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Financial inclusion of remittance recipients and non-recipients in Mexico

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Abstract

Purpose: Remittance reception plays a relevant role in Mexican household economies, as Mexico was the world's fourth highest remittances recipient in 2019. Studies about remittance reception have focused on the factors that explain their reception, their primary uses or whether they generate development in the receiving communities. However, the analysis of the relationship between remittance reception and financial inclusion has been relatively neglected. The primary goal of this research is to analyze the characteristics of remittance receiving and non-receiving households and how they are associated with their financial inclusion, as well as the main institutional actions aimed at providing financial inclusion.

Design/methodology: A quantitative study using the National Financial Inclusion Survey of 2015 was carried out. A principal component analysis was calculated to generate a financial inclusion index. A latent class analysis was estimated to group the index into three categories to carry out a descriptive analysis. An ordinary least squares linear regression model was estimated to study the effects of remittance reception and the socio-demographic characteristics on financial inclusion.

Findings: A low percentage of Mexicans have high financial inclusion. By focusing on the main characteristics of remittance recipients and non-recipients associated with financial inclusion, it was found that the main variables that explain this inclusion are: age -the older the age, the more inclusion-, being a head of household, schooling level -the more schooling, the more inclusion-, living in urban areas, having a job, and receiving remittances. There are several financial inclusion strategies implemented by the Mexican government. However, these strategies have not been accompanied by plans to make the public aware of the pros and cons of acquiring the various financial products offered by banks.

Originality/value: It is important to consider the economic benefits that financial inclusion generates, as well as some of the negative implications it can bring to households, like indebtedness.

Keywords: Financial inclusion, Remittances, Household, Mexico

Jel Codes: F24, G51, G53

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1. Introduction

The increase of migration throughout the world is becoming more visible. Mexico has a dichotomous view in the face of this phenomenon. On the one hand, the government maintains and defends the importance of its citizens in the United States -the main destiny of Mexican migrants-. On the other hand, the government has increased domestic migratory controls for the foreign population that arrives in the country, except for some privileged nationalities which may enter with no significant drawbacks (Pardo, 2018).

In this context, one of the most outstanding aspects of Mexican migration is remittances. The relevance of remittances has been mainly analyzed from two perspectives. First, they are considered a key source to finance the development of the countries of origin of migration (Yoshino, Taghizadeh-Hesary & Otsuka, 2020), as well as potentializing development (Azizi, 2021; Ekanayake & Moslares, 2020; Brito, Corbacho & Osorio, 2014). It has also been argued that they can reduce poverty levels in the migrants' home communities (Akobeng, 2016), since they can be productively used (Fuentes & González, 2012; Bracking & Sachikoye, 2010). For example, remittances can be invested in human capital, as expenditure on education and health by the households in their local areas, which translates into an increase in the quality of life of non-migrants (Mahesh, 2020; Lu, 2013; Torres, 2000). However, the negative perspective underscores that remittances are mostly used for everyday expenses, so savings or productive investment are secondary (Gamlen, 2014; De Haas, 2012). Canales (2008) identified that the positive view is predominant among international organisms such as the International Monetary Fund or the World Bank (WB), as well as in national and local governments, whose analysis of remittances is focused on them being a preferential instrument for poverty reduction. In contrast, the negative perspective is held by mainly civil organizations. These organizations argue that, since remittances are private transfers, promoting them for productive actions should not be a substitute for the State's responsibility in promoting the population's development and wellbeing.

In Mexico, the reception of remittances plays a relevant role in household economies. An example of this is that, according to data from the World Bank, Mexico was the world's fourth largest remittances recipient in 2019, with approximately 38,540 million dollars, surpassed only by India, China, and the Philippines. Remittances are also Mexico's third-leading source of income, after tourism and oil. However, studies about remittances in Mexico have focused mainly on identifying the factors that explain their reception (Pardo & Salinas, 2017; Ramírez, 2010); the expenditures the households make with this resource (García, Peláez & Fuentes, 2015; De la Rosa, Romero & Pérez, 2006); their productive use, arguing that it leads to the country's development (Carvajal & Almonte, 2011); the dependency on remittances (Herrera, 2016), among other subjects. In this sense, a theme that has been relatively neglected is the relationship between remittances and financial inclusion. That is, the access and use of financial products by remittance reception households has rarely been studied (Li, Salinas, Hoyo, Ramírez & Serrano, 2014).

Financial inclusion has been understood as an attainable and timely access to different financial products granted to different segments of society (Ozili, 2018; Allen, Demirguc-Kunt, Klapper & Martinez Peria, 2016; García, Grifoni, López & Mejía, 2013). Different actions have been recently implemented by the government to make banking services available to remittance recipients (Goel & Nayak, 2018). Traditionally, this population has been considered as not having access to several financial products, mainly because of their scarce savings. However, with the current financialization of the economy, the aim has also been for remittance-receiving households to have access to banking products. This is justified by a discourse about democratization and the population's right to access credit and other services offered by the financial entities. The strategies used to financially include these households follow a logic of organizing different groups in relation to the market, including those who were never seen as producers of large amounts of economic resources, such as remittance recipients. Nevertheless, making banking services available to this population does not necessarily take their specificity into account. They are automatically seen as subjects who can save or invest just because they receive monetary resources. In most cases, this is not accurate, primarily because remittances are mainly used for everyday expenses (Monteros, García & Songor, 2017; Canales, 2016).

This research paper is focused mainly on analyzing the characteristics of households that explain their financial inclusion, including remittance reception. It also centers on some of the actions and strategies that the Mexican

government has implemented to enable the financial inclusion of the population and, in particular, remittance recipients. Thus, it seeks to answer the following questions: What characteristics of remittance recipient and non-recipient households in Mexico influence their financial inclusion? And, which institutional actions are being taken in favor of the financial inclusion of remittance recipient households? This article has two objectives in answering these questions: a) to analyze the main characteristics of remittance recipient and non-recipient households that are associated with their financial inclusion, and b) to examine the main institutional actions aimed at fulfilling this task. The main research hypothesis is that, given the actions and strategies of the Mexican government towards the financial inclusion of remittance recipients, it is expected that financial inclusion could be higher in remittance receiving households.

To achieve these objectives, a principal component analysis was calculated to generate a financial inclusion index, which then is grouped into three categories to carry out a descriptive analysis using a latent class analysis. An ordinary least squares (OLS) linear regression model was estimated to study the effects of remittance reception and household characteristics on financial inclusion. These methods show that a low percentage of Mexicans have high financial inclusion. Also, the main characteristics that explained financial inclusion in Mexico were: age -the older the age, the more inclusion-, being a head of household, schooling level -the more schooling, the more inclusion-, living in urban areas, having a job, and most importantly, receiving remittances. This relationship between remittance reception and financial inclusion could be linked to the strategies adopted by the government and banking institutions to incorporate vulnerable households, including those with migrants, into the Mexican financial system.

This research paper is structured in six sections. In the first section, the key aspects of remittance reception in Mexico are explained, underscoring what is understood as financial inclusion and reviewing several studies that have analyzed the relationship between this concept and remittances. In the second section, the data and the methodology used to fulfill the research objectives are described. The third section includes a brief descriptive analysis of the main variables related to financial inclusion. In the fourth section, the major factors associated with the financial inclusion of the remittance recipient and non-recipient households are presented. In the fifth section, several financial inclusion initiatives for the households of migrants in Mexico are analyzed. The sixth section presents the final considerations, recommendations for future research, and the main limitations relevant to the study.

2. Financial inclusion and remittances in Mexico

2.1. What is understood as financial inclusion

There is not a clear consensus on the definition of financial inclusion. Yet, research on financial inclusion has gradually become more relevant, especially among those who study migration and remittances. The Organization for Economic Co-operation and Development (OECD) defines it as attainable and timely access to different financial products by various segments of society (García et al., 2013). The Global Partnership for Financial Inclusion and the Consultative Group to Assist the Poor (2011) defines it as the situation in which all adults are included in the financial system, allowing them to have access to services such as credit, deposits and savings accounts, insurance, etc. Financial inclusion is measured by using information about the usage of bank accounts, savings accounts, credit adjudication, digital banking, automatic bank tellers, among other variables (Orazi, Martinez & Vigier, 2019; Demirgüç-Kunt, Klapper & Singer, 2017).

The definitions and practices of financial inclusion vary in each country (Ozili, 2020a). In Mexico, 'financial inclusion encompasses the access to, and use of, financial services with the appropriate regulation, guaranteeing consumer protection schemes and promoting financial education to improve the financial abilities of all segments of the population' (Comisión Nacional Bancaria y de Valores, 2012: 15). This implies transparent access to formal financial services, allowing users of these services to have enough information to identify those that are the most convenient according to their needs (Raccanello & Herrera, 2014), which does not necessarily occur in practice.

Ozili (2020a) argues there are no theories regarding the study of financial inclusion. Yet, he presents some principles that could benefit the discussion of financial inclusion theories and may be useful for the academy and

those responsible for making public policies. These principles are divided into three major categories: theories of financial inclusion beneficiaries, theories of financial inclusion funding, and theories of financial inclusion delivery (Ozili, 2020a). The first category focuses on those who benefit from financial inclusion; some argue that the poor are the ones who benefit the most (Bhandari, 2018), while others point to the financial system as the ultimate beneficiary (Swamy, 2014). The second category centers on those who should finance the expenses of financial inclusion. There are also two major points of view regarding this category. There are those that consider that financial inclusion programs should be paid with public resources. In contrast, other groups think the private sector should finance those programs, as they are the major beneficiaries (Mohiuddin, 2015). The last category focuses on who should provide the financial services. There are also two opposing discourses: those that argue that the private sector should provide them (Gabor & Brooks, 2017), while others claim it should be the government (Chibba, 2009).

Although each of these categories involve different theories, this research focuses on the first category, since the interest lies in the financial inclusion beneficiaries who, are the most vulnerable group (Ozili, 2020a). In Mexico, this occurs because, as will be shown later, the government's implemented financial inclusion strategies focus on the elderly, indigenous population, migrants, women and people with disabilities. Yet, data shows that the groups with the higher and lower financial inclusion also present diverse sociodemographic characteristics.

In recent years, the benefits that financial inclusion can bring to the population have been highlighted by several governments, who have formulated policies and actions seeking to stimulate access to different banking products. They state that financial inclusion increases the standard of living of the more vulnerable populations (Thoene & Turriago, 2017; Allen, Carletti, Cull, Qian, Senbet & Valenzuela, 2014); that it has positive effects on the poorest population (Koomson, Villano & Hadley, 2020); helps bring people out of poverty and may contribute to the acceleration of economic development (Muluani, 2015). In addition, it may help incorporate more women into economic activities, making the most of their contributions to society and it will help governments deliver services to people in a more efficient manner through the simplification of transfers and the reduction of administrative costs. The main strategies are linked to access to bank accounts, and other services such as credit and loans, sometimes with the message that these means are the only way to acquire certain goods.

Although these strategies point out relevant aspects of financial inclusion, the main problem is that no attention is being paid to its negative consequences, like the debt in lower-income households that stems from credit and loans. This "culture of indebtedness" has had disastrous repercussions for several social groups (Colau & Alemany, 2012). One example includes the negative consequences experienced in Spain during the economic crisis of 2008 that was mainly linked to the housing market, where credit was the only way of guaranteeing the right to housing (Colau & Alemany, 2012). Still, there is limited research on the problems financial inclusion could lead to, particularly for remittance recipients (Li et al., 2014). This is fundamental since it has been claimed that if access to credit became more flexible for remittance recipients, demand for savings instruments would increase (Anzoategui, Demirgüç-Kunt & Martínez, 2011). However, this does not mean an automatic decrease in inequality and poverty among remittance recipients. Rather than being an additional source of income to families, remittances are basically the salary that migrants are no longer earning in their place of origin, after being compelled to join the job market elsewhere and not necessarily under the best conditions. Thus, the money they send back is basically used for everyday expenses. Due to the importance remittance reception has in Mexico, some recent data on the reception of this resource are shown in the next section.

2.2. Remittances in Mexico and financial inclusion

The magnitude of Mexican migration has turned remittances into a fundamental resource for the country's economy. Mexico is one of the largest remittance recipients in the world and the largest in Latin America and the Caribbean. The reception of remittances in Mexico increased annually from 1995 to 2007. After 2007 different annual variations have occurred, such as a decrease generated by the 2008 economic crisis, an upturn that started in 2014 and the current crisis derived from Covid-19, which, according to the Bank of Mexico, has increased remittances further (BBVA, 2020). Despite these fluctuations, the flow of remittances has continued, and the migration to the US has continued to be the most important destination for Mexicans (Banco de México, 2014).

According to BBVA (2020), in 2019, remittance reception reached 36 billion dollars. Most remittances come from the US and are received in Mexico primarily through non-banking institutions (74.9%). The main recipient states are Michoacán, Jalisco, Guanajuato, the State of Mexico, and Oaxaca. In this context, Mexico's economic dependency on remittances was 2.9% of its GDP, the highest since 2003. As for how this resource is used, according to 2019 data, everyday expenses predominated, especially for food, clothes, health, housing, and education.

With this background in mind, the financial inclusion of the migrant population has been designed as the ideal strategy for the productive investment of remittances. Some argue that the reception of this resource can generate excess cash, which would mean a greater demand for bank accounts offered as a 'safe space' to manage this income, a circumstance financial institutions have taken advantage of to offer credit directly (Anzoategui et al., 2011). As these same authors have pointed out, remittances are used for everyday expenses and do not necessarily represent a surplus. This could be the main reason remittance recipients have chosen to stay outside the financial system (Anzoategui et al., 2011).

Some theoretical perspectives allude to the economic benefits derived from remittances and the decrease in inequality. However, most of these studies emphasize the benefits at the macro level, but do not focus on the specificities of households and how they must use these resources so that a higher financial inclusion does not necessarily mean a reduction of poverty and inequality in households with migrant population.

Several characteristics have been previously associated with financial inclusion. Access to the financial system is different for males and females (Li et al., 2014). Women have less access to formal financial services, therefore many social programs focus on promoting female financial inclusion (De los Ríos & Trivelli, 2011). Regardless of these programs, it could be expected that males have a higher financial inclusion. By age, people tend to save during adult life when they are economically active (Li et al., 2014). Thus, it is likely that as people age, they become financially included, as well as individuals who are currently working. Position within the household and marital status are also associated with financial inclusion. It has been observed that individuals in-union have a higher access to formal financial services. Regarding schooling, it has been shown that higher educational achievement is related to a higher financial inclusion, especially with financial education (Li et al., 2014). Urban areas have more access to the financial system (Sarma & Pais, 2011). Therefore, it is expected that living in a rural area would decrease the level of financial inclusion, as well as having a low educational status; while living in-union and being the head of household should increase financial inclusion. Finally, insurance and savings are a central part of financial inclusion (Li et al., 2014). So, individuals who can respond to an economic emergency (which could be used as a way to approach having insurance and savings) are more likely to have a higher access to financial services.

3. Research methodology

A quantitative study was performed based on data from the 2015 National Financial Inclusion Survey (Encuesta Nacional de Inclusión Financiera, ENIF), of the National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía, Inegi). The survey generated statistical information to design public policies aimed at the use of and access to financial services and products for people between 18 and 70 years old. It also includes i) the characteristics of users, never-users, and ex-users of formal and informal financial products and services; ii) information about the adults that have savings, credit, insurance or retirement savings accounts, and their access channels; and iii) the barriers that limit access to and use of the formal financial system. The ENIF 2015 sample design was stratified, with a three-stage clustering that provided a sample size of 6039 individuals. The survey results include representativeness at the national level, as well as urban (15 thousand inhabitants or more) and rural areas (INEGI, 2015).

A financial inclusion index was estimated as the dependent variable. The variables that refer to the use of and access to financial services and products were selected for the index (Li et al., 2014). These variables include if the person declared having an account or card for wage payment, savings, pension, or collected governmental assistance in a bank or financial institution; has insurance for his/her car, household, life, medical expenses, or others; has used a bank branch during the last year; and has used an ATM in the previous year. Based on this set

of five variables, a principal component analysis (ACP) was used to generate a financial inclusion index applied to qualitative variables through the use of a polychoric correlation matrix. A Cronbach's alpha of 0.73 was estimated. This result guarantees the internal consistency of the variables used in the analysis (Vargas, Delice & Donoso, 2019). Three principal components were kept for the index, with an overall explained variance of 87.4%. A Kaiser, Meyer, and Olkin (KMO) fitness index of 0.81 was obtained, which points to a good fit (Kaiser, 1974). The index showed a mean value of 0.58 and a standard deviation of 0.53.

To analyze the association between the social-demographic characteristics of Mexican adults and their financial inclusion, the following ENIF 2015 variables were selected: gender; age group − 18-29, 30-39, 40-49, 50-59 and 60 or above; position inside the household − head of household or not; marital status − in-union or not; schooling − based on school achievement and grouped according to the academic level finished: primary or no schooling, secondary school, preparatory school, and a university degree or more; place of residence − considered urban if it reported fifteen thousand inhabits or more and rural if not; employment status ☐currently employed or not; and the capacity for response in the face of some economic emergency. Remittance reception was generated based on the survey questions that inquired if the person had relatives or acquaintances who lived in another country and if during the last year he/she received money from relatives or acquaintances who live abroad. Independent variables were selected as in other financial inclusion studies (Li et al., 2014).

A bivariate descriptive analysis was performed to identify if remittance reception and which social-demographic characteristics are associated with financial inclusion. For this, Pearson's chi-square independence test was used. This analysis was based on contingency tables, where financial inclusion was separated into three categories (high, medium, and low). This grouping was done using a latent class analysis (LCA), aimed at grouping populations depending on their behavior -in this case, the use of and access to financial services and products-, but there is no variable assigning individuals to each group. The same variables that explain the use of and access to financial services were used. The LCA results allow the determination of the probability of a person belonging to a group and describe the differences between these groups. It is important to mention that the LCA grouping was only used in the descriptive analysis.

An ordinary least squares (OLS) linear regression model using the financial inclusion index (as a dependent continuous variable), was estimated to calculate the effect of remittance reception and the social-demographic characteristics on financial inclusion. In this model, the variable to be explained was the financial inclusion index obtained through the ACP.Thus, the regression equation is

$$FI = \beta_0 + \beta_1 Remittance\_recipient + \beta_2 Sex + \beta_3 Age\_group + \beta_4 Head\_of\_Hoshold +$$

$$\beta_5 Sex\_and\_Head\_of\_Household + \beta_6 In\text{-}union + \beta_7 Schooling + \beta_8 Locality +$$

$$\beta_9 Employed + \beta_{10} Can\_respond\_to\_an\_emergency + \varepsilon$$

Where *FI* is the financial inclusion index; *Remittance_recipient* is the variable whether people receive remittances or not; *Sex* indicates whether the person is male or female; *Age_group*is the variable for the person's age and it is grouped:18-29, 30-39, 40-49, 50-59 and 60 or above; *Head_of_Hoshold* indicates if the person is the head of household or not; *Sex_and_Head_of_Household* is an interaction term between sex and head of household; *In-union* is the variable for the union status of the person; *Schooling* indicates the educational achievement, grouped as primary or no schooling, secondary school, preparatory school, and a university degree or more; *Locality* is the variable for the place of residence (urban or rural); *Employed* indicates if the person is employed or not; *Can_respond_to_an_emergency* is the variable that shows if a person can respond to an economic emergency; $\beta_{(0\text{-}10)}$ are the regression coefficients; ε is the error term. The correlation analysis was performed using a polychoric correlation command in Stata/MP 17.0. This analysis is shown in the Appendix A. The highest correlation was between sex and head of household (.62). The ANOVA table is also shown in the Appendix B. Multicollinearity was tested by estimating the variance inflation factors (VIF) for the independent variables specified in the linear regression model. All VIF values were under 3.34, which shows low correlation and no multicollinearity problems in the regression model. All estimations were done taking into account the survey sampling design. The data that supports the findings of this study is publicly available from INEGI at https://www.inegi.org.mx/programas/enif/2015/.

4. Results and discussion

4.1. Financial Inclusion of recipient and non-recipient households

Table 1 shows that in 2015, 41.4% of the persons surveyed had a low level of financial inclusion, and 15.1% had a high level. Those percentages are consistent with previous research in Mexico between 2010 and 2016. In the ENIF sample, 8.5% of the adults said they were remittance recipients. The highest percentage was found in people with mid-level financial inclusion, followed by high-level. In El Salvador, Anzoategui et al. (2011) demonstrated that remittance reception can increase the use of some financial products such as bank accounts, which could also help explain our results. A higher percentage of females was also observed in the survey. There was a higher number of adult males with a high level of financial inclusion. By age, three-fourths of the adults surveyed by the ENIF were of productive age (18-49 years old). The highest percentage of people 50 years old or older was found in the low financial inclusion group. Concerning the head of the household, 58% of those surveyed declared having that characteristic, with the highest percentage in the high financial inclusion group.

Regarding marital status, in 2015, almost two-thirds of adults in Mexico declared they were in-union (married or in cohabitation) (Table 1). The highest percentage of the in-union population was registered in the low financial inclusion group. The schooling variable was incorporated into the model because, as corroborated by Anzoategui et al. (2011), it allows identifying households with the highest possibility of knowing the characteristics and uses of financial instruments offered by banking institutions. Schooling is low in Mexico since six out of every ten heads of household declared secondary level schooling or less. In the low financial inclusion group, three-fourths of the adults declared this schooling level. In contrast, a little over three-fourths of the adults with a high level of financial inclusion reported schooling of preparatory level or more. Often, the lack of financial inclusion depends on the distrust of financial institutions (Maldonado, Moreno, Giraldo & Barrera, 2011). This could be directly related to how complicated certain financial products can be, thus making them more accessible to the high schooling population.

Two-thirds of the localities in Mexico were of 15,000 inhabitants or more (considered urban in this study). It stands out that the group with less financial inclusion mostly live in rural localities, while those with a high inclusion mostly reside in urban areas (84%). This could be related to the fact that there is limited access to financial products such as ATMs in rural areas, or as Internet service is scarce, it complicates access to electronic banking (Sarma & Pais, 2011). This instead leads to rural remittance recipients preferring to receive them through non-banking services, limiting their financial inclusion.

Additionally, 64.4% of the adults declared they were employed. This percentage increased for those who had a high level of financial inclusion (83.3%). In comparison, the group with a low financial inclusion index had a lower percentage of this variable (57.1%). Many people who are a part of the formal labor market receive their wages through banking institutions, so they have access to some products offered by these institutions (Li et al., 2014). Finally, almost 9 out of 10 adults mentioned they could respond in case of an economic emergency. However, the group with the lowest financial inclusion again had a lower positive answer to this question (83.5%), in contrast to the group with higher inclusion, where almost everyone could solve an economic emergency (98.4%). This could be related to a higher rate of insurance and savings in the high financial inclusion group (Li et al., 2014).

Variables	Degree of financial inclusion			Total
	Low	Medium	High	
	n=2501	n=2628	n=911	n=6039
Remittance recipient*	**100**	**100**	**100**	**100**
No	92.4	90.6	91.5	91.5
Yes	7.6	9.4	8.6	8.5
Sex**	**100**	**100**	**100**	**100**
Female	53.1	54.8	44.7	52.6
Male	46.9	45.2	55.3	47.4
Age Group**	**100**	**100**	**100**	**100**
18-29	30.1	32.3	25.9	30.4
30-39	22.8	24.0	30.4	24.5
40-49	20.3	21.2	20.3	20.7
50-59	17.2	11.6	16.0	14.6
60 or more	9.6	10.9	7.4	9.8
Head of Household**	**100**	**100**	**100**	**100**
No	60.8	59.6	47.4	58.3
Yes	39.2	40.4	52.6	41.7
In-union*	**100**	**100**	**100**	**100**
No	33.6	37.0	35.7	35.4
Yes	66.4	63.1	64.3	64.6
Schooling**	**100**	**100**	**100**	**100**
Primary or none	43.1	23.2	4.5	28.6
Secondary	33.1	31.8	19.6	30.5
Preparatory	16.8	24.5	25.4	21.5
College or more	6.9	20.5	50.6	19.4
Locality**	**100**	**100**	**100**	**100**
Urban	54.2	68.4	84.0	64.9
Rural	45.8	31.6	16.0	35.1
Employed**	**100**	**100**	**100**	**100**
No	42.9	35.1	16.7	35.6
Yes	57.1	64.9	83.3	64.4
Can respond to an emergency**	**100**	**100**	**100**	**100**
No	16.5	8.1	1.6	10.6
Yes	83.5	91.9	98.4	89.4

**Chi-squared test significance $p<0.01$. * Chi-squared test significance $p<0.05$. This indicates that the variable has a statistical significant association with financial inclusion. The coefficient of variation was estimated for all variables and was under 30% in all cases.

Table 1. Main socio-demographic characteristics of Mexican adults by financial inclusion category, 2015 (INEGI, 2015)

The linear regression model results are shown in Table 2. With this model, the effect of the adults' social-demographic and economic factors on financial inclusion were analyzed. It is shown that the adults that receive remittances have a higher index of financial inclusion, a finding that emerges after controlling for the other social-demographic and economic characteristics. This is possibly related to the different financial inclusion strategies recently implemented for the remittance recipient population, which will be discussed in the next section.

Variables		Financial Inclusion 2015		
		Coefficients	Std. Error.	IC 95%
Remittance recipient	No+	-	-	-
	Yes	0.093***	0.023	[0.047, 0.139]
Sex	Female+	-	-	-
	Male	-0.024	0.022	[-0.068, 0.020]
Age group	18-29+	-	-	-
	30-39	0.072***	0.019	[0.036, 0.109]
	40-49	0.079***	0.021	[0.038, 0.120]
	50-59	0.074***	0.025	[0.024, 0.123]
	60 or more	0.175***	0.028	[0.121, 0.230]
Head of Household	No+	-	-	-
	Yes	0.107***	0.024	[0.061, 0.154]
Sex and Head of Household	Female not head of household+	-	-	-
	Male head of household	-0.056	0.035	[-0.124, 0.013]
In-union	No+	-	-	-
	Yes	0.062***	0.016	[0.030, 0.093]
Schooling	Primary or none+	-	-	-
	Secondary	0.203***	0.016	[0.171, 0.234]
	Preparatory	0.391***	0.021	[0.350, 0.433]
	College or more	0.691***	0.023	[0.647, 0.736]
Locality	Urban+	-	-	-
	Rural	-0.128***	0.017	[-0.161, -0.095]
Employed	No+	-	-	-
	Yes	0.143***	0.015	[0.113, 0.173]
Can respond to an emergency	No+	-	-	-
	Yes	0.251***	0.018	[0.215, 0.287]
Constant		**-0.092***	**0.029**	**[-0.148, -0.035]**
Number of observations in the model				**5912**

Notes: + Reference category; *** p<0.01; ** p<0.05; * p<0.1;
Goodness of fit test F p<0.001. R2 = 0.31.

Table 2. Lineal regression model on financial inclusion in Mexico, 2015 (INEGI, 2015)

Although some studies have pointed out the relevance of making banking services accessible to women as an instrument for empowerment (Uribe, 2015), in this case, the person's gender did not have a significant effect on financial inclusion once the rest of the explanatory variables were included. In contrast, age has a considerable impact: financial inclusion increased among the four decennial age-groups compared to the 18-29 age-group. Savings are more common during adult life when people are economically active (Li et al., 2014). Being heads of households increased the financial inclusion of Mexican adults. However, there was not a significant effect on financial inclusion when the heads of households were male.

Concerning marital status, it was observed that in-union adults reported a higher index of financial inclusion (Li et al., 2014). The schooling level also had a positive and significant effect on financial inclusion. It is highlighted that as schooling increases, so does the financial inclusion which, could be linked to a greater knowledge and understanding of financial products (Li et al., 2014). If the person lives in a rural locality, the financial inclusion index decreases. This result coincides with Anaya, Buelvas and Romero (2020), who found that a higher schooling level of the heads of household and living in urban areas can increase the probability of financial inclusion. It is also observed that employment increased adults' financial inclusion, in contrast to those unemployed. Finally, if the person declared he/she could solve financial emergencies, this had a positive association with the financial inclusion index. These last results are similar to the ones presented by Li et al. (2014).

4.2. Financial Inclusion strategies in Mexico

In this section, some of the main actions and strategies that the government has implemented towards financial inclusion of the population are presented. This could lead to a better understanding of the current state of financial inclusion in the country. However, these strategies mostly omit the economic situation of households and the consequences that could derive from this inclusion, like indebtedness.

Financial inclusion has been implemented through several regional strategies as part of a global tendency promoted by international organisms, such as the World Bank and other sectors, trying to promote development. Their aim was to encourage access to and effective use of the financial system as a symbol of progress (Trivelli & Caballero, 2018). In Latin America, Nicaragua was one of the first countries to introduce, as a strategy for financial inclusion, a Law for the Promotion and Regulation of Microfinance in 2011. Brazil followed with its Action Plan for Financial Inclusion and Ecuador with its Financial Inclusion Public Policy in 2012. In Mexico, the National Policy for Financial Inclusion (PNIF) was first published in 2016. This policy collected the action lines for the promotion and advancement of financial competencies and had as a main axis the protection of financial services users. The law also included strategies to measure financial inclusion, which motivated the implementation of the survey used in this research.

The PNIF is linked to the 2020-2024 National Development Financing Program. The policy had two primary objectives: i) promoting the sustainable development of the financial system, and ii) increasing financing, the level of development, and promoting greater inclusion of the private sector to contribute to the country's economic development (Secretaría de Hacienda y Crédito Público, 2020). It is important to point out that proposing the integration of the private sector as a part of a successful financial inclusion strategy should be accompanied with the identification of the main characteristics of the population. Knowing these characteristics would allow the development of public policies, specifically tailored for the vulnerable population, including migrants and remittance receiving households. There is a diagnostics section in the PNIF but, instead of the particularities of the population analyzed in this article, it lists the key problems of financial inclusion. These problems include the low ownership and use of financial products, the limited use of digital services, the lack of financial education tools, and the low inclusion of vulnerable sectors of the population, among others.

Another important element highlighted in the PNIF is the lack of personal self-identification documents, which excludes the vulnerable population from the financial system, including migrants. This happens, for example, with Mexican children who migrated to the US when they were very young but who have since returned; children of Mexicans who were born abroad but who have no Mexican nationality papers; and with the irregular foreign population in the country. Furthermore, the PNIF stresses the importance of remittances, underscoring that, according to the data from the ENIF survey, most of these resources are collected in cash through remittance businesses or companies.

As part of the government's objectives to respond to the needs of the vulnerable population, including migrants, the PNIF promotes increased access to the financial system, mainly through the channeling of payments from social programs through the banks. When dealing specifically with remittances, it is stressed that financial services must increase regarding sending and receiving these resources by: i) promoting the opening of financial products by migrants and their relatives who receive the remittances, both in-person and remotely; ii) reducing the cost of sending and receiving; iii) using consular registration as an official ID, and iv) the creation of financial education programs (Secretaría de Hacienda y Crédito Público, 2020).

There are other financial inclusion strategies for migrants that are being proposed and implemented. Recently, the Ministry of Finance and Public Credit (Secretaría de Hacienda y Crédito Público), through the Welfare Bank (Banco del Bienestar) and the Bank of Mexico (Banco de México), have proposed facilitating opening bank accounts in Mexican consulates for migrants in the US, independently of their migratory status. The intention is to reduce sending costs and to provide the most beneficial exchange rate for users. Other initiatives include the creation of an application to identify currency exchange points, selling prepaid cards to pay for goods and services, and increasing the municipalities with banking infrastructure (Secretaría de Hacienda y Crédito Público, 2020). Financial inclusion also contemplates other services, apart from considering opening bank accounts, like access to loans. However, the institutions that offer them do not consider that, at the local or family level, this could lead to indebtedness, something that has been previously reported (Kirwan, 2020; Suárez, 2017; García-Lamarca & Kaika, 2016). Prabhakar (2019) and Berry (2015) also point out that the policies related to financial inclusion do not focus on how to protect the population. Instead, these policies shift the responsibility to the individuals who, under their own risk and often without knowledge, use the various financial products.

Another financial inclusion strategy aimed at the migrant population is the Financial Attention Counters (VAF in Spanish). These counters offer information about opening bank accounts, mainly in the Wellbeing Bank, or on a range of options for sending remittances from various banks. Additionally, Mexicans abroad can access the *Financial Mailbox for Mexicans Abroad* that, through the website of consulates, helps them send and receive funds internationally; allows the payment of debts in Mexico; provides general information about Retirement Fund Administrators (AFORE); and allows them to report any problems with financial institutions in Mexico.

The Law to Regulate Financial Technology Institutions (Fintech Law) was published in 2018 (Secretaría de Gobernación, 2018). This law sought to offer legal certainty to those who use financial services through digital platforms, which directly involves the population that sends and receives remittances. According to the Inter-American Development Bank (IADB), in 2018, Fintech companies dedicated to the payment and reception of remittances increased 61% in Latin America. These enterprises offer users minimum fees or even free transfers through their applications. Thus, the purpose of the Fintech Law is to regulate these type of activities, yet they do not necessarily insure the money of the users. Although the activities carried out by these companies and the dissemination of information made by the Mexican government through the VAF in the consulates abroad could be considered a relevant financial inclusion strategy for some population sectors, the main problem is that not all remittance recipients have internet access or smartphones. For example, people in rural areas do not have the necessary mechanisms to receive remittances through digital platforms. Moreover, as previously stated, ATMs or banks where they can withdraw remittances are sometimes inaccessible due to the long distances they must travel.

There are other type of strategies that, even if they are not targeted at the remittance receiving population, they can have access to them. Among them, the Mexican Government has implemented social programs aimed at the most vulnerable population. The payments of these programs used to be made directly in the banks or through bank checks. But now, the beneficiaries must have a bank account and with it, the government expects them to access other types of financial services. Among these programs, the "Tandas para el Bienestar" gives microcredits aimed at small family businesses located in the medium to very high marginalization zones and/or in places with high violence indexes. Another program is the "Programa de Pensión para el Bienestar de las Personas Adultas Mayores" that offers economic support to people aged 65 or older. In both programs, the government wants to encourage the opening of bank accounts by the beneficiaries.

Some of the proposed strategies could be beneficial for the population. However, these strategies are aimed at population groups that receive economic resources, such as remittances. These policies exclude the most vulnerable individuals, which will continue to be left out of the financial sector. It is vehemently claimed that financial inclusion of even the most vulnerable can increase the development of their communities. Yet, these strategies are focused on making banking services accessible to those with resources that can be profitable for the financial system, without really offering them future benefits, and excluding the poorest people. This shows that the democratization of finances is not planned as a support for the most vulnerable, but to seize the greatest possible amount of resources from the population.

5. Conclusions

One of the main findings of this paper is the low percentage of the population with a high level of financial inclusion in Mexico. This research also found that the main sociodemographic variables that explain financial inclusion were: age − the older the age, the more inclusion−, being a head of household, schooling level − the more schooling, the more inclusion −, living in urban areas, being employed, and receiving remittances. The latter variable could be linked to the financial inclusion actions adopted by the government and banking institutions to incorporate vulnerable households − including those with migrants − into the Mexican financial system.

Although financial inclusion could become a path for household welfare (Orazi et al., 2019; Damodaran, 2013), in Mexico, it has not necessarily focused on the population with the lowest resources. This is confirmed by the variables discussed here, which explain that certain groups are more financially included, such as those with more schooling or living in urban areas. This contradicts somewhat the position that financial inclusion strategies are

focused on the lower-income population. These strategies have been aimed at the population with monetary resources, that has been previously excluded from the financial system.

It has been stated that financial inclusion allows for better management of household investments (Ozili, 2020a). However, Ozili (2020a) also mentions that financial inclusion advocates rarely question the products offered to the population with the goal of giving them access to banking services, since it could be viewed as an anti-development posture. Moreover, financial inclusion strategies are not accompanied by the financial education of the households. Financial education could be considered as one of the strategies of the neoliberal regime that transfers responsibility of economic security to the individual (Maman & Rosenhek, 2020). However in Mexico, financial education could help avoid the consequences of high indebtedness of vulnerable households. These impacts could not be determined based on the statistical data shown here. Knowing the main socio-demographic characteristics of the population with higher financial inclusion would allow further research aimed at establishing the link between financial inclusion and the impacts, both negative and positive, it may generate in households.

In conclusion, it is important that financial inclusion policies not only focus on strategies that give the population access to banking services, but also attempt what Ozili (2020b) calls 'optimal financial inclusion'. This concept refers to forms of inclusion where the financial system offers essential services at affordable prices that are economically profitable for the service providers. This would be an incentive for both the users and for those who provide these services. It is also vital that the official discourse about financial inclusion or democratization is supported by studies that, apart from the supposed economic benefits, consider some of the negative implications of financial inclusion, such as indebtedness. These implications could be related to the household's current lack of knowledge about many of the financial products they are offered.

This study has some limitations that should be highlighted. In brief, although the issue of the financial inclusion of remittance recipients appears in the PNIF, where they are referred to as an important group, it has not been amply researched. Even in the new versions of the ENIF survey, this population group has not been included. The analysis also could not be implemented at the state level, which might overlook the relevant heterogeneity within the country. Likewise, if the ENIF results had state or municipal level representativeness, they could be used to make comparisons between traditional migration states or municipalities.

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Appendix A – Correlation matrix (ENIF, 2015)

Correlation matrix	Financial Inclusion Index	Remittance recipient	Sex	Age Group	Head of Household
Financial Inclusion Index	1				
Remittance recipient	0.016679	1			
Sex	0.067915	-0.16713	1		
Age Group	-0.05027	-0.02786	-0.02068	1	
Head of Household	0.108907	0.013055	0.621942	0.352028	1
In-union	-0.05215	-0.1009	0.107612	0.130062	-0.01387
Schooling	0.505666	-0.0887	0.062801	-0.34963	-0.09933
Locality	-0.32696	0.179962	0.038011	-0.03353	-0.01751
Employed	0.289018	-0.12453	0.609107	-0.12332	0.456368
Can respond to an emergency	0.387709	0.136914	0.078117	-0.22986	0.038362

Correlation matrix	In-union	Schooling	Locality	Employed	Can respond to an emergency
Financial Inclusion Index					
Remittance recipient					
Sex					
Age Group					
Head of Household					
In-union	1				
Schooling	-0.17365	1			
Locality	0.179635	-0.40952	1		
Employed	-0.1233	0.234733	-0.13535	1	
Can respond to an emergency	0.022097	0.284013	-0.02359	0.248261	1

Appendix B – ANOVA table(ENIF, 2015)

Source	Partial Sum of Squares	Degrees of Freedom	Mean Square	F - statistic	Prob>F
Model	517.90969	20	25.895485	131.81	0
Remittance recipient	4.1184332	1	4.1184332	20.96	0
Sex	1.7380259	1	1.7380259	8.85	0.0029
Age Group	13.476682	10	1.3476682	6.86	0
Head of Household	4.8364826	1	4.8364826	24.62	0
In-union	1.9816531	1	1.9816531	10.09	0.0015
Schooling	276.76353	3	92.25451	469.57	0
Locality	18.747369	1	18.747369	95.42	0
Employed	19.774382	1	19.774382	100.65	0
Can respond to an emergency	33.685659	1	33.685659	171.46	0
Residual	1157.369	5,891	0.19646393		
Total	1675.2787	5,911	0.28341714		