

Household Access to Financial Services in Peru

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Abstract

A sound financial system benefits national growth by enabling households to access financial products, develop their financial abilities and achieve greater economic well-being, while encouraging the development of financial markets and contributing to the reduction of poverty and inequality. To this end, this work has two objectives: First, to describe the evolution of household access to financial services, proposing a methodology for measuring it using the National Household Surveys of Life Conditions and Poverty (ENAHO) in Peru, conducted by the National Institute of Statistics and Informatics of Peru (INEI) between 2004 and 2014. Second, to use the proposed measure of access to financial services to analyze its principal determinants, such as where there is a positive relation between income, education, and age regarding the level of access to financial services (bankarization), and a negative relation when living in rural areas or being in poverty.

Keywords: financial inclusion, households, Peru.

JEL classification: D14, G21, I22.

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1. INTRODUCTION

Economic literature provides evidence of the positive impact of a sound financial system on the growth of countries and the improvement of living conditions. Studies have shown that the benefits and opportunities that households with savings and credit instruments receive, be it to finance physical assets or human capital, to access basic goods and services, or to obtain resources to deal with adverse situations, (Levine, 2005; Clarke et al., 2006; and Thorsten et al., 2007).

In recent years, Peru, along with several other countries, has assumed responsibility for improving the conditions needed to expand access to, and promote the responsible use of, financial services. With this goal in mind, the Superintendency of Banking, Insurance, and Pension Fund Administrators in Peru (known by the initials SBS in Spanish) and Peru's Central Reserve Bank have been working to establish a regulatory environment directed at favoring conditions for promoting a solid financial system with long-term stability.¹ The government's commitment to this process can also be seen in the activities undertaken by the Comisión Multisectorial de Inclusión Financiera (CMIF, 2015a)² in designing and managing three main avenues of support: the use, access, and quality of financial services as specified in the National Strategy for Financial Inclusion of 2015, which aims to motivate the progressive involvement of larger segments of the population in the financial system. One of its goals is to get 75% of the population to use a mobile account or savings account by 2021.

Likewise, with the participation of government representatives, the financial sector, and civil society, measures are being developed to improve infrastructure and digital technology and present lower-cost financial products that are more suited to the needs of the population (Arbulú, 2015). These advances include an increase in the

¹ Together with macroeconomic stability, they have contributed to the development of a risk center administered by the SBS, and to the role of the central bank in the regulation and modernization of payment systems (see Vega et al., 2015).

² Representatives of the Ministry of the Economy and Finance and the Ministry of Development and Social Inclusion, as well as the Central Bank, the Banco de la Nación and the SBS are involved. (Supreme Decree 029-2014).

number of financial entities issuing electronic money using a mobile wallet (*billetera móvil*),³ which allows people to transfer and receive money from any cell phone to all parts of the country at a lower cost.

These actions have been accompanied by a series of proposals for strengthening the financial education of certain population sectors, aimed at improving their knowledge, attitudes, and financial abilities (according to their needs), in order to “increase their participation in financial markets and facilitate the financial inclusion of groups that are the most vulnerable” (García et al., 2013).⁴ Along these lines, the National Financial Education Plan is looking to articulate ongoing initiatives to achieve successes “beyond small, time-limited projects [...] that undertake and finance in a sustainable and long-term manner profitable initiatives for financial education,” (Comisión Multisectorial de Inclusión Financiera, 2016, p.4).⁵

This interest in improving policies and strategies for financial inclusion, as mentioned, is based on evidence shown by several studies regarding the benefits of access to a solid and stable financial system. This has also led to an intense debate among academics on the most relevant concepts for measuring the levels and determinants of financial inclusion.

In this respect, efforts have occurred to find a consensus definition regarding the “access and use of quality banking services” (Allen et al., 2016, and Demirgüç-Kunt and Klapper, 2012). In this case, access refers to the degree to which financial services are available

³ This financial product, called Modelo Perú, was launched by the Association of Banks of Peru (Asbanc) in February of 2016 in accordance with guidelines set by the Law 29985 pertaining to electronic money.

⁴ Higher-income nations have government entities which guide financial education strategies such as the Financial Literacy and Education Commission (www.treasury.gov/resource-center/financial-education) in the United States and the Financial Conduct Authority (FCA) (www.fca.org.uk) of Great Britain.

⁵ Peru’s Superintendency of Banking, Insurance and Pension Fund Administrators (SBS) has been working to focus in an integral fashion on financial education (including mapping out the distinct initiatives underway). Coordination is occurring with the Ministry of Education and the Center for Finance Studies (CEFI) of Asbanc, to include the topic of curriculum design and teacher training programs with the Ministry of Development and Social Inclusion to train beneficiaries of social aid transfer programs (Juntos, Pension 65) and productive development of FONCODES.

(infrastructure and service locations) while the question of use focuses on an analysis of the frequency or intensity with which quality financial products such as credit or savings are used.

Using these concepts, official statistics have been presented to measure advances over time at the national and regional levels (see the SBS financial inclusion portal⁶). However, due to the failure to look at the characteristics of individuals or households that use financial products, a deeper analysis of the demand for services has not been possible.

To better understand the demand for financial services, various international organizations (World Bank Global Findex 2011 and 2014; OECD/INFE, 2011; CAF 2010 and 2013) and national organizations (SBS, 2013) have promoted the development of specialized surveys on the subject. This has resulted in the definition of some common concepts and the establishment of methodological criteria for analyzing the determinants of access to the financial system. Demirgüç-Kunt and Klapper (2012), using information from the Global Findex (GF) 2011, defined use of a financial system as having an account (current or savings). This concept has been used by Aurazo (2016) in Peru following the Global Findex.

The difficulty of continuously developing specialized surveys has led several researchers to use the information from household surveys to analyze the determinants of financial inclusion. Although not designed for this purpose, the National Household Surveys of Life Conditions and Poverty (ENAHO) in Peru has made it possible to carry out several works along these lines because of the amount of information available from households. For example, Jaramillo et al. (2013) used the 2007-2011 panel survey to collect information about the issuing of direct credit in some districts as an indicator of the use of financial services and its determinants. Cámara et al. (2013), with the ENAHO 2011, used the following criteria: if the household has interest for a financial product, possesses a housing credit, or performs electronic banking transactions.

In this context, the present study seeks to harness and systematize information from ENAHO carried out by INEI between 2004-2014 to achieve two objectives: 1) to contribute to the knowledge of the evolution of Peruvian households access to the financial system by proposing a measurement methodology that summarizes the use or

⁶ See < <https://www.sbs.gob.pe/inclusion-financiera>>.

possession of financial products into a given indicator; and 2) distinguish the determinants of bankarization according to households' socioeconomic characteristics.

As for the first objective, the construction of a use of financial services indicator has had to be adapted to the existing ENAHO variables. In order to arrive at a better approximation, all the modules of the survey were reviewed, so as to collect a greater number of variables than those proposed by Cámara et al. (2013) and Jaramillo et al. (2013). In addition, the results are presented at the household level since many questions about bankarization are addressed to the head of the household (unlike the Global Findex information that focuses on the individual). For this task, it is considered pertinent to differentiate between two household groups: those who use financial products on their own initiative (Group 1) and those who are obliged to have a product (opening an account) to receive social program conditional money transfers (Group 2).

The main results, considering the ENAHO 2004-2014 expansion factors, show a positive evolution in this process, although the bankarization is still limited. In this period, the percentage of households that used financial services on their own initiative (Group 1) rose from 20% in 2005 to 29.4% in 2014 (a level close to the results of the GF 2014). When including households receiving conditional transfers (Group 2), the percentage of banked households increased from 20.7% in 2005 to 42.8% in 2014.

To analyze the factors that determine the probability of participating in the financial system, those belonging to Group 1 (dependent variable) were considered as banked households. Using a standard probit model of binary choice, we find that the factors with the greatest incidence in the probability of using formal financial services are related to household living standards (poverty, income, savings) and some head-of-household demographic characteristics (sex, age, marital status). In addition, when analyzing the marginal effects, a higher positive relation between the level of income, education, and age with the level of bankarization is observed, while a negative relation is seen with respect to rural households living in extreme poverty.

To develop these themes, in addition to the introduction, our study is structured in the following manner: Section 2 presents a proposed methodology for measuring the use-of-financial-services indicator and then describes its evolution and relation with some household socioeconomic characteristics. Section 3 shows the results of the

analysis on the determinants of the access of Peruvian households to financial services. Finally, Section 4 presents our conclusions.

2. THE EVOLUTION OF HOUSEHOLD ACCESS TO THE FINANCIAL SYSTEM

In this section we develop the primary goal of our work: we propose a methodology for measuring an indicator of Peruvian households' access to the financial system. Then we make a descriptive analysis of its evolution over time, as well as its relation with other variables related to living-condition and supply of financial services, and by provinces.

2.1 Official Statistics

Official statistics show a positive evolution of financial penetration and supply of financial services in Peru between 2009 and 2014 (SBS, 2014). However, the related indicators show limited levels if compared with the financial penetration rates in some neighboring countries or countries with greater economic development.

Regarding supply of services, the number of service locations for every 100,000 persons grew notably between 2009 and 2014, from 99 to 362 locations (an increase of 265%). This was due to the high degree of growth in the number of banking correspondents⁷ (438.3%) and ATMs (155.8%). Also, within Peru, the number of services delivery points is more concentrated in the urban areas of some provinces such as Arequipa (544) and Lima (398), which contrast with low levels in Huancavelica (72), Puno (80), and Loreto (81). (See SBS, 2014).

The expansion of financial service offerings has had a positive effect on their greater use, but the growth rate has been small. Between 2009-2014, for example, the depth of loans and deposits increased by 9.5 and 5.8 percentage points respectively, reaching 37% and 37.8% of gross domestic product (GDP) in 2014 (SBS, 2014)—levels below the rates of financial services penetration seen in some

⁷ Service channels used by financial system entities that operate at commercial establishments (stores and pharmacies, among others) allow multiple banking and payment operations subject to maximum amounts which vary according to the entity, the type of transaction allowed, or the availability of funds at stores acting as banking correspondents (Asbanc TE EDUCA, Boletín 3. www.hablemosmassimple.com).

Latin American and Caribbean countries (such as Brazil, Chile, Colombia, and Costa Rica).

As for the use of services, defined as the holding of an account, the entities that provide these statistics in Peru, such as the SBS, have had difficulties finding an indicator that does not overestimate or double the results when information issued by each financial institution is consolidated.

In this regard, there is a proposal to measure the use of financial services by the *number of debtors*, since reporting focuses on the same person in one province even if they have outstanding loans at several banks.⁸ Also, SBS has developed the indicator *percentage of adult debtors* in the Peruvian financial system, where the rates of the entire adult population went from 27% to 36.1% between 2009 and 2014. This is considered a reduced level given the financial needs of the population it reflects, as well as the large gaps that exist between provinces. For example, in 2014, the percentage of debtors in Lima, Arequipa, and Ica ranged between 39.5% and 48.6%, while in Ayacucho, Apurímac, Amazonas, and Huancavelica—provinces with high poverty rates—it did not reach 15 percent.

2.2 ENAHO Description, 2004 to 2014

Official statistics, despite their importance in showing the evolution of financial inclusion and the gaps between regions, do not allow for greater details about the socioeconomic characteristics of the individuals or households that use financial services. As such, there exists the need to use household surveys to perform a deeper analysis of the demand for financial services over the long term and establish what influences this demand according to distinct demographic variables (sex, age), social variables (education, housing), and economic variables (employment, income, poverty).

The present study uses ENAHO 2004-2014 data applied quarterly and annually on a sample composed of about 30,000 homes or 20,000 households per year on average (see survey data sheets). This makes it possible to cover all private dwellings and their occupants residing in urban and rural areas in the 24 provinces of the country and in the Constitutional Province of Callao.

⁸ There are restrictions, however, because it excludes people that have only deposit accounts.

Statistics from the Population and Housing Census and updated cartographic material constitute the framework for the sample. The sample is a multistage probability type, independently taking into consideration individual areas and stratification in each of the provinces studied. Each year the same household groups were visited during the same month, while distinct households were chosen. (The level of confidence for the results is 95%.) The questionnaire collects questions about various socioeconomic characteristics of the households through various modules (household, education, health, economically active population, and household income and expenditures, among other modules).

The Estimation methodology for processing the data of the National Household Survey involves the use of a weight or expansion factor for each record that is then multiplied by all of the data that belongs to the corresponding record. The basic expansion factor for each sample home is determined by the sample design. It is equal to the inverse of the final probability of being in the selection, which is the outcome of the selection probabilities at each stage.

The basic expansion factors are adjusted, taking into account the population projections by age group and sex for each survey month, and levels of inference proposed in the sample design. For the degree to which variables collected at the household level are worked with, an estimated expansion factor is used for each household (see survey technical sheets), which has permitted us to make inferences at the level of presenting the descriptive analysis results.

2.3 Methodology for Measuring the Use of Financial Services

In this section we develop the primary goal of our work: we propose a methodology for measuring an indicator of Peruvian households' use of the financial system. Then we make a descriptive analysis of the evolution of the use of financial services over time, as well as its relation with other living condition variables. This is complemented by an analysis of the supply of financial services by provinces.

The basic information for the development of this methodology comes from the household surveys conducted annually in Peru between 2004 and 2014. Although the ENAHO surveys have not been designed with the goal of measuring financial inclusion, they allow us to approximate some variables regarding ownership of financial

Table 1

METHODOLOGY FOR MEASURING THE FINANCIAL-SERVICES-USE INDICATOR

In thousands of households

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Group 1	1,324	1,305	1,455	1,847	2,046	2,233	2,350	2,303	2,495	2,410	2,411
Receive social program transfers	516	393	543	670	702	857	862	787	755	800	848
Remittances at banks	-	-	-	150	161	177	151	134	111	79	96
Pensions	766	810	834	852	878	847	888	922	999	995	1,002
Interest on deposits	39	40	33	63	88	117	117	98	94	77	53
Housing credit	95	80	96	163	193	205	231	244	382	379	349
Financial services	145	136	178	374	507	591	633	559	621	435	424
Electronic banking operations	-	-	-	249	304	485	445	435	495	456	488
Group 2	1,324	1,350	1,522	2,060	2,407	2,638	2,795	2,762	3,069	3,291	3,502
Social program benefits	-	45	67	213	361	405	445	459	574	881	1,091

Note: Group 1 considers each household individually although a household may be using two or more financial services. Group 2 includes the households in Group 1, plus the beneficiaries of social transfer programs such as payments to the impoverished (since 2005), pensions, and scholarships (since 2012) that are not registered in Group 1.

Source: INEI, ENAHO.

products (Table 1) and to know some socioeconomic characteristics of the households. For this purpose, the same methodology has been used to select the same variables and compare their evolution over time.⁹ As has been mentioned, the concept used to determine the level of the use of financial services (or being *banked*) is ownership of formal financial products, as defined by the international conventions used by the 2015 National Strategy for Financial Inclusion.

The analysis focuses on the household because some of the selected variables are collected at this level. The methodology consists of differentiating two segments of households: a) Group 1—those that use financial products on their own initiative, which is calculated by selecting households that have at least one financial product of the seven items listed in Table 1 (receive unemployment insurance, remittances at banks, pensions, interest on deposits, housing credit, financial services, and electronic banking operations); b) Group 2—added to Group 1—households that benefit from social programs involving cash transfers (i.e. payments to the impoverished, pensions, scholarships), and who are therefore obligated to open an account at the Banco de la Nación.

The expansion factors applied in the ENAHO allow us to make inferences at the household level, as shown in Table 1. In Group 1, we can speak of an increase in households that use financial services from 1.3 million in 2004 to 2.4 million in 2014, a level which increases when considering the social programs that transferred money to 3.5 million individuals in 2014.

2.4 Evolution of the Indicator and Its Relation with the Other Variables

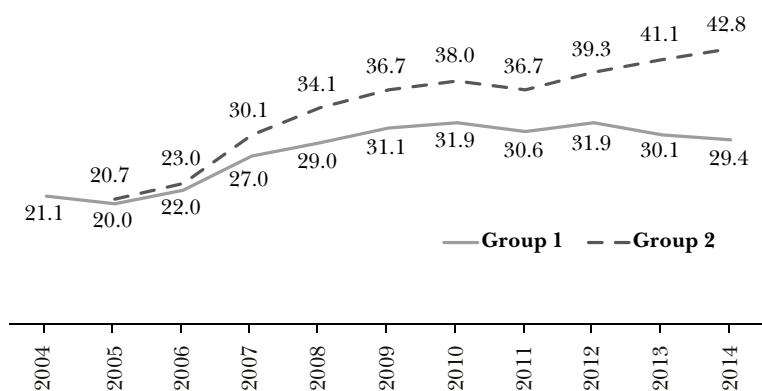
Figure 1 illustrates the evolution of the percentage of households that used financial services in the two groups analyzed.

Despite its positive evolution, the use of financial services on an individual's own initiative, as shown in Figure 1, has tended to stagnate, which could reflect some restrictions on the entry of new customers into the financial system. However, Group 2 experienced greater dynamism sparked by the growth in the number of social program beneficiaries. In spite of these advances, as indicated by

⁹ In 2015, ENAHO included four questions about financial inclusion in its employment module.

Figure 1

EVOLUTION OF HOUSEHOLDS THAT USE FINANCIAL SERVICES
Percentages



Source: INEI, ENAHO.

the figures below, the proportion of households that are unbanked is high among both those who are in poverty and those with higher incomes.

The rate of use of financial services in Group 1 rose from 20% of households in 2005 to 29.4% in 2014 (9.4 percentage points), which indicates a decline compared to the rate of 2010 (31.9%). Group 2, displaying a different trend, increased continuously to 42.8% in 2014 (22 percentage points).

The analysis by income quintiles of Group 1 (Table 2) shows an increase in the bankarization rates as the income brackets advance, which also expresses a strong concentration of persons banked in the higher-income groups. In 2014, the highest income groups in Group 1, quintile 5 (one million households) and fourth quintile (673,000 households) reached rates of 61.1 and 41%, respectively. While at the lower income brackets, the first and second quintiles, there were no more than 60,000 and 227,000 households, representing bankarization levels of 3.6% and 13.8% respectively.

Richer quintiles access more financial services, but the increase in the beneficiaries of social transfer programs encouraged the entry

Table 2

HOUSEHOLDS BANKED BY INCOME QUINTILE											
As percentages of total households											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Group 1											
<i>Total</i>	21.1	20.0	22.0	27.0	29.0	31.1	31.9	30.6	31.9	30.1	29.4
Quintile 1	0.9	1.2	1.4	1.2	2.2	2.8	3.5	4.0	4.6	3.9	3.6
Quintile 2	4.5	5.6	6.5	8.8	12.1	13.4	14.8	14.9	15.3	14.6	13.8
Quintile 3	17.0	15.7	17.9	23.7	26.8	27.8	30.8	28.6	30.2	28.6	27.2
Quintile 4	33.2	30.5	31.9	39.0	42.1	45.7	46.7	43.9	45.7	43.3	41.0
Quintile 5	50.1	47.1	52.2	62.2	61.5	65.5	63.7	61.6	63.9	60.1	61.1
Group 2											
<i>Total</i>	21.1	20.7	23.0	30.1	34.1	36.5	38.0	36.7	39.3	40.1	42.8
Quintile 1	0.9	1.8	5.2	12.8	21.6	22.3	23.7	25.0	28.7	35.9	40.5
Quintile 2	4.5	6.6	7.5	12.1	17.2	20.2	22.2	21.9	23.9	30.4	32.4
Quintile 3	17.0	16.6	31.9	24.3	27.8	29.1	33.0	30.4	33.2	34.2	35.4
Quintile 4	33.2	30.9	31.9	39.1	42.3	46.1	47.1	44.4	46.7	44.8	43.8
Quintile 5	50.1	47.7	52.2	62.3	61.5	65.8	63.7	61.8	63.9	60.4	61.7

Note: Average per capita monthly income quintiles at Metropolitan Lima prices in 2014.

Source: INEI, ENAHO.

of lower-income sectors into financial markets, helping to attenuate the differences by income levels. In this scenario, the participation of the poorest quintile increased from 1.8% in 2005 (in programs with few beneficiaries) to 40.5% in 2014, and in the second quintile from 6.6 to 32.4%. Rates are still lower than the richest quintiles, as can be seen in Table 2.

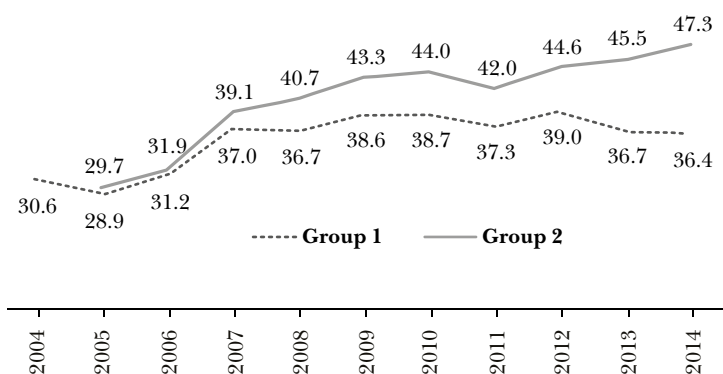
The evidence shown by ENAHO regarding the continuous increase in household incomes (as demonstrated by the fall in poverty) between 2004-2014 has influenced a significant increase in household savings capacity (incomes greater than expenditures). In absolute terms, these households increased from 2.4 million in 2005 (51.6% of households) to 5.3 million in 2014 (64.3% of households).

The figures for 2014 also allow us to see a higher percentage of banked households with savings capacity in Group 1 (79.6%) than in nonbanked households (57.9%).¹⁰ However, when analyzing the distribution of services used by the 5.3 million that had savings capacity in 2014, only 36.4% were banked according to the criterion of Group 1, and 47.3% in Group 2 (Figure 2).

Figure 2

BANKED HOUSEHOLDS WITH SAVINGS CAPACITY

Percentages of total households with savings capacity



Source: INEI, ENAHO.

¹⁰ In Group 2, the percentage of banked who were able to save was 71.1%, while in the unbanked, it increased slightly to 59.2%.

The existence of nonbanked sectors in households with savings capacity, even in the richest quintiles, reveals the difficulties of offering financial services to meet the needs of potential users, be it because of the high cost of financial transactions, lack of money, or lack of confidence in the financial sector, as some specialized surveys indicate.

For example, in the GF 2014 survey in Peru, 41.1% of respondents aged 18 and over (912 people) reported having saved in the last 12 months either to finance their children's education expenses (54.9%), for their businesses or farms (33.9%), or to have funds in their old age (25.3%). Only 32% of them saved using an account in the financial system, while 68% opted for other systems such as savings clubs.¹¹ Among the reasons for not saving in the financial system (multiple answer) were the high cost of having an account (53.7%), lack of confidence in the financial sector (51.1%), and lack of money (51.6%).

The need to see the factors that limit access to financial services has led to a differentiation in the levels of financial services use in different life conditions. Table 3 shows that in 2014, according to the criteria of Group 1, only 7.5% of households in poverty¹² used financial services compared to 34.3% for nonpoor households. These differences are relatively similar to those (10.4%) estimated to have some basic unsatisfied need (known by the initials NBI in Spanish) and those who do not have NBI (33.6%). Likewise, household heads with higher education had a higher bankarization level (49.8%) than those who did not (12%) or those who studied only to primary (18.4%) or secondary (29.3%) school level.

Group 2 shows different trends from those of Group 1 according to living conditions. For example, among the poor, the use

¹¹ Although the figures differ, the Financial Capabilities Survey in Peru (Mejía et al., 2015) indicates a strong presence of informal savings systems. Of the 55% of respondents who reported having saved in the last 12 months, only 22% indicated that they had done so in the financial system, while 42% mentioned other modalities: 26% saved at home, 9% in informal groups, and the rest by investing in property or the purchase of goods such as livestock.

¹² The poverty indicator is monetary poverty. The ENAHO defines a household as being poor when its per capita expenditure is below a poverty line, and it is considered as extremely poor when the household's per capita expenditure is lower than the extreme poverty line.

of financial services was 44.3%, 1.9 points more than the nonpoor (42.4%), although in homes with some basic unsatisfied need (NBI), it was less (37.4%) than among those with no unsatisfied basic need (44%). The level rose to 49% among those who had no education and was 42.8% among those who attended primary school. However, as in Group 1, more heads of household with a university level of education used financial services (51.4%).¹³

In Group 1, the provinces of Lima and Callao, Ica, and Arequipa, showed the highest levels of banked households (between 35.9 and 47.4 percent in 2014), which contrasts with rates in Apurímac, Ayacucho, Huancavelica, and Cajamarca Amazonas (no more than 11% of banked households). However, by focusing on social programs in these provinces, the use of financial services increased markedly (Group 2), as shown in Figure 3. This indicates that social programs involving conditional money transfers are the main engine of change between Group 1 and Group 2.

The panels in Figure 4 also show a positive relation between the supply of financial services (SBS, 2014), measured by the number of offices, ATMs, banking correspondents, and total service points (per 100,000 adults over the age of 18), and the level of banked households (Group 1).

3. DETERMINANTS OF FINANCIAL SERVICES ACCESS

This section develops the second objective of this paper, which is to perform a quantitative approximation of the factors that determine the probability of household participation in the financial system. The variable to be explained is the indicator of access to financial services or financial inclusion proposed in the previous section. To this end, econometric estimates are made using a standard probit model of binary choice.

¹³ Distribution according to sex, insofar as only heads of households are considered, shows no great difference in both groups of banked households.

Table 3

HOUSEHOLDS USING FINANCIAL SERVICES ACCORDING TO LIFE CONDITIONS											
Percentages											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Group 1											
Total	21.1	20.0	22.0	27.0	29.0	31.1	31.9	30.6	31.9	30.1	29.4
<i>Poverty</i>											
Poor	8.7	7.1	7.1	7.2	7.6	7.4	8.5	7.3	8.3	7.4	7.5
Not poor	34.1	31.8	32.8	38.2	38.7	40.4	40.0	37.6	38.3	35.6	34.3
<i>Basic needs</i>											
Unsatisfied	8.6	5.7	7.8	10.2	10.6	10.3	9.7	10.8	11.8	9.8	10.4
Satisfied	29.3	26.9	29.8	36.5	35.8	38.0	38.3	36.1	37.0	34.8	33.6
<i>Education</i>											
No level	8.9	10.1	8.8	11.1	14.0	13.2	14.6	12.6	13.3	11.9	12.0
Primary level	14.0	13.5	14.5	17.0	18.0	18.7	19.4	19.6	20.2	19.5	18.4
Secondary level	20.1	19.5	21.4	25.1	27.3	29.6	31.7	29.5	31.1	29.1	29.3
University level	40.2	36.2	39.6	48.4	50.0	54.3	53.9	51.5	52.9	50.7	49.8

Group 2

Total	21.1	20.7	23.0	30.1	34.1	36.7	38.0	36.7	39.3	41.1	42.8
<i>Poverty</i>											
Poor	8.7	7.9	9.5	14.9	22.2	24.0	26.6	25.7	30.4	39.0	44.3
Not poor	34.1	32.4	32.8	38.7	39.5	41.7	41.9	40.0	41.7	41.7	42.4
<i>Basic needs</i>											
Unsatisfied	8.6	6.4	9.9	16.9	19.9	19.5	19.5	21.7	25.3	31.3	37.4
Satisfied	29.3	27.6	30.2	37.6	39.3	42.4	42.4	40.8	42.8	43.4	44.0
<i>Education</i>											
No level	8.9	10.9	11.0	17.3	21.1	22.6	26.0	23.9	31.6	42.2	49.0
Primary level	14.0	14.3	16.3	23.0	28.1	29.4	31.1	31.1	33.9	39.5	42.8
Secondary level	20.1	20.2	21.9	26.9	30.3	33.3	35.3	33.5	35.5	35.4	36.2
University level	40.2	36.8	39.7	48.6	50.3	54.9	54.4	52.0	53.4	51.7	51.4

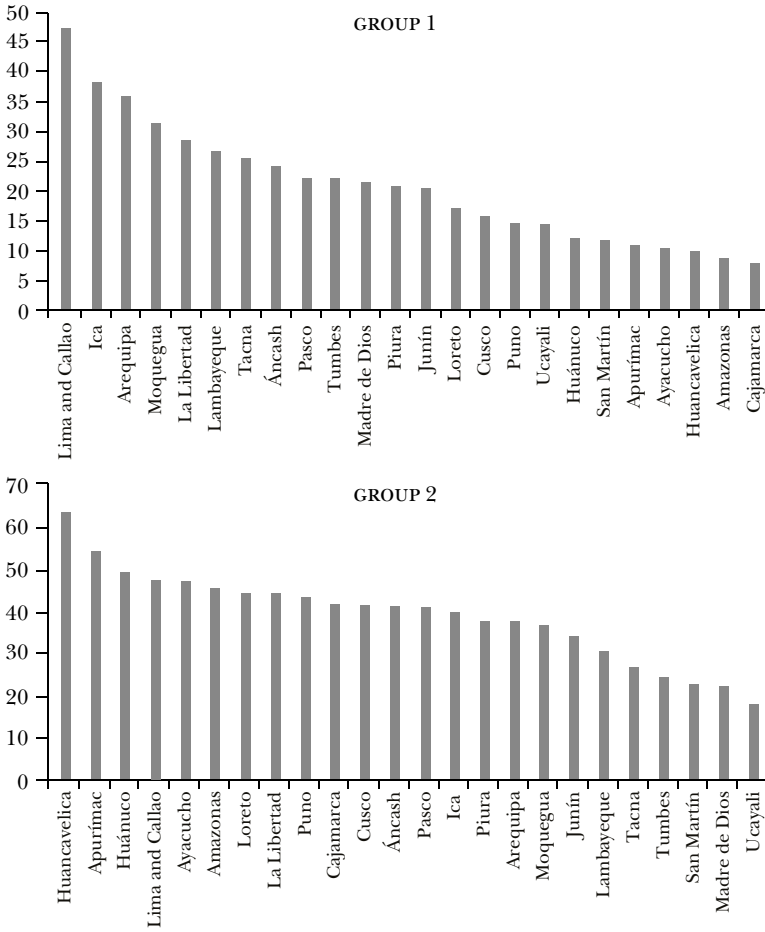
Note: Percentage related to the total number of households in each group according to poverty, basic needs unsatisfied, or education level.

Source: INEI, ENAHO.

Figure 3

LEVEL OF BANCARIZATION BY REGION IN 2014

Percentages



Source: INEI, ENAHO.

Figure 4

BANKARIZATION AND SUPPLY OF FINANCIAL SERVICES BY REGION, 2014

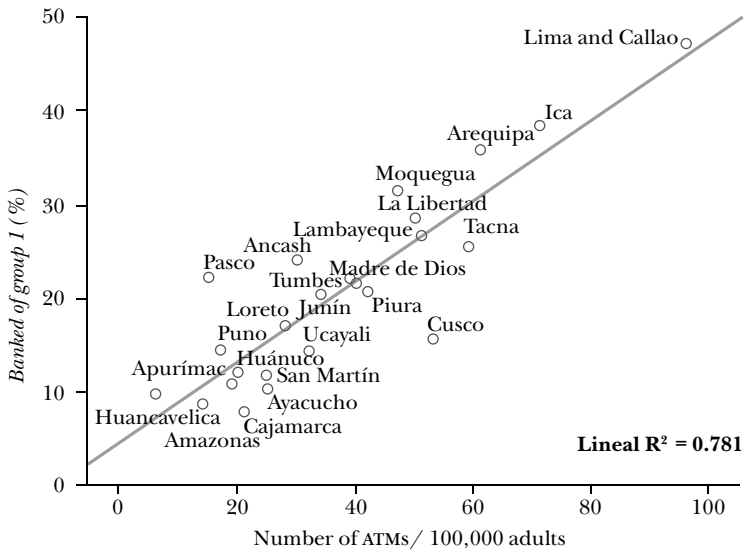
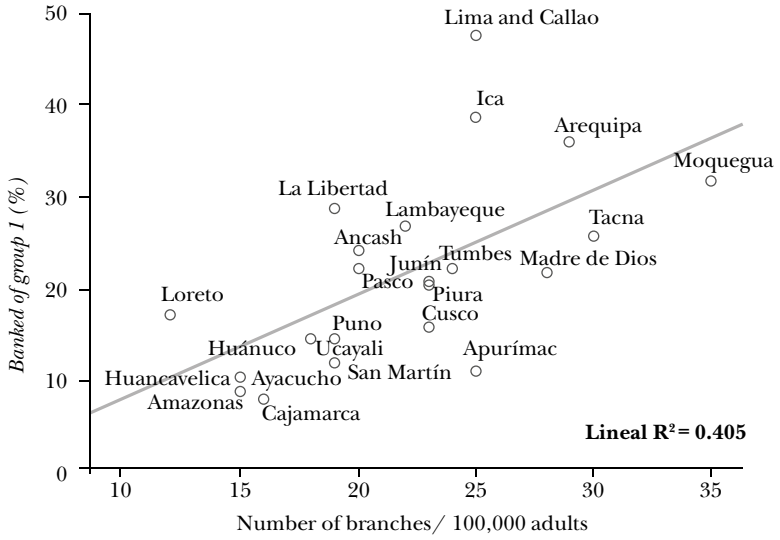
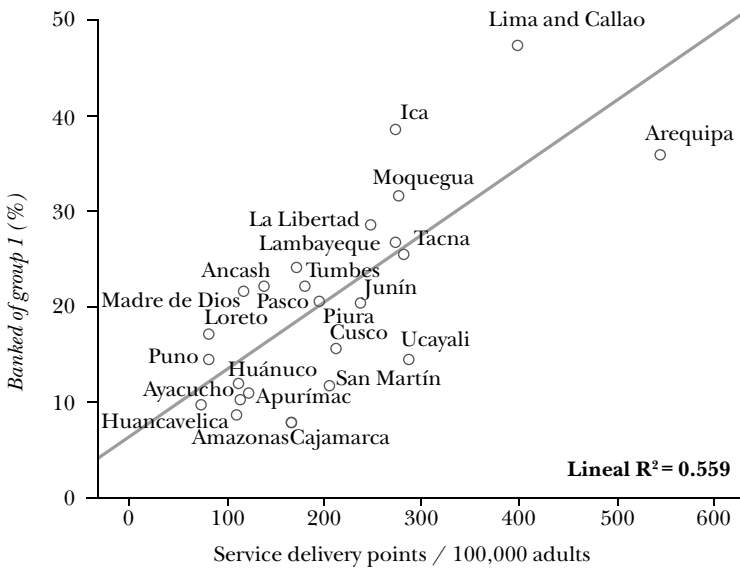
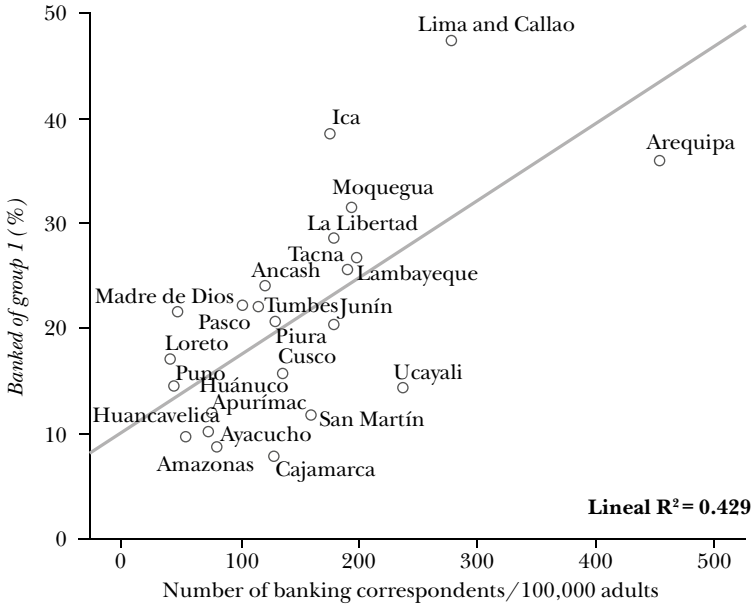


Figure 4 (cont.)

**BANKARIZATION AND SUPPLY OF FINANCIAL SERVICES
BY REGION, 2014**



Source: Reports of financial inclusion indicators of SBS, June 2014, and ENAHO, 2014.

3.1 Related Literature

The analysis of the factors that explain access to the financial system has been approached from distinct perspectives, either to estimate the influence of certain macroeconomic variables (GDP, inflation) and the effect the offering of financial services has on the depth of the financial services market (Aparicio and Jaramillo, 2012), or to measure the context and the policies that influence financial system access (Hopkins and Charles, 2014). Specialized surveys on this topic have promoted the analysis of the economic and social factors involved in the decision to use financial services. Among them are the works of Cano et al. (2014) in Colombia, Peña et al. (2014) in Mexico, and Tuesta et al. (2015) in Argentina.

Some studies have addressed the analysis with data from household surveys. Murcia (2007) used the 2003 Quality of Life Survey by Colombia's national statistics administration to evaluate the impact of income (summarized in an indicator of wealth) on the probability of having a housing loan. Jaramillo et al. (2013) used the 2007–2011 ENAHO panel survey to collect information about the issuing of direct loans in some districts as an indicator of the use of financial services and its determinants. Cámara et al. (2013) used the ENAHO 2011 to study the factors that explain the access of households and small businesses to the financial system in Peru, and Aurazo (2016) studied the determinants of the use of credit cards, savings accounts, and loans accounts in Peru households using the Global Findex database.

3.2 The Information Source

As has been mentioned in Section 2.2., this study uses ENAHO data from the years 2004 to 2014. ENAHO is a survey that is conducted on a quarterly and annual basis (with greater coverage) to collect information on the relevant life condition variables of health, education, employment, income, and access to housing services. In this sense, it is a very important source for investigating the socioeconomic characteristics of households.

The size of the annual samples—some 30,000 households per year—and the possibility of visiting the same groups each year in the same month as the survey, while selecting distinct households has allowed us to make yearly Estimations instead of panel data. The level of confidence of the sample results is 95 percent.

On the other hand, to avoid losing information about all of the households, (panel surveys are restricted to a limited number of households extracted from the annual sample and do not include all question modules) we preferred to make the Estimation separately, year by year. This allows a more dynamic approach over the long term, which is not possible with panel-organized surveys that are restricted to a maximum of five years of surveys. Currently the panel surveys for the years 2007-2011 and 2011-2015 can be downloaded from the INEI website.

3.3 Dependent and Explanatory Variables

In order to examine the variables that most often occur in the probability of using financial services, a discrete choice probability probit model was used, which is standard in studies of this type (Cámara et al. 2013, and Murcia, 2007). It is proposed that the decision by households to participate in the financial system (dependent variable) is influenced by some life standard characteristics such as poverty, income, expenditures, savings, occupation, education level, age, sex, and marital status of the head of household. Some of these variables, such as being of legal age or owning your own home, are considered requirements for getting a bank loan.

The dependent variable is the proposed indicator of access to financial services stated in Section 2, and includes households that use financial products on their own volition (Group 1). In this sense, households that receive money transfers as a part of social programs, and that are required to open accounts at the Banco de la Nación, are excluded.¹⁴ The selected explanatory variables have been organized in a binarian form, taking the value of 1 when the condition is fulfilled and 0 when it is not fulfilled (see Table 4).¹⁵ To see the impact of income, households were classified by spending quintiles.

¹⁴ Households obligated to have a financial product were not considered since their inclusion biases the Estimation results. The analysis of this group in regard to why households do not use financial services requires a more careful analysis, including variables that act as barriers, for example the indicators found in the Global Findex such as the lack of trust in the financial sector, low financial education, and the high cost of transactions.

¹⁵ Other explanatory variables can be included in the analysis, such as the head of household sex (no significant result was seen in the regres-

3.4 Estimation Results

The results of the Estimation for the years 2004 to 2014 are presented in Table 5. In general, the coefficients show expected results similar to Cámara et al. (2013). The analysis of the average marginal effects¹⁶ in Table 6 leads to the general conclusion that income (as measured by expenditures), age, educational level, and savings capacity have a greater impact on the probability of a household belonging to the financial system, which coincides with the results of Peña et al. (2014) and Murcia (2007).

Table 6 shows a higher probability of households accessing financial services where the head of the household is 60 or older, which may be related to their higher financial education. A second high-impact variable is when the household belongs to the upper-income quintile (measured through expenditures), producing results that are in line with the home having a greater savings capacity, a variable that is also positive and significant.

It is also interesting to see that as the head of household reaches higher levels of education (primary, secondary, and university level), the probability of the household accessing the financial system grows. That is to say that households where the head of household has higher education are more likely to use financial services than households with heads that have only a primary education.

In distinguishing the impact of the possession of some assets, such as a mobile phone, computer or vehicle, on the use of financial services, it can be seen that the effect is stronger in homes that own a computer. This could be explained by the advantages that a computer offers for carrying out banking transactions and for gaining access to more information about the conditions of the banking system, which also results in greater financial knowledge.

sions), marital status, region where the household is located (including if the household is in an urban or rural area), or age as a continuous variable. This study includes the most important explanatory variables about the household and it is hoped that other specifications give results of similar quality.

¹⁶ The average marginal effect (AME) is calculated first for each individual with their observed levels of the covariables. These values are then averaged across all individuals. Since the regressors are indicator variables, the finite difference method is used. See Cameron and Trivedi (2010) for more details regarding the method.

Table 4

HOUSEHOLD CHARACTERISTICS	
<i>Explanatory variables</i>	<i>Description</i>
Extreme poverty	One if the household is in extreme poverty, zero if it is not.
Not extreme poverty	One if the household is in poverty that is not extreme, zero if it is the contrary.
Housing condition	One if the home is inadequate, zero if the home is adequate.
Householder owns his/her home	One if the home is owned by the householder, zero if not
Primary education	One if the head of household has a primary-level education, zero if not.
Secondary-level education	One if the head of household has a secondary education, zero if not.
University education	One if the head of household has a university education, zero if not.
Basic services	One if the household has water, sewage, and electricity, zero if not.
Owns a computer	One if the household owns a computer, zero if not.
Vehicle ownership	One if the household owns vehicles, zero if not.
Mobile (cellphone) services	One if the household has cell service, zero if not.
From 25 to 29 years of age	One if the head of household is between the ages of 25 and 29, zero if not.
From 30 to 59 years of age	One if the head of household is between the ages of 30 and 59, zero if not.
60 years of age and above	One if the head of household is 60 or older, zero if not.
Savings capacity	One if the household saves, zero if not.
Quintile 2 expenditures	One if the household is in quintile 2 for per capita expenditures, zero if not.
Quintile 3 expenditures	One if the household is in quintile 3 for per capita expenditures, zero if not.
Quintile 4 expenditures	One if the household is in quintile 4 for per capita expenditures, zero if not.
Quintile 5 expenditures	One if the household is in quintile 5 for per capita expenditures, zero if not.
Rural area	One if the household is located in a rural area, zero if not.
Formal employment	One if the head of household has formal employment, zero if not.

Table 5

DETERMINANTS OF FINANCIAL SYSTEM PARTICIPATION

<i>Explanatory variables</i>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Extreme poverty	-0.33 ^a	-0.55 ^a	-0.62 ^a	-0.37 ^a	-0.39 ^a	-0.52 ^a	-0.55 ^a	-0.29 ^a	-0.20 ^a	-0.23 ^a	-0.41 ^a
Not in extreme poverty	0.00	-0.19 ^a	-0.27 ^a	-0.05	-0.04	-0.13 ^a	-0.06	-0.06	-0.10 ^a	-0.13 ^a	-0.03
With housing	-0.25 ^a	-0.18 ^a	-0.21 ^a	-0.20 ^a	-0.22 ^a	-0.22 ^a	-0.19 ^a	-0.22 ^a	-0.19 ^a	-0.19 ^a	-0.28 ^a
Householder owns his/her home	0.20 ^a	0.11 ^a	0.13 ^a	0.18 ^a	0.15 ^a	0.09 ^a	0.07 ^a	0.13 ^a	0.13 ^a	0.18 ^a	0.14 ^a
Primary education	0.25 ^a	0.09	0.21 ^a	0.16 ^a	0.13 ^a	0.20 ^a	0.17 ^a	0.13 ^a	0.16 ^a	0.14 ^a	0.13 ^a
Secondary-level education	0.49 ^a	0.34 ^a	0.47 ^a	0.39 ^a	0.32 ^a	0.37 ^a	0.38 ^a	0.29 ^a	0.31 ^a	0.32 ^a	0.32 ^a
University level education	0.67 ^a	0.46 ^a	0.63 ^a	0.45 ^a	0.42 ^a	0.45 ^a	0.46 ^a	0.41 ^a	0.42 ^a	0.43 ^a	0.44 ^a
Basic services	0.18 ^a	0.22 ^a	0.23 ^a	0.26 ^a	0.18 ^a	0.18 ^a	0.20 ^a	0.15 ^a	0.17 ^a	0.13 ^a	0.14 ^a
Owens a computer	0.20 ^a	0.18 ^a	0.21 ^a	0.24 ^a	0.18 ^a	0.28 ^a	0.31 ^a	0.25 ^a	0.28 ^a	0.29 ^a	0.31 ^a
Vehicle ownership	0.09 ^a	0.09 ^a	0.02	0.07 ^a	0.13 ^a	0.11 ^a	0.09 ^a	0.12 ^a	0.14 ^a	0.11 ^a	0.16 ^a
Mobile services	0.22 ^a	0.13 ^a	0.13 ^a	0.18 ^a	0.12 ^a	0.17 ^a	0.22 ^a	0.16 ^a	0.20 ^a	0.14 ^a	0.15 ^a
From 25 to 29 years of age	0.85 ^a	0.69 ^a	0.49 ^a	0.34 ^a	0.20 ^a	0.06	0.17 ^a	0.32 ^a	0.27 ^a	0.34 ^a	0.38 ^a
From 30 to 59 years of age	0.90 ^a	0.83 ^a	0.63 ^a	0.51 ^a	0.35 ^a	0.17 ^a	0.35 ^a	0.36 ^a	0.33 ^a	0.37 ^a	0.41 ^a
60 years of age and above	1.85 ^a	1.72 ^a	1.50 ^a	1.38 ^a	1.12 ^a	0.91 ^a	1.06 ^a	0.98 ^a	0.96 ^a	1.00 ^a	1.03 ^a
Savings capacity	0.65 ^a	0.61 ^a	0.60 ^a	0.49 ^a	0.39 ^a	0.44 ^a	0.44 ^a	0.41 ^a	0.41 ^a	0.43 ^a	0.45 ^a
Quintile 2 expenditures	0.33 ^a	0.39 ^a	0.29 ^a	0.27 ^a	0.23 ^a	0.21 ^a	0.17 ^a	0.23 ^a	0.22 ^a	0.30 ^a	0.29 ^a
Quintile 3 expenditures	0.59 ^a	0.46 ^a	0.30 ^a	0.49 ^a	0.46 ^a	0.37 ^a	0.35 ^a	0.47 ^a	0.41 ^a	0.49 ^a	0.49 ^a
Quintile 4 expenditures	0.71 ^a	0.60 ^a	0.41 ^a	0.64 ^a	0.62 ^a	0.54 ^a	0.57 ^a	0.66 ^a	0.60 ^a	0.64 ^a	0.67 ^a
Quintile 5 expenditures	0.93 ^a	0.82 ^a	0.66 ^a	0.90 ^a	0.89 ^a	0.84 ^a	0.78 ^a	0.91 ^a	0.87 ^a	0.94 ^a	0.96 ^a
Rural area	-0.45 ^a	-0.43 ^a	-0.47 ^a	-0.39 ^a	-0.39 ^a	-0.46 ^a	-0.42 ^a	-0.41 ^a	-0.41 ^a	-0.37 ^a	-0.40 ^a
Formal employment	-0.50 ^a	-0.28 ^a	-0.45 ^a	0.32 ^a	0.37 ^a	0.35 ^a	0.34 ^a	0.32 ^a	0.31 ^a	0.26 ^a	0.21 ^a
Constant	-3.58 ^a	-3.17 ^a	-2.92 ^a	-2.99 ^a	-2.53 ^a	-2.35 ^a	-2.54 ^a	-2.58 ^a	-2.61 ^a	-2.74 ^a	-2.79 ^a
Observations	19,502	19,895	20,577	22,204	21,502	21,753	21,496	24,809	25,091	30,453	30,848

Note: ^a indicates significance at 10 percent

Table 6

AVERAGE MARGINAL EFFECTS FOR INDICATOR VARIABLES

<i>Explanatory variables</i>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Extreme poverty	-0.05 ^a	-0.08 ^a	-0.09 ^a	-0.07 ^a	-0.08 ^a	-0.10 ^a	-0.11 ^a	-0.06 ^a	-0.04 ^a	-0.05 ^a	-0.09 ^a
Not in extreme poverty	0.00	-0.03 ^a	-0.05 ^a	-0.01	-0.01	-0.03 ^a	-0.01	-0.01	-0.02 ^a	-0.03 ^a	-0.01
Housing condition	-0.04 ^a	-0.03 ^a	-0.04 ^a	-0.04 ^a	-0.05 ^a	-0.05 ^a	-0.04 ^a	-0.05 ^a	-0.05 ^a	-0.05 ^a	-0.07 ^a
Householder owns his/her home	0.03 ^a	0.02 ^a	0.02 ^a	0.03 ^a	0.03 ^a	0.02 ^a	0.02 ^a	0.03 ^a	0.03 ^a	0.04 ^a	0.03 ^a
Primary education	0.04 ^a	0.02	0.04 ^a	0.03 ^a	0.03 ^a	0.04 ^a	0.04 ^a	0.03 ^a	0.04 ^a	0.03 ^a	0.03 ^a
Secondary-level education	0.09 ^a	0.06 ^a	0.08 ^a	0.08 ^a	0.07 ^a	0.08 ^a	0.09 ^a	0.07 ^a	0.07 ^a	0.08 ^a	0.07 ^a
University-level education	0.13 ^a	0.08 ^a	0.13 ^a	0.10 ^a	0.10 ^a	0.11 ^a	0.11 ^a	0.10 ^a	0.11 ^a	0.11 ^a	0.11 ^a
Basic services	0.03 ^a	0.04 ^a	0.04 ^a	0.05 ^a	0.04 ^a	0.04 ^a	0.05 ^a	0.04 ^a	0.04 ^a	0.03 ^a	0.03 ^a
Owns a computer	0.04 ^a	0.03 ^a	0.04 ^a	0.05 ^a	0.04 ^a	0.06 ^a	0.07 ^a	0.06 ^a	0.07 ^a	0.07 ^a	0.08 ^a
Vehicle ownership	0.02 ^a	0.02 ^a	0.00	0.01 ^a	0.03 ^a	0.03 ^a	0.02 ^a	0.03 ^a	0.04 ^a	0.03 ^a	0.04 ^a
Mobile services	0.04 ^a	0.02 ^a	0.02 ^a	0.04 ^a	0.03 ^a	0.04 ^a	0.05 ^a	0.04 ^a	0.05 ^a	0.03 ^a	0.03 ^a
From 25 to 29 years of age	0.17 ^a	0.14 ^a	0.10 ^a	0.07 ^a	0.04 ^a	0.01	0.04 ^a	0.08 ^a	0.07 ^a	0.09 ^a	0.09 ^a
From 30 to 59 years of age	0.13 ^a	0.12 ^a	0.10 ^a	0.09 ^a	0.07 ^a	0.04 ^a	0.08 ^a	0.08 ^a	0.07 ^a	0.08 ^a	0.09 ^a
60 years of age and above	0.38 ^a	0.35 ^a	0.31 ^a	0.30 ^a	0.26 ^a	0.21 ^a	0.25 ^a	0.24 ^a	0.24 ^a	0.25 ^a	0.25 ^a
Savings capacity	0.11 ^a	0.10 ^a	0.10 ^a	0.09 ^a	0.08 ^a	0.09 ^a	0.10 ^a	0.09 ^a	0.10 ^a	0.10 ^a	0.10 ^a
Quintile 2 expenditures	0.06 ^a	0.07 ^a	0.05 ^a	0.05 ^a	0.05 ^a	0.05 ^a	0.04 ^a	0.05 ^a	0.05 ^a	0.07 ^a	0.07 ^a
Quintile 3 expenditures	0.11 ^a	0.08 ^a	0.05 ^a	0.10 ^a	0.10 ^a	0.08 ^a	0.09 ^a	0.11 ^a	0.10 ^a	0.12 ^a	0.12 ^a
Quintile 4 expenditures	0.13 ^a	0.11 ^a	0.08 ^a	0.13 ^a	0.14 ^a	0.12 ^a	0.14 ^a	0.16 ^a	0.14 ^a	0.16 ^a	0.16 ^a
Quintile 5 expenditures	0.19 ^a	0.17 ^a	0.14 ^a	0.21 ^a	0.23 ^a	0.21 ^a	0.20 ^a	0.24 ^a	0.23 ^a	0.26 ^a	0.26 ^a
Rural area	-0.07 ^a	-0.07 ^a	-0.08 ^a	-0.07 ^a	-0.08 ^a	-0.10 ^a	-0.09 ^a	-0.09 ^a	-0.10 ^a	-0.09 ^a	-0.09 ^a
Formal employment	-0.07 ^a	-0.04 ^a	-0.07 ^a	0.07 ^a	0.08 ^a	0.08 ^a	0.08 ^a	0.08 ^a	0.08 ^a	0.06 ^a	0.05 ^a
Observations	19,502	19,895	20,577	22,204	21,502	21,753	21,496	24,809	25,091	30,453	30,848

Note: ^a indicates significance at 10 percent.

Among the significant variables related to household characteristics, such as poverty, formal employment, housing conditions, basic services, and region (rural or urban), the level of probability of participating in the financial system shows less variability over time (with the expected signs).

However, compared to 2004, it is observed that by 2014, households that are in extreme poverty, those with inadequate housing conditions, and those living in rural areas are less likely to enter the financial system on their own volition. In contrast, the probability increases among those that have higher incomes and access to a computer.

It should be noted that the variable of owning vehicles, which has less impact or is not significant in the Estimations from 2004 to 2007, becomes significant and more important between 2008 and 2014. Given the relation of income to vehicle acquisition, it is important to take into account that the year 2008 represented a period of cut-backs where real wages were stagnant, followed by a period of high sustained growth until 2014. An analysis of panel data incorporating national income measures would make for an interesting hypothesis for evaluation.

Although this study focuses on the analysis of household characteristics in the determination of access to financial services, the results allow us to infer the impact of policy towards financial education for increasing banking participation in the country. In terms of policy, the implication points to a communications strategy that would target information about the financial sector to households where the head of household is young, as well as to low-income households.

Actions should also be taken to reduce the costs of access to financial services, supported by the expansion of infrastructure and digital technology, since as has been observed, the possession of a computer has a significant impact on the probability of using the financial system. Furthermore, the introduction of the mobile wallet, which allows people to transfer and receive money from any mobile phone, is expected to boost the use of financial services to larger segments of the population.

Likewise, economic policy should be more efficiently applied by other public policies related to improving access to quality education and income levels, in order to generate greater access to financial services. However, the slower growth rate of the Peruvian economy

since 2016 could affect incomes, which means more proactive behavior by the financial system will be needed to boost entrepreneurship.

Note that the explanatory variables when considering only household characteristics focus on demand for financial services at the national level. This analysis, however, could be extended to an approach by provinces incorporating financial services supply variables (various points of service, number of offices, number of ATMs, etc.) Although there is a direct relation between the greater supply of services and greater banking (figure 4), the availability of financial services is also lower in regions of greater poverty. Therefore, this type of analysis could be useful to analyze the factors that explain the gaps between regions or provinces, an analysis which would be very relevant for future research.

One important issue is the effect of macroeconomic factors (GDP, inflation) and infrastructure variables on the evolution of household access to financial services over time, as well as an analysis that includes variables that act as barriers to access, such as the lack of confidence in the financial sector, the lack of a culture of financial education, and the high transaction costs as indicated by the Global Findex. This however would require following households over time, where the houses surveyed are surveyed again each year. Without doubt, these themes would be interesting for future investigation.

4. CONCLUSIONS

In consideration of the positive impact household access has on the financial market, the Peruvian government has designed a financial inclusion strategy aimed at increasing the country's level of bankarization. Likewise, advances in the financial environment have given greater solidity and solvency to the system and facilitated financial transactions. In this context, banking in Peru has shown a positive evolution towards greater penetration of financial services, diversity of products and services, and greater use of financial services. These indicators, however, are lower for other countries such as Chile, Brazil, or Colombia.

In order to have regular indicators regarding the progress of household access to financial services and to analyze its determinants, we have worked with information from the ENAHO. We have proposed a methodology for measuring an indicator of access to

financial products and services and looked at this across two household groups according to their use of financial products. Group 1 is defined as using banking services and products at the individual's own volition, and our results show that the use of financial products grew from 20% of these households surveyed in 2005 to 29.4% in 2014. When looking at households that received conditional transfer payments from government social programs (Juntos, Pension 65, and Beca 18), our results show that the percentage of banked households grew from 20.7% in 2005 to 42.8% in 2014 (22 percentage points).

The descriptive study shows strong differences in the level of bankarization according to life conditions regarding variables including poverty, basic needs not met, income level, savings possibilities, and the educational level of the head of the household. Despite these limitations to financial inclusion, there are also unbanked sectors in the richest quintiles and among those with higher education and lower needs. This demonstrates the need to complement this work with other studies on the barriers that limit the use of banking services in these groups.

The analysis of the savings capacity among distinct income quintiles shows that families with lower incomes also save, although there are high-income households with the ability to save that nonetheless are unbanked. This shows the need to investigate the difficulties financial services providers face in meeting the needs of potential users. Low levels of education and financial knowledge, and the high costs of financial transactions act as barriers to entry into the financial system, according to the results of the Global Findex survey of 2011 and 2014.

In order to make a quantitative approximation of the factors that determine the probability of the households participating in the financial system, a standard probit model of binary choice was used, employing the indicator of the use of financial services as a dependent variable. Also, the model selected some explanatory variables that could have a greater incidence in the probability of households using formal financial services.

The analysis of marginal effects shows that between 2004 and 2014 the probability of using financial services in rural areas declined among the poor and those with inadequate housing conditions. The likelihood of using financial services increased in the higher income quintiles households with savings capacity, a head of household with university-level education, and households with a computer. This

could make it increasingly difficult for vulnerable groups to enter the financial system, a situation that works against the concept of financial inclusion, and which shows the need to assess the important role of these factors in the formation of public policy.

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