

Financial Inclusion and the Role of the Post Office

Jose Anson
Alexandre Berthaud
Leora Klapper
Dorothe Singer

The World Bank
Development Research Group
Finance and Private Sector Development Team
October 2013



Abstract

Given their widespread presence in rural and poor areas, post offices can play a leading role in advancing financial inclusion. Yet little is known about the type of clients that post offices reach through their financial service offerings as compared with clients of traditional financial institutions (such as commercial banks). This paper documents and analyzes account ownership patterns at post offices in comparison with traditional financial institutions, using the Global Financial Inclusion Indicators (Global Findex) database, which collects data on account ownership at post offices in 60 countries where postal accounts are offered. Controlling for a host of individual characteristics and country fixed effects, the paper finds that post offices are relatively more likely than traditional financial institutions to provide accounts to individuals who are most likely to be from

financially vulnerable groups, such as the poor, less educated, and those out of the labor force. The paper also uses data from the Universal Postal Union to explore the degree to which different postal business models and the size of the postal network help explain differences in account ownership patterns. The results suggest that post offices can boost account ownership by acting as cash-merchants for transactional financial services, such as electronic government and remittance payments, and that partnerships between the post office and other financial institutions coincide with a higher bank account penetration. The paper also finds that the size of the postal network matters; the larger the network—relative to the network of traditional financial institutions—the more likely it is that adults have an account at the post office.

This paper is a product of the Finance and Private Sector Development Team, Development Research Group. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at lklapper@worldbank.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

Financial Inclusion and the Role of the Post Office

Jose Anson, Alexandre Berthaud, Leora Klapper, and Dorothe Singer*

Keywords: Financial Inclusion; Financial Institutions; Post Office; Emerging Markets

JEL Codes: G2, G21, O16

Sector Board: Finance and Private Sector Development

* Anson: Universal Postal Union (UPU), jose.ANSON@upu.int; Berthaud: UPU, alexandre.BERTHAUD@upu.int; Klapper: World Bank, klapper@worldbank.org; Singer: World Bank, dsinger@worldbank.org. We thank Isabelle Huynh, Roelof Goosen, Atisha Kumar, and Douglas Randall for helpful comments. This paper's findings, interpretations, and conclusions are entirely those of the authors and do not necessarily represent the views of the Universal Postal Union nor the World Bank, their Executive Directors, or the countries they represent.

1. Introduction

Post offices (or “posts”) can play a leading role in advancing financial inclusion. In Brazil, for example, more than 10 million accounts were opened between 2002 and 2011 after the post established Banco Postal under a partnership model with an existing financial institution (Ansón and Bosch Gual, 2008). Yet little is known about the type of clients that post offices reach through their financial service offerings, as compared to clients of traditional financial institutions (such as commercial banks). Moreover, the role of the post office may vary depending on the business model that a government pursues in providing financial services via the postal network. The lack of systematic data has hindered efforts to understand the role of the post office in providing financial services in most economies.

This paper documents and analyzes account ownership patterns at post offices, in comparison to traditional financial institutions, such as banks and regulated microfinance institutions (MFI’s). We use the Global Financial Inclusion Indicators (“Global Findex”) database, which provides indicators measuring how people in 148 economies around the world save, borrow, make payments, and manage risk based on interviews with more than 150,000 nationally representative and randomly selected adults. For 60 countries these new indicators distinguish whether adults have an account at the post office, a financial institution, or both.¹ Controlling for a host of individual characteristics and country fixed effects, we find that post offices are relatively more likely than traditional financial institutions to provide accounts to individuals who are most likely to be financially excluded such as the poor, less educated and those out of the labor force.

Using newly collected data from the Universal Postal Union (UPU), we also explore the degree to which different postal business models and the size of the postal network help explain

¹ Account ownership is the only indicator for which a breakdown by institution is available.

differences in account ownership patterns across institutions (post offices versus traditional financial institutions) and countries. Partnerships between the post office and other financial institutions coincide with a higher bank account penetration, suggesting that the contribution to financial inclusion through the post is potentially larger than what we can measure with the share of post office accounts. We also find that the size of the postal network matters. The larger the network— both relative to the network of traditional financial institutions and to a country's population — the more likely it is that adults have an account at the post office.

A formal account provides individuals with a safe place to save and creates a reliable payment channel to transact with family members, an employer, businesses, or the government. It can also facilitate formal savings and credit, which may be used to invest in education or starting a business. As such, account ownership is often the first step towards inclusion in the formal financial sector.

The first postal account was opened in 1861 when the post in the United Kingdom established a postal savings bank to encourage the poor to save. Postal services in many other countries soon followed suit in offering savings accounts. In some countries posts operated as agents for private savings institutions before becoming postal savings banks. For example, in the Netherlands the post served as agent based on a royal decree from 1875 which regulated the connection between the post offices and the existing savings banks before the Royal Postal Savings Bank was established in 1881 (Universal Postal Union, 1879). For over a century, the business model of postal savings banks around the world remained essentially unchanged. In 1970, Finland was one of the first countries to convert its postal savings bank into a fully-fledged postal bank reporting to the central bank. This move was taken by the Finnish government to allow the post to provide a wider range of services across its more than 3,000 post offices. The

increasing use of digital communication technologies in the 1990s and substitution away from mail, however, forced post operators to rethink their overall business strategy and to diversify product offerings. As a result, some postal operators decided to leverage their existing post office network and expand the number of financial services provided. While posts in some countries such as Brazil chose to partner with existing financial institutions, other posts decided to convert their postal savings banks into fully-fledged postal banks (Berthaud and Davico, 2013).

The rest of the paper is organized as follows. Section 2 presents the data both at the individual and country-levels. Section 3 introduces the empirical methodology. Section 4 shows the econometric estimation results according to individual (demand-side) and country (supply-side) characteristics. Section 5 concludes.

2. Data

2.1 Individual-Level Data

Our data on account ownership come from the first round of the Global Findex database.² The Global Findex data were collected over the calendar year 2011 by adding a questionnaire on financial inclusion to the annual Gallup World Poll. The 2011 World Poll surveyed at least 1,000 individuals in 148 economies using randomly selected, nationally representative samples.³ The target population is the entire civilian, non-institutionalized, adult population (age 15 and over) in each country. The questionnaire includes a question on ownership of an individual or joint account at a formal financial institution. For 62 countries in which post office savings accounts are offered, the questionnaire also includes a question on ownership of an individual or joint

² See Demircug-Kunt and Klapper (Forthcoming) for a description of the database.

³ Detailed country-level information about the data collection dates, sample sizes, excluded populations and margins of error can be found at: <http://www.worldbank.org/globalfindex>. In BRIC countries, the sample size ranges from 2000-4000 individuals.

account at a post office.⁴ In our sample, we focus on the over 65,000 individuals who were interviewed in 60 of these countries.⁵ Appendix 1 lists all the countries included in our sample.

The Global Findex data allow us to distinguish between three types of account ownership: an account at a financial institution only, accounts at both a financial institution and the post office, and an account at the post office only. Within our sample of countries that offer postal accounts, we find that 49.9 percent of adults have an account at either or both institutions, 11.6 percent of adults have an account at the post office, and 2.8 percent of adults have an account at the post office only (5.6 percent of account holders).

Figure 1 shows a wide variation in overall account ownership between high income and developing countries. While account penetration is close to universal in the developed countries included in our sample (90 percent), on average, only 44 percent of adults in developing countries offering postal financial services report having an account.⁶ However, beyond account penetration, we are interested in the types of accounts owned by individuals. In most of countries in our sample, account ownership at a formal financial institution only is the most common type of account ownership, followed by account ownership at both a financial institution and post office. Having a post office account only is typically the least common.

One exception to that general pattern is Japan, where 80 percent of adults in Japan report owning an account at the post office. Japan is also the only country where owning an account at both a financial institution and the post office is the most common type of account ownership (77 percent). The gap between the share of post account ownership in Japan and the countries with

⁴ For seven countries (Algeria, Congo, Rep., Egypt, Arab Rep., Greece, Morocco, Tunisia, and Yemen, Rep.) the data is for 2012 instead of 2011 because of data quality issues in the 2011 round.

⁵ We drop Madagascar from our sample because more than 20% of the population is not sampled and Taiwan, China because no country-level post office information is available.

⁶ This compares to 89 percent account penetration in high income countries and 41 percent account penetration in developing countries for the full sample of countries in the Global Findex database. The data are population weighted.

the next highest levels of account ownership illustrates that the Japanese case is indeed an exception. In Ireland and Luxembourg, a little over 30 percent of adults report owning a post office account. Furthermore, in most countries, fewer than 10 percent of adults have a post office account. With respect to the percentage of adults who *only* own an account at the post office, Italy stands out with 16 percent of adults who report owning an account at the post office only. In contrast, in most other countries, less than five percent of adults have a post office account only. We report the percentages for all three types of account ownership by country in Appendix 1.

In addition to sharp differences in account penetration across countries, there are also important disparities in account penetration by individual characteristics. Allen et al. (2012) document that men and more educated, wealthier, and older adults, as well as adults residing in urban areas, are more likely to own an account. We test whether demographic characteristics also matter for the type of account that adults own. Table 1 reports the univariate statistics of type of account by individual demographics which are included in the Gallup World Poll Survey.

Because there are three account ownership types – financial institution only, both financial institution and post office, and post office only – we present two sets of statistics. First, we compare individuals with an account at a financial institution or both financial institution and post office to those with an account at the post office only. We find that individuals with an account at a post office only tend to be significantly poorer, older, less educated, less likely to be married and less likely to be employed. This suggests that post offices may play an important role in providing financial services to segments of the population that might be particularly likely to be financially excluded. Notably, we find no statistically significant gender or rural-urban gap between adults with an account at a financial institution or financial institution and post office

and adults with an account at a post office. Second, we compare adults with an account at the post office only to those with no account. We find that individuals with an account at the post office only are relatively more likely to be male, richer, older, reside in urban areas, more educated and employed by an employer. They are less likely to be unemployed or self-employed. This suggests that the postal service may provide financial services to vulnerable parts of the population if we restrict ourselves to the universe of account owners. However, relative to the unbanked, adults with a post office account only may not represent the most vulnerable segment of society.⁷

2.2 Country-Level Data

We combine individual-level data from the Global Findex database and the Gallup World Poll with country-level information on the post offices' adopted business model and the types of financial services provided. The data on the different business models pursued by posts with regard to providing financial services was collected by the Universal Postal Union (UPU), a United Nations specialized agency that is the primary forum for cooperation between governments and postal sector players.⁸ Appendix 2 provides an overview of the included business models. First, we identify dummy variables (0/1) on whether posts have a postal bank license, provide unlicensed postal savings (usually referred to as post office savings bank), or offer financial services through various partnership models with other financial institutions.⁹ Because few countries have fully licensed postal financial services, we combine the licensed and

⁷ For the most vulnerable segment of society owning an account might not make economic sense due to costs related to opening and maintaining an account. However, those individuals may use the post for transactional financial services such as sending remittances.

⁸ See Berthaud and Davico (2013) for a description of the database.

⁹ Licensed in this context refers to the fact that the post has been issued a banking license by the banking supervisor (typically the central bank) and falls under its supervision. Unlicensed here refers to the fact that the postal savings bank does not fall under the supervision of the banking supervisor. Instead, it falls under the supervision of its line ministry or the postal regulator.

unlicensed financial services in the regression analysis and create one dummy that equals 1 if posts provide financial services through partnerships and 0 if posts provide licensed or unlicensed financial services directly. Second, we identify dummy variables (0/1) if the post office acts as a cash-merchant for (i) remittance service providers or (ii) government payments. Note that the latter two categories are not necessarily mutually exclusive. Appendix 1 includes data on the post bank business models by country.

Table 2 summarizes the number of countries that adopt each business model. Overall, seven countries¹⁰ in our sample of 60 countries have a licensed post bank. In 29 countries, the post offers unlicensed postal savings. Posts have entered a partnership with a financial service provider in the remaining 24 countries. In developing countries, unlicensed postal savings are the most common business model. In contrast, in high-income countries the dominant model involves partnerships with financial service providers. In addition, in many countries, the post offers cash merchant services. In 43 countries (72 percent), the post offers such services on behalf of remittance service providers and in 40 countries (67 percent) the post offers services to facilitate government payments. While the postal service in nearly all high-income countries acts as cash merchants for remittance service providers, it only does so in 61 percent of posts in the developing world (25 countries).

In addition to data on the postal networks' business models in providing financial services, we also use data on post office access points both relative to the total number of post and financial institutions contact points as well as the proportion of access points per 1,000 inhabitants. We hypothesize that a larger presence of post office branches compared to financial institutions or a denser postal branch network in general increase the convenience of having a post office account. This may in turn influence individuals' choice of account type in favor of

¹⁰ China, France, Gabon, Japan, Kazakhstan, Morocco, Poland.

postal accounts. Data on post access points are collected by the UPU. The IMF's Financial Access Survey provides data on financial access such as branch penetration. Data on GDP per capita come from the World Bank's World Development Indicators database. Appendix 3 provides detailed descriptions of all indicators and their sources.

3. Empirical Methodology

To examine the determinants of individuals' choice of the type of account owned, we specify a multivariate estimation model. In particular, we fit a multinomial logit regression model to the response variable account ownership since it has four distinct categories: 0 if an individual does not have an account, 1 if the account is at the post office only, 2 if the individual owns an account both the post office and a financial institution, and 3 if the account is at a financial institution only. We choose no account (0) as our baseline category.

$$y_{ij} = x'_{ij}\beta + z'_j\gamma + \varepsilon_{ij} \quad (1)$$

where y_{ij} is account ownership type of an individual i residing in country j . The variables x_{ij} and z_j are the vectors of country and individual-level characteristics, respectively. Their corresponding vectors of parameters are given by β and γ . ε_{ij} denotes the error term.

Among the individual-level characteristics we include in x_{ij} are the following socioeconomic variables that may be associated with account ownership. We include dummies for gender, income quintiles based on the income of respondents in a country, whether a respondent lives in a rural area, the respondent's marital status, educational attainment, and employment status. We also include age and age squared in years and the logarithm of household

size in our regression. In the first set of regressions, we focus on the explanatory role of individual characteristics and replace the vector z_j of country characteristics with country fixed effects.

In the second set of regressions, we test the explanatory power of the different postal business models and the relative size of the postal branch network on the type of account owned. To do so, we replace country fixed effects with the logarithm of GDP per capita and include the several country-level characteristics that might influence choice of account type. As discussed in the data section above, we include a dummy variable for the different business models with respect to offering financial services at the post office. We also include variables measuring the number of post office access points relative to the total number of post office and financial institutions access points and post office access points per 1,000 inhabitants. Appendix 3 provides detailed descriptions of each indicator and its source.

4. Results

4.1 Account Ownership and Individual Characteristics

Table 3 examines the relationship of individual characteristics and the odds of falling into one of four account ownership categories: no account, account at the post office only, account at both the post office and a financial institution, and account at a financial institution only. Our baseline category is no account. Thus, the coefficient estimates represent the log-odds ratio of each of the three account owning categories relative to not having an account. We report our results for the entire data set in Panel A and separately for high income and developing countries in Panel B. Each regression controls for country fixed effects.

The results in Panel A indicate that the log-odds of having any of the three types of accounts relative to not having an account decrease for women compared to men. This drop is statistically the same for both post office only and financial institutions only account holders. The relative log-odds of having any kind of the three types of accounts compared to not having an account also decrease as one moves from the highest income quintile to the lowest and decreases by a larger amount for accounts at a financial institution only versus none than for post office accounts only compared to none for the bottom 60 percent of the population. This suggests that post offices are relatively better in reaching lower income individuals. As expected, an increase in age leads to an increase in the relative log-odds of having an account both at the post office only and at a financial institution only compared to not having an account. However, the relationship between age and account ownership is not linear; the statistical significance of the included square term means that account ownership eventually diminishes with an increase in age. The estimates on the coefficients suggest that an increase in the log-odds associated with age is smaller for accounts at the post office. Living in a rural area has no significant impact on the relative log-odds of having an account at the post office only compared to having none. However, it does have a significant impact on accounts at a financial institution only: it decreases the log-odds of having an account at a financial institution relative to not having an account. This suggests that post offices could play a role in bridging the gap in account penetration between rural and urban areas that we typically observe (Allen et al., 2012).

The relative log-odds of having any kind of the three types of accounts compared to none decrease as one moves from more than 15 years of schooling (masters degree or more) to fewer years. The negative effect is larger for accounts at a financial institution only relative to no accounts than for post office accounts only compared to not having an account. Household

characteristics such as household size and marital status only significantly impact the relative log-odds of having an account at financial institutions but not at the post office. Finally, as expected, employment status is an important determinant of account ownership. Our results indicate that the relative log-odds of having any kind of the three types of accounts compared to none increase as the employment status changes from self-employed to being employed by an employer but decrease as the status changes to being unemployed or exiting the workforce. The results are stronger in magnitude for both the increase and decrease for accounts at a financial institution only compared to individuals with accounts at the post office only. Overall, the results thus seem to suggest that post offices may be relatively better at providing accounts to groups that are often most likely to be financially excluded, such as the poor, less educated, unemployed, or those out of the labor market.

In Panel B, we report regression results separately for high income and developing countries. We find three main differences in how individual characteristics influence account ownership in the two groups. Unlike in our sample of developing countries, gender and rural residency no longer have a statistically significant impact on the three log-odds ratios. Furthermore, in high income countries log-odds ratio of having an account at the post office versus not having an account does not significantly change moving from the highest income quintile to the lowest one. The log-odds ratio of having an account at a financial institution, however, does change moving from the richest income quintile to one of the lowest 60 percent income quintiles. Similarly, moving from self-employed to unemployed or exiting the workforce does not affect the log-odds of owning a post office account compared to not having an account while there is a significant impact on accounts at a financial institutions only compared to no account. This suggests that, in high income countries, post offices are not only relatively better at

providing financial services such as accounts to some segments of the population most likely to be financially excluded such as lower income individuals and those unemployed or out of the labor force compared to financial institutions, but that there is actually no significant difference in providing account services to them.

4.2 Account Ownership and Country Characteristics

In Table 4, we explore the explanatory power of the different postal business models and the relative size of the postal branch network on the choice of account type. To do so, we use the same specification as in Table 3 but instead of country fixed effects we now control for GDP per capita and one postal variable at a time. In the interest of space and readability the coefficients for the individual characteristics are not reported. They are of similar size and sign as those reported in Table 3.

Our results in Panel A indicate that the relative log-odds of having an account at the post office relative to not having an account decrease if a country moves from an unlicensed or licensed postal savings model (omitted category) to a partnership model. At the same time, the log-odds of having an account at a financial institution increase. This finding is in line with evidence from Brazil where Ansón and Bosch Gual (2008) show that, in municipalities with certain characteristics, Banco Postal's launch attracted other bank branches not previously present in these municipalities. This suggests that the contribution to financial inclusion through the post is potentially larger than what we can measure with the share of post office accounts alone.

Our results also indicate that, regardless of whether posts offer financial services as a (un)licensed institution or in partnership with a financial institution, the log-odds of having an

account at the post office increase if posts serve as cash merchants for remittances or government payments. Notably, posts serving as cash merchants for remittances moreover increases the log-odds of having an account at a financial institution only compared to none albeit to a smaller degree. While this may at first seem counterintuitive, remittances need both a sender and receiver. If remittances can be received at other financial institutions, posts providing remittance services can increase the log-odds of having an account at only a financial institution as well. When we only consider the sample of developing countries (Panel B), we find that there is actually no statistically significant difference between the increase of the log-odds ratios for post office accounts only and financial institutions accounts only compared to none for remittances and government payments.

Finally, we control for the size of the postal network. As expected, the log-odds of having an account at the post office only relative to having no account increase as the size of the postal branch network increases relative to the sum of post and financial institutions access points. At the same time, the log-odds of having an account at a financial institution only versus not having an account decrease. When we consider the number of post office branches per 1,000 inhabitants, we find that the log-odds of having an account at the post office increase compared to none. This time, however, we do not measure a statistically significant impact on the relative log-odds of having an account at a financial institution only.

5. Conclusion

Using data from the Global Financial Inclusion Indicators (Global Findex) database, which collects data on account ownership at post offices for 60 countries where postal accounts are offered, this paper documents and analyzes account ownership patterns at post offices in

comparison to traditional financial institutions such as banks to help clarify the role that post offices can play in advancing financial inclusion. Controlling for a host of individual characteristics and country fixed effects, we find that post offices are relatively more likely than traditional financial institutions to provide accounts to individuals who are most likely to be financially excluded such as the poor, less educated, and those out of the labor force.

We also use data from the Universal Postal Union (UPU) to explore the degree to which different postal business models and the size of the postal network help explain differences in account ownership patterns. The results suggest that post offices can boost account ownership—perhaps at both the post and other financial institutions— and that the size of the postal network matters. The larger the network—relative to the network of traditional financial institutions— the more likely it is that adults have an accounts at the post office.

Overall, our results suggest that post offices can play an important role in advancing financial inclusion. Leveraging their existing postal network infrastructure may be one of the ways that developing countries can use to address the financial inclusion challenges they face. However, more research is needed to better understand under which circumstances and under which business models posts can best expand financial inclusion.

References

- Allen, Franklin, Asli Demirguc-Kunt, Leora Klapper, and Maria Soledad Martinez Peria. 2012. "The Foundations of Financial Inclusion: Understanding Ownership and Use of Formal Accounts." World Bank Policy Working Paper 6290.
- Ansón, José and Laia Bosch Gual. 2008. "Financial Access and Inclusion Through Postal Networks: Evaluating the Experience of Brazil's Banco Postal." In Joëlle Toledano, ed., *Postal Economics in Developing Countries*. Bern: Universal Postal Union.
- Berthaud, Alexandre and Gisela Davico. 2013. "Global Panorama on Postal Financial Inclusion." Bern: Universal Postal Union.
- Demirguc-Kunt, Asli and Leora Klapper. Forthcoming. "Measuring Financial Inclusion: The Global Findex Database." *Brookings Papers on Economic Activity*.
- Karlan, Dean, and Jonathan Morduch. 2010. "Access to Finance." In Dani Rodrik and Mark Rosenzweig, eds., *Handbook of Development Economics*, vol. 5. Amsterdam: North-Holland.
- Universal Postal Union. 1879. "Post Office Savings Banks". In *L'Union Postale*, vol. IV n.1, January 1, 1879

Figure 1: Account Ownership by Type and Country, 2011

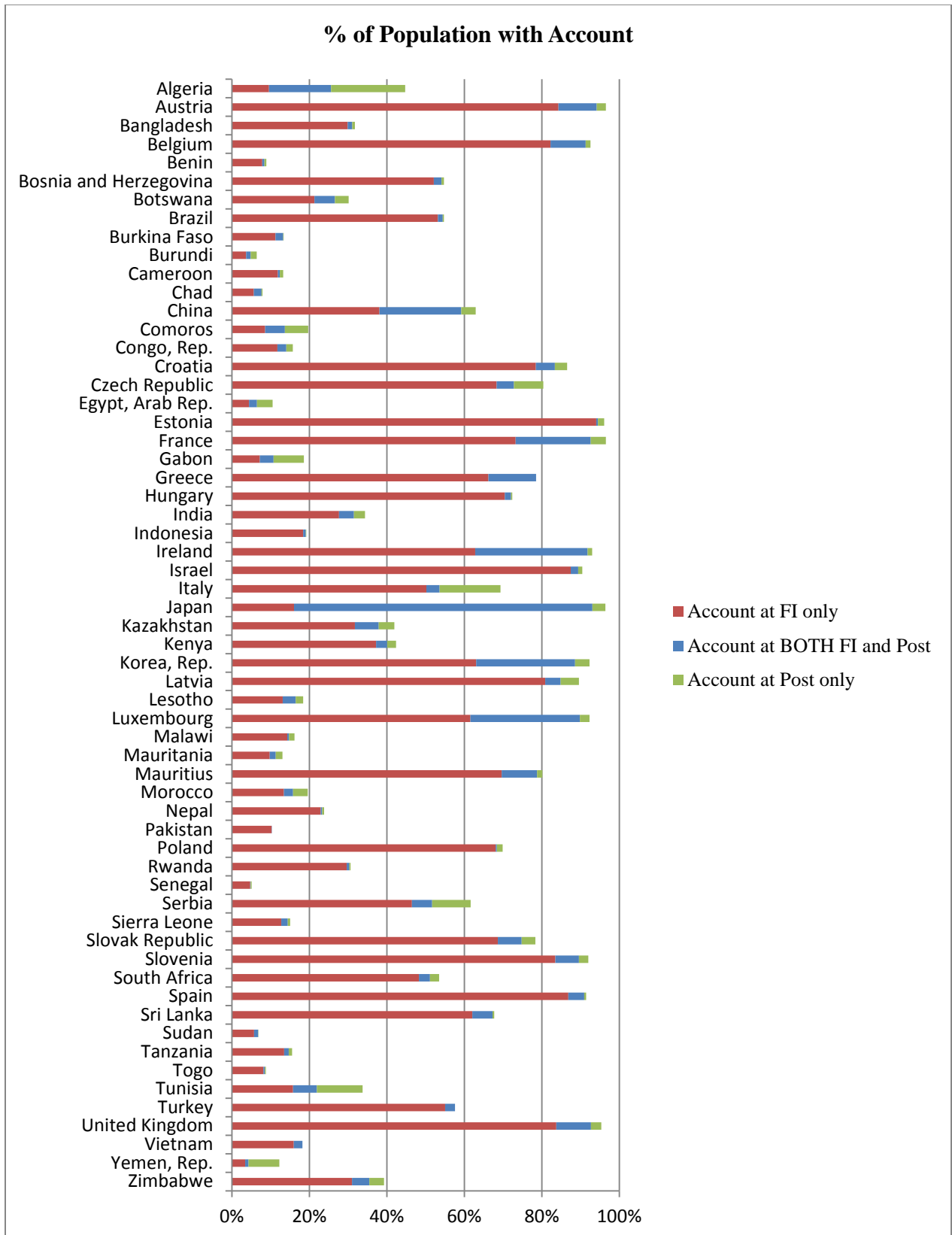


Table 1: Who Has an Account at the Post Office?

	FI Account vs Post Office Only Account			Unbanked vs Post Office Only Account		
	Account at FI or Post Office and FI	Account at Post Office Only	Sig. T-test	Unbanked	Account at Post Office Only	Sig. T-test
Female (0/1)	0.4917	0.4982		0.5405	0.4982	***
Income: poorest 20% (0/1)	0.1718	0.2042	***	0.2631	0.2042	***
Income: second 20% (0/1)	0.1873	0.2190	***	0.2298	0.2190	
Income: middle 20% (0/1)	0.1971	0.2144		0.1973	0.2144	
Income: fourth 20% (0/1)	0.2212	0.1703	***	0.1759	0.1703	
Income: richest 20% (0/1)	0.2226	0.1920	***	0.1340	0.1920	***
Age	42.1835	44.1920	***	35.6902	44.1920	***
Rural (0/1)	0.5885	0.5934		0.7364	0.5934	***
0 - 8 years of education (0/1)	0.2811	0.4585	***	0.6938	0.4585	***
9 - 15 years of education (0/1)	0.5705	0.4572	***	0.2848	0.4572	***
> 15 years of education (0/1)	0.1483	0.0843	***	0.0214	0.0843	***
Household size (ln)	1.2252	1.3257	***	1.6246	1.3257	***
Married (0/1)	0.6012	0.5369	***	0.5255	0.5369	
Divorced/Separated (0/1)	0.0510	0.0436		0.0309	0.0436	**
Employed for employer (0/1)	0.4386	0.2877	***	0.1643	0.2877	***
Unemployed (0/1)	0.0526	0.0639	*	0.0922	0.0639	***
Out of workforce (0/1)	0.3332	0.4517	***	0.4666	0.4517	
Employed for self (0/1)	0.1757	0.1967		0.2770	0.1967	***

note: *** p<0.01, ** p<0.05, * p<0.1

Table 2: Overview Postal Business Models

Business Models	Countries					
	All		High Income		Developing	
Licensed postal financial services	7	12%	3	16%	4	10%
Unlicensed postal savings	29	48%	5	26%	24	59%
Partnership with a financial service provider	24	40%	11	58%	13	32%
Total	60	100%	19	100%	41	100%
Cash Merchant for						
Remittances	43	72%	18	95%	25	61%
Government payments	40	67%	11	58%	29	71%

Table 3: Individual-Level Regressions
Panel A: All Countries

	All Countries			p-value diff (1) and (3)
	Mlogit (Base Category: No Account)			
	Post Office Account Only	Post Office and FI Account	FI Account Only	
	1	2	3	
Female (0/1)	-0.131** (0.049)	-0.280*** (0.000)	-0.166*** (0.000)	
Income: poorest 20% (0/1)	-0.892*** (0.000)	-1.350*** (0.000)	-1.214*** (0.000)	***
Income: second 20% (0/1)	-0.577*** (0.000)	-1.055*** (0.000)	-0.845*** (0.000)	**
Income: middle 20% (0/1)	-0.326*** (0.001)	-0.720*** (0.000)	-0.578*** (0.000)	**
Income: fourth 20% (0/1)	-0.373*** (0.000)	-0.402*** (0.000)	-0.278*** (0.000)	
Age	0.047*** (0.000)	0.091*** (0.000)	0.085*** (0.000)	***
Age squared	-0.000** (0.031)	-0.001*** (0.000)	-0.001*** (0.000)	***
Rural (0/1)	0.040 (0.620)	-0.234*** (0.003)	-0.241*** (0.000)	***
0 - 8 years of education (0/1)	-1.355*** (0.000)	-2.153*** (0.000)	-1.854*** (0.000)	***
9 - 15 years of education (0/1)	-0.668*** (0.000)	-0.981*** (0.000)	-0.972*** (0.000)	***
Household size (ln)	-0.103 (0.145)	-0.305*** (0.000)	-0.274*** (0.000)	**
Married (0/1)	-0.068 (0.419)	0.415*** (0.000)	0.238*** (0.000)	***
Divorced/Separated (0/1)	0.030 (0.860)	0.255** (0.038)	0.020 (0.801)	
Employed for employer (0/1)	0.285** (0.018)	0.476*** (0.000)	0.489*** (0.000)	*
Unemployed (0/1)	-0.436*** (0.006)	-0.613*** (0.000)	-0.629*** (0.000)	
Out of workforce (0/1)	-0.454*** (0.000)	-0.670*** (0.000)	-0.699*** (0.000)	**
Constant	-1.726*** (0.000)	-3.616*** (0.000)	-2.243*** (0.000)	
Country-FE		YES		
N		59,550		
# countries		55		

note: *** p<0.01, ** p<0.05, * p<0.1
P-values reported in parentheses.

Panel B: By High Income and Developing Countries

	High Income Countries				Developing Countries			
	Mlogit (Base Category: No Account)				Mlogit (Base Category: No Account)			
	Post Office Account Only	Post Office and FI Account	FI Account Only	p-value diff (1) and (3)	Post Office Account Only	Post Office and FI Account	FI Account Only	p-value diff (1) and (3)
	1	2	3		1	2	3	
Female (0/1)	0.001 (0.995)	-0.099 (0.280)	0.058 (0.407)		-0.137* (0.069)	-0.322*** (0.000)	-0.240*** (0.000)	
Income: poorest 20% (0/1)	-0.358 (0.122)	-0.663*** (0.000)	-0.792*** (0.000)	**	-1.002*** (0.000)	-1.698*** (0.000)	-1.267*** (0.000)	**
Income: second 20% (0/1)	-0.101 (0.663)	-0.518*** (0.001)	-0.512*** (0.000)	**	-0.678*** (0.000)	-1.284*** (0.000)	-0.861*** (0.000)	
Income: middle 20% (0/1)	-0.176 (0.447)	-0.268* (0.085)	-0.300** (0.013)		-0.310*** (0.005)	-0.913*** (0.000)	-0.599*** (0.000)	**
Income: fourth 20% (0/1)	0.238 (0.343)	0.016 (0.921)	0.048 (0.713)		-0.510*** (0.000)	-0.513*** (0.000)	-0.309*** (0.000)	*
Age	0.086*** (0.000)	0.122*** (0.000)	0.106*** (0.000)		0.038*** (0.002)	0.082*** (0.000)	0.083*** (0.000)	***
Age squared	-0.001*** (0.006)	-0.001*** (0.000)	-0.001*** (0.000)	**	-0.000 (0.190)	-0.001*** (0.000)	-0.001*** (0.000)	***
Rural (0/1)	0.204 (0.149)	-0.014 (0.899)	0.043 (0.594)		0.029 (0.776)	-0.235* (0.053)	-0.342*** (0.000)	***
0 - 8 years of education (0/1)	-0.977*** (0.000)	-1.981*** (0.000)	-1.491*** (0.000)	**	-1.396*** (0.000)	-2.047*** (0.000)	-1.913*** (0.000)	***
9 - 15 years of education (0/1)	-0.450** (0.035)	-0.888*** (0.000)	-0.837*** (0.000)	**	-0.732*** (0.000)	-0.963*** (0.000)	-0.997*** (0.000)	**
Household size (ln)	0.027 (0.866)	-0.260** (0.017)	-0.325*** (0.000)	**	-0.143* (0.071)	-0.313*** (0.000)	-0.233*** (0.000)	
Married (0/1)	-0.080 (0.656)	0.406*** (0.001)	0.354*** (0.000)	***	-0.055 (0.570)	0.480*** (0.000)	0.204*** (0.000)	***
Divorced/Separated (0/1)	0.001 (0.998)	0.295 (0.113)	0.088 (0.543)		0.020 (0.928)	0.136 (0.489)	-0.011 (0.912)	
Employed for employer (0/1)	0.725** (0.021)	0.548*** (0.006)	0.506*** (0.002)		0.183 (0.173)	0.426*** (0.000)	0.469*** (0.000)	**
Unemployed (0/1)	-0.574 (0.165)	-0.780*** (0.002)	-0.821*** (0.000)		-0.412** (0.016)	-0.598*** (0.002)	-0.607*** (0.000)	
Out of workforce (0/1)	-0.127 (0.669)	-0.668*** (0.000)	-0.712*** (0.000)	**	-0.525*** (0.000)	-0.683*** (0.000)	-0.720*** (0.000)	
Constant	-2.041*** (0.008)	0.248 (0.670)	2.884*** (0.000)		-1.289*** (0.001)	-3.280*** (0.000)	-2.083*** (0.000)	
Country-FE		YES				YES		
N		17,476				42,074		
# countries		18				37		

note: *** p<0.01, ** p<0.05, * p<0.1
P-values reported in parentheses.

Table 4: Individual-Level Regressions with Country-Level Variables

Panel A: All Countries

	m1			m2			m3			p-value diff (1) and (3)
	Post Office Account Only	Post Office and FI Account	FI Account Only	Post Office Account Only	Post Office and FI Account	FI Account Only	Post Office Account Only	Post Office and FI Account	FI Account Only	
	1	2	3	1	2	3	1	2	3	
GDP per capita (ln)	0.608*** (0.000)	1.091*** (0.000)	0.817*** (0.000)	0.528*** (0.000)	1.026*** (0.000)	0.786*** (0.000)	0.588*** (0.000)	1.107*** (0.000)	0.822*** (0.000)	
Partnership with a financial service provider (0/1)	-0.692*** (0.000)	-1.084*** (0.000)	0.262*** (0.000)							***
CM for remittances (0/1)				0.517*** (0.000)	0.892*** (0.000)	0.319*** (0.000)				**
CM for government payments (0/1)							0.254*** (0.005)	-0.022 (0.806)	-0.086* (0.078)	***
Constant	-7.224*** (0.000)	-9.776*** (0.000)	-6.254*** (0.000)	-7.127*** (0.000)	-10.127*** (0.000)	-6.160*** (0.000)	-7.391*** (0.000)	-10.078*** (0.000)	-6.173*** (0.000)	
N		59,550			59,550			59,550		
# countries		55			55			55		

note: *** p<0.01, ** p<0.05, * p<0.1

P-values reported in parentheses.

Individual characteristics controlled for but not reported.

	m4			m5			p-value diff (1) and (3)
	Post Office Account Only	Post Office and FI Account	FI Account Only	Post Office Account Only	Post Office and FI Account	FI Account Only	
	1	2	3	1	2	3	
GDP per capita (ln)	0.712*** (0.000)	1.209*** (0.000)	0.672*** (0.000)	0.470*** (0.000)	1.234*** (0.000)	0.811*** (0.000)	
Post branches as % total FI and post branches	1.214*** (0.000)	0.156 (0.404)	-1.438*** (0.000)				***
Post branches per 1000 inhabitants (ln)				0.297*** (0.000)	-0.347*** (0.000)	0.033 (0.230)	***
Constant	-9.514*** (0.000)	-11.963*** (0.000)	-3.985*** (0.000)	-5.558*** (0.000)	-12.069*** (0.000)	-6.050*** (0.000)	
N		43,776			59,550		
# countries		42			55		

note: *** p<0.01, ** p<0.05, * p<0.1

P-values reported in parentheses.

Individual characteristics controlled for but not reported.

Panel B: Developing Countries

	m1			m2			m3			p-value diff (1) and (3)
	Post Office Account Only	Post Office and FI Account	FI Account Only	Post Office Account Only	Post Office and FI Account	FI Account Only	Post Office Account Only	Post Office and FI Account	FI Account Only	
	1	2	3	1	2	3	1	2	3	
GDP per capita (ln)	0.655*** (0.000)	0.877*** (0.000)	0.644*** (0.000)	0.572*** (0.000)	0.783*** (0.000)	0.613*** (0.000)	0.601*** (0.000)	0.949*** (0.000)	0.639*** (0.000)	
Partnership with a financial service provider (0/1)	-0.741*** (0.000)	-0.772*** (0.000)	0.154** (0.012)							***
CM for remittances (0/1)				0.466*** (0.000)	0.787*** (0.000)	0.302*** (0.000)				
CM for government payments (0/1)							0.300** (0.033)	-0.986*** (0.000)	0.108* (0.099)	
Constant	-7.289*** (0.000)	-7.923*** (0.000)	-4.829*** (0.000)	-7.166*** (0.000)	-7.942*** (0.000)	-4.756*** (0.000)	-7.203*** (0.000)	-8.341*** (0.000)	-4.801*** (0.000)	
N		42,074			42,074			42,074		
# countries		37			37			37		

note: *** p<0.01, ** p<0.05, * p<0.1

P-values reported in parentheses.

Individual characteristics controlled for but not reported.

	m4			m5			p-value diff (1) and (3)
	Post Office Account Only	Post Office and FI Account	FI Account Only	Post Office Account Only	Post Office and FI Account	FI Account Only	
	1	2	3	1	2	3	
GDP per capita (ln)	0.685*** (0.000)	0.619*** (0.000)	0.496*** (0.000)	0.496*** (0.000)	0.957*** (0.000)	0.624*** (0.000)	
Post branches as % total FI and post branches	1.622*** (0.000)	0.577** (0.024)	-1.796*** (0.000)				***
Post branches per 1000 inhabitants (ln)				0.311*** (0.000)	-0.226*** (0.000)	0.055* (0.071)	***
Constant	-9.475*** (0.000)	-7.570*** (0.000)	-2.399*** (0.000)	-5.515*** (0.000)	-9.328*** (0.000)	-4.495*** (0.000)	
N		29,276			42,074		
# countries		27			37		

note: *** p<0.01, ** p<0.05, * p<0.1

P-values reported in parentheses.

Individual characteristics controlled for but not reported.

Appendix 1: Summary Statistics of Account Penetration and Post Bank Business Model, By Country

Country	Account Penetration by Type			Post Bank Business Model		
	Account at FI only	Account at both FI and Post	Account at Post only	Licensed postal financial services (BM 5a, 5b, and 5c)	Unlicensed postal savings (BM 4a)	Partnership with a financial service provider (BM 3c, 3d, 3e, and 3f)
Algeria	0.10	0.16	0.19	0	1	0
Austria	0.84	0.10	0.02	0	0	1
Bangladesh	0.30	0.01	0.01	0	1	0
Belgium	0.82	0.09	0.01	0	0	1
Benin	0.08	0.01	0.01	0	1	0
Bosnia and Herzegovina	0.52	0.02	0.01	0	0	1
Botswana	0.21	0.05	0.04	0	0	1
Brazil	0.53	0.01	0.00	0	0	1
Burkina Faso	0.11	0.02	0.00	0	1	0
Burundi	0.04	0.01	0.02	0	1	0
Cameroon	0.12	0.00	0.01	0	1	0
Chad	0.06	0.02	0.00	0	1	0
China	0.38	0.21	0.04	1	0	0
Comoros	0.09	0.05	0.06	0	1	0
Congo, Rep.	0.12	0.02	0.02	0	1	0
Croatia	0.78	0.05	0.03	0	0	1
Czech Republic	0.68	0.04	0.08	0	0	1
Egypt, Arab Rep.	0.04	0.02	0.04	0	1	0
Estonia	0.94	0.00	0.02	0	0	1
France	0.73	0.19	0.04	1	0	0
Gabon	0.07	0.04	0.08	1	0	0
Greece	0.66	0.12	0.00	0	0	1
Hungary	0.70	0.02	0.00	0	0	1
India	0.28	0.04	0.03	0	1	0
Indonesia	0.18	0.01	0.00	0	0	1
Ireland	0.63	0.29	0.01	0	1	0
Israel	0.87	0.02	0.01	0	1	0
Italy	0.50	0.03	0.16	0	1	0
Japan	0.16	0.77	0.03	1	0	0
Kazakhstan	0.32	0.06	0.04	1	0	0
Kenya	0.37	0.03	0.02	0	0	1
Korea, Rep.	0.63	0.26	0.04	0	1	0
Latvia	0.81	0.04	0.05	0	1	0

Lesotho	0.13	0.03	0.02	0	0	1
Luxembourg	0.62	0.28	0.02	0	1	0
Malawi	0.14	0.00	0.01	0	0	1
Mauritania	0.10	0.02	0.02	0	1	0
Mauritius	0.70	0.09	0.01	0	0	1
Morocco	0.13	0.02	0.04	1	0	0
Nepal	0.23	0.00	0.01	0	1	0
Pakistan	0.10	0.00	0.00	0	1	0
Poland	0.68	0.00	0.01	1	0	0
Rwanda	0.30	0.01	0.00	0	1	0
Senegal	0.05	0.00	0.00	0	1	0
Serbia	0.46	0.05	0.10	0	0	1
Sierra Leone	0.13	0.02	0.01	0	1	0
Slovak Republic	0.69	0.06	0.04	0	0	1
Slovenia	0.84	0.06	0.02	0	0	1
South Africa	0.48	0.03	0.02	0	1	0
Spain	0.87	0.04	0.01	0	0	1
Sri Lanka	0.62	0.05	0.00	0	0	1
Sudan	0.06	0.01	0.00	0	1	0
Tanzania	0.13	0.01	0.01	0	0	1
Togo	0.08	0.00	0.00	0	1	0
Tunisia	0.16	0.06	0.12	0	1	0
Turkey	0.55	0.03	0.00	0	1	0
United Kingdom	0.84	0.09	0.03	0	0	1
Vietnam	0.16	0.02	0.00	0	0	1
Yemen, Rep.	0.03	0.01	0.08	0	1	0
Zimbabwe	0.31	0.04	0.04	0	0	1

Appendix 2: Postal Business Models for Financial Services

Variable Code	Short Variable Descriptions
bm0	Real estate provider
Business model 1: cash-merchant (CM) for transactional financial services	
bm1a	CM for remittance service provider
bm1b	CM for government payments
bm1c	CM for bill collection
bm1d	CM for insurance companies – collection of premiums, payout of insured amount
bm1e	CM for mobile network operator – registration, cash-in, cash-out
bm1f	CM for MFIs and banks – loan disbursement and repayment
bm1g	CM for MFIs and banks – deposit and withdrawal from accounts
Business model 2: proprietary transactional financial services	
bm2a	Proprietary domestic transfers
bm2b	Proprietary international transfers
Business model 3: partnership with a financial service provider	
bm3a	Partnership model with an insurance company to offer its services
bm3b	Partnership with a mobile network operator for financial services
bm3c	Partnership model on a regional basis
bm3d	CM for multiple banks but partnership for savings accounts
bm3e	Partnership model with a bank
bm3f	Partnership model with a post bank or a government savings bank
Business model 4: unlicensed postal savings and financial services	
bm4a	Unlicensed post bank
bm4b	Unlicensed postal insurance
Business model 5: licensed postal financial services	
bm5a	Microfinance license
bm5b	Limited post bank license
bm5c	Universal post bank license

Appendix 3: Variable Definitions

Variable	Description	Source
<i>Panel A: Individual Characteristics</i>		
Account (0/1)	Respondent reported to currently have, possibly together with someone else, a bank account at a formal financial institution---a bank, credit union, cooperative, post office, or microfinance institution. This includes having a debit card.	Gallup
Post Office Account (0/1)	Respondent reported to currently have, possibly together with someone else, a bank account at a post office.	Gallup
Account at FI (0/1)	Respondent reported to currently have, possibly together with someone else, a bank account at a formal financial institution---a bank, credit union, cooperative or microfinance institution.	Gallup
Female (0/1)	Dummy that takes the value 1 if the respondent is female and 0 otherwise.	Gallup
Income: poorest 20% (0/1)	Dummy that takes the value 1 if the respondent falls in the lowest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Gallup
Income: second 20% (0/1)	Dummy that takes the value 1 if the respondent falls in the second lowest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Gallup
Income: middle 20% (0/1)	Dummy that takes the value 1 if the respondent falls in the middle income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Gallup
Income: fourth 20% (0/1)	Dummy that takes the value 1 if the respondent falls in the second highest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Gallup
Income: richest 20% (0/1)	Dummy that takes the value 1 if the respondent falls in the highest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Gallup
Age	Age in years	Gallup
Age squared	Age in years, squared	Gallup
Rural (0/1)	Dummy that takes the value 1 if the respondent lives in a rural area and 0 otherwise. A rural area is defined as a town or rural village with less than 50,000 inhabitants. If this information is unavailable, a rural area is based on the interviewer's perception of whether a respondent lives in a rural area, on a farm, in a small town, or in a village.	Gallup
0 - 8 years of education (0/1)	Dummy that takes the value 1 if the respondent completed elementary education or less (up to 8 years of education) and 0 otherwise.	Gallup

9 - 15 years of education (0/1)	Dummy that takes the value 1 if the respondent completed secondary education and some education beyond secondary education (9-15 years of education) and 0 otherwise.	Gallup
> 15 years of education (0/1)	Dummy that takes the value 1 if the respondent completed four years of education beyond high school and/or received a 4-year college degree and 0 otherwise.	Gallup
Household size (ln)	Logarithm of household size.	Gallup
Married (0/1)	Dummy that takes the value 1 if the respondent is married and 0 otherwise.	Gallup
Divorced/Separated (0/1)	Dummy that takes the value 1 if the respondent is divorced or separated and 0 otherwise.	Gallup
Employed for employer (0/1)	Dummy that takes the value 1 if the respondent is employed for an employer, either full or part time, and 0 otherwise.	Gallup
Unemployed (0/1)	Dummy that takes the value 1 if the respondent is unemployed and 0 otherwise.	Gallup
Out of workforce (0/1)	Dummy that takes the value 1 if the respondent is out of the workforce and 0 otherwise.	Gallup
Employed for self (0/1)	Dummy that takes the value 1 if the respondent is self-employed and 0 otherwise.	Gallup
<i>Panel B: Country Characteristics</i>		
GDP per capita (ln)	Logarithm of GDP per capita in USD.	WDI
Licensed postal financial services	Dummy that takes the value 1 if post office has a post bank license (BM 5a, 5b or 5c) and 0 otherwise.	UPU
Unlicensed postal savings	Dummy that takes the value 1 if post office offers unlicensed postal savings (BM 4a) and 0 otherwise.	UPU
Partnership with a financial service provider	Dummy that takes the value 1 if post office partnership with financial services provider (BM 3c, 3d, 3e or 3f) and 0 otherwise.	UPU
CM for remittance service providers	Dummy that takes the value of 1 if the post office acts as a cash merchant for remittance service providers and 0 otherwise.	UPU
CM for government payments	Dummy that takes the value of 1 if the post office acts as a cash merchant for government payments and 0 otherwise.	UPU
Post branches as % total FI and post branches	Post branches as percentage of total number of post branches and financial institutions.	UPU, IMF FAS
Post branches per 1000 inhabitants	Post branches per 1000 inhabitants.	UPU, WDI