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DETERMINANTS OF AND BARRIERS TO PEOPLE'S FINANCIAL INCLUSION IN MEXICO

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ABSTRACT/RÉSUMÉ

Determinants of and barriers to people's financial inclusion in Mexico

Individuals' access to finance is particularly low in Mexico. Widening access to finance would boost growth and inclusion. This paper uses microdata from the National Survey for Financial Inclusion to assess the drivers of and the barriers to people's financial inclusion in Mexico. Results show that working in the formal sector, the level of wealth and income, educational attainment, and age are the socio-economic characteristics that most affect the likelihood of holding any formal financial product. The relative importance of these characteristics, however, varies across financial products. Economic barriers to individuals' financial inclusion are strongly associated with widespread informality and a low level of education and income. These results suggest that financial education programmes and credit registries considering a wider set of data to assess informal workers' credit worthiness would be promising avenues to help more Mexicans access financial services.

Key words: financial inclusion, informality, financial education, credit registry, banks
JEL codes: D18, G2, G41, G51, G52, G53, O32

This Working Paper relates to the 2022 Economic Survey of Mexico
https://www.oecd.org/economy/mexico-economic-snapshot/

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Déterminants et obstacles à l'inclusion financière des personnes au Mexique

L'accès des particuliers au financement est particulièrement faible au Mexique. L'élargissement de l'accès à la finance stimulerait la croissance et l'inclusion. Cet article utilise des microdonnées de l'enquête nationale sur l'inclusion financière pour évaluer les facteurs et les obstacles à l'inclusion financière des personnes au Mexique. Les résultats montrent que le fait de travailler dans le secteur formel, le niveau de richesse et de revenu, le niveau d'éducation et l'âge sont les caractéristiques socio-économiques qui affectent le plus la probabilité de détenir un produit financier formel. L'importance relative de ces caractéristiques varie toutefois selon les produits financiers. Les obstacles économiques à l'inclusion financière des individus sont fortement associés à l'informalité généralisée et à un faible niveau d'éducation et de revenu. Ces résultats suggèrent que les programmes d'éducation financière, ainsi que les registres de crédit prenant en compte davantage de données pour évaluer la solvabilité des travailleurs informels permettraient d'aider un plus grand nombre de Mexicains à accéder aux services financiers.

Mots clés : inclusion financière, informalité, éducation financière, registre de crédit, banques
Codes: D18, G2, G41, G51, G52, G53, O32

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https://www.oecd.org/fr/economie/mexique-en-un-coup-d-oeil/

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Determinants of and barriers to people's financial inclusion in Mexico

By Steven Cassimon, Alessandro Maravalle, Alberto González Pandiella and Lou Turroques [1]

1. Introduction

1. Mexico has ample room for increasing financial depth and people's access to finance. Structural issues have historically delayed Mexico's financial development, including low levels of financial literacy, a large informal sector, a costly enforcement of collateral repossession and mistrust in the banking sector. With a bit less than 70% of adults using at least one financial product (bank account, credit, insurance or retirement savings) in 2018, financial inclusion indicators remain low in international comparison (OECD, 2022[1]). Moreover, access to financial services is significantly unequal across income levels, gender, between rural and urban areas and across states. Around one-eighth of Mexico's municipalities does not have even one financial access point, though most of them are located in sparsely inhabited rural areas. Even if 92% of the adult population has access to a bank branch, in some states, this share is significantly lower and declines to 56% in Oaxaca, 62% in Tlaxcala and 77% in Puebla. Smaller regional disparities persist when considering the presence of any financial access point. While around 98% of the population has access to at least one financial point, the share is 94% in Yucatan, 93% in Chiapas and as low as 81% in Oaxaca. The gender gap is significant in the access to some financial services such as retirement savings.

2. Promoting financial inclusion can be especially beneficial for emerging-market economies such as Mexico. An increase in financial inclusion appears to be positively related to growth (Sahay et al., 2015[2]). It is also associated with sharp declines in income inequality and poverty rates in countries at intermediate and advanced stages of financial development, provided that the pace of credit expansion does not lead to financial instability (Rajan, 2005[3]) due to poor regulation and supervision (Mehrotra and Yetman, 2015[4]). Expanding access to finance would enable Mexican households to invest in education and health, and better manage income shocks thus reducing the possibility of falling into poverty after a negative income shock (e.g. sickness or unemployment). Low-income households, including those that reside in disadvantaged regions, would particularly benefit from more financial inclusion, as it would unlock new economic opportunities for them.

3. This paper applies standard survey-weighting generalised linear models (probit and multinomial logit) to data from the 2018 Mexico's National Survey for Financial Inclusion to undertake a quantitative assessment of the determinants of and the barriers to people's financial inclusion in Mexico. Estimates are used to identify key socio-economic characteristics affecting the likelihood of holding financial products as

[1]Steven Cassimon, Alessandro Maravalle and Alberto González Pandiella are members of the OECD Economics Department. Lou Turroques is a research assistant in the OECD Directorate for Education and Skills. The authors would like to thank Álvaro Pereira, Isabell Koske, Vincent Koen, Aida Caldera Sánchez, Enes Sunel and Kiril Kossev for their valuable comments. Special thanks go to Roland Tusz and Véronique Gindrey for research assistance, and Karimatou Diallo for editorial assistance .

well as the main barriers preventing individuals from using them, thus providing insights on which policy interventions would be more beneficial to increase financial inclusion.

4. Results show that the probability of holding a formal financial product is largely associated with a subset of socio-economic characteristics that may change across financial products. Specifically, having a formal job strongly affects the probability of holding a bank account (savings, checking or payroll), while higher educational attainment, wealth or income matter most for obtaining a credit, in line with past evidence of the relevance of indicators of individual creditworthiness. Educational attainment, which could be a proxy for financial literacy, is strongly associated with holding more specialised financial products such as insurance, while age affects the most the probability of using mobile banking. Looking into the barriers to financial inclusion, results highlight that a low level of education and income, informality, and living in rural areas, are strongly associated with the presence of economic barriers to holding formal financial products. Among higher income and better educated individuals, instead, financial exclusion is mostly due to non-economic reasons such as preferences.

5. With the vast majority of poor households working in a large informal sector, extending financial inclusion is a component of the comprehensive strategy required to reduce informality in Mexico. Informal workers often do not meet requirements for accessing a credit because they cannot provide the documentation that is usually required to assess creditworthiness. Policies that broaden the range of information to be used for credit assessment would help reduce information asymmetries in the credit market and promote financial inclusion, thus benefiting disproportionally the poor who often lack collateral (Banerjee and Newman, 1993[5]). Strengthening financial literacy to increase awareness of consumer protection regulation and of the tools available to consumers would also help build trust in financial markets and reduce voluntary financial exclusion. Consumer protection regulation should also keep up with the pace of financial innovation (OECD, 2021[6]), including digitalisation (OECD, 2020[7]).

6. The structure of the paper is as follows. Section 2 gives an overview of the existing literature in the field of financial inclusion with a special focus on emerging market economies. Section 3 presents data used in the empirical analysis and descriptive statistics. Section 4 describes the methodology adopted and presents results. Finally, Section 5 concludes the paper.

2. Literature review

7. Financial inclusion is a multifaceted concept that has been defined in different ways. One widely used definition is that “financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs delivered in a responsible and sustainable way” (World Bank, 2020[8]). Financial inclusion thus encompasses several dimensions including the access, use, quality and affordability of financial services, as well as the level of financial literacy among the population.

8. Financial inclusion is key to boost economic and social inclusion, and removing barriers to financial access is included among the key enablers for achieving the United Nations Sustainable Development Goals (SDG) of the 2030 Agenda. Extending the access to financial services to a larger share of households and firms may alleviate poverty and reduce income and regional inequalities by mitigating the impact of income shocks and facilitating investments in education, health or businesses (Dabla-Norris et al., 2015[9]; Demirguc-Kunt et al., 2018[10]; OECD, 2020[11]). Financial inclusion may even reinforce the transmission of monetary policy if the increase in the access to credit is due to reforms that reduce asymmetric information, such as strengthening the credit registry system or improving the creditworthiness assessment (OECD, 2022[1]).

9. A growing body of the literature highlights the importance of financial inclusion for growth and poverty reduction. Improving the access to financial services may help to boost growth especially in

emerging-market economies, as financial inclusion appears to be linearly and positively correlated to economic growth in the intermediate and advanced stage of development (Sahay et al., 2015[12]). A limited supply of expensive financial services appears to be a stronger barrier to financial access in developing economies than in advanced economies (Dabla-Norris et al., 2015[9]). Results from empirical analyses find a positive relationship between financial inclusion and economic growth (Aghion, Howitt and Mayer-Foulkes, 2004[13]; Fung, 2009[14]). However, establishing causality between financial inclusion, growth and inequality is challenging because of limited data availability also due to the fact that policies aimed at promoting financial inclusion are very recent (Demirguc-Kunt, Klapper and Singer, 2017[15]).

10. Studies on financial inclusion in emerging-market economies find that low incomes, the cost of financial services and the distance to a financial access point are among the main barriers to access to financial services. To a lesser extent, lack of trust in institutions and the inability to provide the required documentation, such as income documentation for informal workers or formal proof of domicile, are also factors that prevent from accessing financial services (Aggarwal, Klapper and Singer, 2013[16]).

11. In Western Kenya, reducing the cost of saving accounts and credit is found to enable more bank users, despite the lack of trust in banking institutions or high transaction costs (Dupas et al., 2016[17]). In Niger, the introduction of unconditional cash transfers via mobile money increased the access to financial services by reducing substantially the cost of accessing financial services due to distance, time, mobile phone ownership and need for an initial amount of savings. It also improved households' well-being and resource allocations (Aker et al., 2016[18]).

12. In Rwanda, insights from studies using probit models to analyse the probability of financial inclusion helped uncover the effect of increasing the volume of microcredits on reducing the barrier to credit. The larger number of microcredits helped reduce information asymmetries that, in turn, also led to an increase in the volume of other kinds of formal credit (Agarwal et al., 2018[19]). In Peru, the level of education and income, gender, and the region where people live are found to be the main facilitators for the use of formal financial services (Clamara, Pena and Tuesta, 2014[20]). In Argentina, age, education and income levels are highlighted as the main determinants of the use of financial products such as savings accounts, credit and debit cards, formal credits and electronic payments. On the other hand, income and age stand out as the socio-economic characteristics that are more strongly associated with the presence of barriers imposed on financially excluded households (Tuesta et al., 2015[21]).

13. In Mexico, studies based on data from the National Survey of Financial Inclusion (ENIF) highlight that gender, education and income levels are the socio-economic factors that affect the most the probability of holding a savings account or an insurance product (including car, house, health expenditure, life or other types of insurance), as well as accessing a financial point such as a bank branch or an ATM (Li et al., 2014[22]; CNBV, 2021[23]). Receiving remittances, surprisingly, is found not to improve the probability of financial inclusion. These studies also find that insufficient or unstable levels of income, self-exclusion, personal preferences and living far from a financial access point are the main factors associated with the presence of barriers to the use of financial services. Another study highlights the socio-demographic factors associated to using informal financial services (Hoyo, Peña and Tuesta, 2014[24]; Atkinson, 2013[25]).

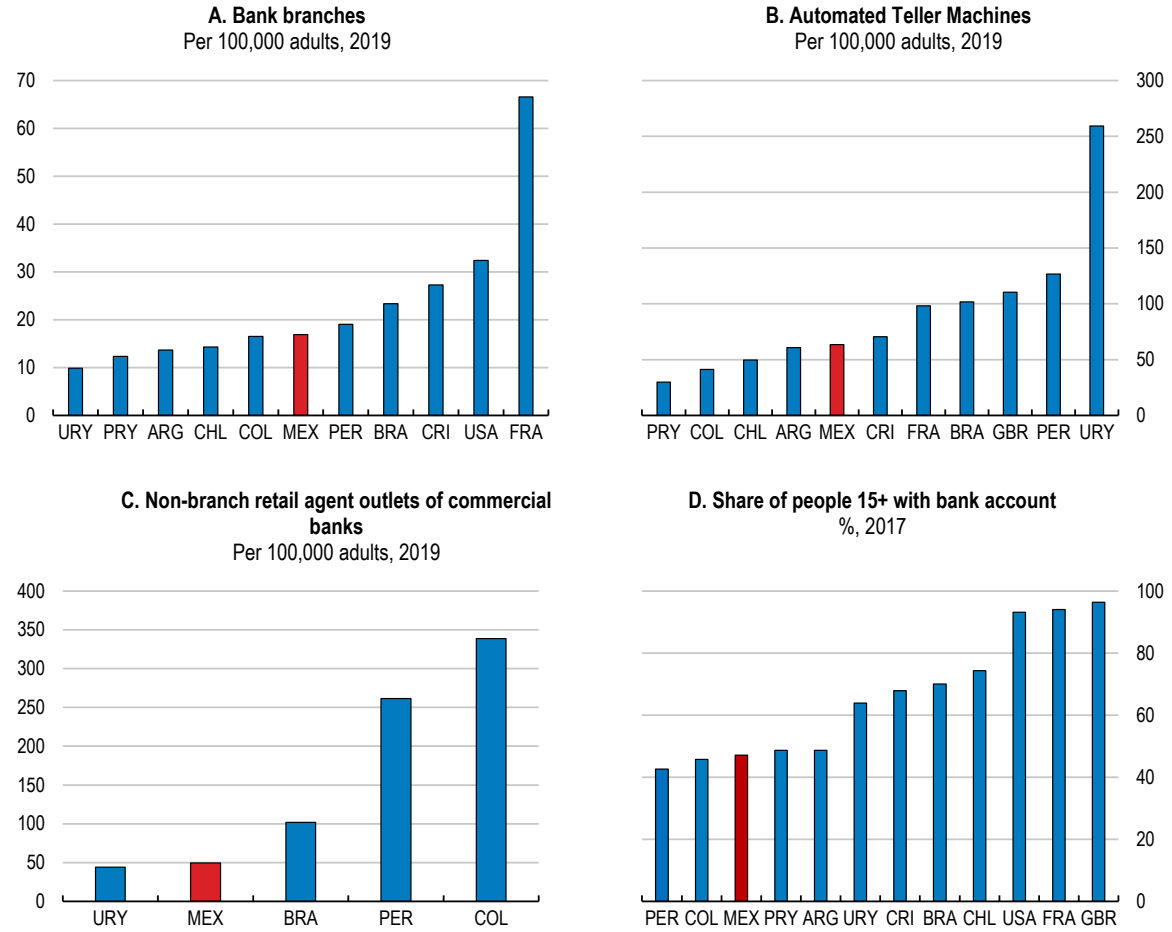
14. This study quantifies the relevance of the main socioeconomic factors associated with financial inclusion in Mexico using the more recent and richer 2018 survey data, which makes it possible to highlight the role of informality and to take into account the presence of regional disparities. The use of a multinomial logit analysis makes it possible to draw specific in-depth insights on the relationship between specific barriers to financial inclusion and socio-economic characteristics of the population.

3. Data and stylised facts

2.2. Emerging and developing economies lag behind advanced economies in financial inclusion

15. To assess the extent of financial inclusion in Mexico and other emerging-market economies two international datasets on financial inclusion are used: the Global Findex database, launched in 2011 by the World Bank, and the Financial Survey Access (FAS), launched in 2009 by the International Monetary Fund, collecting indicators of financial inclusion across more than 140 countries. The Global Findex database provides information on how individuals – aged 15 and over – save, borrow, make payments, and manage financial risks (Demirguc-Kunt et al., 2018[10]). The Financial Survey Access (FAS) captures supply-side data from central banks and financial regulators, facilitating the tracking of progress towards the achievement of Sustainable Development Goals (Espinosa-Vega et al., 2020[26]; IMF, 2020[27]).

Figure 1. Mexico ranks low in access to formal financial services



Notes: Panel A, B and C: data for Mexico refer to 2021. Panel D: data for Mexico refer to 2018 and refer to adult population between 18 and 79 years of age.
Source: IMF Financial Access Survey; World Bank Global Findex 2017; Encuesta Nacional de Inclusión Financiera (ENIF) 2018; and Comisión Nacional Bancaria y de Valores (CNBV) 2021.

16. Emerging and developing economies lag behind advanced economies in financial inclusion. For example, while in advanced economies 94% of adults had an account in 2017, in emerging economies the share is 63% (Demirguc-Kunt et al., 2018[10]). In addition, there are large gender and income gaps in financial account ownership in developing economies. In the average emerging and developing economy, the gap in financial inclusion between men and women is about 8 percentage points, and between the richest 60% and the poorest 40% of the population the difference is even more significant at about 18 percentage points (Demirguc-Kunt et al., 2018[10]).

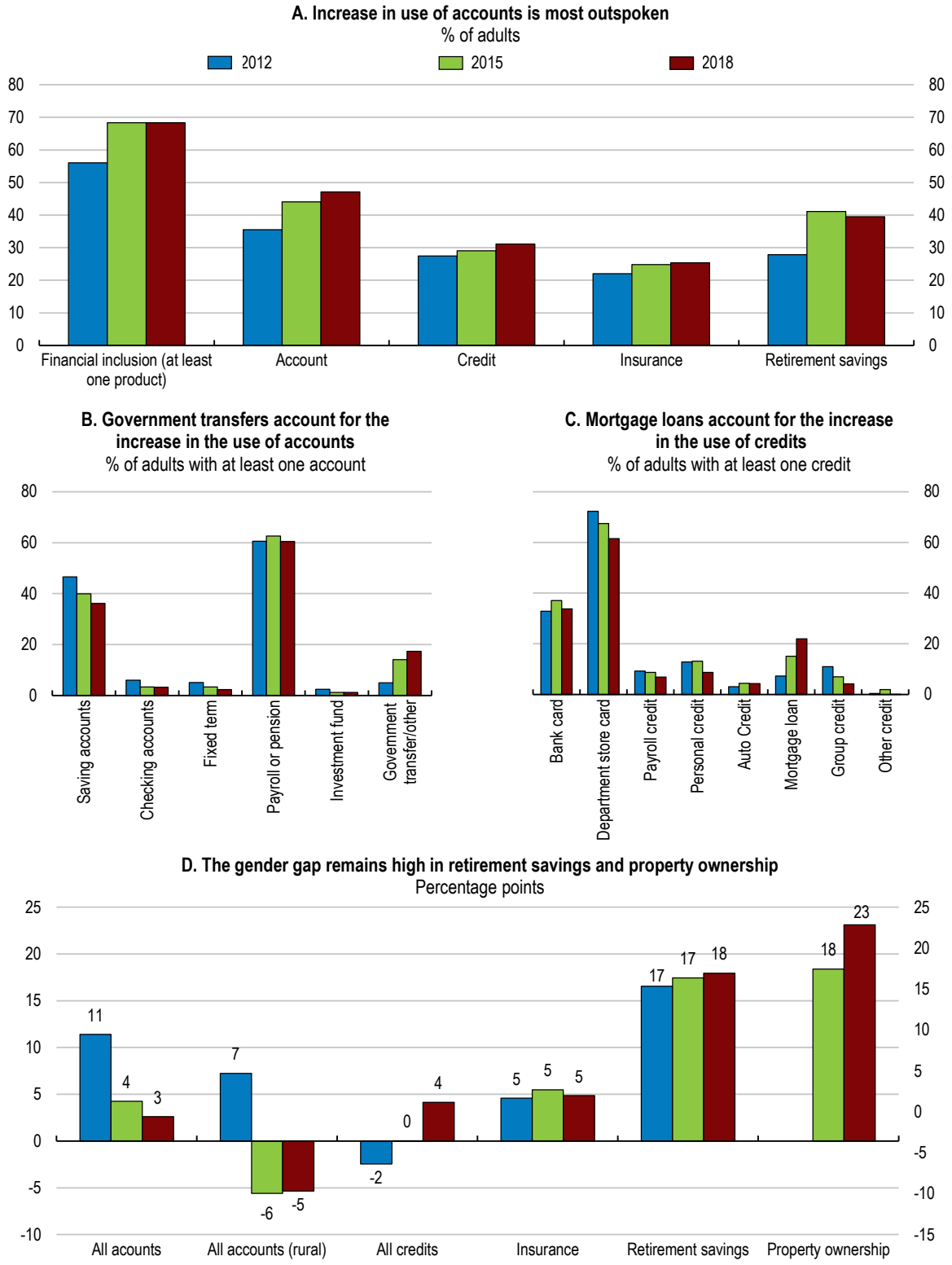
17. In international comparison, Mexico lags behind regional and global peers in several indicators of financial inclusion (Figure 1). For instance, only 47% of adults had an account in 2018 (Figure 1– Panel D) and the number of financial services access points (bank branches, automated teller machines and non-branch retail agent outlets of commercial banks) per 100 thousand adults is relatively low (Figure 1– Panels A, B and C). Similarly, insurance penetration in Mexico is low in international comparison, with the ratio of direct gross premiums to GDP in 2020 at 2.6% against the OECD average of 9.4%.

18. Data are from the National Survey of Financial Inclusion 2018 (ENIF, *Encuesta Nacional de Inclusión Financiera*) that since 2012 is conducted every three years by the National Banking and Securities Commission (CNBV, *Comisión Nacional Bancaria y de Valores*) and the National Institute of Statistics and Geography (INEGI, *Instituto Nacional de Estadística y Geografía*). The survey involves a sample of 14 500 households, representative of the whole adult Mexican population between the age of 18 and 70 years. It consists of 132 questions aimed at capturing socio-demographic characteristics and key aspects of the financial behaviour and capability of the Mexican population as to help public authorities to better design public policies and "establish goals in matters of inclusion and financial education" (ENIF, 2018[28]). The survey provides aggregate information on the Mexican population, as well as disaggregated data by gender, population size of the locality and regions. Between ENIF 2012 and ENIF 2018, the sample size has doubled, thus providing greater accuracy, and new variables have been added to allow for a regional characterisation of financial inclusion (Table A.10 in the Annex) and to incorporate a wide range of information on non-banking financial institutions, frequency of use, financial literacy and preferred payment methods. Descriptive statistics of the relevant variables of the survey are provided in the Annex (Table A.11 in the annex).

3.1. The evolution of financial inclusion

19. Financial inclusion indicators show an improvement between 2012 and 2018 (Figure 2), most of it having occurred between 2012 and 2015 (Figure 2, Panel A), and slightly less than 70% of adults in 2018 used at least one financial product (bank account, credit, insurance contract or retirement savings). The increase in the use of accounts is primary due to government transfers accounts (Figure 2, Panel B), notably among women living in rural areas in Southern states, which has contributed to reduce the gender gap in holding a bank account in rural areas (Figure 2, Panel D). The increase in access to bank accounts, however, does not appear to have been conducive to an equivalent increase in access to credit and insurance (ENIF, 2018[29]). Currently, six out of ten beneficiaries of federal social programmes receive transfers through their bank accounts. This strategy, that has been adopted in other countries in the region (e.g. Costa Rica with the Bono Proteger, (OECD, 2020[11])) could be extended to all federal social programmes and those delivered by states and municipalities. This would also help reduce the scope for fraud or corruption associated with government transfers.

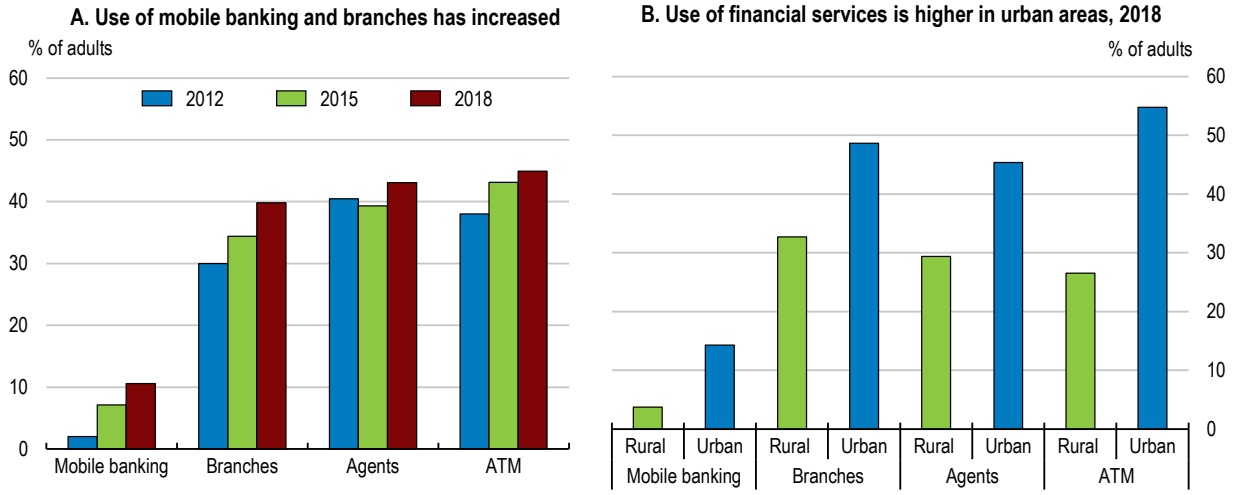
Figure 2. Financial inclusion is slowly improving



Note: Panel D: the gender gap is the difference between the share of men and the share of women having access to a financial product.
Source: ENIF 2012, 2015 and 2018.

20. The increase in access to credit between 2012 and 2018 is mainly explained by the expansion of mortgage loans (Figure 2, Panel C). A large share of adults have a positive balance on credit and department store cards, but the usage of these credit products tends to slow down over time (Figure 2, Panel C). The gender gap in the use of accounts has declined since 2012, yet it remains high in access to retirement savings and property ownership (Figure 2, Panel D). The use of mobile banking and bank branches have both increased by approximatively 10 percentage points between 2012 and 2018 (Figure 3, Panel A). However, the use of financial services remains uneven between rural and urban areas. (Figure 3, Panel B).

Figure 3. Use of access points to financial services has increased unevenly among areas



Source: ENIF (INEGI).

3.2. Descriptive statistics and preliminary analysis

21. The ENIF 2018 database makes it possible to connect the use of financial products to the level of income, education as well as the labour status of individuals. A preliminary analysis of the data is performed to estimate the proportion of adults holding any of four main financial products (savings account, credit, insurance and retirement savings account) and that of adults who are financially included, that is that hold at least one financial product, taking into account relevant socio-economic characteristics. Results highlight the importance of working in the formal sector for financial inclusion, as individuals employed in the informal sector hold financial products in far less proportions than individuals employed in the formal sector, even when other socio-economic characteristics are taken into account (Table 1). For example, the proportion of individuals who are financially included, that is that holds at least one financial product, is estimated between 94.6% and 96.8% for formal workers, but it is between 55.6% and 59.1% for informal workers. Such a large gap remains even when gender, income level or education are taken into account. This has relevant implications in terms of the priority of policies necessary to promote financial inclusion given that informality is widespread in Mexico, with slightly more than 55% of the jobs being informal at the end of 2021 (*Encuesta Nacional de Ocupación y Empleo Nueva Edición*, ENOEN). This preliminary analysis does not point to the presence of a gender gap per-se in financial inclusion (Figure 4, top panels), which might nonetheless emerge as the effect of widespread differences between men and women in other socioeconomic characteristics, such as the level of income or having a formal job. The analysis also highlights that the proportion of adults that use formal financial products increases with the level of income (Figure 5 top panels, and Table A.14 in the Annex), a result in line with findings from a survey on financial inclusion conducted in Peru (Clamara, Pena and Tuesta, 2014[20]) and from the Global Findex data

(Demirguc-Kunt et al., 2018[10]) and educational attainment (Figure 5 bottom panels, and Table A.15 in the Annex).

Table 1. Financial product holding rate by labour market formality and main socio-economic characteristics

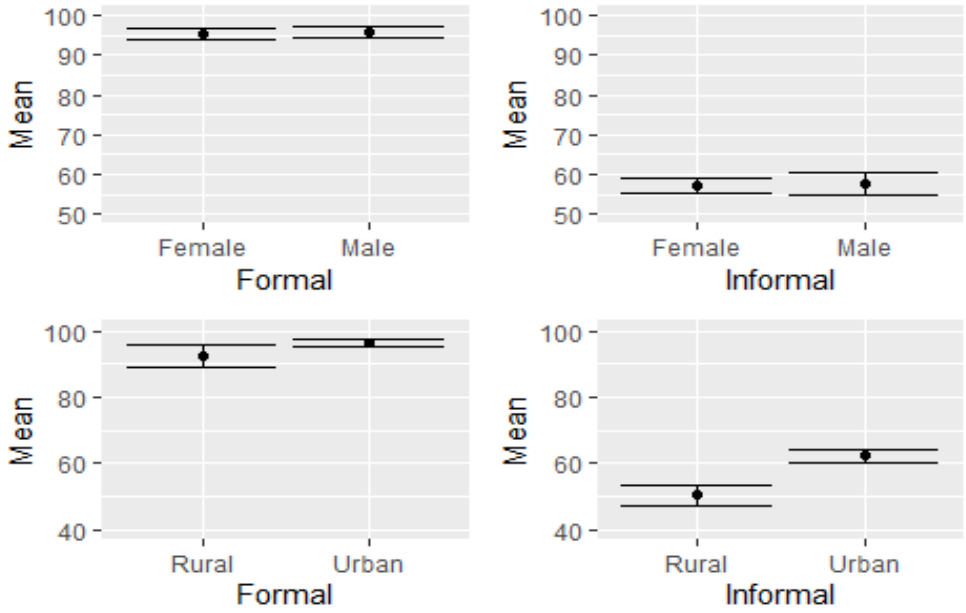
Survey based estimates

	Any financial product		Account ownership		Credit		Insurance		Retirement	
	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal
All sample	**95.7**	**57.4**	**80.8**	**24.1**	**80.8**	**24.1**	**50.7**	**23.3**	**45.8**	**17.2**
	(94 - 96)	(55 - 59)	(79 - 83)	(23 - 25)	(78 - 83)	(22 - 25)	(48 - 53)	(21 - 24)	(43 - 48)	(16 - 18)
By gender:										
Male	**95.9**	**57.6**	**79.3**	**26.2**	**79.3**	**26.2**	**51.2**	**22.7**	**47.0**	**16.7**
	(94 - 97)	(54 - 60)	(77 - 82)	(24 - 28)	(76 - 82)	(24 - 28)	(48 - 54)	(20 - 25)	(43 - 50)	(14 - 18)
Female	**95.4**	**57.2**	**83.3**	**22.5**	**83.3**	**22.5**	**49.9**	**23.7**	**43.8**	**17.6**
	(94 - 97)	(55 - 59)	(80 - 86)	(21 - 24)	(80 - 86)	(21 - 24)	(46 - 53)	(22 - 25)	(40 - 47)	(16 - 19)
By locality:										
Urban	**96.5**	**62.3**	**82.6**	**62.3**	**82.6**	**62.3**	**53.0**	**26.8**	**47.4**	**19.5**
	(95 - 98)	(60 - 64)	(80 - 85)	(60 - 64)	(80 - 85)	(60 - 64)	(50 - 56)	(25 - 29)	(45 - 50)	(18 - 21)
Rural	**92.2**	**50.3**	**73.6**	**50.3**	**73.6**	**50.3**	**41.2**	**18.2**	**39.3**	**14.0**
	(89 - 96)	(47 - 53)	(68 - 80)	(47 - 53)	(68 - 80)	(47 - 53)	(37 - 45)	(16 - 20)	(33 - 45)	(12 - 16)
By income:										
1st quintile	**86.4**	**54.1**	**59.1**	**16.1**	**59.1**	**16.1**	**40.7**	**21.2**	**37.4**	**13.6**
	(79 - 94)	(50 - 58)	(45 - 73)	(14 - 18)	(4 - 73)	(14 - 18)	(26 - 55)	(18 - 24)	(24 - 51)	(11 - 16)
2nd quintile	**91.2**	**53.8**	**73.6**	**20.7**	**73.6**	**20.7**	**35.2**	**21.8**	**24.3**	**12.9**
	(87 - 95)	(49 - 59)	(68 - 80)	(17 - 24)	(68 - 80)	(17 - 24)	(29 - 42)	(19 - 25)	(19 - 29)	(10 - 15)
3rd quintile	**94.1**	**50.1**	**76.3**	**24.4**	**76.3**	**24.4**	**43.5**	**18.1**	**35.0**	**10.7**
	(90 - 98)	(44 - 56)	(71 - 81)	(19 - 29)	(71 - 81)	(19 - 29)	(38 - 49)	(14 - 22)	(29 - 40)	(7 - 14)
4th quintile	**96.1**	**69.8**	**79.5**	**29.5**	**79.5**	**29.5**	**50.0**	**30.1**	**42.0**	**18.9**
	(94 - 98)	(65 - 75)	(75 - 84_	(25 - 34)	(75 –84)	(25 - 34)	(45 - 55)	(26 - 34)	(38 - 46)	(15 - 23)
5th quintile	**99.1**	**80.0**	**90.5**	**47.5**	**90.5**	**47.5**	**65.3**	**43.9**	**64.8**	**38.3**
	(98 -100)	(74 - 85)	(88 - 93)	(41 - 54)	(88 - 93)	(41 - 54)	(61 - 70)	(37 - 50)	(59 - 70)	(32 - 44)
By education:										
Elementary or less	**89.6**	**48.5**	**58.4**	**13.9**	**58.4**	**13.9**	**34.4**	**14.0**	**21.9**	**10.7**
	(86 - 93)	(46 - 51)	(52 - 64)	(12 - 16)	(52 - 64)	(12 - 16)	(28 - 41)	(12 - 16)	(16 - 27)	(9 - 12)
Secondary	**94.7**	**57.8**	**76.5**	**19.8**	**76.5**	**19.8**	**45.7**	**24.6**	**37.8**	**14.6**
	(93 - 97)	(55 - 61)	(73 - 80)	(18 - 22)	(73 - 80)	(17 - 22)	(41 - 50)	(22 - 27)	(34 - 42)	(13 - 16)
High school	**96.3**	**50.8**	**80.8**	**23.6**	**80.8**	**23.6**	**45.1**	**22.7**	**39.0**	**16.9**
	(93 - 99)	(47 - 55)	(75 - 86)	(20 - 27)	(75 - 86)	(20 - 27)	(40 - 50)	(19 - 26)	(34 - 44)	(14 - 20)
Technical school	**94.0**	**63.1**	**79.6**	**30.4**	**79.6**	**30.4**	**46.5**	**29.8**	**38.9**	**20.2**
	(89 - 99)	(57 - 69)	(72 - 87)	(26 - 35)	(72 - 87)	(26 - 35)	(39 - 54)	(25 - 35)	(31 - 46)	(16 - 24)
Bachelor degree or more	**97.9**	**78.8**	**89.3**	**50.7**	**89.3**	**50.7**	**61.9**	**37.9**	**61.9**	**34.8**
	(97 - 99)	(75 - 82)	(87 - 92)	(46 - 55)	(87 - 92)	(46 - 55)	(58 - 66)	(34 - 42)	(57 - 67)	(31 - 38)

Note: The 95% confidence interval is reported in brackets (rounded to the nearest integer).
Source: ENIF 2018 (INEGI); and authors' calculation.

Figure 4. There is no evidence of a gender or urban-versus-rural gap in financial inclusion among individuals with a formal job

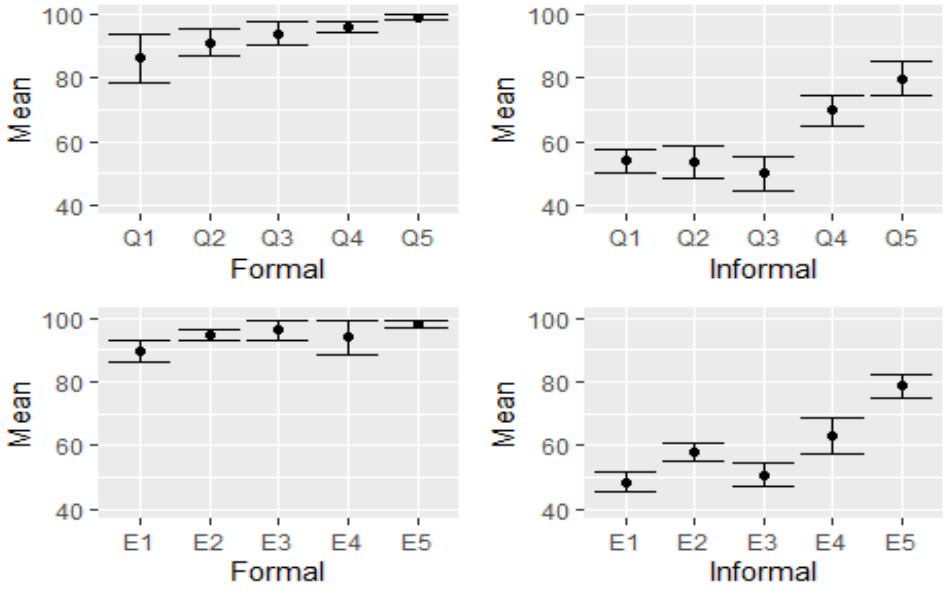
Share of adult population holding at least one formal financial product



Note: Each panel reports the point estimate and the 95% confidence interval for a given subsample of the population that is reported on the horizontal axis: female or male in the top panels, and people living in an urban or a rural area in the bottom panels. Panels on the left refer to individuals with formal job and panels on the right refer to individuals with informal jobs.
Source: ENIF 2018 (INEGI); and authors' calculations.

Figure 5. Financial inclusion increases with the level of income and education

Share of adult population holding at least one formal financial product



Note: Each panel reports the point estimate and the 95% confidence interval within a given subsample of the population that is reported in the horizontal axis. The top panels report subsamples of the population by increasing quintile of income, Q1 being the bottom income quintile and Q5 the top income quintile. The bottom panels report subsamples of the population by increasing educational attainment (E1 = elementary or less, E2 = secondary, E3 = high school, E4 = technical school and E5 = bachelor degree or more). Panels on the left refer to individuals with formal jobs and panels on the right refer to individuals with informal jobs.
Source: ENIF 2018 (INEGI); and authors' calculations.

Table 2. Relevance of socio-economic characteristics for financial inclusion, full sample

p-value of the bivariate test of association

	Gender	Urban-rural	Income quintile	Education	Region	Age	Asset ownership	Marital status	Formal employment
Any financial product	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.04**	0.00***
Savings account	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Government savings account	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.11	0.00***	0.00***
Credit	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Insurance	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.01**	0.00***
Retirement savings	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.14	0.00***
Mobile banking	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***

Note: Each entry in the table provides the p-value of a bivariate test of association between a socio-economic characteristic (columns) and a financial inclusion variable (rows). A test of association checks whether the distribution of a variable measuring a socio-economic characteristic in the population is independent of the distribution of a variable measuring financial inclusion. The null hypothesis of the test is that the two variables are distributed independently in the population. Thus, the rejection of the null hypothesis of independence implies that the socio-economic characteristic provides information about financial inclusion. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: ENIF 2018 (INEGI); and authors' calculations.

22. Different variables of the ENIF database are used as dependent variables conditional on whether the analysis focuses on the determinants of financial inclusion or the barriers preventing households from using or accessing financial products (Table A.12 in the Annex). In the analysis of the determinants of financial inclusion for a specific financial product (savings account, government savings account, credit, insurance, retirement saving, mobile bank account) the dependent variable is a binary variable capturing whether an individual holds the product of interest. A binary variable capturing financial inclusion is built by setting it to 1 if an individual holds at least one out of five financial products (savings/checking/payroll account, government savings account, credit, insurance, retirement saving), and zero otherwise. In the analysis of the barriers preventing households from using or accessing financial products, the dependent variable is a multi-level category variable as the respondents of the survey may identify several barriers preventing them to access a financial product.

23. To select the vector of independent variables to be used in the analysis of the determinants of financial inclusion, a series of bivariate tests of associations between each dependent variable capturing financial inclusion and a set of socio-economic characteristics is performed. This is to verify if a given socio-economic characteristic is a relevant predictor for a specific financial inclusion variable. Results (Table 2) show that all the selected socio-economic characteristics have the potential to affect the probability of an individual to hold at least one financial product. The only exceptions are marital status for retirement savings and asset ownership for government credit accounts. A full list of the available predictors is provided in the Annex (Table A.13 in the Annex).

24. The analysis is repeated for population subsamples of individuals working in the formal and the informal sector due to the observed importance of labour market formality for financial inclusion. Results show some differences in the relevance of socio-economic factors for the two groups (Table 3). For example, gender is statistically relevant for holding retirement savings and mobile banking only among individuals working in the informal sector. This suggest that gender gaps might arise limitedly to these financial products only in the informal sector. Despite this first evidence, the specific quantitative relevance of each of the selected socio-economic factors for financial inclusion is measured by estimating a series of probit models in Section 4.

Table 3. Relevance of socio-economic characteristics for financial inclusion, individuals in the formal and formal sector

p-value of the bivariate test of association, formal sector subsample

	Gender	Urban-rural	Income quintile	Education	Region	Age	Asset ownership	Marital status
Any financial product	0.62	0.00***	0.00***	0.00***	0.06*	0.01**	0.00***	0.21
Savings account	0.04**	0.00***	0.00***	0.00***	0.01**	0.06*	0.00***	0.72
Government savings account	0.00***	0.21	0.00***	0.15	0.22	0.00***	0.85	0.87
Credit	0.63	0.00***	0.00***	0.00***	0.20	0.00***	0.00***	0.00***
Insurance	0.17	0.02**	0.00***	0.00***	0.01***	0.03**	0.00***	0.01***
Retirement savings	0.10	0.04**	0.00***	0.17	0.01***	0.00***	0.00***	0.00***
Mobile banking	0.28	0.00***	0.00***	0.00***	0.02**	0.00***	0.00***	0.00***

p-value of the bivariate test of association, informal sector subsample

	Gender	Urban-rural	Income quintile	Education	Region	Age	Asset ownership	Marital status
Any financial product	0.78	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Savings account	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.01***
Government savings account	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.05*	0.00***
Credit	0.50	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.01***
Insurance	0.45	0.00***	0.00***	0.00***	0.00***	0.04**	0.00***	0.03**
Retirement savings	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.23
Mobile banking	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***

Note: Each entry in the table provides the p-value of a bivariate test of association between a socio-economic characteristic (columns) and a financial inclusion variable (rows). A test of association checks whether the distribution in the subsample population of a variable measuring a socio-economic characteristic is independent of the distribution of a variable measuring financial inclusion. The null hypothesis of the test is that the two variables are distributed independently in the subsample population. The rejection of the null hypothesis of independence implies that a socio-economic characteristic provides information about the probability of holding a given formal financial product. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculation.

4. Empirical methodology and results

4.1. Methodology

25. To identify the socio-economic characteristics that affect financial inclusion, a series of survey-weighted probit models are estimated as in (Clamara, Pena and Tuesta, 2014[20]; CNBV, 2021[23]) using cross-section data from the 2018 ENIF survey for each of six different financial products: savings accounts (including checking and payroll accounts), credit, government transfers accounts, insurance contracts, retirement savings accounts and mobile banking accounts.

26. A probit model is a generalised linear model for a binary variable with possible values 0 and 1 in which it is assumed that a specific non-linear function (the inverse of the cumulative distribution function of a standard normal) of the expected probability that the binary variable Y_i takes the value 1 ($E\ (Y_i = 1|x)$) is linear in a vector of predictors x and follows a standard normal distribution:

$$g\big(\pi(x)\big) = \Phi^{-1}(\pi(x)) = z = \left(\sum_{i=1}^{m} \beta_i x_i\right) \qquad (1)$$

$$\pi(x) = E(Y_i = 1|x) = \Phi(z) = Prob(Z \leq z_i) = \left(\frac{1}{\sqrt{2\pi}}\right) \int_{-\infty}^{\beta x_i} e^{\frac{z^2}{2}} dz\,, \qquad (2)$$

where $\pi(x)$ measures the expected probability that the dependent variable Y_i takes the value 1, that is, whether household i uses a given financial product or not, conditional on socio-economic characteristics included in the vector of independent variables x_i of dimension m ; $\Phi(z)$ is the cumulative standard normal distribution function and Z is a standard normally distributed variable. Model (1) is estimated by the *svyglm* package in R (Lumley and Scott, 2017[30]). To ease the interpretation of the results, the average marginal effects associated with each independent variable is computed. The average marginal effect associated with a given characteristic is interpreted as the average change in the probability of holding a financial product due to a unit change in that characteristic while keeping all the other variables constant. A goodness of fit test of the probit models is performed through a cross-validation exercise (see Figure A.12 in the Annex).

27. A survey-weighted multinomial logit model is estimated to analyse the barriers preventing individuals from accessing financial products. A multinomial logit model for a variable Y with K nominal categories (the K possible answers to a question in the survey) implies estimating simultaneously $K-1$ simple logistic regression models, each modelling the expected probability of being in the category $k = 2, \dots, K$ versus the baseline category $Y = 1$. Each simple logistic model can be expressed as:

$$g(E(Y = k|x)) = g\big(\pi(x)\big) = ln\left(\frac{\pi(Y = k|x)}{\pi(Y = 1|x)}\right) = \left(\sum_{i=1}^{m} \beta_i x_i\right), \qquad (3)$$

where $\pi(Y = k|x)$ is the expected probability that the $Y = k$ with respect to the baseline category $Y = 1$, and the function $g(.)$ is the logit function.

4.2. Determinants of financial inclusion

28. To study how individuals' socio-economic characteristics affect financial inclusion a probit model is estimated for each of the following types of financial products: account owner (including savings, checking and payroll), a credit, an account created to receive government transfers, an insurance contract, a retirement account and a mobile banking account. Estimates of the average marginal effects make it possible to assess quantitatively how socio-economic factors affect the probability of holding formal financial products. Results are reported in Table 4 and Figure 6 (detailed information on dependent and independent variables are available in Table A.13 in the Annex).

29. Results confirm the importance of labour market formality in determining financial inclusion: having a formal job is either the most important or the second most important factor in affecting the probability of holding three of the financial products that are included in the analysis. More specifically, having a formal rather than an informal job increases the probability of holding an account owner by 42 percentage points, the probability of holding a retirement saving account by 40 percentage points, the probability of holding an insurance contract by 16 percentage points and the probability of having a credit by 12 percentage points (Figure 6), ceteris paribus.

30. The likelihood of holding any financial product (except for government transfers accounts) increases with educational attainment, other things equal. As educational attainment, together with other individual and institutional factors, is positively related to financial literacy (Cupák, 2021[31]), this points to the importance of an adequate level of financial literacy for promoting financial inclusion. Achieving the top educational attainment is the factor increasing the most the probability of subscribing an insurance contract: having a university degree raises the likelihood of holding an insurance by 24 percentage points with respect to having just finalised primary school, while holding a high school diploma increases it by around 10 percentage points, ceteris paribus (Table 4, column 4 and Figure 6, Panel C).

31. Income, wealth and education are the most important determinants of access to formal credit (Figure 6, Panel B): an adult in the top quintile of the income distribution, with at least a bachelor or professional degree and owning assets (e.g. house, car), has a probability of holding a formal credit that is around 35 percentage points higher than an adult earning an income in the bottom to middle quintile, no

assets and just secondary education, ceteris paribus. All these factors can be related, directly or indirectly, to the creditworthiness of the individual. Education, indeed, is often considered as a proxy for creditworthiness in the presence of strong asymmetric information (Anjali et al., 2005[32]), and reducing such asymmetries in Mexico would likely expand financial access to formal credit. Moreover, households with a higher level of education are also more likely to be aware of credit sources, and evidence shows that Mexican regions with greater average schooling have a larger share of the population using formal credit (Campero and Kaiser, 2013[33]).

32. Women are marginally more likely than men to hold a savings account, an insurance and of receiving a formal credit, but are less likely to have a retirement savings account, ceteris paribus (Table 4). At the same time, descriptive statistics show that 60% of men hold a credit against 54% of women. These results suggest that economic factors such as the lower labour participation rate of women and their relatively larger presence in the informal labour market, in which low wages prevail, are key determinants of the gender gap in formal credit. These factors may as well explain women's lower likelihood of holding a retirement savings account.

33. Government transfers accounts are provided by the government to the beneficiaries of some social programmes, thus they differ from standard bank accounts. They are characterised by targeting largely individuals with lower levels of income and education, living in rural areas and often working in the informal sector (Table 4, column 3). In recent years, social inclusion programmes, such as Prospera, have benefitted relatively more women in Southern states rural areas, thus contributing to reduce the gender gap in holding a bank account in rural areas. Results from the probit estimation reflect it, and show that a woman living in a rural area and with a job in the informal sector has a probability of holding a government transfer account that is around 17 percentage points higher than a man with a formal job living in an urban area, ceteris paribus (Figure 6, Panel E).

34. The probability of holding a financial product also increases with age, except for a mobile banking account. Other factors that are associated with financial exclusion, but to a lesser extent, are a low level of education attainment and geographical variables, such as living in a rural rather than an urban area or in a region different from the North. Finally, mobile banking account are more popular among young, high educated people with middle to high income and living in urban areas (Table 4, column 6), which points to the presence of digital divide across age cohorts and that affects mostly low-income groups. It might also points to lack of digital infrastructure in rural areas.

Table 4. Determinants of financial inclusion

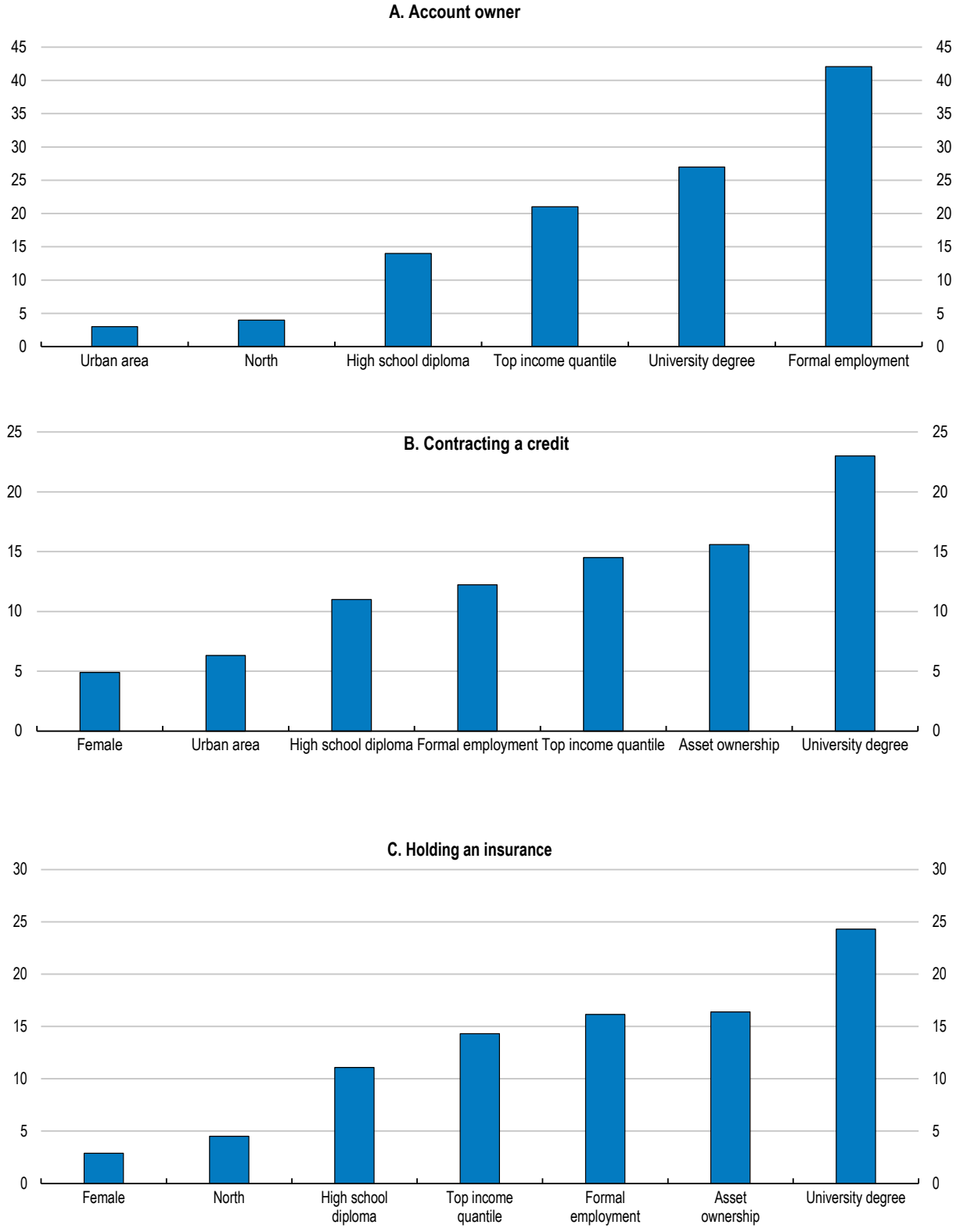
Probit model – average marginal effects of a unit increase in predictors

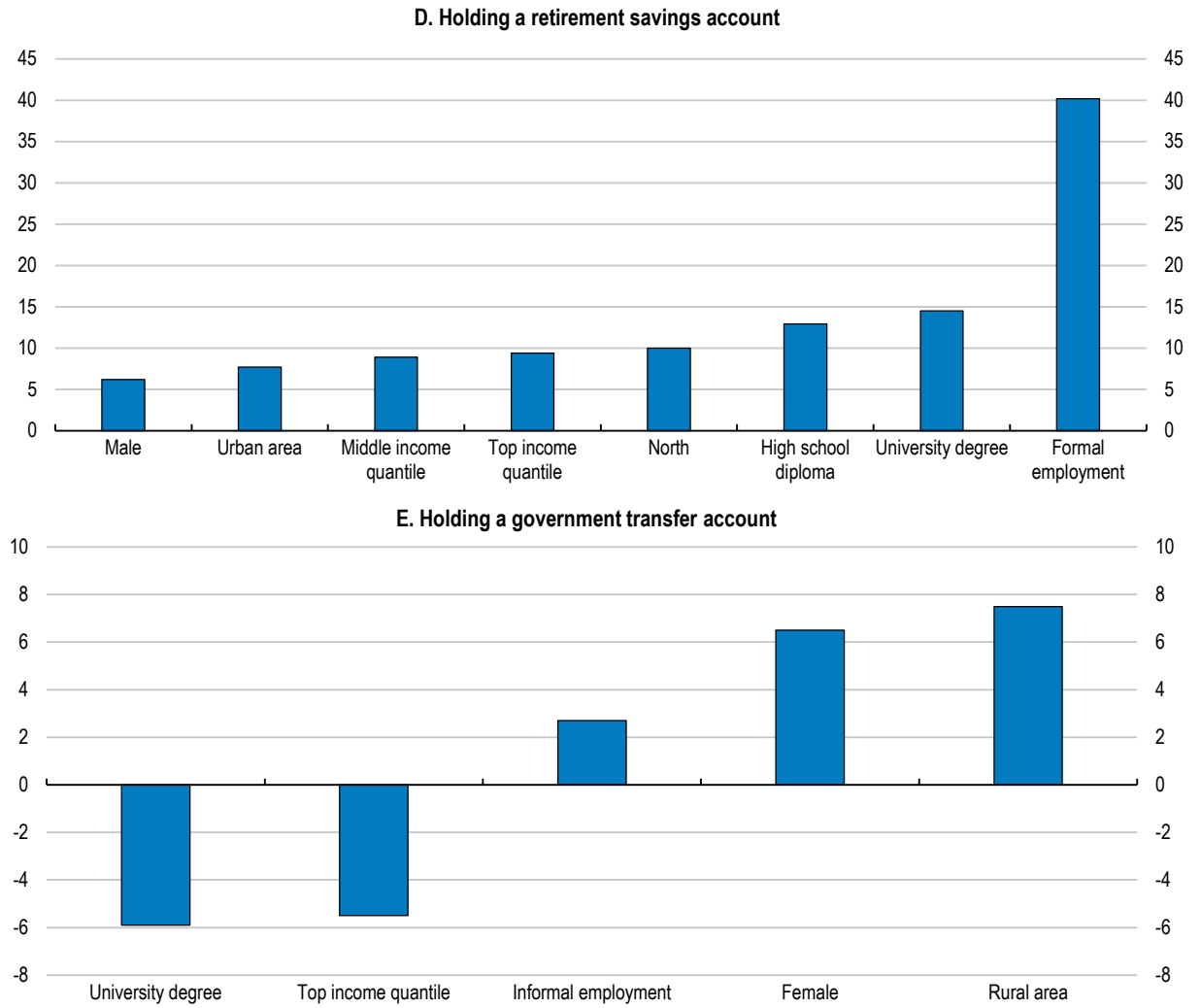
Variable	Category	Account owner (1)	Gov. transfers account (2)	Credit (3)	Insurance (4)	Retirement (5)	Mobile banking (6)
Age (Base: 25-54 years old)	18-24	-0.0147	-0.0097	-0.0465**	-0.0169	-0.2017***	-0.0043
		(0.0152)	(0.0079)	(0.0184)	(0.0156)	(0.0159)	(0.0112)
	55-70	-0.0253*	0.0259***	-0.0426***	-0.0097	-0.0844***	-0.0539**
		(0.0133)	(0.0089)	(0.0148)	(0.0126)	(0.0134)	(0.0091)
Owns asset(s)	Yes	0.0574***	0.0142**	0.1562***	0.1639***	0.0355***	0.0424***
		(0.0098)	(0.0069)	(0.0121)	(0.0104)	(0.0099)	(0.0073)
Couple	Yes	0.0078	0.009	0.0436***	0.0293***	0.0043	-0.0223**
		(0.0097)	(0.0063)	(0.012)	(0.0103)	(0.0118)	(0.0075)
Education (Base: high school)	Elementary school or less	-0.1422***	0.0689***	-0.1238***	-0.1108***	-0.1293***	-0.083***
		(0.016)	(0.0094)	(0.0182)	(0.0165)	(0.0182)	(0.0092)
	Secondary school	-0.0538***	0.0361***	-0.0104	-0.041**	-0.0289*	-0.054***
		(0.0156)	(0.0077)	(0.0176)	(0.0165)	(0.017)	(0.0094)
	Technical studies	-6e-04	-0.0038	0.0152	-0.0132	0.0387	0.0036
		(0.0227)	(0.011)	(0.0261)	(0.0233)	(0.0256)	(0.0164)
	Bachelor's/professional degree or higher	0.1273***	0.0123	0.1025***	0.1284***	0.0162	0.1099***
		(0.0187)	(0.0101)	(0.0239)	(0.0201)	(0.0185)	(0.0143)
Employment (Base: formal)	Informal	-0.4201***	0.0273***	-0.1224***	-0.1616***	-0.4018***	-0.052***
		(0.0182)	(0.0092)	(0.0155)	(0.0146)	(0.0183)	(0.0088)
Gender (Base: female)	Male	-0.0465***	-0.0651***	-0.0489***	-0.0323***	0.062***	0.0053
		(0.0105)	(0.0078)	(0.0125)	(0.0107)	(0.0106)	(0.0073)
Type of area: (Base: rural)	Urban	0.029**	-0.0754***	0.0631***	0.0112	0.077***	0.0445***
		(0.0128)	(0.0083)	(0.0141)	(0.015)	(0.0127)	(0.0106)
Monthly income quintile (Base: 3rd quintile)	Currently no income (retired, students, housework, ...)	-0.1033***	0.0342***	-0.0198	0.0436**	-0.0888***	0.0085
		(0.0183)	(0.0104)	(0.0186)	(0.0173)	(0.0181)	(0.0118)
	1st quintile	-0.0854***	0.0723***	0.0114	0.021	-0.0736***	0.0076
		(0.0223)	(0.0148)	(0.0239)	(0.0209)	(0.0212)	(0.0158)
	2nd quintile	-0.0369*	0.0223*	0.0045	-0.0171	-0.037*	-0.0221**
		(0.0196)	(0.0121)	(0.024)	(0.0214)	(0.0201)	(0.0112)
	4th quintile	0.0337	-0.0181	0.0533***	0.0346**	0.0331*	0.0253**
		(0.0213)	(0.0112)	(0.0201)	(0.0162)	(0.0201)	(0.0106)
	5th quintile	0.1026***	-0.0205*	0.1255***	0.1432***	0.0059	0.0926***
		(0.026)	(0.0115)	(0.0253)	(0.0251)	(0.0251)	(0.0148)
	Has income but not given	-0.0435*	-0.0135	0.0053	0.0224	-0.059**	0.0309**
		(0.0257)	(0.0122)	(0.0239)	(0.0219)	(0.0248)	(0.0152)
Region (Base: North)	Bajio and West	-0.0379**	-0.0261***	-0.0621***	-0.0455***	-0.1002***	4e-04
		(0.0159)	(0.0094)	(0.0143)	(0.0152)	(0.0166)	(0.0097)
	Mexico City	-0.0192	0.0153	-0.1094***	-0.0419**	-0.1137***	0.004
		(0.0166)	(0.0145)	(0.0169)	(0.0178)	(0.0164)	(0.011)
	South Center and East	-0.0373***	-0.0089	-0.0283**	-0.04***	-0.1238***	-0.007
		(0.0126)	(0.0073)	(0.0132)	(0.013)	(0.0141)	(0.0092)

Notes: Reference categories for categorical predictors are: Asset ownership (no asset), Education (high school), Employment (formal), Marital status (single), Gender (female), Income (third income quintile), Region (North), Type of area (rural). Income quintiles have been computed based on INEGI 2018, Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH). Standard errors are reported in brackets. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: ENIF 2018; and authors' calculations.

Figure 6. Main factors increasing the probability of holding formal financial products

Average marginal effect on probability of accessing financial service, percentage points





Note: The chart reports the average marginal probability associated to the more relevant socio-economic factors of each financial product that are statistically significant. The average marginal probability measures the average change in the probability of having access to a formal financial service for an individual who has a category of a socio-economic variable different from the benchmark category. The benchmark category of the variables reported in the figure are: living in a rural area (type of area variables); no income (income variable); West and Baijo region (regional variable); having pre-school/no school education (education attainment variable); working in the informal sector (sector of employment variable); female (gender variable); no asset ownership (asset ownership variable). Average marginal probability is additive when considering two different socio-economic factors. For example, the probability of holding a bank accounts of an adult with a formal job (+42 percentage points) and a university degree (+31 percentage points) is 73 percentage points higher than that of the benchmark adult who has an informal job and preschool or no education (Panel A).
Source: Authors' calculations.

4.3. Barriers to financial inclusion

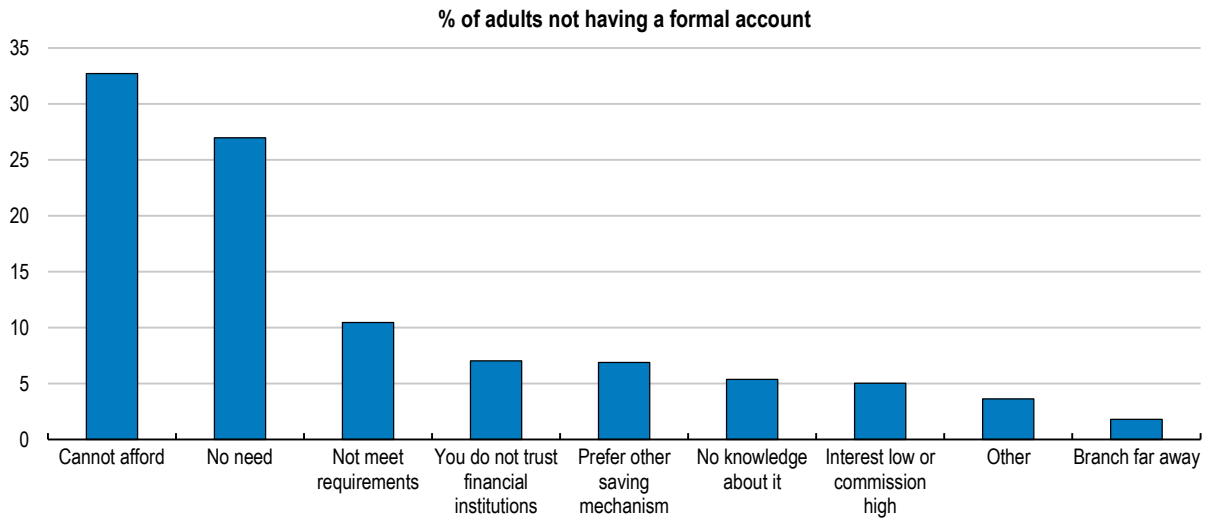
35. This section performs a quantitative assessment of the relevant socio-economic features that characterise the subsample of the Mexican population who does not use or have access to formal financial services. In the survey, respondents may select one reason, out of several options, for not having a certain financial product (a list of available options is available in the annex Table A.12). Depending on their answer, financial exclusion is categorised as either voluntary or involuntary. It is voluntary when people choose not to use a financial service because they state that they do not need it or prefer alternative informal options. It is involuntary when people would like to use a financial service but cannot afford it, do not meet the requirements to be eligible or do not have access to it. Results from the estimation of the multinomial logit provide some insights into the characteristics of the individuals associated to each barrier (Table 5).

Savings accounts

36. The majority of the adults not owning an account (savings, checking or payroll) reported as main reasons that they "cannot afford it", "do not need it", or "do not meet requirements", thus the analysis will focus on these three main specific barriers. Very low education, a young age and living in a rural area characterise individuals who are more likely to report lack of knowledge about savings account, which highlights the need for promoting financial literacy among the young and in the rural areas (Figure 7). Lack of trust in the financial sector is less likely to be reported as a barrier to access by young and highly educated individuals, but it is more likely to be quoted as a barrier by people living in urban areas and outside the Northern regions, where both the level of income and access to financial services are relatively more widespread.

37. Older adults (in the 55-70 age group) with a low level of education (elementary school or less), a low income (first income quintile) and an informal job, are around 8 times more likely than prime age adults with average income, a high school diploma and a formal job to face economic barriers (cannot afford it) to access a savings account rather than answering that they do not need it (Table 5, columns 1). Adults with an informal jobs have a likelihood almost twice as high of answering that they do not meet requirement to have a savings account rather than they do not need it with respect to an adult with a formal job (Table 5, columns 2). This is in line with the preponderance of low wages in the informal sector.

Figure 7. Barriers to having a formal savings account



Source: ENIF 2018.

Table 5. Individual characteristics and barriers to holding a formal savings account

Multinomial logit model - reference category: no need

Variable	Category	Cannot afford (1)	Do not meet requirements (2)	No trust (3)	Prefer other savings (4)	No knowledge about it (5)	Interest low or commission high (6)	Other (7)	Branch far away (8)
Age (base: 25-54 years old)	18-24	0.5651***	0.9674	0.2088***	0.9816	1.6118*	0.3477***	1.2597	0.8785
		(0.1627)	(0.1963)	(0.3303)	(0.2506)	(0.2443)	(0.3238)	(0.2824)	(0.3764)
	55-70	1.5104***	1.0044	1.4606	0.6575	1.3563	1.2283	0.9628	0.5171*
		(0.1546)	(0.2441)	(0.2578)	(0.3009)	(0.2583)	(0.2828)	(0.3324)	(0.3642)
Education (base: high school)	Elementary school or less	2.2637***	1.2601	0.6062	1.2289	2.5533***	0.9446	1.8477	1.0746
		(0.2133)	(0.2552)	(0.3277)	(0.3239)	(0.3206)	(0.365)	(0.4057)	(0.4515)
	Secondary school	1.6482***	0.6825*	0.6417	1.0293	1.2992	0.763	0.8647	1.1187
		(0.1819)	(0.2304)	(0.2932)	(0.2712)	(0.3177)	(0.3467)	(0.3542)	(0.4345)
	Technical studies	1.4112	0.555*	0.4809**	0.8224	0.4191*	1.0356	0.6873	0.4983
		(0.2434)	(0.334)	(0.3262)	(0.5051)	(0.4683)	(0.4057)	(0.4057)	(0.7631)
	Bachelor's/profess-ional degree or higher	0.8347	0.5099**	0.433*	0.567	0.2946***	1.3349	0.9668	0.7029
		(0.2784)	(0.3222)	(0.4308)	(0.4129)	(0.4511)	(0.3879)	(0.4744)	(0.6244)
Employ-ment (base: formal)	Informal	1.724***	1.9262**	0.9567	0.7166	0.9059	0.7859	0.5884	1.6828
		(0.1932)	(0.3018)	(0.3226)	(0.3522)	(0.2913)	(0.327)	(0.4137)	(0.513)
Gender (base: female)	Male	1.2498	1.1273	1.1151	0.9412	1.1459	1.2233	0.7757	0.7575
		(0.1457)	(0.187)	(0.3001)	(0.2187)	(0.2549)	(0.2177)	(0.2503)	(0.3533)
Type of area (base: rural)	Urban	0.8356	1.0776	1.4854*	1.0661	0.6384**	1.1232	1.081	0.0984***
		(0.1453)	(0.205)	(0.2154)	(0.2352)	(0.2142)	(0.1985)	(0.2839)	(0.3807)
Monthly income quintile (base:3rd quintile)	Currently no income (retired, students, housework, ...)	0.8606	0.8025	0.654	0.8532	1.5097	0.7353	1.5835	0.8542
		(0.1997)	(0.2236)	(0.321)	(0.3235)	(0.4223)	(0.3248)	(0.3741)	(0.5284)
	1st quintile	2.078***	1.585	1.5174	1.9001	2.8217**	1.4078	2.2995*	1.2768
		(0.2831)	(0.3271)	(0.4106)	(0.3912)	(0.4831)	(0.4189)	(0.4827)	(0.5301)
	2nd quintile	1.1663	1.1742	0.6237	1.3075	1.4014	1.8141	2.1408	0.6983
		(0.2162)	(0.3159)	(0.3972)	(0.3621)	(0.5254)	(0.3816)	(0.5102)	(0.6592)
	4th quintile	0.574**	0.6604	0.6457	1.1316	0.8131	0.7471	0.7127	0.3788
		(0.2388)	(0.3073)	(0.3812)	(0.3314)	(0.387)	(0.4066)	(0.4653)	(0.6171)
	Top quintile	0.5243*	0.4595*	0.812	0.9717	1.2592	1.0301	0.4279	2.1939
		(0.358)	(0.4173)	(0.4913)	(0.5722)	(0.4598)	(0.3894)	(0.5547)	(0.6247)
	Has income but not given	0.519**	0.6543	1.1091	1.3008	0.6362	1.0271	1.7606	0.5539
		(0.3334)	(0.3763)	(0.4726)	(0.5608)	(0.5201)	(0.3915)	(0.4256)	(0.7567)
Region (base: North)	Bajio and West	0.8101	1.1805	2.9059***	1.1492	0.5199**	1.0596	0.4113***	0.3575**
		(0.1649)	(0.2035)	(0.2783)	(0.2672)	(0.2853)	(0.2625)	(0.3373)	(0.4017)
	Mexico City	1.5595*	2.5884***	3.6586***	3.7785***	0.7749	1.8237*	1.0517	0***
		(0.2312)	(0.2647)	(0.3402)	(0.3273)	(0.5256)	(0.3553)	(0.4304)	(0.3381)
	South Center & East	1.3376**	0.7216*	2.5469***	1.545*	0.7625	1.2601	0.8864	0.2738***
		(0.1461)	(0.1942)	(0.265)	(0.2452)	(0.2286)	(0.2332)	(0.2772)	(0.2829)

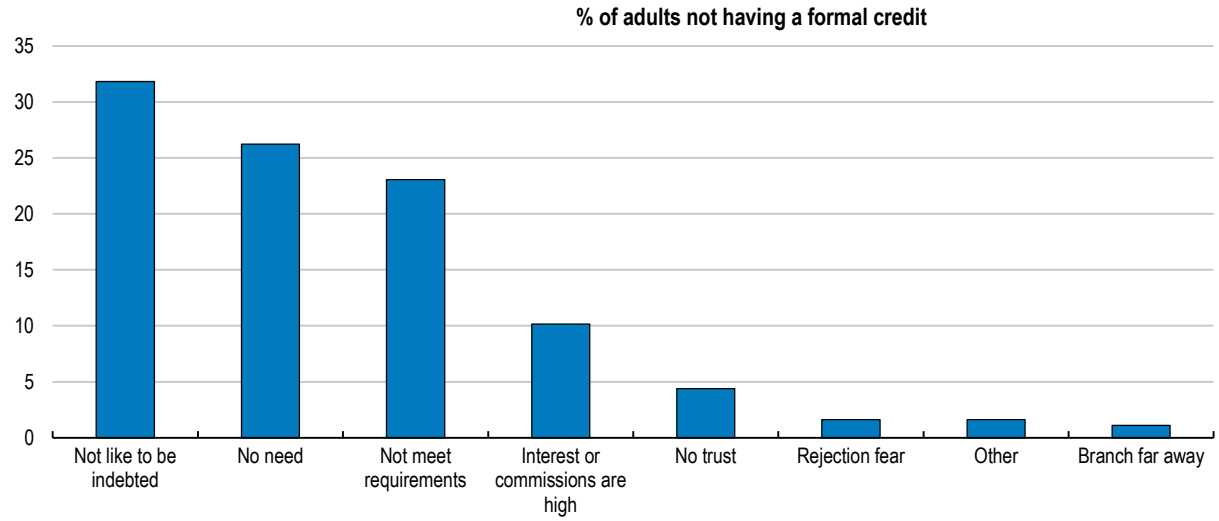
Note: The sample size includes 4 701 adults who do not have any formal account (around 40% of full sample). For any category of a variable, the coefficient expresses the odds ratio, that is, the probability for an individual falling in that category (row) of experiencing the specific barrier reported in the column rather than the reference barrier "no need", expressed as a ratio to the same probability for an individual falling into the base category of that variable. When considering an individual falling into two or more categories, the odds ratio is obtained by multiplying the odds ratios for each category. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: ENIF 2018; and authors' calculations.

Credits

38. The majority of the adults not holding a credit reported as the main reasons that they "do not like to be indebted", "do not need it", or "do not meet requirements" (Figure 8), thus the analysis will focus on these specific barriers. Results from the multinomial logit model indicate that younger adults (between 18-24 years of age) are more likely to report that they do not need a credit rather than answering that they do not like being indebted or that do not meet the requirements (Table 6, columns 1 and 2). Adults with a low level of education (elementary or less), low income (first quintile) and an informal job, instead, have a probability of not meeting the requirements for a credit when they need it that is around 6 times that of an adult with a high school diploma, average income (third quintile) and a formal job.

39. Men's probability of not accessing a credit because of not meeting the requirements, rather than because they do not need it, is also 1.3 higher than women's, all else equal, which strengthens the finding that the gender gap in credit is related to women's worse labour and economic situation (Table 6, column 2). Lack of trust in the financial system and fear of rejection, are more likely to be reported as a barrier to credit by individuals outside the Northern regions.

Figure 8. Barriers to holding a formal credit



Source: ENIF 2018.

Table 6. Individual characteristics and barriers to a formal credit

Multinomial logit model - reference category: no need

Variable	Category	Do not like to be indebted (1)	Do not meet requirements (2)	High commissions (3)	No trust (4)	Rejection fear (5)	Other (6)	Branch far away (7)

Age (base: 25-54 years old)	18-24	0.398***	0.7578**	0.4063***	0.2583***	0.4615*	1.3266	1.4546
		(0.1298)	(0.132)	(0.2259)	(0.3408)	(0.407)	(0.3056)	(0.4041)
	55-70	1.1689	1.0385	0.6537**	1.4309	0.7077	0.7772	0.8845
		(0.1404)	(0.1474)	(0.1852)	(0.2187)	(0.4555)	(0.4138)	(0.3264)
Education (base: high school)	Elementary school or less	1.6144***	1.5502***	1.4384	1.0724	1.4021	1.4836	5.6555**
		(0.1562)	(0.1686)	(0.2512)	(0.2849)	(0.3927)	(0.433)	(0.7476)
	Secondary school	1.2259	1.1022	1.0412	1.1208	0.6279	0.6759	4.4529**
		(0.1513)	(0.1637)	(0.2073)	(0.2793)	(0.4387)	(0.4252)	(0.668)
	Technical studies	0.8604	1.0843	0.8437	0.8648	0.7261	0.1724***	0.4433
		(0.2144)	(0.2143)	(0.3008)	(0.3746)	(0.6503)	(0.6732)	(1.1812)
	Bachelor's/professional degree or higher	0.7988	0.7752	1.2031	0.8775	0.3195*	0.8326	0.9007
		(0.1702)	(0.2297)	(0.2415)	(0.3333)	(0.6169)	(0.4133)	(0.8856)
Employment (base: formal)	Informal	0.8988	2.4816***	0.7544	0.7108	0.8533	1.2296	3.2205
		(0.1372)	(0.178)	(0.1995)	(0.2362)	(0.4186)	(0.3996)	(0.7119)
Gender (base: female)	Male	0.9634	1.3118**	0.9681	1.5264**	1.6382	0.9488	1.3198
		(0.1095)	(0.1123)	(0.1708)	(0.2102)	(0.3032)	(0.2726)	(0.2904)
Type of area (base: rural)	Urban	0.9899	1.1317	0.7839	1.6699**	1.0928	0.5941*	0.0378***
		(0.1217)	(0.1298)	(0.1579)	(0.2122)	(0.3608)	(0.2947)	(0.7002)
Monthly income quintile (base:3rd quintile)	Currently no income (retired, students, housework, ...)	1.1412	1.0697	0.7818	1.7775*	1.7133	0.6058	1.2537
		(0.1588)	(0.1661)	(0.2407)	(0.3005)	(0.5524)	(0.4744)	(0.6671)
	1st quintile	1.5095*	1.4494*	0.7732	1.5475	1.8786	1.071	0.7429
		(0.2145)	(0.2175)	(0.3214)	(0.4048)	(0.6085)	(0.5037)	(0.7588)
	2nd quintile	1.2167	0.8295	0.8782	1.6986	0.9813	0.5136	0.4872
		(0.1988)	(0.2138)	(0.2662)	(0.392)	(0.7054)	(0.5434)	(0.6892)
	4th quintile	1.1397	0.687*	0.8115	1.0364	1.4524	0.6655	1.2081
		(0.1642)	(0.2069)	(0.2396)	(0.3261)	(0.5843)	(0.6297)	(0.7481)
	Top quintile	1.3963	0.4094***	0.9631	1.8243	2.8891*	1.1868	0.7662
		(0.2187)	(0.2952)	(0.3179)	(0.4115)	(0.6017)	(0.569)	(0.7735)
	Has income but not given	1.1174	0.8076	0.8392	1.6743	2.883	1.1385	1.9431
		(0.2679)	(0.3049)	(0.312)	(0.4237)	(0.6741)	(0.5869)	(0.7213)
Region (base: North)	Bajio and West	0.5524***	0.7162**	0.9647	2.829***	2.6046**	0.5859	0.1467***
		(0.14)	(0.1639)	(0.2032)	(0.2683)	(0.4063)	(0.4495)	(0.5805)
	Mexico City	0.9332	1.1916	1.9462***	2.3523***	3.3428**	0.6493	0***
		(0.1913)	(0.1763)	(0.2447)	(0.3258)	(0.5149)	(0.6159)	(0.4553)
	South Center and East	1.373***	0.8883	1.7233***	2.93***	2.4484**	1.5274	0.201***
		(0.1195)	(0.1225)	(0.165)	(0.2437)	(0.3776)	(0.2989)	(0.3805)

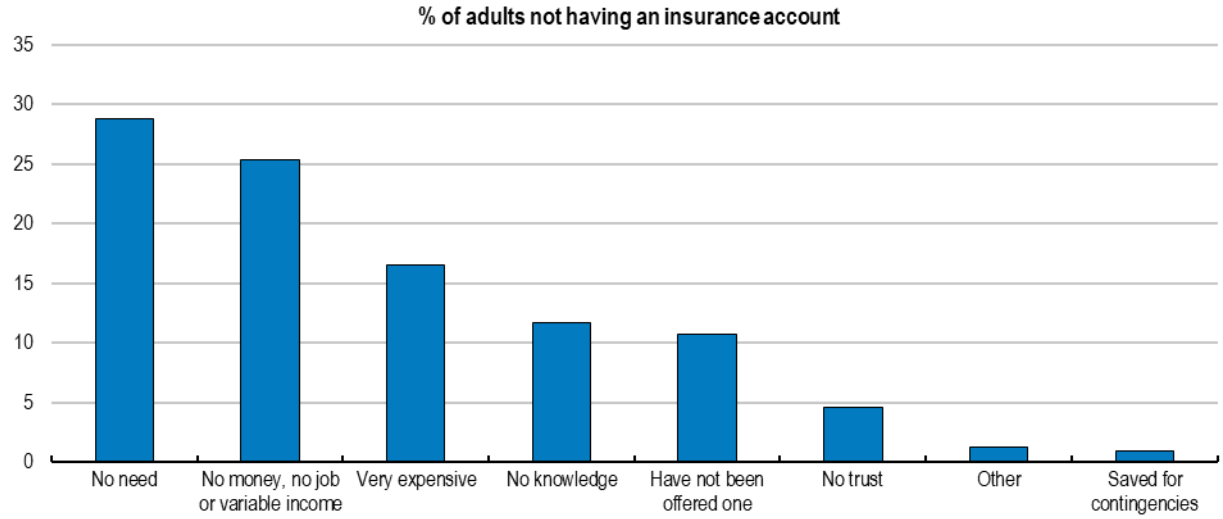
Note: The sample size includes 6 651 adults who do not have a formal credit (around 56% of all adults). For any category of a variable, the coefficient expresses the odds ratio, that is, the probability for an individual falling in that category (row) of experiencing the specific barrier reported in the column rather than the reference barrier "no need", expressed as a ratio to the same probability for an individual falling into the base category of that variable. When considering an individual falling into two or more categories, the odds ratio is obtained by multiplying the odds ratios for each category. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: ENIF 2018; and authors' calculations.

Insurance products

40. The majority of the adults not holding an insurance reported as main reasons that they "do not need it", that they "have no money, no job or a variable income", that insurance "are very expensive" or that they "do not have knowledge about it" (Figure 9), thus the analysis will focus on these specific barriers. Results from the estimation of the multinomial logit model show that younger adults (between 18 and 24 years) are more likely to report that they do not need an insurance rather than facing an economic barrier

(no money, no job or variable income or very expensive), while the cost of insurance is more likely to be reported as a barrier by oldest adults (Table 7, columns 1 and 2). A low level of education (secondary or less) and having an informal job are both associated to barriers to access to insurance due to economic reasons (very expensive or no money, no job and variable income) or lack of financial literacy (Table 7, column 3).

Figure 9. Barriers to holding an insurance product



Source: ENIF 2018.

Table 7. Individual characteristics and barriers to holding an insurance product

Multinomial logit model - reference category: no need

Variable	Category	No money, or job, or variable income (1)	Very expensive (2)	No knowledge (3)	Not been offered (4)	No trust (5)	Other (6)	Saved for contingencies (7)
Age (base: 25-54 years old)	18-24	0.6336***	0.6667**	0.9017	1.2643	0.1658***	0.8807	1.4297
		(0.1435)	(0.1595)	(0.1666)	(0.1628)	(0.2787)	(0.2713)	(0.4435)
	55-70	0.982	1.3332*	0.753	0.5988**	1.3868	1.1236	0.9185
		(0.1428)	(0.1545)	(0.1777)	(0.2176)	(0.2157)	(0.3625)	(0.396)
Education (base: high school)	Elementary school or less	1.3848**	1.5224**	2.2398***	0.9686	0.7419	0.5104**	1.1644
		(0.1625)	(0.19)	(0.2026)	(0.201)	(0.2785)	(0.336)	(0.5887)
	Secondary school	1.1669	1.4232**	1.4471*	1.0397	0.9028	0.9236	1.0909
		(0.1586)	(0.1756)	(0.19)	(0.1852)	(0.2752)	(0.3397)	(0.5807)
	Technical studies	1.0415	1.2124	0.7068	1.7511**	0.7512	1.1742	1.5596
		(0.1944)	(0.2346)	(0.2759)	(0.2717)	(0.3821)	(0.5389)	(0.6853)
	Bachelor's/professional degree or higher	1.0165	1.0017	0.591	0.8212	1.2912	0.949	1.2399
		(0.1926)	(0.2136)	(0.3271)	(0.2423)	(0.3064)	(0.3679)	(0.6607)
Employment (base: formal)	Informal	1.9143***	1.5742***	1.1913	1.1526	0.6932*	1.5261	0.5597
		(0.1463)	(0.1406)	(0.1839)	(0.1576)	(0.2041)	(0.363)	(0.4531)
Gender (base: female)	Male	1.1854	0.8644	0.9348	1.048	1.234	1.1622	0.7854
		(0.1263)	(0.1156)	(0.1224)	(0.136)	(0.2198)	(0.2879)	(0.3503)
	Urban	0.8919	0.9503	0.383***	0.7855*	1.0114	0.7467	0.8121

Type of area (base: rural)		(0.1256)	(0.1406)	(0.1541)	(0.1394)	(0.22)	(0.2955)	(0.4178)
Monthly income quintile (base:3rd quintile)	Currently no income (retired, students, housework, ...)	1.2403	0.8038	1.173	0.8143	1.0852	0.9707	1.1158
		(0.1551)	(0.1814)	(0.2314)	(0.1918)	(0.2653)	(0.5408)	(0.5772)
	1st quintile	1.6957**	1.0504	1.2963	0.7604	1.1069	2.1492	0.4999
		(0.2072)	(0.2319)	(0.2487)	(0.2514)	(0.3696)	(0.6398)	(0.6985)
	2nd quintile	1.2889	1.1234	0.9203	1.0449	0.7958	0.7708	2.1906
		(0.1897)	(0.2007)	(0.2655)	(0.2398)	(0.3455)	(0.5364)	(0.5367)
	4th quintile	0.7312	0.8955	0.929	0.9751	0.7853	1.2978	1.9818
		(0.1949)	(0.1972)	(0.2372)	(0.2221)	(0.293)	(0.4346)	(0.5757)
	Top quintile	0.4682***	1.1196	0.7934	0.6723	0.8763	0.749	1.8383
		(0.2711)	(0.2681)	(0.3147)	(0.2608)	(0.4056)	(0.5196)	(0.6293)
	Has income but not given	0.6929	1.5109*	0.6347	0.8402	1.0564	0.8817	0.8799
		(0.2584)	(0.2494)	(0.3336)	(0.2964)	(0.3266)	(0.89)	(0.6934)
Region (base: North)	Bajio and West	0.7369**	0.9148	0.9957	0.7451*	0.8462	0.8231	0.7159
		(0.1326)	(0.1579)	(0.19)	(0.1605)	(0.2358)	(0.3202)	(0.4882)
	Mexico City	0.9488	1.1705	0.7537	0.4676***	1.0961	0.4257*	0.9097
		(0.1638)	(0.1852)	(0.3044)	(0.2412)	(0.2769)	(0.4798)	(0.5145)
	South Center and East	0.7844*	1.1393	1.0883	0.6025***	1.0173	0.3587***	0.5832
		(0.1338)	(0.1389)	(0.1537)	(0.1693)	(0.2237)	(0.3401)	(0.5718)

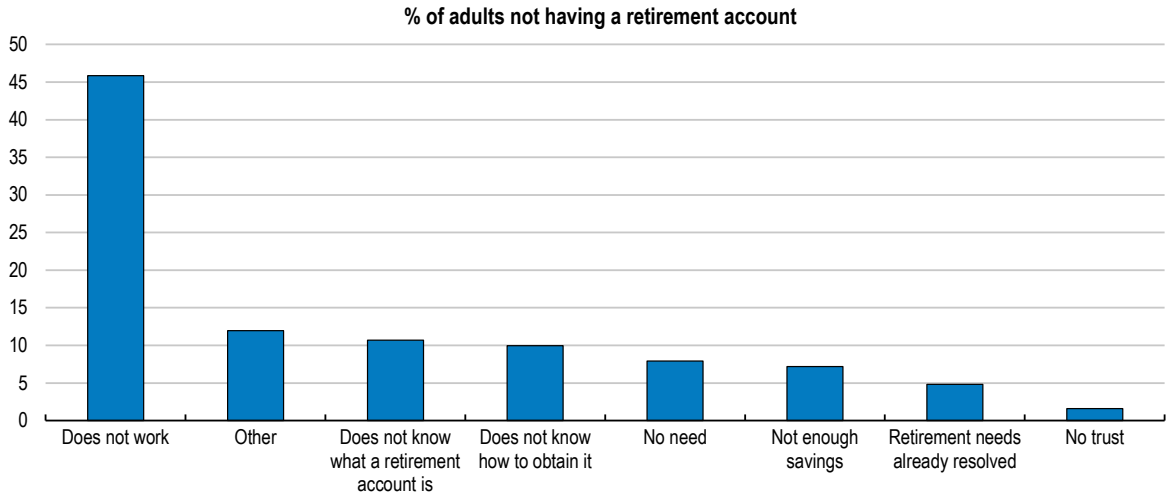
Note: The sample size includes 7 726 adults who do not have an insurance product (around 64% of all adults). For any category of a variable (row), the coefficient expresses the odds ratio, that is, the probability for an individual falling in that category (row) of experiencing the specific barrier reported in the column rather than the reference barrier "no need", expressed as a ratio to the same probability for an individual falling into the base category of that variable. When considering an individual falling into two or more categories, the odds ratio is obtained by multiplying the odds ratios for each category. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: ENIF 2018; and authors' calculations.

Retirement savings accounts

41. The large majority of the adults who does not have a retirement savings account reported lack of employment as the main reason ("does not work") or, to a lesser extent, that they "do not know what a retirement savings account is" or do not know "how to obtain it" (Figure 10), thus the analysis will focus on these specific barriers. Results from the estimation of the multinomial logit model indicate that women with low income (first quintile) and informal jobs are 20 times more likely than men with an income in the third quintile and a formal job to not have retirement savings because of their working status rather than because they do not need it (Table 8, column 1). This result points to serious economic barriers that prevent women from accessing retirement savings.

42. Adults with a low level of education (secondary school or less) and living in a rural area have a probability between 4 and 6 times higher than adults with a high school diploma and living in an urban area to report that they do not know what a retirement account is rather than answering that they do not need it (Table 8, column 3). Young adults (between 18 and 25 years) have a probability that is 1.6 higher than that of prime age adults to report that they do not know how to obtain a retirement account rather than reply that they do not need it. These results point to the need to boost financial literacy among the young and more vulnerable.

Figure 10. Barriers to holding a retirement savings account



Source: ENIF 2018.

Table 8. Individual characteristics and barriers to holding retirement savings accounts

Multinomial logit model - reference category: no need

Variable	Category	Does not work (1)	Other (2)	Does not know what a retirement account is (3)	Does not know how to process it (4)	No savings (5)	Retirement needs already resolved (6)	No trust (7)
Age (base: 25-54 years old)	18-24	1.323	0.8122	1.36	1.6689**	0.7407	0.0046***	0.2244***
		(0.2346)	(0.2513)	(0.2483)	(0.2538)	(0.3499)	(1.0897)	(0.5049)
	55-70	0.976	1.2271	0.8217	0.7483	1.0739	19.5549***	2.2977*
		(0.2202)	(0.2569)	(0.2517)	(0.2677)	(0.2771)	(0.365)	(0.4323)
Education (base: high school)	Elementary school or less	2.4119**	1.3695	3.3365***	1.8027	2.7684**	0.8868	0.4628
		(0.3543)	(0.3706)	(0.3527)	(0.3914)	(0.4995)	(0.5111)	(0.6185)
	Secondary school	1.6907	1.2141	1.8989*	1.4193	2.083	1.082	0.7024
		(0.3446)	(0.3958)	(0.3449)	(0.4195)	(0.4859)	(0.5431)	(0.5593)
	Technical studies	1.3041	1.0022	0.8914	0.7688	0.676	2.7935*	0.5757
		(0.4068)	(0.4894)	(0.4155)	(0.4528)	(0.5671)	(0.5492)	(0.7107)
	Bachelor's/professional degree or higher	0.9346	1.21	0.3667***	0.6986	1.4332	3.8406***	0.6134
		(0.3414)	(0.3111)	(0.3777)	(0.3683)	(0.5476)	(0.4718)	(0.5005)
Employment (base: formal)	Informal	5.4972***	1.4119	1.0642	1.0519	3.8219***	0.7456	1.0014
		(0.2606)	(0.2678)	(0.2869)	(0.2537)	(0.4638)	(0.5398)	(0.3485)
Gender (base: female)	Male	0.4927***	0.9583	0.9999	0.8099	0.9274	3.5339***	0.7355
		(0.1768)	(0.2047)	(0.2313)	(0.1987)	(0.2477)	(0.2783)	(0.3282)
Type of area (base: rural)	Urban	1.0153	1.1555	0.5119***	1.1993	1.195	1.5163	1.4815
		(0.2114)	(0.1863)	(0.2266)	(0.2033)	(0.1863)	(0.2734)	(0.3744)
Monthly income quintile (base:3rd quintile)	Currently no income (retired, students, housework, ...)	5.4332***	0.4358**	2.217**	0.6336	0.7846	5.6705***	0.3622
		(0.2785)	(0.3673)	(0.3603)	(0.3665)	(0.3469)	(0.5745)	(0.6334)
	1st quintile	1.9465**	0.9	1.7736	0.7709	0.6929	0.3427	0.5347
		(0.3205)	(0.3578)	(0.3916)	(0.3685)	(0.4533)	(0.7472)	(0.6782)
	2nd quintile	1.0604	0.7152	1.0593	1.128	1.045	0.4049	0.8103
		(0.3422)	(0.3369)	(0.3863)	(0.3425)	(0.3204)	(0.7804)	(0.559)

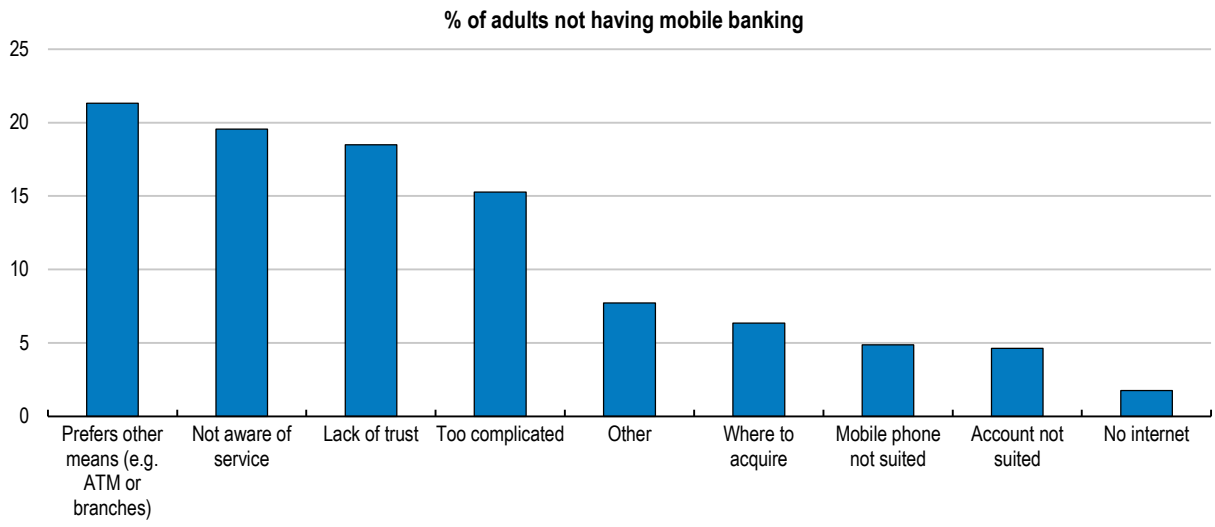
	4th quintile	0.4202***	0.8879	0.7773	0.6958	0.6622	0.2728*	0.8216
		(0.293)	(0.3288)	(0.3463)	(0.2949)	(0.399)	(0.6955)	(0.5405)
	Top quintile	0.4833**	0.4387***	0.4574**	0.4663**	0.1813***	0.2167**	1.1564
		(0.3591)	(0.3056)	(0.3911)	(0.3525)	(0.5724)	(0.7393)	(0.4991)
	Has income but not given	0.8844	0.7248	1.1206	0.4929*	0.4906	0.3909	2.4091*
		(0.3822)	(0.3817)	(0.4232)	(0.4167)	(0.5177)	(0.7035)	(0.4838)
Region (base: North)	Bajio and West	0.324***	0.3842***	0.5306**	1.19	0.4459***	0.3662***	1.5848
		(0.2179)	(0.2443)	(0.2727)	(0.255)	(0.2749)	(0.3315)	(0.4426)
	Mexico City	0.366***	1.0278	0.8184	0.6866	0.7881	0.2913***	2.0681
		(0.2954)	(0.3099)	(0.3744)	(0.3524)	(0.3549)	(0.4303)	(0.4992)
	South Center and East	0.3822***	0.3392***	0.6657*	0.6017**	0.7652	0.2687***	0.9551
		(0.2005)	(0.2101)	(0.2293)	(0.2255)	(0.2348)	(0.2835)	(0.4235)

Note: The sample size includes 6 568 adults who do not have a retirement savings account (around 55% of all adults). For any category of a variable, the coefficient expresses the odds ratio, that is the probability for an individual falling in that category (row) of experiencing the specific barrier reported in the column rather than the reference barrier "no need", expressed as a ratio to the same probability for an individual falling into the base category of that variable. When considering an individual falling into two or more categories, the odds ratio is obtained by multiplying the odds ratios for each category. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: ENIF 2018 and authors' calculations.

Mobile banking account

43. Respondents who have a mobile phone but do not hold a mobile banking account report that the main reasons for not having one are that they "prefer other means (ATM, branches)", are "not aware of the service", "lack of trust" or find that it is "too complicated" (Figure 11). Results from the estimation of the multinomial logit model suggest that women with a level of education below elementary school or less and living in rural areas are around 8 times more likely than men earning an average income (third quintile) in a city to report that they are not aware of the possibility of mobile banking rather than answering that they prefer other means (Table 9, column 1). Reporting lack of trust rather than preferring other means, is more common among adults with informal jobs (Table 9, column 2). Women with informal jobs, low education (elementary school or less) and between 55 and 70 years of age are twenty times more likely than prime age men with a high school diploma and a formal job to not have a mobile account because they find it too complicated rather than because they prefer other means (Table 9, column 3).

Figure 11. Barriers to using mobile banking



Source: ENIF 2018.

Table 9. Individual characteristics and barriers to mobile banking

Multinomial logit model - reference category: prefers other means (e.g. ATM, branches)

Variable	Category	Not aware of service (1)	Lack of trust (2)	Too complicated (3)	Other (4)	Does not know where to acquire (5)	Mobile phone not suited (6)	Account not suited (7)	No internet (8)
Age (base: 25-54 years old)	18-24	1.2908	0.8141	0.6235	0.9161	1.7242*	1.5559	1.906	1.5794
		(0.2355)	(0.2783)	(0.2987)	(0.2824)	(0.3086)	(0.368)	(0.4663)	(0.548)
	55-70	1.0536	1.1894	2.5063***	0.8937	0.3849***	1.3534	0.4714*	1.2167
		(0.2143)	(0.2105)	(0.2365)	(0.292)	(0.301)	(0.3108)	(0.3887)	(0.5991)
Education (base: high school)	Elementary school or less	2.5506***	1.4639	3.222***	0.7741	2.8494***	1.7641	1.2705	4.002**
		(0.2937)	(0.2999)	(0.3148)	(0.3648)	(0.3676)	(0.3969)	(0.463)	(0.5691)
	Secondary school	1.3662	1.1363	1.5037	0.4784***	1.4302	1.1784	0.9089	2.0198
		(0.2356)	(0.2548)	(0.2874)	(0.2631)	(0.3004)	(0.3406)	(0.3817)	(0.513)
	Technical studies	1.4346	1.6121	1.0905	1.092	1.4461	1.2635	0.9244	4.957**
		(0.299)	(0.2933)	(0.3272)	(0.3637)	(0.3646)	(0.496)	(0.6518)	(0.6545)
	Bachelor's/professional degree or higher	0.4855***	1.2962	0.744	1.0738	0.4161***	0.7015	0.9204	2.4006*
		(0.2345)	(0.2317)	(0.2744)	(0.2632)	(0.3369)	(0.3228)	(0.3959)	(0.5013)
Employment (base: formal)	Informal	1.3918	1.583*	1.5256**	1.7265**	0.8449	1.8677**	2.4419**	1.3777
		(0.2109)	(0.2479)	(0.2023)	(0.2127)	(0.2718)	(0.2754)	(0.3715)	(0.3754)
Gender (base: female)	Male	0.6803**	0.9302	0.6119***	0.7662	0.7524	0.9058	1.5103	0.7067
		(0.1544)	(0.1767)	(0.1747)	(0.222)	(0.2279)	(0.2235)	(0.2876)	(0.3371)
Type of area (base: rural)	Urban	0.4526***	0.9531	0.406***	0.6032**	0.4804***	0.5059**	0.5992*	0.1028***
		(0.2156)	(0.2074)	(0.2135)	(0.2275)	(0.2487)	(0.3009)	(0.3003)	(0.3609)
Monthly income quintile (base:3rd quintile)	Currently no income (retired, students, housework, ...)	0.9435	0.8697	0.8819	0.652	1.0056	0.6039	0.8626	0.5805
		(0.2809)	(0.3759)	(0.3289)	(0.3523)	(0.4015)	(0.4312)	(0.4793)	(0.9659)
	1st quintile	1.4152	1.1466	1.2708	1.1334	1.9495	1.3148	1.648	0.1764*
		(0.4513)	(0.5263)	(0.5216)	(0.5681)	(0.5548)	(0.5826)	(0.5844)	(1.0058)
	2nd quintile	1.6087	0.8365	1.5308	1.132	1.9363	1.2814	1.5776	1.7875
		(0.3297)	(0.4304)	(0.3585)	(0.4175)	(0.4812)	(0.4641)	(0.5902)	(0.6828)
	4th quintile	0.7809	1.2331	1.1469	0.9577	0.8322	0.5993	0.3963**	0.6382
		(0.2261)	(0.3016)	(0.2606)	(0.3911)	(0.3251)	(0.3444)	(0.4228)	(0.5839)
	5th quintile	0.4154***	1.1292	0.8159	0.51**	0.6803	0.4157**	0.4011	0.9421
		(0.2639)	(0.3508)	(0.3138)	(0.341)	(0.3937)	(0.3704)	(0.6397)	(0.4856)
	Has income but not given	0.6095	1.3997	0.6581	0.6529	0.4206	0.2165**	0.159***	0.0773**
		(0.3748)	(0.3496)	(0.4107)	(0.5131)	(0.5358)	(0.6417)	(0.6688)	(1.1752)
Region (base: North)	Bajio and West	0.3391***	1.0318	0.8043	0.3328***	0.777	0.8517	0.5758	0.3582**
		(0.2127)	(0.2047)	(0.2237)	(0.2798)	(0.2626)	(0.2904)	(0.3379)	(0.4162)
	Mexico City	0.2276***	0.5178***	0.2546***	0.1013***	0.3901***	0.3018***	2.6953**	0.7477
		(0.2766)	(0.2218)	(0.3093)	(0.4495)	(0.3632)	(0.4468)	(0.3854)	(0.7592)
	South Center and East	0.4548***	0.9381	0.8216	0.5289***	0.4621***	0.4476***	1.1717	0.5002*
		(0.1919)	(0.2033)	(0.2021)	(0.2062)	(0.2586)	(0.2708)	(0.3352)	(0.3627)

Note: The sample size includes 3 958 adults who have a mobile phone but opt out of mobile banking (people not having a mobile are excluded (around 30% of all adults). For any category of a variable, the coefficient expresses the odds ratio, with "preference for other means" being the reference category answer, that is, the probability for an individual falling in that category (row) of experiencing the specific barrier reported in the column rather than the reference barrier "prefers other means", expressed as a ratio to the same probability for an individual falling into the base category of that variable. When considering an individual falling into two or more categories, the odds ratio is obtained by multiplying the odds ratios for each category. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: ENIF 2018; and authors' calculations.

5. Concluding remarks

44. This study uses data from the 2018 Financial Inclusion Survey to shed light on the determinants of and the barriers to financial inclusion in Mexico. The likelihood of holding a financial product (savings, checking or payroll bank accounts, credit, insurance products, government transfers accounts, retirement savings accounts) associated with a subset of individual socio-economic characteristics is estimated through probit models. Multinomial logit models provide insights on the socioeconomic features associated with adults facing economic and non-economic barriers to accessing financial products. Results suggest that reducing the size of the informal sector, diminishing asymmetric information in the credit market and boosting financial literacy are three of the most promising venues to reduce economic barriers that still prevent many Mexicans from accessing financial services. Using non-financial data to create credit history information for informal workers can be a powerful tool to help informal workers to access financial services. In an increasingly digitised world, the generation of alternative sources of information will increase substantially and could supplement traditional financial data in assessing individual creditworthiness, including those in the informal sector. Alternative data includes utility payments and use of online platforms and mobile applications.

45. Future research might attempt to analyse the main factors driving the evolution of financial inclusion by adding a time dimension to the analysis. Using data from successive surveys on financial inclusion, changes in financial inclusion could be associated with the evolution of socio-economic (such as educational attainment, income distribution, size of the informal sector) and macroeconomic factors that capture modifications in the costs and benefits of holding financial products (e.g. inflation, interest rates, spread between bank loan and deposit).

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Annex

Table A.10. Descriptive analysis of ENIF 2012 - 2018

Questions	ENIF 2012	ENIF 2015	ENIF 2018
Effective sample size of households in the survey	6,113	6,039	12,446
Corresponding adult population covered by the survey sample	70,382,459	76,157,088	79,096,971
Regions	-	-	6
Adult male	32,407,547	36,129,516	37,545,539
Adult female	37,974,912	40,027,572	41,551,432
Adults living in localities of less than 15 000 inhabitants	24,233,592	26,746,453	27,606,725
Adults living in localities of 15 000 or more inhabitants	46,148,867	49,410,635	51,490,246
Average age	40	39	40
% of households in couple	66.73%	64.61%	64.65%

Source: OECD calculations using ENIF 2012 - 2018 (INEGI).

Table A.11. Descriptive statistics of main variables in ENIF 2018

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	79,096,971	39.80	14.227	18	70
Marital status	79,096,971	0.65	0.478	0	1
Educational level	79,064,725*	2.72	1.483	1	5
Male	79,096,971	0.47	0.499	0	1
Informal	79,096,971	0.71	0.452	0	1
Region	79,096,971	2.89	1.911	0	5
Type of area	79,096,971	0.65	0.477	0	1
Monthly income quintiles	74,884,631*	3.73	1.469	1	5
Asset ownership	79,096,971	0.46	0.498	0	1
Savings account	37,250,703*	0.36	0.481	0	1
Payroll account	37,250,703*	0.52	0.499	0	1
Account ownership	47,205,220*	0.11	0.317	0	1
Department deposit credit	24,637,679*	0.61	0.487	0	1
Positive credit card balance	24,637,679*	0.34	0.473	0	1
Mortgage loan credit	24,637,679*	0.22	0.414	0	1
Government credit	57,552,961*	0.05	0.226	0	1
Government transfers account	79,096,971	0.08	0.274	0	1
Financial inclusion (using at least one financial product)	79,096,971	0.68	0.465	0	1
Use of financial accounts	79,096,971	0.47	0.499	0	1
Use of financial credits	79,096,971	0.31	0.463	0	1
Use of financial insurance	79,096,971	0.25	0.435	0	1
Use of financial retirement savings	79,096,971	0.40	0.489	0	1

Note: * denotes a variable with missing values. Missing values can be due to several factors such as: respondents that refused to provide information or incomplete information; the household selected was uninhabited; permanent residents were not present at the time of the interview. All variables are either numerical, categorical or binary. Data weighting is applied to ensure that results are representative for the Mexican population.
Source: OECD calculations using ENIF 2018 (INEGI).

Table A.12. Dependent variables used in the analysis of the determinants of and barriers to financial inclusion

Dependent variables in the analysis of determinants of financial inclusion	
Financial inclusion	Account ownership
	Credit ownership
	Government transfers account
	Government credit
	Insurance
	Retirement savings
	Mobile banking
Dependent variables in the analysis of determinants of barriers to financial inclusion	
Barriers to hold a bank account	Cannot afford
	No need
	Do not meet requirements
	No trust
	Prefer other savings
	No knowledge
	High commission
	Other
	Branch far away
Barriers to pay with a debit card	Prefer cash
	Lack of trust
	Other
	Don't know how
	Not accepted in stores
	Small amounts
	Commissions
	No record of expenses
	Prefer credit card
Barriers to hold a government transfers account	Barriers to use a mobile phone banking
	Prefer other means
	Not aware of service
	Lack of trust
	Too complicated
	Other
	Where to acquire
	Mobile phone not suited
	Account not suited
	No internet
Barriers to have a formal credit with bank	Do not like borrowing
	No need
	Do not meet requirements
	High interest or commissions
	No trust
	Rejection fear
	Other
	Branch far away

Source: ENIF 2018 (INEGI).

Table A.13. Description of independent variables

Independent variables	Description
Age	Age in years
Asset ownership	Dummy that takes the value 1 if the respondent owns an asset and 0 otherwise
Couple	Dummy that takes the value 1 if the respondent is part of a couple and 0 otherwise
Secondary school	Dummy that takes the value 1 if the respondent has completed secondary school and 0 otherwise
High school	Dummy that takes the value 1 if the respondent has competed high school and 0 otherwise
Technical studies	Dummy that takes the value 1 if the respondent has completed technical studies with finished secondary school and 0 otherwise
Bachelor's/professional degree or higher	Dummy that takes the value 1 if the respondent has completed bachelor's/professional degree or higher and 0 otherwise
Informal	Dummy that takes the value 1 if the respondent is an informal worker and 0 otherwise
Male	Dummy that takes the value 1 if the respondent is a man and 0 otherwise
Urban	Dummy that takes the value 1 if the respondent lives in a urban area and 0 otherwise
1st quintile	Dummy that takes the value 1 if the respondent is in the lowest income quintile and 0 otherwise
2nd quintile	Dummy that takes the value 1 if the respondent the second lowest income quintile and 0 otherwise
3rd quintile	Dummy that takes the value 1 if the respondent is in the middle income quintile and 0 otherwise
4th quintile	Dummy that takes the value 1 if the respondent is in the second highest income quintile and 0 otherwise
5th quintile	Dummy that takes the value 1 if the respondent is in the highest income quintile and 0 otherwise
Has income but not given	Dummy that takes the value 1 if the respondent has an income but has not given it and 0 otherwise
Mexico City	Dummy that takes the value 1 if the respondent lives in Mexico City and 0 otherwise
Northeast	Dummy that takes the value 1 if the respondent lives in the Northeast region and 0 otherwise
Northwest	Dummy that takes the value 1 if the respondent lives in the Northwest region and 0 otherwise
South	Dummy that takes the value 1 if the respondent lives in the Southern region Mexico and 0 otherwise
Center	Dummy that takes the value 1 if the respondent lives in the Center-East and Center-South region and 0 otherwise

Note: Income categories denote quintiles of monthly income distribution of households in Mexican pesos. The Northeast includes the states of Coahuila, Nuevo Leon, San Luis Potosi and Tamaulipas. The Northwest region includes the states of Baja California, Baja California Sur, Chihuahua, Durango, Sinaloa and Sonora. The Southern region includes the states of Campeche, Chiapas, Guerrero, Oaxaca, Quintana Roo, Tabasco and Yucatan. The Center-East and Center-South region includes the states of Hidalgo, México, Morelos, Puebla, Tlaxcala and Veracruz.
Source: OECD calculations using ENIF 2018 (INEGI).

Table A.14. Holding of financial products by income distribution

Monthly income	% of adults	% at least 1 formal account	% at least 1 formal credit	% insurance	% retirement savings	% property
Work but no response	5,3%	57,7%	37,8%	34,8%	55,3%	55,7%
No work	32,6%	35,4%	20,7%	17,6%	16,7%	34,1%
1st quintile	11,6%	35,4%	22,8%	15,5%	20,8%	42,8%
2nd quintile	13,0%	40,2%	25,7%	16,1%	40,7%	43,7%
3rd quintile	9,8%	50,5%	30,1%	22,2%	53,4%	43,9%
4th quintile	15,0%	55,6%	40,1%	30,5%	60,5%	53,6%
5th quintile	12,4%	77,9%	58,9%	56,8%	72,2%	69,9%

Income categories	% of adults	Type of account			Type of credit		
		% savings account	% payroll account	% government transfer	% department store card	% bankcard	% mortgage
Work but no response	5,3%	57,7%	37,8%	34,8%	21,3%	18,2%	7,2%
No work	32,6%	35,4%	20,7%	17,6%	14,2%	6,5%	2,4%
1st quintile	11,6%	35,4%	22,8%	15,5%	15,3%	5,1%	2,7%

2nd quintile	13,0%	40,2%	25,7%	16,1%	16,9%	5,4%	3,9%
3rd quintile	9,8%	50,5%	30,1%	22,2%	18,5%	5,5%	8,6%
4th quintile	15,0%	55,6%	40,1%	30,5%	25,0%	11,7%	10,3%
5th quintile	12,4%	77,9%	58,9%	56,8%	30,4%	30,5%	19,5%

Note: Income categories denote quintiles of monthly income distribution of households in Mexican pesos.
Source: OECD calculations using ENIF 2018 (INEGI)

Table A.15. Holding of financial products by educational level

Education	% of adults	% at least 1 formal account	% at least 1 formal credit	% insurance	% retirement savings	% property
NA	0,0%	42,0%	42,0%	19,4%	42,0%	51,5%
None or preschool	3,9%	38,0%	8,4%	10,4%	10,6%	51,3%
Elementary school	22,1%	33,0%	17,3%	12,0%	21,2%	51,3%
Secondary school	27,2%	40,8%	30,0%	20,5%	40,2%	41,9%
High school	16,5%	45,6%	30,4%	24,5%	42,9%	32,4%
Technical studies	8,2%	48,3%	35,0%	26,1%	48,7%	46,8%
Bachelor's or professional degree	19,9%	69,9%	48,3%	46,0%	55,1%	52,6%
Master's or Phd Degree	1,8%	87,0%	65,0%	70,8%	70,6%	72,1%

Education	% of adults	Type of account			Type of credit		
		% savings account	% payroll account	% government transfer	% department store card	% bankcard	% mortgage
NA	0,0%	19,4%	42,0%	0,0%	19,4%	19,4%	42,0%
None or preschool	3,9%	7,0%	4,9%	27,6%	4,6%	2,7%	0,8%
elementary school	22,1%	9,0%	11,3%	15,1%	11,0%	3,6%	2,3%
secondary school	27,2%	13,1%	23,2%	8,4%	18,5%	6,4%	6,7%
high school	16,5%	18,1%	31,0%	3,0%	19,5%	8,1%	5,5%
technical studies	8,2%	18,4%	33,2%	3,6%	19,7%	11,0%	9,5%
bachelor's or professional degree	19,9%	29,3%	51,3%	2,9%	29,7%	24,2%	12,3%
master's or Phd Degree	1,8%	45,8%	70,4%	2,1%	35,8%	40,2%	15,5%

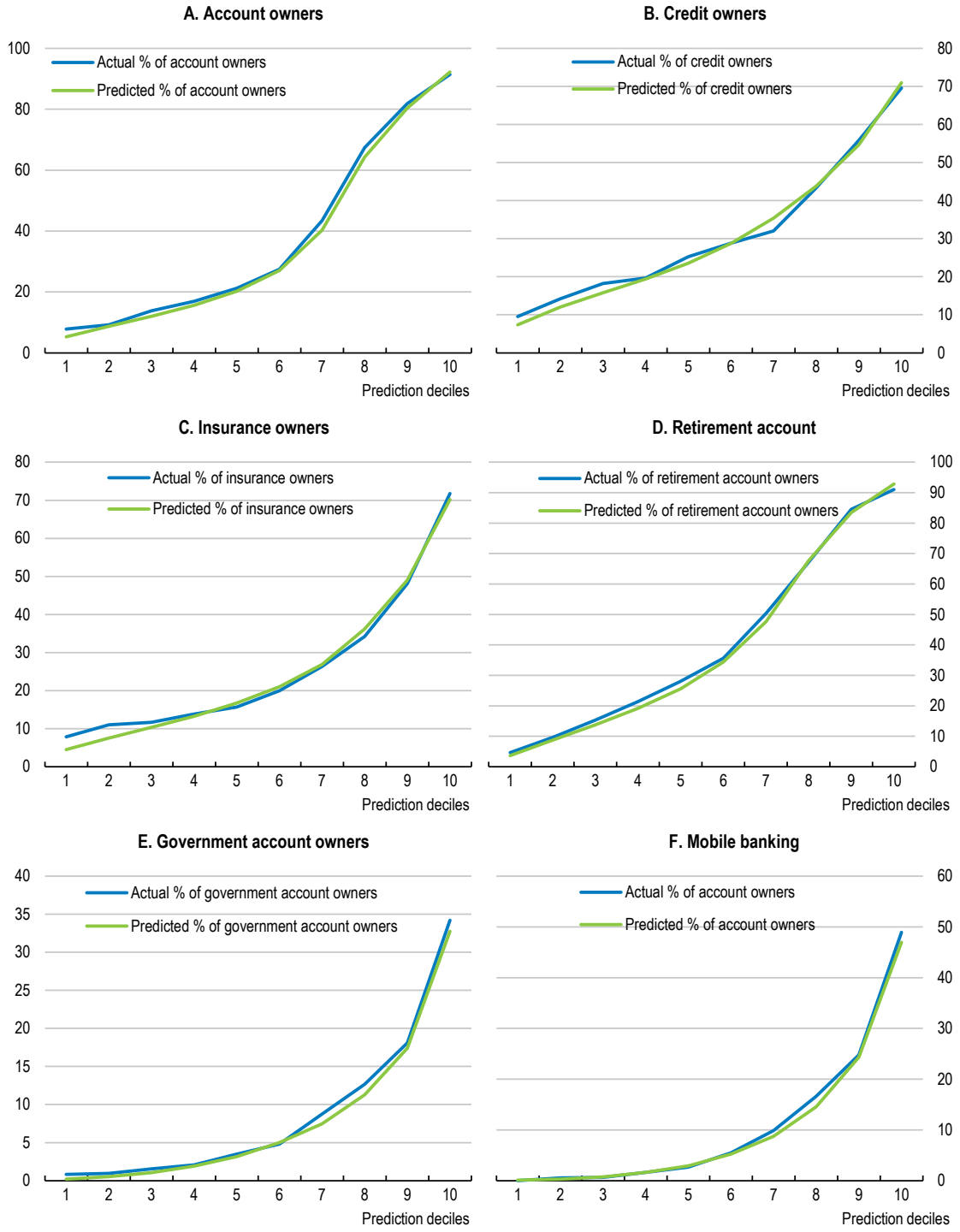
Note: Technical studies refer to technical studies with finished secondary school.
Source: OECD calculations using ENIF 2018 (INEGI)

Table A.16. Holding of financial products by formal and informal employment

Employment	% of adults	% at least 1 formal account	% at least 1 formal credit	% insurance	% retirement savings	% property
Informal	71.3%	33.3%	23.3%	17.2%	22.8%	42.0%
Formal	28.6%	81.2%	50.7%	45.8%	81.2%	55.5%

Source: OECD calculations using ENIF 2018 (INEGI).

Figure A.12. Goodness of fit test of the probit models



Note: The goodness of fit of a probit model for a specific financial product is approximated by computing a cross validation exercise in which the model is estimated using 75% of the data (training), randomly selected. Estimates are then used to compute predictions on the remaining 25% data that are ranked in prediction deciles, with the 1st decile including the 10% of persons that are least likely to hold a financial product, and the 10th decile including the 10% of persons that are most likely to hold a financial product. The goodness of fit is measured as the difference between the actual and predicted share of persons who hold the financial product within a prediction decile. This procedure is repeated ten times for each model, results are then averaged.
Source: OECD calculations using ENIF 2018 (INEGI).