

# An outline of financial inclusion through countries

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### ***Abstract***

*Financial inclusion concerns the expanding of the access to financial services to which, currently, it isn't possible to accede. It is an important objective in developing countries and a priority policy in industrialized countries. The aim of this paper is to outline the financial inclusion through different countries. The research is developed analyzing data published by the Global Findex Database in 2011, and applying a Cluster Analysis that carries out typologies of clusters of countries which are homogeneous inside but heterogeneous between them. The results of this research put in evidence a certain proximity among developing countries, which haven't an inclusive financial system, and industrialized countries that have an inclusive financial system.*

**Keywords:** Cluster analysis, Ethical finance, Financial exclusion, Financial services, Microfinance.

**JEL Classifications:** C38, G20, G21, G23.

### **1. Introduction**

Financial inclusion is an important objective in many countries. In fact, well-functioning financial systems are useful for a vital purpose, offering saving, credit, payment, and risk management products to people with a wide range of needs.

Inclusive financial systems - allowing a broad access to financial services - are particularly reliable on the benefit of poor people and of other disadvantaged groups. Without any inclusive financial systems, there are problems for poor people and Small and Medium Enterprises (SMEs). Poor people must rely on their own limited savings to invest in their education or to become entrepreneurs; SMEs must rely on their limited earnings to pursue promising growth opportunities. This, can contribute for a persistent income inequality and for a slower economic growth (Beck et al., 2000; Demirguc-Kunt and Levine, 2009; King and Levine, 1993; Klapper et al. 2006; World Bank, 2008).

Indeed, financial inclusion can bring very significant benefits. It is such a stimulus to the poverty and to the inequality reduction, to encourage the social and economic growth of the less well-off. Particularly, financial inclusion contributes for the poverty reduction for two main reasons:

- 1) the availability of appropriate and promising financial services has a direct positive impact on the welfare of the poor;

- 2) the improving of the financial system functioning stimulates the economic growth and, indirectly, reduces the levels of poverty and inequality.

In substance, financial inclusion aims at overcoming forms of social exclusion concerning the employment, the housing, and education and health services.

Financial inclusion has also an indirect impact on economic development when it allows a greater number of people to support aggregate demand. In addition, financial inclusion provides a contribution to stability and restores confidence in the banking and financial systems damaged by the global crisis. Inclusive financial systems are characterized not only by lower levels of inequality, but also by dynamic economic systems.

The aim of the paper is to summarize the financial inclusion phenomenon and to investigate how patterns of financial inclusion vary through different countries.

From the methodological point of view, the research is developed by means of collecting and analyzing data published by the Global Financial Inclusion (Global Findex) Database<sup>1</sup> in 2011.

The study, first of all, provides a brief overview of financial characteristics of regional aggregations (East Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, North America, South Asia, Sub-Saharan Africa).

Then, it offers an outline of the financial inclusion through different countries concerning formal accounts, payments, savings and credit. It is used a Cluster Analysis to carry out some typologies of clusters of countries which are homogeneous inside but heterogeneous between them by the financial characteristics taken into consideration.

## **2. Financial inclusion: theoretical and pragmatic insights**

Financial inclusion is the set of measures to promote the improving and the full financial integration of people excluded from the financial sector because they are in a situation of economic and social difficulties (Anderloni, 2003; Kempson et al., 2000).

The term financial inclusion is part of the wider concept of social inclusion because the main objective is to promote the integration or reintegration of outcast persons who live in a situation of social exclusion. Indeed, social discrimination increases the distance between excluded people and

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<sup>1</sup> The World Bank's Development Research Group, with a 10-year grant from the Bill & Melinda Gates Foundation, has initiated the Global Findex Database. As the first public database of indicators that measure people's use of financial products in the economies and through the years, the Global Findex Database fills a wide gap in the financial inclusion data landscape. Covering a range of topics, the Database can be used to follow financial inclusion policies globally and to develop a deeper and more nuanced understanding of how people all over the world save, borrow, make payments, and manage risks.

the social, economic and financial reality around them. Acting on the marginality and supporting the integration, it is possible to satisfy those requirements that allow a person to accede to the financial system. The appropriate access to financial services, is essential for many aspects of economic and social life (i.e. for consumption, saving, economic development, etc.).

In literature, financial inclusion (or, alternatively, financial exclusion) has been also defined in the context of a larger issue of social inclusion in a society.

When Leyshon and Thrift (1995) defined the concept of financial exclusion, they refer to those processes that serve to prevent certain social groups and individuals from gaining access to the formal financial system. A study of financial exclusion, in the UK, carried out by Kempson and Whyley (1999), showed that 7% of households lacked any mainstream financial products.

According to Sinclair (2001), financial exclusion means the inability to accede to necessary financial services in an appropriate form. Exclusion can prove to be a result of problems with access, conditions, prices, marketing or self-exclusion in response to negative experiences or perceptions. Carbo et al. (2005) defined financial exclusion as the great inability of some social groups to accede to the financial system.

Financial inclusion is a shared theme not only in developing countries but also in the more economically advanced countries owing to the need (Anderloni and Carluccio, 2006):

- 1) to facilitate the credit access to individuals without any traditional guarantees;
- 2) to make possible the granting of small loans;
- 3) to finance micro productive activities;
- 4) to reduce the usury.

This necessity is more evident in the new century owing to the global financial crisis, that has increased both poverty and marginal economy. As a consequence, financial sector reforms, that promote financial inclusion, are increasing and they are at the centre of the international development agenda both for policy makers and for the development of institutions at the global level. The United Nations (UN) have declared 2005, the Year of Microfinance, and the recent Pittsburg and Korea G-20 communiques increasingly point out the importance that this topic has gained in the international arena. The Nobel Institute awarded the Nobel Peace Prize to the founders of microfinance, Muhammad Yunus and the Grameen Bank, in 2006. New international bodies, such as the Alliance for Financial Inclusion (AFI), have emerged, and whose primary objective is to advance financial inclusion for poor people all over the world. The International Monetary Fund (IMF) and the International Finance Corporation (IFC) also pay an increasing attention to this debate. The IMF has launched a new database on financial inclusion, and the IFC, together with

Consultative Group to Assist the Poor (CGAP) and AFI, has been leading for some years the G-20 discussion about the financial inclusion for households and SMEs.

The phenomenon of the financial inclusion is a direct consequence of the existence of people who, for social, economic and cultural characteristics, may meet with some difficulties and barriers to accede, and/or, to use services and products offered by the traditional financial sector, that contributes to manage normal activities of daily life in the society which they belong to. The poorest people often have a modest, uncertain and irregular income that does not allow them to settle the levels of consumption and to finance unexpected events (i.e. medical emergencies), expenses for the education, productive investments, etc. The inaccessibility of these persons to financial instruments refers not only to the exclusion banking (i.e. account at a formal financial institution), but also to other areas such as exclusion from payments, savings, credit. Recent empirical evidence, using household data, maintains that the access to basic financial services, such as savings, payments and credit, can make a substantial positive difference in improving poor people's lives (Caskey et al., 2006; Dupas and Robinson 2009).

Today, it emerges the need to develop a new financial literacy and to promote instruments of financial inclusion that can be summarized in: microcredit, micro-saving, micro-insurance, real estate microfinance, remittances, payment services and transfer of funds, alternative as micro venture capital and micro leasing (Federico, 2013; Notte, 2013).

People who are involved in the phenomenon of financial inclusion are divided into passive and active subjects (Adamo, 2013).

A passive role is played by outcast people and small businesses.

Outcast people (identified by particular social and economic characteristics) are represented by groups of low-income people, such as unemployed, single parents, people with disabilities or illness, retired people and immigrants, and people with a low level of knowledge about the financial market, i.e. the youngest or the oldest persons.

Small businesses (which often are dynamic, and innovative, and always have an important role in economic development) may meet with some difficulties to accede to external sources of funding at their start up and soon after. Financial inclusion also allows more independence from family propriety or economic groups with important consequences for both the composition and the degree of competitiveness within the sector of SMEs, and with advantageous effects on the potential growth of the whole economic system.

An active role is played by political authorities, actors of the financial system, non-profit organizations and microfinance institutions.

Political authorities play a significant role in the promotion of interventions to promote appropriate social conditions for financial inclusion, as: the support of the innovation and competition in the financial services market; the development of adequate infrastructures; the guarantee of an adequate protection for the users; the support of financial education initiatives. Among the political authorities there are countries of the G-20.

Actors of the financial system play an active role in the programs of financial inclusion, which represent an important sign of awareness of the banking world towards social problems and ethical values. They distinguish themselves in:

- a) traditional lenders, whose activity is devoted, only in part, to ethical finance;
- b) credit institutions, whose activity is devoted, completely, to ethical finance (such as development banks and ethical banks).

Non-profit organizations hold a series of activities to promote the integration of those who do not have the social and economic conditions to credit access, such as the inclusion in the labor market and the promotion of financial education. Non-profit organizations may be based only on the efforts of volunteers or on real companies (Non-Governmental Organizations - NGOs, cooperatives and foundations).

Microfinance institutions deliver microfinance products and services to people who are in financial difficulty but they wish to improve their living conditions and/or create sustainable businesses. They can be set up as non-profit organizations, banks, cooperatives, non-bank financial institutions. In the latest years, the debate on financial exclusion spread out to include the notion of financial exclusion as a barrier to economic development and to the need to create inclusive financial systems (Beck et al., 2008).

The literature argues about the economy benefits through financial inclusion because it reduces income inequality in the economy, in fact, once the access is provided, people have a greater potential to improve their income levels. In addition, the more financial resources become available for efficient intermediation and allocation, the more access to the finance promotes greater start-up enterprises, which often contribute to the risk taken, employment and processes of creative destruction (Schumpeter, 1942).

Above all, the relationship between financial development and growth has been studied by a number of economists (Demirgüç-Kunt and Maksimovic, 1998; Beck et al., 2004; Levine, 2005; Demirgüç-Kunt et al., 2008). Especially, Vicarelli (1982) gives an important role to the policy, which is necessary to prevent instability, macroeconomic stability and to mitigate the negative consequences. In particular, solidarity must recompose and get the link stronger between

democracy, economic development, and social integration. A number of empirical studies suggests that the development of the financial system promotes the growth in an economy, too (Aghion et al., 2003; Rajan and Zingales, 2003).

Calderon and Liu (2003) used data on 109 developing and developed countries and showed that the direction of causality was generally from financial development to economic growth. Moreover, economic growth could be advantageous on the poorest segment of the population, as pointed out by the results of a study by Beck et al. (2007). They used data from a sample of 72 developed and developing countries in the period 1960-2005 and showed a positive relationship between the financial depth [as measured by the ratio of private sector credit to Gross Domestic Product (GDP)] and the change in the share of the lowest quintile in the whole national personal income. Similar results were obtained by Burgess and Pande (2005), who studied the effect of the rural bank branch expansion which took place in India in the period 1977-1990, as a result of a specific rule.

While the importance of financial inclusion is widely recognized, the literature on financial inclusion should extend the research on a comprehensive measure that can be used to measure the extent of financial inclusion in an economy.

The gap of measurement financial inclusion, however, has been recently filled by researchers who have provided various measures and variants of financial inclusion index. Some researchers such as Sarma (2008) and World Bank (2012) have attempted to provide index of financial inclusion using various methods. Other researchers, therefore, focus on the measures of use of financial services. For example, Honohan (2008) developed a composite data set to measure financial services access for 160 countries (which is a synthetic headline indicator of access), measuring the percentage of the adult population with access to an account with a financial intermediary. The data set is based on a regression model that uses available data from regulators and household surveys.

### **3. Data and methodology**

The study of the financial inclusion has been carried out by collecting and analyzing a data set published by the Global Findex Database in 2011. This Database was revealed in April, 2012. Data, collected in partnership with the Gallup World Poll, are based on interviews with more than 150,000 national representative samples and adults selected at random in 148 economies, covering over 97% of the world adult population<sup>2</sup>.

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<sup>2</sup> The 2014 Global Findex Database - based on another 150,000 interviews - will update to the 2011 indicators and will also include an extended module on payments, which provides in-depth data on people's payment activities related to

We observe a sample of 148 countries in the world. For each country, we use a novel data set with regard to the financial characteristics of adults (age 15+) who used formal and informal financial services in 2011. We investigate four macroeconomic indicators (formal accounts, payments, savings, and credit) and we also examine financial inclusion from the point of view of the users of financial services.

The variation in the data - belonging to accounts, payments, savings, and credit – points out the differences of the levels of financial inclusion in various countries.

From the methodological point of view, the study is carried out, first, by an overview of the seven geographical aggregations (East Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, North America, South Asia, Sub-Saharan Africa).

Then, the research uses a Cluster Analysis to carry out some typologies of clusters of countries which are homogeneous inside but heterogeneous between them by means of the characteristics taken into consideration.

Particularly, the study aims to offer an outline of the financial inclusion through different countries. We analyze a sample of 18 indicators (Table 1).

**Table 1 - Macroeconomic indicators of the sample**

<i>Topics</i>	<i>Details</i>	<i>N. indicators</i>
Formal accounts	Account at a formal financial institution	7
	Account used to receive remittances	
	ATM is main mode of withdrawal	
	Bank teller is main mode of deposit	
	Debit card	
	Retail store is main mode of deposit	
	Zero deposits	
Payments	Checks used to make payments	2
	Electronic payments used to make payments	
Savings	Saved any money	4
	Saved at a financial institution	
	Saved for emergencies	
	Saved for future expenses	
Credit	Credit card	5
	Loan	
	Loan from a financial institution	
	Loan from family or friends	
	Outstanding loan to purchase a home	

Cluster Analysis deals with the classification of objects into different groups, or more precisely, the partition of a data set into subsets (clusters), so that, the data in each subset (ideally) share some common trait, often proximity according to some defined distance measure.

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domestic remittances, government-to-person transfers, wages, formal obligations, and mobile payments. The 2014 Global Findex Database will be revealed in April, 2015.



The aim of this application is to obtain groups of unities, characterized by their internal homogeneity and external heterogeneity, with regard to the specific characteristics taken into consideration. The clustering strategy applied in our study, is a hierarchical classification which creates a hierarchy of partitions using the method of aggregation of Ward<sup>3</sup> with an algorithm that is defined as the reciprocal neighbours, in which, the distance between the units decreases, if they have similar characteristics in relation to the variables taken into consideration, all this, gives rise to the different groups.

The choice of this methodology is important to minimize the intra-class variability and maximize the inter class one, so that, to create the least numbers of groups (Jambu, 1978) characterized by their internal homogeneity and external heterogeneity, in relation to the characteristics taken into consideration (Bolasco, 2004).

#### **4. Financial characteristics of regional aggregations**

The study provides a brief overview of financial characteristics of regional aggregations using some indicators of the Global Findex Database, or account penetration, credit, savings.

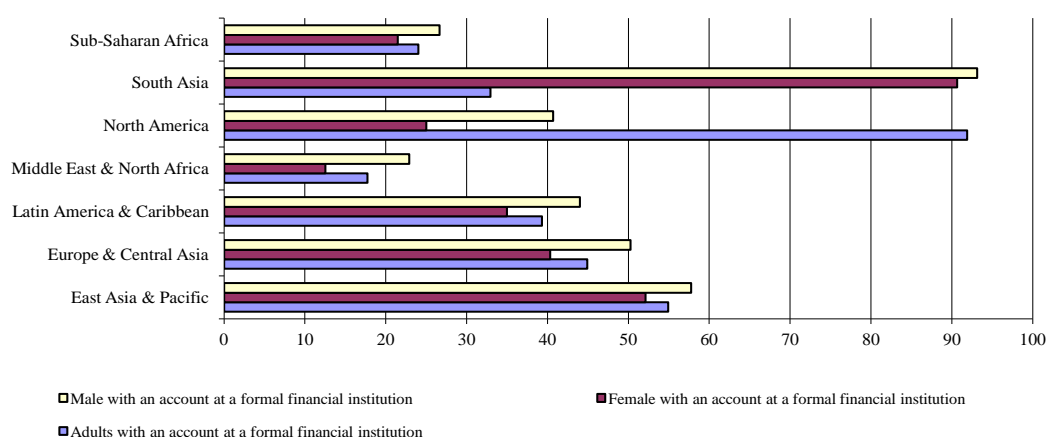
The account penetration differs enormously among continents: 91.88% of adults in North America, but only 17.72%, in the Middle East and North Africa, maintains that they have an account at a formal financial institution (Figure 1). In the Middle East and North Africa only 12.53% of women has an account against 22.89% of men. Even in the richest continents, the difference between men and women in terms of account penetration is evident; only in East Asia and Pacific and in South Asia the difference is slight. In fact in the poorest countries, women have an important role: they educate their children, look after their families, provide secure protection and find the access to finance because they have more creditworthy than their husbands.

Most of the adults who live in different countries with a formal account, make deposits or withdrawals only once or twice a fixed month, but in North America, more than half of account holders withdraw money from their accounts three or more times a fixed month (Table 2).

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<sup>3</sup> Particularly, we refer to the procedure RECIP in SPAD 5.0 package.

**Figure 1 - Formal account penetration (%)**



**Table 2 – Frequency of access (%)**

Indicator	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	South Asia	Sub-Saharan Africa
0 deposits	19.07	6.47	13.09	30.78	4.02	11.66	6.27
0 withdrawals	20.55	6.90	10.46	24.36	2.75	15.90	11.69
1-2 deposits	64.55	80.83	63.24	50.79	38.24	70.48	69.52
1-2 withdrawals	55.01	61.85	52.97	50.22	7.51	66.37	63.41
3+ deposits	7.75	5.39	17.66	14.60	55.30	12.91	21.91
3+ withdrawals	14.27	22.54	30.52	19.28	85.69	11.86	22.95

Many more differences among regional aggregations are evident in the percentage of adults distinguished by sex, education and geographical typology (Table 3). For example, in the case of urban respondents, with an account at a formal financial institution, who maintain to make 1 to 2 deposits, the percentage is 83.12% in Europe and Central Asia against 37.49% in North America. While the percentage of women, who maintain to make zero deposits into or zero withdrawals from their personal account, is 12.78% in East Asia and Pacific and 0.84% in North America.

ATMs and electronic payment systems facilitate access to accounts. Indeed, adults with a formal account in the richest continents, maintain to use above all ATMs for their withdrawals, while the ones in developing continents, maintain to make withdrawals, over the counter, from a branch of their bank or from another financial institution.

**Table 3 - Frequency of access, by sex, education and geographical typology (%)**

<i>Indicator</i>	<i>Distinction</i>	<i>East Asia &amp; Pacific</i>	<i>Europe &amp; Central Asia</i>	<i>Latin America &amp; Caribbean</i>	<i>Middle East &amp; North Africa</i>	<i>North America</i>	<i>South Asia</i>	<i>Sub-Saharan Africa</i>
0 deposits/withdrawals	Female	12.78	5.09	6.38	24.85	0.84	6.76	3.77
	Male	13.47	2.61	5.79	16.19	1.96	6.34	3.65
	Primary education or less	17.98	5.90	10.75	14.52	10.93	7.85	6.59
	Secondary education or more	6.53	3.72	4.31	22.17	0.91	4.26	2.31
	Rural	16.64	4.69	8.47	15.58	1.13	7.38	4.06
	Urban	6.21	2.82	5.15	17.72	1.67	4.74	3.32
1-2 deposits	Female	66.26	81.17	63.09	45.71	39.98	72.30	70.31
	Male	63.06	80.71	63.40	53.64	36.46	69.40	69.21
	Primary education or less	61.80	80.76	60.38	45.38	44.41	69.56	69.13
	Secondary education or more	69.46	80.51	63.46	53.41	36.77	68.87	69.27
	Rural	62.84	79.07	66.08	48.27	38.79	71.02	69.06
	Urban	67.80	83.12	60.69	55.34	37.49	68.91	69.52
1-2 withdrawals	Female	56.03	61.81	56.14	49.62	8.47	62.29	64.23
	Male	54.14	62.03	50.34	51.15	6.66	68.11	62.78
	Primary education or less	55.65	66.02	58.77	54.26	8.35	67.80	69.02
	Secondary education or more	55.50	60.54	50.10	49.57	6.64	62.51	61.22
	Rural	55.82	61.58	60.10	60.21	7.09	66.57	67.18
	Urban	53.23	62.60	49.40	49.84	8.02	65.38	56.51
3+ deposits	Female	7.10	4.49	15.66	10.86	53.37	10.09	21.37
	Male	8.46	6.18	19.27	16.07	57.26	14.19	22.24
	Primary education or less	6.50	3.44	12.59	16.41	34.59	10.51	19.57
	Secondary education or more	9.30	5.69	20.07	12.16	57.43	19.04	24.16
	Rural	6.37	4.88	12.28	10.22	55.15	11.14	21.02
	Urban	10.71	6.20	20.06	13.57	55.73	16.86	23.16
3+ withdrawals	Female	13.24	21.30	25.88	14.73	83.65	9.59	21.81
	Male	15.3	24.11	34.40	21.18	87.66	13.15	24.16
	Primary education or less	8.34	13.18	18.76	20.43	58.65	8.37	14.92
	Secondary education or more	21.60	24.16	35.38	17.02	88.21	17.83	26.95
	Rural	9.39	20.54	21.37	13.43	85.41	9.10	19.62
	Urban	23.81	25.22	34.88	16.78	85.67	18.11	30.25

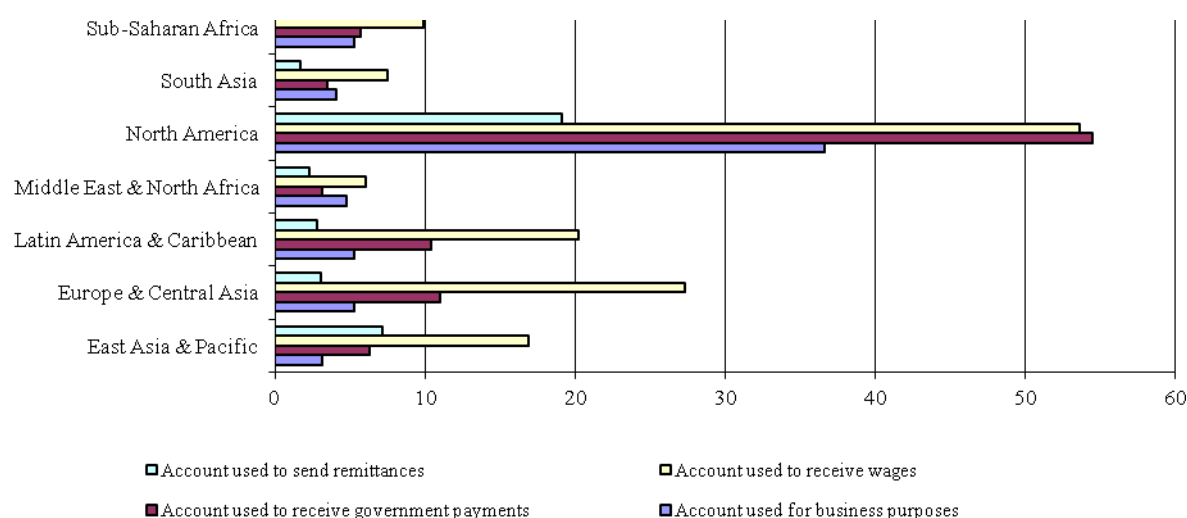
People also have lots of reasons to maintain an account at a formal financial institution (Figure 2).

It's very common, in North America, to use a formal account to receive wages, in fact it is used by 53.58% of adults, while it is only 6.02% in Middle East and North Africa.

It is also very common in North America to use an account to receive payments from the government, in fact, it is used by 54.46% of adults, while it is only 3.09% in Middle East and North Africa.

According to a distinction of sex, education and geographical typology, 54.65% of women in North America uses their accounts to receive government payments, against 1.98% of women in Middle East and North Africa (Table 4).

**Figure 2 – Use of accounts (%)**



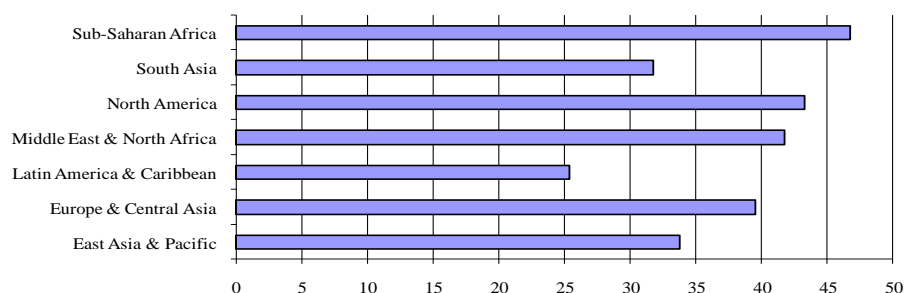
**Table 4 - Use of accounts, by sex, education and geographical typology (%)**

Indicator	Distinction	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	South Asia	Sub-Saharan Africa
Account used for business purposes	Female	2.56	2.91	3.65	2.04	35.64	1.71	4.01
	Male	3.75	8.04	7.06	7.39	37.60	6.30	6.61
	Primary education or less	1.75	4.10	2.65	4.02	26.51	3.28	2.60
	Rural	1.86	4.88	4.66	2.34	39.79	4.14	4.63
	Secondary education or more	5.86	5.78	7.09	5.50	37.20	6.80	8.71
Account used to receive government payments	Urban	6.84	5.88	5.78	3.76	33.53	3.67	7.90
	Female	5.42	10.14	10.06	1.98	54.65	2.87	4.90
	Male	7.22	11.92	10.67	4.19	54.20	4.09	6.45
	Primary education or less	5.89	11.14	11.85	2.03	33.78	2.86	2.42
	Rural	5.16	10.03	10.63	1.58	55.03	3.46	4.87
Account used to receive remittances	Secondary education or more	7.26	10.94	9.32	4.30	57.05	5.78	9.76
	Urban	9.59	12.29	10.42	4.14	53.91	3.58	8.80
	Female	16.07	23.45	15.28	2.29	51.01	4.47	7.89
	Male	17.66	31.85	25.55	9.74	56.27	10.35	11.97
	Primary education or less	9.96	13.31	10.03	5.23	26.17	6.32	4.14
	Rural	11.26	22.43	15.96	1.58	49.23	6.31	8.25
	Secondary education or more	30.15	32.67	27.19	6.80	57.26	11.59	17.06
	Urban	32.81	34.53	23.50	3.72	58.24	10.52	16.37

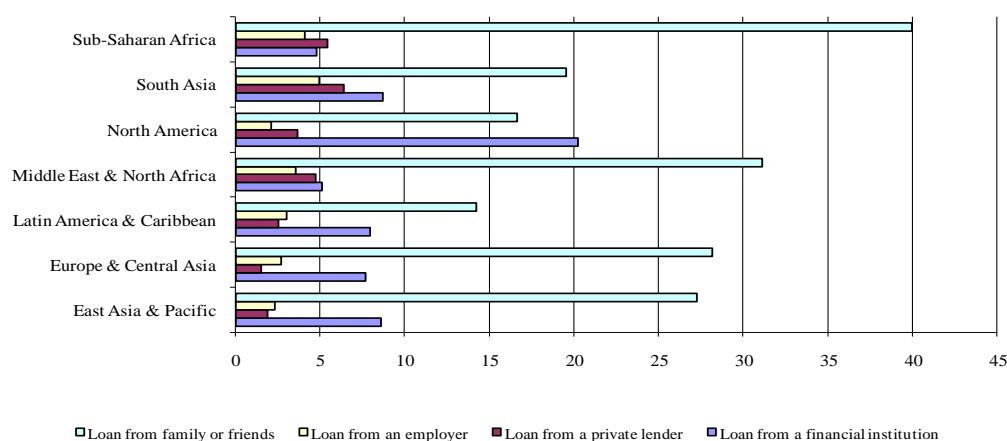
In terms of loans, on average, almost one-third of adults in both industrialized and developing continents, maintains to borrow money (Figure 3). In Sub-Saharan Africa 46.76% of adults has new loans, formal and informal, against 25.37% of adults in Latin America and Caribbean.

However, besides the whole rate of new borrowings, regional aggregations exhibit few elements, which are in common, in terms of sources and destination of credit (Figure 4). People in North America probably borrow more often from formal sources, such as banks or retail stores, while the ones in Sub-Saharan Africa use informal sources of credit such as family and friends.

**Figure 3 – Obtaining of loans (%)**



**Figure 4 - Origin of loans (%)**

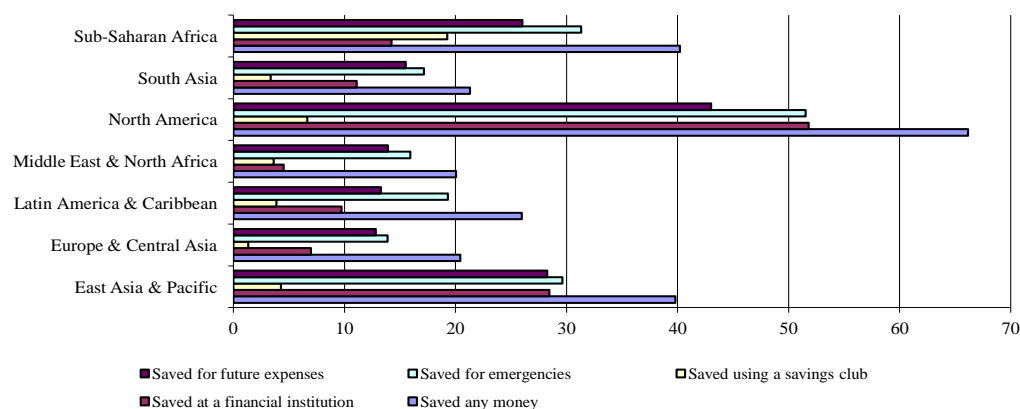


According to a distinction of sex, education and geographical typology, 18.05% of women, in North America, maintains to borrow some money from a bank, credit union, microfinance institution, or another financial institution such as a cooperative, while 38.75% of women, in Sub-Saharan Africa, maintains to borrow some money from family or friends (Table 5). Only 1.55% of men, in East Asia and Pacific, and 1.69% of men, in Europe and Central Asia, maintains to borrow some money from a private lender.

Finally, the percentage of adults, who maintains to save or set some money aside, is particularly high in North America (66.15%), while it is low in Middle East, North Africa (20.04%), Europe, and Central Asia (20.42%) (Figure 5).

**Table 5 - Origin of loans by sex, education and geographical typology (%)**

Indicator	Distinction	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	South Asia	Sub-Saharan Africa
Loan from a financial institution	Female	7.77	7.21	7.45	3.88	18.05	7.89	4.29
	Male	9.42	8.24	8.47	6.32	22.51	9.48	5.23
	Primary education or less	8.16	3.52	6.55	4.39	9.59	8.40	3.32
	Rural	8.53	7.54	7.58	4.90	20.65	9.43	4.45
	Secondary education or more	9.41	9.23	8.90	5.82	22.18	9.79	6.65
	Urban	8.78	7.91	8.02	5.61	20.16	6.25	5.96
Loan from a private lender	Female	2.23	1.31	2.16	4.20	3.39	6.09	5.06
	Male	1.55	1.69	2.86	5.25	3.88	6.64	5.77
	Primary education or less	1.57	1.19	1.86	5.25	5.20	6.68	5.12
	Rural	1.65	1.57	2.57	5.27	3.68	6.38	5.11
	Secondary education or more	2.45	1.61	2.92	4.06	3.64	5.25	5.84
	Urban	2.57	1.38	2.45	5.35	3.72	6.32	6.58
Loan from an employer	Female	1.51	2.38	2.24	2.21	1.07	4.31	3.01
	Male	3.16	3.09	3.86	4.92	3.20	5.55	5.19
	Primary education or less	2.06	1.83	1.93	3.39	6.83	5.52	3.55
	Rural	1.99	2.73	1.89	3.59	2.48	4.97	3.67
	Secondary education or more	2.88	3.07	3.76	3.79	1.94	2.62	4.73
	Urban	3.31	2.63	3.81	4.41	1.76	4.90	5.75
Loan from family or friends	Female	26.10	27.44	13.13	29.80	15.86	17.44	38.75
	Male	28.40	29.04	15.36	32.42	17.42	21.53	41.16
	Primary education or less	27.32	27.50	10.87	33.01	22.27	20.68	39.32
	Rural	27.43	26.02	13.32	29.07	16.10	19.54	40.28
	Secondary education or more	27.28	28.51	16.48	28.83	15.64	15.09	40.05
	Urban	26.72	31.41	14.78	29.38	17.36	19.45	38.61

**Figure 5 - Use, mode and purpose of savings (%)**

Besides, the saving to cover future expenses as: education, wedding, big purchases or to provide against possible emergencies, is a universal practice in the world. However, not only the tendency to save is different in the various regional aggregations; but even the mode and the purpose of saving vary.

The comparison among financial systems of different continents shows how they have similar and different topics in common, therefore, it is important to examine the situation of each country in term of financial inclusion.

## 5. Cluster Analysis

Cluster Analysis identifies 6 groups of countries (Table 6), whose features are:

**Cluster 1 - High Financial Inclusion Regions (18):** The group is represented by high income countries<sup>4</sup>.

It is characterized by a considerable presence of adults who use formal financial institutions, both for deposits and loans. For example, the intra-group average of an account at a formal financial institution, has a value of 96.30% against the general average of 46.01%.

There is also a high use of financial instruments such as electronic payments, ATM, credit card, and debit card. For example, the intra-group average of the electronic payments, used to make payments, has a value of 69.03% against the general average of 17.10%, while the one of the debit card has a value of 79.36% against the general average of 31.48%.

The group is characterized by a high financial inclusion system in which lots of people use checks to make payments with a value of 27.57% (against a general average of 8.09%).

Besides, this is the only index, with an intra-group average less than the general average, represented by loans from family or friends (11.66% against 23.81%) confirming the low use of the informal financial system.

The financial inclusion of these countries is favoured by the presence of laws which are designed to spread access to credit, and the availability of more credit information to facilitate lending decisions. Some evidences show that improvements in the legal, regulatory, and institutional environment, which tend to be helpful for the development in general, are also quite useful for financial inclusion (Allen et al., 2012; World Bank, 2014). Part of the literature focuses on the role of legal institutions to explain international differences in financial development<sup>5</sup>. Particularly, the

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<sup>4</sup> The World Bank distinguishes countries in four macro aggregates based on income: 1. Low income countries are those with gross national income per capita less than 1,025 dollar in 2011; 2. Lower middle income countries (1,026 dollar - 4,035 dollar); 3. Upper middle income countries (4,036 dollar - 12,475 dollar); 4. High income countries (12,476 dollar or more).

<sup>5</sup> In fact, several countries have initiated legislative measures, for example, the Community Reinvestment Act (1997) of the United States requires banks to offer credit throughout their area of operation and forbids them to target only the rich neighbourhoods. The French law against exclusion (Loi du 29 Juillet 1998 contre l'exclusion) emphasises an

law and finance theory maintains that, in countries where legal systems, enforce private property rights, support private contractual arrangements, and protect the legal rights of investors, savers are more willing to finance firms and financial markets flourish (Beck and Levine, 2005).

**Cluster 2 – Middle High Financial Inclusion Regions (22):** This cluster, is made up by 16 countries with high income, 5 countries with upper middle income and only 1 country with lower middle income.

Just like the Cluster 1, the group is characterized by some indicators that put in evidence the high financial inclusion level. In fact, the adults who use an account at a formal financial institution have registered an intra-class average with a value of 81.21% against a general average of 46.01%, and people who use electronic payments are 30.16% against 17.10%.

The group is also characterized by an only indicator with an average lower than the general average; adults with loans from family or friends register an intra-group average lower than the general average (17.17% against 23.81%).

However, differently from the previous cluster, this group doesn't distinguish itself by the index that points out the percentage of respondents who use checks to make payments on bills or to buy things using money from their accounts.

**Cluster 3 – Limited Financial Inclusion Regions (35):** This cluster, is made up by 7 countries with high income, 21 countries with upper middle income, and 7 countries with lower middle income.

It is characterized by the use of financial instruments, such as, ATM for withdrawals with the intra-group average whose value is 65.56% against the general average of 51.17%.

However, the group is characterized by a low use of bank teller<sup>6</sup> to make deposit (45.48% against 64.40%) and low savings at a financial institution (9.70% against 18.50%).

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individual's right to have a bank account. In the United Kingdom, a "Financial Inclusion Task Force" was set up by the government in 2005 in order to monitor the development on financial inclusion. For an outline see Calomiris et. al. (1994), Kempson (2006), Shear et. al. (1995).

<sup>6</sup> Bank teller is an employee of a bank who deals directly with most customers and he is considered a "front line" in the banking business. Bank teller is different from bank agent. In some countries, banks, more and more, are using agents to increase, significantly, financial access to poor and underserved populations to a range of formal financial services. In Brazil, for example, banks use about 160,000 agents to provide financial services to all 5,564 Brazilian town councils (Lauer et al., 2011). Other countries think that the contact of the customer with the agents is riskier than of a contact with a bank teller in a conventional bank branch. For example, the Pakistan Branchless Banking Regulations maintain that these agents may operate in hard-to reach or dangerous areas and they lack physical security systems and specially trained staff (Bold, 2011). Global Findex Database provides the value of the percentage of adults who use bank agents. However, these two indicators (bank teller and bank agent) were too correlated one another to be used in the Cluster Analysis.



In fact, saving levels are lower than the general average, for example, people who save for emergencies, are 15.83% (against 26.30%), and those who save for future expenses are 12.22% (against 22.88%).

**Cluster 4 – Reduced Financial Exclusion Regions (23):** This cluster, is made up by 8 countries with low income, 12 countries with lower middle income and 3 countries with upper middle income.

It is characterized both by a high use of bank tellers to make deposit (85.53% against 64.40%) and by loans from family or friends (36.24% against 23.81%). This cluster also confirms the difficulty of the traditional credit access for a lot of people.

The group is characterized by countries in which people have some difficulties to accede to a formal financial system; in fact, the innovative instruments are not very used, such as, electronic payments (4.36% against 17.10%), debit card (16.10% against 31.48%), credit card (4.93% against 16.68%), and this confirms the low financial inclusion of these countries.

The financial inclusion in these countries, is prevented by the difficult availability of more credit information. In fact asymmetric information and high transaction costs can give rise to dilemmas and coordination problems that prevent the spread of financial services to certain segments of the population (de la Torre, 2007; Jappelli and Pagano, 2002; World Bank, 2014).

**Table 6 – Distribution of regions in the clusters**

<b>Cluster 1</b>	Australia	Denmark	Hong Kong SAR, China	Netherlands	United Kingdom
	Austria	Finland	Ireland	New Zealand	United States
	Belgium	France	Korea, Rep.	Singapore	
	Canada	Germany	Luxembourg	Sweden	
<b>Cluster 2</b>	Cyprus	Jamaica	Mauritius	Slovak Republic	Thailand
	Czech Republic	Japan	Mongolia	Slovenia	Trinidad and Tobago
	Estonia	Kuwait	Oman	Spain	United Arab Emirates
	Iran, Islamic Rep.	Malaysia	Portugal	Taiwan, China	
	Israel	Malta	Qatar		
<b>Cluster 3</b>	Albania	Brazil	Greece	Macedonia, FYR	Saudi Arabia
	Argentina	Bulgaria	Hungary	Moldova	Serbia
	Armenia	Chile	Italy	Montenegro	South Africa
	Azerbaijan	Costa Rica	Kazakhstan	Paraguay	Turkey
	Bahrain	Croatia	Kosovo	Poland	Ukraine
	Belarus	Djibouti	Latvia	Romania	Uruguay
	Bosnia and Herzegovina	Georgia	Lithuania	Russian Federation	Venezuela, RB
	Angola	Dominican Republic	Liberia	Sierra Leone	Uganda
	Bolivia	Ghana	Malawi	Sri Lanka	Zambia
<b>Cluster 4</b>	Botswana	Indonesia	Mozambique	Swaziland	Zimbabwe
	China	Kenya	Nigeria	Syrian Arab Republic	
	Cameroon	Lao PDR	Philippines	Tanzania	
	Afghanistan	Comoros	India	Morocco	Sudan
<b>Cluster 5</b>	Algeria	Congo, Rep.	Iraq	Nepal	Togo
	Bangladesh	Ecuador	Jordan	Nicaragua	Tunisia
	Benin	Egypt, Arab Rep.	Kyrgyz Republic	Niger	Turkmenistan
	Burkina Faso	El Salvador	Lebanon	Pakistan	Uzbekistan
	Cambodia	Gabon	Lesotho	Panama	Vietnam
	Central African Republic	Guatemala	Mali	Peru	West Bank and Gaza
	Chad	Guinea	Mauritania	Rwanda	Yemen, Rep.
	Colombia	Honduras	Mexico	Senegal	
	Burundi	Haiti	Madagascar	Somalia	Tajikistan
	Congo, Dem. Rep.				

**Cluster 5 – High Middle Financial Exclusion Regions (44):** This cluster, is made up by 15 countries with low income, 19 countries with lower middle income and 10 countries with upper middle income.

It is characterized by a considerable use of bank tellers to make deposit (75.45% against 64.40%) even if there is a low percentage of adults who:

- a) obtain loans from a financial institution (7.27% against 10.64%);
- b) have low savings at a formal financial institution (6.86% against 18.50%).

These people show a low use of payment instruments, such as, electronic payments (1.89% against 17.10%), debit card (8.44% against 31.48%), credit card (3.32% against 16.68%), which confirm the low financial inclusion of these countries.

**Cluster 6 – High Financial Exclusion Regions (6):** This cluster, is made up by 6 countries with low income.

It is characterized by a high use of loans from family or friends (36.55% against 23.81%), and it also confirms the difficulty of the traditional credit access for a lot of people.

The group is characterized by countries in which people have a lot of difficulties to accede to a formal financial system; in fact there is a very low use of account at a formal financial institution (12.00% against 46.01%).

Adults, with loans from financial institutions, are very few (3.36% against 10.64%), and this confirms the low financial inclusion of these countries.

The financial exclusion of these countries derives both from the low presence of laws, which are designed to spread access to credit, and from a high illiteracy levels, which may prevent lots of people from getting benefit from financial inclusion efforts which are due to low awareness and comprehension of the financial services. In fact, literature pointed out the need for more researches to examine how appropriate and favourable policies can play a positive role in improving financial inclusion. Particularly, Hannig and Jansen (2010) also suggest the need to increase consumer protection and financial literacy taking into consideration the poor education among unbanked customers.

## 6. Main results

Cluster Analysis shows wide gaps in account penetration through various countries and puts in evidence the peculiar characteristics as regards some countries which are included in particular clusters.

Cluster 1 and Cluster 6 are, respectively, made up both of a lot of high income countries and of some low income countries. Countries of Cluster 1 and Cluster 6 are characterized by opposite financial indicators which are accounts at a formal financial institution, and loans from family or friends. On one hand, a formal account allows to entry into the formal financial sector, making easy the transfer of wages, remittances, and government payments, even encouraging formal saving and open access to credit. On the other hand, people who have difficulties in acceding to a formal lending, are forced to borrow some money from family or friends. In fact, the max value of the account at a formal financial institution index, is registered in Denmark (Cluster 1) with a value of 99.74%, while the max value of loans from family or friends, is registered in Madagascar (Cluster 6) with a value of 57.71%.

The study focuses a particular attention on groups from 2 to 5 which are made up of countries with different income levels and present particular cases.

Cluster 2, is defined Middle High Financial Inclusion Regions because it includes countries in which there is a high percentage of adults (with an account at a formal financial institution, such as, bank, credit union, microfinance institution, cooperative or post office) which includes respondents who maintain to have a debit card; while there is a low percentage of people who maintain to borrow some money from family or friends.

Besides, Cluster 2, includes primary high income countries in which there is a large use of formal financial institutions, plus, 5 countries with upper middle income (Iran, Jamaica, Malaysia, Mauritius, Thailand), and only 1 country with a lower middle income (Mongolia).

Particularly Mongolia is characterized by a low number of people who have zero deposits with a value of 1.90%, almost like the one registered in Austria (1.61%) and New Zealand (1.67%), which are included in Cluster 1. Mongolia is also characterized by a high percentage of people who use an account at a formal financial institution (77.72%): in fact, there are lots of people who have loans from a financial institution (27.66%) and save at a financial institution (23.18%). As regards the innovative financial instruments there is a considerable use of debit cards (60.64%) and electronic payments (21.59%).

Cluster 3, is defined Limited Financial Inclusion Regions because it includes countries in which there is a low percentage of respondents who maintain to save or set some money aside by using an

account at a formal financial institution, but, there is also a high percentage of adults who maintain to use innovative payment instruments.

Cluster 3, includes a lot of countries with high and upper middle income and some countries which are generally taken into consideration with a lower middle income (Armenia, Djibouti, Georgia, Kosovo, Moldova, Paraguay, Ukraine).

Particularly, in these lower middle income countries, there is a large diffusion of innovative payment instruments, such as, ATM, electronic payments, debit card, credit card, and a high percentage of adults who borrow some money from some sources as: a formal financial institution, a store by using installment credit, family or friends, employer, or another private lender. For example, in Ukraine 75.19% of people uses ATM for withdrawal (a similar value to the one registered in Austria, included in Cluster 1: 76.71%), and 33.57% uses debit cards (a similar value to the one registered in Singapore, included in Cluster 1: 28.63%).

While, respectively in Moldova and in Ukraine, 47.92% and 44.42% of people borrows some money (a similar value the one registered in Australia, included in Cluster 1: 44.54%).

Italy is included in this group, and although it is taken into consideration as a high income country, it registers values of some financial inclusion indicators which are similar to the poorest countries. In particular, there are few adults who maintain to save or set some money aside with a value of 26.35% (saved for future expenses: 9.94%), a similar value is registered in Burundi (25.16%) (saved for future expenses: 11.18%), which is located in Cluster 6. Even in terms of percentage of adults, who maintain to borrow some money from a financial institution, the value is low and equal to 4.59% (a similar value is registered in countries located in Cluster 6, such as Tajikistan: 4.76%). Other indicators of Italy, show values closer to the ones of industrialized countries.

Cluster 4, is defined Reduced Financial Exclusion Regions, because it includes countries in which, mainly, adults maintain to borrow some money from family or friends, and use few payment instruments. At the same time, the financial exclusion of these countries, is considered reduced because the percentage of adults who make transactions with a teller, over the counter, at a financial institution, is elevated.

The group includes a lot of countries, with a low and lower middle income, but only 3 countries, are generally taken into consideration, with an upper middle income (Botswana, China, Dominican Republic).

Particularly, in Botswana, China and Dominican Republic, even if there is an important percentage of people who maintain to borrow some money from a financial institution (respectively 7.16%, 6.96% and 17.60%), there are other indicators that influence negatively the financial inclusion. In

fact, in Botswana 46.50% of people obtains loans from family and friends; in China 6.90% of adults uses electronic payments; in Dominican Republic 15.97% of people maintains to save at a formal financial institution.

These data show how in some countries in the world, many adults, in despite of having a formal account, use other methods of credit access. These people might be classified as underbanked. There are people who may choose an informal method rather than use their formal account because the costs of their account are prohibitively high. For example, in Indonesia, as in many other developing countries, there are saving clubs which are often an alternative (or complement) to save at a formal financial institution. Common forms of such clubs, are rotating savings and credit associations (ROSCA). These clubs, generally, operate by pooling the weekly deposits of their members and by paying out the entire amount to a different member each week. Although, members generally do not earn interest on their deposits as in a formal account, these clubs can provide members an opportunity to save.

Cluster 5, is defined High Middle Financial Exclusion Regions because it takes into consideration countries where there are low loans from financial institutions, low savings at financial institution, and a low use of payment instruments. At the same time, the financial exclusion of these countries, isn't considered very pertinent because the percentage of adults who make transactions with a teller, over the counter at a financial institution, is significant.

Cluster 5, includes a lot of countries with low and lower middle income and some countries which are generally considered with an upper middle income (Algeria, Colombia, Ecuador, Gabon, Jordan, Lebanon, Mexico, Panama, Peru, Tunisia).

These last countries show some difficulties in acceding to a formal financial system; in Peru only 20.46% of people has an account at a formal financial institution (27.43% in Mexico), while in Gabon only 3.56% of people obtains loans from financial institutions (3.57% in Tunisia).

The innovative instruments are not very used; in fact in Lebanon only 1.96% uses electronic payments (2.97% in Panama), in Algeria only 1.16% has a credit card (3.48% in Jordan).

## **7. Conclusion and discussion**

For most people in the world, it is important to have an account at a financial institution, to get an access to the formal financial sector. A formal account can encourage savings and open access to credit. It can also make it easier to transfer wages, remittances, and government payments.

The access on a large scale to formal accounts, is a characteristic of an inclusive financial system, whose absence, can contribute to a persistent inequality income and to a slower economic growth. Indeed, only after almost 40 years, Muhammad Yunus made the first microloan - the first of many exciting developments in financial services for the poor - we are beginning to see research efforts already concerted to map the trait and effect of these instruments on households all over the world. Our study shows how it is possible to observe a certain proximity (with respect to some indicators) among countries which are always considered poor, or with a prevalent presence of not inclusive financial systems, and industrialized countries with inclusive financial systems. This might give rise to problems on which we could and should put more attention to increase the level of financial inclusion in the world. Of course, it is known that the concept of the financial inclusion enters, fully, into a wider concept of social inclusion. In fact, the main objective is to facilitate the integration or reintegration of outcast persons. We can maintain that we find this social objective not only in the ethical finance. In this period, we are on the way to find and to confirm the social nature again in the whole finance. This isn't easy but, if the finance has a social nature, the financial inclusion will develop all over the world. Therefore, this study on the phenomenon of financial inclusion, requires further investigations, taking into consideration other social and economic characteristics of the countries object of the research. This study also allows a better understanding both of the differences among countries and of the most appropriate instruments to realize a system of financial inclusion.

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