient clients or the clients do not yet trust them with their accounts or details or money. But as and when the operations pick up with the inclusion of financial services from the state government in addition to the regular banking services, their losses would get converted into profits albeit a small one. Very few BCs, who have considerably large client base, have been making regular profits.

22% declared to have another income generating activity. Several BCs offers the possibility of running photocopying shops, running kirana (daily grocery) shops, or mobile recharge shops. Others are engaged in family farming or provide help in the family shop. Some are also selling life insurance policies or are engaged with civil society organisations and local administration.

BCs face many difficulties, most of which are generally underestimated by researchers. Some BCs complain that their customers visit at all times. When the RBI introduced the concept of, the BCs were projected to responsible for replacing the local moneylenders. The primary advantage of the local moneylenders is that they hail from the same locality and are accessible at all times of the day or night. Similarly clients visit BCs to operate their accounts, but many banks have time restrictions to operate the account. In such circumstances, the BCs, lend from their personal money and the next day, they go to the client's place to get the transaction ratified. This might become difficult in some circumstances and the money of BCs would get blocked.

Some BCs are also of the opinion that this activity tarnished their reputation. Many BCs are banished from their villages by the political leaders. Some of the villagers also think that the BCs are stealing bank money. Sometimes, the tensions between the local elected officials (Panchayat president who are eager to show off their influence in the region and who sometimes were also operating as local money lenders) and BC (who is obliged to apply the methods and guidelines of his employer in terms of account opening, pension payments, etc.) are quite high. There have been many instances where the BCs have been threatened, manhandled, and even sometimes beaten up by the local elected representatives. Sometimes, the tension rises between them and BCs could be threatened if they do not cooperate and service the people as per the wishes of the local elected representatives.

In many ways, the life of the BCs is not what is envisioned by the policy framework fo the RBI. They have to suffer undue financial hardships, they have to brave the threats from the local politicians, and also get their reputation tarnished. In such circumstances, the phenomenon of high turnover of BCs is not a surprising one.

State and Nation Making: What is the role of financial inclusion in India?

From January 2006, RBI has allowed banks to use the services of commercial intermediaries with the objective of providing financial services and also providing the last mile connectivity between the citizens and the financial services. These commercial intermediaries, who are called Business Correspondents (BCs) may provide services including collection and preliminary processing of loan applications, disbursement of loans, collection of small value deposits, selling insurance products, disbursing pension services of the state government, promoting and monitoring SHGs, disbursal of small value credit, recovery of principal and collection of interest, receipt and delivery of small value remittances, etc.

The BC model allows banks to do transactions such as cash in - cash out closer to the rural people. The objective of this model is to push farther the boundaries of financial inclusion, to pursue the structuring of a banking network in the most remote areas of the Indian territory (RBI, 2006). Banks have engaged 221,341 BCs as on March 2013.

Since 2006, RBI launch a new model of financial inclusion by extension of banking services through BCs with the goal to open bank accounts to the entire population. In some places, such as Pondicherry territories, all households living at a fixed address seems to have a bank account. The utility of opening the bank accounts might be questioned; the accounts opened under this scheme are largely dormant accounts (Jos, 2011). Between 2007 and 2009, 25.1 million accounts have been opened. A study by Skoch Foundation indicates that only 11% of these accounts are active (Kochhar, 2009).

For the Indian government, this accelerated policy of "total financial inclusion" (RBI, 2012) have at least three positive effects: i) the millions of bank accounts opened have allowed the government to present spectacular results in terms of financial inclusion. One of the stated and claimed goals by the Indian government is to be displayed as a modern nation; ii) after the liberalization period of the 1990s and the neoliberal government in control until 2004, this policy has allowed to mend close ties with the entire Indian banking (private and public). It is interesting to note that some private banks are now the leading institution (lead bank) for some districts which confer them with much more local political power; iii) it has allowed the government to implement an infrastructure to facilitate the dissemination of the social programs promulgated both by the central and state governments.

This last reason is particularly interesting to note. Beyond the microfinance crisis in 2010 in India, in which MFIs, one among the many actors responsible for a broader financial inclusion process, played an important role in providing financial services to the masses. But these MFIs did not take up the responsibility of providing the welfare schemes to the beneficiaries.

The Indian government implement many social programs. These programs range from support systems for widows, unemployed, and also ex-service men. These programs also aid the education plans for the poor. The beneficiaries/recipients never used to get the benefit from these programmes till very recently. This was primarily due to various factors, including among other things, corruption, embezzlement, lack of information, etc. (for more information, see the European research project coordinated by Lucia Michelutti).

When these funds are not diverted, they are often poorly distributed. By lack of information, eligible people become aware of these programs through intermediaries, who update the clients about the processes to be followed, only for a remuneration, help them fill the right documents (In India, the adult literacy rate was 63% on 2011), file them in the right place and get the money on behalf of the beneficiary.

This new infrastructure set up by the government through BCs and the rural extension of the banking network tend to reduce the role of these intermediaries and seek to facilitate access to the welfare schemes of the government to the most vulnerable population who are on the fringes of the social strata. The central and the state governments through the Direct Benefit Transfer (DBT) schemes are using the accounts opened by the BCs, to directly transfer the welfare payments to the beneficiaries. Some of the instances are transfer of cooking gas subsidy, farm subsidy, irrigation subsidy, drought relief subsidy, etc.

There are obviously still some abuse and some BCs charge more for their services but this deliberate policy of the Indian government to open an account for each person over 18 years throughout its vast territory extends far beyond the objective related to financial inclusion and microfinance of fight against poverty and of relating their clients into financial networks at the global peripheries. If microfinance has been understood and described as a neoliberal tool, **the financial inclusion process in India can be seen as an extension and a reinforcement of the State.**

At a time when many observers question the end of the nation-state in European countries, it is interesting to note that the process of financial inclusion at work in India, beyond the post-consensus of Washington discourse on the fight against poverty, fits into and contributes to the making of a welfare State. Financial relationships, as explained elsewhere (Servet, 2015), not only make sense in performing monetary practices but offer greater access to a group, a community, and here to a State that uses banking infrastructures as a network which pushes the boundaries of the Indian welfare State.

III. Scientific productions

From the project

Media

Fouillet, C. and Guyomart, J-C. (2013), "La dépossession et l'alternative", *La Libre Belgique*, April 13.

Conferences

Fouillet, C. and Nithyananda, V. K. (2014), "Beyond boarders. Perspectives on financial inclusion spatial dynamics", Lecture at the Indian Institute of Management-Kozhikode, Kozhikode, February 13.

Fouillet, C. and Nithyananda V.K. (2013), "Spatial complementarity of mobile financial services, business correspondents and banking infrastructures: Accounting for mobile financial services ecosystems in India" (with Nithyananda V.K.), *IMTFI's Fifth Annual Conference for Funded Researchers*, University of California, Irvine, December 4-5.

Fouillet, C. (2013), "Le concept d'accumulation par dépossession de David Harvey appliqué au secteur bancaire indien", *13th RIUESS Conference-Penser et faire l'ESS aujourd'hui Valeurs, Statuts, Projets ?*, Angers, June 5-7.

Fouillet, C. and Morvant-Roux, S., (2015), "Public policies, financial inclusion and inequalities: A review of recent trends in India and Mexico", SASE 27th Annual Conference, *Inequality in the 21st Century*, London School of Economics, 2-4 July.

Not from the project but related

Edited collection

Fouillet, C., Harriss-White, B. and Hudon, M. (2013), "The Field of Microfinance and Development: Showcasing India", Special Issue of *Oxford Development Studies*, Vol. 41, Supplement Issue 1.

Paper in refereed journal

Fouillet, C., Harriss-White, B., Hudon, M. and Copestake, J. (2013), "Microfinance studies: Introduction and overview", *Oxford Development Studies*, Vol. 41, S1, pp. S1-S16.

Papers in books

Augsburg, B. and Fouillet, C. (2013), "Profit Empowerment: The Microfinance Institution's Mission Drift", *in* D. Haase (ed.), *The credibility of microcredit: Studies of impact and performance*, Leiden, Brill, pp. 182-210.

Fouillet, C. and Pairault, Th. (2013), "Microfinanzas en China y la India: una disciplina diversamente apropiada", *in* M. Villareal and L. Angulo (ed.), *Las microfinanzas. Cálculos, normatividad y malabarismos*, Mexico, CIESAS/IPN, Mexico, pp. 95-113.

Submitted

Guérin, I., Fouillet, C., Kumar, S., Roesch, M. et Venkatasubramanian, G., "Microcredit crisis from the demand side. The case of rural Tamil Nadu (South India)" submitted to a edited book by I. Guérin, M. Labie and J.-M. Servet, *Microfinance Crisis*.

Fouillet, C. and Guérin, I., "La pluralité des crises de la microfinance : le cas indien" submitted to *Mondes en Développement*.

IV. References

Allena, F., Carletti, R., Cull, R., Qian, J., Senbet, L. and Valenzuela, P. (2014), The African financial development and financial inclusion gaps", Journal of African Economies, 23(5), pp. 614-642.

Anderloni, L., Braga, M.D. and Carluccio, E.M. (2007), *New frontiers in banking services*, Springer, Heidelberg, 377 p.

Anselin, L. (1995), "Local indicators of spatial autocorrelation-LISA", *Geographical Analysis*, 27, pp. 93-115.

Anzoategui, D., Demirguc-Kunt, A. and Martinez Peria, M.S. (2014), "Remittances and financial inclusion: Evidence from El Salvador", *World Development*, 54, pp. 338-439.

Ardic, O.P., Heimann, M. and Mylenko, N. (2011), "Access to financial services and the financial inclusion agenda around the World", *World Bank Policy Research Working Paper*, 5537, World Bank, Washington DC.

Beck, T. and de la Torre, A. (2007), "The basic analytics of access to financial services", *Financial markets, institutions and instruments*, 16(2), pp. 79-117.

Beck, T., Demirguc-Kunt, A. and Martinez Peria, M.S. (2007), "Reaching out: Access to and use of banking services across countries", *Journal of Financial Economics*, 85(1), pp. 234-266.

Beck, T., Senbet, L. and Simbanegavic, W. (2015), Financial inclusion and innovation in Africa: An overview", *Journal of African Economies*, 24(1), pp. i3-i11.

Bird, K., McKay, A. and Shinyekwa, I. (2010), "Isolation and poverty: the relationship between spatially differentiated access to goods and services and poverty", *ODI Working Paper Series*, 322, Overseas Development Institute, Oxford.

Carter, M.R. and Barrett, C.B. (2006), "The economics of poverty traps and persistent poverty: An asset-based approach", *Journal of Development Studies*, 42(2), pp. 178-199.

Copestake, J. (2007), "Mainstreaming Microfinance: Social Performance Management or Mission Drift?", *World Development*, 35(10), pp. 1721-1738.

Demirguc-Kunt, A. and Klapper, L. (2012), "Measuring financial inclusion: the global findex", *World Bank Policy Research Working Papers*, 6025, World Bank, Washington DC.

Fouillet, C. (2009), *La dimension spatiale de la microfinance en Inde,* Ph D thesis in Economics, Université libre de Bruxelles, Brussels, 460 p.

Fuller, D. and Jonas, A. (2002), "Institutionalising future geographies of financial inclusion: National legitimacy *versus* local autonomy in the British Credit Union movement", *Antipode*, 34(1), pp. 85-110.

Galvis, L.A. and Meisel, A. (2013), "Regional inequalities and regional policies in Colombia: *The experience of the last two decades", in J. R. Cuadrado-Roura and P. Aroca (eds.), Regional problems and policies in Latin America*, pp. 197-223.

Giesbert, L. and Schindler, K. (2012), "Assets, shocks, and poverty traps in rural Mozambique", *World Development*, 40(8), pp. 1594-1609.

Honohan, P. (2008), "Cross-country variation in household access to financial services", *Journal of Banking and Finance*, 32, pp. 2493-2500.

Howard J., Jones, M., Williams, M., Nilsson, E. and Thorat, Y. (2007), "Training to address attitudes and behaviour of rural bank managers in Madhya Pradesh, India: A programme to facilitate financial inclusion", *Journal of International Development*, 19(6), pp. 841-851.

Jones, P.A. (2008), "From tackling poverty to achieving financial inclusion—The changing role of British credit unions in low income communities", *Journal of Socio-Economics*, 37(6), pp. 2141-2154.

Jos, A., Denny, G., Shivshankar, V. and Stanley, V.T. (2011), *Exploring reasons for dormancy in no frills savings accounts in Tamil Nadu*, MicroSave, Lucknow.

Kempson, E., Atkinson, A. and Pilley, O. (2004), "Policy level response to financial exclusion in developed economies: Lessons for developing countries", *Report of Personal Finance Research Centre*, University of Bristol.

Kocchar, S. (2009), *Speeding financial inclusion*, Academic Foundation, Delhi, 168 p.

Moran, P. (1948), "The interpretation of statistical maps", *Journal of the Royal Statistical Society B*, 10, pp. 243-251.

NABARD (2008). *Report of the committee on financial inclusion*, National Bank for Agriculture and Rural Development, Mumbai.

Nord, M., Luloff, A.E. and Jensen, L.(1995), "Migration and the Spatial Concentration of Poverty", *Rural Sociology*, 60(3), pp. 399-415.

Ravallion, M. and Jalon, J. (1997), "Spatial poverty traps?", *World Bank Policy Research Working Paper*, 1862.

Ravallion, M. and Jalon, J. (2002), “Geographic poverty traps? A micro model of consumption growth in rural China”, *Journal of Applied Econometrics*, 17, pp. 329-346.

RBI (2006), “Financial inclusion by extension of banking services – Use of business facilitators and correspondents”, *Reserve Bank of India*, RBI/2005-06/288, Reserve Bank of India, Mumbai.

RBI (2012), “Financial inclusion. Issues in measurement and analysis”, *BIS-BNM workshop on financial inclusion indicators*, Kuala Lumpur, November 5.

RBI (2014) *Basic Statistical Returns of Scheduled Commercial Banks in India*, Reserve Bank of India, Mumbai.

Sarma, M. (2008), “Index of financial inclusion”, *Working Paper*, 215, Indian Council for Research on International Economic Relations, New Delhi.

Sarma, M. and Pais, J. (2011), “Financial inclusion and development”, *Journal of International Development*, 23(5), pp. 613-628.

Servet, J.-M. (2015), *La vraie révolution du microcrédit*, Odile Jacob, Paris, 256 p.

Shah, A. (2010), “India’s Red Belt”, *BBC Radio 4*, May, 6.