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Abbreviations

API	Application Programming Interface
AROPE	At Risk of Poverty and Social Exclusion
BDS	Business Development Services
CGAP	The Consultative Group to Assist the Poor
CRM	Customer Relationship Management
CSR	Corporate Social Responsibility
EaSI	EU Program for Employment and Social Innovation
EC	European Commission
EIB	European Investment Bank
EIF	European Investment Fund
EMN	European Microfinance Network
EU	European Union
GDP	Gross Domestic Product
GNI	Gross National Income
GPFI	Global Partnership for innovative Financial Inclusion
ICT	Information and Communication Technology
IMF	The International Monetary Fund
IT	Information Technology
IVC	Individualism versus Collectivism (Hofstede cultural dimension)
JASMINE	Joint Action to Support Microfinance Institutions
JEREMIE	Joint European Resources for Micro to Medium Enterprises
MFC	Microfinance Center
MFI	Microfinance Institution
MIS	Management Information System
MIV	Microfinance Investment Vehicles
MNO	Mobile Network Operator
NBFI	Non-banking Financial Institution
NGO	Non-Government Organization
OECD	Organization for Economic Co-operation and Development
OSS	Operational Self-Sufficiency
P2P	Peer-to-peer, person-to-person
ROE	Return on Equity
SaaS	Software as a Service
SME	Small and Medium-sized Enterprises
WBG	The World Bank Group

Introduction

What about microfinance in Europe? What is hidden behind the word 'FinTech'? Can FinTechs and financial inclusion be a good match? Can we bring microfinance and FinTechs together in Europe? What do people in the field think about it? Would it help? Make it worse? Financial exclusion, social exclusion, soon digital exclusion? These questions will be addressed in this paper.

FinTechs, 'financial technologies', or in the broadest sense 'the application of innovative technologies to the financial service sector', have become a popular phenomenon over the last decade in industrialized countries. In spite of the ambiguity of their definition, financial technologies are known to be disrupting the rigid business model of traditional financial institutions given their flexible, agile and high-speed characteristics. FinTechs have gained a lot of attention in emerging countries, particularly in the microfinance sector, for making the delivery of financial services more affordable and accessible than ever. Indeed, when we attended the 13th Annual Global Microfinance Forum in March 2017, many questions were raised about the role of FinTechs in supporting financial inclusion around the world.

As a matter of fact, more than 2 billion people still live on less than \$2 a day, and approximately the same number of people did not have a bank account in 2014 (The World Bank Group [WBG], 2014b). Against this backdrop, microfinance has become a key tool to fight financial exclusion: it aims at giving those people the opportunity to take control of their own lives by providing them with financial means and guidance. Although microcredit is nearly half a century old in developing countries, microfinance institutions are still struggling to expand outreach to the most vulnerable segments and reach financial sustainability at the same time. Hence, FinTechs and their ability to provide ubiquitous and low-cost access to financial services are seen as a key enabler for financial inclusion.

On the other side of the globe, microfinance in Western Europe has only grown since 2000 with the Lisbon Strategy for sustainable and inclusive economic growth. In 2008, microcredit has been acknowledged by European authorities as one of the tools to meet the target set by the Europe 2020 Strategy: reducing the number of people at risk of poverty and social exclusion by 20 million by 2020. Consequently, the EU authorities have deployed support programs for microfinance institutions, which have contributed to the recent 13% growth rate in the number of active micro-borrowers in Europe. Nevertheless, this number

hints that there remains a large unmet demand for funding from micro-entrepreneurs that European microfinance institutions struggle to fulfil.

As a result, in a European context where the investment in FinTechs rises exponentially and where their benefits are hyperbolically praised, one could wonder how microfinance institutions in Europe perceive these innovative technologies, how it could impact their business model and how it could help them meet their dual mission of expanding outreach and becoming financially independent. But to date, there has been surprisingly little research interlinking the development of FinTechs with the European microfinance sector. As such, the aim of our thesis is to fill this gap in the literature by answering the following question:

“What is the role of financial technologies in the business model of microfinance institutions in Western Europe?”

Given the recency of the topic, we follow a qualitative approach which also better suits our willingness to not only assess the current use of FinTechs in the Western European microfinance sector, but also get a sense of the perceived benefits and potential hindering factors by the microfinance institutions. To direct our research, we build hypotheses throughout the theoretical part which will be confronted to the reality of the field in the practical part. Since the literature regarding the use of FinTechs in the European microfinance sector is sparse if not absent, we assume that the advantages of FinTechs can be transposed from two different, yet closely related, contexts back to our research environment. To be more precise, the foundations of our hypotheses either come from the use of FinTechs in developed countries but by traditional financial institutions, or from the use of FinTechs by microfinance institutions but in developing countries. By considering the differences between these contexts and our research environment – the Western European microfinance sector, we build consistent hypotheses to be tested in a second phase through case study analyses.

This approach structures our research in the following way. *Chapter 1* goes back to the roots of microfinance in developing countries and explains the key elements of microcredit. *Chapter 2* considers microfinance in developed countries, highlights the geographical differences of the microfinance markets and describes the situation of the European microfinance sector, particularly in the West. Those two first chapters are key in setting the microfinance context, before jumping into a more technological background. After defining

the 'FinTech' term, *Chapter 3* describes the origins of the rise of FinTechs in developed markets, then focuses on three main technologies (i.e. mobile banking, cloud computing and data analytics) and assesses their impact on the business model of financial institutions based on literature from practitioners. *Chapter 4* ends the theoretical part by examining how microfinance institutions benefit from FinTechs in developing countries through various illustrations. The literature review sets forward eight major benefits that Western European microfinance institutions could benefit from, which provide a basis for the hypotheses to be tested in the practical part. As such, *Chapter 5* restates the research question and explains the methodology used for the qualitative approach. *Chapter 6* introduces the three case studies on which the fieldwork is based (i.e. microStart in Belgium, Adie in France, and Qredits in the Netherlands) and presents the result analysis by scrutinizing each hypothesis before reporting the general findings. Finally, we will conclude by explaining the implications for microfinance institutions in Western Europe, after which we will comment on the limitations of the study and suggest further areas of research.

Part I: Theoretical part

Chapter 1: Global overview of financial inclusion and microfinance

Although our research will focus on microcredit in Europe, it is important to first understand what ‘Financial Inclusion’ and ‘Microfinance’ entail and represent globally. Financial inclusion englobes microfinance, which in turn contains various financial services, including ‘*microcredit*’, the service we focus on in this research. Microcredit has a history in the various regions of the world, and more particularly in developing countries as shown by the large literature available for that part of the world. This first chapter builds the necessary foundations regarding financial inclusion, microfinance, microcredit, and the general challenges of the sector. This will lead us to *Chapter 2* in which we will consolidate the understanding of microcredit within the microfinance environment of Western Europe.

1.1 Financial inclusion

In a recent book published by the World Bank, Ledgerwood, Earne and Nelson (2013) describe ‘financial inclusion’ as a concept which is customer-centric and includes two dimensions. First, it deals with the accessibility to and use of financial services. Second, it is related to education to better equip customers. According to Beck (2015, p. 3), financial inclusion refers to *“the access to reasonably priced and appropriate formal financial services that meet the needs of enterprises and households.”*

These definitions suggest that some people do not have a proper access to formal financial services, if at all. The reasons can range from the geographic distance of a service provider or prohibitive fees to the lack of documentation required by traditional financial institutions (Beck, 2015). As a consequence, they are excluded from society on a financial level, and for aspects of professional and social life, such as protection and education. As such, financial inclusion brings the unbanked population back into the financial system, which is critical to foster business creation and to better manage financial shocks to which the unbanked population segment is often more exposed (Attali, 2012).

Better financial inclusion can be associated with greater proximity, lower costs, simpler procedures, stronger legal rights and also with more stable individual and political environments (Allen, Demirguc-Kunt, Klapper, & Soledad Martinez Peria, 2016). At an individual level, financial inclusion translates into the ability to make transactions and to smooth consumption through saving and borrowing to improve overall wellbeing (CGAP,

2017a). At a macroeconomic level, financial inclusion is considered a way to improve livelihoods, reduce poverty and advance economic development towards growth and stability (CGAP, 2017a).

1.1.1 Financial inclusion in figures

In 2014, the World Bank Group claimed that only 62% of the world's adult population had a bank account, leaving two billion unbanked adults worldwide (see Annex 1, p.133 and Annex 2, p.133 for a geographical visualization). At a regional level, there is a huge gap between high-income OECD countries where only 6% of the people aged over 15 do not have a bank account, compared to the Sub-Saharan Africa and the Middle East where these numbers raise to 65% and 85% respectively (The World Bank Group [WBG], 2014a). Another interesting element comes to light when we filter the unbanked by income. If we look at the people living under \$2 a day, 77% of adults do not have a formal account (Demirguc-Kunt A. , 2012).

Over the last years, the number of unbanked individuals worldwide fell significantly, that is from 49% to 38% between 2011 and 2014 (The World Bank Group, 2014b). This fall is found to be largely caused by the emergence of mobile technologies and their role in facilitating access to financial services in the developing world (The Economist, 2015). This decline in the unbanked population suggests that financial inclusion is improving. Nevertheless, Cámara and Tuesta (2014) emphasize that the measurement of 'financial inclusion' goes beyond the simple indicator of the bank account penetration, since it is a concept which falls within the scope of poverty reduction, economic development and social inclusion.

1.1.2 Financial inclusion on the agenda of policymakers

For years, there has been a real interest from policymakers in considering financial inclusion. This derives from the acknowledgment that despite a general economic progress in the developing world, large segments of the population remain left out, broadening the development and inequality gaps (Sahay, et al., 2015). International institutions are also looking at financial inclusion as an issue of growing importance. For instance, the United Nations indirectly included financial inclusion in its Sustainable Development Goals by its willingness to *“strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all”*, which is part of a more

global goal to *“Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.”* (United Nations, 2014, pp. 15-16).

Moreover, after the financial crisis of 2008-2009, the G20¹ included financial inclusion as *“one of the main pillars of the development agenda”* (Global Partnership for Financial Inclusion [GPFI], 2010, p. 1) by setting the Global Partnership for Financial Inclusion² (GPFI) as an implementation mechanism of the G20 Principles for Innovative Financial Inclusion (see Annex 3, p.134). The GPFI is an inclusive platform for *“peer learning, knowledge sharing, policy advocacy and coordination”* (GPFI, 2017, para. 3) for the work on financial inclusion between G20 members and non-members together (GPFI, 2010).

Both the Global Sustainable Goals and the GPFI are examples of international cooperation aimed at bringing solutions to financial exclusion issues, and microfinance is considered as one of the development tools to try to tackle these issues.

1.2 Microfinance

Microfinance comes into play where traditional finance seems to be absent. Beck (2015) defines microfinance as an *“attempt to provide financial services to households and microenterprises that are excluded from traditional commercial banking services. Typically these are low-income, self-employed or informally employed individuals, with no formalized ownership titles on their assets and with limited formal identification papers”* (Beck, 2015, p. 3). To complete this definition, Ledgerwood (1999) emphasizes that microfinance is not only a financial intermediation tool for low-income self-employed people, but it also includes a social intermediation aspect to the services provided. Therefore, the microfinance institutions

¹ *“The Group of Twenty (G20) is the central forum for international cooperation on financial and economic issues. The G20 countries account for more than four-fifths of gross world product and three-quarters of global trade, and are home to almost two-thirds of the world’s population. The G20 comprises 19 countries plus the EU. These countries are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom (UK) and the United States of America (US)”* (G20, 2017).

² *“The GPFI is the main implementing mechanism of the endorsed action plan by G20 Leaders during the Seoul Summit and functions as an inclusive platform for G20 countries, non-G20 countries and relevant stakeholders for peer learning, knowledge sharing, policy advocacy and coordination.”* (GPFI, 2017). *The implementing partners – to develop data for measurement and methodologies for countries wishing to set targets – are since:*

- 2010: the Alliance for Financial Inclusion (AFI), the Consultative Group to Assist the Poor (CGAP), the International Finance Corporation (IFC).
- 2012: the World Bank Group (WBG).
- 2013: the Organisation for Economic Co-operation and Development (OECD).
- 2014: The Better Than Cash Alliance, the International Fund for Agricultural Development (IFAD)."

have a dual mission of financial and social inclusion. More than access to credit and financial services, she claims microfinance to be part of an economic and social development approach. Microfinance is a concept that can be translated into different geographical and institutional contexts. Indeed, it has been adopted in different regions and adapted to the different economic, social and institutional environments.

1.2.1 *Origins of microfinance*

The microfinance market grew as a *“new project of development based on financial market activities”* and microfinance institutions arose as key agents of that project (Mader, 2015, p. 39). Mader (2015) challenges the usual narrative of the sudden discovery of microfinance by Muhammad Yunus in 1977 as starting point¹. Instead, he gives a more granular genealogy of the context-related processes that gave birth to the idea of modern microcredit (see Annex 4, p.135 for all key events). Mader (2015) adds that the institutionalization of microfinance neither comes from the South – as it is often claimed – nor is a tool imposed in a top-down approach by the North, but was hybridly shaped by numerous interrelated institutional changes.

The microfinance heritage that has shaped modern microfinance is complex and could make the object of an entire thesis. In the scope of our research, it is acceptable to simply note that the transformation of microfinance happened through different institutional changes in history; should it be colonialism, decolonization, charitable intent, developmentalism, self-help idealism, neoliberalism and the still-being-defined direction of global finance (Mader, 2015).

The involvement of transnational institutions was vital in shaping today’s microfinance. Specifically, three institutions played a particularly important role during key events: the World Bank, the United Nations and the well-known Nobel Institute.

In 1995, the World Bank created the ‘Consultative Group to Assist the Poor’ (CGAP)² to promote microfinance and share best practices related to reporting, performance standards,

¹ *“Mohammed Yunus started in 1976 during a famine period to lend money to people of his community. Seven years later, Grameen Bank was founded and Bangladesh became a textbook example for microfinance”* (Becker, 2010).

² *“The Consultative Group to Assist the Poor is a global partnership of over 30 leading organizations that seek to advance financial inclusion. CGAP develops innovative solutions through practical research and active engagement with financial service providers, policy makers, and funders to enable approaches at scale”* (CGAP, 2017b).

operational tools, financial projections and more (Bhatnagar, Dewan, Moreno Torres, & Kanungo, 2003). In other words, *“CGAP controls the truths about microfinance”* (Roy, 2010, p. 46). It embodies the power of the World Bank for microfinance globally and can be assimilated as the implementation mechanism of its agenda on poverty.

Second, the United Nations declared that 2005 was the ‘International Year of Microcredit’ to *“increase public awareness and understanding of microcredit and microfinance; promote inclusive financial systems; support sustainable access to financial services; and encourage innovation and partnership.”* (United Nations Capital Development Fund, 2006, p. 5). As a result, the UN granted massive legitimacy to microcredit which was on the rise and that was increasingly seen as a comprehensive development tool (Mader, 2015).

Third, in 2006 Muhammad Yunus received the ‘Nobel Peace Prize’ by the Norwegian Nobel Committee for his work creating economic and social development at the bottom of the pyramid, which the Committee advocated lead to better democracy and human rights, and ultimately supported peace (Nobel Media AB, 2006, p. 2). Awarding the Nobel Peace Prize to Yunus gave microfinance a face and anchored credit as a way to alleviate poverty and even a tool to bring peace.

These three events led to a lot of media coverage. They show how influential institutions are in shaping the concept of microfinance, which in turn shapes the financial world and the market dynamics. Microfinance, and more particularly microcredit, gained momentum and interest from governments, investors and other actors, and took off at the end of the twentieth century (see Annex 5, p.136).

1.2.2 Microfinance actors: government, donors, investors and microfinance institutions

The significant evolution of financial inclusion and microfinance over the last 30 years is also reflected by the dynamics of the market and its actors: that is the multitude of actors, the entrance of new players and the exit of others. The microfinance market grew in complexity over the years and there are many different actors whose roles, risks, and returns have continued to evolve. Beyond the reciprocal dynamic between clients and service providers, there are governments, donors, investors, Non-governmental organizations (NGOs), for-profit companies and development practitioners (Ledgerwood, et al., 2013).

First, governments and international organizations are key to maintain stability of the financial market system by providing *“[...] a prudential regulatory framework that will promote*

the sector's development" (Attali, 2012, para. 9). They have a role to play in the financial inclusion of low-income populations and they must ensure that the microfinance industry moves in a direction that is healthy for society at large. Attali (2012) adds that government must explore, adapt and simplify the framework when possible. Examples of well-thought-out governmental incentive mechanisms are:

- promoting access to banking services and enabling people to open bank accounts more easily, like in Brazil with the approved 'Resolution 4480'¹ allowing the opening of an account with digitized documents (Zmitrowicz, 2017);
- helping digitalize authentication for financial functionalities, as in India's 'Aadhaar' program for biometric identification (Banerhee, 2016).

Second, in order to build a financial system better catered to the poor, there is a necessity of combining the efforts of public players with private ones. In particular, donors are entities that aim to make the financial ecosystem more inclusive for economic development. They can be state-owned donors like USAID or private foundations like the Bill & Melinda Gates Foundation (see Annex 6, p.137 for more examples).

Third, the creation of microfinance investment funds (MFIFs) enabled to attract investments from various types of high-end investors in favor of low-end micro-entrepreneurs (Matthäus-Maier, 2006). These include private donors, development agencies, private individuals and institutional investors (see Annex 7, p.137 and Annex 8, p.138). Investors target different MFIFs depending on the importance attributed to financial or social aspects. The particularity of MFIFs compared to traditional funds is that they do not necessarily seek a financial return (see Annex 9, p.139 for examples) (Matthäus-Maier, 2006). Concretely, microfinance became an attractive alternative asset class for investors (Rhyne, 2009). This interest in microfinance has led to more than a hundred specialized Microfinance Investment Vehicles which amounted in total to \$11.6 billion in December 2015 (Symbiotics, 2016), up from \$6.8 billion in 2010 (Symbiotics Research & Advisory, 2011). A recent report by Symbiotics (2016) reveals a compounded annual growth rate of 20% from 2006 to 2015 and

¹ "In March 2016, the Brazilian government took a major step towards institutionalising remote banking for the poor. The country's National Monetary Council approved a law called Resolution 4,480, which allows financial institutions to open accounts for people with only digital documents. The new law in Brazil is bringing banking services to some of the poorest people in the country by making it easier for them to offer low-income people accounts and credit" (Apolitical.co, 2017).

shows how important MIVs have been to funding MFIs on top of donors (see Annex 10, p.140 and Annex 11, p.141 for more details).

Lastly, microfinance institutions (MFIs) are indispensable to reach the end costumers. There are difference types of microfinance providers. Some are licensed as banks and others can be grouped under the designation 'non-bank financial institutions' (NBFIs) (e.g. insurance companies and mobile operators) and this is depending on country-specific legislations. Another approach consists in looking whether the MFI is public (e.g. governmental bodies) or private (e.g. cooperatives, NGOs), commercial institutions) (Beck, 2015; Ledgerwood, et al., 2013). All these microfinance service providers differ in their legal form (i.e. banking or other license, non-for-profit), oversight (i.e. government, central bank, and specialized body), their ownership (i.e. members, private or public shareholders) or in their funding structure (i.e. debt, equity, grants) (see Annex 12, p.142 for a table illustrating the different types of microfinance providers) (Ledgerwood, et al., 2013).

The type of MFIs, characterized by the aspects mentioned above, depends not only on the national regulatory environment but more importantly on the mission and motivations that are at the core of the microfinance activity (i.e. socially or commercially oriented). Indeed, even if the pursuit of both social and financial goals are ideal, the more complex reality forces the microfinance providers to make choices regarding the adoption of a type of MFIs. All in all, the environment as well as the motivations behind the activities impact the choice of the type of MFIs (e.g. legal form), which in turn impact the kind of products and services offered (Ledgerwood, et al., 2013). For instance, in countries where MFIs are highly subsidized, microfinance providers tend to be more socially orientated and consequently adopt NGOs status; since the external funds relieves some pressure on the revenues of the MFIs, the products offered target more risky customers at a smaller price – compared to an MFI which is not as subsidized and that will have a higher pressure to pay back its shareholders and borrowers.

1.2.3 Microfinance products and services

Just like the wealthy, the poor need to manage their daily expenses, save, and borrow money (CGAP, 2017a). The financial service needs of the low-income population include payment and transaction mechanisms, insurance, access to capital and safe savings (Ledgerwood, et al., 2013). The simple lack of a bank account deprives people of conducting basic financial activities that contribute to human well-being (Demirguc-Kunt A. , 2012).

Hence, low-income populations often rely on informal methods of dealing with money, which are risky, unpredictable, and expensive. Instead of borrowing money from formal institutions, they call on informal community-based providers such as family, friends, brokers, and informal moneylenders (see Annex 13, p.143 for details on the formalization level of money providers).

In response to the use of alternative and often unsecure providers, microfinance services emerged for lower-income segments in order to “[...] *improve individual and household welfare and spur small enterprise activity.*” (CGAP, 2017a). As a result, microfinance started with microcredit, but over time has been extended to micro-savings, micro-insurance, payment systems and pensions as there was not only a demand from poor households from productive credit but a whole range of services (Ledgerwood, et al., 2013). Nevertheless, an appropriate product design is key and must take the status and needs of the customers into consideration (Beck, 2015). That is, services all must be reliable, accessible, flexible (e.g. terms and conditions), safe, and of course affordable. Eventually, it really became ‘microfinance’ – closer to what finance entails but at a micro level, adapted to poor people and households. This paper, however, will mainly focus on the disbursement of microcredit, which remains the flagship of microfinance.

1.2.4 Focus on microcredit

The roots of microfinance lie in microcredit. In fact, the word ‘microfinance’ is commonly used to refer to microcredit. Although microfinance does more than granting loans, lending is the most substantial activity of the microfinance industry.

What MFIs offer is not donation but credit. In that sense, microcredit is not charity and requires the debtors to pay back the funds with interest or fees at a later time. It is a tool at the disposal of individuals who have an entrepreneurial spirit to start a small business, but are not able to materialize it due to a lack of capital. To a certain extent, they are called micro-entrepreneurs, creating their own jobs often by necessity as formal sector employment eludes them (Becker, 2010). Formerly, microcredit was not a consumer credit to finance non-durable good but a productive credit to launch or expand a micro-business (see Annex 14, p.143 for a segmentation of credit categories). Business microloans are “... *targeted at micro-enterprises and vulnerable people who wish to go into self-employment but who do not have access to traditional banking services*” whereas personal microloans “... *address vulnerable clients' needs such as rent, personal emergencies and education as well as investments in their employability*” (EMN & MFC, 2016, para. 4).

According to Ledgerwood et al. (2013), a microcredit has different inherent characteristics: (1) the size of the loan, (2) the lending methodology, (3) the collateral aspect, (4) the repayment terms and (5) the pricing conditions:

- (1) The average loan size varies depending on the regions of the world. In 2009, it was around \$200 in Asia, \$300 in Africa and the Middle East, \$800 in Latin America and approximately \$2000 in Central Europe (Becker, 2010). The loans size can increase over time based on the credit history of the clients, his or her debt capacity and needs.
- (2) A loan provider can grant a microcredit to a single individual or to a group of individuals where every person is in some way liable for the loans of the other group members. Group-lending requires less involvement from the provider since the screening and reimbursement pressure are dealt with among group members. Individual lending demands greater up-front analyses with of tools such as credit ratings from rating agencies or credit-scoring and requires greater collateral.
- (3) Because poor people have few assets to back a loan, there are other alternatives for collateral which reduce the risk of the loan provider. Examples are peer pressure, reputation, compulsory savings, personal guarantees, liable co-signers, etc.
- (4) A loan is outstanding for a certain period of time, could it be a week, a month or a year. The longer the period, the bigger the risk. Therefore, the maturity of the loan tends to be rather short. Most of the time, the repayments terms include the principal and the interests on top of it, which can be defined on a weekly, bi-weekly or monthly basis. The maturity and the repayment terms are usually aligned to the type of activity, the cash flow generation, the transaction costs, the needs and the profile of a client.
- (5) An adequate pricing is important. The revenues come from the interest rate and the service fees. Ideally they cover the costs incurred by the loan provider – the significant ones being the operational costs, the loan loss provisions and the cost of capital (for instance the cost of debt funded by from MIVs).

1.2.5 Microfinance, a tool for financial inclusion

As outlined by the Global Findex in the *section on Financial inclusion in figures (1.1.1)*, financial exclusion is a reality in developing as well as in developed countries as we will see in the next Chapter (WBG, 2014a). Microfinance can be seen as an economic development tool put at the service of the poor, aimed at tackling a development issue with the use of an

economic means. In other words, there is an interest in poverty alleviation while advocating an idea of self-help empowerment (Roy, 2010).

When looking at the inclusion problem, microfinance has played a noticeable role already. As shown in Figure 1, the number of borrowers increased tenfold between 1998 and 2013, from 21 to 211 million borrowers worldwide (Reed, 2015). However, even if the total number of borrowers (i.e. breadth of outreach) is growing, the proportion of poor borrowers (i.e. depth of outreach) is decreasing. The challenge in the level of outreach is unfortunately not the only one.

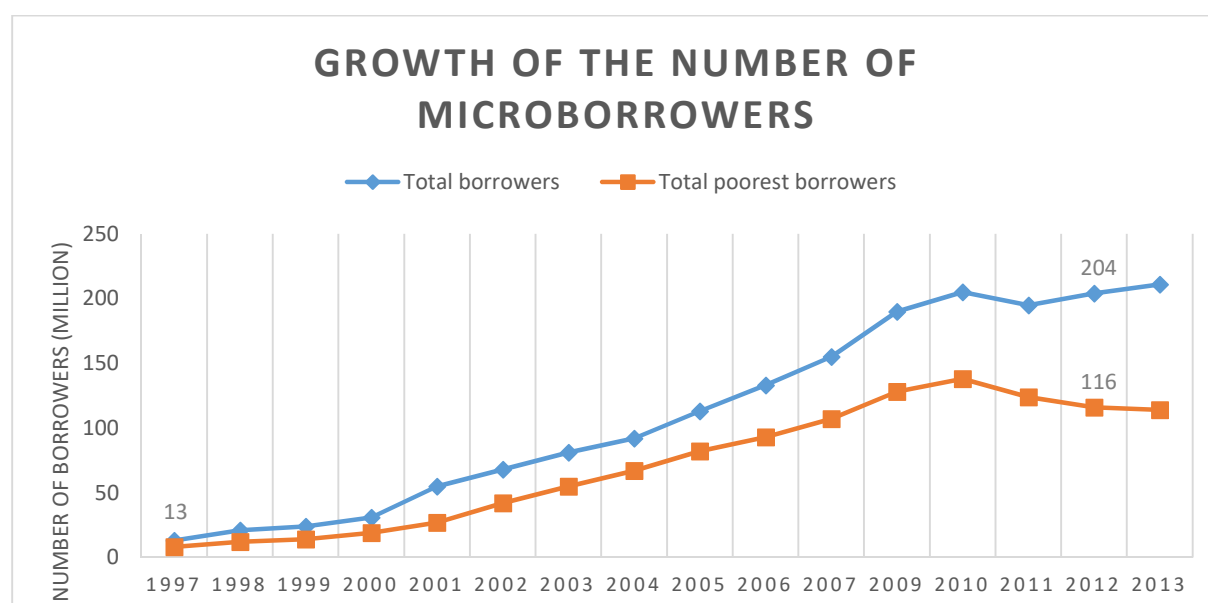


Figure 1: Growth of the number of total borrowers and total poorest borrowers (December 1997 – December 2013). Source: (Mapping Pathways out of Poverty: The State of the Microcredit Summit Campaign Report, 2015)

Other obstacles like policy of interest rates, regulations, client over-indebtedness and gender discrimination are well present and must be dealt with (Janda & Zetek, 2014). Microfinance is confronted with these issues while trying to tackle the greater financial inclusion problem and ultimately ensure that the financially excluded population is reached. Moreover, the list of challenges mentioned above can be extended with questions related to the danger of mission drift and to the impacts of microfinance services. Each and every one of these critical questions would deserve much more attention but they are out of the scope of this research. Rather, we will continue progressing towards a better understanding of the microfinance sector in developed countries and more particularly in Western Europe.

Chapter 2: Translation of microfinance into developed countries

Until now, we have discussed microfinance and microcredit at a global level with a focus on developing regions which are home to the majority of poor households and where microfinance has had its greatest momentum (Barinaga, 2013). Admittedly, those regions experience a severe poverty compared to in developed countries, but industrialized¹ countries should not disregard microfinance due to the lack of extreme poverty close to home. Indeed, developed countries counts a proportion of the population lacking financial services as well, and there is a growing segment of the population in the USA and Europe at risk of poverty (Pedrini, Bramanti, Minciullo, & Maria Ferri, 2016). While poverty in industrialized countries is often neglected (Armendáriz, 2009), microfinance institutions have started offering financial services there as well (Jayo, Gonzalez, & Conzett, 2010a).

Before specifically addressing the microfinance market of Western Europe, we will first outline some important differences between developing and developed regions. Second, we will dig into the European microfinance market itself, underline the dichotomy that exists between Eastern and Western countries in that regard, review the support put in place by the European authorities and highlight some figures regarding the current EU microfinance market. Finally, we will outline the important challenges hindering the development of microfinance in Europe.

2.1 Main microfinance differences between developing and developed regions

As mentioned earlier, microfinance was adopted in various parts of the world and was adapted according to each region's economic, social and institutional environment. It is therefore important to underline the differences that exist between developing and developed countries before going into more detail on European microfinance. We identified nine of those differences. Even if the list hereunder is not exhaustive, they are important ones to consider.

2.1.1 *Limited academic research*

First of all, the microfinance sector in developed countries is young and is still to be better defined and researched (Pedrini, et al., 2016). There is for the moment limited

¹ "An *industrialized country*, also commonly referred to as a developed country, is a sovereign state with a highly developed economy relative to other nations. Most commonly, the criteria used to evaluate a country's level of development is its gross domestic product (GDP) per capita" (Boundless Sociology, 2016).

academic research on microfinance in the industrialized countries, compared to the extensive focus on the developing world. The reason could be the infancy of the sector in developed regions, as well as the less severe depth and scale of poverty.

2.1.2 *Wealth difference*

The second important difference is the level of poverty. The wealth difference is considerable and we observe a hundredfold difference in gross national income (GNI) per capita¹ between the poorest and richest countries (see Annex 15, p.144), for instance between \$720 in Democratic Republic of Congo (DRC) and \$72,080 in Luxembourg. Second, the population below the poverty line is considerably lower in industrialized countries than in developing ones (Armendáriz, 2009). This can be explained by the social safety nets² of welfare states characterizing the industrial world (Cozarenco & Szafarz, 2014). Those safety nets reduce the number of people at risk of poverty and greatly impact the lives of socioeconomically vulnerable people.

2.1.3 *Proportion of the informal sector*

The third difference is the size of the informal sector which is very small in developed countries relative to the developing world. In industrialized countries, the number of self-employed individuals working in the informal sector was estimated to represent 16% of the labour force, whereas the level in developing nations is around 50%, with many countries of South Asia and Sub-Saharan Africa exceeding 90 % (see Annex 16, p.144 for the informal economy size and Annex 17, p.145 for the workforce percentage) (Loayza, 2016). All in all, compared to developing countries, there is a smaller number of poor individuals as well as a much smaller degree of informal sector labourers who are excluded from the official world of employment (Armendáriz, 2009).

¹ *"GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States"* (The World Bank Group, 2017). The GNI per capita based on purchasing power parity (PPP) reflects the average annual income of a country's citizen and his or her purchasing power respective to the country.

² *"Social Protection systems consist of many different types of benefits. The European systems are big and include contributory benefits and non-contributory benefits. Contributory benefits are mostly associated with risks directly linked to labour market events (unemployment, retirement, professional illness and accidents, etc). Non-contributory benefits contain a large range of arrangements of which social assistance is only one (such as universal child benefits and social pensions)." (de Neubourg, Castonguay, & Roelen, 2007).*

2.1.4 *Bank and account penetrations*

The figures relative to the degree of the informal sector underline another difference that touches financial inclusion and microfinance: the level of bank penetration. Industrialized countries are characterized by a high density of bank branches and a substantial level of bankerization (see Annex 18, p.146). For instance, there are 77 branches for a hundred thousand people in Luxembourg while there is only one in the Democratic Republic of the Congo (DRC) (The World Bank and the International Monetary Fund, 2015). This means that there are 1,300 people on average by retail branch in Luxembourg against, in theory, 100,000 a branch in DRC. Whereas geographical accessibility of commercial branches can be considered an issue in developing countries, it is no obstacle in developed regions (Pedrini, et al., 2016). Another important proxy to characterize the bank penetration difference is the percentage of adults having a bank account. Although 62% of adult worldwide had a bank account in 2014, there is a huge gap between developing and developed countries, with, for example, 31% in Bangladesh, 42% in Bolivia, 94% in the USA and 99% in the Netherlands (see Annex 19, p.147).

2.1.5 *Microcredit dominance*

Those contrasts in banking infrastructure, social structure and financial inclusion tools play a role in shaping the direction of the microfinance sector in Europe. Since the poor in developing nations are excluded from financial life on all fronts, there is a need for the whole bulk of financial services from the MFIs in order to compensate the lack of efficiency of the welfare systems (Radermacher & Brinkmann, 2011). On the contrary, the targeted segments of MFIs in the developed countries are essentially lacking access to credit products, which predominantly confines microfinance in Europe to microcredit (Armendáriz, 2009).

2.1.6 *Individualism of loans*

Moreover, the type of microcredit offered in developed countries is individual instead of the collective type prevailing in developing regions. This difference is associated with the different socio-economic context and reciprocity dynamic (Pedrini, et al., 2016). Cultural dimensions – such as the ‘individualism versus collectivism dimension’ (IDV)¹ of the Hofstede’s

¹ “Individualism on the one side versus its opposite, Collectivism, as a societal, not an individual characteristic, is the degree to which people in a society are integrated into groups. On the individualist side we find cultures in which the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family. On the collectivist side we find cultures in which people from birth onwards are integrated into strong,

culture model¹ – play a role in the strength of the social sanctions mechanisms, which are weaker in developed countries. Thus, the low propensity to cooperate and share risks does not help achieve better repayment rate in industrialized countries (see Annex 20, p.148). The microfinance in the industrialized region has been adapted to that cultural difference and is not based on joint liability as it was the case with the original microfinance approach of Muhammad Yunus in Bangladesh (Calidoni & Fedele, 2009).

2.1.7 Target group

Whatever the region, MFIs target individuals who are excluded from the formal financial market, often because they lack sufficient collateral, even if they have enough drive to be economically active (Bruhn-Leon, Eriksson, & Kraemer-Eis, 2012). Nevertheless, the target group in developing countries is usually constituted by the poor that have to survive in the informal world and are in an extreme socioeconomic situation; whereas in the developed countries, the target group may be included in the formal economy through the social welfare system but lack the necessary collateral to be supported by a commercial loan institution – should they be micro-entrepreneurs, unemployed people, immigrants, individuals with a low level of education or skills, elderly people, etc. (Pedrini, et al., 2016). The target group in industrialized countries is often between benefiting from social welfare and being autonomous financially; on the one hand, if they start working they would lose their social transfer, and on the other hand they lack the necessary economic resources that would enable them to launch a productive activity or to deal with business uncertainty (Armendáriz, 2009).

2.1.8 Interest rate and loan size

Another important difference lies in the average effective interest rate charged to micro-borrowers, which is directly linked to the costs structure (i.e. operational costs, costs of capital and loan losses) and the revenue model (i.e. margins) of the MFI. As such, MFIs in developed countries usually charge customers with lower interest rates. This can be partially explained by the lower servicing costs thanks to a better infrastructure and by the bigger average loan size which allows economies of scale (Bruhn-Leon, et al., 2012). While the average loan size in developing countries was below US\$ 1,000 (Becker, 2010), the average

cohesive in-groups, often extended families (with uncles, aunts and grandparents) that continue protecting them in exchange for unquestioning loyalty, and oppose other ingroups” (Hofstede, 2011).

¹ The Hofstede’s cultural model is a cross-cultural framework that describes the effect of the culture of a society on the value and behaviour of the members of societies.

microloan size in Europe was approximately €6,000 – specifically €8,000 for business and €2,000 for personal microloans (Botti, Luigi Dagradi, & Maria Torre, 2016, p. 35). Bruhn-Leon et al. (2012) add that subsidies in developed countries allow MFIs to offer a pricing below the level that would be required to cover all the operating costs implied by the microcredit activity.

2.1.9 Types and motivations of microfinance providers

The type and motivations of microfinance institutions comes as the last main difference between developing and developed countries. Indeed, MFIs in developing countries have been transformed by a wave of commercialisation, which has directed their goal towards a market- or profit-oriented one. Nevertheless, this trend has not (yet) reached developed countries where MFIs are usually socially driven, non-for profit organizations, and benefit from subsidies (Pedrini, et al., 2016) (see Annex 21, p.149). Indeed, Pedrini et al. (2016) state that many MFIs in Europe and the USA receive subsidies from public funds as well as from commercial banks. The latter are principally including microfinance support as part of their Corporate Social Responsibility (CSR) activities.

2.1.10 Conclusion on the differences between developing and developed countries

To summarize, there exist at least nine important differences between microfinance in developing and developed regions. These are presented below in Table 1 for the sake of clarity. All of those differences are important to better understand the reality in which MFIs operate in industrialized countries, and in Europe more particularly.

<i>DIFFERENCES</i>	<i>DEVELOPED COUNTRIES</i>	<i>DEVELOPING COUNTRIES</i>
1. Extent of academic research	Limited	Extensive
2. Wealth difference		
• GNI per capita	• High	• Low
• % at risk of poverty	• Limited	• High
3. Proportion of workers in the informal sector	16%	50% to 90%
4. Infrastructure		
• Branches density	• High	• Low (difficult access)
• account penetrations	• 94%	• Less than 62%
5. Microfinance financial services	Microcredit dominance	Whole suit of services
6. Individual vs collective loans	Individual loans	Collective loans
7. Target group	• Economic drive • Safety net support	• Economic drive • Abandoned to self-sufficiency
8. Interest rate and loan size	• Low AIR • Average loan size (€6,000)	• High AIR • Average loan size (< \$1,000)
9. Type and motivations of microfinance providers	• Socially-oriented • Usually not for profit organizations	• Profit-oriented • # NGOs getting smaller, # NBFIs getting bigger

Table 1 : Main differences between developed and developing countries. Personal elaboration.

2.2 Adoption of microfinance in Europe

Since Europe is the geographical focus of the thesis, more specifically Western Europe, it is important to depict the European microfinance environment in greater detail. The European microfinance market is dichotomously divided between the Eastern and Western sub-regions and is highly fragmented at a national level as well. In the field research of the thesis, we will dive a bit deeper into three countries through cases studies respective to MFIs operating in Belgium, France, and The Netherlands. Until then, the analysis will be limited to a binary approach of both Eastern and Western European microfinance sub-regions¹.

¹ Before going further in the dichotomous diagnosis of the European microfinance, the distinction of the geographies of the two European sub-regions is important to be born in mind. The distinction is mainly geographical since the microfinance history is correspondingly rooted in the geopolitical framework of Europe. Eastern Europe, lying between the Alpes and the Ural mountains, includes countries like Estonia, Latvia, Lithuania, Poland, Czech-Republic, Slovakia, Hungary, Croatia, Bosnia-Herzegovina, Montenegro, Kosovo, Albania, Macedonia, Bulgaria, Serbia, Romania, and Ukraine. On the other hand, Western countries are countries like Germany, Switzerland, Italy, Portugal, Spain, France, Belgium, The Netherlands, the United Kingdom, Ireland, Norway, Sweden and Finland (Enam, 2016) (Jayo, et al., 2010a).

2.2.1 *Origins of microfinance in Europe*

The European financial sector has a rich history linked to the delivery of financial services to more vulnerable people, with for instance the German ‘Cooperatives Raiffeisen’ in the nineteenth century, the ‘Casse rurali’ cooperative model in Italy (Kraemer-Eis & Conforti, 2009) and the ‘Cooperative Credit Society Act’ in the UK in 1904 (Mader, 2015). However, the modern European microfinance is inspired from the microfinance models that emerged in developing countries in the seventies (Kraemer-Eis & Conforti, 2009).

Microfinance did not start everywhere in Europe simultaneously. Rather, it began in the late 1980s in Eastern Europe, around the collapse of the Berlin wall in 1989 and the dissolution of the Soviet Union¹ in 1991 (Jayo, Lacalle Calderón, Rico Garrido, Dayson, & Kickul, 2010b). This transformed the region from a centrally-planned to a market-oriented economy, leading to an increase in unemployment (Jayo, et al., 2010b). Kraemer-Eis and Conforti (2009) state that microfinance started in Central and Eastern Europe in turbulent times and that the microcredit sector of today is dynamic, thanks to development of the entrepreneurial sector and the privatization of the financial sector with the entrance of foreign banks.

Microfinance spread out into the Western region after the Lisbon Agenda² of March 2000 as an initiative to support economic growth and social inclusion (Enam, 2016). In spite of an already dense banking network, many small businesses lacked access to financial services (Kraemer-Eis & Conforti, 2009). Microfinance was thus seen as a tool tackling the exclusion from the traditional banking sector via self-employment and income-generating activities – addressing directly the income dimension of poverty which in turn impacts education and health (Armendáriz, 2009; Botti, et al., 2016).

In short, the origins of modern microfinance are allochronic. As a matter of fact, the maturity of microfinance in the regions of Europe is fairly different. In a working paper

¹ “In December of 1991, as the world watched in amazement, the Soviet Union disintegrated into fifteen separate countries. Its collapse was hailed by the west as a victory for freedom, a triumph of democracy over totalitarianism, and evidence of the superiority of capitalism over socialism” (The Cold War Museum of Warrenton, n.d.).

² The Lisbon Agenda is also called the Lisbon Strategy. “The aim of the Lisbon Strategy, launched in March 2000 by the EU heads of state and government, was to make Europe “the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion”” (European Committee of the Regions, n.d.). The successor of the Lisbon Strategy is the Europe 2020 Strategy of June 2010.

published for the period 2008/2009 by the European Microfinance Network¹ (EMN), Jayo et al. (2010a) outlined that more than 50% of the MFIs in Eastern countries started between 1980 and 1996, against 15% percent for the Western MFIs. In the most recent survey conducted by the EMN and the Microfinance Center² (MFC) for the period 2014/2015, Botti et al. (2016) restate this difference by mentioning that the majority of MFIs in Western Europe started between 2005 and 2015.

2.2.2 Main trends in Eastern and Western Europe

Besides the difference in the maturity of the microfinance markets, Eastern and Western Europe differ on many other aspects. This section presents those related to the motivations, the sustainability goals and the socioeconomic environment.

2.2.2.1 Role and motivations of microfinance

The European market is characterized by a lack of supply of financial services to some segments of the population who would be excluded if nothing was done to include them financially (Convergences, 2016). Molenaar and Lehmann (2016) support the fact that microfinance has its role to play in Europe regarding financial inclusion and that it should be brought into the national agenda of European countries. Indeed, financial inclusion has proven to play a role in the improvement of the economy, its growth, poverty alleviation and social inclusion (De Koker & Jentzsch, 2013). As such, microfinance has emerged in Europe as a tool to promote self-employment, support micro-enterprises and fight financial and social exclusion.

Nevertheless, Jayo et al. (2010b) highlight the fact that microfinance has a different role in Eastern and Western Europe (see Annex 22, p.149 for a synthetic view of the nature of microfinance in both regions). In the former, there was a vital need for infrastructure and

¹ *"The European Microfinance Network is an International Non-Profit Organisation with more than 80 members in 21 European countries. The mission of EMN aisbl is to promote microfinance as a tool to fight social and economic exclusion and to promote micro-entrepreneurship and self-employment. This will be achieved by supporting the development of microfinance organisations through the dissemination of good practices and by improving the regulatory frameworks for microfinance, self-employment and microenterprises at European Union and Member State levels"* (Linkedin, 2017).

² *"The Microfinance Centre is a regional microfinance resource center and network. It unites 106 organizations (including 77 MFIs) mainly from Eastern Europe, but also from Central Asia and beyond, who together deliver responsible microfinance services to over 1,000,000 low-income clients. The actors include policymakers, networks, financial service providers and investors. Its mission is "to contribute to poverty reduction and human potential development by promoting a socially-oriented and sustainable microfinance sector that provides adequate financial and non-financial services to a large number of poor families and micro-entrepreneurs"* (The Microfinance Center, 2016).

financing after the transition from communist control to a capitalistic economy. Therefore, microfinance was a tool in the construction of the new private financial infrastructure and in allowing individuals to access financial services to be self-sustained. By contrast, in the latter microfinance comes into play as public support to encourage self-employment, boost entrepreneurship, and to tackle unemployment and exclusion (Jayo, et al., 2010b). In brief, the East puts the emphasis on financial stability and development whereas the West focuses on well-being and social development (Enam, 2016).

2.2.2.2 Sustainability: Institutionalism versus Welfarism

The countries across the European continent are commonly referred to as 'Welfare states', where the governmental system protects the health and well-being of its citizens. A Welfare state system takes care to a certain extent of the segment of the population in financial and social need (Enam, 2016). Nonetheless, not all national systems in Europe are equal in terms of efficiency. The performance of the Eastern European Member States in that regard is described as weak by Bruhn-Leon et al. (2012). Adding low bank penetration rates, the environment tends to be market-oriented, and thereby microfinance to be commercial rather than social. As such, Eastern Europe is characterized by a dominant institutionalism approach towards the sustainability of MFIs. In other words, MFIs are structured in such a way that operational and financial costs are covered by the revenues generated with the activity (Enam, 2016).

On the contrary, Western MFIs are characterized by a Welfarist paradigm towards sustainability, which implies a bigger focus on the social aspects of microfinance rather than financial sustainability. Indeed, the advocates of Welfarism argue that it is possible to achieve sustainability through donations that do not require remuneration of the capital but serve the MFIs as a sort of interest-free equity (Enam, 2016). As a consequence, the organizations in the West offer more non-financial services like mentoring, guidance sessions and a closer follow-up. Microcredit is therefore viewed as a tool for *"alleviating an overburdened welfare state"* and as a tool for helping the socially excluded and unemployed population (Armendáriz, 2009). Evers and Jung (2007, p. 10) add that *"Microfinance programmes in Western Europe are not and possibly will not become profitable, but make economic sense. The average costs for someone supported within a microfinance scheme [...] are often below the cost for one year of support in the traditional social welfare system, where costs thereby incurred are 'lost' subsidies."* Armendiz (2009) puts that into perspective by saying that once we take into

account the cost associated with training and other non-financial services offer to MFIs' clients, the economic sense is not that obvious anymore.

2.2.2.3 Socio-economic differences

With regard to the socio-economic differences, we decided to take a few elements to highlight how different the West and the East are regarding themes such as 'economy and finance' and 'living conditions' (Eurostat, 2017a). Beside GDP per capita, minimum monthly wages, people at risk of poverty, and people at risk of poverty and social exclusion (AROPE), there exist many more socio-economic indicators to measure the gap that exists between the two parts of Europe.

To begin with, the GDP per capita¹ varies greatly across European countries, ranging between €6000 and €83,700 and averaging at €26,500 for the EU-28 in 2015. As it can be seen on Figure 2 (left), not a single country in Eastern Europe has a GDP per capita above €17.000, whereas only Portugal has one under that value among Western countries. Consequently, we clearly see a gap between the average real income of a Western and Eastern European citizen.

Furthermore, we can also look at the monthly national minimum wage² (before tax and social security) enforced by law, as illustrated in Figure 2 (right). The highest minimum monthly wage in Eastern Europe is €410 in Poland, whereas in Western countries like Germany, France, the Netherlands and Belgium the amount is close to €1,500, which is more than three times higher (Eurostat, 2017a).

¹ "Real GDP per capita is calculated as the ratio of real GDP to the average population of a specific year. It is often used as an indicator of how well off a country is, since it is a measure of average real income in that country. However, it is not a complete measure of economic welfare" (Eurostat, 2017a).

² "The national minimum wage is enforced by law, often after consultation with the social partners, or directly by national intersectoral agreement (this is the case in Belgium). The national minimum wage usually applies to all employees, or at least to a large majority of employees in the country. Minimum wages are gross amounts, that is, before deduction of income tax and social security contributions. Such deductions vary from country to country" (Eurostat, 2017a).

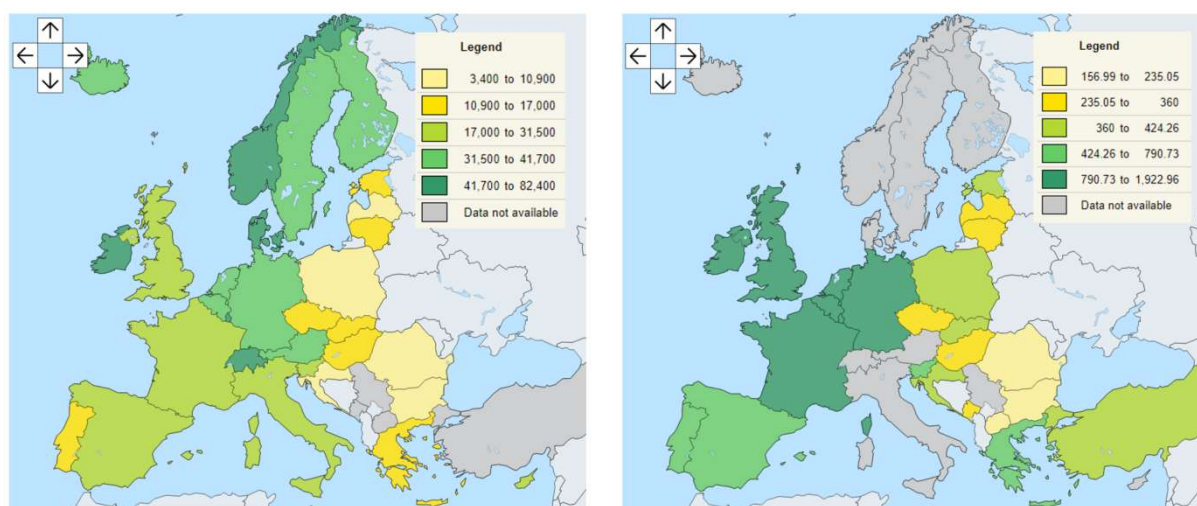


Figure 2: (Left) GDP per capita in EURO by country; (Right) National minimum wage before tax and social security in EURO by country. Source: (Eurostat, 2017a).

One of the dimensions of well-being presented by the OECD is the ‘income distribution’ and ‘poverty’. Poverty can be assessed and measured using the relative income poverty criteria¹. As it is represented visually in Figure 3 (left), the differences are noticeable between the Eastern and Western countries. Most Eastern countries have more than 17% of their respective population at risk, while in the West it tends to be below 15%. Altogether 17.3% of the total EU population were considered at risk of poverty in their respective country at the end of 2015 (Eurostat, 2017b).

¹ This criteria represents the percentage of the population considered at risk of poverty (financially) compared to the income of a typical citizen of their country. The poverty line is set at 60% of the median national income after taxes and transfers (OECD.Stat, 2017). Eurostat also provide figures about the percentage of the European population at risk of poverty (Eurostat, 2017c). This simple criteria gives an idea of the disparity that exists at an income level within and between countries in Europe – since the criteria compares the proportion of the population that do not earn as much as sixty percent of the median income of the country itself, and since we are then able to compare the national proportion of people at risk between countries.

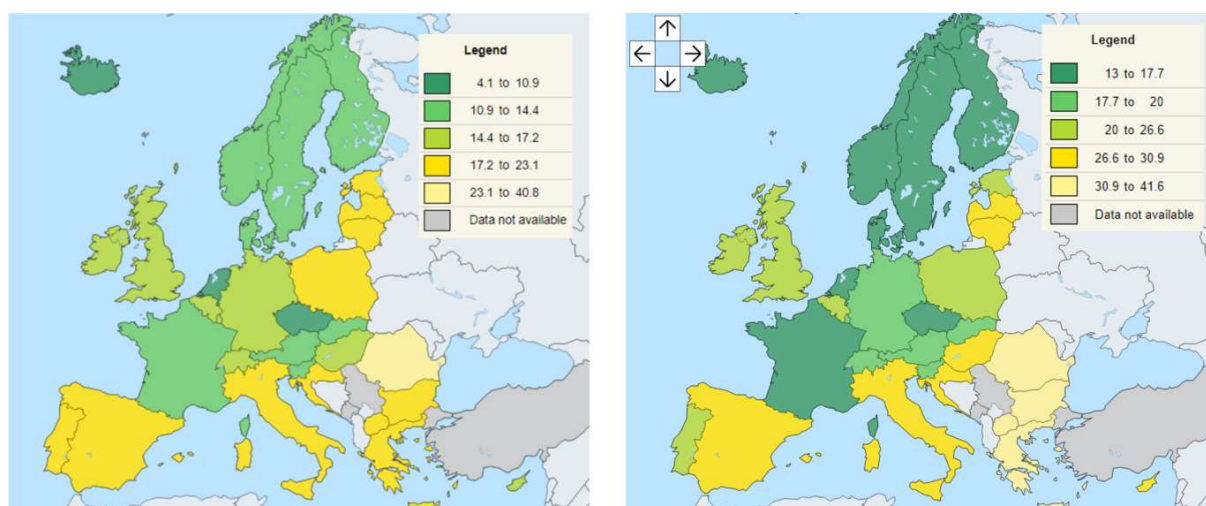


Figure 3: (Left) Percentage of total population by country with an equivalised disposable income below the risk-of-poverty threshold set at 60 % of the national median equivalised disposable income; (Right) percentage of total population considered AROPE – we used the quantile method for the legend classes. Source: constructed using the data and the online Eurostat software (Eurostat, 2017c).

Another point to be mentioned concerns the difference regarding the effectiveness of social security towards poverty reduction – which takes the form of social transfers such as unemployment benefits and pensions. At the EU level, social security transfers decrease the proportion of people at risk from 25.9 to 17.3%. Looking at the difference between Eastern and Western countries, it can be seen in Figure 4 that the decrease of the at-risk-of-poverty rate due to social security is much bigger in Western countries. For example, Finland and Romania had more or less the same rate before social transfers (respectively 26.8% and 29.3%), but the respective decrease of the at-risk-of-poverty rate were of -14.4% for Finland and -3.9% for Romania (Eurostat, 2017c). This can be explained by the difference in the size of the expenditure on social protection, which is 32% of GDP for Finland and 15% for Romania (Eurostat, 2017a).

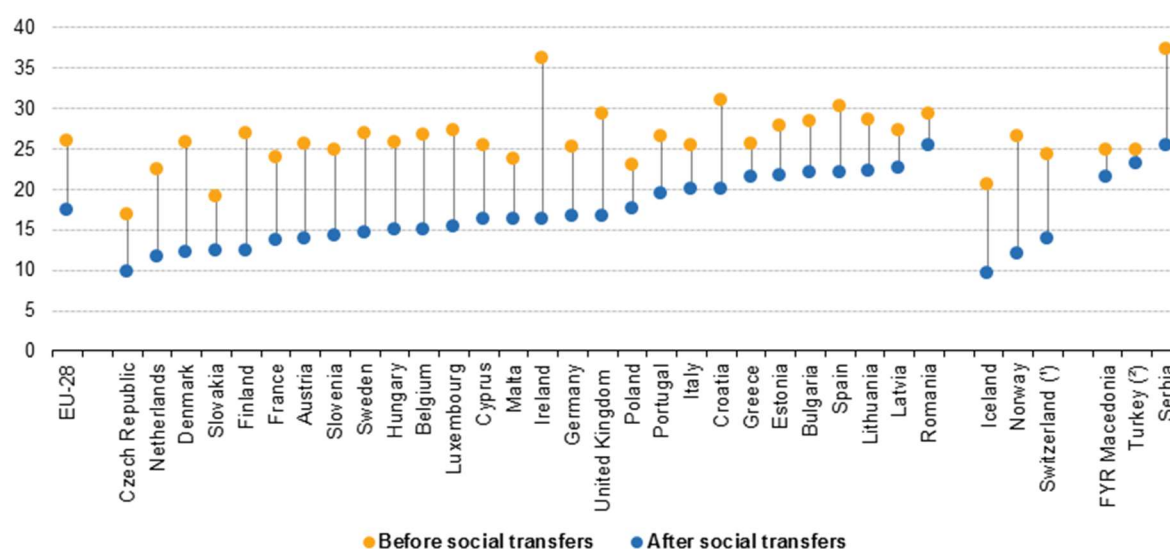


Figure 4: Evaluation of the effectiveness of monetary social provision by comparing the at-risk-of-poverty rate before and after social transfers, by country, 2015 (%). Source: (Eurostat, 2017b).

The European Union developed another way to indicate whether the population is at risk of poverty. In addition to the income dimension of poverty (i.e. the monetary poverty after social transfer¹ as discussed above) like the OECD does, it includes two other proxies for defining whether a person is at risk of poverty and social exclusion (AROPE): the material deprivation² and the work intensity of a household³ (Eurostat, 2017d) (see Annex 23, p.150 for the different national percentage of people at risk of poverty and people AROPE by country in 2015). Even though ‘monetary poverty’ affected 17.3% of the EU population in 2015, ‘severe material deprivation’ and ‘very low work intensity’ affected 8.1 percent and 10.6 percent respectively (Eurostat, 2017b). Once again, as it can be observed on Figure 3, p.26 (right),

¹ “People At risk-of-poverty are persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at [50% or] 60 % of the national median equivalised disposable income (after social transfers).” The relative poverty threshold is expressed as a percentage of the national median disposable income which is in nominal terms (OECD, 2015).

² “Severely materially deprived persons have living conditions severely constrained by a lack of resources, they experience at least 4 out of 9 following deprivations items: cannot afford i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone” (Eurostat, 2017b).

³ “People living in households with very low work intensity are those aged 0-59 living in households where the adults (aged 18-59) work 20% or less of their total work potential during the past year” (Eurostat, 2017b).

Persons are only counted once even if they are present in several sub-indicators previously mentioned (see Annex 24 p80 for the repartition among the three dimensions).

there is a distinction between the East and the West: the Western countries having a lower percentage of people at risk of poverty and social exclusion.

The multidimensional approach of the AROPE rate serves the purpose of the Europe 2020 strategy adopted on June 17th of 2010. The three key priorities of the strategy are a smarter, more sustainable and more inclusive growth for the future of Europe. The latter is promoted through a target on poverty reduction which aims at lifting a minimum of 20 million people AROPE by 2020 compared to 2008¹ (Eurostat, 2017d; European Commission, 2010b).

2.2.3 EU support

Microfinance arrived late to Europe and it took some time before microcredit was recognized by the European authorities as a tool for fighting social and financial exclusion (Armendáriz, 2009). The goal behind European microfinance is to promote self-employment and support micro-enterprises, which are a driving force of job creation (Kraemer-Eis, Lang, Torfs, & Gvetadze, 2017). Kraemer-Eis et al. (2017) mention that supporting the launch of new businesses as well as the development of existing ones is a key tool for escaping poverty or unemployment.

2.2.3.1 The economic fabric of SMEs and the unmet demand

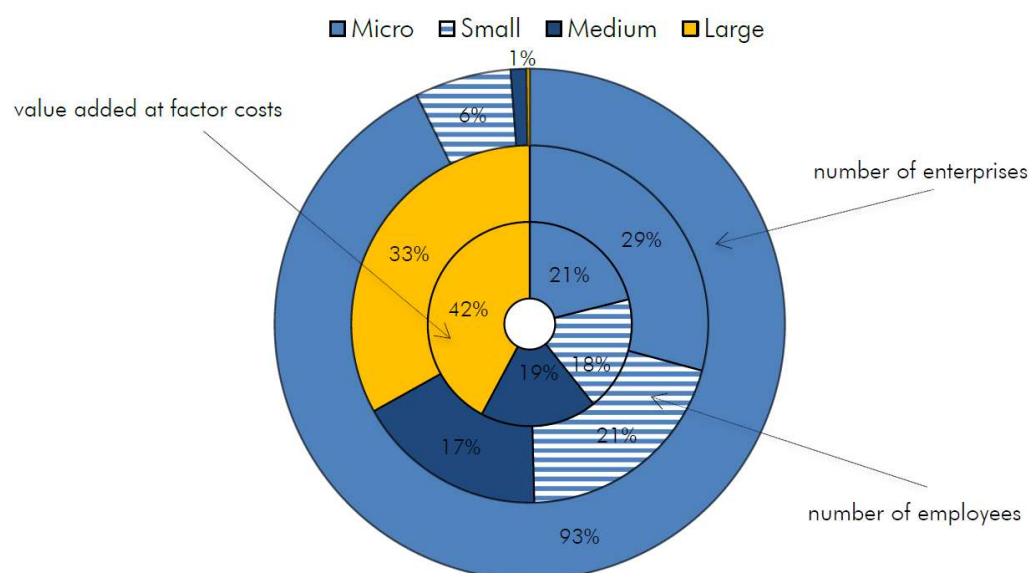
Microenterprises² represent more than 90% of European companies (see Figure 5). Hence, supporting them is crucial for further economic growth in Europe. In perfect market conditions, there would be no market gap regarding lending activities (Kraemer-Eis & Conforti, 2009). However, there is an unmet demand for professional and microenterprises loans, which keeps these actors on the outskirts of the traditional financial system (Convergences,

¹ The people at risk of poverty or social exclusion nationally represented when aggregated 23.7 percent of the total EU-28 population in 2015, which still amounted to 118.9 million people AROPE across the EU. This number is still far from getting closer to the target of 95.9 million. Getting closer to the target has been made difficult because of the economic crisis; the number of people at risk rose in 2009 and plateaued around 2012 before experiencing a soft recovery.

² A company is considered a microenterprises if it has less than ten employees and either a turnover or a balance sheet under the two million euros (European Commission, 2003).

In Europe, an enterprise is “considered to be any entity engaged in an economic activity, irrespective of its legal form. This includes, in particular, self-employed persons and family businesses engaged in craft or other activities, and partnerships or associations regularly engaged in an economic activity” (European Commission, 2003).

2016). The European Commission¹ decided in 2007 to respond to the market gap by acting on the reasons among which this gap exists, notably the lack of lending institutions, capital, and an enabling environment to unleash the potential of microcredit with the greater goal of promoting sustainable employment and inclusion (Kraemer-Eis & Conforti, 2009).



Source: European Commission (2015a)

Figure 5: SMEs, employment, and value added in the EU in 2014 depending on the size of enterprises. Source: (Kraemer-Eis, et al., 2017)

2.2.3.2 EU initiatives

The European support for microfinance can be described in two waves of initiatives launched by the European Commission. The first followed the Lisbon Agenda of 2010 and concerned the period 2007-2013; the second wave concerns the period 2014-2020 and is carried on as the continuation of the previous initiatives – but are related to the Europe 2020 strategy of 2010, which replaces the Lisbon agenda of 2000.

Until 2007, microfinance and microcredit were not practically supported by the European authorities. On the 13th of November 2007, the Commission presented an initiative for the development of microcredit in line with the Lisbon Agenda supporting growth and

¹ “The European Commission is the EU's politically independent executive arm. It is alone responsible for drawing up proposals for new European legislation, and it implements the decisions of the European Parliament and the Council of the EU”.

Regarding EU policies and EU budget, the European Commission:

- “Sets EU spending priorities, together with the Council and Parliament”;
- “Draws up annual budgets for approval by the Parliament and Council”;
- “Supervises how the money is spent, under scrutiny by the Court of Auditors”;

(European Union, 2017)

employment (European Commission, 2007; Pes & Porretta, 2016). In that document, the European Commission recognized that even though the number of microloans was increasing in the Member States, much remained to be put in place to develop the full potential of microcredit. Accordingly, the Commission (2007) identified four priority fields:

a. *“Improving the legal and institutional environment in the Member States”;*

Given that microcredit is rarely considered at the national level, encouragement is necessary for the Member States to adapt their legislation in such a way that MFIs can develop (e.g. relaxing interest rate caps, applying favourable tax schemes)

b. *“Further changing the climate in favour of entrepreneurship”;*

Promoting entrepreneurship and improve the entrepreneurs’ chance of success by increasing non-financial services (e.g. mentoring, business development services) and by improving the institutional framework for micro-enterprises (e.g. the treatment for self-employed, the legal, tax or administrative barriers).

c. *“Promoting the spread of best practices, particularly in relation to training”;*

Although the microfinance landscape in Europe is highly fragmented, the foundation of the microcredit services can be laid down in a shared code of conduct. Moreover, as a way to encourage microcredit, technical assistance to MFIs could help.

d. *“Providing additional financial capital for micro-credit institutions.”*

Given that financial sustainability is made difficult due to the profile of microcredit customers, there is a need to provide MFIs with not only technical but also financial support to further develop the European microfinance sector.

Based on this, different instruments were put in place by the European authorities. Some of these instruments are described in Annex 25, p.152. The goal of all the initiatives is to extend the provision of microfinance in the EU and ultimately to promote employment and inclusion. Those programmes support selected microfinance providers to increase their lending capacity and their capacity building so that those institutions will, in turn, offer more microcredits in a more efficient way. The Council of Europe (2010) identified these tools for self-employment and entrepreneurship as crucial to achieving the Europe 2020 objectives and its targets (See Annex 28, p.156). The Europe 2020 strategy can therefore be seen as the driver behind the different initiatives currently in place today. As it was stated in the regulations of March 2010 (Progress Microfinance) and December 2013 (EaSI), it is important for all instruments and actions undertaken to be coherent with other Union policies and complementary to other EU

programmes such as the European Social Fund and the Youth Employment Initiative (European Commission, 2010a; European Commission, 2013).

2.2.4 *Recent figures on the development of microfinance in Europe*

Given that the European microfinance sector is still developing, recent figures on the development of microfinance at a European level are not yet available. Therefore, we will rely on the latest survey released in December 2016 which was jointly conducted by the European Microfinance Network (EMN) and the Microfinance Center (MFC). In total, 149 institutions from 22 European countries¹ participated. The results do not reflect all the microfinance institutions but it is a fair approximation of how the sector behaves. All the numbers gathered for the period 2014-2015 relate to those respondents only.

2.2.4.1 Providers

The surveyed European institutions show a multitude of institutional models due to the heterogeneous national regulatory contexts the institutions operate in. Those various institutional models were grouped in the survey into five different categories: non-bank financial institutions (60%), non-governmental organizations (31%), commercial banks (3%), cooperatives or credit unions (3%) and government bodies (1%). For the majority of the institutions, microcredit is their core service, representing more than 75% of their respective overall turnover. Among those, only 29% offer both financial and non-financial products and services.

The providers' funding sources include grants, debt financing, equity and guarantees. All institutions considered, debt financing is the most widespread financing source and accounts for 30.3% of the total value of funding sources in 2015. However, when looking at Western providers, we see that grants are of great importance and represent 38.7% of their funding sources, especially in countries like France, Ireland and Italy. Debt financing is more present in countries like Albania, Bosnia-Herzegovina and Bulgaria. The prevalence of social-

¹ "The respondents operate in 14 EU Member States (Belgium, Bulgaria, Finland, France, Germany, Hungary, Ireland, Italy, the Netherlands, Poland, Portugal, Romania, Spain, and the United Kingdom), 4 EU candidate countries (Albania, Macedonia, Montenegro, and Serbia), 1 EFTA country (Switzerland), and other European countries that signed the Association Agreement with EU (Bosnia-Herzegovina, Kosovo, and Moldova)" (Botti, et al., 2016, p. 15).

Out of 22 countries, 11 are part of the Eastern region (Albania, Bosnia-Herzegovina, Bulgaria, Hungary, Kosovo, Macedonia, Moldova, Montenegro, Poland, Romania and Serbia) and the 11 others of the Western countries (Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Switzerland and United Kingdom).

oriented MFIs in the West which are partly dependent on grants – compared to non-subsidized cost-covering business models of some Eastern MFIs – plays a role in the pricing of the microloans which is higher in the East (Bruhn-Leon, et al., 2012).

2.2.4.2 Products

While MFIs in Eastern European countries focus almost exclusively on the provision of financial products, 59% of the MFIs offering non-financial products (e.g. business development services, financial education and mentoring) are located in Western European countries. 56% of the services were delivered in person, 4% online and 40% both in person and online. Moreover 87% of Western MFIs used external actors like volunteers to offer those non-financial services. Western MFIs amount for nearly three-quarters of the clients reached by non-financial products.

Among the financial products, we can differentiate between business and personal loans. 51% only disburse business loans, 33% do both business and personal loans and 16% only do personal loans. Business and personal loans differ by their nature, their terms and conditions (see Annex 29, p.157). Whereas the average loan term is 41 months for a business loan, it is 30 months only for a personal loan. The average annual interest rate¹ (AIR) in the case of a business microcredit is around 10% against 19% for personal microloans, which is nearly twice as high. Interestingly, the interest rate in both loan categories is approximatively 5% higher in Eastern European countries. Moreover, even if the growth rate of 15% in the number of personal microloans disbursed in 2015 (332,529) is higher by seven percentage points compared to the 8% growth rate for business microloans (220,305), the business microloan segment represents 71% of the €2.5 billion overall outstanding portfolio.

2.2.4.3 Clients and outreach

As suggested by Bruhn-Leon et al. (2012, p. 13) , the target group for microfinance in Europe is made of the people and businesses who are “*financially excluded but economically active*”. Those people are denied access to finance for enterprise creation or development, often because they lack collateral, business knowledge or formal credit history. The European Commission (2007) lists the people who are part of that category: micro-entrepreneurs,

¹ To the AIR, an additional fee of on average 2.5% must be added for 43% of the respondents in order to get close to the effective interest rate supported by the borrowers.

unemployed people, individuals with low level of education and skills, immigrants, women and the elderly.

The EMN-MFC Survey of 2014/2015 also looked at the level of outreach, which measures the number of active clients and their poverty profile. First, considering the breadth of outreach, the survey shows that the number of active borrowers for business microloans grew by 8% between 2014 and 2015 up to 402,365. The number for personal microloans grew by 18% up to 344,900 at the end of 2015. Altogether, the total number of active borrowers amounted to 747,265 in 2015, which was an increase of 13% year on year. This growth rate is a little bit lower than the 15% growth rate in the value of the gross microloan portfolio outstanding of €2,537,619,948; this means that the average loan size is slightly higher than in 2014. Second, the depth of outreach can be expressed by each country's average microloan size as a percentage of the gross national income (GNI) per capita, as this allows us to assess the relative poverty linked to the economic situation of a country. The average loan size was €6,072 (€7,947 for business loans and €1,697 for personal loans). When expressed as a percentage of GNI per capita, it can be observed that the ratio is on average equal to 23% in Western countries and 50% in Eastern Europe. This can be interpreted as a deeper depth of outreach in the West which is explained by the bigger focus of Western MFIs on disadvantaged groups.

2.2.4.4 Financial performance

Based on financial performance indicators listed by the CGAP (2003) and on the figures released in the EMN-MFC Survey, we will look at some indicators underlying the financial performance of European MFIs. Those categories concern the portfolio quality, asset-liability management, the efficiency and productivity, and the sustainability and profitability:

a. *Portfolio quality:*

The portfolio at risk (PAR) is the most accepted ratio to appreciate the quality of the portfolio. The 'PAR30' was in 2015 of 9.7% among the respondents. This means that the outstanding amount of the loans for which customers are more than 30 days late accounts for 9.7% of the gross loan portfolio. The write-off ratio was 2.6%, which represents the proportion of the average gross loan portfolio that the respondent institutions considered unlikely to be repaid.

b. *Asset-liability management:*

On the one hand, the 'portfolio yield' indicates the financial revenue from the loan portfolio expressed as a percentage of the average gross loan portfolio. It was equal to 14.5% at a European level and amounted to 16.6% in the East against 10% in the West. On the other hand, the overall 'financial expense ratio'¹ equals to 4.7%, but again there is a difference between the low 3.4% characterizing Eastern Europe and the 8.1% higher cost for the Western MFIs to fund their assets.

c. *Efficiency and productivity:*

The 'operating expense ratio' assesses the institutional cost occurred by MFIs to deliver loans, including all administrative and personnel expenses. The overall operating expense ratio was 16.1% in 2015 but was 7.7 percentage points higher for Western respondents (21.4%) compared to their Eastern counterparts (13.7%). The 'staff productivity ratio' amounted to 174 clients per staff member, or 87 customers if taking one outlier commercial bank affecting the ratio.

d. *Sustainability and profitability:*

The 'operational self-sufficiency ratio'² (OSS) assesses the economic sustainability of an institution, represented by the capacity of an MFI to cover the costs of the activities from the income it generates. The average OSS was on average equal to 90% in 2015 (94.5% in the Eastern region and 78.5% in the Western ones). Only the Netherlands and Spain from Western countries reported an OSS ratio above 100%, reaching operational sustainability³. Only 43 of 94 respondents were operationally self-sufficient (seven of which were from the West). Another indicator of profitability is the 'return on equity' (ROE) to get an idea of the shareholders' investment revenues. The average ROE equalled 5.7%, amounted to 7.7% in the East and -2.7% for Western countries in 2015.

From the surveyed institutions, around 90% of the Eastern respondents reported information on their financial performance whereas less than 50% of the Western ones did.

¹ *financial expense ratio* =
$$\frac{\text{interest and fee expenses on funding liabilities}}{\text{Average gross loan portfolio}}$$

² *OSS* =
$$\frac{\text{operating revenue}}{(\text{financial expenses} + \text{L} \quad \text{loss provision} + \text{operating expenses})}$$

³ 'Operational sustainability' differs from 'financial sustainability' in the sense that the financial one take into consideration adjustments to operational revenues and expenses "to model how well the MFI could cover its costs if its operations were unsubsidized and [if the MFI was] funding its expansion with commercial-cost liabilities" (CGAP, 2003).

This might be linked to higher transparency required from international investors who are looking for self-sustainable MFIs in the East, as well as to the less mature market of the West which still needs to adopt standard reporting requirements. Nevertheless, the smaller sample size of Western MFIs may not be robust enough and may be overestimating the overall performance of the Western region.

2.2.4.5 Conclusion from the recent survey

The latest survey from the EMN and MFC for the period 2014/2015 gives an overview of the most recent trends observed for the European microfinance sector. Overall, there was a 13% increase in the number of active borrowers (747,265 in 2015) and a 15% increase in the value of the total microloan outstanding portfolio (2.5 billion in 2015) among the respondents. The average loan size was around €6,000 euros and the average annual interest rates for business and personal microloans were respectively 10.7 and 19%. Microcredit was the core service offered by the respondents which were represented by various institutional models resulting from different regulatory environments. There was a clear regional distinction that could be made between Eastern and Western institutions. As a matter of fact, Western institutions are characterized by a greater focus on offering non-financial services, are more social-oriented and dependent on external support, charge around five percentage points less interest rate but experience higher cost of funding of nearly five percentage points (8% instead of 3%). As such, they have an operational self-sufficiency ratio of 78% (compared to 94.5% in the East) and have negative ROE. These figures show how fundamentally different microfinance is in the Eastern and Western regions of Europe.

2.2.5 Challenges to the development of the EU microfinance sector

As previously discussed in the *paragraph on the Role and motivations of microfinance (2.2.2.1)*, there was and still is a gap in the European microfinance market. Although the shortage in microfinance services has been reduced over last decade, an unmet demand from financially and socially excluded people remains. We also saw in the *section on the EU support and EU initiatives (2.2.3)* that the European Union seems to have understood the importance of microfinance as a tool for job creation, enterprise development and for the promotion of self-employment. Moreover, the EMN Survey results (2016) showed that the European microfinance sector has seen a positive trend over the years. Although the EU is working on improving the microfinance sector through financial and regulatory initiatives, various

obstacle are still hindering the growth of European microfinance sector and need to be tackled.

First, the financial sustainability of MFIs is claimed as one of the biggest challenge by various researchers (Enam, 2016; Jayo, et al., 2010a). Two levels of sustainability are mentioned in the literature: while it can be a situation where an MFI relies on subsidies to cover its operational costs, it can also be a *“situation where an MFI generates sufficient revenue to cover its costs [...] and is not reliant on subsidies”* (Manos, Gueyié, & Yaron, 2013). As we saw in the *paragraph 2.2.2.2*, financial sustainability is even more an issue in the West, where MFIs tend to be socially-orientated and greatly rely on financial support from governments, EU initiatives and other actors (philanthropic or as part of CSR projects). Nevertheless, the accessibility of external funding instruments is a key difficulty face by European MFIs, although they are indispensable for institutions to lend money to micro-borrowers. Indeed, these instruments provide MFIs with long-term and secured access to capital and thereby help MFIs to broaden their outreach. Kraemer-Eis et al. (2017) recalls that the share of organizations which see ‘access to finance’ as their most important problem is higher among micro-enterprises than among larger companies. In short, European MFIs struggle to be financially independent, and their willingness to fulfil their social mission does not help in that regard, as explained by the second challenge.

Indeed, there is an unresolved dilemma between expanding outreach to the vulnerable segments of the population and reaching financial sufficiency. Although targeting lower risk customers who are looking for bigger amounts makes more sense for the bottom line of a lending institutions, it tends to move MFIs away from the initial target segment and from the core mission (Enam, 2016). The ideal would be to attain efficient operational models that allow to maximize both social and financial performances (Kraemer2009). Meeting this dual mission requires MFIs to learn how to effectively deliver services with high added-value for the costumers and reasonable operational costs, for instance through the development of adapted credit scoring systems (Manos, et al., 2013; Pedrini, et al., 2016). There is a dual effort to be made which is carried out by staying loyal to the core mission while continually looking for innovative solutions to get more efficient.

Third, the EU definition¹ of microcredit (i.e. loans below €25,000) has given rise to much controversy. Although the European Commission acknowledges the fragmentation of the EU microfinance sector, the univocal definition does not take into account the wealth differences among EU countries (Kreamer 2009), as they were highlighted in the *paragraph on the poverty related socio-economic differences (2.2.2.3)*. A univocal definition is an issue since it is used to determine whether an MFI can be supported or not by the funding instruments and guarantees of the EU. Too much attention is paid to the maximum amount of €25,000 which has led commercial banks to benefit from the EU microfinance programmes without devoting attention to the targeted client profile, the type of institution and the type of services offered like the non-financial ones (EMN & MFC, 2015).

A fourth challenge is the inadequate regulatory framework for microfinance as financial regulations were mainly designed for banks (Jayo, et al., 2010a). Indeed, Thomson Reuters Foundation (2011) states that EU Member States should work on encouraging self-employment through a better regulatory framework for MFIs and microcredit. Although deposit activities are clearly restricted to licensed banks by the European Bank with stringent requirements (e.g. transparency, supervision of banking authorities, reporting, and minimum capital requirement), microcredit is regulated at a national level. This results in a highly fragmented regulatory framework for microcredit in Europe. As such, some Member States (e.g. Austria, Germany, Turkey) have strict regulations and limit the lending activities to licenced banks. Yet some other countries (e.g. Belgium, France, Sweden, the UK) do not, or the legislator made some exceptions thereby allowing non-bank institutions to lend money under certain conditions (European Commission, Expert Group Report, 2007). Nevertheless, the main difficulty is to find the right balance between over-regulation, which obstructs the

¹ "Microcredit is defined by:

- its target: micro-entrepreneurs, the self-employed, and socially excluded people lacking access to traditional sources of capital;
- its object: the creation or expansion of income-generating and job-creating activities or micro-enterprises, whose principal need is usually the financing of initial investment or of the working capital;
- the small amount of the individual loans required which in turn relates to the limited debt-servicing capacity of the target clientele. Typically, this amount does not exceed EUR 25 000. The average micro-loan provided by Micro-finance Institutions (MFIs) in Europe is approximately 7 700 euros (EMN survey 2004/2005);
- a more labour-intensive delivery system for making loans, involving greater knowledge of borrower capacity and a close relationship with the borrower, especially during the start-up phase of the micro-enterprise, through mentoring and general business support."

(European Commission, 2007)

implementation of MFIs operations (Enam, 2016), and absence of regulation, which leads to uncertainty in microfinance activities.

An ultimate challenge is the lack of consolidation and collaboration in the European microfinance market due to its fragmented structure (Kraemer-Eis & Conforti, 2009). In response to that need for cohesion, some structures are already in place, such as the European Microfinance Network and the Microfinance Centre. These are supported by the EU authorities and foster the sharing of best practices among European stakeholders.

All in all, these challenges hamper the overall development of the European microfinance sector. As part of the research, we will outline how financial technologies can be a tool to reduce the barriers to the spread of microfinance. Indeed, technology can be a key factor to improve the quality of the services and of the processes, which can translate into scalable business model, extended outreach and improved sustainability – ultimately supporting the dual mission of the microfinance sector (Bruhn-Leon, et al., 2012; Manos, et al., 2013).

Chapter 3: What about FinTechs

FinTechs, also known as ‘financial technologies’, are drawing worldwide attention with their explosive growth across the globe. According to Accenture (2015), the global investment in FinTech companies has grown by 75% to US\$ 22.3 billion in 2015 and has been mainly driven by Asia-Pacific and Europe (see Annex 30, p.158). Their flexible, secure, high-speed and low-cost characteristics are disrupting several areas across the financial services sector, both in mature and emerging markets. However, before examining how FinTechs could be used to fight financial exclusion in developing countries as it will be illustrated in *Chapter 4*, it is essential to understand how and why they first emerged in developed countries. Indeed, there might be similarities between the new customers’ needs in the developed markets to which FinTech responded and the needs of microfinance customers today.

This chapter aims at providing the big picture about the evolution of FinTechs in developed countries, followed by a typology of FinTechs that have reached maturity in Europe and that are relevant to the microfinance sector. Once this backdrop is set, we will study the impact of FinTechs on the financial services industry and more particularly on the business model of its actors. The findings will provide a basis for the development of our hypotheses on the role and potential benefits of FinTechs in the business model of Western European MFIs.

Nevertheless, it is important to note that the sources of information mainly come from practitioners rather than academia. As noted by Schueffel (2016), very few scholars have explored the field of FinTechs although their significant influence on the financial services industry is widely accepted. One reason mentioned by Zavolokina, Dolata, and Schwabe (2016) is that the novelty and continuous evolution of the sector make the research context relatively unstable. As a result, we consider practitioners to be credible sources of information given their proximity to this continuously changing environment.

3.1 Definition, scope and focus

Although the term ‘FinTech’ simply emerges from the marriage of the words ‘finance’ and ‘technology’, its definition remains large and ambiguous. As it has been pointed out in the studies of Zavolokina et al. (2016) and Schueffel (2016), authors and institutions fail to agree on a universal understanding of what ‘FinTech’ represents. FinTech is commonly used to describe the companies, and more typically the start-ups that are using new and mainly

Internet-related technologies to improve financial services offered to customers (Gomber, Koch, & Siering, 2017). In addition to start-ups, innovators may include established technology company such as Google or Amazon (Gomber, et al., 2017; Zavolokina, et al., 2016). FinTech can also be referred to as the sector including all these innovating companies. Finally, FinTechs are also understood as the disrupted financial services themselves (e.g. transaction banking), or as the enabling technologies (e.g. mobile banking) (Schueffel, 2016).

Because the research focuses on the overall role of new and innovative technologies, FinTechs will be broadly defined as *“the use of technologies to deliver financial solutions”* (Arner & Buckely, 2016, p.3) *“that make use of the availability of ubiquitous communication, specifically via the Internet and automated information processing.”* (Gomber, et al., 2017, p.540). The second part of this definition will become more comprehensible once the evolution of finance and technologies is explained in this chapter.

As a result of the definition, the term FinTech does not *per se* include the financial services sector exclusively (Arner, Barberis, & Buckely, 2016). Indeed, the research will show that other sectors such as the IT or telecommunication industry can also deploy financial technologies. Notwithstanding, the research will mainly focus on the financial services sector which comprises firms that engage in activities such as lending, insurance, payments, investment and more (Asmundson, 2011). Also known as ‘financial institutions’, these firms include banks, investment funds or insurance companies and they act as intermediators to provide financial goods to individuals (e.g. loan for borrowers, savings and interest for investors). Hence, a financial service is defined as *“the transactions required to obtain the financial good”* (Asmundson, 2011, p.46).

3.2 Historical evolution of FinTechs in developed countries

In order to understand the origins of technological innovations in the financial services sector, it is crucial to first understand how technology and finance have evolved together and how they have mutually driven each other’s development. In a second time, we will explain the key trends and events that contributed to the emergence of FinTechs, which will enable us to understand how technologies are fulfilling unmet customers’ expectations.

3.2.1 From ‘finance’ and ‘technology’ to ‘FinTechs’

Finance and technology have long been interlinked, even before the transition from an analogue to a digital financial industry. Indeed, early financial processes (eg. written records

of transactions) and practices (eg. double entry accounting) have led to the earliest forms of Information Technology (IT) and constitute today the basis of modern economies (Arner, et al., 2016). The creation of the Automatic Teller Machine (ATM) in the 1960s marked the beginning of a new, modern digital financial era. This was one of the first applications of technology in the financial sector that increased customer convenience and automated previously hand-operated jobs (Nicoletti, 2017). In the 1970s, electronic payments and security trading systems allowed for cheaper and faster transactions domestically and globally (Arner, et al., 2016). By the end of the 1980s, financial institutions in developed countries had largely adopted Information and Communication Technologies¹ (ICT) to support transactional operations and to digitize paper-intensive processes, thereby increasing labor productivity (Arner, et al., 2016; McQuinn, Guo, & Castro, 2016).

The rise of the internet in the late 1990s took the digitalization and globalization of financial services to a next level. The expanded connectivity opened up new communication and interaction channels with widespread market participants (Gomber, et al., 2017). At the beginning of the 21st century, services such as customer account checking were available online and consequently the first branchless banks emerged (Arner, et al., 2016). The Internet also enabled the partial or full elimination of costs, which made certain products and services such as telephone calls more accessible (International Organization of Securities Commissions [IOSCO], 2017). Moreover, the rapid adoption of smartphones during the late 2000s favored the usage of mobile banking and allowed consumers to ‘bank’ not only whenever, but also wherever (Deloitte Development LLC, 2010). At the same time, computing power was growing exponentially, enabling the costs of data collection, process and storage to decline (IOSCO, 2017). As a consequence, the technological barriers to enter the financial services market fell down and new financial products, software and businesses models emerged (Gomber, et al., 2017).

In other words, for decades, *“IT has allowed firms to pick off the ‘low-hanging fruit’ of relatively easy-to-improve efficiencies, such as automating routine tasks.”* (McQuinn, et al., 2016). But nowadays, the focus of digitalization has moved from the use of technologies to

¹ *“Information and communications technology (ICT) refers to all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions.”* (techopedia, sd). ICT is often considered as a synonym for Information Technology (IT) which definition is broader as it *“refers to anything that is related to technology computing.”* (TechTerms, sd).

improve traditional financial services, which is commonly referred to as 'incremental innovation', to the use of the latest technologies to provide new ways of delivering financial services to customers, which is often referred to as 'disruptive innovations', or most recently as 'FinTechs' (Gomber, et al., 2017; McQuinn, et al., 2016).

3.2.2 *FinTechs as a response to a changing environment*

Although Nicoletti (2017) qualifies the 'digital transformation' as the most important driver of the FinTech era in the last years, other events and trends also need to be considered.

First of all, the global financial crisis of 2008 has shown to the world the systemic risk underlying the financial system and it has had two major consequences. On the one hand, it has spawned an increased compliance of financial activities, affecting the business model of large incumbent market players and their capacity to offer low-valued loans (Arner, et al., 2016). Indeed, to ensure the stability of the financial system, tightened regulations have been set on reserve standards and solvency requirements, forcing banks to scale-back and imposing a high burden on their activities (Nicoletti, 2017). This has led to an overall retraction of the economic and lending activity, and therefore an increased difficulty for private individuals and SMEs to access credit (Arner, et al., 2016). On the other hand, it has spread a climate of public distrust towards traditional players in the industry. These were seen as the main culprits of the financial crisis, not able to assess and manage their risks responsibly (Nicoletti, 2017). This has caused a deep breach in trust of banks, especially among young generations who started expecting new, innovative players to enter the game as a response (Nicoletti, 2017).

Second, the emergence of the Internet and the growing digital transformation of businesses has prompted social and behavioral changes in the consumption of Generation Y¹ (Nicoletti, 2017). Also called 'millennials', they grew up with increasingly personalized and interactive products of tech giants, which have raised customer experiences to high levels, as opposed to the one-size-fit-all products offered by traditional financial institutions (Capgemini Consulting & LinkedIn, 2017). Moreover, because the Internet has facilitated the ability of customers to compare offers from different providers, their expectations in terms of transparency and clarity of information have increased.

Technological development has also fostered a demand for multi-channelled service delivery, especially through mobile (Capgemini Consulting & LinkedIn, 2017). In the same way

¹ Refers to the generation born between 1979 and 1994.

that social networks had become a natural extension of traditional social interaction, financial service providers aimed to offer as convenient mobile applications to their users (Skinner, 2014 cited in Cuesta, Ruesta, Tuesta, & Urbiola, 2015).

3.2.3 *FinTechs invigorating the competition landscape*

All in all, the combination of the accelerated digitalization, the stringent post-crisis regulations and the changes in customer needs have set a very attractive backdrop for start-ups to enter the market. FinTech start-ups are filling the gap between customers demand and the rigid, standardized and high-priced market offer (Cuesta, et al., 2015). With a flexible, secure and low-cost structure, they implement customer-centric business models to respond to a demand for *“intelligent, however easy-to-use financial services independent of location and time, and at continually decreasing costs.”* (Gomber, et al., 2017, p.2). These are commonly built around digitized platforms or new technologies which streamline infrastructure, increase service productivity and therefore significantly reduce the role of traditional intermediaries (Gomber, et al., 2017). Moreover, they are often offering financial services in a way that is not subject to the same regulations nor capital and reporting requirements of the traditional incumbents.

In the meantime, giant tech providers and telecommunication companies have also made their entry into the market. By offering interactive and customized financial services to their large customer base, they achieve substantial economies of scale and increase customer convenience to the highest degree (Cuesta, et al., 2015). This massive entrance of non-bank players on the financial services market results in a highly-competitive environment, which puts pressure on traditional financial institutions to innovate their business models accordingly, if they want to remain in the game in the future (Nicoletti, 2017).

3.3 Types of FinTechs

In order to understand how FinTechs help innovate the business model of financial services firms, we will explain their general purpose and functioning in this section. While covering all the existing FinTechs would lead to quite superficial descriptions, explaining a single one would be too narrow for the scope of the research. Indeed, the goal is to have broad yet sufficient details on financial technologies in order to understand how they can affect the operations of financial services firms. For that reason, we have selected three technologies based on their maturity in developed markets and on their relevance to the microfinance sector.

In *section 2.1.5*, microcredit was depicted as the main product of MFIs in Europe. Having that in mind, the chosen FinTechs can directly or indirectly be related to lending and payment activities. In particular, recent research about innovations in microcredit led by Ashta (2016) revealed that mobile banking, cloud computing¹, credit scoring and crowdfunding are expected to reduce costs, increase outreach and improve the sustainability of MFIs. These benefits tackle the main challenges faced by microfinance today and therefore highlight the relevance of the technologies (see *sections 1.2.5 & 2.2.5*). Nevertheless, crowdfunding platforms seem more difficult to set up within microfinance institutions given the inherent high-risk profile of their customers and the potential threat it constitutes to their initial model of MFIs. As a result, the research will focus on Internet and mobile banking, cloud computing, and data analytics, while taking crowdfunding into account due to its disrupting potential in a more distant future. The functions, usage and adoption of each FinTech in Europe will be explained.

3.3.1 Internet and mobile banking

Since the end of the 1990s, most financial institutions have made part of their financial products and services accessible through the Internet (Cuesta, et al., 2015). Online banking, also called Internet banking, offers customers a new way to interact with their bank on a self-service basis. From their desktop or laptop computer, customers can consult account information and conduct financial transactions on the bank's website after authentication. They can also receive account or credit alerts and new offers via email. In 2016, 79% of the Europeans used the Internet on a regular basis (see more details in Annex 31, p.158) and 59% of them used online banking services (see more details on internet activities Annex 32, p.159) (Eurostat, 2016)². Basic online services include balances checking, statement views, bill payments, fund transfers and check deposits are usually free of charge (McQuinn, et al., 2016). In more developed applications, online banking offers almost any branch-based service such as insurance contracts, investment management tools, and online loan and credit card applications. However, the Internet does not yet seem to be a familiar channel for these

¹ More specifically, cloud computing delivered through a *Software as a Services* (Saas) model. These terms will be explained later in this section.

² The 2016 results are based on survey responses from a total of 156,152 households containing at least one person aged 16-74, and 203,798 individuals aged 16-74 across all EU Member States and some non-EU countries (Norway, the former Yugoslav Republic of Macedonia and Turkey).

financial activities as they have been carried out by an average of respectively 13%, 4%, and 3% of European Internet users in 2016 (see Annex 33, p.159) (Eurostat, 2016)¹.

In the recent years, financial institutions extended their physical and browser-based distribution channels to mobile devices (Cuesta, et al., 2015). ‘Mobile banking’ is typically conducted through mobile applications on smartphones and tablets. The functionalities are similar to online banking, with an emphasis on transactional services such as payments and balance checking. The research conducted by Deloitte in 2010 estimated that mobile banking would surpass online banking by 2020. Indeed, although the ‘Gen Y’ drives the adoption because of its fast segment growth, its high market potential and its digital consumption patterns, the report predicted older and younger generations to follow the trend as mobile devices become an established channel. This has been confirmed by the study conducted by VISA Europe in 2016² which shows in Figure 6 that the youngest and the oldest generations have the fastest growth rates of mobile banking adoption between 2015 and 2016 (VISA Europe, 2016).

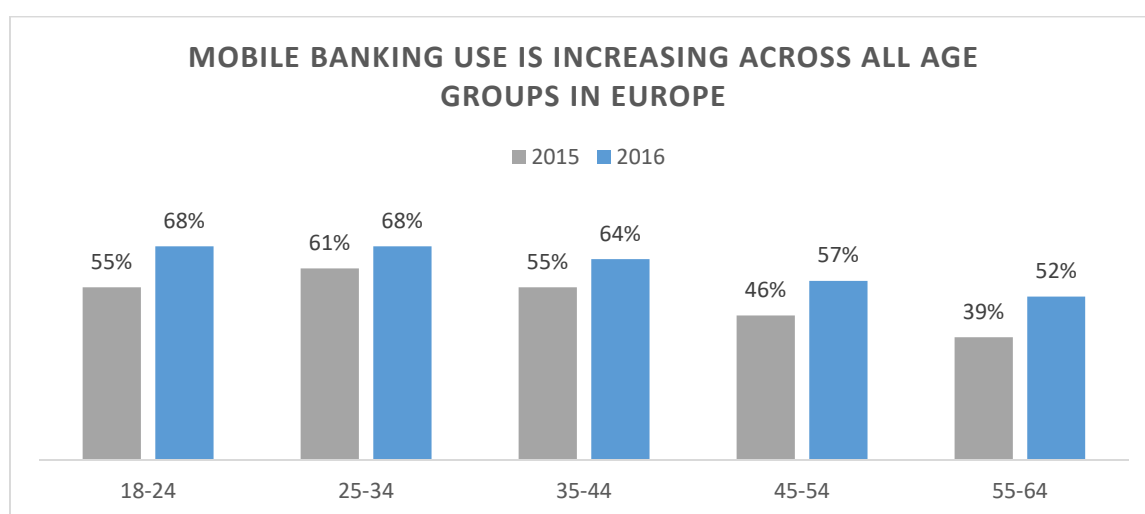


Figure 6: Mobile banking users in 2015 and 2016, by age group (% of individuals). Source: (VISA Europe, 2016)

3.3.1.1 Payments and transfers

Among the mobile-based services, payments and transfers have experienced a high level of disruption and fast growth in recent years, which is not expected to slow (see Annex

¹ *ibid.*

² The Visa’s Digital Payment survey was conducted in August-September 2016 and included 36,843 respondents from 19 European countries – Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Netherlands, Norway, Poland, Romania, Slovenia, Spain, Sweden, Switzerland, Turkey and the UK.

35, p.160) (Bansal, Bruno, Hou, Istace, & Niederkorn, 2015). Banks, tech giants and start-ups are increasingly developing new payment processes and digital applications in order to make transactions cheaper, faster and more convenient for customers (PWC, 2016). Based on contactless and secured technologies, they are changing the way people exchange and transmit money in several ways (see Table 2 for examples). Regarding the adoption of mobile payments, the *VISA Digital Payment Study* (2016) identifies two rationales specific to the development stage of a country:

“When looking at the top ten countries where mobile payments are most prevalent, they fall into two categories: developing markets such as Turkey and Romania, which have been leapfrogging traditional payment methods to adopt new technologies faster; and developed markets – particularly the Nordics – which are evolving to new technologies at differing paces.” (VISA Europe, 2016, para. 4).

MOBILE PAYMENT & TRANSFER APPLICATIONS	DESCRIPTION	KEY PLAYERS
Mobile or digital wallets	Virtual wallets allow storage of digital documents, valuables and payment card information to make instant transactions to other parties. By creating direct relationships with companies, parts of the transactions costs may be removed.	PayPal Apple Pay
Person-to-Person (P2P) platforms	Users can transfer money from their bank account or credit card to an individual or small business' bank account via the Internet (i.e. an app) or a mobile phone (i.e. text messaging). Little or no fees are charged.	Square Stripe

Table 2 : Innovations in mobile payments and transfers. Source: (McQuinn, et al., 2016).

3.3.2 Cloud Computing

Based on the definition of the National Institute of Standards and Technology (NIST), cloud computing allows companies to access a shared pool of computer resources – such as servers, storage, applications and services – over the Internet on a self-service and pay-for-use basis (Mell & Grance, 2011). That is, from any device connected to the network, the consumer can access computing capabilities on demand with minimal service provider interaction and only pays for the underlying resource usage. These cloud-based applications are run in distant data centers owned and operated by a service provider in such a way that the hardware and software do not have to be installed, maintained or updated in-house (IBM,

sd). This delivery model is also known as 'Software as a Service' (SaaS) and avoids important upfront capital investment in IT solutions.

Because a massive amount of resources are pooled (i.e. serving multiple customers), the cloud scales up or down very quickly to meet the consumer demand, which gives an appearance of unlimited computing power (Armbrust, et al., 2010). In particular, the customer workload demand may rise due to growing business activities or fluctuate because of diurnal, seasonal and cyclical variations (Heng & Neitzel, 2012). The scalability of resources allows use of the power of IT resources more efficiently and therefore at a decreased price (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011). For instance, companies can gain higher capacity levels for disaster recovery and back-up in case of cyberattacks or accidental equipment failures at an affordable price (Sriram, 2011). Those attributes particularly benefit small and medium businesses which usually have difficulties adapting their IT capabilities to their needs due to limited budget (Heng & Neitzel, 2012). With the cloud, small market players get access to services and technologies that were not available before (Anderson, 2014).

A cloud can be deployed publicly or privately. A public cloud is owned by an organization selling cloud services to the general public via the Internet, while a private cloud can only be access by users within a specific organization, via the Internet or an internal network (Mell & Grance, 2011). Private allows the cloud to maintain flexibility, scalability and efficiency while giving the owner more control and customization over the computing resources hosted on premise (Microsfot Azure, sd).

However, the development of the cloud technology has not been without hindering factors. Data security and privacy have long been major compliance-related concerns regarding cloud environments. This has been especially the case for the financial services sector which touches highly sensitive customer information and mission-critical legacy applications (Sriram, 2011). Indeed, cloud computing might be a problem as consumer data is scattered over various servers and sometimes in different countries, while many regulators specifically prevent consumer banking data to be hosted on servers and in foreign countries. Even within the EU, national regulations for cloud computing and data privacy differ and their relevance remain unclear (Naydenov, Liveri, Dupre, & Chalvatzi, 2015). As a solution tackling this issue, the internal hosting of a private cloud increases the data security and protection as no third-party provider can access it, which is seen as a major benefit for companies dealing with confidential information. Moreover, given the post-crisis low-trust environment the

sector is facing, financial institutions cannot afford the risk of consumer data security breaches which would tarnish their reputation and undermine the already tenuous confidence in the sector.

Another potential difficulty is the integration of existing legacy applications which may not be written in a 'cloud aware' format. As a result, the financial services sector tends to be a laggard in the adoption of cloud solutions even if the opportunities to support their digital transformation are large (Naydenov, et al., 2015). Indeed, the cloud offers the necessary computing power for big data analytics¹ (Deutsche Bank, 2015), or for *“real-time execution of business activities such as fraud detection, instant lending decision and extensive risk calculations”* (Rolfe, 2017, para. 3).

Nevertheless, it seems that financial institutions and authorities start to understand the potential technical and financial benefits of cloud computing. According to the survey led by the Cloud Security Alliance (2015)², although only 32% of financial institutions have an existing cloud strategy within their organization, 61% are developing one (see Annex 36, p.161). Despite of the numerous security accreditations and certifications acquired by cloud providers, financial institutions remain very cautious about losing control over information assets (Naydenov, et al., 2015). As such, it seems that most financial institutions move non-critical services to the cloud such as tests environments (46%), customer relationship management (46%) and email management (43%), rather than core banking activities (see more details on cloud application adoption in Annex 37, p.161). A mix of in-house IT, public and private clouds are the most common approaches (see more details in Annex 38, p.162) (Cloud Security Alliance, 2015). Table 3 provides a short overview of the cloud applications and the associated key players.

¹ Big data analytics will be explained in the next section.

² The survey attracted 102 participants globally from banking/credit unions (35%), insurance (13%), investment (11%), government (7%), and other professional roles (34%) over a 13-week period during the fourth quarter of 2014; spread across 20 different countries, including Americas (59%), Asia-Pacific (21%), and EMEA (20%).

CLOUD APPLICATIONS	DESCRIPTION	KEY PLAYERS
Customer Relationship Management (CRM)	System managing customer relationships and interactions. Tracks entire history.	Salesforce.com SAP
Email Management Software	Allows to centrally organize, manage, and store employees' emails. Spam management.	
App development and testing	Cloud offers affordable and fast infrastructure to design, develop, test and deliver new software.	<i>Cloud providers:</i> Amazon Web Services (AWS) Google Cloud Microsoft Azure IBM Bluemix Oracle Cloud
Enterprise Content Management Systems	Manage organizational content from structured & unstructured (e.g. paper document, email) sources.	
Processing & Data Analytics	Provides capacity for processing extensive calculations and analysis of large data sets.	
Storage, Archiving	Provides capacity to maintain, manage and back-up databases remotely.	

Table 3 : Main Cloud Application description and overview of key players. Personal elaboration based on various sources (aiim, 2017; Cloud Security Alliance, 2015).

3.3.3 Data Analytics

Every day, organizations collect data from their business environment, processes and interactions. Business transactions, social media, mobile phones, and instrumented machinery all provide information about people and activities as a by-product of their initial operation (McAfee & Brynjolfsson, 2012). While a business can do little with raw and unstructured data, it can identify meaningful patterns and behaviors once the data has been extracted, transformed, organized and modelled by specialized computer systems (Informatica, 2017). This process of gaining significant insights from data is commonly called 'data analytics' and helps businesses seize opportunities which might have remained otherwise hidden among the mass of information (e.g. new customer needs, product development opportunity). Moreover, data analytics enables better-informed decision-making based on evidence rather than intuition (e.g. cost reduction, investment) and allows the identification of bottlenecks in a business process to improve the overall efficiency (e.g. time reduction, staff allocation) (Laney, LeHong, & Lapkin, 2013; Sarrocco, Morabito, & Meyer, 2016). Last, predictive analytics allows the anticipation of future outcomes and behaviors based on historical, current and possibly third-party data.

'Data Science', or the ability to extract knowledge from vast sets of data, has been applied by statisticians and computer scientists for decades (Press, 2013). Nonetheless, with

the arrival of the Internet, the digitalization of business processes and the emergence of new sources of information, the data to be handled has increased in volume, in variety¹ and in velocity² – called ‘Big Data’ nowadays – which demands large, fast and cost-efficient information processing (Laney, et al., 2013; McAfee & Brynjolfsson, 2012). As a matter of fact, new technologies and flexible structures, such as cloud environments, offer increasing computing power at a decreasing cost, enabling businesses to manipulate huge amounts of different types of data and generate value for the entire business (Sarrocco, et al., 2016).

The adoption of data analytics activities is industry-wide: in 2016, 40%³ of businesses were using data-driven business insights and this number is expected to reach 90% by 2020 (Forrester Consulting, 2017). The financial services sector makes no exception; financial institutions are not only characterized by huge amount of data generated from customers, transactions and other sources, but also by a high level of risk which is inherent to their operations and by the heavy post-crisis regulatory environment. Consequently, data analytics are largely applied on efficient compliance and risk management, such as fraud management or credit scoring improvement. This enables the automation of key processes and activities that have become labor-intensive, time-consuming and cost-demanding (Davenport & Krishna, 2017). Additionally, *“as banks grapple with the numerous challenges facing the banking industry today [...] they require a robust analytical solution to better understand drivers for customer retention and attrition.”* (Kanchan, 2012, p.17). Therefore, it clears the way for new marketing and revenue growth opportunities (Davenport & Krishna, 2017; Sarrocco, et al., 2016).

3.3.4 Alternative lending platforms

Alternative lending platforms are important to mention as they contribute to the same trends than those initiated by the three previous technologies, such as the disintermediation of financial firms. Nevertheless, they will not be the focus of this research because of their lack

¹ Referred to as the structural heterogeneity in the dataset (e.g. video, social media, voice).

² Referred to as the speed of data generation.

³ Forrester conducted an online survey of 583 business and IT leaders from enterprises in North America, Europe, and Asia-Pacific across 11 industries (energy and utilities, financial services and insurance, telco, retail, government, and manufacturing) to evaluate their organizations’ strategy and management of data analytics.

of maturity in the European microfinance sector. Indeed, two experts¹ interviewed in a study led by Claudia Savarese (2015) for the EMN mention that alternative investors are nowadays predominantly driven by a commercial motive and therefore target credit worthy consumers, which is not the case of microfinance clients. Moreover, in the near future, they rather see alternative lending platforms as external partners to MFIs (e.g. funding follow-up) than an internal solution. Indeed, implementing such a platform would require a substantial change in the business model of MFIs, and maybe even in their core mission.

As previously explained, the post-crisis regulatory environment led to high compliance costs for traditional financial institutions which have made lending for SMEs and private actors very expensive – if not inaccessible – due to their risky profile or low return potential (McQuinn, et al., 2016). As a result, this has left room for businesses to enter the lending market with non-traditional sources of funding. That is, online platforms emerged to directly connect borrowers with investors, with two prevalent business models.

On the one hand, crowdfunding platforms allow borrowers to raise funds or capital publicly from a large number of individuals who receive in exchange either shares (i.e. equity-based), products and services (i.e. reward-based), capital and interest (i.e. debt-based) or nothing (i.e. donation-based), depending on their incentive (McQuinn, et al., 2016). On the other hand, peer-to-peer lending (P2P) platforms allow borrowers to obtain financing from one or many investors – either individual actors or institutions – and who will earn monthly interest income in addition to capital repayment (International Organization of Securities Commissions, 2017).

In short, both types of multi-sided platforms enable individuals and start-ups to expand their pool of investors from ‘family, friends and fools’ to anyone on the Internet that is willing to lend, invest or donate. Their growth and adoption around the world has been quite important, especially for peer-to-peer platforms (see Annex 39, p.162 for growth in loan issuance by P2P, p.162), and has been mainly driven by the lower technological and overhead costs (i.e. “brick-and-mortar²” related). These savings enable them to offer lower interest

¹ The interviewees are namely Robert Benfield, Head of Fair Business Loans at Fair Finance in the UK, and Oliver Gajda, Chairman and Executive Director at European Crowdfunding Network.

² Brick and mortar refers to the fact that a business exists as a physical building rather than on the Internet (Cambridge Dictionary, sd).

rates to previously underserved customers (International Organization of Securities Commissions, 2017).

3.4 Innovation of traditional business models

The sole description of these innovative technologies has already shed light on how FinTechs affect the business model of financial institutions. On the one hand, Internet and mobile banking deliver a multi-channeled strategy where traditional face-to-face and digital interaction coexist; banks have transformed from 'brick-and-mortar' to 'click-and-mortar' models. On the other hand, cloud computing provides a cheap and fast way to leverage powerful data analytics in an automated fashion. This leads financial services firms to transition from a "product push" model where the goal is to increase sales targets, to a customer-centric model, where the goal is to meet the customer needs in the best way (Deutsche Bank, 2015).

Although the financial technologies differ by their nature and functions, they all tend to impact financial firms on similar components of their business model and in the same direction. In spite of the numerous definitions, we will define a 'business model' according to Osterwalder and Pigneur (2010, p. 14): "a business model describes the rational on how an organization creates, delivers and captures value." As such, Alexander Osterwalder's Business Model Canvas was used as a source of inspiration to group and structure the various impacts identified in the literature of practitioners and academia. This visual framework is built around nine core pillars of an organization and is commonly used to describe, analyze and challenge its business model (see Annex 40, p.163) (Strategyzer, sd). However, for the purpose of the research it was used as an aiding tool rather than a core analytical tool in order to focus on the most relevant elements of the business model of a financial firm with regard to FinTechs. As a result, the aspects that will be evaluated are the cost and revenue structure, the speed of process and delivery, the customer relationship and the risk management.

3.4.1 *Cost structure*

Although the adoption of IT has significantly decreased operational expenses of financial companies in the past, it seems that the adoption of innovative technologies reduces them even more. In particular, the previously analyzed technologies have considerably impacted the costs of running a physical infrastructure or a 'branch', the costs of storing sensitive data and finally on the IT investment, development and maintenance costs.

3.4.1.1 Physical network costs

The era of mobile devices is slowly undermining the advantages of the physical distribution of financial services (Dietz, Khanna, Olanrewaju, & Rajgopal, 2016). Indeed, the shifting customer preferences towards ubiquitous banking services is reducing high touch points between clients and branch employees. Moreover, a high number of customer-facing transactions are being replaced by immediate, automated digital functions (du Toit & Burns, 2016; Marcu & Mathias, 2013). As a result, financial institutions find themselves with numerous costly and unproductive offices, and are forced to review their branch strategy. Figure 7 illustrates the important decrease in the number of bank branches in Europe between 2007 and 2015, with the Netherlands reaching one of the highest reduction rate given the successful adoption of digital solutions (see branch density per country in Annex 41, p.164) (The World Bank Group [WBG], sd). Indeed, according to the Visa Digital Payment study (2016), 74% of the Dutch use mobile devices to make payments (see mobile payment use by country in Annex 42, p.164). For Belgium and France, the mobile payment usage amounts to respectively 75% and 64%, however the reduction rate of bank branches amounts to 25% and 16% only.

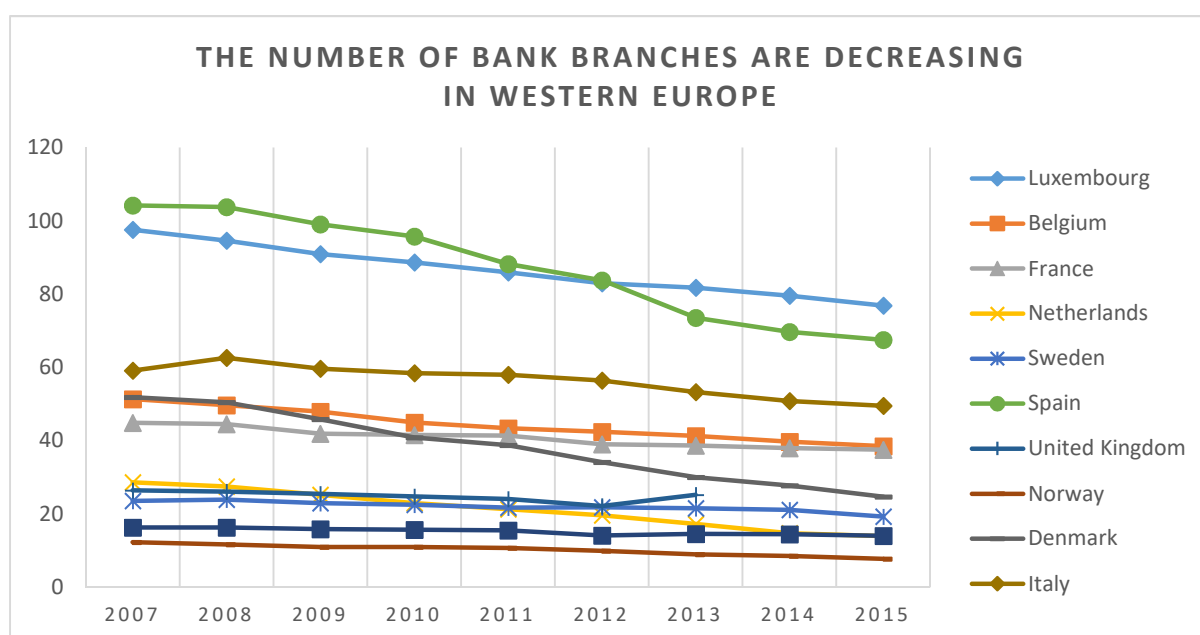


Figure 7 : Number of commercial bank branches per 100,000 adults from 2007 until 2015. Source: (WBG, sd).

Hence, by cutting out a part of their intermediaries, financial institutions avoid substantial costs such as property rentals and payroll (Hanne, 2013). With the increased

maturity of and accessibility to self-service technologies for retail clients, new players called ‘direct banks’ took the disintermediation of financial services to a next level by adopting Internet-only business models. Consequently, significant cost-savings are made and are passed on to the customers in the form of lower interest rates (Castro, Atkinson, & Ezell, 2010; Dietz, et al., 2016; Hanne, 2013). However, these savings can be partially offset by the cut in margins that used to be earned on customer-facing operations (e.g. investment management, foreign exchange transactions) (Dietz, et al., 2016). These need to be compensated by new revenue streams which will be explored later. Moreover, the partial or full eliminations of branches raises concerns about the ‘digital exclusion’ of vulnerable customers or regular branch visitors that may not be equipped with mobile devices, or just not able to use them for banking activities (Jones, 2016).

Besides lowering operational costs, FinTechs boost the performance of the remaining branches by reassigning branch employees to core and higher-value activities (Broeders & Khanna, 2015; Deloitte Development LLC, 2010; du Toit & Burns, 2016; McQuinn, et al., 2016; Sia Partners, 2016). Specifically:

“The employees of banking institutions will change from dividing their time between administrative and sales tasks to focusing on the relationship with the customer and designing and marketing high-value products. This should finally lead to an increase in new customer business, a stronger bond with the banking institution and a reduced incidence of account migration.” (Cuesta, et al., 2015, p.8).

All in all, the adoption of innovative technologies enables to reduce the overall transaction costs as shown by Figure 8.

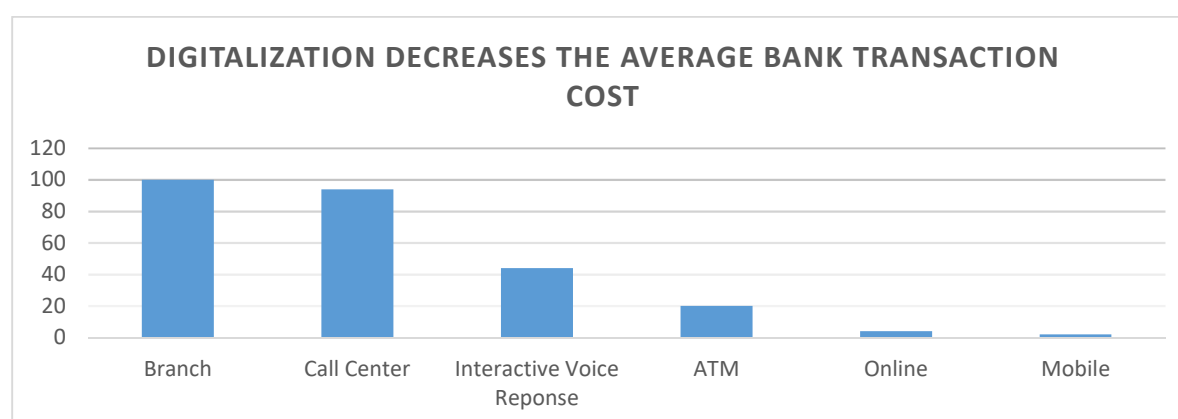


Figure 8 : Relative transaction cost per channel usage. Source: (Tower Group cited in Deloitte Development LLC, 2010).

3.4.1.2 IT infrastructure and storage costs

Before the emergence of ICT, financial organizations used to pay rental fees for a storage facility as well as wages to the individuals taking care of the property, the security and maintenance of their documents (WWW Metrics, sd). Today, cloud computing enables financial institutions to significantly reduce their IT expenses by 'delocalizing the IT infrastructure' outside of the company and reduce excess staff. First, a large up-front capital investment in IT infrastructure is avoided and turned into smaller, continuous operational costs via a pay-for-use pricing model (Sriram, 2011). This also allows smaller firms to affordably access services and computing-intensive business analytics that were unavailable before (Marston, et al., 2011). Indeed, the sophistication and automation of powerful analytical tools enable a faster, easier and cheaper storage, elaboration and analysis of data and therefore cost of insightful information (Sarrocco, et al., 2016). Second, the scalability of IT resources increases efficiency use as underutilization and overprovisioning of capacity is avoided. In addition, integration of new technologies and applications is eased by the standardized nature of the cloud (Banking Tech, 2014). At last, given that the maintenance of applications is managed by the cloud provider, employees can focus on core activities such as the development of relevant customer products and services (Anderson, 2014).

3.4.2 *Speed of process and delivery of services*

FinTechs are central to streamline operational capabilities within a financial service firm. On the one hand, the partial or full automation of decision-making processes reduces the overall lead time of services. On the other hand, standardized technologies enable a faster reaction to new market demands.

The automation of back-end operations has been part of the digitalization of financial service firms for a long time (Cuesta, et al., 2015). Thanks to technological advancements, IT solutions have progressively improved the efficiency of highly manual, repetitive and paper-intensive back-office processes, which are slow, expensive, generate errors and inconsistent results (Dias, Scopa, & van Bommel, 2012). Aside from back-end operations, FinTechs have recently enabled financial services companies to focus on the automation of front-end operations as well (Cuesta, et al., 2015). Indeed, mobile and online banking digitize and speed up normally customer-facing operations, such as data collection (Dias, Scopa, & van Bommel, 2012). The cloud also makes the system accessible from web

browsers anywhere at any time, allowing employees to work outside of the office (Banking Tech, 2014).

Moreover, *“where decision rules and logic are well-known, more precise and real-time analytics will be applied to automate a range of operational decisions”* (Sallam, Beyer, & Heudecker, 2013, p. 27). These include for instance scoring, product proposals, or advisory services based on a variety of customer data (Cuesta, et al., 2015). Nevertheless, where decisions cannot be fully automated, cloud computing together with strong data analytics provide employees an easy access to dashboards and predictive analytics to have a real-time picture over a customer or company’s status that supports decision-making in a convenient way (Scott-Briggs, 2017). As a result, the increased internal workflow automation reduces the time needed for the delivery of financial services, allowing instant access to products that consumers may need urgently.

Additionally, cloud environments and particularly SaaS models accelerate the speed-to-market of a firm or its ability to respond efficiently to the customers’ needs. First, because cloud applications are readily available on the providers’ marketplace, the initial set-up of new services is much faster (Kanchan, 2012). There is no need to find substantial capital investment in advance, meaning that delays in soft- and hardware acquisition are avoided (Banking Tech, 2014). Second, the inherent standardization of cloud applications makes it easier to integrate market changes identified by Big Data analytics (Financial Services User Group (FSUG), 2016). Therefore, development cycles of new products are shorter and their launch is facilitated (Kanchan, 2012). All in all, FinTechs enable financial firms to keep up with the fast pace of innovation through an agile delivery of services (Dietz, et al., 2016).

3.4.3 Revenue structure

The adoption of FinTechs leads the way for new revenue streams. First, a diversified, customized, simplified and integrated range of financial products and services improve the user experience and consequently the customer retention. Second, digital channels enable customer acquisition through increased geographical access and visibility on the Internet. Since retaining the right customer can be five to twenty-five times cheaper than acquiring a new one – depending on the industry and the study – both strategies can be considered as new revenue opportunities (Gallo, 2014). Of course, the approaches for client retention can certainly be used for acquisition and vice versa. Notwithstanding, each method is explained for the goal it serves the best.

3.4.3.1 Customer retention

FinTechs enable financial institutions to respond to the increasing demand for personalized services, which in turn increase the customer retention. In particular, the combination of mobile banking, data analytics and cloud computing allows a 360 degree view over every customer or segment. Indeed, every online transaction made via the web or smartphones is readily digitized and can be processed through powerful analytical tools to gain insights on each individual's behavior, preferences and needs (Gutierrez, 2014). This single customer profile can even be enriched with third-party data, for instance from mobile usage or social media (Marcu & Mathias, 2013).

As a result, a financial service firm can use this personal data to increase the share of wallet of existing customers by cross-selling, up-selling or bundling products. By offering a consolidated suit of financial products and services, financial firms deepen the customer relationship and thereby increase customer loyalty (Barbovich, 2016; Dietz, et al., 2016; Kanchan, 2012). Based on the consumption behavior of each customer, relevant and personalized financial services can be suggested proactively or in real-time via automated decision-making (Barbovich, 2016; Deloitte Development LLC, 2010). Given that payment-related transactions constitute over 80% of customer interactions with banks, mobile apps form a remarkable opportunity to suggest the "next-best-product" (Deloitte Development LLC, 2010; Denecker, Gulati, & Niederkorn, 2014; Kanchan, 2012). Moreover, once the digital distribution channel is set up, it is easier to diversify the portfolio by adding new products to the portfolio.

Furthermore, customer information can be used to enhance the overall user experience with highly customized products and services per customer rather than one-size-fit-all offers across all segments (Dietz, et al., 2016). Individuals increasingly request compelling, user-friendly interfaces where content is adapted to their online activity and any function is just one click away (EY, 2014). Real-time information – such as the client's status of application or an update on the missing documents – also improves the customer journey and satisfaction in a personalized way (Dietz, et al., 2016). An enhanced user experience improves the transparency and understanding of the products, and thereby their comparability in price and performance (Marcu & Mathias, 2013). Moreover, SaaS solutions prevent companies and their customers from needing to update app versions for enhanced design and new options, as the maintenance is taken care of by the provider (PWC, 2016).

Finally, an integrated channel approach is key to deliver a seamless banking experience to customers (Kanchan, 2012; Marcu & Mathias, 2013). This implies not only that basic transactions are accessible via any channel, but also that a customer can initiate an operation at a branch, pursue it on mobile and finalize it at home. As such, information needs to be consistent across channels to offer a cross-product experience on top (Dietz, et al., 2016). This integration responds to the increasing demand for consistency, immediacy and ubiquitous availability of financial services. A further step is the integration of relevant third-party features and solutions via application program interfaces¹ (APIs) to the banking platform, in order to offer a fully seamless customer journey (PWC, 2016).

3.4.3.2 Customer acquisition

FinTechs also allow financial services firms to enlarge their existing customer base in several ways. First, since mobile banking gives access to financial services independently of place and time, customers beyond geographical scope can be reached (Deloitte Development LLC, 2010). Thanks to the omnichannel strategy, most transactions can be performed online which increases the accessibility of financial services to customers for whom frequent trips to the branch are highly time-consuming and cost-demanding. Second, digital channels facilitate the presence of the financial firm on social networks and on the web, which increases the firm's visibility hence the potential outreach (Kanchan, 2012). Nevertheless, advanced data analytics is essential for a successful digital marketing campaigns. By identifying critical market trends and favorable segments behaviors, firms can improve their hit and conversion rate via content marketing or customer-life-cycle management (Dietz, et al., 2016).

3.4.4 Customer Relationship

As online and mobile banking provide customers self-service capabilities, their relationship with their bank shifts from a highly face-to-face interaction to a remote, virtual contact. Indeed, the Global Consumer Banking survey² of EY (2014) shows the low physical footprint of clients in their banking activities, as 76% of the respondents visit a physical branch once a month at most (see channel use for banking activities in Annex 43, p.165). In addition to banking apps, the web itself is a goldmine to get financial recommendations and is available

¹ An Application Programming Interface refers to a code specifying how two software programs should interact with each other to exchange data (Investopedia, sd).

² The Global Consumer Banking survey of EY in 2014 surveyed 32,642 retail banking customers in 43 countries worldwide.

at any time of the day. Customers also tend to ask their peers' opinion about financial services rather than relying solely on the advice of branch employees (Marcu & Mathias, 2013). Hence, end users not only gain a lot of autonomy in performing their daily banking activities (Sia Partners, 2016), but they also do in their financial management and decision-making abilities.

Indeed, according to the ING International Mobile Banking survey (2016)¹, out of the average 47% of European consumers using mobile banking, 71% claim it improves their money management and increases control over their finances (see Annex 44, p.165). The combination of real-time data analytics with potentially unlimited computing power has also enabled the development of products and services that help customers make better decisions without the human intervention (Banking Tech, 2014). This can range from personal financial management tools notifying budget imbalances or spending patterns that could lead to over-indebtedness, to product comparison and recommendation based on the customer needs, or even to robo-advisors providing guidance or deciding on the customers' behalf about their investment portfolio (Financial Services User Group (FSUG), 2016).

As a result, an empowered customer base forces financial institutions to rethink the role of their branch network (Sia Partners, 2016). While most practitioners do believe financial providers will continue to reduce their physical presence, they also believe branches are not doomed to extinction (Blazheski, 2016; Brunier, Pätsch, & Stradtman, 2016; de Roys, Coumaros, & Falato, 2013; Sia Partners, 2016). Indeed, branches remain essential advisors for complex and high-valued services as well as solvers of content-driven problems (Brunier, et al., 2016; Kanchan, 2012; de Roys, et al., 2013). They also validate the online findings of customers and provide the physical contact needed by each generation to initiate or improve their financial journey (Brunier, et al., 2016). Notwithstanding, the traditional branch network needs to be integrated with the online and mobile apps to offer a true omnichannel experience and to offer a highly personalized service and customer experience (Brunier, et al., 2016; de Roys, et al., 2013).

¹ The ING International Mobile Banking Survey (2016) surveyed 14,579 respondents in 13 European countries (Austria, Belgium, Czech Republic, France, Germany, Italy, Luxembourg, Netherlands, Poland, Romania, Spain, Turkey, UK), the USA and Australia.

3.4.5 Risk Management

Big Data analytics have an essential role in the improvement of the risk management¹ of financial institutions. Indeed, with the increased regulatory reporting and compliance requirements, financial firms need strong capabilities to conduct data-intensive activities, such as real-time scenario analyses (Sarrocco, et al., 2016).

As such, Big Data and advanced analytics provide companies a timely access to useful insights which enables them to make better-informed decisions, that is, based on evidence rather than intuition (Sarrocco, et al., 2016). Specifically, financial firms increasingly apply data analytics to credit scoring models in order to better estimate a customer's default risk (Buytendijk, 2013). A large amount of customer data is collected from external data sources and is analyzed via automated processes to assess a customer's creditworthiness (Gutierrez, 2014). Based on up to 10,000 data points ranging from traditional (e.g. credit and payment history) to more innovative sources (e.g. social networks, e-commerce), credit and loan decisions are taken in a few seconds thanks to powerful computing solutions capable of handling such a breadth of data (Gutierrez, 2014). Back-testing is another possible application of big data analytics in the financial service sector, which consists in the validation of predictive models or investment strategies using massive amounts of historical data (Gutierrez, 2014). Last, hidden insights, such as fraud or other risky behaviors, can be uncovered by studying various relationships in the data (Buytendijk, 2013).

In short, the increased granularity of data and quality of business insights provided by advanced analytics tools enable a better identification and quantification of risk and therefore a better portfolio risk management.

¹ In this paper, risk management will mainly refer to credit risk management. Credit risk refers to *"the risk that clients will not fulfil their repayment obligations"* (Forcella, 2015, p. 7). As such, credit scoring is used by lending institutions as a tool to *"systematically assess the risk level of a potential borrower"*, and usually *"based on the performance of past loans with characteristics similar to current loans"* (Forcella, 2015, p. 10). More precisely, *"credit scoring assigns points to a set of borrower features. The full score is obtained by combining all of the risk factors. The output is a numerical value that estimates how a particular loan is expected to perform relative to other loans."* (Forcella, 2015, p. 10). Credit scoring can be used as a screening tool for loan disbursement decisions, as a tool to follow-up the loan performance and take action to reduce risk, as tool to design the product (e.g. price) according to a borrower's features (Forcella, 2015, p. 10).

3.5 Conclusion

In conclusion, FinTechs emerged in developed countries as a result of technological advancements, in reaction to stringent banking regulations since the global financial crisis and as a response to an increasing customer demand for an affordable, user-friendly and ubiquitous access to financial services. This has led to an increased competition in the financial services market, from either start-ups or tech giants, spurring traditional financial institutions to innovate their business models. After an in-depth analysis of three FinTechs, we have studied how innovative technologies affect the business model of financial services firms. As a result, eight main findings follow from this chapter on the role of FinTechs, which constitute a starting point for the development of the hypotheses of our research. In particular, we have seen that FinTechs enable to (1) decrease operational costs partly thanks to an (2) increased speed of processes and delivery of services. By looking at the impact of new technologies on the revenue structure, we found out that FinTechs facilitate the (3) acquisition of new customers and enable to (4) diversify and (5) customize the offering of products and services to better suit customer needs, and consequently increase the loyalty of existing customers. We also considered that that adoption of digital delivery channels (6) decreases the face-to-face relationship with customers which in turn increases their autonomy in conducting financial activities. Finally, we also looked at the opportunity to (7) improve the risk management thanks to powerful data analytics. Because the rise of new actors intensifies the competition level in the financial industry, we also add that FinTechs (8) incentivize organizations to continuously innovate their products, processes and business models.

These eight elements provide us insights on the way FinTechs impact the formal financial industry in developed countries. Nevertheless, it remains to be seen whether they apply to the microfinance sector.

Chapter 4: FinTechs in developing countries

The aim of this chapter is to add a ‘microfinance aspect’ to the findings about the role of FinTechs in developed countries identified in the previous chapter. Doing so will help develop consistent hypotheses with our research context. By looking at developing countries, where the size of the microfinance market is much larger, it seems that technologies already play an important role and are seen as a means to fight financial inclusion. Taking into account the differences of the microfinance sector between developing and developed regions, as it has been highlighted in the *section 2.1*, the analysis of the adoption of FinTechs by microfinance institutions can either support, disapprove or bring new insights to the first sketch of our hypotheses. As such, we will first introduce how technologies are perceived in developing countries in comparison to developed ones. Then, we will analyze the impact of the mobile banking, cloud computing and data analytics on the business model of microfinance institutions, through literature and multiple real-life examples.

4.1 FinTechs, a tool for financial inclusion

As we mentioned in *Chapter 1*, in 2014 the number of ‘unbanked’ adults dropped by 20% to 2 billion since 2011, while 700 million individuals became holders of an account. Specifically, a 13% growth in account penetration points at developing countries and innovative technologies (Demirguc-Kunt, Klapper, Singer, & Van Oudheusden, 2015). While FinTechs emerged as a reaction to the global financial crisis in developed countries, their proliferation in developing countries is driven by the pursuit of economic development (Arner, et al., 2016).

According to Arner and Buckely (2016), the adoption of FinTechs in lower-income countries is supported by a relatively favorable environment, or rather, a yet untapped mass market. Indeed, *section 2.1* already pointed at the low bank account penetration, the extremely large informal sector and the highly insufficient physical banking infrastructure. Arner and Buckely (2016) add that people increasingly possess mobile devices, especially the tech savvy youth, and tend to have a behavioral pre-disposition in favor convenience over trust. Regarding data protection regulations, they tend to be less stringent and the competitive landscape less intensive than in developed countries.

As a result, accessible, affordable and fast technologies are crucial to offer financial services to those who are excluded from the traditional banking sector (Zimmerman, 2014).

As a matter of fact, the third G20 Principle for Innovative Financial Inclusion highlights the importance of “*promoting technological [...] innovation as a means to expand financial system access and usage*” (Alliance for Financial Inclusion, 2010, p. 3) (see Annex 3, p.134 for the G20 principle list). While data analytics, digital identification and back-office systems show big opportunities to boost financial inclusion, the mobile technology seems to make the greatest impact in emerging countries today thanks to its ubiquity and rapid scalability (Cheston, Conde, Bykere, & Rhyne, 2016).

While mobile banking emerged in mature economies as a way to upgrade existing online banking services, it appeared as a powerful tool to provide a first access to financial services to the large share of the unbanked population in emerging markets (Kanchan, 2012). That is, mobile banking has been revolutionary in a context where the high costs of building bank branches are the major obstacle to extend financial services to the remote rural communities, and where Internet access is limited but mobile penetration is high (CGAP, sd). Indeed, the International Telecommunication Union states that the mobile phone penetration was of 93% in developing in 2015, but a little more than two third of individuals in that region remained offline in 2017. Table 4 provides a comparison on the technological advancement in developed and developing countries worldwide.

INDICATOR OF TECHNOLOGICAL ADVANCEMENT	DEVELOPED	DEVELOPING	WORLD
Mobile phone suscriptions¹ per 100 people (2015)	124	93	98
% of Internet users (2017)	81	41.3	48
% of Internet users aged 15-24 (2017)	94.3	67.3	70.6
Mobile broadband subscriptions (2015)	86.7	39.1	46.1

Table 4 : Technological advancement in developed, developing countries and the world. Personal elaboration from various sources: (International Telecommunication Union, 2015; International Telecommunication Union, 2017; The World Bank Group, 2015a).

As a result, Mobile Network Operators (MNOs) have taken the lead by developing mobile money products which initially provided payments and transfers services, and later

¹ This indicator does not imply that the mobile subscriptions per individual are unique, however it gives a fair indicator on mobile phone adoption. According to Kemp **Invalid source specified.**, the world penetration of unique mobile users in 2017 would be 66%. For this indicator, the percentages given in the table refer to high income countries for developed countries, and low and middle income countries for developing countries.

savings, credit and micro-insurance via SMS-text system which can be decoupled from a bank account. Although initially pioneered in the Philippines in 2001, mobile money has been particularly successful in Africa (Arner, et al., 2016). The most well-known story is probably that of M-Pesa in Kenya, launched by Vodafone in 2007, which has known an explosive growth from 20,000 active users to 1 million eight months later, to 16.6 million in 2016 (Safricom, 2016). Today, mobile money is available across 92 markets including two third of developing countries, and counts more than half a billion registered accounts worldwide (GSMA, 2017). There are now 277 live deployments of which 35 reached more than 1 million active users. In Sub-Saharan Africa, mobile money accounts outnumber bank accounts, with 277 million registered individuals (GSMA, 2017).

Besides MNOs, many actors are already involved in reaching the goal of the World Bank to reach a 100% account penetration by 2020, up from 51% in 2011 to 62% in 2014 (Demirguc-Kunt, et al., 2015). These actors include governments, international organizations, traditional as well as alternative financial service providers (Moreno, Vazirani, & Lillis, 2015). According to Jim Yong Kim, the President of the World Bank (2015b), microfinance institutions will be key partners along them.

4.2 Technology-driven business models of microfinance institutions

Technology adoption by MFIs in developing countries is not new. Indeed, Nyapati (2011) mentions a survey conducted by CGAP in 2009 among 152 MFIs and shows that the use of manual systems for loan tracking decreased from 46% to 18% between 2004 and 2009. Following the increased technology adoption by MFIs in developing countries, this section will present how they perceive mobile banking, cloud computing and data analytics and how these FinTechs impact the economics and processes of the model. To this end, we will use the available literature about the topic from academics and practitioners, which mostly takes the form of case studies. This is why the impact of FinTechs on the business model of MFIs will be mainly illustrated through real-life examples. Nevertheless, it is important to bear in mind the eight elements mentioned in the conclusion of *Chapter 3*, as we will see that many benefits perceived by financial institutions in developed countries are also perceived by MFIs in developing countries. Indeed, in his book called *“Advanced Technologies for Microfinance”*, Ashta (2011) gives for the first time an overview on the various technological applications adopted by MFIs. The chapters of the book are written by authors across the world and explain

how different technologies, from mobile phones to cloud solutions, enable to reduce costs, enrich the customer relationship and increase the outreach.

4.2.1 *Mobile banking*

In reaction to the explosive growth of mobile money services, microfinance institutions started to adopt mobile banking as a new channel to deliver financial services. Hanouch and Rotman (2013) studied how microfinance and mobile banking intersect based on interviews with MFIs that integrated mobile devices to their operations. As such, their findings, combined with practical cases, provide some insights on how it impacts the business model of MFIs. According to the research, the successful stories usually take place in countries where MFIs can leverage an existing and extensively used mobile banking infrastructure. Indeed, MFIs have difficulties building their own platform from scratch given the funds and expertise needed. The main mobile services offered by MFIs are usually loan repayments, savings mobilization and loan disbursements, but more innovative MFIs include due diligence, loan application and credit decision processes (see Annex 45, p.166).

Although the use of mobile banking requires investment in appropriate technology, operational costs can be significantly diminished through an increased staff efficiency and lower logistics costs at the branch, as shown in Example 1 (Arenaza, 2014). In case loan officers used to travel to the customer's door to collect payments, significant time and cost savings can be made (Kumar, McKay, & Rotman, 2010). Employees can then spend more time on customer service and education to empower the client (Arenaza, 2014). At the end, net savings can be passed onto the customers in the form of lower interest rates, although the degree varies from one market and model to the other (Kumar, et al., 2010).

Example 1- SMEP DTM Limited is a Kenyan MFI that enables its 168,000 customers to save, receive and repay loans via M-Pesa. This reduces the frequency of group lending meetings. Also, the integration of their MIS system with M-Pesa avoids time-consuming reconciliation processes and automates data collection. As a result, loan officers have more time in the field and can work on value-adding activities such as growing the loan portfolio. *Source:* (Kumar, et al., 2010).

Additionally, new revenue streams can also be generated from transaction fees and commissions charged on services (e.g. transfers, balance enquiries) available through the mobile channel. Cross-selling or bundling products is also an opportunity exploited by BankO

in the Philippines, which gives new customers access to an account combining savings, insurance and mobile payments, and eventually credit if they have built a good financial history (Hanouch & Rotman, 2013).

Regarding the acquisition of new customers, *“it is no exaggeration to say that some technologies like mobile banking have revolutionized the microfinance landscape, empowering hundreds of millions of poor clients with access to banking and financial services, which would have otherwise remained out of their reach”* (Nyapati, 2011, p. 2). Moreover, Shrivastava (2010) shows in a study on mobile banking adoption that it can be a channel to reach out lower income segments.

Finally, meeting customer demand is key in countries where mobile money is well-established. In such countries, mobile banking is expected as a basic service and is key to retaining existing customers (Hanouch & Rotman, 2013). Even in countries where mobile money is not widely adopted, customers come to value the savings from travel costs and time brought by mobile banking (Hanouch & Rotman, 2013). Customer convenience is also enhanced with SMS reminders about loan payments (Kumar, et al., 2010). Security and transparency are other important aspects brought by electronic channels compared to cash, reducing risk or fraud and theft (Arenaza, 2014).

Nevertheless, in a study on the level of automation of MFIs, Khan (2011) highlights the danger of mobile banking and the potential degradation of the group lending methodology. That is, the joint liability of micro-borrowers can suffer from a decrease in human contact, which is a core principle to ensure timely repayments in the Grameen model.

4.2.2 Cloud computing

The main transformation brought by cloud computing lies in the access and use of computing power it offers through the Internet at an affordable price (Barnett, 2011). That is, end users can access sophisticated cloud-based services on any web browser at any time and only pay for their usage. Hence, cloud computing plays a key role in the context of international economic development as it has *“the potential to help developing countries reap the benefits of information technology without the significant upfront investments that have stymied past efforts”* (Marston, et al., 2011, p.181). In the area of microfinance, cloud providers increasingly offer portfolio management and accounting with a pricing tied to the portfolio size or the number of active accounts (Barnett, 2011). With a volume-based pricing,

MFIs can control costs as the portfolio and organization grow, gain flexibility and can scale up faster (Cazacu, Dolgaya, Bruckner, & Kortenbusch, 2016).

A popular cloud-system is provided by Mambu, a Berlin-based organization providing enterprise core banking systems using a SaaS model. Example 2 describes one of its projects led in Kenya and highlights how the MFI has become more efficient and agile with the cloud.

Example 2- Premier Group (PG) was established in 2014 in Nairobi as a credit only microfinance institution. The MFI counts 126 staff members in Kenya and 68 in Uganda with respectively 6,500 and 2,500 customers, and plans to reach 20,000 and 8,000 within a year with the implementation of Mambu. In order to grow while providing high-touch services to customers, PG considers loan management automation, real-time reporting and mobile accessibility to customer information to be key. Indeed, Mambu speeds up the entire loan system and facilitates the launch of new products such as “Superkwik Loan” which is disbursed in 12 hours. Such innovations enable PG to deepen their relationship with existing customers but also to attract new ones. Moreover, the loan officers become more productive and focus on core business activities. For instance, with the mobile App, loan officers can collect customer data directly from the field. The IT staff can also spend time on value-adding projects rather than storage capacity management. Employees are also empowered with a personal access to the software which gives them a better control and visibility over the portfolio. Additionally, Mambu improves the management and movement of documents between the branches and with the field. PG has now the ambition to automate the loan application, decision and disbursement. *Source:* (Mambu, 2015).

Nevertheless, cloud computing strongly relies on a stable Internet connection, which is not always available in developing countries. Moreover, the integration with legacy systems can be problematic and national regulations may restrict the use of SaaS systems. In addition, as the MFI becomes larger, volume-based pricing may become an expensive IT solution (Cazacu, et al., 2016). Finally, Quadri, Singh and Iyengar (2011) highlight general challenges related to the lack of infrastructure, employee training, IT support and the particularities required by an MFI system compared to a commercial bank (e.g. type of information).

4.2.3 Data Analytics

The digital data revolution is not solely happening in developed countries. On the contrary, developing countries represented 74% of the mobile subscriptions in 2016 (GSMA, 2016 cited in Caire, et al., 2017) and two third of the Internet users worldwide in 2015

(International Telecommunication Union, 2015). And the same patterns are expected regarding smartphone users in the near future, which will generate even more digital data.

More than a simple communication tool, mobile devices are actually building a digital footprint for those that have never dealt with a financial institution, and potentially turning them into creditworthy customers (Accion, 2017). Data such as customer mobile call records or payment history provides usable information for an alternative credit scoring (Caire, et al., 2017). Other sources of information such as social media accounts, e-commerce payments or geospatial movements also have the potential to establish a more formal credit history. Nevertheless, the main difficulty is to infer 'credit' value from data while respecting customer's privacy. The variation in regulations and in the degree of enforcement across countries makes it even more challenging for financial institutions and requires caution regarding the usability of data (Caire, et al., 2017). Although regulations in developing countries tended to be less severe, numerous countries are regulating cross-border data flows.

Besides assessing the credit risk of people with no formal history, big data analytics provides the necessary level of granularity to better understand the poor and adapt products and services to their needs (Chen & Faz, 2015). As a result, marketing strategies can become more segment-specific and therefore more effective to accelerate adoption and usage of financial services (Gupta, 2014). Finally, data can help loan officers work more efficiently and effectively by automating a certain number of decision-making processes and supporting the monitoring of the portfolio performance (Caire, et al., 2017).

Example 3- Since June 2012, First Access (FA) provides screening and scoring solutions to MFIs in developing markets that do not have the in-house knowledge to develop scorecards efficiently for customers with no formal history. Based on data from alternative sources like mobile phones, customizable algorithms provide insights on the credit profile of repeat or new loan applicants. As such, FA worked with an MFI in East Africa to improve their credit assessment process. By creating fast-track loan approval for the best scoring segments, the MFI reduced the time to approval from 6 to 1 day for that group. This improved the overall customer experience, the efficiency in underwriting loans by 18% and the financial performance of these groups. Source: (Caire, et al., 2017).

In short, data is playing a key role in the financial services sector as it promotes a customer-centric business model that can better understand, assess and serve those excluded from the traditional financial system.

4.3 Conclusion

To summarize, these illustrations show us that MFIs in developing countries perceive various benefits in the use of each of the described technologies. First, the main advantages of mobile banking are the ability to reach more remote and poorer borrowers; to reduce operational costs thanks to an increased staff efficiency; to benefit from new revenues streams thanks to diversifying the product offers; and to improve the customer convenience, especially in terms of autonomy and security. Second, cloud computing enables MFIs to affordably access more powerful IT resources and therefore to speed up the loan processes and the time to market. It also increase the staff efficiency thanks to an increased automation of routine tasks. Third, the data generated from mobile phones and from other non-banking sources are crucial to supply alternative credit scoring models for customers who are often lacking track records, bank accounts or sometimes even income. Such scoring models can potentially improve the MFI's visibility and control over the portfolio, speed-up decision-making processes and better respond to the customers' needs.

When comparing these elements to the benefits perceived by traditional financial institutions in developed countries, we see that the advantages of using FinTechs converge towards the same direction: decreased operational costs, increased speed of process and outreach, improved customization, diversification of products and risk management. Moreover, in markets where mobile banking is largely available, MFIs need to follow the trends if they do not want their customers to switch to competitors. Obviously, the extent to which these benefits are perceived and the way they are generated differ from one geographical area and sector to another. Indeed, the size of the opportunities brought by FinTechs in developing countries is potentially higher given the larger underserved market and the lack of infrastructure compared to developed countries. Finally, it is important to note that a new obstacle has been raised: the danger of FinTechs to diminish the physical contact between borrowers and loan officers – as a core tenet of microfinance on the whole – and therefore to deteriorate the repayment behavior of customers.

Conclusion of theoretical part

This theoretical part has started by setting microfinance in its worldwide context. We first got back to the roots of microfinance in developing countries where it is seen as a tool to overcome financial inclusion, after which we examined the way microfinance has been translated into developed countries. We highlighted the main economic, social and institutional differences between those geographical regions that shape microfinance institutions towards different missions, activities and structures. Then, we had a closer look at microfinance in Europe and we emphasized the differences between the Eastern and Western European sector. We mentioned the numerous initiatives set up by the EU over the last years to promote employment and social inclusion through microfinance, as well as several challenges the sector still faces.

The second part of the literature review focused on the rise of financial technologies since the global financial crisis. After reviewing the driving forces of their rapid adoption in industrialized countries, the three most promising FinTechs for microfinance have been explained. Against this backdrop, we studied how the adoption of FinTechs by traditional financial institutions in developed countries affect various dimensions of their business model. These findings have then been supported by literature and illustrations on the way innovative technologies influence the operations and activities of microfinance institutions in developing countries. Despite the sectorial and geographical differences, financial institutions of developed economies and MFIs in developing regions share common interests in the use of FinTechs, which have been gathered under eight major benefits:

- (1) Reduced operational costs resulting from an increased staff efficiency, decreased IT and infrastructure costs, leading to potential lower interest rates;
- (2) Increased speed of process and delivery of services resulting from a faster customer interaction and accelerated decision-making proves;
- (3) Increased outreach to more vulnerable and remote customers thanks to the ubiquity of mobile phones and an increased visibility on the Internet;
- (4) Increased diversification of products and services for an increased customer loyalty;
- (5) Increased customization of products based on customer needs, improved customer experience and convenience;

- (6) Decreased face-to-face relationship with the customer given the availability of self-service functions, which in turn increases the customer autonomy in conducting banking activities;
- (7) Improved risk management thanks to an increased visibility over the portfolio and better-informed decisions through scoring model enriched in data;
- (8) Increased competition in the market resulting from low technological barriers incentivizes innovation in the products and processes.

Annex 46, p.167 provides a complete overview for each benefit. These advantages provide a basis for the development of hypotheses that will be tested in the reality of the Western European microfinance sector in the second part of our research.

Part II: Practical part

Chapter 5: Research question and methodology

This chapter will first explain the reflections that have led us to the main research question of this paper, followed by the methodology adopted to conduct our research study.

5.1 Research question

The theoretical part has showed us an increased interest for FinTechs from formal financial institutions in Europe (*Chapter 3*) and from microfinance institutions in developing countries (*Chapter 4*). This has been illustrated by numerous practitioners' reports, some academic research and success stories in developing countries. As a result, one could wonder how European microfinance institutions are perceiving innovative technologies, how it could impact their operations and activities, and whether it could help them overcome the challenges faced by the microfinance sector today (see *sections 1.2.5 & 2.2.5*). Nevertheless, few literature is addressing this topic in Europe, and the existing literature is most of the time not up to date given the rapid technological advancements over the last years. One of the latest examples is a report on the use of IT in European MFIs published by/in the IT & Innovation Working Group of the EMN (2011). Estapé-Dubreuil and Torreguitart-Mirada (2011) also analyzed the relationship between IT and microfinance in Catalonia, Spain and suggested to take a broader approach at the European level.

Hence, this paper attempts to fill in the gap in the literature about microfinance and technology in Europe by responding to the following question:

“What is the role of financial technologies in the business model of microfinance institutions in Western Europe?”

Because providing a deep, exhaustive study on the adoption, the impact and the future of FinTechs for MFIs in Europe would probably be beyond the scope of a Master's thesis, the aim of this study is to see how the land lies in the microfinance sector regarding new technologies. In other words, we will have a broad look at how innovative technologies are appreciated by microfinance institutions in Western Europe, to what extent they are being adopted and which difficulties are faced. Although we will look at the potential obstacles in the implementation of FinTechs by MFIs to remain objective and realistic, we will rather focus

on the potential benefits innovative technologies can offer. The focus on Western Europe is not only justified by the geographical ease of the research, but also by the fact that the microfinance landscape tends to be more homogeneous within Western Europe than within Europe, given the differences between Eastern and Western European microfinance highlighted in *Chapter 2*.

5.2 Qualitative research through case studies

Given the novelty of the topic and the limited time frame of the research, we decided to assess the role of FinTechs in the business model of MFIs with a rather qualitative than quantitative method. Indeed, a quantitative study would have to be conducted in the long run as numerical data is not broadly available yet. Moreover, qualitative data better suits our willingness to understand the nature of the impact of new technologies rather than the quantity of its underlying characteristics (Eriksson & Kovalainen, 2011). A qualitative approach also enables to interpret the meaning and significance that individuals attach to processes and situations in a particular context (Starman, 2013).

According to Yin (1994, p. 13), a case study is an *“empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.”* In the case of our research, contextual conditions are particularly important given the previously highlighted differences between the microfinance sector in developed and developing countries, and the existing differences between the microfinance sector and the formal banking sector. As a result, an observed role of technologies could be more or less relevant from one context to the other, making the real-life setting of the research crucial.

Furthermore, Yin (1994) suggests to use case studies when three conditions are met:

- The research question is formulated in a “how” or “why” fashion. Notwithstanding, Yin (1994) specifies that case studies are justified for “what” questions that are exploratory and require the development of hypothesis to conduct the research, which is our case;
- The investigator has no control over the behavioral event. In our study, the role given to technology by an MFI is embedded in its strategy and can hardly be influenced. Moreover, the use of multiple sources of evidence, of which semi-directed interviews, makes it difficult to manipulate the results;

- The research focuses on contemporary events, which is undoubtedly the case in our study given the recent emergence of FinTechs.

As a result, the above described arguments justify the use of the case study method for our research. What is more, Yin (1994, p. 13) emphasizes that a case study usually has “more variables of interest than data points” and therefore “relies on multiple sources of evidence, with data needing to converge in a triangulating fashion” and “benefits from the prior development of theoretical propositions to guide data collection and analysis”. The deployment of these characteristics will be explored in the following sections.

5.2.1 Development of hypothesis

In order to have a structured approach and to steer our qualitative study towards the research question, we will develop hypotheses based on the eight major findings about the role of FinTechs identified in the theoretical part (see Annex 46, p.167). As such, the origins of the hypothesis are dual. On the one hand, they result from the theoretical literature about what FinTechs generally provide. On the other hand, they result from a geographical difference in the adoption of new technologies by MFIs. Consequently, we will study the feasibility of the hypotheses listed in Table 5 in the reality of the Western European microfinance.

HYPOTHESIS 1: REDUCED OPERATIONAL AND TRANSACTION COSTS

HYPOTHESIS 2: INCREASED SPEED OF PROCESS AND DELIVERY OF SERVICES

HYPOTHESIS 3: INCREASED OUTREACH AND FINANCIAL INCLUSION

HYPOTHESIS 4: INCREASED DIVERSIFICATION OF PRODUCTS AND SERVICES

HYPOTHESIS 5: IMPROVED CUSTOMIZATION AND ADAPTATION TO CUSTOMER NEEDS

HYPOTHESIS 6: DECREASED FACE-TO-FACE INTERACTION AND INCREASED CUSTOMER AUTONOMY

HYPOTHESIS 7: IMPROVED RISK MANAGEMENT

HYPOTHESIS 8: INCREASED COMPETITION SPURS CONTINUOUS INNOVATION

Table 5 : Hypotheses to be verified through qualitative research.

Before confronting the theoretical findings to the reality, we first need to define how exactly these hypotheses will be tested.

5.2.2 Data set

As suggested by the research question, the ‘unit of analysis’ will be the microfinance institution (Yin, 1994). Obviously, other stakeholders in the microfinance sector could be considered such as third-party technology providers, policymakers, customers or donors (Kauffman & Riggins, 2012). Nevertheless, the scope of the research needs to be realistic and we considered MFIs to be in the best position to provide relevant, comprehensive and exhaustive information in assessing the role of FinTechs in their business model.

According to Yin (1994), a multiple case design improves the external validity or the ability to generalize the findings of a research to a domain, which is in our case the Western European microfinance sector. In particular, when a few cases – two to three – are designed under the same theoretical conditions so that the same outcomes can be expected, a logic of literal replication is used and increases the robustness of the findings (Yin, 1994). Therefore, three MFIs have been carefully selected based on three criteria. First, the geographical location and proximity to conduct as many face-to-face interviews as possible. The aim was also to have one MFI per country in order to increase the potential to generalize the results at a Western European level. Second, the similarity in the type of MFIs in order to increase the comparability, coherence and the strength of the results. Specifically, the selected microfinance providers are all non-banking, private and publicly subsidized institutions which are driven by a social mission and focus on professional microcredit. Third, the availability of relevant personnel, that is, with adequate insights on the digital strategy of the MFI and/or sufficient knowledge about FinTechs. Based on these criteria, the data set consists of microStart in Belgium, ADIE in France and Qredits in The Netherlands. Those MFIs will be presented in *Chapter 6*.

5.2.3 Data collection

Multiple sources of evidence are needed to construct validity of a case study (Yin, 1994). These can come from primary or secondary sources. Primary data was collected through observation and in majority through semi-structured interviews. This type of interview seemed to be the most appropriate as the researchers define topics to be discussed, while letting the interviewee chose the order of the questions, bring new elements or go more or less in depth depending on the relevance of the question (Eriksson & Kovalainen, 2011). The interviews were conducted in a systematic way and all the hypothesis were tested for every MFI (see the agenda and structure of the interviews in Annex 47, p.168). Whenever it

was possible, the interviews were conducted face-to-face in order to smooth the interaction and have the highest response rate and clarification level possible, both orally and visually (Dialsingh, 2011). Depending on the available time of the employees and managers, interviews were conducted in one or several sessions, and sometimes with one or several employees depending on their level of knowledge. The transcriptions of the interviews can be found in Annex 50, p.172. Secondary data was collected through the MFI's website, annual reports and other material provided by the interviewees (see Annex 48, p.169 for an overview on data collected for each MFI).

5.2.4 Data analysis and structure

The collected data will be analyzed in two phases. First, each microfinance institution will be thoroughly presented according to its national context, its core values and mission and its digital strategy. Then a comparative table will give an overview about their structure, products and performance (Table 6, p.86). This part aims at setting the necessary background to understand the similarities and differences between the selected MFIs and in which environment they operate. In a second phase, the results of the interviews will be analyzed following the structure set by the aforementioned hypotheses. The elements in favor of each hypothesis will be regarded as well as the obstacles that impede a feasible implementation. Although these have been analyzed individually for each MFI, the results of the 3 case studies will be presented simultaneously for each hypothesis. This structure avoids a redundant analysis approach, creates a fluent information flow for the reader and enables to directly discern patterns from the various point of views in the field. The results will then be compared against the literature in order to identify new or contradicting elements. This will help us to understand how differently FinTechs are actually perceived by Western European MFIs in comparison with the theory.

Chapter 6: Analysis of the results

In this chapter, we will analyze the information collected from the three MFIs according to the structure mentioned in the above paragraph. Nonetheless, before examining the case studies thoroughly, we will introduce a research about the digitalization of MFIs that is currently being conducted at a European level by the Microfinance Centre (MFC) in collaboration with the EMN. We had the chance to interview the Research Program Manager, Justyna Pytkowska, who shared insightful preliminary results about the adoption of digital solutions for delivering microfinance products and services (see Annex 50, p.172 for the transcription). This will provide a global view on use of technologies by MFIs in Europe before deep diving into the analysis related to the three specific cases.

6.1 European Background: Research of Microfinance Centre

According to Justyna Pytkowska, the ‘digitalization of MFIs’ is a quite new topic in Europe and there is currently no formal publication or proper research about it. To date, only discussions between microfinance actors took place during panels or workshops at several conferences organized by the MFC or the EMN. As a result, the aim of the research is to *“map who does what and to see to what extent the MFIs are prepared for digitalization, where they see the opportunities, what are the obstacles”*. The research is conducted in three steps. It starts with a survey among the MFC and EMN members, followed by case studies on interesting solutions that have been implemented, and it ends with an overview of software providers for MFIs. So far, only the survey has been completed and preliminary results will be discussed in this chapter. The survey counted 35 respondents, of which 42% from Western Europe and 58% from Eastern Europe. Nevertheless, because the survey was completed on a voluntary basis, the sample might not be fully representative.

Considering the FinTechs described in the *section 3.3*, only 11% of the respondents have a cloud-based loan tracking system against 89% using a server-based system, either in-house or from a MIS provider. Half of the surveyed MFIs offer online loan application services via their website, 14% offer this service both online and on a mobile app, and 36% offer none, which is quite a lot according to the researcher. Online application forms are rather offered as a complementary entry point for the customers than a substitute. They enable loan officers to know the amount and duration of the requested loan, but the rest of the process is usually done at the office or in the field. Among the MFIs offering online and mobile solutions, 28% enable their customer to upload documents, 14% to check the loan balance, 17% to make the

loan repayments online but none allows digital signatures. Regarding the solutions made available the loan officers, 64% of the MFIs can collect data directly from the field via connected tablets or laptops. In some cases, the data collection takes place offline but the customer data is automatically uploaded once in the office. 17% of MFIs have access to an instant credit scoring. Besides, 47% of the respondents use data analytics for risk management.

Overall, MFIs consider digital solutions to be the most beneficial at the application stage of the lending process (i.e. credit scoring, document collection) followed by the loan processing (i.e. document analysis, loan approval) and finally for the customer relationship management. While 36% of the MFIs feel very ready for digitalization, 53% feel somewhat ready and 8% do not feel ready at all. However, 81% of the MFIs plan to introduce digital solutions in the near future. The answers mainly refer to digital loan disbursement, credit scoring, online lending platforms, CRM for marketing and mobile delivery channels.

6.2 Presentation of MFIs

In this section, each institution will be generally presented according to its national regulatory environment, its mission, its digital strategy and its use of innovative technologies. These short descriptions will set the scene in which our research took place and will help us put the results into perspective.

6.2.1 *microStart – Belgium*

Belgium does not have specific regulations for the provision of professional loans by non-bank financial intermediaries (NBFIs) (e.g. cooperatives, credit unions, associations, foundations, etc.) and there is no supervisory body regarding the lending activities of those NBFIs. Moreover, NBFIs are not forced to share client data with the *credit bureau*¹, but they also do not have access to that data. However, the government subsidizes business development services (BDS) offered by organizations such as business planning, administrative, marketing and legal advice, etc. Moreover, since 2016, the government provides a financial support to the unemployed people during 12 months in their transition

¹ “A *credit bureau*, also called a credit agency, is a firm that supplies data about the financial strengths and credit histories of individuals and businesses, usually to banks, credit card companies, retailers, and other lenders” (Market Business News, 2017).

towards self-employment. Finally, the development of the existing legal framework includes initiatives that would allow NBFIs to access the National Bank data (EMN, 2016).

microStart was founded in 2010 jointly by ADIE, the Belgian bank BNP Paribas Fortis and the EIF. In 2016, there was a capital increase of €1.7M that involved other organizations, namely AG Insurance and Partena Professional. To ensure its dual mission of financial and social inclusion, microStart is made up of two legal entities: (1) *microStart Support asbl*¹ for the mentoring services, and (2) *microStart srl-fs*² which takes care of the credit disbursement activity. microStart is operating at a national level and has five local agencies scattered around the country (microStart, 2016; microStart, 2017). Besides funding partners, microStart is also developing partnerships with organizations that can help develop its business and outreach, like the crowdfunding platform Babyloan and Funds for Good offering interest-free loans (microStart, 2017).

The mission of microStart is *to help those who have more ideas than money* (microStart, 2017), which concretely translates into offering funding up to €15,000 and educational support to those who are willing to create or develop a small activity but cannot access traditional bank loans. It targets more specifically the self-employed, the unemployed and the social welfare recipients (Marchand, 2013). In 2015, microStart granted 869 of the total 1049 microloans in Belgium, and is by far the biggest MFI in the country (Tadjudje & Jérusalmy, 2016). In 2016, 767 loans were disbursed and 1,160 people benefited from coaching from one of the 112 volunteers.

‘Meeting the needs of the clients’ is the first axis of microStart’s strategy. In line with that goal, the organization has developed an online application form in 2016 which is directly accessible from the website (microStart, 2016). The current digital strategy of microStart aims at supporting growth of activities without additional operational paid staff, creating online tools for online management and improving the quality of the business development services.

¹ An *asbl* (association sans but lucratif) is a Belgian legal form of a not-for-profit organization. An *asbl* can receive donations.

² An *srl-fs* (société coopérative à responsabilité limitée et à finalité sociale) is a Belgian legal form of NBFIs with a social purpose – meaning that it cannot have as main object the distribution of profit. The combination of both *asbl* and *srl-fs* allows for better tax conditions (Annika, 2012). Contrarily to an ‘*asbl*’, a company with a ‘social purpose’ can engage in commercial transactions – as long as those fit within the social nature of the company. In Belgium, around 73% of ‘social purpose’ companies take a ‘*srl*’ legal form, as this status gives some advantages such as decision-making process, limited dividend for the shares, facility for the associates to enter of exit, the ability to modify the amount of capital without modifying the statutes – indeed increasing the capital would induce costs for any other legal form than the ‘*srl*’ (Fiduciaire Cludts, n.d.).

In 2017, the main priority is the set-up of an online platform enabling a more efficient online credit demand management, a better internal collaborative work, and an improved communication with the volunteers.

6.2.2 ADIE – France

Unlike Belgium, France has a specific regulation¹ on microcredit. This regulation governs the rights and obligations of non-profit organizations that grant loans. A loan is considered ‘microcredit’ up to a maximum amount of €12,000. The only way to disburse microcredit without being a bank nor a NBFIs is with the legal status of an association². The French Central Bank supervises the microfinance sector and MFIs have some obligations regarding financial ratios and reporting requirements. Regarding customer data, France does not have a ‘credit bureau’ but MFIs can access a list of gathering negative credit history. The French government provides strong support for financing and for the delivery of BDS (EMN, 2016).

ADIE (Association pour le Droit à l’Initiative Economique) is an association which has been allowed by the microcredit Committee to grant microcredit loans. The association was founded in 1989 by Maria Nowak and is financially supported by a variety of public actors, whether European, national or regional. ADIE operates on all the French territory with more than 500 employees scattered in 128 branches and helped with more than 1285 volunteers (ADIE, 2016). Given its size, ADIE has many initiatives promoting employment and inclusion and partnerships, for example with Veolia, Finance Active and Renault Mobiliz. Besides, the ADIE Fund was created in 2009 and collected more than one million euros in 2016 for supporting its business development programs (Fonds ADIE, 2016).

As it is implied by its name, ADIE aims at providing financial and non-financial support to entrepreneurs who are denied access to traditional capital sources, in the form of microloans, non-interest bearing subordinated loans, micro-insurance and BDS. The association targets particularly unemployed people and people on welfare. A micro-entrepreneur can receive a loan up to €10,000, depending on the project funding needs, with

¹ Monetary and Financial Code - [Article L511-6](#). This article has been updated nearly 20 times since 2001.

² “Before 2001 French banking law did not allow associations to on-lend to their clients. Adie therefore had special refinancing agreements with banks that provided loans to Adie clients. However, through intense lobbying, Adie obtained an amendment to the French banking law which now allows the association to borrow for on-lending.” (Jayo, et al., 2010b)

the possibility to benefit from BDS. In 2016, it disbursed nearly 20,000 microloans (ADIE, 2016; ADIE, 2017).

The transition towards digitalisation is considered as a main driver behind the continuous development of ADIE (ADIE, 2016). The digital strategy addresses four topics: the visibility, the client experience, technological innovation through integration into the business model, and the monitoring of the potential digital implications. In May 2016, ADIE conducted a survey showing that around 80% of its clients use the internet on a daily basis and that 75% have a smartphone. As a consequence, it opened an 'Online Customer Area' which enables the clients to check the loan balance and to pay online, from their computer or mobile phone. Online loan application also started in 2016. E-learning online tools have also recently been introduced.

6.2.3 Qredits – The Netherlands

The Netherlands do not have specific regulatory framework around microcredit activities. NBFIs are allowed to disburse loans for business purposes only without being subject to any interest cap. They report voluntarily to the Ministry of Economic Affairs, but there is no supervision neither from the Dutch National Bank nor from the Authority for Financial Markets. Moreover, NBFIs can access customers' credit history data if they become members of the 'credit bureau registry'. With regard to the clients, the government grants a social welfare bridge up to six months for entrepreneurs launching a new business. The offering of BDS receive public support as well (EMN, 2016).

Qredit was launched in 2009 on the advice of the Dutch council of microfinance and thanks to subsidies provided by the Ministry of Economic Affairs. The funding sources also come from large commercial banks (i.e. ABN AMRO, ING, Rabobank, etc.), a syndicate of insurance companies and the EIF. Regarding its legal form, Qredits is an 'ANBI'¹ which is a non-profit private foundation without shareholders and with a national recognition for contributing to the common good. The headquarters are in Almelo from which Qredits operates in the whole country (Qredits, 2017).

Qredits targets people who are denied the opportunity to participate economically and entrepreneurs who need support and coaching (Qredits, 2014). In order to increase the

¹ An ANBI (Algemeen Nut Beogende Instelling) is a non-profit tax designation for foundation in the Netherlands. ANBIs are entitled to certain tax benefits related for instance to donations (Belastingdienst, 2017).

opportunities of (new) entrepreneurial businesses, Qredits offers flexible credit up to €25,000, microcredit up to €50,000 and SME loans from €50,000 to €250,000. It also offers mentoring, e-learning courses and other BDS (Qredits, 2017).

Qredits started its operations with the idea that they would have to be supported by a highly sophisticated IT support system to ensure a sustainable approach (Qredits, 2017). The risks linked to customer profiles, the high face-to-face interaction and the BDS requires a high-tech environment which is cost effective, independent from the location and tailored to both the clients and the MFI. Therefore, Qredits developed an online application process early on, is constantly improving its credit risk assessment tools and is looking for new product and service development such as flexible loans, micro-leasing, digital identification and contracting, and a pilot project for video call screening.

6.2.4 Comparison of the technological approaches

The individual presentations depicted above all give the latest information about the respective digital strategy of the three MFIs. However, it is important to step back and compare their approach to digital solutions on a broader level. First, since Adie was launched back in 1989, it is considered as one of the pioneer microfinance institutions in Western Europe. Operationally mature, it has had the time to establish its business across the whole French country using a decentralized approach. More than 25 years later, although Adie could be thought to have exhausted the traditional distribution channels at its disposal, it has turned towards digitalization in order to keep growing and expand its reach even further. Making use of one of its most valuable assets, its customer base, Adie conducted a survey in 2016 to better understand the level of digitization of its clients and how it could better meet their needs with digital solutions.

On the other hand, Qredits has had a totally different approach right from the start in 2009. It was originally set up with the help of the Dutch government but has always had the goal of financial sustainability as part of its strategy – not pursued as a goal as such but as a means to achieve higher social impact and bigger outreach with more independence. Technology has played a vital role right from the start and laid the necessary foundations for an efficient business model.

Lastly, microStart was founded in 2010 following a decentralized strategy like Adie – one of its founders – but with the idea to one day reach sustainability like Qredits. microStart

inherited know-how and software solutions from Adie and had to adapt these assets to its own environment and customers. Despite its numerous ideas and projects related to digital solutions, microStart is still working on building a powerful backend system that will allow the acceleration of the development of its digital activities. As a much smaller player, its young age and limited budget are factors that microStart must take into consideration, even if greatly innovative.

An overview on the FinTechs adopted by each MFI can be found in Annex 49, p.170 and reflects their different stages in the deployment of their digital strategy. In comparison with the result of the MFC Survey, the three MFIs seem to be rather ahead of various FinTechs in Europe, such as cloud solutions and online application forms. What is more, Qredits seems to be one step further with its sophisticated scoring model and its plans to adopt technologies such as digital signatures.

6.2.5 Comparison at national and organisational level

				
		Microstart – Belgium	ADIE – France	Qredits - Netherlands
Country	GDP per capita	€34,400	€31,700	€39,500
	Employment rate age group 20-64 ¹	67.7%	70%	77.1%
	People at risk of poverty and social exclusion ² (2015)	21.1% (2.3M people)	17.7% (11M people)	16.4% (2.7M people)
	Internet use ≥ 1 per week	84%	82%	92%
	Internet banking ≥ 1 per 3month	64%	59%	85%

...

¹ The employment rate is calculated by dividing the number of persons aged 20 to 64 in employment by the total population of the same age group.

² People at risk of poverty or social exclusion (ARPE): this indicator corresponds to the sum of persons who are: at risk of poverty or severely materially deprived or living in households with very low work intensity.

...

		Microstart – Belgium	ADIE – France	Qredits - Netherlands
MFI	Launching date	2010	1989	2009
	Legal form	Scrl-fs & asbl ¹ (NBFi & non-profit)	Association Loi 1901, public utility since 2005 (non-profit)	ANBI (foundation) (non-profit)
	Intervention area	Countrywide (5 branches)	Countrywide (128 branches)	Countrywide (1 branch)
	Type of products	Microcredits Micro-leasing BDS	Microcredits Non-interest-bearing loans Micro-insurances BDS	Microcredits SME loans Flexible credits BDS
	Maximum loan size	[€500 – €15,000]	Max €10,000	Microcredits: max €50,000 SME loans: [€50,000 – €250,000] Flexible credits: max €25,000
	Average microloan size (2016)	€7,000	€4,000	€19,000
	Average loan period	[3 – 48 months]	Max 48 months	[12 – 120 months]
	Interest rate (2016)	From 8.95% + 5% admin fees	From 6.69% + 5% admin fees	From 6.75%
	Default rate (2016)	3%	6.2%	4.8%
	Outstanding (2016)	€10.2M in 2016 (for a total of €23M lent)	€120M in 2016	N/A (for a total of €207M lent)
	Amount issued in 2016	€6M	€74M	€42M (from which €32M are for microcredits and flexible loans)
	Number of active clients in 2016	1664 (compared to 1365 in 2015)	47,573	N/A
Sources of data	Number of loan disbursed (2016)	767 3000 in six years	19,431 135,687 since 1989	1750 (among which 1645 are microcredits) 10,104 in 8 years (among which 9650 are microcredits)
	Primary data	Contact with CEO, Immersion day, interview with credit manager & with IT manager	Skype Interview with micro-insurance and international manager	Interview with the IT and innovation manager
	Secondary data	Website, annual report, internal slides	Website, annual report	Website, annual report, internal slides

Table 6 : MFI-specific data. Personal elaboration based on the following sources: (ADIE, 2016; ADIE, 2017; Eurostat, 2017a; microStart, 2016; microStart, 2017; Qredits, 2017; WBG, 2014b)

¹ MicroStart scrl-fs borrows from banks for on-lending to clients, and benefits from an EIF guarantee. Meanwhile MicroStart Support asbl accompanies the clients free of charge.

6.3 Analysis of the interviews

Now that a technological background has been set for the European microfinance sector and more particularly for the three interviewed MFIs, we will analyze their opinion on the eight hypotheses developed in the theoretical part. For each hypothesis, the converging and diverging points of views of microStart, Adie and Qredits will be outlined with regard to the elements identified in the literature (see *Conclusion 3.5* and Annex 46, p.167). When appropriate, the results of the MFC survey will be used as an additional source in order to assess the validity of the hypothesis. As a reminder, the aim is to assess the feasibility of each hypothesis in the microfinance sector in Western Europe. That is, the interviews were conducted in such a way that interviewees explain the reasons why a hypothesis could be realized for their MFI and if not, which could be the difficulties. Nevertheless, the interviewed people were free to spend more or less time on the questions they considered to be the most relevant for them and their institution. Therefore, it is not because the point of view of an MFI regarding an aspect of a hypothesis is missing or less developed that the MFI in question does not have a well-established opinion. For the purpose of clarity, Table 7 provides an overview on the name, position and institutions of each interviewee.

<i>MICROFINANCE INSTITUTION</i>	<i>NAME OF THE INTERVIEWEE</i>	<i>POSITION</i>
microStart	Adrien Lippolis	Agency Manager
	Jente Minne	IT Manager
Adie	Bruno Gautier	Director of micro-insurance Assistant Director of International Development
Qredits	Vincent Stulen	IT & Innovation Manager

Table 7 : Overview on the interviewees.

6.3.1 Hypothesis 1: Reduction of operational and transaction costs

The literature review showed that reduced operational costs resulted from an increased staff efficiency, decreased IT costs, and reduced infrastructure costs from cut in physical branches, which could in turn lead to reduced transactional costs and potentially lower interest rates.

To begin with, the three MFIs agree with cost reduction induced by the increase in staff efficiency from FinTechs, which is mainly due to the replacement of numerous face-to-face interactions with customers and paper-intensive processes by digital and automated functions. In particular, microStart sees big opportunities to reduce overall costs given the high wages in Belgium. Examples include online application forms, online payments, and loan balance checking – which avoid clients visiting or calling because they simply want to know their outstanding credit or the bank account number they must send the money to. As a result, online ‘customer areas’ increase the availability of loan officers for higher-value activities, both economic and social. In the same vein, Adie sees these time-savings as a mean to develop its activities by reaching more customers and as a way to increase the service quality for those who are unfamiliar with digital channels by spending more time with them. In particular, online loan applications avoid or at least shorten long procedures of data collection and entry. Quickly after its launch, Qredits realized how time consuming paper loan applications were (i.e. about 30 more minutes per customer) and switched to an exclusively online application model. In addition, Adie expects important efficiency gains in its ongoing digitalization and centralization of customer documents.

Nevertheless, the extent to which staff efficiency can be improved depends on several factors. First, it depends on the adoption rate of digital services by the customers. While Qredits states that Internet and mobile access is not a problem for its customers, a study conducted by Adie showed that 16% of its customers use the Internet less than once a week, and microStart estimates non-digital users to amount for 40 to 50% of its customers. Second, Jente Minne, the IT manager of microStart highlights the necessity to have a solid back-end system. In case digital services and interfaces are not well integrated and synchronized with the system, gains in staff efficiency may be offset by the time spent on correcting system errors and by the amount of stress caused by unsatisfied customers complaining about the expected immediacy of service delivery. Third, the increased staff efficiency from FinTechs may be limited by the operating model of an MFI. This is the case of Qredits which systematically visits customers at home, all over the country and from a single branch. Although these visits are time-consuming and constitute an expensive part of the process, they are considered to be anchored in microfinance practices and it seems hard to push innovation further in that regard. The set-up of tools such as online applications or scoring has certainly improved the efficiency of loan officers since the foundation of Qredits, but in the

meantime, visits still play an important role (e.g. specific questions need to be asked, personal reports must be written). The importance of physical interaction with customers will be addressed in the sixth hypothesis.

Regarding the reduced costs of technology, Qredits and microStart confirmed that cloud-based systems such as Salesforce.com enable them to affordably access, develop and customize applications for their CRM as well as decrease maintenance costs thanks to automated third-party software updates. In particular, Qredits highlighted the avoided upfront investment when developing pilot projects thanks to the pay-for-use model on a monthly basis. The scalability of resources provides an efficient environment for development and testing which spurs innovation. Reduction of technological costs also occur thanks to fringe benefits or discounts offered by tech companies which often have foundations for non-profit organizations. microStart and Qredits even mentioned those 'free' IT resources to be crucial in the deployment of their digital strategy. For instance, microStart received pro-bono IT resources from Accenture for development, Adie collaborated with Google for online marketing, Qredits is part of the Microsoft foundation program and has good cooperation with external data providers for more affordable prices.

Despite these opportunities to reduce IT expenses, the initial required investment remains substantial for the budget of an MFI. Qredits mentions that the initial set-up, the purchase of external data, the continuous update of scoring models are major part of the IT expenses. According to the MFC survey, 50% of the respondents mentioned the lack of funds to be a barrier to the adoption of digital solutions. Furthermore, microStart adds that the lower volume of microfinance operations and clients in Europe compared to developing countries reduces the opportunities for economies of scale to recover the initial investment. The IT manager of microStart also underlines that despite the lower maintenance required for software from Salesforce for instance, there is still a need for maintenance of other systems, for development of new applications and services, for the training of staff and customers on new solutions. As a result of more digitalization, there might be a need for a switch in human capital, from the operational staff towards more IT professionals. Therefore, Jente Minne highlights that the reduction of costs might become visible in the long run only. Finally, Vincent Stulen, the IT manager of Qredits underlines the limits of systems such as Salesforce regarding the security of sensitive customer data (i.e. loan-related, financial data), as well as the high

costs that a pay-for-use pricing model may generate when systems require frequent data interaction and update.

With regards to the reduced infrastructure costs, the potential is not as significant for MFIs as it could be for formal financial institutions, given that the branch penetration is much lower in the microfinance sector. Nevertheless, Vincent Stulen highlights that its single branch model has been enabled by its technological infrastructure: *“our whole model wouldn’t have been possible without technology.”* Indeed, its core system called microNET is available in the cloud and was built in such a way that loan officers can access the IT system directly from the field, and thereby work efficiently from distance by entering customer data immediately in the system during the visit for instance. As such, the ubiquitous access to microNET enables the 20 loan officers of Qredits to work from everywhere in the country as long as they are connected to the central system. In-between visits, they can call customers for repayment because they have access to the necessary information. As a consequence, decentralized branches and their related costs are avoided. By integrating microNET right from the start in the organization, Qredits has been able to implement an efficient business model from scratch, which has helped the MFI to break even in 2015 and generate some profit in 2016. In turn, this extra profit has been used to lower interest rates on loans by 1% in January 2017.

All in all, the results of the interviews show that FinTechs enable MFIs to reduce operational costs through an increased staff efficiency and lowered IT costs as identified in the theory. Nevertheless, many obstacles may determine to which extent operational costs can be reduced. Moreover, the early stage of technology adoption by MFIs in Europe and the time required to observe reduction in costs has to be taken into account in the assessment of the validation of this hypothesis. These findings are confirmed by the MFC survey in which an average majority of 67% of the respondent perceive the cost reduction as a major benefit from the adoption of digital solutions.

6.3.2 Hypothesis 2: Increased speed of process and delivery of services

The theoretical analysis demonstrated that FinTechs streamline operational capabilities within an organization in several ways, which we will confront to the opinion of the interviewed MFIs.

First, as already mentioned, digital channels enable to speed up the customer interaction thanks to automated front-end operations. As such, microStart states that the

information provided through an online platform would let them save from 30 minutes up to one hour per customer to set up a file for a customer demand. According to Adie, online demands increase the rapidity and flow of access to services by screening immediately a new applicant's situation and needs in order to direct the client towards the appropriate services and personnel. Besides, online payments also save a lot of time both for the loan officers and the customer. Qredits asserts that the online application form has helped reduce the time it took to react to a customer's demand from four weeks to two working days. This was made possible thanks to automated validation and strong data processing that have been put in place. What is more, Qredits is planning to launch a pilot on a digital identification and contracting using a customer's bank account in the course of the year. Thanks to prior identification with the bank's token machine, the purpose of this pilot is to save time on identity check and signature of contracts, which are operations that require time for the MFI and the client.

Second, accelerating internal decision-making processes has become a key challenge for MFIs. For instance, Adie and microStart are currently working with Salesforce to centralize all loan-related customer information so that a clear overview can be immediately shared with decision-makers and that the acceptance or rejection decision can be taken faster. In addition, scorings are an important tool to speed up the decision-making process. Based on various customer data from internal or external sources, they give an instant evidence-based indication on the customer's default risk. Although the scoring system of the three MFIs differ, they all use credit scores as a supporting tool for faster decision-making. For instance, microStart and Adie are using a scoring system to determine the decision-making level that applies for a certain loan (e.g. loan officer, operational director, credit committee). The aim is to reduce the amount of customers that need to be approved by the credit committee, and ultimately save time. Qredits for its part does not allocate the loan applications to different hierarchical levels for decision-making, but rather has a centralized decision-making in a single branch: *"the decision-makers are just 3 people sitting up there and looking at the whole country"*, explains Vincent Stulen in the office of Qredits. Instead, Qredits uses scores as a tool that screens customers from distance and accelerate the loan application processes for customers having a good score. For these types of customer, Qredits could even imagine loan officers to bring the contract to the visit, or even replace the visit by video calling. However, Qredits clearly states that *"the credit-scoring does not take the final decision. It is always a*

person who gives the Yes or No” and that data cannot be more important than the personal touch, especially in microfinance. Although the Belgian and French MFIs could hardly imagine disbursing a loan in a 100% online and automated fashion, it could be applied in the long run for renewed loan demands or for a certain type of clients. This will be furthered discussed in the sixth hypothesis.

Lastly, FinTechs and more particularly public clouds enable MFIs to increase their time to market and becoming more agile in meeting customers’ needs in a timely manner. As such, microStart and Qredits perceive Salesforce as an efficient tool to set-up new projects as the required applications may be readily available. The standardized environment makes it easy to customize applications to their needs.

Overall, the findings of the interviews are consistent with the elements identified in the theory. This is also supported by the MFC survey in which 75% of the respondents perceive ‘reduced service delivery time’ as a key benefit of digital solutions. Therefore, we can confirm that FinTechs enable MFIs to speed up their internal processes. Nevertheless, Adrien Lippolis, agency manager at microStart, highlights a danger in that the more digitalization accelerates the processes, the least time is spent with the customer, which may affect the social mission of the MFI: help people that do not have money or the administrative knowledge to start-up a business. For instance, this may include going to the national bank with the most vulnerable customers. As such, loan officers at microStart are afraid that digitalization may lead to “mission drift”.

6.3.3 Hypothesis 3: Increased outreach and financial inclusion

The third hypothesis outlined in the theoretical part mentions FinTechs as an enabler for increasing outreach and financial inclusion. As illustrated in *section 1.2.5* and *paragraph 2.2.4.3*, the concept of outreach includes a dimension of breadth (i.e. number of people) and depth (i.e. poverty level).

Regarding the breadth of outreach, all responding MFIs agree with the fact that digital solutions give them the opportunity to increase the accessibility of their services and consequently acquire new customers. The IT manager of Qredits highlights how important technologies are to increase its outreach: *“I think that we can get a bigger market share both in the outreach, as in meeting the needs of the customers”*. In addition, the IT manager of microStart says that the online strategy plays key role to reach the goal of doubling the annual

number of loans disbursed and tripling the outstanding credit by 2020. In the same vein, Bruno Gautier from Adie emphatically says that *“what we gain from an increased efficiency and from a simplified customer relationship thanks to digitalization, we can use it to serve more people¹.”* In short, customer acquisition is key challenge for the three MFIs which see technology as a means to increase the number of people that can be reached.

With regard to the depth dimension, all three MFIs unequivocally state that the use of technology would not make any difference in their respective target segments. Bruno Gautier makes it clear by saying that *“the target segment of Adie is not going to change because of the use of digital tools.²”* He adds that productivity gains from technologies would indeed enable to reach more people, but among the same target group. For its part, microStart has recently introduced an online application form and does not have the feeling that a completely different public will be reached because of that.

Besides accessibility, the theory also mentions how useful the digital tools can be for the visibility of an MFI on the Web. In that regard, the three MFIs unanimously value the new digital approaches to increase their visibility and attract new clients. Adie started its activities nearly 30 years ago and acknowledges that it has reached a ceiling for the number of people it can enter in contact with by using traditional distribution channels. For that reason, Adie has started to expand its digital presence on social networks like Facebook or through Youtube videos. Adie sees a great potential in digital communication and web marketing and believes it will keep growing due to the mobile adoption trend. microStart comes to the same conclusion and believes that marketing campaigns can be more than simply informative: by using online simulation tools, an online campaign takes a potential client directly to the next step by filing in the application form, which is directly linked to the CRM via Salesforce. In this way, microStart transforms what could be thought as a purely informative campaign into an actionable tool to attract new customers. Qredits brings something more to the table by explaining that even low-level investments in marketing strategy, like ‘Google Search Ads’, may bring direct results: *“If somebody searches ‘how to write a business plan’, we can put an*

¹ Originally in French : *“Tout ce qu’on peut gagner en efficacité et en simplifiant la relation avec le digital, on peut alors utiliser ça pour servir plus de monde.”*

² Originally in French : *“La cible de l’Adie n’a pas vocation à évoluer parce qu’on utilise des outils digitaux, surtout pas!.”*

ad on top of the search results". This enables to attract new customers and the analytics behind it help understand what kind of advertisements work or not.

According to Vincent Stulen, *"the website and the non-financial products are not only a good marketing tool, but they also provide customers the necessary information to start their business in a good way"*. When discussing about the outreach, the MFIs pointed out that granting loans was not their sole goal and that the number of people supported by business development tools could be used as a proxy for outreach. Qredits underlines the microfinance aspect that makes them different compared to traditional banking: *"Microfinance is not just a loan, microfinance is a loan with education, coaching, and more."* With respect to that mission, technologies have also helped to reach more people. Qredits sees how important its online tools are in achieving its social mission. Besides its strong involvement in educational programs, it also invests energy into increasing its educational presence online (e.g. business and financial plans accessible online, e-learning tools and online competency tests). Adie and microStart worked together on online video tutorials which teach the entrepreneurs about the different steps to launch a business. All these tools are part of the social mission of MFIs, but also help them reach more customers.

All in all, the elements gathered from the field confirm the hypothesis that digital solutions have a role to play in increasing the MFIs' outreach and financial inclusion. Nevertheless, the MFC survey shows that a slight majority of 56% of the respondents see digital solutions as way to increase outreach and financial inclusion. This may be explained by the obstacles pointed out by the interviewed MFIs related to the use of technology for this purpose, such as digital literacy and digital exclusion. As previously mentioned, the problem with the digitalization of services is that not every microfinance client has the tools and the capacity to access or use them. Even if the literature showed an increased adoption of online and mobile banking across generations, a proportion of the clients do not use the internet nor possess a smartphone. In 2016, Adie conducted a survey showing that these proportions were respectively 20% and 25% of its clients, although Bruno Gautier expects these numbers to decrease every year. As such, he mentions that when developing digital services, Adie is being *"careful to not creating additional barriers or exclusion, for a target which should logically have the easiest access to those services"*¹. Projecting himself into the largely digitalized society of

¹ Originally in French : *"On reste vigilant à ce que ces services digitaux-là ne créent pas de barrières ou d'exclusion en plus, pour une cible qui logiquement doit accéder avec le plus de facilité possible aux services"*.

the future, the IT manager of Qredits thinks that *“because of all this technology, there is also a new group who is going to be excluded, not just socially, but kind of digitally excluded”*, therefore creating new needs to which the microfinance sector would have to adapt. Regarding the survey conducted by the MFC, 50% of the European MFIs consider the lack of customer readiness to use digital services as a main challenge for MFIs to implement innovative technologies.

Another obstacle raised by Qredits is the fact that most of the MFIs in Western Europe are being set up as social projects and consequently forget to keep an eye on the sustainability and self-sufficiency aspects of the organization, which requires to reach certain thresholds in terms of customer acquisition. In other words, having a minimum of drive towards financial sustainability enables to keep evolving and looking for new solutions to reach that goal. In particular, Vincent Stulen explains that *“most of the MFIs that are in place right now are very much focused on the social part but not on ‘how to grow, how to increase outreach, and how to go from 1000 loans a year to 10,000 loans a year without having to incur a ten times as many costs”*.

6.3.4 Hypothesis 4: Improved diversification of products and services

Whether financial technologies could help MFIs diversify their products and services is the object of this section. In that regard, the results of the interviews were not so much related to the ‘cross-selling, up-selling and bundling’ of products. Instead, the three MFIs emphasize that technology is an enabler for diversification as digital distribution channels facilitate the launch of new products and services.

First, it is worth mentioning that even though technology can help diversify the products and services, Qredits and Adie highlight that new products aim at targeting the same group of *“small entrepreneurs with little external finance, but with slightly different needs”*. Adie stresses out that adding new services would fall under the continuity of Adie’s mission and would by no means attempt to reach new audiences. From the same perspective, the agency manager of microStart thinks of the possibility to offer personal loans but with a professional goal, such as a loan for a car to go to work. Adie is already offering that type of loan which would be coherent with microStart mission as well.

Furthermore, Adie tells that the distribution of micro-insurance services has been facilitated by the network which was already in place for loans and business support services

(B. Gautier, email, 2nd of June 2017). In addition to the distribution network, Qredits highlights how important it is to have the appropriate digital environment and IT systems to launch new products. Indeed, to offer its 'flexible loan' which had been demanded by clients for a long time, Qredits had *"to set this online environment first, with the right settings, the security, the legal questions, etc."* Although setting this environment was not easy, Vincent Stulen says that *"now that we have the infrastructure, it makes it easier to develop more products"*. In short, their *"flexible loans are possible thanks to new technologies"*. It was previously technically impossible to manage such a product. As a result, Qredits is now thinking about offering smaller loans up to €15,000 or a leasing product.

Nevertheless, diversification does not come without obstacles. Indeed, the IT manager of microStart is curious about the way the flexible loan of Qredits works from an IT perspective, but he anticipates the need for a powerful and flexible back-end system which microStart is currently building step by step. The back-end of the system is key to the development of more products. Another obstacle to product diversification can be the necessity to find the right partners to launch a product such as micro-insurance or micro-leasing. For the latter, Qredits has the necessary IT system, but no partner yet. microStart has also tried to offer micro-leasing in partnership with BNP Paribas, but the relationship management turned out to be more difficult than expected. A last barrier to product diversification mentioned by both Adie and Qredits is regulatory: if they wanted to offer savings, they would need a banking license.

To conclude, despite some elements which might hinder the diversification of products, the arguments brought up by the interviewed MFIs verify the fact that digital solutions and digital channels facilitate the diversification of the product portfolio. Nonetheless, during the interviews we could feel that diversification was not the main benefit that the MFIs attribute to FinTechs, and most of all that the concepts of 'cross-selling, up-selling and bundling products' were not present in their strategy. This is also supported by the fact that the MFC survey did not suggest this benefit when asking the respondents about the main advantages brought by digital solutions. This confirms the trend of European MFIs to focus on microcredit given that the lack of funds is one of the major challenges of micro-entrepreneurs. As such, it seems that when MFIs develop a new product, it is not so much for offering a consolidated suit of financial products that could increase the wallet share of existing customers, but rather to reach out to more people of the targeted group with slightly

different needs. As mentioned in the previous hypothesis, Adie underlines the priority to allocate their capacity to *“reach more people before reaching the same amount of people with more services¹”*.

6.3.5 Hypothesis 5: Increased customization

“I do think that there is still a lot of potential: not only because of the number of customers we haven’t reached yet, but also because we can develop new products that suit the needs better”. As advanced by Vincent Stulen from Qredits, technology is not only strengthening the outreach and the diversification, but tops these benefits up with another important axis: answering the needs of the customers by adapting and customizing the products and services.

To do so, the three questioned MFIs are used to gather information through surveys in order to better understand and serve their clients. For instance, Adie conducted in May 2016 a pivotal survey to build its digital strategy for the coming years, which is based on two major challenges. Besides the acquisition challenge – discussed in the outreach hypothesis, there is a challenge of customer retention by increasing the customer experience and convenience with digital tools when possible. To that end, Adie has developed an ‘online customer area’ in May 2016, which enables customers to access several personalized functionalities from distance in order to increase the customer convenience to the highest possible level. In the same line, microStart conducted a satisfaction survey which showed that clients would like to be able to pay and check their loan status online. To that end, microStart is working on a similar ‘online personal area’ where the client would be able to perform these actions and more.

On its side, Qredits adapts its products and services to customers’ needs by sending an annual survey to each customer. Based on their answers, the staff *“take decisions on offering new products, e-learning or coaching services”*. The Dutch MFI also mentions its ‘coaching platform’ as another element which offers customers more personal choices. While the MFI previously assigned a coach to a customer itself, the current coaching environment looks like a market place where customers can look at the availability of the coaches in their surroundings and make their choice based on the coach’s online profile. By giving the

¹ Originally in French: *“Les gains de productivité qu’on recherche sont destinés à nous donner la capacité de toucher plus de monde avant de toucher avec plus de services un nombre identique de personnes”*.

customer the choice, Vincent Stulen says that *“it’s far more likely that the match is going to be successful”*. This example illustrates a personalized service all clients can access, but the personalization can also be applied on products based on the customers’ profiles. For instance, Qredits uses scoring models to segments its clients according to their default risk level and already charges a 1% higher interest rate to the segment with the highest risk. However, Qredits considers using a more sophisticated credit scoring tool, which will be explained in the seventh hypothesis, to apply higher differences in the interest rates applied to lower-risk and higher-risk customers. Besides the pricing, the scoring could also be used to offer shorter loan processes to lower-risk customers. In short, the more information is gathered about customers, the better their needs can be fulfilled and the better product development opportunities can be detected.

Overall, the previously mentioned elements verify our hypothesis on digital solutions as enablers to better address the customers’ needs. The strongest element identified by the MFI is the ‘online personal area’ which answers well-stated customers’ demands for personal and real-time information regarding their loans. Nevertheless, the IT manager of microStart warns that even if technologies such as data analytics enable to offer much more tailored products, an increased customization may result in a higher complexity at different levels: first, at the level of the back-end system which has to be more flexible; second, the front-end needs to be adapted to the various product offerings in order not to confuse the customer who may be lost among all the offers; third, employees need to understand all the variations and nuances among the products. As such, Jente Minne rather recommends to automate and digitize products that may suits 70 to 80% of the customers, and customize the products according to the different needs in a more manual fashion because *“digitizing all options can often be counterproductive¹”*. These more mitigated results are confirmed by the MFC survey in which 56% of the MFIs expect to better respond to the clients’ needs by adopting digital solutions.

¹ Originally in French : *“Digitaliser toutes les options c’est souvent contre-productif.”*

6.3.6 Hypothesis 6: Decreased face-to-face relationship and increased customer autonomy

As it has been mentioned, the benefits of reduced costs and increased speed of process relies on the decrease of face-to-face interactions with the customers for numerous operations, which give more tools in their hands. Indeed, Qredits, Adie – and soon microStart – offer a “customer area” on their website which enables customers to carry out financial activities such as loan applications and payments, to make administrative changes and to request information digitally. In addition to mentoring and coaching programs, the three MFIs have also created e-learning modules to help customers build their business plan at home through videos and documents, which upon completion allow customers to apply for a loan and ask for a professional follow-up. As a result, micro-entrepreneurs gain a certain degree of autonomy in their loan activities. Qredits observes a slightly improved autonomy in repayment of loans thanks to emails which give specific information and tools to help the customers repay in case of delay (e.g. a link to pay directly). Vincent Stulen explains: *“We see that giving the correct information at the right time and as automatically as possible really helps. You can really focus on the customers who are in trouble rather than calling those who just forgot”*. Yet, Bruno Gautier from Adie views the improved customer autonomy through digital relationships as part of a more global trend in which MFIs play quite a small part. According to him, the digital services of Adie will not dramatically increase the autonomy of customers.

When considering online payments, although such a service has a significant impact on the autonomy of customers in developing countries as they do not have to make cash deposits at the MFI’s office anymore; in France, more convenient alternatives already existed (e.g. cash deposits at the post office, checks).

Nevertheless, the three MFIs perceive some limits to the decreased physical interaction with microfinance customers. The idea of Adie is to implement digital functionalities for all the components of the relationship that can be managed from a distance, with the aim of supporting and optimizing the quality of physical contact rather than removing it. In line with this thought, Jente Minne sees digitalization as a mean to *“spend the most time possible with the most vulnerable customers and to gain time with the customers who can fill in a form on the Internet”¹*, which does not imply that there should not be any physical contact

¹ Originally in French: *“[...] passer le plus de temps possible avec les gens le plus faibles et gagner du temps avec ceux qui peuvent remplir des formulaires sur Internet”*.

with a customer able to use digital services. On the contrary, Adie and microStart could not imagine disbursing a loan to a client they have never met in person. This vision is also reflected by the custom of Qredits to visit every customer at home or at the business place. According to Vincent Stulen, the personal screen is very important because there is some information that figures do not reflect but the eyes of customers do, such as their reaction when the business is not doing well. Their motivation, experience and competences as a successful entrepreneur can also solely be assessed subjectively. He adds that a loan offer once told him the following: *“When I go to a customer, I always go to the bathrooms there. If they are not clean, then the financial administration is probably not good either.”* Despite the pilot on video calling that will be launched with certain customer profiles, Qredits is afraid to lose the personal touch that is key to microfinance.

All in all, the results from the three case studies verify the conclusions made in the theoretical approach regarding the evolving customer relationships. Indeed, self-service functions decrease the physical customer interaction and increases to a certain extent the autonomy of the customer in conducting loan-related activities. Nevertheless, this is limited by the crucial physical contact in the microfinance sector to collect subjective customer information which compensates their lack of formal track records. In the same way, the theory states that traditional bank branches are not expected to completely disappear because of the physical contact required by individuals along their financial journey.

6.3.7 Hypothesis 7: Improved risk management

Risk is an integral part of the operations of an MFI because of the high-risk profile of the microfinance clients – it is not without reason that the traditional banks do not let them qualify for a loan. In that regard, the three MFIs agree that digital tools can help at better managing the risk.

An important tool used by MFIs to predict a customer’s risk of default are scoring models, which can be very powerful when using data analytics as shown by the theory. Nevertheless, because most of the microfinance customers do not have any track records, alternatives sources of data are used by MFIs to evaluate their creditworthiness. As such, Qredits has developed a rather advanced scoring model based on a wide range of internal (i.e. own payment data) and external sources (e.g. credit bureau, chamber of commerce, suppliers payment, previous loan repayment, juridical data). Some financial data is also provided by assumptions of the entrepreneur, which are verified during the customer visit. Yet, by the end

of year, banks in Europe will be obliged to share their data at the request of the customer, which Qredits sees as an opportunity to supply its scoring model with formal financial or accounting data about customers. More innovative data sources such as social media are not planned to be integrated yet, given their expensive price and their difficulty of use in the model. Altogether, Qredits gathers data that amounts to approximately 1,200 variables, making the analysis quite complex. Qredits back-tested its predictive model for small loans using historical data to assess the quality of their scorecards. It is still on pilot, but according to the IT manager, it works.

Making use of data analytics, Qredits has developed two scorecards: one for initial loan disbursement, called the ‘acceptance scorecard’, and one during the loan period, called the ‘behavioral scorecard’, in order to receive early warnings and signs when a problem occurs. Although it is usually more difficult to get value from the acceptance scorecard given the lack of data, the behavioral scorecard gets better after a couple of months and is automatically updated with the collected track records since the disbursement. The IT manager says: *“This is one of the biggest advantages: nobody has to do anything, the system just collects data automatically so that we can get a daily update on the most important changes in our portfolio.”* As a result, it greatly increases the visibility and control over the entire portfolio risk, and enables loan officers to have real-time snapshots of the client’s situation. Based on these, automatic alerts are set to anticipate defaults of payment, or decisions on second loans can be taken faster. Yet, although the scoring model helps make evidence-based decisions, a subjective scoring based on the information gathered during the customer visit is equally important, as mentioned the *Hypothesis 2* (6.3.2). The scoring is planned to be genuinely implemented in other workflows. Ultimately, the data is not only used internally for scoring but also flows back automatically to external suppliers such as banks. For instance, automated reports provide information about the types of customers the bank had redirected to Qredits.

Regarding microStart and Adie, they use rather similar scoring models however less sophisticated than the one of Qredits. Adie has had such a tool for around seven years, whereas it is still on pilot for microStart. Both models mostly use internal sources of data (e.g. revenues, expenses, baking situation) and are used to decide on the level of decision-making for the loan application. Besides data analytics, microStart believes other solutions enable to improve the default risk: automated SMS reminders about payments improves the repayment follow-up and reactivity; compulsory fields in the loan applications on Salesforce forces the

staff to provide all the required customer data. Furthermore, the systematic way of gathering information into Salesforce reduces risks for lost or erroneous information. Indeed, customer information is entered only once into a single system instead of several times in multiple systems. The centralization of data also makes the MFI more credible regarding external auditors who can do their job from a distance without looking for scattered information in IT systems and paper files.

In conclusion, the abovementioned elements attest that FinTechs help MFIs to improve their portfolio risk visibility, management and control. Nevertheless, the potential of data analytics to better estimate and anticipate a customer's risk of default is restrained by two elements. First, the value of the information provided by an initial scoring remains very limited due to the profile of the microfinance clients who are generally entrepreneurs lacking any kind of track records. As such, quantifiable data is hard to collect. Second, an obstacle to make use of credit-scoring tools is the format of the data which is related to the level of digitalization of the MFI. If not available in a digital format, the collected data are unusable for automated analytics. Regarding the case studies, while Qredits has all its information ready to be processed via its exclusive online loan applications, Adie and microStart have mainly worked with hard copy loan applications and have only recently opened a digital channel on their websites. Again, a robust back-end system is required to handle such operations between various systems. Third, the MFC survey states that 42% of the respondents see unclear regulations regarding data protection among others as an obstacle to digitalization. Finally, Jente Minne reminds that the more a portfolio grows in size, the more its risks increases and the more powerful and sophisticated analytics are required.

6.3.8 Hypothesis 8: Increased competition creates pressure to innovate

As it has been highlighted in the literature review, the three questioned MFIs effectively observe a rise in new market players which are neither banks nor microfinance institutions, but small start-ups offering alternative lending to small entrepreneurs using innovative technologies. These alternative lending start-ups commonly take the shape of crowdfunding platforms. Interestingly, none of the Belgian, French or Dutch institutions consider these actors as competitors. On the contrary, microStart see crowdfunding platforms as a communication channel to increase their visibility (e.g. Babyloan), whereas Adie considers them as partners to help develop further the activities of clients that have reach another level and which may not per se require the extra support of Adie. They are therefore seen as

partners rather than competitors. According to Bruno Gautier, the first competitor to microcredit is “no credit”, that is micro-entrepreneurs starting lending from their family and friends. Regarding competition from other MFIs in the country, both ADIE and microStart consider their approach and target to be very different, which limits the competition threat from these actors as well. As such, Adie asserts its motivation to innovate is internal – linked to the willingness to improve quality of services for customers and gain time to serve more – rather than external – to cope with an increased risk from competition. Notwithstanding, despite the low perceived competition today, Adie and microStart remain very attentive to the evolution in the market, and the potential entry of new players. *“An active watch is essential to anticipate the repercussions caused by new technologies, especially in terms of distribution¹”* mentions Adie in its activity report (2016, p. 22).

Although Qredits does not perceive crowdfunding platforms as a competitor yet – it is sceptical regarding the financial sustainability of their model, the MFI sees other competitors emerging in the Netherlands, such as FinTechs start-ups offering loans in 24 hours at very high rates based on customer data and track records. However, Vincent Stulen underlines that these start-ups usually target experienced entrepreneurs with an existing business, who also represent the lower risk customer of MFIs. Given that 70% of the projects it supports are start-ups, Qredits also need these customers to be self-sustainable. In order not to let these innovative start-ups ‘cherry pick’ the lower-risk customers, Qredits could compete by lowering its rates for these types of customers or shorten the processes. Therefore, the IT & Innovation manager says: *“it’s good to have competition coming up, it makes us innovate”*.

To conclude, we can observe two different competitive environments among the interviewed MFIs, with a low degree of competition perceived in Belgium and France and somewhat higher in the Netherlands. As a result, only Qredits confirmed our hypothesis on an increasing competition spurring MFIs to innovate their services, processes and models. Nevertheless, the attention microStart and Adie pay to evolving trends and to the emergence of new actors shows their awareness about the impacts competition may have on their business model. This is somehow confirmed by the MFC survey according to which only 25% of the respondents perceive new FinTech lending platforms as competition against 42% who believe they will be soon. Nevertheless, Justyna Pytkowska highlights that the fact that

¹ Originally in French: *“Enfin une veille active s’impose afin d’anticiper les incidences des évolutions générées par les nouvelles technologies, notamment en termes de distribution.”*

Western European MFIs differentiate from these platforms in their offer of non-financial and educational services, which may explain why they do not see competition in these new actors yet.

6.4 Conclusion on main findings

Overall, the analysis of the three case studies confirms the eight hypotheses on the role of FinTechs in the business model of microfinance institutions. Despite the differences regarding the national context, the organizational structure and technological advancement between the three interviewed MFIs, they all mentioned consistent or, at least, no contradicting elements with the theoretical findings. Nevertheless, microStart, Adie and Qredits mentioned several obstacles that moderate with more or less intensity the relationship between the adoption of FinTechs and their impact on MFIs as expressed by each hypothesis. Indeed, the obstacles raised by the interviewees differ in their extent to hinder the feasibility of each hypothesis in the Western European microfinance sector. As such, in order to enrich the contribution of our research to the literature, we refined our findings by assigning a 'level of validation' for each hypothesis based on the perceived significance of the obstacles. We also took the results of the MFC survey into account, although with caution given their European-wide scale, as well as our general perception on strength of the arguments stated by interviewees based on the tone, intonation and gestures they used during the discussions. These considerations have led us to develop three levels of validation: high, medium and low.

After careful consideration, we concluded that the 'increased speed of process' and the 'increased outreach' were the most confirmed impacts of the adoption of innovative technological solutions. Although the ability of MFIs to reach more people thanks to FinTechs depends on the share of customers who do not use digital services, the field expects this proportion to decrease over time given the upward trend of mobile banking adoption, which was also confirmed in the literature review (*see section 3.3.1*). Afterwards, we assigned a 'medium' level to the validity of the 'cost reduction' hypothesis given the mixed elements provided by the interviewed MFIs. This uncertainty results from the necessity to assess cost reduction over the long run. The feasibility of an 'improved customization of products' was considered as moderate given the increased complexity required in technological capabilities, as well as the 'decreased customer autonomy' due to the indispensable physical dimension of the customer relationship in the microfinance sector. The possibility of an 'improved risk

management' was also less significant given the inherent risk of microfinance customers and the sophisticated tools required for an improved scoring model. The hypothesis on the 'increased competition spurring to innovation' was confirmed by only one MFI and was rather dependent on the national context, therefore it was also assigned a medium validity level. Finally, we concluded that the hypothesis on an 'increased diversification of products' was less confirmed than the others because of the increased complexity in terms of technology, the difficulty to find external partners, and regulatory barriers. More importantly, the focus of MFIs is on customer acquisition rather than customer retention through diversified products.

Table 8 provides a detailed overview on the resulting 'classification' of the eight hypotheses related to the moderators mentioned in the result analysis and the indicator provided by the MFC survey. Of course, our perception of the interviews is hard to quantify, but it played a role in the attribution of the validation level of the hypotheses.

<i>HYPOTHESIS</i>	<i>VALIDATION LEVEL</i>	<i>MODERATORS (INDICATOR)</i>
1. Reduced operational and transaction costs	Medium	- Digital literacy - Substantial IT costs for MFI budget - Volume of operations for economies of scale - Operating model of the MFI for customer touch (MFC Survey: expected by 67% of respondents)
2. Increased speed of process and delivery of services	High	Jeopardize social mission and danger of mission drift (MFC Survey: expected by 75% of respondents)
3. Increased outreach and financial inclusion	High	- Digital literacy and danger of digital exclusion - Drive towards sustainability and efficient model (MFC Survey: expected by 56% of the respondent)
4. Increased diversification of products and services	Low	- Need for powerful and flexible back-end system - Need for external partners - Regulatory barriers - Focus on outreach rather than more services
5. Improved customization and adaptation to customer needs	Medium	- Increased complexity in the back-end and front-end systems - Increased complexity for clients and employees (MFC Survey: expected by 50% of the respondents)
6. Decreased face-to-face interaction and increased customer autonomy	Medium	- Importance of physical touch - Need to collect 'subjective' data
7. Improved risk management	Medium	- Lack of financial data and track records - Lack of digitalized data - Need for robust back-end system - Data regulations
8. Increased competition spurs continuous innovation	Medium	- According to national level of competition - Differentiated mission compared to competitors (MFC Survey: expected by 25% of the respondents)

Table 8: Overview on the relative level of validation and moderators for each hypothesis.

By putting into perspective the elements mentioned in the table above, we were able to gather the moderators in a more generic way. Specifically, we came up with three different types of obstacles or origins of the difficulties faced by MFIs.

The first obstacle is related to the technology itself. Even if the use of FinTechs may benefit the business model of an MFI in several ways as suggested by the hypotheses, the implementation of these innovative technologies does not come without difficulties.

Indeed, an MFI can only offer a diversified range of customized products and services if it has a solid, flexible and well-integrated back-end system. In the same way, an MFI can only develop a refined scoring model for a better risk management if it has a robust back-end system able to handle complex data analytics. Nevertheless, it undoubtedly requires a significant investment in the short run, especially for an MFI. As a result, the challenge for an MFI is to balance the initial technological costs with the gains these technologies generate in the long run, which impedes the immediate deployment of FinTechs and its related benefits.

The second group gathers obstacles which are peculiar to the European environment regarding the size of its microfinance sector, its technological adoption level and its regulatory framework. First, as it has been highlighted in the third chapter, the microfinance sector is a niche market in Europe due to the welfare system which takes care of the most vulnerable individuals. Consequently, the volume of operations and customers are much lower compared to developing countries where microfinance is a mass market. This leads to a decreased opportunity for MFIs to generate economies of scale to recover from substantial technological investments. Second, although the literature has showed high and growing rates of Internet usage and mobile adoption, some countries in Europe still count an undeniable share of 'unconnected' individuals, which can be excluded from services offered exclusively in a digital fashion. Third, the regulatory environment in Europe regarding banking activities is known to be strict, which limits MFIs to offer financial products that innovative technologies would enable them to. Moreover, regulations regarding data security and privacy vary widely from one country to the other and are often unclear, which restrains MFIs from using data which might partially offset the lack of records of their customers.

Last but not least, the third group gathers obstacles that are linked to the microfinance sector, its customers and its deeply anchored values. That is, Western European MFIs are not willing to jeopardize the social mission they have advocated since their foundation because of the adoption of innovative technologies, in spite of their potential benefits. Although technologies may increase the productivity of employees and speed up the loan processes due to a faster digital interaction with customers, the interviewed MFIs are determined to keep a high touch model in which a loan officer has a physical interaction with the customer at least once in the lifetime of the relationship. As such, this crucial face-to-face contact puts limits to the gains in efficiency that FinTechs can generate. What is more, the

high-risk nature of microfinance resulting from a lack of track of financial data makes the personal touch even more important due to the necessity of compensating the shortage of information with alternative or 'subjective' customer data.

Conclusion

Research conclusion

This thesis has been undertaken in a context where, to date, there is limited formal research on technologies and microfinance in Europe. Somehow, this gap in the literature is quite surprising in a context where microfinance in Europe is growing, yet still struggling to expand its outreach and to become sustainable, while FinTechs are simultaneously transforming the formal financial sector by making financial services more affordable and accessible. In the meantime, technological innovations have long been considered as a key enabler for financial inclusion in developing countries by international organizations. As such, the aim of the thesis is to ‘connect the dots’ in the Western European environment by studying at a broad level the adoption of FinTechs by microfinance institutions, the benefits they expect from these innovative solutions and the barriers they face in their implementation. In order to direct and structure our research, we developed hypotheses on the role of FinTechs based on existing literature derived from two different, however closely related environments: on the one hand, the traditional financial sector in developed countries, and on the other hand, the microfinance sector in developing countries. Taking into account the geographical and sectorial differences of these contexts, we assume the hypotheses can be transferred to our research environment: the Western European microfinance sector.

Above all, it was of paramount importance to understand the driving forces of microfinance which takes roots during the 1970s in developing countries as an economic development tool to fight financial exclusion. Before depicting the transition of microfinance to Western Europe at the beginning of the century, we highlighted the key economic, social and institutional differences between those geographical regions. These contributed to make Western European microfinance institutions socially-oriented, highly subsidized and to offer mainly microcredit to fulfil an unmet demand for professional micro-loans. However, the growth of microfinance in Europe is slowed down by several challenges, including the age-old dilemma between expanding outreach and reaching financial sustainability.

Wondering whether fast, agile and efficient technologies could be a tool to overcome these barriers, we initiated the second part of our literature by examining the three most promising FinTechs for microfinance, which are mobile banking, cloud computing and data

analytics. Based on literature from practitioners, we first analysed their impact on different dimensions of the business model of traditional financial institutions in Europe. Against this backdrop, and being aware of the ongoing implementation of new technologies in developing countries, we supported the findings on the role of FinTechs with case studies illustrating their main benefits to microfinance institutions in that part of the world. This has led us to determine eight ways in which FinTechs innovate business models, which have built the basis of our hypotheses to be verified in our research context. After analysing and confronting the primary and secondary data collected from three MFIs in Belgium, France, and the Netherlands, we were able to assess the feasibility of our hypotheses in the Western European microfinance industry.

Implications at the organizational level

The analysis of the results has proven the validity of all the hypotheses. Indeed, the interviewed MFIs did not mention any element in contradiction with the literature, although some elements were more prominent and others were not discussed. In order to enrich the contribution of our research to the microfinance literature, we decided to assess the validity of the different hypotheses based on three sources: our feelings from the interviews, the results of the ongoing survey on the digitalization of MFIs at the European level, and the obstacles mentioned by the interviewees during our discussions. This also provides MFIs with a scale on the benefits to expect from the adoption of FinTechs. As a result, we concluded that Western European MFIs perceive the ‘increased speed of process and delivery of services’ as well as the ‘increased outreach and financial inclusion’ as the most important benefits of the adoption of FinTechs. Indeed, FinTechs enable the automation of a wide number of processes, streamline operational capabilities, and increase the accessibility of services through digital channels. Afterwards, the ability of FinTechs to ‘reduce operational costs’ gave rise to more controversy but seems to be well-received in the long run. Other moderately confirmed benefits are the ‘increased adaptation of products to customer needs’, the ‘increased customer autonomy’, and the ‘improved risk management’. In addition, the validation of an ‘increased pressure to innovate as a response to the emergence of new competitors’ was less significant. Finally, we concluded that the increased ability of MFIs to diversify their portfolio of products and services was verified to a lesser extent than all the others.

With the ultimate goal of giving a better overview on the difficulties faced by Western European MFIs in the adoption of FinTechs, we identified three types of obstacles or three

origins from which these obstacles come from. The first is related to the adoption of the FinTechs themselves, in the sense that MFIs need to find the right balance between the considerable up-front investment required in the short run and the gains in efficiency among others generated in the long run. The second type of obstacle is linked to the European context regarding the small size of the microfinance market, the limited digital literacy of a share of the population, the severe regulations of banking activities and unclear data protection laws. The third type of obstacle regards the deeply-rooted values and characteristics of the microfinance sector. While the lack of financial customer records retains MFIs in their ability to use certain FinTechs (e.g. data analytics for improved scoring models), the vital face-to-face interaction incites MFIs to put limits on the extent to which they want digital solutions to be integrated into their high touch business models.

To conclude, the findings of our research suggest that technology is the way to go. In spite of the obstacles along the way of digitalization, MFIs will be able to reap the benefits from the adoption of FinTechs within the limits of their high touch model.

Implications at the sectorial level

Taking a step back from an organizational level (i.e. the microfinance institution) to a broader industry level, the findings may be precociously extrapolated to the European microfinance industry. Although it is not the main focus of our research, it may be interesting to assess the opportunities brought by FinTechs to face the challenges of the sector as highlighted in *section 2.2.5*. Indeed, in spite of the growth of microfinance in Europe, there is still a long way to go to meet the current demand of micro-entrepreneurs for professional loans. In addition to a microloan supply shortage, there is also an unresolved dilemma between expanding the outreach to the most vulnerable individuals and reaching financial sustainability. Even if Western European MFIs tend to put a greater emphasis on the former, the latter is important to scale-up their activities and reach a greater amount of people.

Considering the challenges of the sector on the one hand, and the benefits brought by FinTechs on the other hand, it seems that innovative technologies could play a key role. First, given the high validity of the ‘increased outreach’ hypothesis, our findings suggest that the use of FinTechs could help increase the supply of microcredit and meet current demand of micro-entrepreneurs. Second, even if the validity of the ‘reduced operational cost’ hypothesis is nuanced and would require more time to unfold, this finding reveals that FinTechs could

initiate their pursuit of reaching financial sustainability. These arguments, combined to the findings related to an ‘increased speed of process’ and efficiency gains, could ultimately enable a better focus on outreach and on the most vulnerable customer segments.

Nevertheless, although MFIs generally perceive that they could benefit from FinTechs – it could help them innovate, be more efficient, scale-up and reach more customers – the interviewed MFIs already anticipate the challenges FinTechs will cause in turn. Indeed, the more digital data is used for assessing an individual’s creditworthiness, the more customers lacking a digital footprint will be pushed at the outskirts of society; financially, socially, and digitally. As a result, the potential ‘digital exclusion’ challenge adds up to the danger of mission drift, which is already looming over the European microfinance sector but not yet observed.

All in all, this thesis has brought to light a nuanced view on the roles of FinTechs in the business model of Western European MFIs, and to a certain extent, in the microfinance sector. By assessing the advantages and disadvantages through a qualitative approach, we were able to establish a first feeling regarding the potential of FinTechs to help microfinance fulfil its mission of financial inclusion. Nevertheless, some limitations in our research need to be taken into account and open the way for further research in the area of microfinance and technology in Europe.

Limitations

As a response to limited theoretical and empirical research on the use of FinTechs for microcredit in Western Europe, our study attempted to fill in this gap in the literature. Although the results outline some interesting findings, some limitations need to be considered and could serve for the development of further research.

To begin with, this research is limited by its sample size and geography due to time and feasibility constraints. Even though the scope of the study ambitiously attempts to generalize the findings to Western Europe, it must be kept in mind that the sample on which we based our findings only includes three MFIs. What is more, from a geographical point of view, the countries of the three case studies – Belgium, France and the Netherlands – are bordering and similar on various aspects. This may not fully reflect the heterogeneity that exists among Western European countries.

Furthermore, although the conclusions derive from both primary and secondary sources, the data of the former are based on the limited observations and discussions we had with the three institutions. Hence, the amount and quality of the collected information depends on the availability of the staff at the time of the interview as well as their level of experience in microfinance and their knowledge about FinTechs. The views and information collected cannot be considered as exhaustive, nor perfectly reflecting the reality. In addition, although we decided to conduct our research among microfinance institutions only due to time constraints, the findings could have been enriched by questioning other stakeholders such as FinTech providers, customers, policy-makers and donors. These stakeholders could have brought new elements to light and added granularity to our findings.

Last, the depth of the results is limited by our decision to approach the topic at a broad level regarding FinTechs as well as their impacts on various dimensions of an MFI's business model. Consequently, we did not delve into specific details related to microfinance nor technical details regarding FinTechs, which readers with more expertise in one area or another could have appreciated.

Further research directions

Several research directions arise from this study and its limitations, namely the geographical scope, the stakeholders, the level of depth, the methodology, the time span, and the ways to overcome the obstacles.

First, in order to increase the significance and generalization potential of results, we would suggest research on additional views regarding the role played by FinTechs from other Western European countries and MFIs. One could think of the UK (e.g. Fair Finance), Spain or Italy (e.g. PerMicro) as it was suggested by the interviewees, given their technological advancement at certain levels of the loan process. Second, we believe that insights from different stakeholders in the sector would lead to potentially less biased and more robust conclusions. For instance, policy-makers can bring a stronger regulatory perspective on the role of FinTechs in the microfinance sector. Additionally, FinTech providers can bring an external opinion on the technical advantages and disadvantages of technologies for MFIs. Third, it would be insightful to only focus on a single type of FinTech as it would reduce the noise and complexity brought by the interconnected technologies and multiple environments.

This narrow level of analysis would bring a deeper understanding of the individual contribution of each technology and help MFIs prioritize the implementation of various needed FinTechs.

Fourth, a quantitative approach for the research topic would be interesting to acquire deeper empirical data and more actionable results for MFIs, albeit a qualitative approach was useful in a first time to explore the current interest of European MFIs for FinTechs and their role in the organization's strategy and operations. However, given the young maturity of FinTechs in the European microfinance sector, this would only be possible in the long run, which brings us to our sixth research suggestion. Indeed, a study conducted over a longer time span would enable to identify more thoroughly the benefits of FinTechs and the intensity. Moreover, it would allow to grasp the dynamics of the constantly evolving technological environment.

A final research direction concerns the possibilities to overcome the barriers faced by MFIs in the use of FinTechs that were drawn from our findings. A closer examination of the obstacles could help MFIs truly unleash the benefits of new technologies and take microfinance to the next level – ultimately enabling Western European MFIs to fulfil their financial and social mission.

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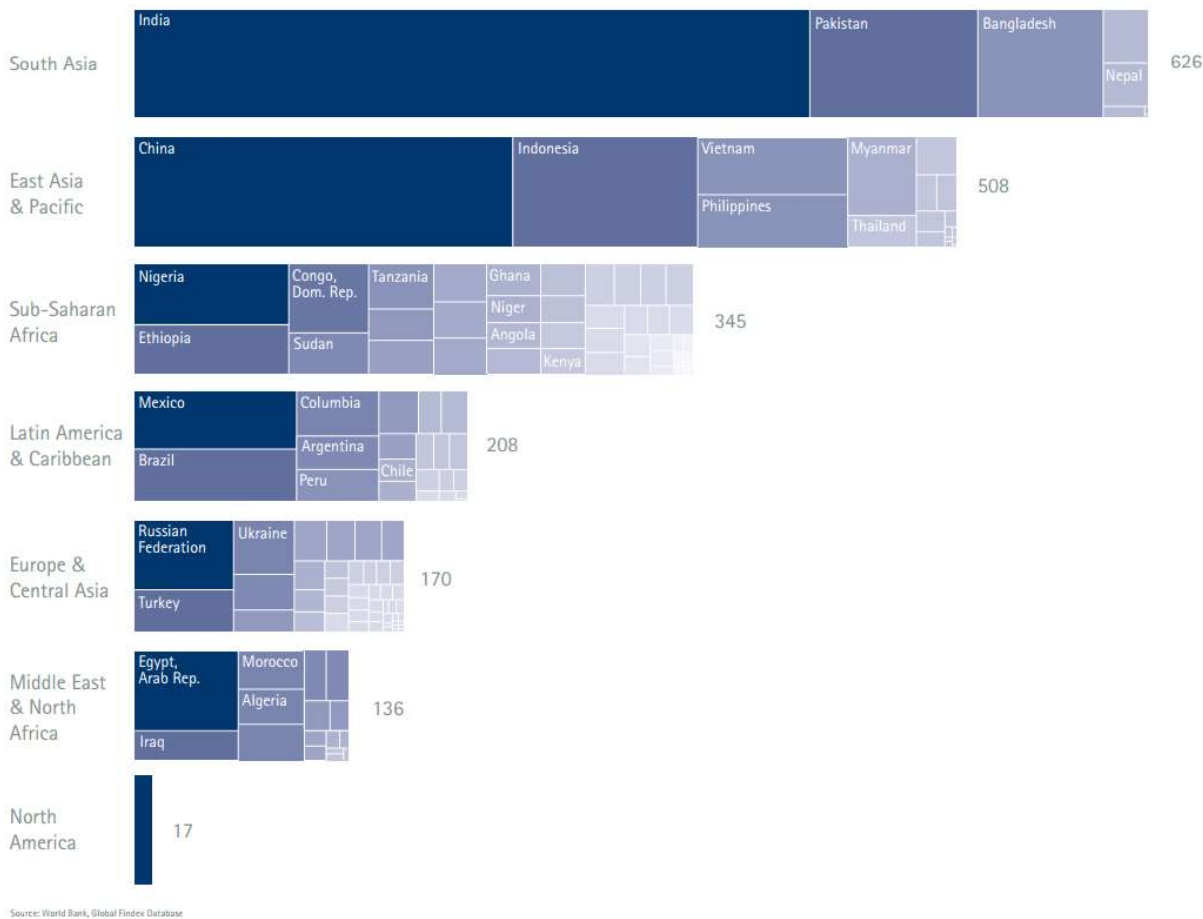
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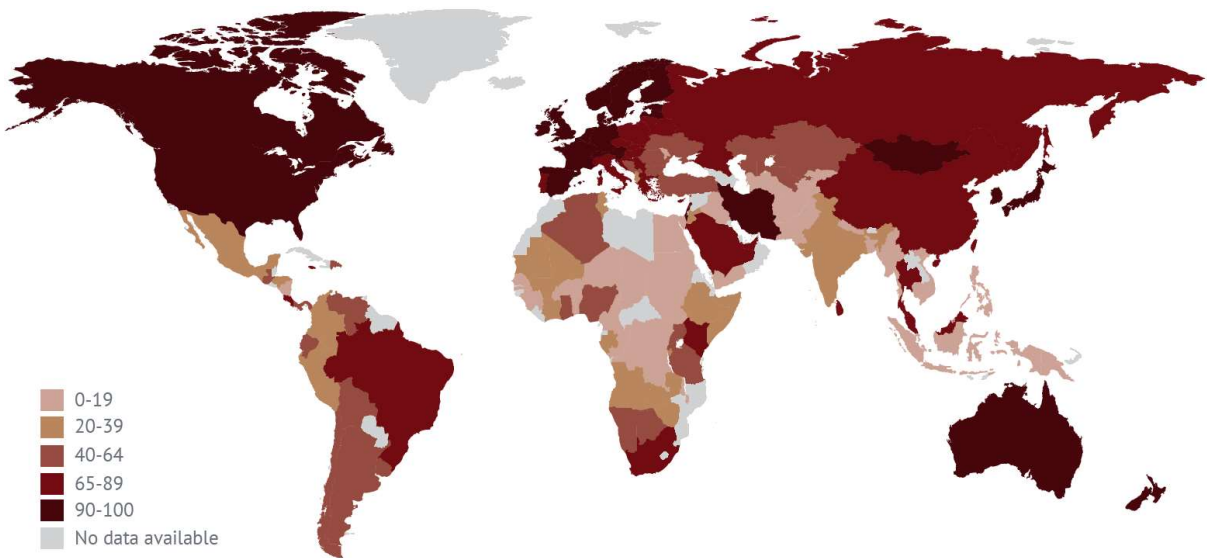
ANNEXS

Annex 1 : The world's unbanked population by region (in millions). Source: (Moreno, Vazirani, & Lillis, 2015, p. 7)

FIGURE 3. World's unbanked population by region (in millions)



Annex 2 : Map visualization of the account penetration around the world in percentage of the population. Source: (CGAP & Symbiotics, 2016, p. 12)



Annex 3 : G20 Principles for Innovative Financial Inclusion. Source: (Global Partnership for Financial Inclusion [GPFI], 2010, p. 12)

G20 Principles for Innovative Financial Inclusion

Innovative financial inclusion means improving access to financial services for poor people through the safe and sound spread of new approaches. The following principles aim to help create an enabling policy and regulatory environment for innovative financial inclusion. The enabling environment will critically determine the speed at which the financial services access gap will close for the more than two billion people currently excluded. These principles for innovative financial inclusion derive from the experiences and lessons learned from policymakers throughout the world, especially leaders from developing countries.

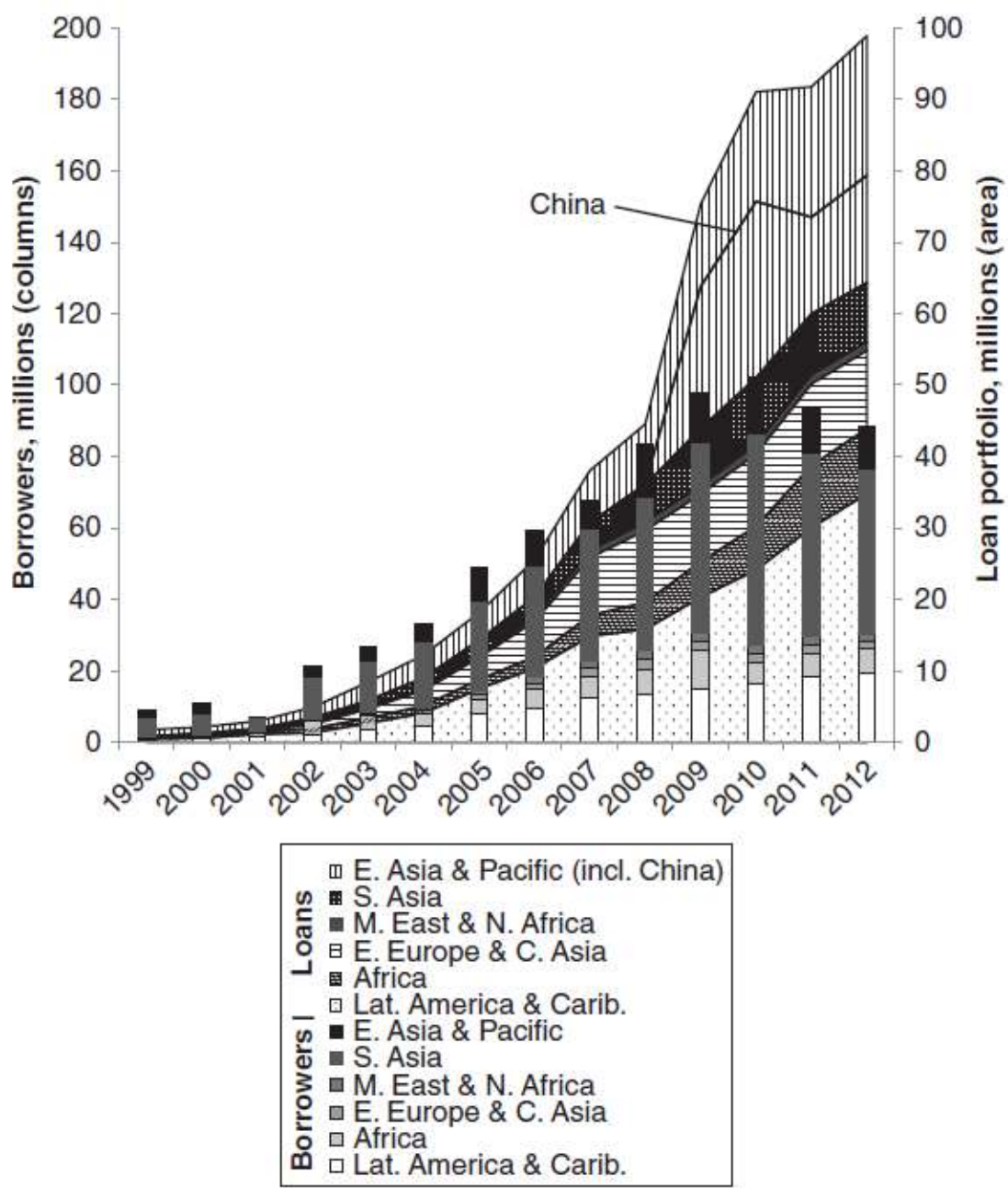
1. **Leadership:** Cultivate a broad-based government commitment to financial inclusion to help alleviate poverty.
2. **Diversity:** Implement policy approaches that promote competition and provide market-based incentives for delivery of sustainable financial access and usage of a broad range of affordable services (savings, credit, payments and transfers, insurance) as well as a diversity of service providers.
3. **Innovation:** Promote technological and institutional innovation as a means to expand financial system access and usage, including by addressing infrastructure weaknesses.
4. **Protection:** Encourage a comprehensive approach to consumer protection that recognises the roles of government, providers and consumers.
5. **Empowerment:** Develop financial literacy and financial capability.
6. **Cooperation:** Create an institutional environment with clear lines of accountability and co-ordination within government; and also encourage partnerships and direct consultation across government, business and other stakeholders.
7. **Knowledge:** Utilize improved data to make evidence based policy, measure progress, and consider an incremental “test and learn” approach acceptable to both regulator and service provider.
8. **Proportionality:** Build a policy and regulatory framework that is proportionate with the risks and benefits involved in such innovative products and services and is based on an understanding of the gaps and barriers in existing regulation.
9. **Framework:** Consider the following in the regulatory framework, international standards, national circumstances and support for a competitive landscape: an appropriate, flexible, risk-based Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) regime; conditions for the use of agents as a customer interface; a clear regulatory regime reflecting for electronically stored value; and market-based incentives to achieve the long-term goal of broad interoperability and interconnection.

These principles are a reflection of the conditions conducive to spurring innovation for financial inclusion while protecting financial stability and consumers. They are not a rigid set of requirements but are designed to help guide policymakers in the decision making process. They are flexible enough so they can be adapted to different country contexts.

Annex 4 : Key events in the evolution of modern microfinance. Source: (Mader, 2015, p. 43)

1904	UK Parliament passes Cooperative Credit Societies Act
1900s–1940s	Growth and decline of cooperative credit in British India
1947	Independence of South Asian countries from the UK
1960s to mid-1970s	Experiments in rural group lending (Comilla Model) in East Pakistan
1971	Bangladesh Liberation War
1972	BRAC founded
	SEWA founded in Ahmedabad, India
1973	ACCION experiments with microlending in South America
1976	Muhammad Yunus lends to 42 villagers in Jobra, Bangladesh
1982	Grameen Bank founded
1984	BRI creates for-profit microfinance division
1986	Bolivia implements NEP
	Founding of Prodem/BancoSol in Bolivia
1995	World Bank founds CGAP
1997	First Microcredit Summit held in Washington
2001	CGAP creates MIX
	Bolivian microfinance crisis
2003	First microfinance IPO (stock offering), BRI
2005	UN observes International Year of Microcredit
	Kiva (online microlending platform) founded
	Krishna microfinance crisis
2006	Muhammad Yunus and Grameen Bank awarded Nobel Peace Prize
	IPO of Equity Bank (Ghana) and BRAC Bank (Bangladesh)
2007	IPO of Compartamos (Mexico); controversy about interest and profits
	Morocco microfinance crisis
2008	Pakistan, Bosnia-Herzegovina and Nicaragua microfinance crisis
2010	IPO of SKS Microfinance (India)
2010/11	Andhra Pradesh/Indian microfinance crisis
2011	Yunus removed as head of Grameen Bank

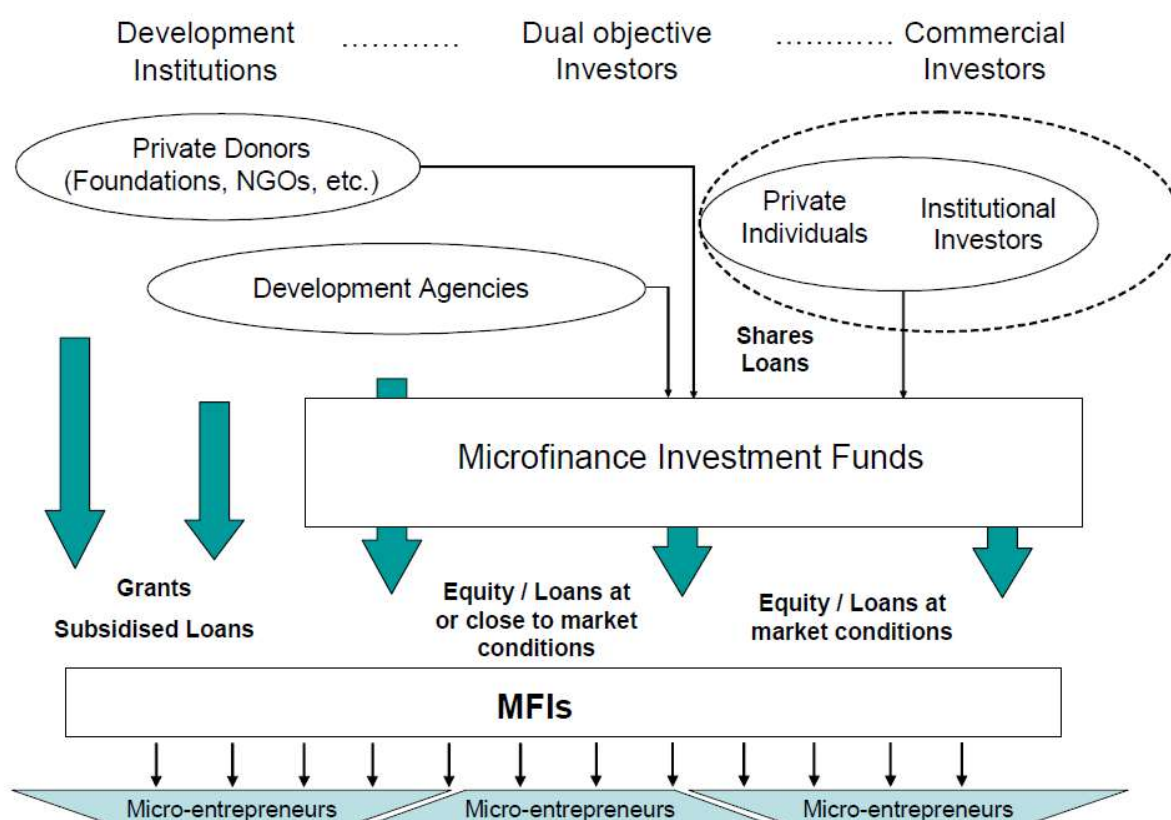
Annex 5 : Growth of the microfinance industry between 1999 and 2012. Source: (Mader, 2015, p. 66)



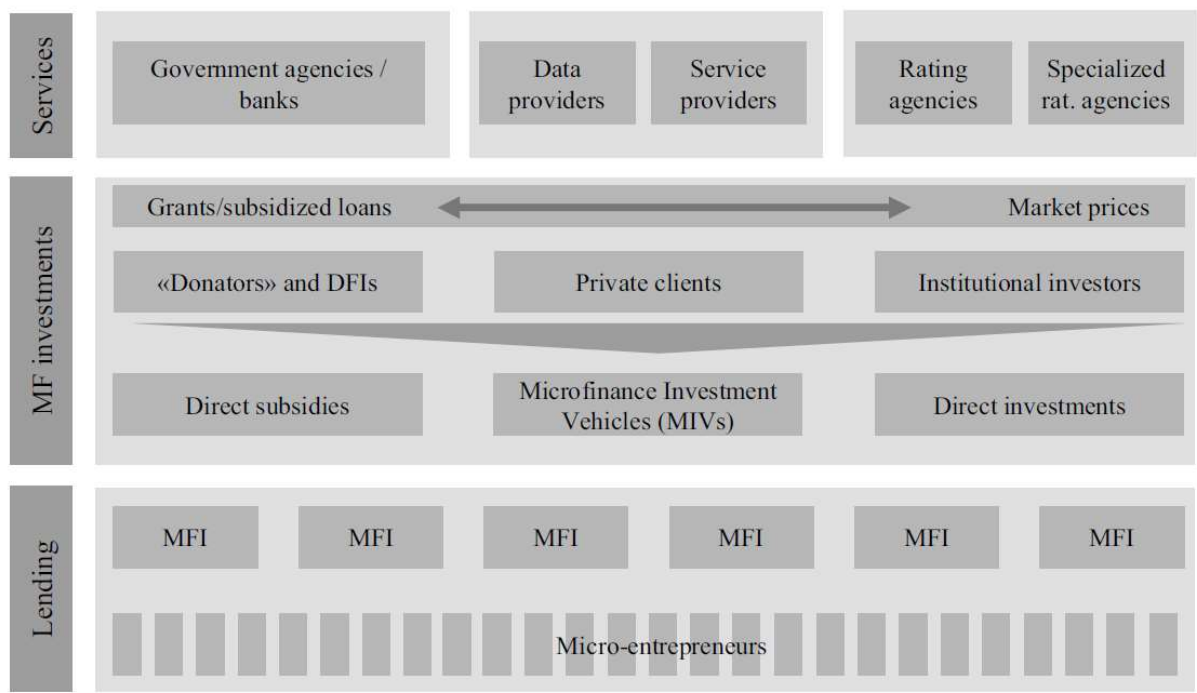
Annex 6 : Spectrum of donors in financial inclusion and the way they operate. Source: (Ledgerwood, Earne, & Nelson, 2013, p. 99)

Type of donor	Examples	Source of funding	Concessional vs. commercial	Ownership
Foundations	Bill & Melinda Gates Foundation Michael & Susan Dell Foundation MasterCard Foundation	Private donations	Concessional	Private
Bilateral donors	USAID (United States) DFID (United Kingdom) GIZ (Germany) SIDA (Sweden)	Public government funding	Concessional	Public
Multilaterals	UN agencies (IFAD, UNCDF) European Commission World Bank	Bilateral donors (member states) Capital markets	Concessional	Public
Regional banks	African Development Bank Asian Development Bank	Bilateral donors (member states) Capital markets	Mixed	Public
Development finance institutions	IFC KfW (Germany) Proparco (France)	Bilateral donors Public government funding Capital markets	Mostly commercial (some concessional)	Public

Annex 7 : Funding of the microfinance sector through microfinance investment funds. Source: (Matthäus-Maier, 2006, p. 22)



Annex 8 : Funding of microfinance sector with an overview of the microfinance layers and players. Source: (Becker, 2010, p. 51)



Annex 9 : Examples of the three categories of microfinance investment funds. Source: (Matthäus-Maier, 2006, pp. 26-28)

Commercial Microfinance Investment Funds

-
- | | |
|--|---|
| • ASN-Novib Fund | • Global Microfinance Facility |
| • AXA World Funds – Development Debt | • Gray Ghost Microfinance Facility |
| | • Impulse (Incofin) |
| • BlueOrchard Microfinance Securities I, LLC | • MicroVest |
| • Dexia Micro-Credit Fund – Blue Orchard Debt Sub-Fund | • responsAbility Global Microfinance Fund |
| | • Triodos Fair Share Fund |
-

Quasi-commercial Microfinance Investment Funds

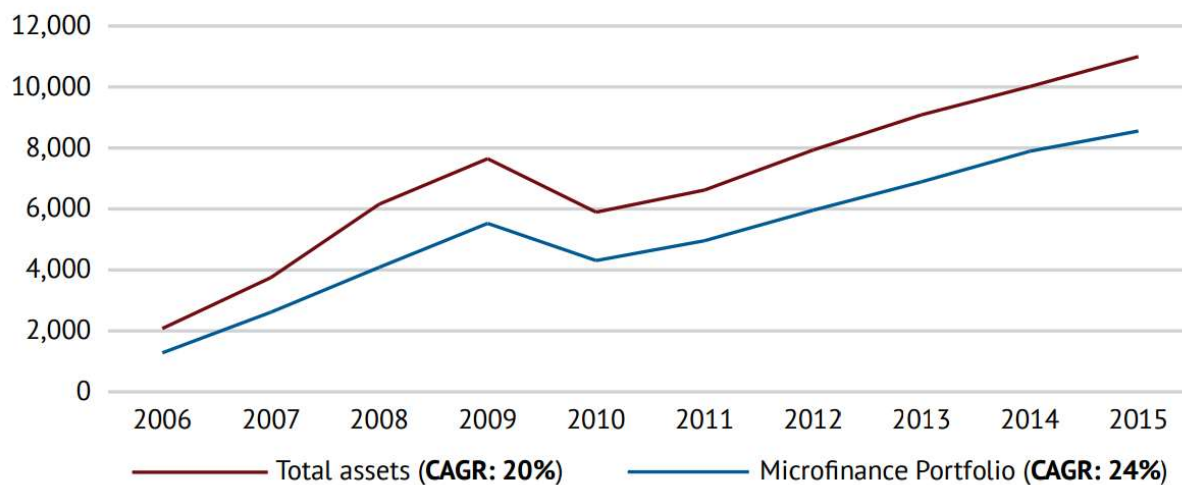
-
- | | |
|---|--|
| • Accion Investments in Microfinance | • Investisseur et Partenaire pour le Développement |
| • Africap | • La Fayette Investissement |
| • Global Commercial Microfinance Consortium (Deutsche Bank) | • La Fayette Participations |
| • ProCredit Holding | • Latin-American Bridge Fund |
| • (formerly IMI AG) | • LA-CIF |
| | • ProFund |
| | • ShoreCap International |
| | • Solidus |
-

Microfinance Development Funds

-
- | | |
|---|--|
| • Accion Gateway Fund | • Etimos |
| • ADA-Luxmint | • Fonds International de Garantie (FIG) |
| • Alterfin | • Hivos-Triodos Foundation |
| • Calvert Social Investment Foundation – Community Investment Notes | • Incofin |
| • CreSud | • Kolibri Kapital ASA |
| • Deutsche Bank Start-up Fund | • Oikocredit |
| • Deutsche Bank Microcredit Development Fund | • Opportunity Transformation Investments |
| • Développement International Desjardins – Partnership Fund | • PlaNet Finance – Revolving Credit Fund |
| • Dvt Int'l Desjardins – Guaranty Fund | • Sarona Global Investment Fund |
| • Dvt Int'l Desjardins – FONIDI Fund | • SIDI |
| | • Triodos-Doen Foundation |
-

Annex 10 : Growth (percentage) in total assets (expressed in \$million) of microfinance investment vehicles and microfinance portfolio globally. Source: (Symbiotics, 2016, p. 13)

10-YEAR GROWTH IN TOTAL ASSETS AND MICROFINANCE PORTFOLIO



Annex 11 : 10-year review of the landscape of microfinance investments and their key performance indicators. Source: (CGAP & Symbiotics, 2016, pp. 6-7)

KEY PERFORMANCE INDICATORS

Size and Growth	Unit	Dec 2006	Dec 2015	CAGR
Total Assets	USD	2.1bn	11.0bn	20%
Microfinance Portfolio	USD	1.3bn	8.6bn	24%

Geographical Allocation	Unit	Dec 2006	Dec 2015	CAGR
Eastern Europe & Central Asia	USD	476m	2.9bn	22%
Latin America & the Caribbean	USD	497m	2.7bn	21%
South Asia	USD	41m	1.3bn	47%
East Asia & the Pacific	USD	91m	1.1bn	32%
Sub-Saharan Africa	USD	94m	889m	28%
Middle East & North Africa	USD	3m	220m	64%

Risk Management	Unit	Dec 2006	Dec 2015
Top 1 Region	% DMP	63%	51%
Top 5 Countries	% DMP	64%	55%
Top 5 Investees	% DMP	43%	28%
Investment in LC (hedged & unhedged)	% DDMP	32% (Dec 08)	29%

Investor-type	Unit	Dec 2006	Dec 2015	CAGR
Institutional Investors	USD	571m	5.1bn	27%
Retail & High-Net Worth (HNW) individuals	USD	742m	3.0bn	17%
Public Investors	USD	443m	2.7bn	22%

Yields & Cost-structure	Unit	Dec 2009	Dec 2015
Portfolio Yield	% DDMP	8.4%	7.2%
Management Fees	% TA	1.9%	1.6%
TER	% TA	2.4%	2.4%
Provisions	% MFP	1.6%	1.7%

Net Returns	Unit	Dec 2006	Dec 2015	2006–15 Average
USD	% NAV	2.5%	2.7%	3.3%
EUR	% NAV	2.3%	2.3%	3.3%
Equity Funds – USD	IRR			15% ⁵

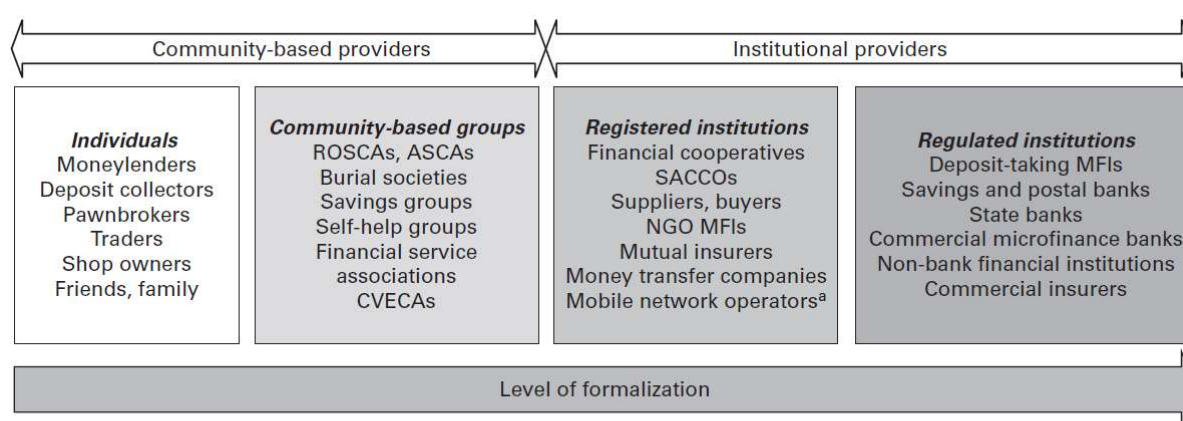
ESG Reporting	Unit	Dec 2008	Dec 2015
Active borrowers Financed – total	#	0.5m	24m
% Women clients	% of total active borrowers	64%	68%
Endorsement of CPPs	% MIVs	60%	98%

Annex 12 : Characteristics of institutional financial service providers. Source: (Ledgerwood, Earne, & Nelson, 2013, pp. 173-174)

Type of provider	Legal form	Regulation and oversight	Ownership	Governance	Client type	Products	Management and reporting	Funding	Sustainability and independence
Financial cooperatives	Registered with central authority	Credit unions may be regulated; oversight by specialized body	Owned by members	Board of directors or management committee elected by members	A range of clients, depending on members	Basic savings and credit, although inherently savings led	Professionally managed to varying degrees; report to supervisory authorities	Equity provided from member contributions; deposits and some external debt	Medium to high depending on capacity of management and governing body
NGO MFIs and multipurpose NGOs	Registered as an NGO, not-for-profit institution, or company limited by guarantee	Not regulated; may be subject to government oversight	No owners, strong ownership characteristics among founders and board	Board of directors, appointed by founders and funders	Poor, "unbanked" clients; for multipurpose NGOs, various target clients and beneficiaries	Traditionally credit led; multipurpose NGOs generally add financial services to other activities	Professionally managed to varying degrees; may need to report to registration body	Grants and debt from development institutions, foundations, socially responsible investors, or aggregators	Low to medium (high costs and lack of separation of activities can delay or prevent sustainability of financial activities)
Deposit-taking MFIs	Licensed as a bank or other form as per regulatory requirements	Regulated and supervised by central bank, ministry, or a specialized body	Mostly private shareholders; some development banks as initial shareholders	Board of directors appointed by shareholders	Unserved or underserved individuals or micro or small businesses	Credit, savings, insurance, payment services; terms may be modified for client needs	Professionally managed; report to central bank or supervisory authority	Mix of equity and debt financing from both private and public sources, deposits	Varied, costs to transform can be high; ongoing costs of regulatory requirements can be high
NBFIs: credit companies, insurance companies, leasing companies	Licensed as an NBFI or modified financial institution (determined by country-specific legal charter)	Regulated by central bank or specialized body or by one or more government units	Mix of public and private shareholders; sometimes other financial institutions or other companies	Board of directors appointed by shareholders	Clients vary depending on type of products (for example, credit or insurance)	Range from credit only, leasing, insurance; normally not able to intermediate deposits	Professionally managed; report to supervisory authority	Mix of equity and debt financing from both private and public sources	Medium to high; initial support may be required depending on target market
Suppliers, wholesale buyers, processors	Registered as a company under primary business	Credit services generally not regulated	Varies; can be owner operated or part of larger company	Varies	Rural farmers	Basic credit embedded in purchases	Little formal structure, provider driven	Funding from working capital; may have debt	High sustainability
Rural, savings or postal banks	Licensed as a bank	Regulated by central bank or specialized body or by one or more government units	Shareholders, government and/or private	Board of directors appointed by shareholders	Broad target group: poor and nonpoor; generally rural	Primarily savings; wide distribution network leveraged for payment services	Professionally managed to varying degrees; report to regulators	Equity and debt financing, generally from public sources and savings	Medium to high
State banks	Licensed with the central authorities; incorporated as either a parastatal or shareholding company	Normally regulated and supervised by the central bank	Shareholders, generally government, some private	Board of directors appointed, influenced by government	General population; government sometimes mandates poor or rural focus	Varied; some offer a full variety of financial services, others focus on agriculture lending	Professionally managed, but may be politically influenced; normally report to regulators	Public funding; debt largely sourced from deposits	Varied; medium (benefits from public subsidies in certain cases due to often rural distribution network)
Commercial microfinance banks	Licensed as a commercial bank	Regulated and supervised by central bank	Private shareholders and some development banks	Board of directors appointed by shareholders	Commercial micro, small, and medium enterprise clients, urban, fewer poor clients	Credit, savings, payments, sometimes insurance	Professionally managed; report to central bank	Equity and debt from institutional investors; deposits	High; with greenfields, some initial support required, then independent
Money transfer companies	Licensed as a money transfer provider	Regulated by local financial services authorities	Private shareholders	Board of directors appointed by shareholders	Poor and nonpoor; rural and urban	Transfers and payments between people, government, businesses	Professionally managed	Private funders	Generally high sustainability due to user fee structure

Note: MFI = microfinance institution; NBFI = non-bank financial institution; NGO = nongovernmental organization.

Annex 13 : Formalization level in the range of financial service providers. Source: (Ledgerwood, Earne, & Nelson, 2013, p. 29)



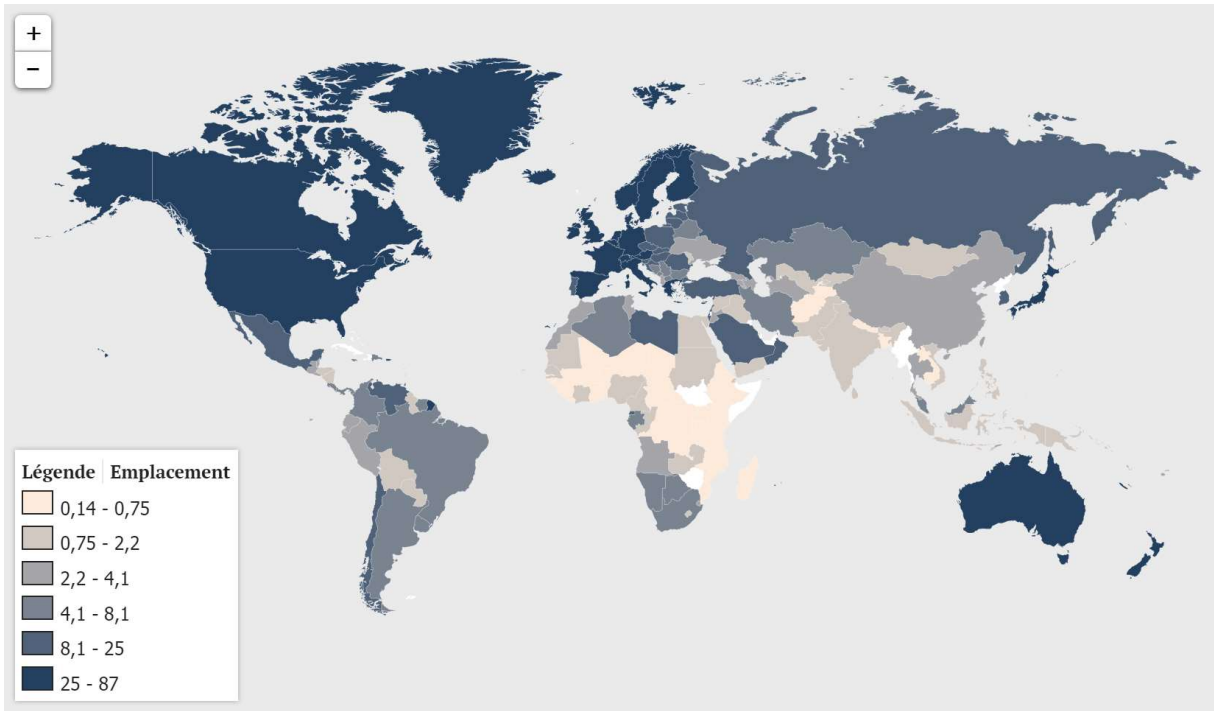
Note: ROSCAs = rotating savings and credit associations; ASCAs = accumulating savings and credit associations; CVECA = *caisses villageoises d'épargne et de crédit autogérées*; SACCOs = savings and credit cooperatives; NGO = nongovernmental organization; MFIs = microfinance institutions.

a. Mobile network operators are regulated as communication companies; most are not licensed to provide financial services.

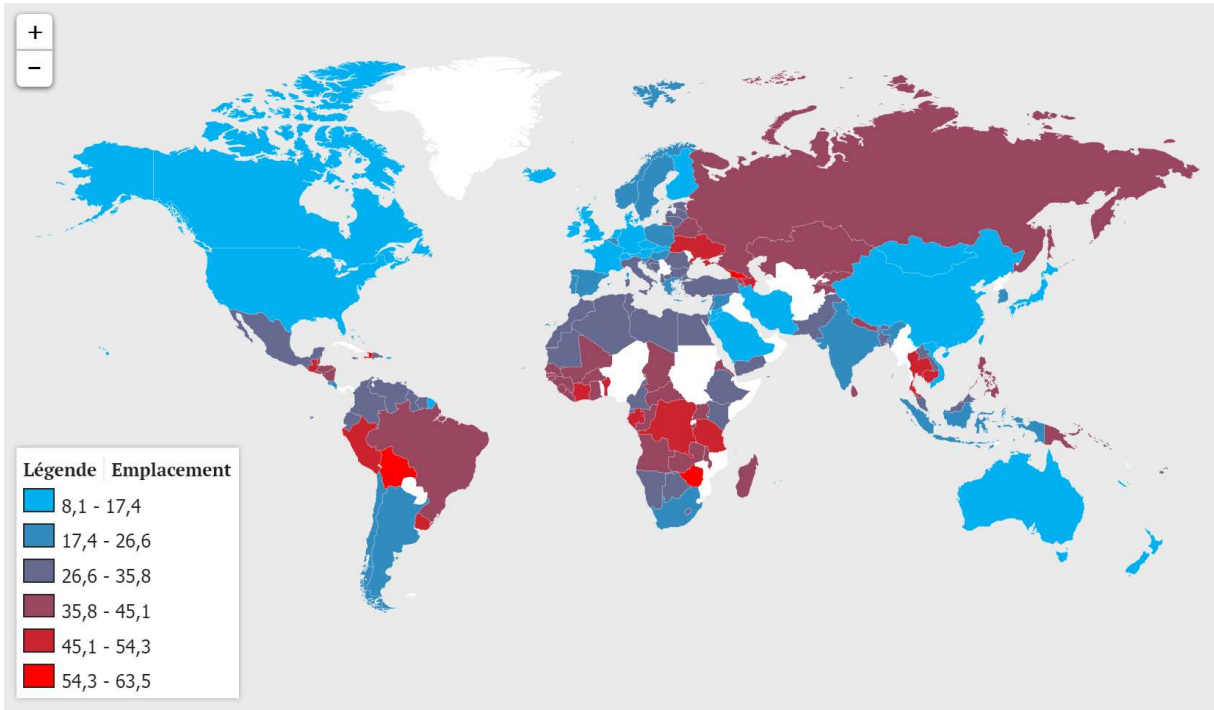
Annex 14 : Segmentation of credit categories. Source: (Becker, 2010, p. 48)

Consumer Credit	Microcredit	Small business lending
▪ Credit for non-durable good or consumer durable ▪ Accommodation of a loan shall depend on income	▪ Credit for entrepreneur to establish a business or expand an existing business moderately ▪ Interest payment is generated out of business (→ cash flow calculation necessary) ▪ No (or insufficient) collateralization	▪ Corporate credit ▪ Collateralization

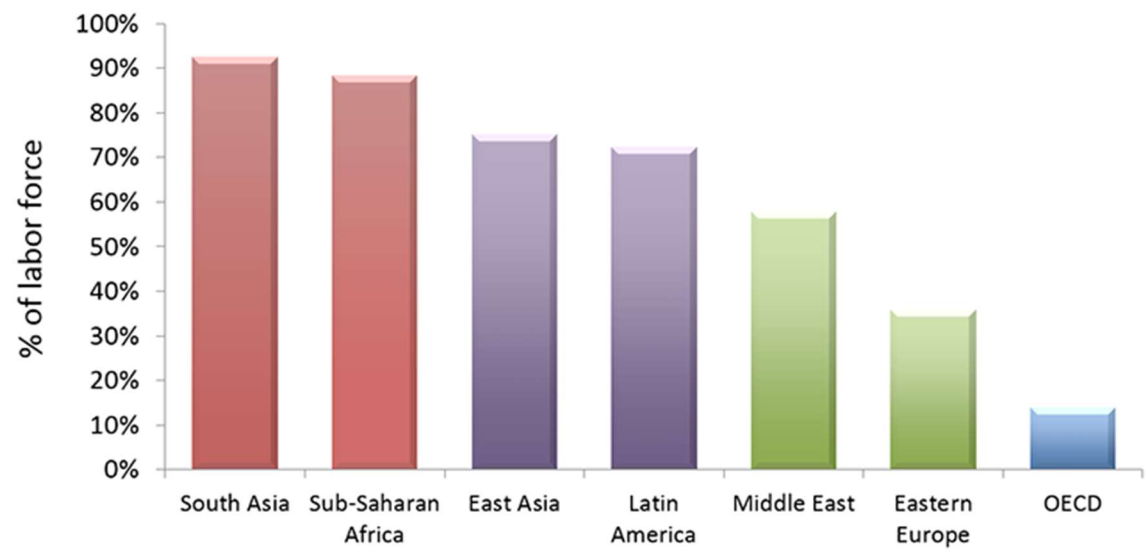
Annex 15 : GNI per capita in 2008 in thousand \$US. Source: (Knoema, 2017a)



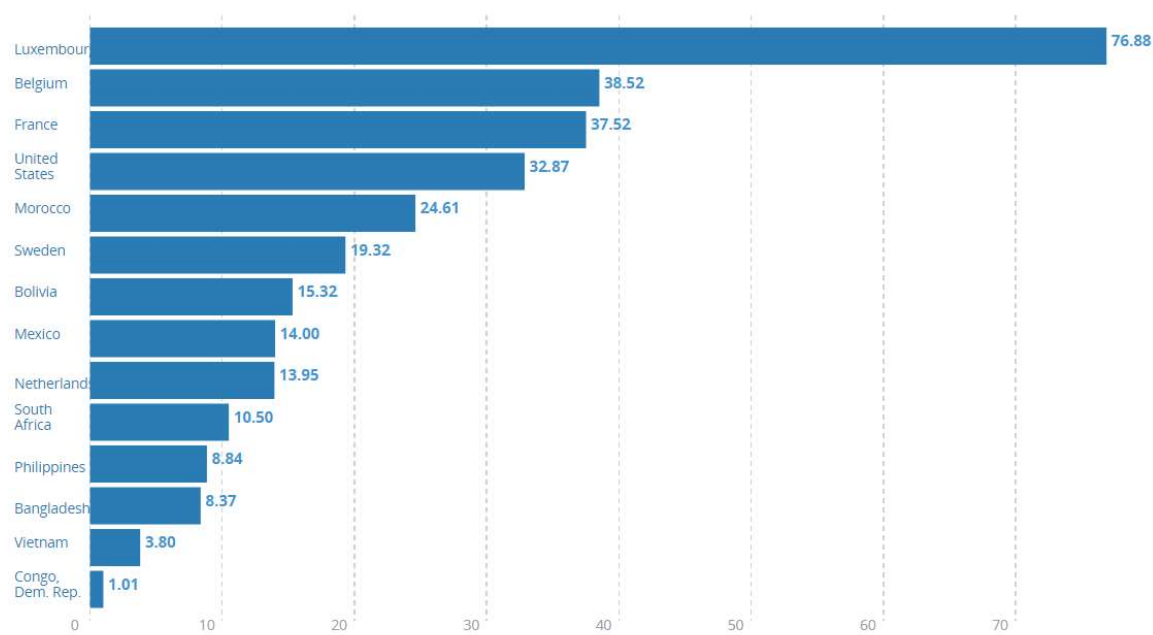
Annex 16 : The size of the shadow economy in 2007 in percentage of GDP. Source: (Knoema, 2017b)



Annex 17 : Regional comparison of the percentage of the labor force working in the informal sector. Source: (Loayza, 2016)

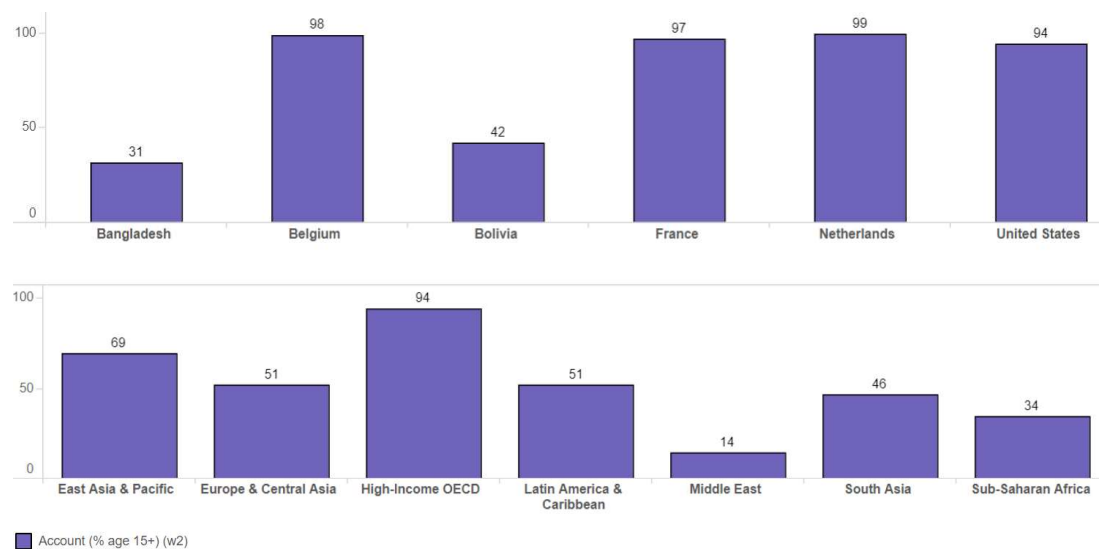


Annex 18 : Commercial bank branches (per 100,000 adults) in 2015 for some countries. Source: (The World Bank and the International Monetary Fund, 2015)



Country	2004	2015	
Luxembourg	110.9	76.9	
Belgium	57.2	38.5	
France	21.6	37.5	
United States	32.5	32.9	
Morocco	9.9	24.6	
Sweden	23.6	19.3	
Bolivia	4.5	15.3	
Mexico	10.8	14.0	
Netherlands	33.6	13.9	
South Africa	4.9	10.5	
Philippines	8.2	8.8	
Bangladesh	6.9	8.4	
Vietnam		3.8	
Congo, Dem. Rep.	0.5	1.0	

Annex 19 : Percentage of adults having an account in 2014 by region and for some relevant countries. Source: (The World Bank Group, 2014b)



w1 denotes 2011 Global Findex data (wave 1) and w2 denotes 2014 Global Findex data (wave 2).

Annex 20 : Comparison of Hofstede's dimensions of national culture in developing and developed countries. Source: (Pedrini, Bramanti, Minciullo, & Maria Ferri, 2016, p. 289)

Countries	Total GDP in billion \$ (2011)	GPD per capita in \$ (2011)	PDI	IDV	MAS	UAI	LTO
<i>Developed countries</i>							
USA	15094	48 387	40	91	62	46	29
Japan	5869	34 740	54	46	95	92	80
Germany	3577	37 897	35	67	66	65	31
France	2776	35 156	65	71	43	86	39
UK	2417	36 090	35	89	66	35	25
Italy	2198	30 464	50	76	70	75	34
Canada	1737	40 541	39	80	52	48	23
Spain	1494	30 626	57	51	42	86	19
Australia	1488	40 234	36	90	61	51	31
Mean	4072	37 126	46	73	62	64	35
<i>Developing countries</i>							
India	1676	3694	77	48	56	40	61
Philippines	213	4073	94	32	64	44	19
Mexico	1155	14 610	81	30	69	82	n.a.
Ecuador	66	8492	78	8	63	67	n.a.
Perù	174	10 062	64	16	42	87	n.a.
Ghana	37	3083	80	15	40	65	n.a.
Nigeria	239	2578	80	30	60	55	16
Bangladesh	113	1693	80	20	55	60	40
Indonesia	846	4666	78	14	46	48	n.a.
Mean	188	5.883	79	24	55	61	34

Source: World Bank, 2012 and Hofstede, 2012.

GDP, gross domestic product; PDI, power distance; IDV, individualism versus collectivism; MAS, masculinity versus femininity; UAI, uncertainty avoidance; LTO, long-term versus short-term orientation.

Annex 21 : Difference in the microfinance characteristics between developed and developing countries. Source: (Pedrini, Bramanti, Minciullo, & Maria Ferri, 2016, p. 284)

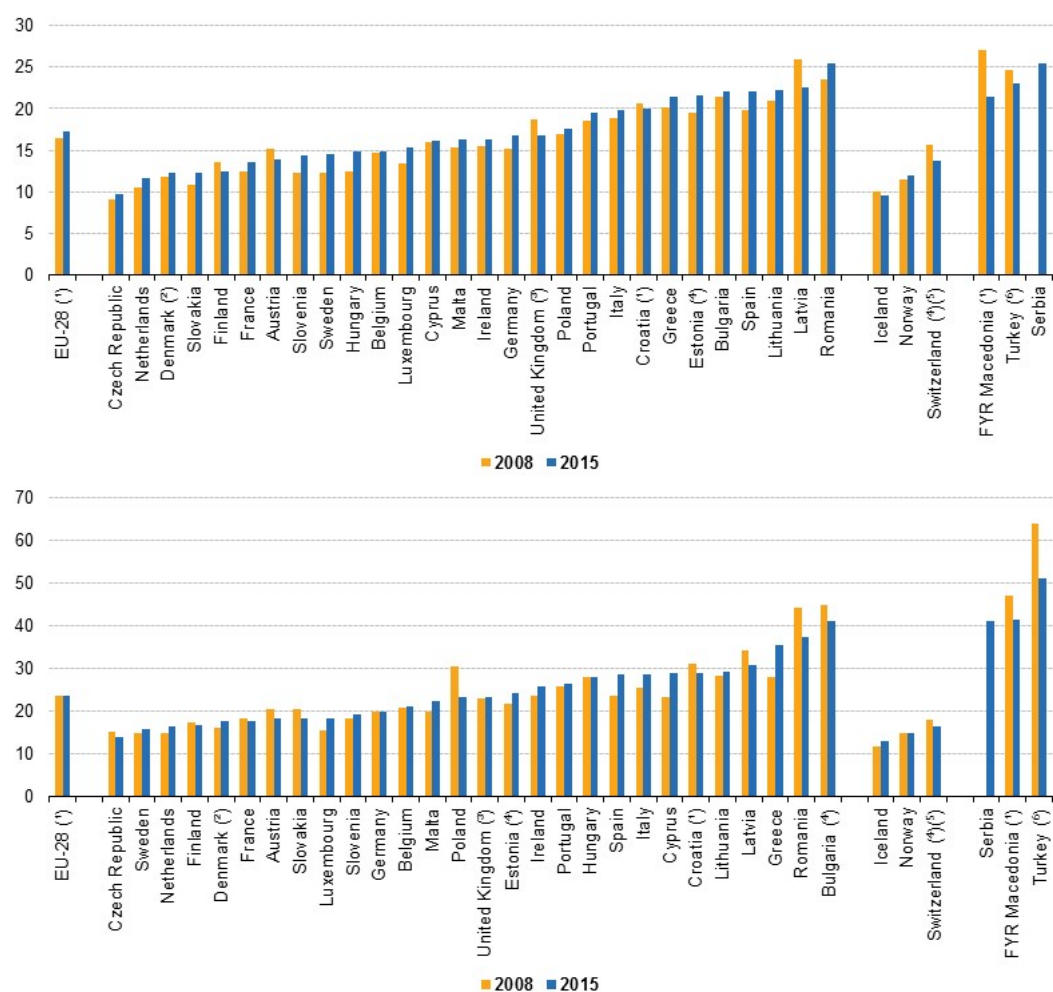
Characteristics	Developed countries	Developing countries
Type of MFIs	Nonprofit/subsidized	For profit
Approach to microfinance	Focus on outreach	Market oriented
Products	Microcredit Social microcredit	Microcredit Microinsurance Savings Remittances
Lending methodology	Individual lending	Group lending
Collaterals	Networks	Group members
Target	Grey area Immigrants SMEs Social enterprises	Unbankable Women

MFI, microfinance institutions; SMEs, small-medium enterprises.

Annex 22 : The nature of microfinance in Eastern and Western Europe. Source: (Jayo, Lacalle Calderón, Rico Garrido, Dayson, & Kickul, 2010b, p. 5)

Part of Europe	Central and Eastern	Western
Policy motivation	Transition, building a market economy	Encourage self-employment, address unemployment particularly among disadvantaged groups
Policy location	Economic	Socio-economic – link to welfare state
Ownership	Self-sufficient independent financial institutions	Partially operationally sufficient. Some non-profits and some extension of private and state sector entities

Annex 23 : (top) People at risk of poverty after social transfers by country 2008 and 2015 and (bottom) People at risk of poverty or social exclusion AROPE by country 2008 and 2015. Source: (Eurostat, 2017b)



(*) 2010 data (instead of 2008)

(†) break in time series in 2011

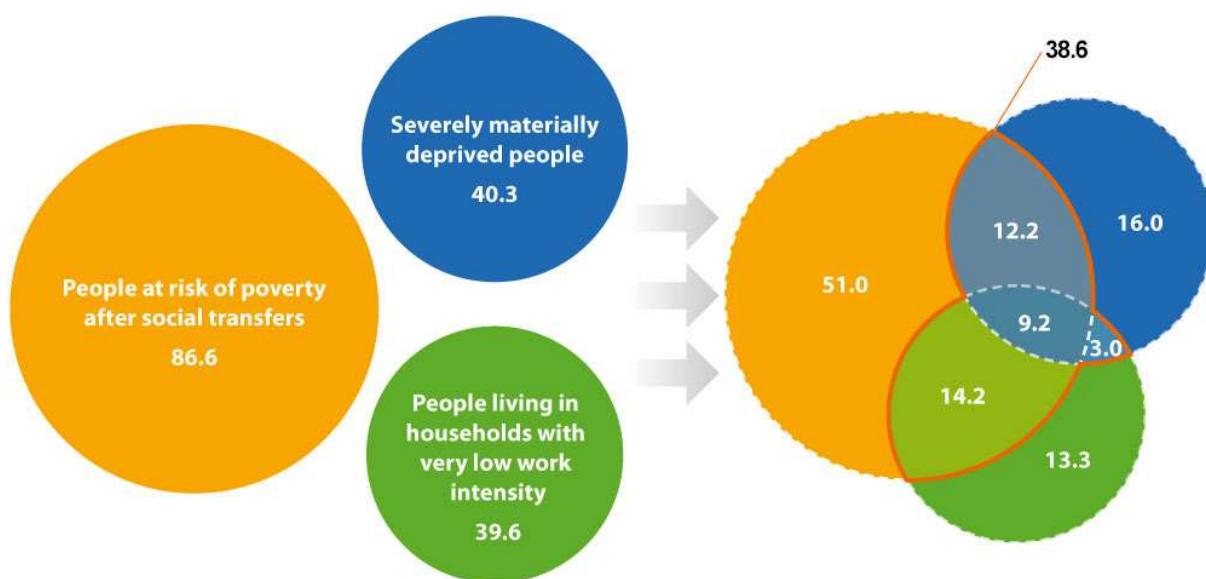
(‡) break in time series in 2012

(§) break in time series in 2014

(¶) 2014 data (instead of 2015)

(*) 2013 data (instead of 2015); break in time series in 2013

Annex 24 : Aggregation of sub-indicators of people at risk of poverty or social exclusion in 2015. Source: (Eurostat, 2017b)



JEREMIE

The Joint European Resources for Micro to Medium Enterprises (JEREMIE) initiative was conjointly developed by the European Commission (EC), the European Investment Fund (EIF) and the European Investment Bank (EIB). JEREMIE is an umbrella fund which targets financial intermediaries like MFIs, which in turn provide final beneficiaries with loans. Its goal is to improve access to finance – including microcredit – for the development of enterprises in European regional programmes for 2007-2013, using the European Structural Funds (European Commission, 2007; Pes & Porretta, 2016).

JASMINE

The Joint Action to Support Microfinance Institutions (JASMINE) is a pilot programme launched in September 2008 to complement the action regarding microfinance that took place within the JEREMIE programme. It can be understood as the operational outcome of the 2007 European Commission initiative as it aims to help microcredit providers improve the quality of their operations in order to reach self-sustainability (Bruhn-Leon, et al., 2012). JASMINE offers financial support to MFIs through loans and equity from EIB resources of €20 million and it also provides technical assistance using EC resources for the improvement of the governance of MFIs, their information systems, the risk management, the strategic planning, and more. Ultimately, this is intended to maximize the impact of microfinance on unemployment and economic growth within the EU (Pes & Porretta, 2016).

Progress Microfinance

The European Progress Microfinance Facility for employment and social inclusion was proposed by the EC and was established following the Decision No 283/2010/EU of the European Parliament and of the Council of March 2010 (European Commission, 2010a). The goal of Progress Microfinance is to further promote and support the development of the sector: increasing access to and availability of microcredit for persons at risk¹ and micro-enterprises². The budget of Progress Microfinance amounted to €100 million for the period 2010 – 2013, of which only 1% maximum could be allocated to support measures such as monitoring, control, audit and evaluation. The rest of the budget aimed at providing equity,

¹ “Persons who have lost or are at risk of losing their job, or who have difficulties entering or re-entering the labour market, as well as persons who are facing the threat of social exclusion or vulnerable persons who are in a disadvantaged position with regard to access to the conventional credit market and who want to start or further develop their own micro-enterprise, including self-employment” (European Commission, 2010a).

² “Micro-enterprises, especially in the social economy, as well as micro-enterprises which employ persons referred to [above]” (European Commission, 2010a).

debt, guaranties and risk sharing instruments, which are different products addressing the specificities of a wide range of different financial intermediaries (see **Error! Not a valid bookmark self-reference.**, p.152 for a view of the use and accounting implication of the different products). Along its investment period, Progress Microfinance is estimated to have reached approximately 60,000 micro-borrowers across 23 countries for around €500 million mobilized thanks to the Facility (Kraemer-Eis, et al., 2017).

The European Code of Good Conduct for Microcredit Provision

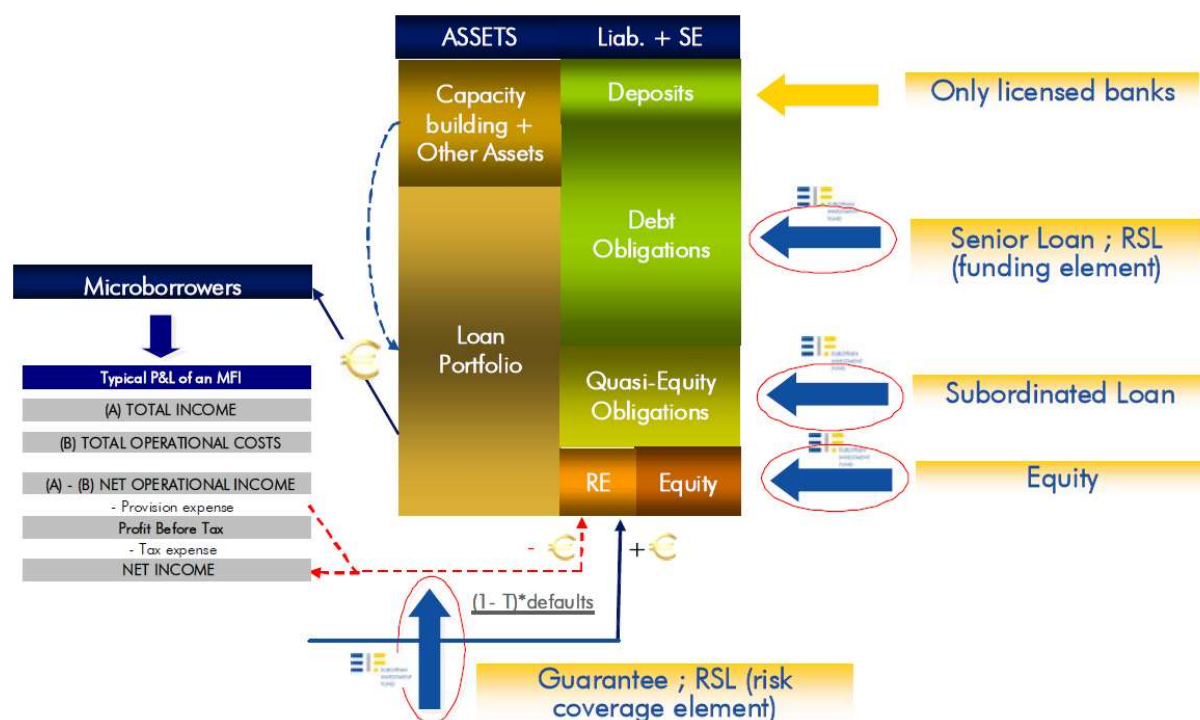
The European Code of Good Conduct was designed in the JASMINE pilot project as an answer to the need for a unifying set of expectations and standards at an EU level. Even though microfinance is growing, the sector is still young and fragmented due to the disparity of the legal and institutional frameworks in the Member States. The EC decided to create in 2011 a Code of Good Conduct promoting best practices in regard to the provision of microcredit (European Commission, Directorate-General for Regional Policy, 2011). The Code was built in consultation with actors and stakeholders of the sector and is meant to be a tool not only for microcredit providers but also for customers who should be treated fairly, investors who deserve transparency and regulators who are given reassurance that microcredit provision takes place under a sound management and ethical practices (European Commission, Directorate-General for Regional Policy, 2011). The Code intends to be voluntarily accepted by the microcredit providers and to be considered as a reference for basic principles of behaviour, operations and reporting ((Bruhn-Leon, et al., 2012; Pedrini, et al., 2016). The acceptance of the Code, even if on a voluntary basis, is a pre-condition for benefiting from products and services such as technical assistance and guarantees (Convergences, 2016).

EaSI Programme

In December 2013, there was a new regulation amending the previous one of March 2010 regarding the European Progress Microfinance Facility for employment and social inclusion (European Commission, 2013). This new regulation incorporates the existing microfinance policy into a broader initiative called “*the EU Programme for Employment and Social Innovation*” (EaSI). This programme, with a total envelope budget of €919 million for the period 2014 – 2020, is a financing instrument at EU level designed to promote employment, to support decent social protection and to fight poverty and social exclusion. As such, it puts into effect the implementation of the strategy Europe 2020. It brings together three programmes that had until then been managed separately for the period 2007 – 2013: ‘PROGRESS’, ‘EURES’ and ‘Progress Microfinance’ (see Annex 27, p.155 for the respective goals and budgets of the three sub-programmes). More particularly, EaSI is constructed around three axes: (1) PROGRESS, (2) EURES and (3) Microfinance and Social Entrepreneurship. The Microfinance and Social Entrepreneurship axis of EaSI supports (a) the provision of microcredits for vulnerable groups and microenterprises and (b) social enterprises. Together, the funds allocated to microcredit and social entrepreneurship

amounts to around €200 million. These funds support microcredit borrowers indirectly by enabling financial intermediaries to increase their loan offering through guarantees and funded instruments. Beside the financing tools, EaSI also continues the technical assistance initiative that was launched as part of the JASMINE pilot programme for the period 2007 – 2013 and extends it to the period 2014 – 2020. The EIB is managing the Technical Assistance programme under the EaSI through its platform Fi-compass, offering three types of support to financial intermediaries with the end goal of increasing their capacity building¹: rating, advice regarding the Code of Good Conduct, and access to development services like seminars and workshops (Convergences, 2016). By mid-2017, 42 EaSI guarantee were signed in 21 countries. The EIF says that the guarantees will ultimately serve to mobilize roughly €800 million to micro-borrowers and social entrepreneurs (Kraemer-Eis, et al., 2017).

Annex 26 : The use of different financial products and their accounting implication on the balance sheet. Source: (Bruhn-Leon, Eriksson, & Kraemer-Eis, 2012)



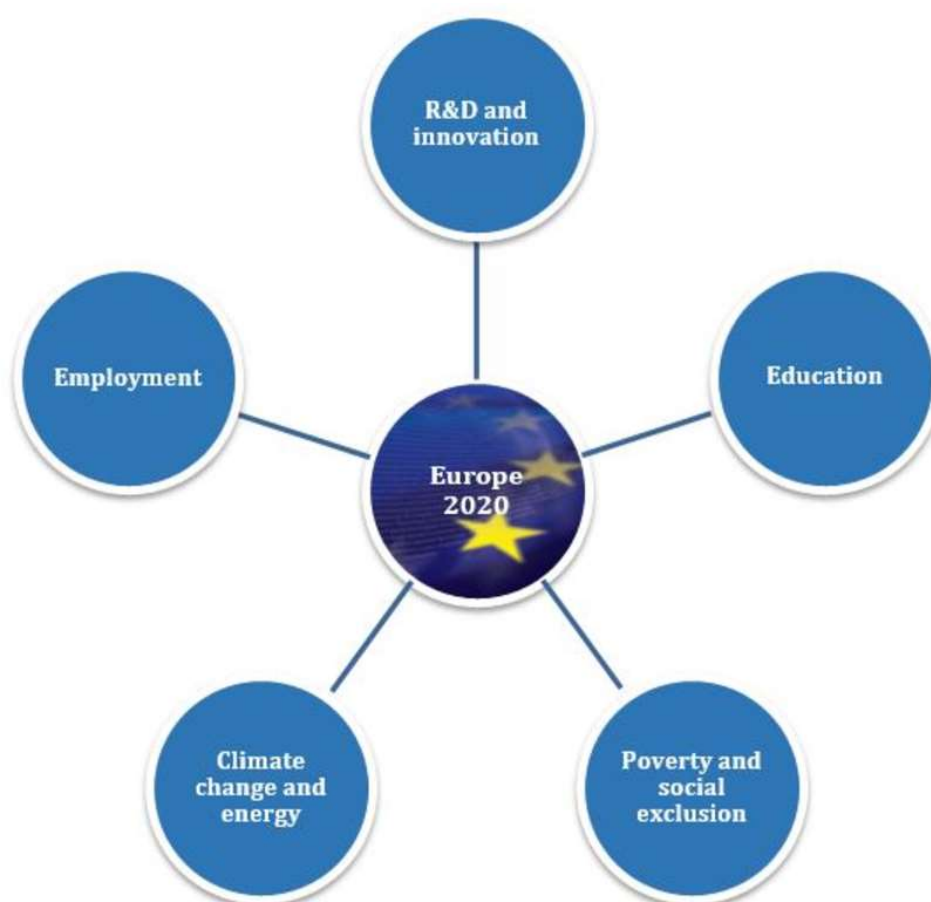
Source: EIF

¹ Capacity building is the “development of (or increase in) knowledge, output rate, management, skills, and other capabilities of an organization through acquisition, incentives, technology, and/or training” (BusinessDictionary, 2017).

Annex 27 : The three EU programmes falling into the EaSI programme and their budget. Source: (Atene KOM GmbH, n.d.)

EU Programme for Employment and Social Innovation (EaSI)		
PROGRESS	EURES	Microfinance and Social Entrepreneurship
Modernisation of employment and social policies	Realisation of a functioning European labour market	Support of microcredit providers and institutions that grant financial assistance to vulnerable groups and micro-enterprises
550 million €	160 million €	200 million €

Annex 28 : The five thematic areas of Europe 2020 strategy and its key priorities, targets and flagship initiatives. Source: (Eurostat, 2017d)



	Targets	Flagship initiatives
Smart growth	— Increasing combined public and private investment in R&D to 3 % of GDP — Reducing school drop-out rates to less than 10 % — Increasing the share of the population aged 30–34 having completed tertiary education to at least 40 %	— Innovation Union — Youth on the move (ended in December 2014) — A digital agenda for Europe
Sustainable growth	— Reducing greenhouse gas emissions by at least 20 % compared to 1990 levels — Increasing the share of renewable energy in final energy consumption to 20 % — Moving towards a 20% increase in energy efficiency	— Resource efficient Europe — An industrial policy for the globalisation era
Inclusive growth	— Increasing the employment rate of the population aged 20–64 to at least 75 % — Lifting at least 20 million people out of the risk of poverty and social exclusion	— An agenda for new skills and jobs — European platform against poverty and social exclusion

Annex 29 : Business and personal microloans in Europe for the period 2014 – 2015. Source: (EMN & MFC, 2016)

Both business and personal microloans are loans below € 25,000 that aim to support social and financial inclusion



BUSINESS MICROLOANS are targeted at micro-enterprises and vulnerable people who wish to go into self-employment but who do not have access to traditional banking services



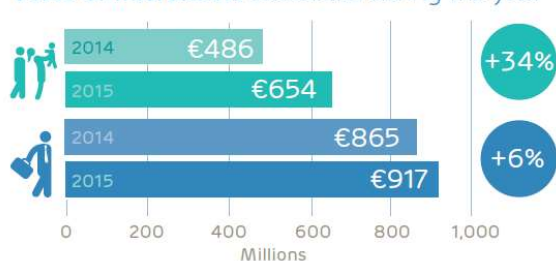
PERSONAL MICROLOANS address vulnerable clients' needs such as rent, personal emergencies and education as well as investments in their employability

Terms and Conditions

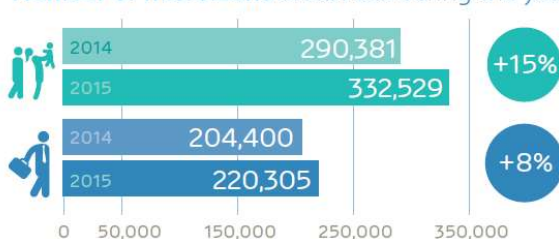
Average outstanding loan size	€ 7,947	Average outstanding loan size	€ 1,697
Average microloan term	41 months	Average microloan term	30 months
Average Annual Interest Rate*	10.7%	Average Annual Interest Rate*	19%

* Does not include additional fees (Average Fee: 2.5%)

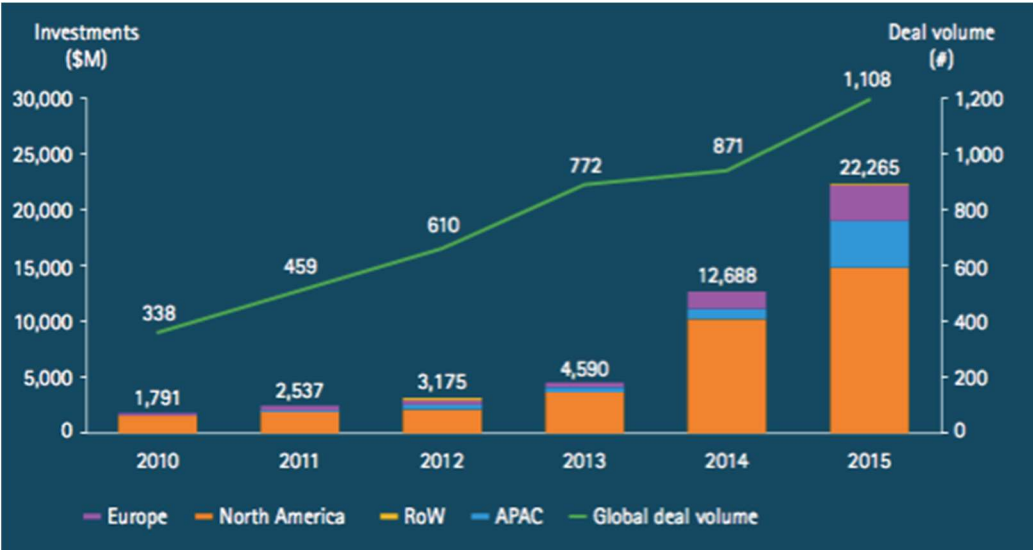
Value of microloans disbursed during the year



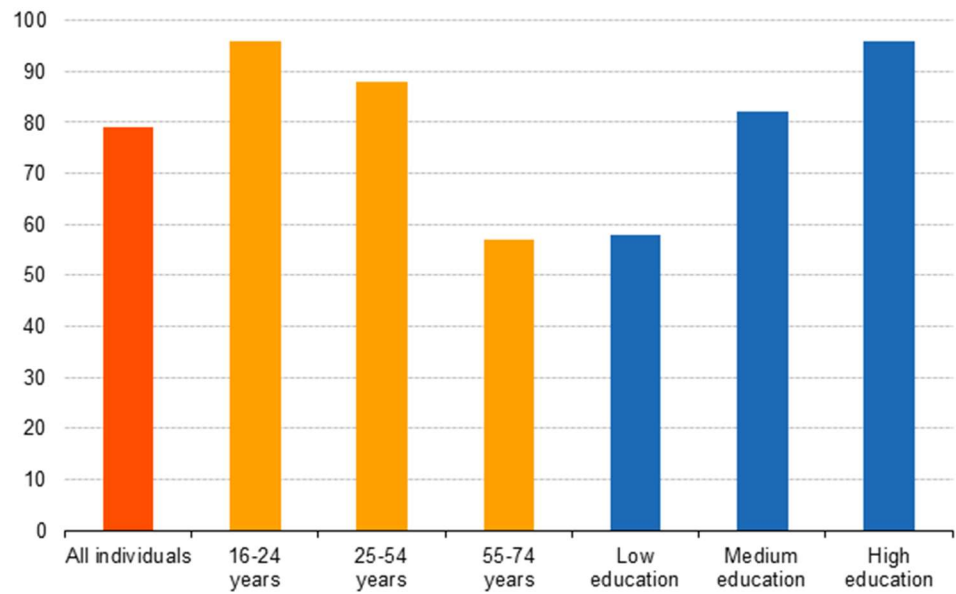
Number of microloans disbursed during the year



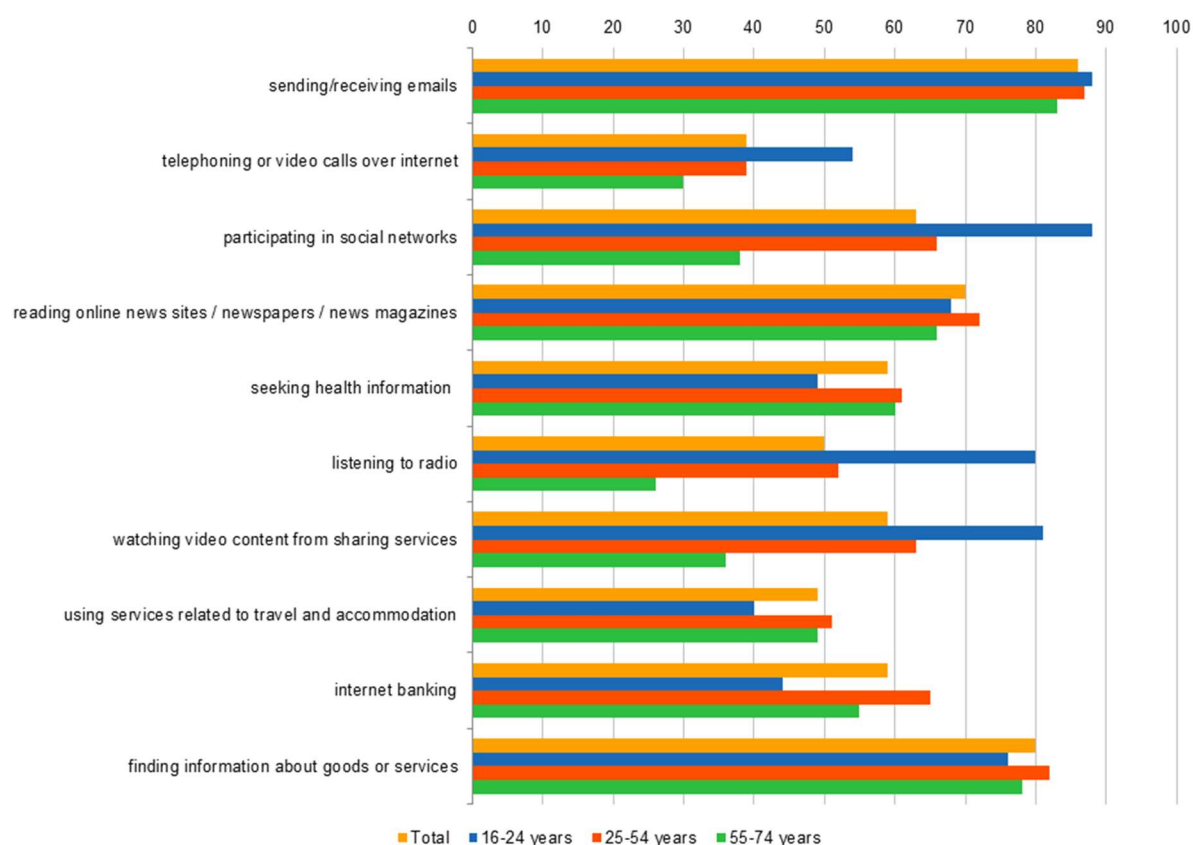
Annex 30 : Global Fintech Investment and deal volume from 2010 until 2015. Source: (Accenture, 2015).



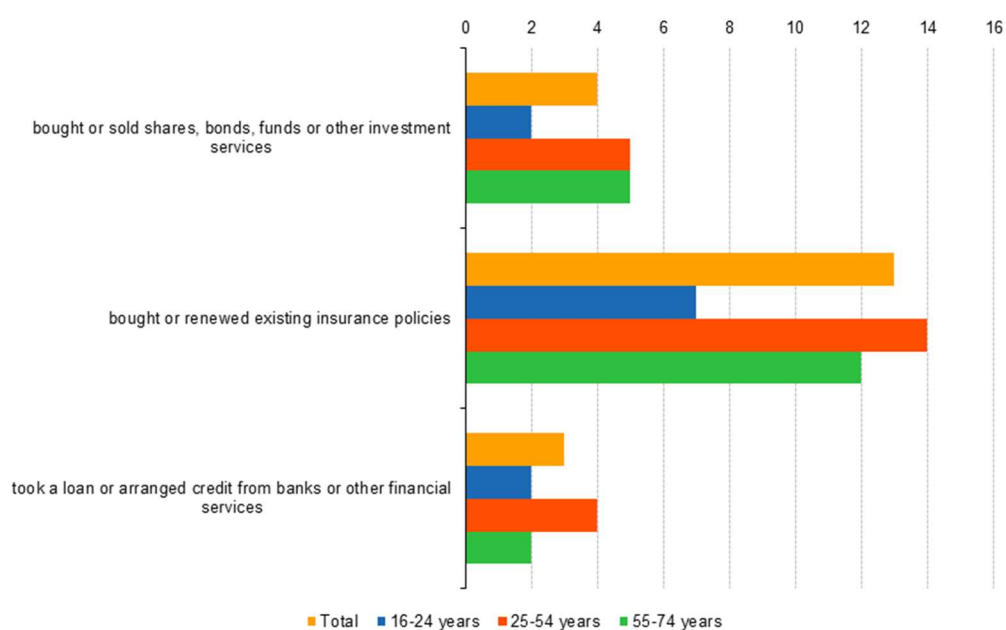
Annex 31 : Regular Internet users (> once a week), by age group and level of formal education, EU-28, 2016 (% of individuals). Source: (Eurostat, 2016)



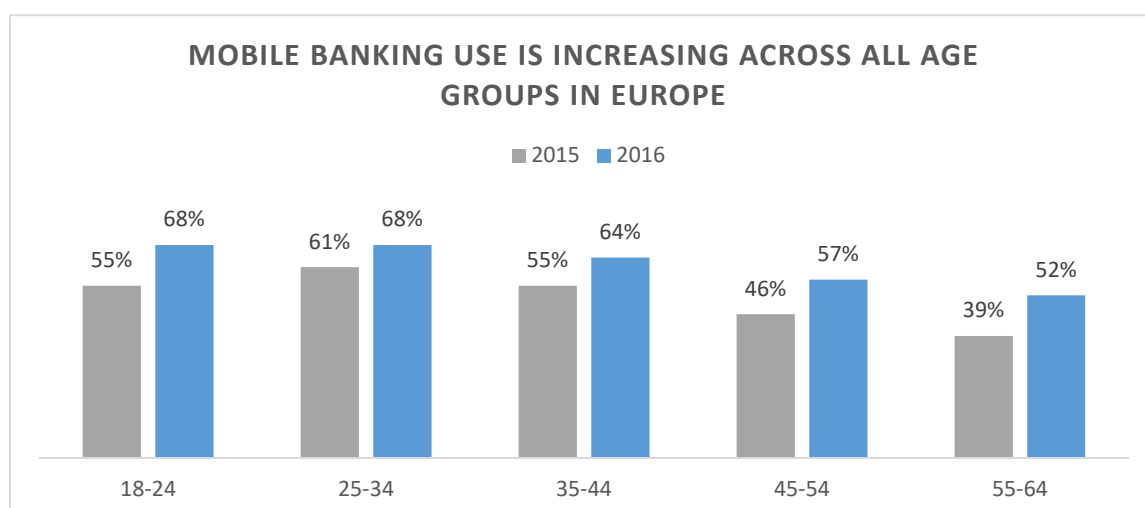
Annex 32 : Internet activities in the past three months by age group EU-28, 2016 (% of Internet users). Source: (Eurostat, 2016).



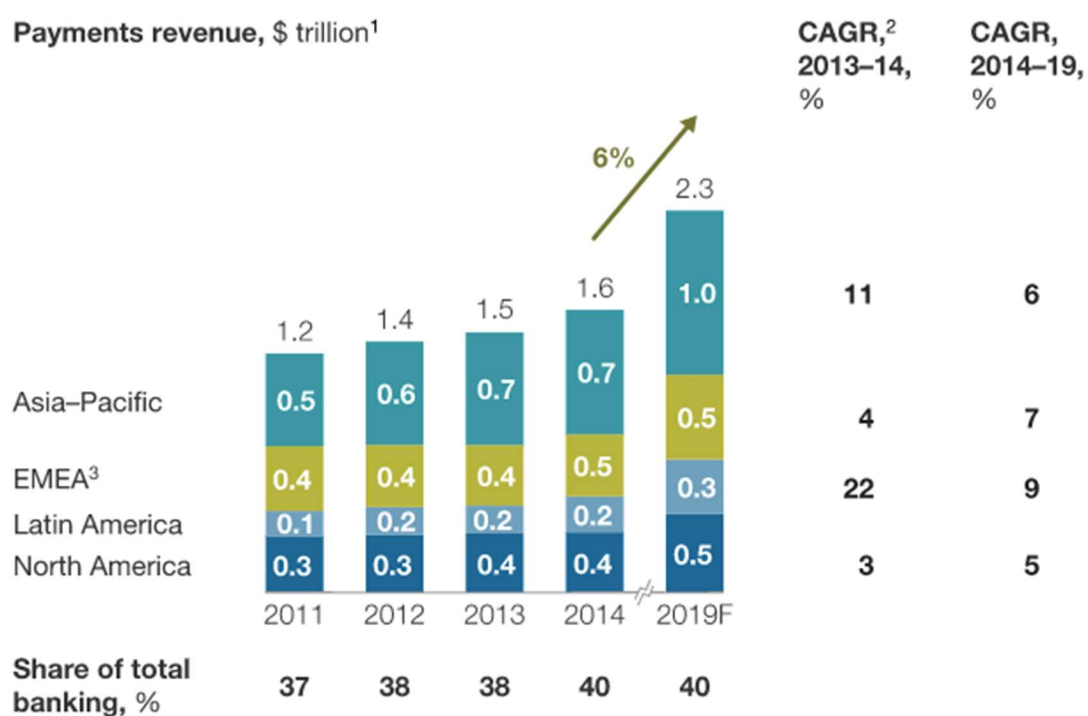
Annex 33 : Financial activities carried out over the Internet in the past twelve months by age group, EU-28, 2016 (% of Internet users). Source: (Eurostat, 2016).



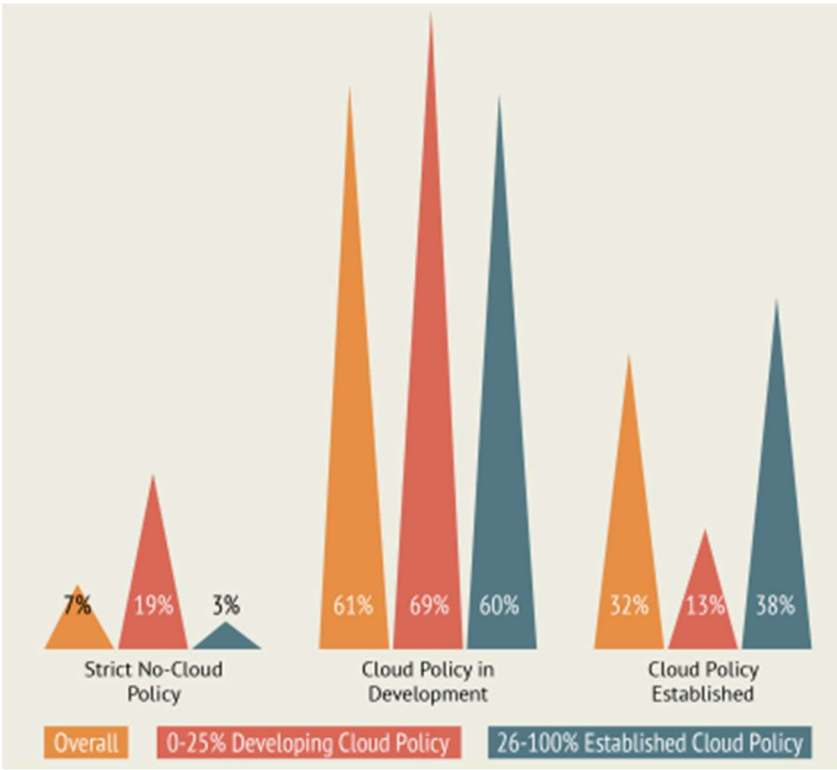
Annex 34 : Mobile banking users in 2015 and 2016, by age group (% of individuals). Source: (VISA Europe, 2016)



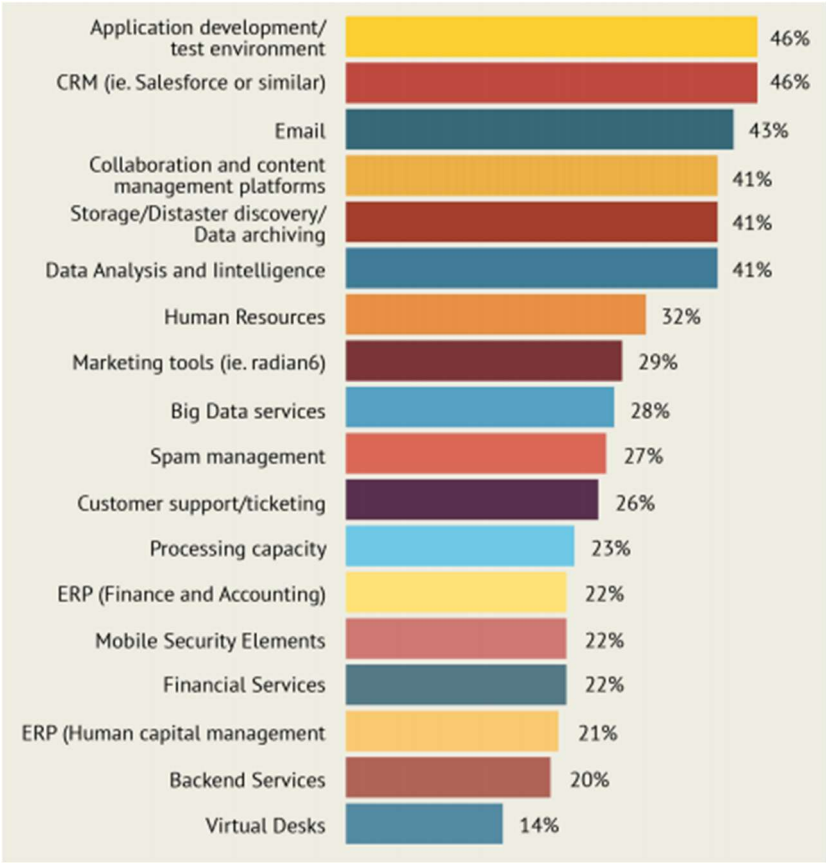
Annex 35 : Global payment revenues (in US\$ trillion), share of banking activities and growth expectations. Source: (Bansal, Bruno, Hou, Istace, & Niederkorn, 2015)



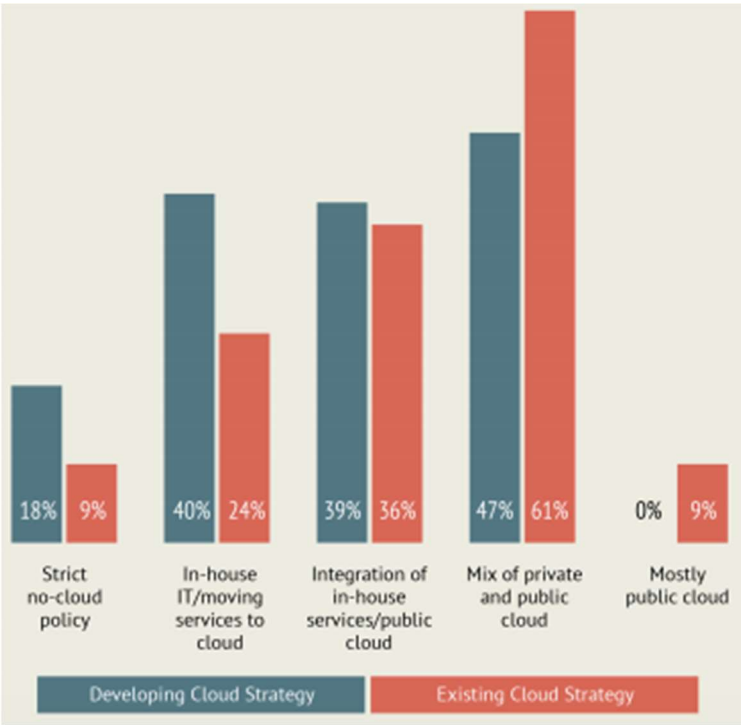
Annex 36 : Cloud strategy adoption according to digitalized customer base. Source: (Cloud Security Alliance, 2015).



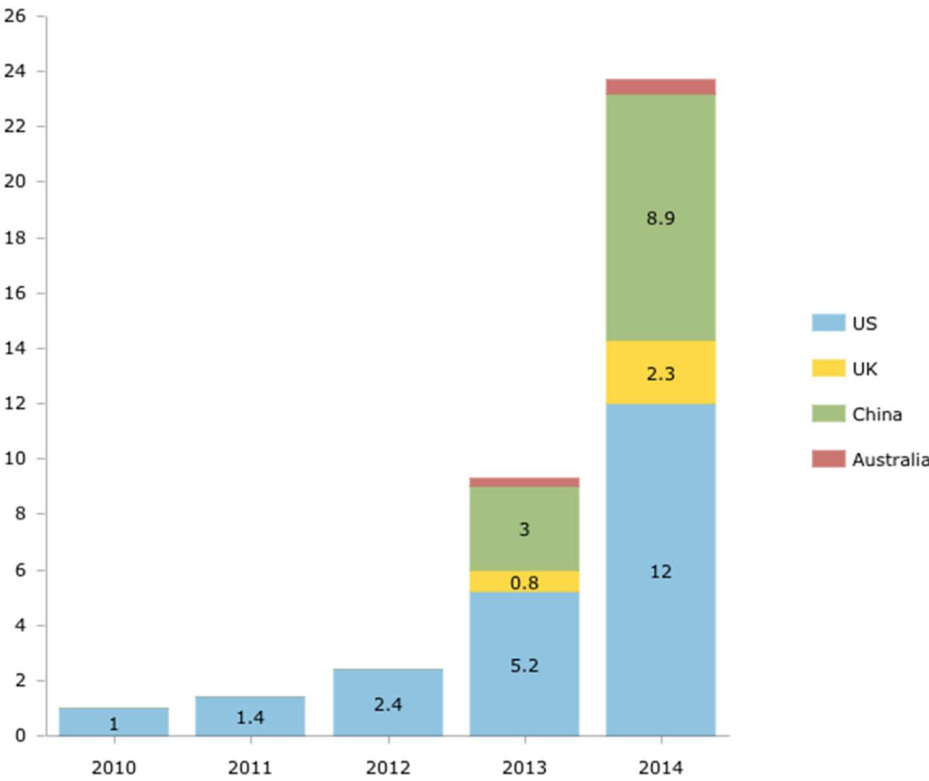
Annex 37 : Top Cloud applications adopted by financial institutions. Source: (Cloud Security Alliance, 2015).



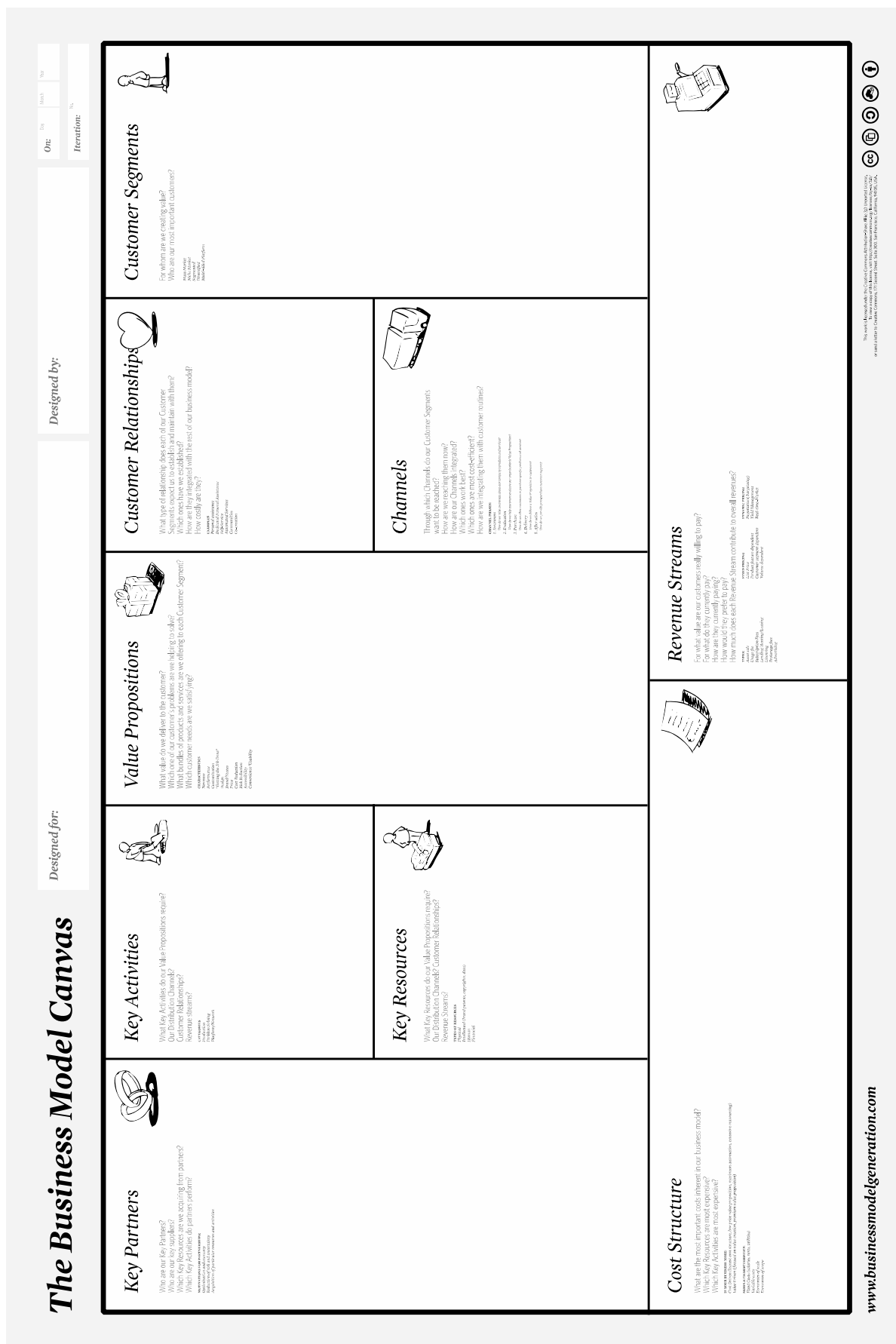
Annex 38 : Deployment models selected according to cloud strategy maturity. Source: (Cloud Security Alliance, 2015).



Annex 39 : Global Marketplace (P2P) Loan Issuance Estimates (\$billions). Source: (Morgan Stanley Research, 2015).



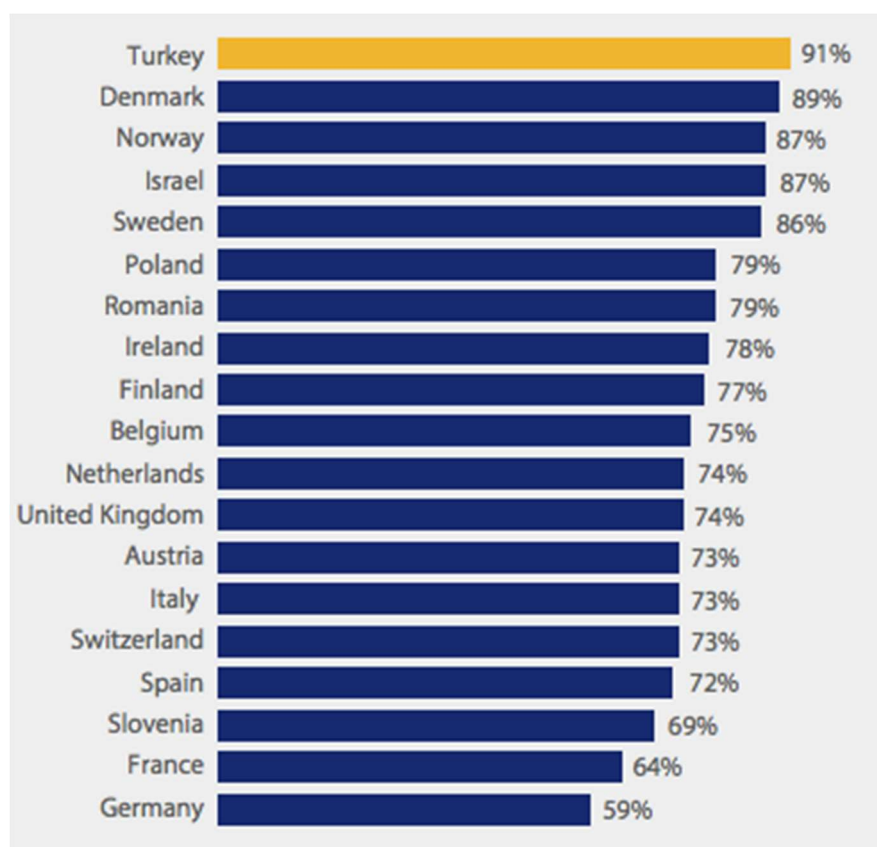
Annex 40 : The Business Model Canvas framework. Source: (Strategyzer, sd).



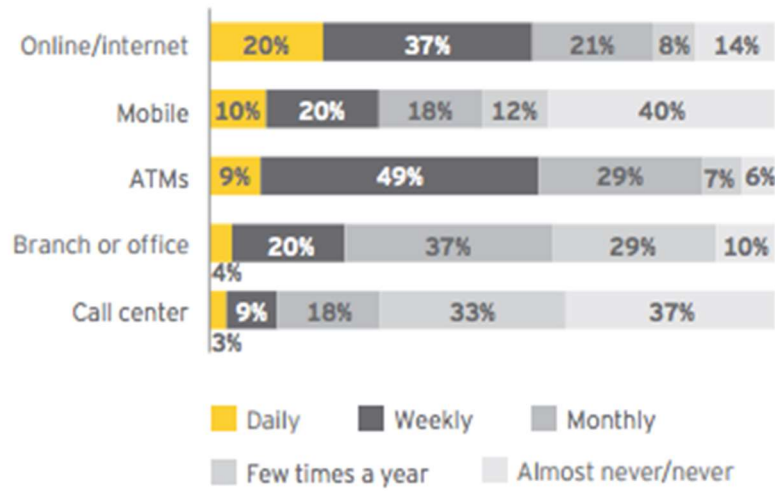
Annex 41 : Number of commercial banks per 100,000 adults and growth rate between 2007 and 2015. Source: (The World Bank Group, sd).

COUNTRY	2007	2008	2009	2010	2011	2012	2013	2014	2015	GROWTH
Luxembourg	98	95	91	89	86	83	82	80	77	-21%
Belgium	51	50	48	45	43	42	41	40	39	-25%
France	45	45	42	42	41	39	39	38	38	-16%
Netherlands	29	28	25	23	21	20	17	15	14	-51%
Sweden	24	24	23	23	22	22	22	21	19	-18%
Spain	104	104	99	96	88	84	74	70	68	-35%
UK	26	26	25	25	24	22	25	-		-5%
Norway	12	12	11	11	11	10	9	9	8	-37%
Denmark	52	50	46	41	39	34	30	28	25	-52%
Italy	59	63	60	58	58	56	53	51	49	-16%
Germany	16	16	16	16	16	14	15	15	14	-14%

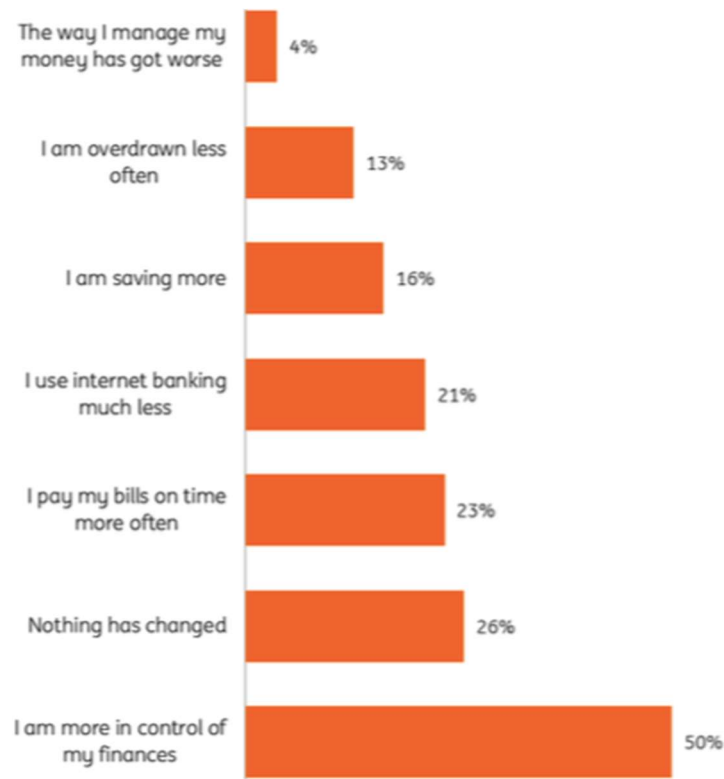
Annex 42 : % of individuals by country using mobile devices to make payments. Source: (VISA Europe, 2016).



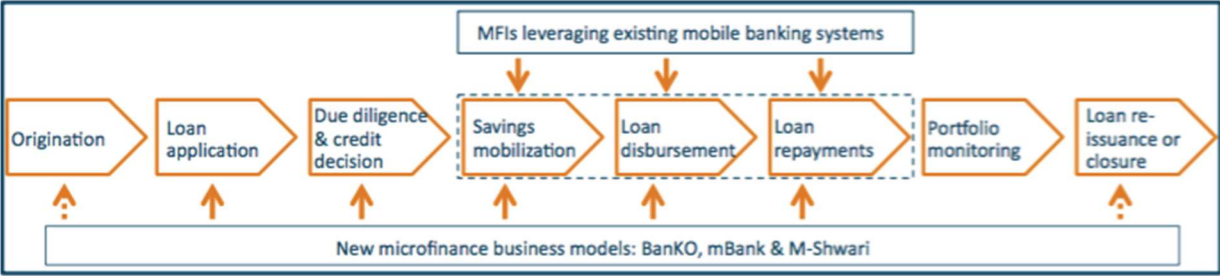
Annex 43 : Worldwide channel use (% who use channel at specified frequency). Source: (EY, 2014).



Annex 44 : Answers to the question “How has mobile banking changed the way you manage your finances?” Source: (Ipsos on behalf of ING, 2016).



Annex 45 : Mobile banking in the microfinance business process. Source: (Hanouch & Rotman, 2013).



Annex 46 : Main findings about the role of FinTechs identified in Chapter 3 and 4. Personal elaboration.

IMPACT OF FINTECHS ON VARIOUS BUSINESS MODEL DIMENSIONS	
1. Reduced operational and transaction costs	• Increased staff efficiency ○ Decreased physical contact in the office/field ○ Automation by digital functions ○ More time on value-adding activities • Infrastructure costs ○ Cut of branches: rental costs and payroll • IT costs ○ Lower software and hardware costs ○ Lower storage, maintenance, development costs ○ Lower cost of insightful customer information • Reduced overall transaction costs
2. Increased speed of process and delivery of services	• Faster digital interaction with customer • Ubiquitous access to IT system • Faster, real-time decision-making processes (e.g. scoring) • Faster speed to market, increased agility
3. Increased outreach and financial inclusion	• Accessibility beyond geographical scope • Increased visibility on social networks and the Web • Accelerated conversion rates via marketing campaigns
4. Increased diversification of products and services	• Cross-selling, up-selling and bundling products • Launch of new products and services facilitated by digital distribution channels → New revenue streams and increased customer loyalty
5. Improved customization and adaptation to customer needs	• 360° view over customer needs, behavior, preferences • Improved user experience: ○ Personalized services and interface content ○ Real-time information (e.g. alerts, updates) ○ Simplification, transparency, comparability • Improved customer convenience: ○ Integrated, omnichannel distribution (on-/offline) → Increased customer retention
6. Decreased face-to-face interaction and increased customer autonomy	• Decrease physical footprint with self-service functions • Autonomous banking activities, financial management and decision-making • Branches for complex and high-value activities
7. Improved risk management	• Improved portfolio management: - Increased portfolio visibility and control - Better-informed, evidence-based decisions (e.g. alternative credit scoring, predictive models) - Identification of hidden insights
8. Increased competition spurs continuous innovation	• New players enter the market of financial services with flexible, fast, low-cost, customer-centric structures • Innovative technologies and services become “basic” • Traditional players are forced to review their strategy

Annex 47: Agenda of the semi-structured interviews sent the day before the interview.

Agenda – Interview with [MFI name] on the [date]

This interview is carried out as part of our master thesis on the role of financial technologies (FinTechs) in the business model of microfinance institutions in Western Europe.

Objective: Understand the new technologies used by [MFI name] (in particular, mobile banking, cloud computing and data analytics) and discuss the extent to which certain benefits could be or become reality.

Interviewers	Pauline Vandeputte and Benoît De Toffol
Interviewee	[name + position]
Financial institution	[name]
Place and time	[Skype/adress + time]

Agenda of the interview:

1. Contextual setting
 - ✓ Introduction to our research topic, scope, methodology and motivations
 - ✓ Introduction of the interviewee and the MFI (type, mission, clients, products, structure)
2. Digital strategy of the MFIs
 - ✓ Technologies in place today and in the future
 - ✓ Overall digital strategy
3. Perception regarding the potential benefits on
 - ✓ Costs
 - ✓ Speed of service delivery and process
 - ✓ Outreach, accessibility
 - ✓ Diversity of products and services
 - ✓ Customization and personalization of offer
 - ✓ Customer relationship (face-to-face vs. digital interactions) and customer autonomy
 - ✓ Risk management
 - ✓ Pressure to innovate from increased competition
4. Obstacles to the implementation of digital solutions
5. Conclusion

Annex 48: Data sources of case studies

MFI	Observation	PRIMARY DATA		SECONDARY DATA
		Interviews		Documents
microStart (Belgium)	1 day	1 phone call – CEO 1 F2F interview – Agency manager 1 F2F interview – IT manager		Website Annual Report 2016 IT material Segmentation study
ADIE (France)	No	2 Skype interviews – International development & micro-insurance manager		Website Annual report 2016 Impact study
Qredits (The Netherlands)	No	1 F2F interview – IT & Innovation manager		Website General information IT material

Annex 49 : overview on the FinTechs adopted by each MFI of the case studies. Personal elaboration (based on the information shared by the MFIs).

IT RESOURCES	MICROSTART	ADIE	QREDITS
Loan tracking system	NOVA (on premise, via ADIE): processes after loan approval (calculations on amount, length, rate) and loan follow-up (payment, history, recovery actions)	Gaia (on premise, own development)	microNET (sort of CRM built for Qredits, private cloud, own development or with external developer): for loan-related processes
Customer Relationship Management	Salesforce (license via ADIE): processes before loan approval (client meetings, agenda, volunteers, project information) <u>Ongoing</u> integration with NOVA.	Salesforce (similar to microStart): currently used rather externally (for clients) than internally. Project is to digitizing all customer documents in order to have a complete overview on the history of the relation (p.9).	Salesforce: used for non loan-related products and services (website, coaching platforms, e-learning) because of security aspect of public clouds.
Other systems	- Excel tool: Grid for Analysis and Decision ("GAD") - Google drive for internal management and documents sent to clients	N/A	N/A
Client interaction	- F2F - No automatic emails - Mobile phone for call (e.g. end of the loan) & SMS alerts for loan disbursements and payments confirmation/failure	- F2F - Social network - Website and mobile (pay online, make appointments, ask for support, loan balance check)	- Visit at client's home/office for the screening, aim is to test their financial assumptions. - Visit after 1 year and questionnaire - Automatic emailing when collection fails/rejected
Online banking	Website is mostly informative; recent loan application simulator which predicts costs given the selected amount & length, but not synchronized yet with SF (i.e. automatic data entry) <u>Ongoing</u> : online payment, platform for questions, customer area, loan check.	Online loan application on website for screening/prior validation and client reception of quality.	100% online loan application on website: only way to apply for a loan. Additional functions: loan balance check, online payment (simple button in an email) and payment information.

...

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IT RESOURCES	MICROSTART	ADIE	QREDITS
Mobile banking	Stand-by for the moment: priority on back-end and website first and low perceived added-value at the moment.	Available to check loan balance, online payment, administrative changes, ask for BDS, make an appointment.	Today, rather informative. <u>Ongoing</u> for 2017 with same functions that website.
Credit scoring	<u>Pilot phase</u>: risk score (A to D) assigns a file to a specific level of decision for loan approval (i.e. loan officer, agency manager, operational director or credit committee). Not decision-tool yet, only support. The information used is confidential.	For any type credit (business or personal, first or fifth), a score is assigned to each file that will determine the decision ways and means. No external data. Data provided by clients on revenues, expenses, baking situation, etc. is used for scoring, but nothing of Big Data analytical tools are used.	On pilot for small loans (predicts probability of default), has been back-tested with historical data. Using external data (e.g. credit bureau, chamber of commerce, suppliers payment, previous loan repayment, juridical data) and internal data (own payment records). Objective score (from data) <u>and</u> subjective score (loan officers) to support final decision.
IT Personnel	1 (new) IT manager Accenture pro-bono resources	N/A	1 FTE and 2-3 external developers depending on the project.
Business Development Services	Video and documents teaching how to apply for a loan through videos and exercises which are already filling in the credit file. (Together with ADIE)	Videos help customers build their business plan through steps and related sheets to be filled in, after which they contact ADIE.	Mentoring and e-learning platform for writing a business or sales plan, for credit management. Upon completion, business plan is ready for a loan application. Very important part of social mission, 3 FTE working on it, a lot of investment.
Future developments	Automated and synchronized online application, platform for external partners to introduce online demands, platform for volunteers, inter-client platform, social impact point, etc.	Simulator and other functions for other services such as micro-insurance. Continually improve the technologies put in place such as online loan application, internal processes, etc.	Identification via banking account, online payment, mobile application, video calling,

Annex 50: Transcript of the interviews with microStart, Adie, Qredits, MFC.

INTERVIEW: MICROSTART IN BELGIUM (PAGE 173)

1A: MINUTES OF PHONE CALL WITH PATRICK SAPY, CEO (PAGE 173)

1B: INTERVIEW WITH BRUSSELS AGENCY MANAGER (PAGE 175)

1C: INTERVIEW WITH IT MANAGER (PAGE 187)

INTERVIEW 2: ADIE IN FRANCE (PAGE 206)

2A: PHONE CALL – FIRST MEETING (PAGE 206)

2B: SKYPE INTERVIEW - DEEPDIVE (PAGE 214)

INTERVIEW: QREDITS IN THE NETHERLANDS (PAGE 225)

INTERVIEW WITH VINCENT STULEN, IT & INNOVATION MANAGER (PAGE 225)

INTERVIEW 4: MICROFINANCE CENTRE RESEARCH (PAGE 247)

Interview: microStart in Belgium

1A: Minutes of phone call with Patrick Sapy, CEO

Microfinance Institution	microStart
Date & Place	4 th of May Phone call
Comment	The phone call took place for a first contact with microStart, during which we discussed the thesis subject and how microStart could fit our requirements. The call was unfortunately not recorded.
Interviewee	
Name	Patrick Sapy
Position	CEO microStart

1. Intérêt pour le mémoire

- Explication du sujet du mémoire et de la démarche : il semble que les Fintechs soient de plus en plus utilisées par les IMF dans les pays en développement : quid de l'Europe ? Recherche par étude de cas.
- Il est très intéressé par notre travail et pense qu'il pourrait être intéressant pour une institution comme la leur. Il a mentionné entre autre le fait que MicroStart opérait depuis maintenant 6 ans (maturité) et avait à ce jour distribué plus de 3.000 microcrédits (volume devenant intéressant). MicroStart cherche à diversifier leur offre et les moyens d'atteindre les clients, et il voit la technologie comme un 'enabler'.

2. Points soulignant la différence entre les pays en développement et développés

- En Europe le **modèle financier est vieillissant mais il existe**: il y a une densité bancaire importante et préexistante aux institutions de microfinance. Les banques en sont en quelque sorte les reines.
- En Europe, il y a un problème de **masse critique** pour les FinTech car leur business model est souvent basé sur l'atteinte de cette masse critique, or le marché européen est bien moins important. En Belgique le marché est de 20.000 personnes par an.
- En Europe, bien que la technologie et l'infrastructure soient plus avancées dans l'ensemble, les **clients de microcrédits n'ont eux pas spécialement de smartphone** (c'est par exemple le cas de la majorité des clients de MicroStart qui n'ont pas de smartphone). Les solutions qui sont proposées (notamment à MicroStart) par des

FinTech demandent de posséder un smartphone pour le téléchargement d'une app mais cela ne concorde pas avec les clients. microStart a donc essayé de créer un partenariat avec Proximus et BNP pour offrir un service mobile sms fonctionnant sur les GSM, comme en Afrique. Ça n'a pas pris: problème de propriété et d'obligation d'être chez Proximus pour les clients qui ne veulent pas être forcé d'être chez un opérateur.

- De plus, la majorité des clients serait intéressée par un service de transfert de crédit et de revenu comme celui qu'offre la startup française 'EtVoilà' (nom donné par Sapy).

3. Aspects intéressants des technologies:

- 'une offre pour le public qui soit **simple**
- une offre **technologique** pour les **plus démunis**
- une technologie pour **l'inclusion financière**
- plus particulièrement (et pour MicroStart), une technologie pour **distribuer les produits**, proposée par l'institution et par des partenaires, et ce de manière à **augmenter le volume**.
- Il a aussi mentionné le '**Scoring comportemental**' comme ce que 'Microbank' en Espagne fait ou a mis en place.

4. Proposition:

- Selon Mr. Sapy, il serait intéressant de rencontrer sont les gens de terrain (en plus de la team qui s'occupe de la recherche et qui serait sûrement intéressée par notre travail)
⇒ Il nous propose de venir s'immerger une journée sur le terrain.

1B: Interview with Brussels Agency Manager

Microfinance Institution	microStart
Date & Place	12th of July 2017 Brussels Agency (Rue de Fiennes 77 - 1070 Bruxelles)
Comment	The interview took place during an immersion day at the office. We assisted a credit decision meeting in the morning and conducted the interviews for our research in the afternoon. The interview was conducted in French.
Interviewee	
Name	Adrien Lippolis
Position	Team Leader of microcredit officers at Brussels Agency (1 year)
Experience	Previously microcredit officer for 2.5 years

Pauline Vandeputte et Benoît De Toffol (P&B) : Pourriez-vous d'abord nous présenter microStart de façon générale ? Quelle est sa mission ?

(1'06) microStart finance d'abord les exclus bancaires par des crédits classiques parce qu'on estime que tout le monde a droit à une initiative économique, que ce n'est pas parce que des personnes viennent d'arriver en Belgique ou n'ont pas les garanties suffisantes, ou ne savent pas faire un plan financier qu'ils ne peuvent pas démarrer une activité. Par exemple, quelqu'un qui a travaillé toute sa vie dans un restaurant en Syrie, il pourrait très bien ouvrir ici et ça pourrait très bien fonctionner. Il a la motivation et l'énergie, mais par le simple fait qu'il n'ait pas de connaissances administratives ou l'argent nécessaire pour démarrer, il ne peut pas le faire. Et nous notre objectif est de moins se baser sur les chiffres, comme les banques qui encodent les données de bilan sur internet et qui ont un client vert ou un client rouge. On s'intéresse plus à la personne, à son expérience, et on voit si on peut faire confiance à ce personnage et on prend plus de risque par rapport aux banques habituellement car c'est un démarrage d'activité, il y a moins de garanties, même si on essaie quand même d'en prendre un maximum car il devra rembourser le crédit.

(2'25) microStart existe depuis 6 ans. A la base, c'est l'ADIE qui est en France depuis 25 ans, qui a aidé à la création microStart en Belgique. On est soutenus par BNP chez qui on emprunte. Mais il y a aussi le Fonds d'Investissement Européen qui garantit une partie de nos pertes. Cela

veut dire que si on ne rembourse pas, eux rembourseront un même montant emprunté mais pas la totalité, il faut être super vigilant par rapport à ça. Je peux vous envoyer le rapport annuel de 2016 comme ça vous l'avez.

(3'23) Au niveau technique, il y a 2 programmes principaux qu'on a hérité de l'ADIE parce qu'ils fonctionnaient déjà avec ce système-là. Ce sont Salesforce pour la gestion des clients, et NOVA pour la gestion des crédits, et le travail de Jente Minne [IT & Tools Manager] actuellement est de plus concentrer les choses dans Salesforce parce qu'il y a beaucoup plus de possibilités de développement qu'avec NOVA qui a été créé par l'ADIE mais qui est très limité pour le développement de certains rapports par exemple qui ne fonctionnent pas, et ces 2 programmes communiquent entre eux pour éviter de tout ré-encoder.

(4'04) Salesforce est un programme connu et utilisé par pas mal de boîtes et c'est là qu'on note les rendez-vous, le calendrier des conseillers. Bientôt, on va pouvoir encoder tous les bénévoles qui sont pour l'instant sur un fichier Excel à part et c'est un peu efficace. Donc tous les clients et les conseillers sont là-dessus, on peut associer un client à un conseiller, organiser des rendez-vous. Ça gère tout ce qui est Customer Relationship Management. Tout ce qui concerne le projet on le met aussi dedans. Une fois que le crédit est accepté, le conseiller va importer le projet vers NOVA où on va faire toute la gestion du crédit (montant, durée, calculer l'échéance, le type de produit qui a été accepté). Les crédits vont jusqu'à 15.000 € et il y a 5-6 produits différents en fonction du montant. NOVA est utilisé pour tout le suivi du crédit, on voit tout de près : on peut voir l'historique, quand cela [le remboursement] a été décaissé, quand on voit que le premier mois ça n'a pas passé sur le compte mais qu'il a remboursé 8 jours après avec un virement, etc.

P&B : Les rappels sont-ils envoyés automatiquement ou le client est-il totalement autonome dans la gestion de ses paiements ?

(5'45) A la base on fonctionnait avec une boîte qui envoyait des lettres papiers qui étaient envoyées automatiquement mais on a arrêté. Maintenant ce sont des sms envoyés automatiquement, mais il faut toujours vérifier les coordonnées dans Garfield. Le sms est envoyé quand le crédit est décaissé pour signaler que ça bien été fait et quand les domiciliations ne passent pas, par exemple s'il manque 1€ sur le compte, aucun prélèvement sera fait et le client et sa caution recevront un sms stipulant qu'il n'y avait pas assez d'argent sur le compte et qu'il faut faire le virement rapidement sur tel compte de microStart. A la base, il y avait même une lettre papier qui était envoyée quand le crédit était clôturé, cela ne se fait plus maintenant, on les appelle en général à la fin du crédit pour voir comment ça s'est passé et les remercier.

(6'58) C'est aussi dedans qu'on crée toutes les actions de recouvrement qu'on va faire. Si on appelle un gars en lui disant qu'il n'a pas payé ce mois-ci et lui demandant ce qu'il se passe, on le note là-dedans, et si le client nous dit qu'il paiera dans une semaine, un rappel se met automatiquement dans NOVA pour qu'il soit envoyé 7 jours après, et on note si l'action a été effectuée.

P&B : Et du côté du client, à quels services en ligne a-t-il accès?

(7'30) Pour le moment rien. Il y a le site internet mais un site statique, où il ne se passe rien, c'est juste à titre informatif. A terme, il y a des développements qui se font pour qu'ils puissent payer en ligne et avoir accès à une plateforme pour poser des questions. A un moment, on a pensé à une appli mais elle est en standby pour le moment.

Sur le site, il peut déjà faire une demande de crédit en ligne avec un simulateur. Il dit le montant [du crédit qu'il souhaite] et clique sur 'demander votre crédit en ligne'.

P&B : Tous les détails de la demande de crédit sont-ils alors requis?

(8'27) On essaie de plus en plus qu'ils s'autonomisent, qu'ils nous envoient le plus d'information possible [via le formulaire en ligne] car plus ils remplissent, plus c'est facile de traiter la demande par la suite car on a déjà pas mal d'information. Après, au niveau du process, concrètement aujourd'hui entre une personne qui donne aucune information et quelqu'un qui remplit tout le dossier, elle viendra quand même en agence pour avoir un contact visuel au moins une fois. On ira peut-être un peu plus vite parce qu'on ne doit pas parcourir toutes les questions, mais on aime bien reparcourir le projet, être sûr que c'est bien lui qui l'a noté, s'il comprend le projet dans lequel il se lance ou si c'est un ami à lui qui a rempli en ligne et qui ne comprend pas grand chose à l'activité.

P&B : Un tout nouveau client est-il aussi capable de remplir cette demande en ligne dès la première fois?

(9'12) Cela dépend. Certains entrepreneurs ont été en activité depuis dix ans et ont été en banque toute leur vie et aujourd'hui ne peuvent plus faire de crédit bancaire parce qu'il y a eu un souci. Ceux-là sont à l'aise avec les demandes en ligne et ça va vite.

P&B : Pourrait-on imaginer octroyer un crédit à un client sans jamais l'avoir vu ?

(9'36) Non. De tout façon ça passe par un rendez-vous. Dans les étapes, il y a toujours un rendez-vous d'accueil par téléphone ou en entrée spontanée à l'agence. On lui explique ce qu'on fait, les documents à apporter, le fait qu'il ait besoin d'un garant car ce n'est pas habituel en Belgique. On fait une simulation de crédit pour être sûr qu'il soit au courant des montants. S'il est d'accord, on fixe un rendez-vous d'instruction, c'est la deuxième étape. En rendez-vous d'accueil, on voit aussi s'il a besoin d'accompagnement, de suivre une formation, s'il a besoin d'accès à la gestion, s'il voudrait voir quelqu'un pour son plan financier si c'est un starter pour voir si ça tient la route. S'il a des dettes, on travaille avec le Centre d'Entreprises en Difficultés pour voir si ça sert à quelque chose de le refinancer ou s'il vaut mieux pas car il aura encore plus de dettes qu'avant et cela ne va pas l'aider. On travaille avec plusieurs partenaires internes pour voir ce dont il a besoin.

(10'33) Quand il est prêt pour la demande de refinancement, on fixe un rendez-vous d'instruction lors duquel on va faire la demande en tant que telle et on va poser des questions sur la personne, sur le projet, sur l'adéquation entre les deux, sa situation personnelle. On introduit une feuille d'instruction qui permet de faire la GAD [Grille d'Analyse et de Décision] que vous avez vu tout à l'heure en format Excel, qui est présenté au comité. A terme, cette GAD sera liée dans Salesforce, ce qui permettra de sortir directement la GAD sans devoir réencoder des données et dans Salesforce et dans Excel, ce qui n'est pas le cas aujourd'hui. Puis une fois que le comité est passé, on appelle pour la signature et quand le contrat est signé, le crédit est envoyé et après c'est de la GRC [Gestion Relation Client], avec les rappels [de paiements] quand il faut.

P&B : Et s'il veut renouveler une demande de crédit, il faut repasser par ces mêmes étapes ou peut-on imaginer que tout soit fait en ligne ?

(11'36) Il y a toujours un rendez-vous physique. Dans ce cas [de renouvellement], on saute le rendez-vous d'accueil, les documents sont un peu différents car on essaie de voir comment cela s'est passé depuis la dernière fois. Le rendez-vous physique peut se faire éventuellement à son magasin pour qu'on puisse se rendre compte de comment ça se passe. Le contact reste important pour une demande de crédit, mais pour certains clients on pourrait en effet imaginer que tout puisse se faire en ligne.

P&B : Et les documents qu'ils doivent vous donner sont-ils physiques ou peuvent-ils être digitaux ?

(12'13) Ca peut être digital, par mail, mais pour la signature ils doivent être là physiquement, ici, à une autre agence ou chez un de nos partenaires pour éviter les fausses signatures. Certains clients signent pour leur garant, car le garant n'est pas toujours très impliqué. Souvent, le client lui demande vaguement de signer un papier pour qu'il puisse faire une demande. Et nous on aime bien voir le garant et lui dire exactement quel est son rôle, et ça diffère parfois assez fortement de ce que nous a dit le client. Du coup, le faire venir à l'agence permet de lui montrer et faire signer le papier. Ca montre qu'il a bien compris ce à quoi il s'engage plutôt que s'il l'avait fait à distance et on est jamais très sûr. On appelle aussi, mais on préfère toujours qu'il y ait un rendez-vous physique lors de la demande et de la signature, et ça on ne compte pas changer. Il y a donc minimum 2 rendez-vous physiques.

P&B : Par rapport au credit scoring mentionné toute à l'heure, est-ce quelque chose que vous essayez de mettre en place?

(13'34) Au tout début, il y a 6 ans, tout passait par le comité de crédit. Après 2-3 ans, on a établi la délégation de décision, qui était le fait que certains crédits, notamment de moins de 7.000€ pour des personnes qui n'avaient pas de fichage et étaient déjà en activité, puissent passer par une procédure plus simple. C'était une personne qui décidait : on lui envoyait par mail, il répondait et c'était bon. Et maintenant, il y a cette idée de scoring où il y a 4 pouvoir/niveaux de décision: le conseiller lui-même, le manager de l'agence, le pôle décision (directeur opérationnel) ou le comité de crédit. Certains critères permettent de mettre un scoring de A à D et ainsi de décider du pouvoir de délégation. C'est ce qu'ils ont essayé de faire par Excel et ce qu'ils vont continuer à faire via Salesforce. A priori, ils ne veulent pas en dire beaucoup plus aux conseillers pour qu'ils ne commencent pas à jouer avec les paramètres et savoir ce qu'il faut exactement [pour avoir un certain scoring], comme c'est en général le cas dans les banques.

(14'47) Donc le conseiller fait sa GAD sur Excel pour l'instant, il clique un bouton qui calcule plein de trucs en fonction de ce qu'il a mis et qui lui dit ensuite si la décision de ce dossier ira soit à lui-même, dans quel cas il doit juste accepter la demander, soit il devra être présenté à une personne différente.

P&B : Dans la GAD vue ce matin au comité de crédit, certains critères tels que la confiance clients sont évalués sur une échelle de 1 à 5. Entrent-ils dans le scoring ?

(15'15) En effet, dans la GAD il y en a des différents [critères], il y en a qui vont de 1 à 5 et j'imagine que certains entrent dans ce scoring à priori. Ce GAD-là ça fait 4-5 mois qu'on [les conseillers] l'utilise. Ils ont récemment envoyé un explicatif pour voir à quoi correspond chaque

stade comme ça les conseillers ont la même échelle, on essaie de s'harmoniser la-dessus. Donc oui ces critères là jouent sans doute [dans le scoring] mais je ne sais pas comment exactement.

(16'08) Pour la gestion des documents, on utilise Google Drive, le troisième système, pour toutes procédures internes, documents envoyés par les clients par dossier, et le client n'y a pas accès.

P&B : Qu'en est-il de l'interaction avec le client pour le moment ?

(16'42) C'est donc physique, téléphonique par les appels et les sms, et par mail. On utilise pas mal de mails-types envoyés directement selon nos besoins, mais il n'y a pas de mails automatiques. C'est personnalisé à chaque fois. Ce sont donc les trois voies de communication pour l'instant.

(17'15) Pour les bénévoles, il y a une plateforme bénévole qui existe mais qui n'est pas utilisée du tout. Il y a une page Facebook qui est un peu plus utilisée pour les contacter et leur dire par exemple que « j'ai une telle personne qui a besoin d'un avis comptable sur déclaration », les bénévoles voient l'information et réagissent. Mais c'est uniquement à Bruxelles car on a 40 bénévoles et leur envoyer un mail était ennuyant, et avec Facebook on voit qui a vu l'information et qui a répondu rapidement.

P&B : Au niveau technologique, il y a-t-il quelque chose qui pourrait vous aider au quotidien pour mieux répondre aux besoins des clients ou à en atteindre plus? Des opérations pourraient-elles être automatisées ?

(18') On a déjà fait le travail pour voir tout ce qui serait utile pour le travail des conseillers, il y a beaucoup de choses qui pourraient être rapidement mises en place, comme les gens qui nous appellent pour savoir combien il leur reste sur leur crédit, quel est le numéro de compte. Mais certains clients continueront toujours à nous appeler, même si on met des outils en ligne en place. Les clients ont tous un téléphone mais pas nécessairement une adresse mail, ou ils n'ont pas l'habitude d'aller sur internet. Je dirais que 40-50% des gens n'utiliseraient pas du tout ces outils en ligne. La vérification du solde restant du crédit est un développement déjà en cours, via un espace client avec un identifiant et un mot de passe.

P&B : Pour revenir sur votre application mobile, pour quelle raison est-elle en standby ?