



Triggers and barriers to financial inclusion: The use of ICT-based branchless banking in an Amazon county

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ABSTRACT

Financial inclusion can be defined as the access to formal financial services at an affordable cost for all members of an economy, favoring mainly low-income groups. It has been recognized as a critical element in policies for poverty reduction and economic growth. Some successful experiences with financial inclusion reported in developing countries are associated with the use of *information and communication technology (ICT)-based branchless banking*. One of these experiences is the Brazilian *correspondent model*, an ICT-based network responsible for delivering financial services to tens of millions of poor Brazilians, most of them having no other way to access banking services. This article presents a case study of financial inclusion in Autazes, a county in the Amazon region not served by banks until 2002, when a correspondent started its operations there. Since then, Autazes has experienced economic and social changes, due in part to government social benefits and other banking services delivered at the local level. The results of our field study in Autazes suggest that financial inclusion through the correspondents' process positively contributes to local socio-economic development but, at the same time, presents clear negative signs such as low-income population over-indebtedness, reproduction of social exclusion practices and reinforcement of power asymmetries. We conclude that although access to financial resources is a fundamental way to promote local development to low-income population, such access should be accompanied by other inclusive mechanisms like financial education in order to be effective.

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1. Introduction

Consolidation trends in the banking industry have contributed to an increasing functional distance of the banking system from remotely located communities (Alessandrini et al. 2009). As banking industry consolidation evolves, large banks become less connected to local interests and, in this sense, they can be considered as non-local entities. The evidence show negative effects on loans to small local businesses associated with banking industry consolidation (Ely and Robinson 2009).

On the other hand, microfinance institutions and credit unions have helped to consolidate within the financial industry the idea that it is possible to provide financial inclusion and be profitable at the same time. Pressured by competition in their usual markets, or attracted by the successful experiences and low delinquency rates achieved by microfinance institutions (MFIs), since the end of 1990s commercial banks have shown an increasing interest in low-income borrowers (Alves and Soares 2006, Latifee 2006). As pointed out by Copestake (2007), since then microfinance services

are being provided by a diverse group of institutions, including non-governmental organizations (NGOs), government funded initiatives and a growing number of “downscaled” commercial financial institutions along with many “upscaled” MFIs transformed into regulated financial institutions.

Yet even this growing promise of microfinance has not yet met the demand for financial services around the world. Based on financial access indicators collected through a survey in 139 countries, a report from the World Bank (CGAP 2009) points out that developed countries count on 3.2 accounts per adult over less than 0.9 in developing countries. The same report also claims that banks do not serve low-income customers, who comprise the largest segment of the population in poor countries, and only in very few countries have MFIs and other non traditional bank institutions overtaken banks in the number of clients.

Despite the innovative practices related to successful micro-credit operations, the growth and diversification of financial services for the poor will increasingly depend on what happens in the mainstream financial sector, not just in isolated niche institutions (Littlefield et al. 2006). However, for the mainstream financial sector, providing financial services to low income population has always been considered difficult and costly (Ivatury 2006). This is due, first, to traditional banks' minor focus on managing small

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amounts of money, meaning larger scale and proportionally higher transaction costs. Second, it is never easy to deliver services to sparsely populated areas with little telecommunication infrastructure available. Finally clients' poorly documented credit histories increase risk for the financial agent.

This explains why most of the population in developing countries is poorly served by formal financial services, this lack of access to finance often being a critical mechanism in generating persistent income inequality as well as slower economic growth (Beck and Demirgüç-Kunt 2008). There is also evidence of financial inclusion as essential to boost economic growth and reduce poverty (IADB 2005) and to increase human development levels (Sarma and Pais 2011). This all means that finding innovative ways to integrate traditional financial systems as an essential part of financial inclusion strategies is necessary to reach goals of social development.

Information and communication technologies (ICTs) are important sources of innovativeness in the financial sector. Contributing to stimulation of geographical diffusion of banking services, ICTs have greatly increased the operational proximity of banks to local economies, with automated teller machines (ATMs), Internet banking and point of sale (POS) devices being the most common examples of how technology can foster geographical expansion of banking services.

In fact, there is a tremendous opportunity for banking technology to connect lower income citizens at reduced costs and bring millions of consumers to the formal financial marketplace through electronic channels (Weissbourd 2002). A number of studies have claimed that technology might play a significant role in improving poor peoples' bank access by delivering sustainable financial services to distant and underserved locations (Stegman et al. 2005, Claessens 2006). In the last decade, ICT arrangements applied in developing countries have been responsible for the creation of a number of experiences with branchless banking, most of them associated with strategies for financial inclusion. While in Africa and Asia branchless banking experiences are mostly related to mobile phone projects and thus controlled by telecom firms, in Latin America, branchless banking is more commonly bank-controlled through arrangements usually called *correspondent banking relationships* (Mas 2009). Correspondent networks are based on agreements involving a diversity of social groups, some identified with local interests – such as local government, small retailers and clients – and others with non-local interests – such as national government, big banks, technology providers and network integrators.

Adaptations and improvisation at the social and technological levels are required to overcome tensions between local and non-local processes and practices related to correspondent operations. The purpose of this study is to explore the consequences of this complex negotiation process that evolves among different social groups when mechanisms of financial inclusion are implemented. We expect that convergence and divergence in arrangements, coalitions and collaborations involving such different social groups serve to shape the outcomes of that process. The main research question guiding this research is: What are the positive and negative consequences related to the introduction of ICT-based mechanisms of financial inclusion – namely a branchless banking model known as *correspondent banking* – in a poor municipality of a developing region? We believe that positive and negative consequences of the use of technology for financial inclusion affect both triggers and barriers to further local development.

To answer the research question, we first carried out a careful literature review on the Brazilian correspondent model and the relationship between financial inclusion and local development, as presented in Section 2. Then, in Section 3 we present the conceptual framework that was selected to guide the empirical work, which was conducted based on an in-depth case study including

24 semi-structured interviews, observation and analysis of documents, and described in Section 4. Finally, Section 5 presents the result of the data analysis, the discussion and the conclusions.

2. Literature

2.1. Financial inclusion and the Brazilian correspondent model

Correspondents are ICT-enabled points of service installed by banks on a partnership basis with non-bank businesses, such as supermarkets, pharmacies, grocery stores, post offices, microfinance institutions (MFIs) and other types of retail establishments in low-income areas underserved by traditional banking (Ivatury and Mas 2008, Diniz et al. 2009). Banking correspondent network infrastructure is essentially ICT-based, where point of sale (POS) devices, or basic personal computers operating as terminals, are installed in retail stores to permit financial transactions to be carried out (Diniz et al. 2009). The model is considered unique because of its reach and scale, the quality of the services provided, and the technological platforms that have enabled these services (Kumar et al. 2006). Although different from bank to bank, the list of services offered by banking correspondents is quite extensive: bill payments, account opening, access to balance and statements, fund transfer, deposits, government benefits withdrawal and many others, including credit (Thompson et al. 2003).

Although the regulatory framework allowing the creation of banking correspondents has emerged from many government resolutions since 1973, the biggest changes occurred in 1999 and 2003, (Alves and Soares 2006), consolidating previous norms and creating the regulatory basis for present correspondent activities (Diniz et al. 2009).

In 2008, the Brazilian Central Bank reported 150,000 correspondent outlets in the country, over five times the number of regular bank branches and three times the number of electronic points with ATMs isolated from branches. Although only 9.5% of all bank transactions were made through correspondents, they covered 100% of municipalities in the country. Bank branches and ATMs are not present in more than 30% of cities, and serve mostly the population of the richest cities (Diagnóstico 2009).

As stated by the Brazilian Central Bank, 80% of all Federal Government social benefits are delivered through a network of correspondents, serving as many as forty million Brazilians, most of them with little or no access to financial services (Feltrim et al. 2009). The same report indicates that the benefits from correspondents extend beyond the low-income population who receive direct financial support from government. Retailers hired as correspondents also benefit from increasing sales, thereby improving the quality of life in localities where they operate, often remote from developed centers, generating employment and income for the local communities.

In fact, correspondents have been considered an important channel for promoting financial inclusion, which can be defined as access to formal financial services at an affordable cost for all members of an economy, favoring mainly low-income groups (Kamath 2007, Sarma and Pais 2011) and is said to be a critical element in policies for poverty reduction and economic growth (Claessens 2006). As pointed out by Littlefield et al. (2006), financial inclusion per se grew from microfinance activities, since it has broadened from the initial notion of microcredit into the “concept of building entire financial systems that serve the poor and low-income populations' financial systems.” As such, financial inclusion can be understood as a range of financial services delivered to the poor by traditional banks and other retail organizations as well as microfinance institutions, whether for-profit, NGOs or government supported.

2.2. Financial inclusion and local development: tensions between local and global interests

In the last two decades, globalization processes have generated – in highly diverse cultural, social and economic dimensions – significant impacts on societies and territories (Galliccio 2004, Arocena 2004), due mainly to information flows from the networked society (Castells 1998). Bervejillo (1999) outlines the emergence of global systems that are disconnected from local realities and from the influence of territories. On the other hand, we can perceive a reaffirmation of territoriality as a decisive element in the development of countries and regions. For Bervejillo (1999): “The territories appear questioned and reaffirmed as spheres and subjects of the development.” This ambivalence is one of the manifestations of the global–local dilemma that we experience nowadays.

According to Zozaya (2006), all local development specialists agree that the *territorial enclave* is a condition that reflects upon the local perspective.¹ The limits of the territory may be comprehended through the concept of proximity. In this case, more than considering territories as defined *a priori* within given physical or geographical limits, they must be considered as the product of a social construction. In this way, the locality is made of a “density of social power projected into spaces of communication, history, identities and shared horizons of future” (Zozaya 2006, p. 198).

Castells (1998) also highlights the importance of the integration of collective identities by the social actors which occupy the space within the city, in symbolic as well as material terms. He considers the democracy of proximity as an opportunity for social cohesion and cultural integration opposed to the socially fragmenting dynamics that characterize globalization.

A number of local development theorists (Galliccio 2004, Bervejillo 1999, Arocena 1999, 2004; Boisier 2005, Baltodano 1997, Casanova 2004) insist on the importance of the articulation between local and global instances, taking into account the restrictions and potentialities of the concrete territories vis-à-vis the global determinations. The importance and degree of such articulation will vary according to the characteristics and specificities of each territory. In this way, depending on the level of articulation between the endogenous capacities of the territories and the global dynamic, different degrees of integration of the local citizens could be obtained or, on the contrary, fragmentation and social exclusion (Galliccio 2004). In this sense, the maximization of the different social actors’ capacities becomes an essential factor within the dynamic between the local and the global.

For Arocena (2004), one of the keys to thinking about local development within the context of globalization is supported by the notion of *local actor*, which constitutes itself as local development agent. In other terms, rather than being subordinated to an exogenous dynamic which produces disarticulation of the local society’s social tissue (Arocena 2004, p. 6), the local development actor–agent will render an articulation between the development initiatives for the local interests; adapting the available technologies to local production systems.

Zozaya (2006) also insists on the capacity for cooperation and negotiation between local and non-local actors. The cooperation and negotiation between different institutional levels (local, regional and international), as well as between the public and private sectors, are central to the process of making local development via-

ble. The notion of agency, individual and collective, in development, is a relevant standpoint from which to reflect upon the possibility of making alternatives viable for the articulation process between local and global.

The local actors’ collective participation must be maximized through development of endogenous strategic capacities (Zozaya 2006). On this point, we consider it important to highlight Amartya Sen’s approach to development. In other words, development needs to be considered as the expansion of capacities which facilitate improvement in people’s lives, through expansion of their possibilities (Sen, 1999). In this sense, development is intimately linked to the elimination of barriers and obstacles which impede individuals from exercising their individual freedoms as well as their freedoms as a social group. The expansion of the capacities and possibilities of the actors, who constitute a social group within the bounds of their territory, may lead to development. Table 1 summarizes the major tensions indicated by the literature review, as well as an alternative for overcoming these tensions, by achieving articulation between local and global through the local actor.

Viewing the emergence of the correspondent model as an initiative conceived by non-local actors, such as large banks and national government, in this article we have stressed the importance of local actors, such as retail stores – acting as bank agents – and poor clients, in building an inclusive development scenario. If technological access to financial services allows expansion of the possibilities for individuals, it is worth identifying the current barriers limiting the expansion of the access (to credit, for instance) in a given territory. The triggers and barriers² to local development were identified in this study through the tensions between local and non-local as manifested by the local actors interviewed during our fieldwork.

3. Proposing a conceptual framework

In the information systems (IS) research field, a range of different social theories have been borrowed and adapted in order to gain insight into the interaction between ICT (its design, adoption, implementation and use) and people at different levels (individual, group, organizational and macro). We found institutional theory (Avgerou 2000), structuration theory (Barley 1986), critical social theory (Doolin 1998, Yetim 2006), actor network theory (Sarker et al. 2006), social construction of technology (Williams 1997) and symbolic interactionism (Gopal and Prasad 2000) to be among the most influential social theories applied in IS research. A number of recent papers have outlined the particular importance of one of these social theories in IS research: structuration theory. The theory represents the idea that human actions all occur within existing social structures that have their own norms and operating characteristics, and this conditions the kinds of human behavior that will be observed, although they can change over time as the norms change.

Although structuration theory is not specific to IS but is, rather, a general social theory (Giddens 1990), it has been argued that it is used in IS research more than in other areas of organizational research (Pozzebon and Pinsonneault 2005, Jones and Karsten 2008). In this paper, we adopted a multilevel framework that extends the structurationist view of technology to investigate the adoption, implementation and use of ICT at the community and societal levels. In line with Burton-Jones and Gallivan (2007), we apply the term *multilevel* to refer to a type of framework that entails more than one level of conceptualization and analysis. How-

¹ In the field of geography, *enclave* refers to a territory whose geographical boundaries lie within the boundaries of another territory. In the context of this article, *territorial enclave* refers to certain specific characteristics (social, cultural, historical and economic) shared by individuals living in proximity (Zozaya 2006). This does not imply that individuals must live in the same geographic territory to belong to the same territory. Rather, the term *territorial enclave* indicates a common identity, shared among individuals, which surpasses traditional geographic boundaries.

² Triggers are positive factors that can enable local actors to overcome tensions between local and global spheres. Education, for instance, can represent an alternative way to expand individual capabilities. Barriers are negative factors that constrain and limit human development, like scarce credit access.

Table 1
Tensions: local × global spheres.

Dimensions	Descriptions	Authors
Globalization	Significant impacts (cultural, social and economic) on the societies and territories; social fragmentation dynamics; emergence of global systems that are disconnected from local realities; exogenous dynamic which produces disarticulation of local society's social fabric	Castells (1998), Bervejillo (1999), Gallichio (2004), Arocena (2004, 2006)
Territory	The local is made of a “density of social power projected into spaces of communication, history, identities and shared horizons of future”	Bervejillo (1999), Zozaya (2006)
Articulation local × global	Articulation between the local and global instances, taking into account the restrictions and potentialities of the concrete territories (endogenous capacities) vis-à-vis the global determinations; local actor is a local development agent; cooperation and negotiation between local and non-local actors	Gallichio (2004), Bervejillo (1999), Arocena (1999, 2004), Boisier (2005), Baltodano (1997), Casanova (2004), Zozaya (2006)

ever, where we differ from the latter authors is with regard to the ontological stance. While they place multilevel research within an organization science perspective that adopts a functionalist, positivist and variance-oriented stance, we place our multilevel framework within a constructivist tradition that views any social research as *processual* and *inherently multilevel* (Pozzebon et al. 2009).

The criteria behind the selection of this particular framework rest mainly on two underlying assumptions. The first is that social phenomena involving ICT at a societal level require a set of concepts that deal with complex and multilevel interactions. The inter-organizational level of analysis is not sufficient for studying uses of technologies at a societal or community level, one that involves individuals, groups, organizations, government, etc. Second, non-determinist logics can be richer in the understanding of social consequences of the use of technologies than deterministic ones (e.g., transaction costs or institutional theory), since the ways each society or social group uses and implements them may produce varied and sometimes contradictory results. The selected conceptual frame is, therefore, based on three well known streams of IS research, where (1) the structurationist view of technology is central, and (2) the social shaping of technology complements and (3) the contextualism approach frames the first two.

The structurationist view of technology is characterized by the application of structuration theory to information systems (IS) research and has been notably influenced by researchers like Orlikowski (2000) and Walsham (2002). The social shaping of technology (SST) (MacKenzie and Wajckman 1999, Bijker and Law 1992) is a constructivist stream of research strongly influenced by sociology of knowledge (Berger and Luckmann 1967). Finally, contextualism was proposed by Pettigrew (1990), whose basic idea is that people and organizations are embedded in social contexts, and are subject to their norms and practices. It had a strong influence on processual investigations in both management and IS research (Ngwenyama 1998). From the analysis of these different streams of research, Pozzebon et al. (2009) carefully selected four central concepts: relevant social groups, technological frames, negotiation and technology-in-practice. The selection of these concepts was guided by a process-based reasoning seeking to put together relevant concepts in a coherent way that could help in the investigation of ICT-related phenomena occurring at the community level.

- The concept of relevant social groups, or simply *social groups*, allows researchers to recognize individuals and groups. Social groups refers to a set of people who share a set of assumptions about a given subject of interest, such as the expected benefits of the implementation of a new technology. Subgroups and alliances between groups form social spaces and play important roles in the choice of management strategy and use of technology. The social groups also work as a bridge between individuals and the community, establishing the multilevel character of the framework.

- Technological frames, or simply *interpretive frames*, help to recognize what kind of interests, assumptions and expectations those different social groups attach to the adoption and use of a given technological artifact. It refers to basic assumptions, beliefs and expectations that people hold about a specific technological application, including not only the nature and role of the technology itself, but the specific conditions, applications and consequences (intended and unintended) of that technology in particular contexts. Technological frames may be shared within a relevant social group because members are likely to share common perceptions, expectations and interests regarding the implementation and use of a given ICT application. Similarly, technology frames might differ between different relevant social groups.
- ICT implementation and use is seen as a *process of negotiation*, where not only the content of the technology itself but also the different interests, commitments, perspectives and positions of the network of players interacting with the technology will influence the process and outcomes of technologies-in-practice and the emergent social structures. Negotiation underlies a process-based approach and corresponds to the identification of occasions, spaces and mechanisms by which social groups interact over time.
- Finally, *technology-in-practice* represents the ongoing results, the consequences that grow out of the actual use of an ICT, allowing recognition of socio-technical, political and cultural characteristics of ICT in use. The focus is on the enactment of technology, highlighting that there are always boundary conditions on how people redefine the meaning, properties and applications of a given technology during and after implementation, and allowing a better understanding of the emergence or non-emergence of new social structures (Pozzebon et al. 2009).

In order to provide internal coherence to the articulation of these four concepts, Pozzebon et al. (2009) integrated them within contextualist logic (Pettigrew 1990). Framing the four concepts with contextualism means articulating them within three basic dimensions: context, process and content.

The result, as shown by Table 2, is a multilevel framework that seems appropriate for our investigation since it allow researchers to investigate the influence of ICT-based correspondent networks combining individual (local actors coming from a low-income population), organizations (firms, cooperatives, etc.) and networks of organizations within a region or local community (associations of cooperatives, arrangements between firms, ICT providers serving a group of firms), besides highly central (or non-local) organizations (banks and federal government).

It is worth noting that we have also integrated some key concepts from local development literature previously presented. For instance, local actors represent the basic unit of analysis. Coalitions of local actors, sharing similar interpretive frames, form the social

Table 2
Tensions between local and global in local development.

Context	Process	Content
Social groups (Groups of local actors, middle-ground between individuals and organizations: multilevel) Interpretive frames (Interests, assumptions and expectations of different social groups regarding the use of a given technological artifact)	Negotiation (Dialogical relationship between global and local)	Technology-in-practice (The consequences of the use of a given technology in a given context)

groups of interest to our research. The social groups work as a bridge, a middle-ground between individuals and meso and macro levels, like organizations, government and the local community. Another concept integrated is that of negotiation as a result of the dialogical tension between global (banks and federal government) and local (local associations and groups of local small borrowers). In this sense, dialogical tension represents the dynamic relationship between local and non-local actors with the aim of local development. Actors try to interact through negotiation processes, in a sort of local and global articulation, seeking to overcome these tensions. Finally, in the content dimension, we seek to identify triggers and barriers to local development by identification of positive and negative consequences of the use of ICT-based financial inclusion mechanisms in a poor and small locality.

4. Methodological approach

This research seeks to understand the economic, social and cultural transformations, as perceived by the population of Autazes and related to the implementation of financial services starting in 2002. In order to explore the research purpose, to examine the consequences of the complex process of introducing an ICT-based financial inclusion mechanism in a poor and small locality involving different social groups where local and global aspects of financial inclusion are called into play, we applied a case study method (Eisenhardt 1989, Yin 1994, Stake 1998).

Stake (2006) identifies three types of case study: intrinsic, instrumental and collective. Our case is both intrinsic and instrumental. Stake (1995) uses the term *intrinsic* when researchers have a genuine interest in the case itself. The case is not undertaken primarily because the case represents other cases or because it illustrates a particular trait or problem, but because the case is of interest in itself, in all its particularity and ordinariness. However, our case is also instrumental because we seek to advance the understanding of that particular case and to produce relevant and actionable knowledge that could be transferable to other similar contexts. Indeed, this paper is one step towards a better understanding of the process of local development and financial inclusion through a social use of ICT.

The selected case refers to the municipality of Autazes, in the state of Amazonas. Autazes was the first Brazilian municipality in the Northern region to receive a Banco Postal, a correspondent arrangement based on a partnership between the public services provided jointly by the Empresa de Correios, Brazilian postal and mail offices, and Bradesco bank – one of Brazil's largest private banks. The choice of Autazes as a case study is based on the municipality's unique features, which help in understanding the investigated phenomenon. Beyond sharing numerous characteristics with hundreds of "typical" Brazilian municipalities – such as a high level of agricultural and commercial activity – it enjoys growing access

to financial services and is located within a very particular geographical context (isolated town surrounded by rivers, in the Amazon rainforest). This geographical context allows us, to some extent, to isolate given socioeconomic phenomena, and so better understand their impact on the perception of the social actors interviewed.

4.1. Data collection

The information collected during the research comes from three complementary sources: interviews, observation, and document and report analysis. First, we collected socioeconomic information on Autazes from secondary sources. We also had a number of informal conversations (not recorded) with financial sector stakeholders who had already been in the municipality. At that point, our aim was to come up with a first "view" of the context to be investigated. We then conducted exploratory fieldwork during four weeks in July 2009, when an initial group of researchers traveled to the region of Autazes. During this first field trip, data collection was conducted through unstructured interviews, seeking to understand the local context, along with a variety of other recordings, such as photographs, audio and video clips. Data were then analyzed and an initial research report was produced.

In December 2009, a new research expedition took place in a ten-day period, to conduct structured interviews in the Autazes region. The objective of this second fieldwork research was to assess the different socioeconomic transformations that occurred following the implementation of the first banking correspondent in 2002. Some owners and employees of local stores, whether or not involved with the correspondent business, as well as micro-entrepreneurs, union representatives, worker associations, public sector representatives and ordinary citizens from the region of Autazes were interviewed, totalling 24 in-depth semi-structured interviews based on a research protocol that was, in turn, based on the four concepts of the conceptual framework (see Table 3). The protocol encompasses interview guidelines as well as ethical forms, like letters of consent. All the names were changed to guarantee anonymity.

It is important to note that, in research of constructivist nature like the current research, the richness of a case study depends not on the total number of interviews but on the quality and depth of the interviews. We are not looking for statistical generalization, but theoretical transferability, which means that it will be plausible to apply the results to similar settings.

4.2. Data analysis

The data obtained were transcribed integrally from the audio and video recordings made during the interviews and then encoded through NVIVO software, following the method proposed by Miles and Huberman (1994), which comprises three phases: data condensation (data reduction through coding), data presentation and elaboration, and verification of conclusions. The four concepts of the framework were used for analytical induction; they were used to guide the initial categorization, leaving, however, space for the identification of new categories and the refinement of existing ones so as to enrich our understanding of the studied phenomenon (Patton 2002).

5. Analysis and discussion of the results

In this section, we present the results based on the concepts that guided the empirical research: the context, where we identified the main social groups; the process, where we depicted the tensions between local and global, also known as negotiation process; and the content, which is represented by the consequences of

Table 3
Data collection.

Fictive name	Role	Fictive name	Role
José	Retailer	Armando	Union representative
Esmeraldo	Retailer	Luis	Union representative
Jeremias	Retailer	Inácio	Union representative
Silvano	Retailer	Batista	Union representative
Décio	Retailer	Vicente	Public sector agent
Mario	Retailer	Anderson	Public sector agent
Fausto	Micro-entrepreneur	Américo	Public sector agent
Maria	Micro-entrepreneur	Sérgio	Population
João	Correspondent point owner	Sonia	Population
Ronaldo	Correspondent point owner	Donato	Population
Severino	Correspondent point owner	Wallace	Population
Paulo	Correspondent point employee	Rivaldo	Population

technologies-in-practice, the ways in which different social groups use ICT and with what consequences. For reasons of length, we did not include a separate section with presentation of the interpretive frames. However, the conceptual framework supports the identification of social groups, which allows identification of their interpretive frames and permits understanding of the negotiation process and its consequences. This means that the interpretive frames (part of the context) are embodied in the presentation of the process and the consequences (the content).

5.1. Describing the context: Autazes

Autazes is situated in the heart of the Amazon forest. Located some 96 km from Manaus, capital of Amazonas State, Autazes can be reached by road in approximately three hours with an appropriate vehicle (depending on weather conditions) or by boat (a 12-h journey). The municipality has some 30,000 inhabitants, of whom some 16,000 live in the urban area. The region of Autazes comprises a total of 40 communities and covers approximately 7600 square kilometers (Information on Autazes taken from *Biblioteca Virtual 2009, IBGE 2006, IBGE@CIDADES 2009*). It is important to note that the 14,000 people who live in the communities outside of the urban area (the largest of them, with about 3000 inhabitants, called Novo Ceu) have no access to financial services close to their homes and often need to travel many hours on a boat to downtown Autazes for their banking needs. The lack of financial access by the population of these communities illustrates clearly the problems all Autazes dwellers faced prior to 2002, when the first correspondent opened,

5.2. Describing the context: the social groups of Autazes

Our first task was to identify the social groups relevant to our investigation. We recognized six main categories of social groups, which are presented in Table 4. Regarding the conceptual framework, this identification of social groups corresponds to the key step for assessing the context.

5.3. Describing the process: tensions between local and global

We organized the interviews so as to gather data in terms of two separate temporal moments: before and after the implementation of the first banking correspondent in 2002. In other words, we tried to understand the context, process and consequences prior to and following the implementation of financial services in

the municipality. For the purpose of the analysis, we considered the testimony of inhabitants living outside of the urban area (specifically, we interviewed people living in the community of Novo Ceu) as comparable to the views of the Autazes dwellers on their life conditions in the municipality prior to the implementation of financial services there.

A central aspect of Autazes' economy is the importance of public financial transfers and public service employment as a source of income. About 33% of the city income is related to government benefits such as pension funds, Bolsa-Familia (a federal government-subsidized program transferring funds to the low-income population), and other social assistance benefits such as unemployment insurance for the sick (City hall employee 2009). Data from 2005 indicate that the monthly payroll of the city council totals up to US\$445,000 in salaries, and that the federal and state government financial transfers amount to nearly US\$832,600 per month (*Autazes web site 2009*). The citizens and local authorities of Autazes feel a dependency on public funding, so that a reduction of these financial transfers or even delays in paying public service employees has a direct impact on money circulation and, consequently, the well-being of local businesses.

Until 2002, the lack of banking services in Autazes generated a number of difficulties, and sometimes high transactional costs, for the population, significantly slowing the municipality's economic development. Prior to the implementation of the first banking correspondent in the municipality, citizens needed to go to Manaus to have access to even the most basic banking services (mostly money withdrawals, deposits, and bill payments). Going to Manaus meant a waste of time (working hours) and money (a minimum of US\$20 for transportation). Prior to the construction of a road between Manaus and Autazes in 2007, transportation by boat consumed twelve working hours, compared to the current three hours by bus. Those who could not afford such a journey – the majority of the population – had to ask a friend or family member travelling to the capital to carry out banking transactions on their behalf, or take the risk of paying someone to do it for them. For instance, the cost of contracting an intermediary to pay bills in Manaus represents US\$3 per billed account. The risk of assault was also significant.

An interesting example of the incredibly high costs incurred due to lack of banking services is the monthly operation organized to pay public service employees their salary. Until 2002, Autazes' public service employees received their monthly salary through an emissary flying from Manaus and bringing a bag with enough cash to pay all city workers. Security agents were contracted to accompany the emissary and make sure everyone received a salary, incurring additional costs for the city government.

All those who traveled to Manaus would make their monthly purchases there, negatively impacting Autazes' economy. Despite receiving their salary in Autazes, the majority of public service employees travelled to Manaus, as did business owners and local farmers, to enjoy a greater variety of products and lower prices,

Table 4
Interviews by social group.

Code		Number of interviews
R&I	Local people working in the retail and industry sectors	6
ME	Local micro-entrepreneurs	2
BC	Banking correspondent agents	4
UR	Union representatives	4
PS	Public sector agents	3
P	Low income population	5
Total		24

Table 5

Financial information of Autazes (in US\$). Source: Brazilian Central Bank (available at www.ibge.gov.br/cidadesat/topwindow.htm?1).

Bank branches	1
Credit amount	\$ 267,647
Deposits short term – government	\$151,765
Deposits short term – private sector and population	\$304,118
Saving accounts – total amount	\$703,529
Deposits – long term	\$95,882

or simply to make deposits to their bank accounts. In view of the risk of assault, especially on payment days, it was safer to purchase goods in the capital and bring all the merchandise back home by boat than to bring the money back to Autazes. The fact that many citizens spent much of their money in the capital had a negative impact on Autazes' economy as it reduced the amount of liquidity in circulation and consequently slowed the development of local businesses. Additional evidence of economic growth after implementation of correspondents is seen in the opening of 2000 new bank accounts on just the first month of operation of the Postal Bank. Table 5 below presents current bank information made available by the Brazilian Central Bank in 2009.³

5.4. Identifying the content: consequences prior to 2002

Content means identifying technologies-in-practice, which represent the ongoing consequences that grow out of actual use of an ICT, in this case the banking correspondent that allows access to financial services. In this section, we gather the responses tracing, retrospectively, the socioeconomic consequences resulting from the lack of local financial services, that is, prior to 2002. Table 6 shows the consequences that were suggested by the greatest number of respondents as they answered a set of questions that could be summarized as: "Prior to the implementation of financial services in 2002, how did you proceed to receive your salary/social benefits and to pay your bills? What were the main challenges faced? How did that affect your life, your business, or the life in the city?"

We note that the main consequences of the absence of financial services were perceived as negative, which means that these factors worked as barriers to the local development of these individuals and of their community. For specialists in local development (Arocena 1999, Galliccio 2004, Zozaya 2006), different sorts of social and economic restrictions impose limits on the capability for expansion of individuals (Sen 1999). These constraints, involving education, financial and information access, represent evidence of barriers (negative factors) that constrain and limit the freedom of individuals. Along the same lines, the restrictions to ICT access can inhibit human development. Thus, financial access and information access not only represent positive factors that affect local economic development but, conversely, their absence is a barrier to expansion of individual capabilities (Gigler 2004, Rahman 2006). Based on Orlikowski (2000), Gigler asserts that ICT access can be treated as a catalytic agent towards individual and community freedoms. In the following paragraphs, we present and illustrate these factors. Their implications and our discussion appear in the next section.

With respect to the relevant social groups' differing perceptions (interpretive frames), it is noteworthy that the groups most affected by the lack of local financial services – retailers (R&I) and the population (P) – are those who insist the most on the challenges imposed by such a lack of local financial services.

³ Unfortunately there is not publicly available information that can be compared with this data.

Difficult access (travel) was considered the most significant negative consequence in the respondents' view. This consequence refers to the difficulties related to the need to travel in order to get access to financial services. Prior to 2002, Autazes dwellers had to go to Manaus, or another developed agglomeration to receive their social benefits, pay their bills, and proceed to any other financial operation requiring the presence of a bank or financial agent. This round-trip travel, almost always made by boat, required up to two days per month.

Transactional costs refer to the different costs resulting from lack of local access to financial services. These include transportation and representation costs (a citizen informally hiring another to perform financial transactions – money withdrawals, payments – and purchase merchandise in another locality on his behalf). One of our informants commented that: "... Every month, we came to receive the bolsa familia [governmental cash transfer program] ... we cannot afford the [bus] ticket, because only from there to here, to get out of the community and get here, it is 8 reais [US\$4.16]. We used to pay R\$16 [US\$8.32] per person, round trip, R\$ 16!" [Rivaldo, Population, Autazes].

Fewer local purchases reflect the fact that the lack of local financial services has a significant negative impact on local commercial activities. When citizens go to a more developed urban centre to receive social benefits or pay bills, they take advantage of being there by making their monthly purchases there, since the offer of products is more abundant and the prices are lower than in their municipality. These purchases made outside of Autazes obviously result in fewer local purchases within the municipality, the third consequence suggested by most respondents. Another interview respondent commented: "A large slice of our money goes there, understood? It stays there. They go receive [their money] there and make their purchases there, and we stay here" [Jeremias, Retailer, Novo Céu village].

Lost working hours is a consequence similar to the transactional costs mentioned above, as every month, Autazes workers needed to stop their activities for up to two days to go receive their salary in another city. We can perceive, through the following testimonies of Novo Céu teachers, that the lack of local financial services affected the population's daily life (or still affects it, in the case of Novo Céu inhabitants). For instance, the pupils could not have class on those two days, as the teachers were out of town. Another interview yielded the following additional perspective: "Without the Banco Postal, teachers needed to come over to the municipality. And stop classes. People are told, 'tomorrow is payment day, so there won't be class tomorrow.' ... there are more distant communities which stop class for two days" [Sonia, Population, Autazes].

5.5. Identifying the content: Consequences after 2002

We note that the consequences of implementation of financial services through ICT-based mechanisms were perceived as both positive and negative, which means that we identify certain factors that work as triggers and others as barriers to local development of these individuals and of their community. In order to gather these

Table 6

Prior to 2002: negative consequences by social group.

Negative consequences by social group	R&I	ME	BC	UR	PS	P	Total
Difficult access (travel)	2	0	1	0	0	4	7
Transactional costs	2	0	0	0	1	2	5
Few local purchases	3	0	0	0	0	0	3
Lost working hours	0	0	0	0	0	3	3
Total	7	0	1	1	1	8	18

consequences, the following Table 7 shows the positive consequences suggested by the greatest number of respondents as they answered a set of questions that could be summarized as: “Following the implementation of financial services in 2002, what happened to Autazes? Do you perceive signs of development/progress resulting from the provision of financial services? In your opinion, what is it that was improved in the municipality?”

A *stimulated local economy* was suggested as a consequence by the greatest number of respondents: “When Banco Postal started [its operations], the municipality’s money began to circulate within the municipality. This helped the municipality’s financial resources to grow [Vicente, Public Sector Representative, Autazes].”

The relevant social groups almost unanimously consider that the municipality changed following 2002. This change is perceived as a boost in the municipality’s economy, essentially credited to the availability of financial services in Autazes. These services brought great benefits to local commerce, essentially those retailers who became banking correspondents. The benefits are also perceived as an advance for the local economy, which is beneficial to all actors.

The consequent *access to financial services, salary and social benefits paid locally* and *bill payments* could actually be grouped within a single category called *financial access*, since these directly refer to the variety of services to which the population gained access through implementation of local financial services. We kept these results separated in order to better characterize these different components pertaining to the *access* category. Local access to financial services eliminates the necessity to travel to other localities – as was the case prior to 2002 – to receive assistance benefits and make payments. It is noteworthy that public benefits represent, in the respondents’ view, important factors for the economic development of the “new” Autazes. However, these services already existed before 2002.

We may conclude that, as these were made locally accessible in 2002 through the banking correspondent network, the perception that they represent an important factor for local development would suddenly have gained importance for the population. In this sense, we believe that, beyond the fact that the population receives assistance benefits, what really counts is that they receive them locally, within their municipality. This in turn pushes local economic development (creating jobs, new commercial activities and businesses) and reduces the transaction costs related to interurban transportation. For example, we heard that: “it is clear that following the creation of Banco Postal, [Autazes] grew more. Why? Payment for the retirees, financing for retirees ... it became much easier from 2002 to this day” [Luis, Union Representative, Autazes].

Once again, the relevant social groups appeared quite homogeneous in their responses (interpretive frames analysis). The *banking correspondents* (BC) are those who most agreed on the gains that were made, namely, a more active local economy and access to financial services for the population. We may also note that both *retailers* (R&I) and the general *public* (P) emphasized the positive

consequences of having access to financial services (including local access to public benefits) and a recently stimulated economy. These answers become even clearer when compared to the lack of these services prior to 2002. In other words, the access and a stimulated economy are perceived as an important benefit/worth accruing to the municipality after 2002.

In relation to the consequences involving *construction of an interurban road, access to electricity* and *access to telephone services*, we propose that these result from the development of the municipality after 2002, as an indirect consequence of the implementation of financial services. First, a paved road connecting Manaus, the state capital, to Autazes (inaugurated on August 24, 2007) represents an important factor of socioeconomic integration between the two cities. As a result, the 12-h journeys to Manaus by river can now be replaced by a 3-h journey by road. The abundant offer of merchandise at competitive prices, resulting from the socioeconomic integration mentioned above, also contributed to local economic development.

Table 8 shows the negative consequences that were suggested by the greatest number of respondents as they answered a set of questions that could be summarized as: “What are the main challenges that followed the implementation of financial services in Autazes in 2002?”

Indebtedness, which was suggested by most respondents as a significant challenge, particularly drew researchers’ attention during the fieldwork. We learned that: “... 90% of our population takes loans, everyone. The salary of Autazes citizens is compromised. Everyone has a debt” [Esmeraldo, Retailer, Autazes].

Bureaucracy, lack of adequate credit policies and high interest rates represent problems related to inadequacy of financial services offered at the correspondent level. Following the implementation of local financial services, the private agents started to offer the population a credit modality called a *payroll loan*, or a loan for which the payments are deducted directly from the client’s pay check. For the financial institution, the risk of payment default on the loan is lower than in the case of one provided directly to the client, since the pay check of the registered employee – from municipal or federal government (pensions), among others – serves as collateral. This modality, however, especially harms retired individuals who are attracted by easily accessible loans. Very often, they actually take these loans on behalf of family members or friends. In Autazes, we met retired individuals who had compromised most of their pension payments to raise financial resources for family members. Doing so, they end up lacking sufficient funds to properly sustain themselves financially.

For those who do not have goods and real estate to offer as collateral, gaining access to credit to initiate, maintain, or expand a small commercial activity remains a great challenge. For that reason, many resort to family members, retired friends, or, very often, public service employees. Having access to payroll loans, they often informally pass their loans onto micro-entrepreneurs. This situation seemed to occur frequently in Autazes. This phenomenon apparently masks the real demand for microcredit (the official demand remaining relatively low) and increases demand for payroll

Table 7
Positive consequences (triggers) by social group.

Positive consequences by social group	R&I	ME	BC	UR	PS	P	Total
A stimulated local economy	3	2	4	2	1	1	13
Access to financial services	1	1	4	3	2	1	12
Salary/social benefits paid locally	3	0	3	3	0	1	10
Bill payment	2	2	2	1	1	0	8
Construction of an interurban road	0	1	4	0	0	1	6
Access to electricity	0	0	1	0	0	1	2
Access to telephone services	1	0	0	0	0	1	2
Total	10	6	18	9	4	6	53

Table 8
Negative consequences (barriers) by social group, after 2002.

Challenges by social group	R&I	ME	BC	UR	PS	P	Total
Indebtedness	1	1	3	3	0	0	8
Bureaucracy	1	0	0	0	0	3	8
Lack of information	1	1	2	2	1	1	7
Waiting lines	0	1	3	3	0	2	7
Lack of adequate credit policies	0	0	0	0	1	1	6
High interest rates	0	0	1	1	0	0	3
Total	3	3	9	15	2	7	39

loans. In other words, the payroll loan credit formally provided to retired individuals and public service employees would be mostly redirected to finance micro-entrepreneurs' productive activities. The official statistics do not illustrate this situation as they cannot distinguish the amount of financial resources used exclusively for payroll loan credit-related activities from the amount used to finance commercial activities.

In this sense, we perceive the convergence of at least two related problems. First, the private financial agent seeks to expand his credit portfolio at low risk. To achieve this, he makes agreements with public agents (municipal government) to get to offer payroll loans to public service employees, which represent high profit potential combined with a low risk of payment default. Second, the abundant offer of additional financial resources for a population which historically had difficult access to credit, in conjunction with an inadequate financial information structure for that population, resulted in high levels of indebtedness for families and small local entrepreneurs. In other words, the large offer of resources and the lack of information jointly represent a perverse side of easily accessible credit: An interviewee stated that "it would improve sufficiently for us if, when we take a loan, that this would be provided, like in a shorter time. Because it takes four months for us to get it" [Batista and Januario, Union representatives, Autazes].

Many interviewees insisted on the difficulty of getting access to credit for productive activities, since they could not provide the required collateral guarantees and the official documentation proving their capacity to pay back the loan: "It's hard. It's hard [...] because, like . . . , we go get a credit, right? Say I want to set up a library. And when we go to get the credit, they put difficulties: "Is there someone to act as co-signer?" If I show my pay check, if I show my income, why do I need a co-signer?" [Sonia, Population, Autazes].

The *lack of information* is the only item unanimously agreed upon among all the social groups interviewed (7 quotes) in this category. This challenge reveals a concern by users of the financial system in relation to the lack of operational knowledge (instrumental knowledge) and the lack of knowledge regarding the financial system's norms and rules (including citizens' and customers' rights). Another respondent told us that ". . . , it is necessary that there be a new view of development; the view is still quite centralized and the characteristic of the North region is different from the rest of this country; the cultural issue, the lack of information. . ." [Américo, Public Sector Representative].

The *waiting lines* apparently represent an important challenge, considering the high number of respondents (7 quotes also) suggesting it. It is related to people waiting to be served at the Banco Postal during the days of benefit payments. Though we certainly believe in the importance of ensuring that the population (especially elderly people coming from distant localities) be attended to in the best possible conditions, we perceive the waiting line problem as an aspect of lesser importance within the analysis as we consider it an operational issue related to the local financial system. Besides Banco Postal, other correspondent points were open in the city in order to reduce this problem.

6. Discussion and results

Based on the analysis of the interviews, we can identify tensions between groups in local and non-local spheres. The separation of these groups aims to guide the elaboration of future proposals for additional changes, making possible the move to current financial services and programs, seeking a socioeconomic insertion of the studied actors matched with their interests. However, since presenting these proposals for further change would go beyond

the scope of this article, we simply suggest paths and alternatives for future research in order to expand our analyses.

In 2009, Autazes already counted six retail stores acting as correspondents and one regular bank branch, resulting from the significant expansion of the local economy and operational demands associated with difficulties in cash management in the town. Local commerce has also developed consistently over the years as the population started to have easier access to cash in town. As nearly half of the population still lives in rural areas and all correspondent points are located in the urban area of the municipality, the previously observed phenomenon of concentration of Autazes' wealth in Manaus has been replaced by a new concentration scenario: rural communities of Autazes now demand extension of access to formal financial services to the rural population as a way to help them develop their own sub-local economies.

From the non-local groups' point of view, Autazes is indeed a successful case of financial inclusion, since signs of economic growth can be seen everywhere in the city. In fact, there is a clear perception of the positive impact on the local economy by all actors interviewed. For local groups, however, besides economic growth, risk of mismanagement of personal bank accounts should be considered since it represents the dangerous over-indebtedness scenario for a significant portion of the new financially included.

As the beneficiaries of some government social support can be enrolled in the offer of payroll loans, most of the new financially included population accept the offer in order to have access to more expensive consumer goods, without clearly understanding the compromising effect of this enrollment on their income. It is important to note that all efforts for financial inclusion should be undertaken together with some kind of financial education process.

To overcome the tensions and restrictions related to people's high indebtedness and the lack of information, we think that some sort of educational action will be needed, encompassing necessities of the local actors and characteristics of financial services. These specific measures should be directed through the social *praxis* and individuals' political action (Freire 1972), so as to provide better understanding of the financial system's functioning (instrumental abilities), exercise social auto-organization practices, and make their demands viable as local social groups, in order to improve their capacity to negotiate with non-local agents responsible for the implementation of financial services and programs.

Inadequacy of financial products offered through correspondents to the local population was also reported. High bank fees and a low level of more elaborate financial products (insurance and savings) were cited as problems by local groups. Indeed, whereas some services are perceived as unnecessary (insurance products), others are avoided due to a lack of capital, collateral or trust in the bank (savings).

To overcome the tensions and restrictions related to inadequacy of services offered at the correspondent level, we think that a set of actions will be needed, aiming to better serve local actors' interests through a new articulation between the non-local and local spheres. These actions must maximize the potential of the local actors' productive characteristics and go beyond the sole promotion of consumption.

This article presented some lessons learned regarding the role of correspondents as instruments for financial inclusion in the case of Autazes in Brazil. It makes a valuable and original contribution for both policymakers and researchers concerning the implementation and evaluation of public policies to foster social development in three aspects: (1) presents relevant evidence of positive economic impact related to branchless bank implementation; (2) highlights the importance of ICT in building network infrastructure to provide financial access in remote locations; (3) points out clearly the importance of financial education to complement ac-

cess to financial inclusion programs. Although very particular, the case of Autazes can be seen as emblematic of the many financial inclusion projects taking place in various developing countries.

For local and non-local groups involved in the correspondent process, this article provides information that would be easily perceptible, since researchers represent listeners able to hear all points of view without previously taking sides or defending specific groups' interests.

For information systems researchers, the article also brings an interesting case of an ICT-based platform to support financial inclusion, thus helping them to overcome one of the challenges of modern society: the potential use of information systems to foster social inclusion.

From the perspective of theoretical contribution, this paper applies an innovative conceptual approach that helps researchers dealing with a complex network of relationships, that allows the emergence of sometimes diverse perspectives from different social groups, and that produces outputs articulated by some sort of negotiation process.

The transferability of our insights to other contexts must be approached with caution. Most of the consequences, barriers and triggers discussed in the paper must be considered under conditions of the Brazilian reality, some of which can be found in other countries. It is worthwhile to mention two main points when considering the potential transferability of this case to other contexts: first, the maturity level of Brazilian banking industry, in particular the use of ICT in Brazilian banks and the outsourcing infrastructure needed to make the correspondent model work; second, the level of a government benefits network that helps as many as forty million people, and the specificity of social benefits delivered to the low-income population in the country.

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