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Gender Policies, Governance and Financial Inclusion

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Abstract:	Expanding financial inclusion has been one of the main goals of both policymakers and the academic world in recent years. A pending challenge is to increase financial inclusion for women and contribute to closing the current gender gap. In this study, we analyze the main determinants of financial access through a probit model, and those of financial depth through an ordered probit that includes the complexity and use of financial products. We focus the analysis on gender policies, elements of financial development, and governance. We use the World Bank's Global Findex database in conjunction with other databases, yielding a sample of 66,000 individuals from 96 countries, with an age range of 25 to 60 years. The enforcement of equal pay laws and better governance increase financial access and financial depth. These findings encourage policymakers to consolidate measures that favor women's labor market participation and continue to improve governance indicators.

December 26, 2020

Drs. C.R. Chen, B.M. Lucey
Editors International Review of Economics and Finance

Dear editors,

I would like to submit for your revision the paper titled “Gender Policies, Governance and Financial Inclusion”. Expanding financial inclusion has been one of the main goals of both policymakers and the academic world in recent years. A pending challenge is to increase financial inclusion for women and contribute to closing the current gender gap.

This paper proposes two, more comprehensive models of financial inclusion, which consider both determinants discussed in the financial literature and gender policies. The first model aims to estimate the determinants of access to finance. One important finding is that the implementation of policies to reduce gender pay gaps has a positive effect on women’s financial inclusion. Moreover, countries that have introduced non-discrimination laws to improve gender equality in credit evaluations have seen reduced financial access. The second model estimates the determinants of financial depth using an ordinal multivariate model that is based on the complexity and use of financial products. We find that women are less likely to have contracted financial products, to have used debit products (low complexity), and credit products (high complexity). Finally, greater control of corruption, stronger protection of legal rights, and better regulatory quality positively affect financial depth.

Please contact me, should you have any further concerns with the manuscript. Thank you in advance for your consideration. I look forward to the response from the Journal.

Best regards,

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Highlights:

- We analyze the main determinants of financial access, and those of financial depth
- The methodology is a probit, and an ordered probit that includes the complexity and use of financial products.
- We focus the analysis on gender policies, elements of financial development, and governance.
- We use the World Bank's Global Findex database in conjunction with other databases
- The enforcement of equal pay laws and better governance (regulatory quality, control of corruption, and strength of the legal rights) increase financial access and financial depth.

Gender Policies, Governance and Financial Inclusion

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Abstract

Expanding financial inclusion has been one of the main goals of both policymakers and the academic world in recent years. A pending challenge is to increase financial inclusion for women and contribute to closing the current gender gap. In this study, we analyze the main determinants of financial access through a probit model, and those of financial depth through an ordered probit that includes the complexity and use of financial products. We focus the analysis on gender policies, elements of financial development, and governance. We use the World Bank's Global Findex database in conjunction with other databases, yielding a sample of 66,000 individuals from 96 countries, with an age range of 25 to 60 years. The enforcement of equal pay laws and better governance increase financial access and financial depth. These findings encourage policymakers to consolidate measures that favor women's labor market participation and continue to improve governance indicators.

Keywords: Financial inclusion, Financial depth, Gender policies, Political risk, Strength of legal rights, Regulatory quality.

Jel Codes: D14, G21, G28, G38

1. Introduction

Financial inclusion is a way of measuring economic development. It relates to individuals' and small business' access to savings and credit mechanisms in capital markets, as well as to sources of finance for ventures that allow them to responsibly achieve economic prosperity (World Bank, 2018). In recent years, the issue of how to implement more inclusive financial policies has been intensively discussed in the academic world and by policymakers (Allen et al., 2016; Park, 2020; Van et al., 2019). Indeed, women are less financially included than men, both in developed countries (Demirgüc-Kunt, et al. 2017; Morsy, 2020) and in developing countries (Demirgüc-Kunt, Kappler, & Singer, 2013; Demirgüc-Kunt et al. 2017; Dimova & Adebowale, 2018; Leon & Zins, 2020; Morsy, 2020). For example, in developing economies, men are 9% likelier than women to have an account in a financial institution (World Bank, 2018). Gender equality is not only a fundamental human right. It is also key to achieving a sustainable and prosperous world (United Nations, 2019). Some countries have implemented anti-discrimination policies to improve women's access to credit, as well as other policies to reduce gender pay gaps. Additionally, better governance guarantees the recognition of rights and regulatory quality (Honohan, 2008). Thus, studying the relationship between gender policies, governance, and financial inclusion should improve our understanding of the determinants of more efficient financial infrastructures, which, in turn, facilitate economic growth.

The benefits of more inclusive financial systems have been widely documented at the individual and macroeconomic levels. Greater financial inclusion not only increases the income of individuals in lower income quintiles, but also the probability of having a job (Bruhn & Love, 2014) and individual savings (Aportela, 1999), particularly in the case of women (Swamy, 2014). Furthermore, having an account in a financial institution increases

women's empowerment, yields greater independence, and constitutes an entrepreneurship tool (Ashraf, Karlan, & Yin, 2010). Demirgüc-Kunt & Klappe (2012) point out that countries with inclusive financial systems make it easier for individuals to invest in their education, finance projects, and to undertake ventures, thus avoiding the dangers of poverty traps. Moreover, greater financial inclusion favors higher economic growth (Beck, Demirgüç-Kunt & Levine, 2007; Beck & Demirgüc-Kunt, 2008; Konte, 2015; Van et al. 2019), reduces poverty (Burguess & Pande, 2005), income inequality (Aslan, Deléchat, Newiak, & Yang, 2017; Beck, Demirgüç-Kunt & Levine, 2007; Beck & Demirgüc-Kunt, 2008; Claessens & Perotti, 2007; Dimova & Adebowale, 2018), volatility in aggregate consumption (Mehrotra & Yetman, 2015), and increases productive investment (Dupas & Robinson, 2009; Sarma & Pais, 2011; Sha'ban, Girardone & Sarkisyan, 2020).

Research shows that there is a gender gap in financial inclusion, but it has been limited to studying gender as one of the demographic characteristics that make up the determinants of financial inclusion. Other studies highlight the differences in men and women's financial participation across several economies. However, these differences are analyzed using descriptive statistics and the results are limited to developing economies. Demirgüc-Kunt, Kappler, & Singer (2013) and Deléchat et al. (2018) provide evidence of legal discrimination against women, which is partly explained by their poorer access to financial products. Several recently implemented gender policies have not been analyzed.

This paper proposes two, more comprehensive models of financial inclusion, which consider both determinants discussed in the financial literature and gender policies. The first model aims to estimate the determinants of access to finance. One important finding is that the implementation of policies to reduce gender pay gaps has a positive effect on women's financial inclusion. Moreover, countries that have introduced non-discrimination laws to

improve gender equality in credit evaluations have seen reduced financial access. The second model estimates the determinants of financial depth using an ordinal multivariate model that is based on the complexity and use of financial products. We find that women are less likely to have contracted financial products, to have used debit products (low complexity), and credit products (high complexity). Finally, greater control of corruption, stronger protection of legal rights, and better regulatory quality positively affect financial depth.

This article is structured as follows. Section 2 reviews the literature. Section 3 describes the databases and variables. Section 4 describes the methodology. Section 5 exhibits the empirical strategy. Section 6 provides the results. Finally, section 7 concludes.

2. Literature review

In recent years, in order to facilitate individuals' access to savings and credit, there has been much research on the need to implement more inclusive financial policies (Allen et al., 2016; Park, 2020; Van et al., 2019). Many studies have analyzed the determinants of financial inclusion, and in particular, the gender gap in financial inclusion, given the substantial impact on society of more women actively participating in capital markets.

The determinants of financial inclusion include demographic factors, individuals' level of educational attainment and financial literacy (Allen et al., 2016; Grohmann et al., 2018; Leon & Zins, 2020; Morsy, 2020; Zin & Weill, 2016). Allen et al. (2016) report as determining factors the affordability of financial accounts (opening, maintenance, and use), the proximity of financial intermediaries, employment, the robustness of the legal system, and the stability of the political system. Furthermore, women and youth appear to respond less to policies that encourage the use of bank accounts. Grohmann et al. (2018) report that a higher level of financial literacy positively affects financial inclusion, especially in the case of women.

Morsy (2020) states that women are more likely to not use financial products (FP) in countries where there are significant gaps between women and men's educational attainment. Zin & Weill (2016) show that older age, belonging to the highest quintiles of income, and being more highly educated are positive determinants of financial inclusion.

Demirgüc-Kunt, Kappler, & Singer (2013) focus their study on developing countries and find that legal restrictions on women's right to work, be head of their household, and own and inherit property decrease their probability of having an account, saving, borrowing and ultimately using a wide variety of financial services. Deléchat, et al. (2018) expand the scope of the previous study by controlling for country-level characteristics, such as policy indicators, educational levels, institutional quality, and specific social norms and gender policies. This study uses access to a financial account as a proxy for financial inclusion. It adds a multidimensional indicator of financial inclusion based on six questions from the 2014 Global Findex survey. These namely concern credit and debit card ownership, as well as transactions carried out in the past 12 months, as a measure of the intensity of financial service use, following the work of Aslan et al. (2017). The study estimates OLS and probit models, which show that both individual and country-level characteristics play an essential role in determining individuals' degree of financial inclusion.

Consequently, the present study builds upon the previous literature by analyzing the determinants of financial inclusion from the perspective of gender policies and governance. Additionally, we analyze financial depth through the sophistication of financial product use. Thus, our hypotheses are as follows:

H1. The implementation of policies to reduce gender pay gaps has a positive effect on women's financial inclusion.

H2. Countries that have introduced non-discrimination laws to improve gender equality in credit evaluations have seen reduced financial access.

*H3. W*omen are less likely to have contracted financial products, to have used debit products (low complexity), and credit products (high complexity).

H4. Greater control of corruption, stronger protection of legal rights, and better regulatory quality positively affect financial depth.

3. Data

We use the third edition of the Global Findex database (for the year 2017), which was launched by the World Bank and the Bill and Melinda Gates Foundation given the need for data regarding financial inclusion at a global level. It contains 154,923 individuals over the age of 15 from 144 countries and it has detailed information about the way they make payments, save money, access their accounts, request loans, *etc*. The surveys are nationally representative and have been repeated every three years since 2011. Moreover, the survey provides relevant information on the demographic characteristics of participants, such as age, sex, education, income quintile, and employment status, that have been used in the estimates of previous work (Demirgüc-Kunt et al. 2017). Two measures of financial inclusion are constructed: access to financial products in formal institutions, and depth in the use of financial products. Additionally, we use demographic, regulatory, and country-specific characteristics.

3.1. Access to financial products

To measure access to the financial system, we use a binary variable that takes a value of 1 if the person has an account at a financial institution, a debit card, credit card, mortgage, or has applied for credit at a financial institution in the past 12 months. Otherwise, it takes a value of 0, that is, if the person does not have or has not applied for any of these financial products.

3.2. Depth of financial inclusion

A study of financial inclusion that considers only access to financial products may overestimate the population that is active in the financial market, because people may choose not to use such products or be cut off from financial services. Therefore, we construct a measure of the depth of financial inclusion based on two factors: the use of financial products and their complexity. The first relates to the frequency of individuals' use of financial products, *i.e.*, having a debit card is not sufficient of itself. The card must have been used in the past 12 months. The second factor concerns the complexity of the product used. Debit products (card or savings accounts) are easily accessible, unlike credit products, which cannot be obtained prior to a credit check. Therefore, financial depth depends on the use and complexity of financial products. We assign: a value of 1 if the respondent has used their debit card, made a withdrawal from- or deposited funds into their account in a financial institution within the past 12 months; a value of 2 if the survey participant has used their debit card and credit card or has requested a loan from a financial institution within the past 12 months, or if they have a valid mortgage for the purchase of a house, plot of land or apartment; a value of 0 if the person has not used any such financial products within the timeframe.

3.3. Control variables

We control for several different factors given the economic, geographic, cultural, and intrinsic differences between each country. We use data from sources reviewed in the theoretical framework and these are included in the robustness analysis of the baseline model estimates. For result comparisons, the sample excludes economies for which all the chosen control variables were not available, *i.e.*, those for which there was no data regarding educational levels, gender laws, political and legal risks, and the size of the country's financial market. The final sample consists of 65,997 individuals from 96 economies, with an age range of 25 to 60 years.

We use the natural logarithm of purchasing power-adjusted GDP per capita for the year 2017 to control for the income level of each economy. This data is sourced from the World Bank database. As a proxy for human capital, we use the schooling variables by country from the 2010 Barro-Lee database. These indicate the percentage of individuals over 25 years of age who had completed their primary education (or secondary, or tertiary, according to the highest level attained) with respect to the country's total population. Furthermore, to quantify the size of financial markets, we control for the share of domestic credit provided by the financial sector (as a percentage of GDP). This data is also obtained from the World Bank.

Additionally, to capture the intrinsic characteristics of each geo-economic zone, we use the region variable of the Global Findex database. This variable separates the sample into eight subgroups according to respondents' geographic location and income, which are recoded into binary variables (see Table 1).

We use the World Bank's 2017 Women, Business, and the Law (WBL) database to capture the effect of gender legislation on financial inclusion. The database contains information

from 187 countries and 43 variables associated with the legal rights of women from various legal sources, including judges, lawyers, and experts on gender issues in each country. For the purposes of this investigation, the following two questions were retained: (1) Does the law order equal remuneration for work of equal value? and (2) Does the law prohibit discrimination by creditors on the basis of sex or gender? These variables are coded dichotomously. If the answer is affirmative, they receive a value of 1, otherwise they take a value of 0.

In order to assess the political context of each country, we also use two components from the PRS Group's Political Risk Index: Control of Corruption and Regulatory Quality. Both variables range between 0 and 1, with a higher value indicating better performance. We also use the Strength of Legal Rights Index by country, which was sourced from the World Bank's 2017 Doing Business project. This index measures the degree of legal protection afforded to lenders. It ranges from 0 to 12, with higher values meaning that laws better protect creditors, and therefore better promote credit supply.

Another relevant factor to consider is the proximity of financial services that people use, both geographically and in terms of their coverage. We include variables relating to the number of automated teller machines (ATMs) per 1,000 km^2 (sourced from the International Monetary Fund's (IMF) 2017 Financial Access Survey database), the number of point of sale terminals (POS) per 100,000 km^2, the number of payment service providers (PSP) per 100,000 km^2 (both obtained from the 2015 Global Payment Systems Survey (GPSS) belonging to the World Bank), and the number of bank branches per 100,000 inhabitants (sourced from the 2015 Global Financial Development Database, also available from the World Bank).

4. Methodology

4.1. Access to financial products

We define as dependent variable $FIa \in \{0,1\}$ whether or not a financial product is owned, which is determined by an unobservable latent variable that we will define as Y* (Gujarati & Porter, 2009). As such:

$$FIa = 0 \qquad if\ Y^* < \tau \qquad (1)$$

$$FIa = 1 \qquad if\ Y^* \geq \tau \qquad (2)$$

where τ is the threshold or critical value that determines whether or not a person has a financial product; the greater the value of Y*, the greater the probability that the person has a financial product. The latent variable will depend on a set of individual and country-level characteristics, defined as:

$$Y_{ij}^* = \delta + \alpha Female_{ij} + \beta X_{ij} + \gamma P_j + \varepsilon_{ij} \qquad (3)$$

the variable Y_{ij}^{*} is the latent variable associated to individual *i* in country *j*. The variable $Female_{ij}$ is a binary variable that takes a value of 1 if the person *i* is a female and 0 otherwise. X_{ij} is a vector of variables describing the individual-level characteristics of *i*. P_j is a vector for the characteristics of country *j*.

Now, we define G_{ij} as the vector that meets all the previously mentioned characteristics for individual *i* in country *j*, such that equation (3) is redefined as follows:

$$Y_{ij}^{*} = \delta + \vartheta G_{ij} + \varepsilon_{ij} \qquad (4)$$

The threshold τ_{ij} for individual *i* in country *j* is not observable, and we assume it is distributed normally with constant means and variances throughout the sample. Hence, it is possible to estimate equation (3) and obtain information from Y_{ij}^{*}.

Assuming normality and using equation (1), the probability that an individual owns any one of the financial products is determined from the standard normal cumulative distribution function (FDA):

$$P_{ij} = P(FIa = 1 \mid G) = P\left(\tau_{ij} \leq Y_{ij}^{*}\right) = P\left(Z_{ij} \leq \delta + \vartheta G_{ij}\right) = F\left(\delta + \vartheta G_{ij}\right) \qquad (5)$$

The function F corresponds to the standard normal FDA. The marginal effects of the explanatory variables on the dependent variable are analyzed to understand their effect on the probability of owning a financial product.

4.2. Financial depth

As in the previous model, models with the ordered multivariate dependent variable FIp are created from a latent variable Y^{*}. However, there are now two thresholds:

$$FIp = 0 \qquad if \quad Y^{*} < \tau_1 \qquad (6)$$

$$FIp = 1 \qquad if \quad \tau_1 \leq Y^* < \tau_2 \qquad (7)$$

$$FIp = 2 \qquad if \quad \tau_2 \leq Y^* \qquad (8)$$

where τ_1 and τ_2 are critical unknown values, which are assumed to follow a normal distribution and must satisfy the relationship $\tau_1 < \tau_2$. Depending on the value taken by Y^*, we have:

$$FIp = 0 \quad if \quad \delta + \alpha Female_{ij} + \beta X_{ij} + \gamma P_j + \varepsilon_{ij} < \tau_1 \qquad (9)$$

$$FIp = 1 \quad if \quad \tau_1 \leq \delta + \alpha Female_{ij} + \beta X_{ij} + \gamma P_j + \varepsilon_{ij} < \tau_2 \qquad (10)$$

$$FIp = 2 \quad if \quad \tau_2 \leq \delta + \alpha Female_{ij} + \beta X_{ij} + \gamma P_j + \varepsilon_{ij} \qquad (11)$$

Since our dependent variable is determined by a latent variable, we cannot use the coefficients obtained for the independent variables in the regression. Instead, we use their marginal effects.

5. Empirical strategy

In this paper, we analyze financial inclusion from two perspectives, that of financial access, understood as the ownership of financial products, and that of financial depth, which concerns the use and complexity of the financial products.

Since the dependent variable is binary and given our assumption that the latent variable and critical values follow a standard normal distribution, we use a probit model with robust errors to estimate individuals' access to financial products,. The marginal effects on the probit are used to quantify those of the independent variables. Secondly, given the nature of the financial depth variable, we used the marginal effects on an ordered probit and also corrected for robustness.

Financial inclusion, in terms of both financial access and financial depth, was represented by the variable FI_{ij}. The financial access variable is coded dichotomously and it takes a value of 1 if individual *i* in country *j* has contracted any financial product, and 0 otherwise. The financial depth variable takes a value of 1 if the individual only uses debit products, 2 if they use a credit product, and 0 if they do not use any such products.

The dichotomous variable $Women_{ij}$ takes a value of 1 if individual *i* of country *j* is a woman, and 0 otherwise. Furthermore, to analyze the effect of this variable on financial inclusion, both in terms of access and depth, a base model is proposed. This model includes individual-level characteristics such as age, age squared, a set of dichotomous variables indicating the participant's highest level of academic achievement (primary, secondary, and tertiary education), another set of dummy variables representing their country-specific income quintile, and a variable coding their employment status (whether they are in work or not). These variables are grouped into a vector of characteristics for individual *i* in country *j*, and represented as X_{ij}.

It is also necessary to control for between-country differences in individual characteristics, because the sample includes a heterogenous selection of economies. For example, belonging to the fifth income quintile of an emerging economy is very different to belonging to the same quintile in the United States. The same applies to educational attainment since finishing secondary education in a country where the literacy rate is very low is not comparable to completing the same level in countries where it is considerably higher. For this reason, the natural logarithm of purchasing power-adjusted GDP per capita is included in the baseline model, as well as a set of three variables indicating the percentage of the country's population having completed their primary, secondary and tertiary education (Barro-Lee), as a proxy for

the level of human capital. Additionally, we include a dichotomous variable to control for the geo-economic zones in the Global Findex database.

Model 1 (Baseline):

We model financial inclusion using a probit for financial access (and an ordered probit for financial depth) such as:

$$Pr\left(FI_{ij} = k \middle|\ Female_{ij},\ X_{ij}, \text{LnGDP}_j, Zone_j, Educ.BLee_j\right)$$
$$= f\left(\beta_1 Female_{ij} + \beta_2 X_{ij} + \beta_3 \text{LnGDP}_j + \beta_4 Zone_j + \beta_5 Educ.BLee_j\right) \quad (12)$$

For $k = 1$ if $FI_{ij} \in \{1,0\}$ ($Financial\ access$) and $k = \{0,1,2\}$ if $FI_{ij} \in \{0,1,2\}$ (Financial depth)

Where the probability of owning a financial product given the individual's characteristics and their country is a non-linear function of these attributes. In order to simplify the presentation of the models that follow, the individual characteristics (female, age, age squared, educational level, income quintile, and employment status) were grouped together with the country characteristics mentioned above (GDP per capita, educational level, and geo-economic zone) in vector $BASELINE_{Ij}$. Thus, the probit model (or ordered probit) can be rewritten as follows:

$$Pr\left(FI_{ij} = k \middle| BASELINE_{ij}\right) = f\left(BASELINE_{Ij}\right) \quad (13)$$

For $k = 1$ if $FI_{ij} \in \{1,0\}$ or $k = \{0,1,2\}$ if $FI_{ij} \in \{0,1,2\}$

We subsequently add a series of country-level controls to the baseline model to test its validity and the robustness of its results, which are reported below.

Model 2: Gender laws

$$Pr(FI_{ij} = k | BASELINE_{ij}, \text{IncomeLaw}_j, \text{CreditorLaw}_j)$$
$$= f(\beta BASELINE_{ij} + \alpha_1 \text{IncomeLaw}_j + \alpha_2 \text{IncomeLaw}_j * \text{Women}_{ij}$$
$$+ \alpha_3 \text{CreditorLaw}_j + \alpha_4 \text{CreditorLaw}_j * \text{Women}_{ij})$$

For $k = 1$ if $FI_{ij} \in \{1,0\}$ or $k = \{0,1,2\}$ if $FI_{ij} \in \{0,1,2\}$

where IncomeLaw is a binary variable that takes a value of 1 if in country *j* there is an equal pay law (equal pay for the same job, regardless of the holder's gender), and CreditorLaw is a binary variable that takes a value of 1 if in country *j* there is legislation that prohibits gender discrimination when applying for a loan. Furthermore, we add the interaction of these variables with the Women variable to determine whether the effect is different for men and women. It is expected that α_2 and α_4 will have a positive sign, *i.e.* that the existence of such a law will favor women's financial inclusion.

Model 3: Size of the financial system

As a proxy for the size of the financial system, for each country *j*, we compute the total amount of domestic credit provided by the financial sector as a percentage of its GDP ($DCFS_j$).

$$Pr(FI_{ij} = k | BASELINE_{ij}, ICFS_j) = f(BASELINE_{ij} + \alpha_1 DCFS_j)$$

For $k = 1$ if $FI_{ij} \in \{1,0\}$ or $k = \{0,1,2\}$ if $FI_{ij} \in \{0,1,2\}$

It is expected that α_1 will be positive since greater development of the financial system entails a greater supply of financial products.

Model 4: Governance

$$Pr(FI_{ij} = k | BASELINE_{ij}, G_{rj}) = f(BASELINE_{ij} + \alpha_1 G_{rj})$$

For $k = 1$ if $FI_{ij} \in \{1,0\}$ or $k = \{0,1,2\}$ if $FI_{ij} \in \{0,1,2\}$, and $r = \{1,2,3\}$

We define G_{rj}= $\{RQ_{1j},\ CC_{2j},\ LE_{3j}\}$, for $r = \{1,2,3\}$, respectively, where RQ_j and CC_j are continuous variables ranging from 0 to 1 (1 representing the best possible scenario) that measure the strength of country j in dealing with issues of regulation and corruption, respectively, and LE_j is an index that takes integer values from 0 to 12 and measures the degree of protection afforded lenders/creditors. Following the literature, there is an association between the strength of a country's legal system and the inclusivity of its financial system. Therefore, the estimates are expected to be positive. Being in a country that is both safer and more secure has an effect on the confidence of its agents, increasing the supply of- and demand for financial products.

Model 5: Proximity of financial services

The number of ATMs, Payment Points and Financial Centers per 1000 km^2 in country j is used as a proxy for the proximity of financial services (PFS). We define PFS_{rj}= $\{ATM1000km^2{}_{1j},\ \ POS1000km^2{}_{2j}, PSP1000km^2{}_{3j}\}$, for $r = \{1,2,3\}$, respectively. Furthermore, we use the number of branches per 100,000 inhabitants in each country j ($Branch100_j$). However, given the high correlation between the variables $ATM1000km^2{}_j$, $POS1000km^2{}_j$, and $PSP1000km^2$ (see Table 2), we decide to regress the PFS variable individually:

$$Pr\left(FI = k \middle| BASELINE_{ij},\ Branch100_j, PFS_{kj}\right)$$
$$= f\left(\ BASELINE_{ij} + \alpha_1\ Branch100_j + \alpha_2 PFS_{kj}\right)$$

For $k = 1$ if $FI_{ij} \in \{1,0\}$ or $k = \{0,1,2\}$ if $FI_{ij} \in \{0,1,2\}$, and $r = \{1,2,3\}$

All the estimators related to PFS_{rj} are expected to be positive for r={1,2,3}, since a greater number of financial access points (whether ATMs, PSPs or POSs) should encourage

individuals to use these services and related financial products. Moreover, a greater number of branches makes it easier to obtain financial products.

6. Results

6.1. Descriptive analysis

The sample contains 65,997 individual surveys from people between the ages of 25 and 60. The average age for the whole men (women) sample is 40.9 (40.8) years (see Table 3). 35.1% of women had completed primary education, 45.6% had completed secondary education, and 19.3% had completed tertiary education. This is in contrast with the male group, in which 27.5% had completed primary education, 51.6% secondary education, and 21% tertiary education. Thus, on average, the males attained a higher education level. There is a gender gap in employment which is significant at the 1% level: 86.6% of men were in work, whereas only 65% of women were employed. Regarding participants' income, 57.7% (48.7%) of women (men) were in the first three income quintiles.

Turning now to the variables associated with financial inclusion, 66.8% (75.7%) of women (men) had contracted a financial product. When analyzing the use of products according to their complexity, 41.7% (31.8%) of women (men) have not used any financial product within the past 12 months, 25.4% (28.9%) of women (men) were only using debit products, and 32.8 % (39.2%) of women (men) were using credit products. Therefore, not only did women have less access to financial products than men, but their financial inclusion was not as deep as men's.

Individuals belonging to high-income countries make up 35.2% of the sample (24.7% are from OECD countries). Additionally, 17.3% are from South Asia, East Asia and the Pacific, 9% from Europe and Central Asia, 13.3% from Latin American and Caribbean countries, and

25.2% from Africa. Furthermore, 47.7% of the countries in the sample had an equal pay law for men and women, and 50% of them had a law that prohibits gender discrimination by creditors. Of these, 34.3% were enforcing both laws in 2017.

Regarding educational levels (see Table 4), on average, 15.6% of each country's population over 25 years of age had completed primary school. Tanzania (49%) and the Czech Republic (0.4%) were the most extreme cases. In the case of secondary education, the average was 27.9%. Again, Tanzania (1.2%) and the Czech Republic (71.9%) were the most extreme cases. Regarding tertiary education, on average, 11% had reached this educational level, with the most extreme cases being 0.1% for Guatemala and 34.8% for the Republic of Korea.

Regarding the proximity of financial services, the sample is particularly heterogeneous, since there are countries that had one ATM per 1000 km^2, such as Botswana, and others such as Singapore with 4,385 per 1000 km^2. In the case of POS, on average, there were 6,158 per 1000 km^2. The maximum density was in Singapore, with 250,340 POS, and the lowest was in Myanmar, with 5 POS. As for the PSP, there was an average of 60 per 1000 km^2, with a maximum of 601 in Norway and a minimum of 1 in Zambia. Finally, on average, there were 21 bank branches per 100,000 inhabitants. Spain and Ukraine were the two extreme cases, with 90and 1.5 branches, respectively.

6.2. Financial access

Table 5 reports that all the individual variables' marginal effects are significant at 1% in the probit model.

6.2.1. Baseline specification

Women are less likely to access financial products than men (see Table 5). Specifically, women are 3 % less likely to have contracted a financial product according to the baseline model (column 1) and, on average, 2.9 percentage points less likely according to the other specifications. These results are in line with the gender gap discussed in the literature (Demirgüc-Kunt, Kappler, & Singer, 2013; Demirgüc-Kunt, et al. 2017; Dimova & Adebowale, 2018; Leon & Zins, 2020; Morsy, 2020; Xu, 2019).

The age and age squared variables behave in a concave fashion in all the specifications. The peak age is 48.1 years for the baseline model and 47.6 years on average for the rest of the models. In other words, the probability of contracting any financial product increases along with respondents' age up to 48 years. Thereafter, the probability begins to decline once more. This result reflects the fact that financial inclusion is lower for younger and older people. With regard to participants' employment status, individuals in work are more likely to have access to financial products. On average, their likelihood is 12.1 percentage points higher across all the specifications. This result is in line with our expectations and the literature (Sha'ban, Girardone & Sarkisyan, 2020). Furthermore, on the one hand, as expected, we find that the probability of financial inclusion is 10.6 percentage points higher for people who have completed secondary education compared to those who have only completed primary education (omitted) in the baseline model (column 1) and in the range 6.5–11 percentage points higher in the other specifications. On the other hand, the probability of financial inclusion is 18.4 percentage points higher for people with a tertiary education compared to those with less education in the baseline model and in the range 11.6–18.5 percentage points

in the other specifications. The previous results are consistent with the literature (Allen et al., 2016; Ghosh & Vinod, 2017; Xu, 2019).

We find that individuals in higher income quintiles have a higher probability of having contracted a financial product. Compared to individuals in the first income quintile, those in the second quintile are 3.9 percentage points more likely to have contracted a financial product, and those in the third, fourth and fifth quintiles are respectively 5.7, 8.2, and 13.3 percentage points more likely. These results are significant at 1% and they confirm findings in the literature (Allen et al., 2019; Ghosh & Vinod, 2017; Xu, 2019). Again, as expected, countrys' income level (natural logarithm of its GDP per capita, adjusted for PPP) is a significant determinant, confirming that higher income economies have greater levels of financial inclusion. This result corroborates results in previous work (Délechat et al., 2018; Sha'ban, Girardone & Sarkisyan, 2020).

6.2.2. Other specifications

When controlling for gender laws (Table 5, column 2), we find that people in economies with an equal pay law are 4 percentage points more likely to access financial products. However, this effect is mitigated by 2.9 percentage points when considering the interaction between being a woman and the enforcement of such a law is considered. We conclude that such a law has a positive effect on financial access, but that the benefits in terms of financial inclusion are greater for men. The results for laws prohibiting gender discrimination by creditors show that they have a negative effect (-1.4 percentage points) on the probability of financial access. In other words, prohibiting gender discrimination by creditors ends up having a negative effect on everyone's financial inclusion, which is probably contrary to the desired effect of the law.

The size of countries' financial system (column 3) affects individuals' likelihood of contracting financial products. This result confirms the hypothesis that greater financial development produces a greater supply of financial products and therefore an increase in financial inclusion.

According to the results from model 4, regulatory quality has no significant effect on financial access (column 4), whereas better control of corruption (column 5) and stronger legal rights (column 6) do increase the likelihood of financial access, in line with previous literature (Allan et al., 2016; Honohan, 2008; Sha'ban, Girardone & Sarkisyan, 2020). In other words, countries with greater institutional integrity and stronger legal rights improve conditions and enhance financial access.

Finally, greater proximity of financial services (column 7 to 9) increases the likelihood of financial inclusion. These results are in line with those of Allen et al. (2016) for bank branches and ATMs.

6.3. Financial depth

The estimates of the marginal effects on financial depth from the ordered probit are reported in Table 6, Table 7, and Table 8.

6.3.1. Baseline specification

According to all the specifications, women are 3.1 to 3.7 percentage points less likely to use financial products and 3.2 to 4 percentage points less likely to use credit. Regarding the use of debit products, the evidence is mixed. The first results are evidence of the gender gap in financial product use, as expected. They highlight women's lower access to financial products and lower use of more complex products.

The probabilities of debit and credit product use behave in a concave fashion with respect to age. The age at which the likelihood of debit card use is at its highest is 70 years (out of range) and that at which credit card use peaks is 43.9 years. This reflects the fact that younger and older people use financial products less. The probability of using no financial products behaves in a convex fashion with respect to age. The inflection age is 44.7 years, meaning that younger and older people are more likely to not have contracted any financial products.

According to the baseline model, individuals in work are 14.1 percentage points more likely to have contracted a financial product, 1.6 percentage points more likely to use a debit product, and 12.4 percentage points more likely to use credit. This is unsurprising, because people who are employed and who have financial resources need to make debit payments, and have enhanced access to credit. These results hold across all the specifications, except in the case of the model that controls for PSP and POS use, in which the likelihood of debit product use decreases, contrary to our expectation.

Results related to educational attainment are in line with our expectations. Individuals with higher levels of educational attainment are more likely to have contracted financial products and more likely to use credit. For example, according to the baseline model (Table 6, column 1), compared to individuals who have only completed primary school (omitted), those who finished their secondary education are 14.7 percentage points more likely to have contracted financial products. Furthermore, compared to participants with lower levels of educational achievement, those who have finished their tertiary education are 27 percentage points more likely to use credit (the range is 26.8–27.8 percentage points across all the specifications).

Compared to individuals in income quintile 1 (the lowest income quintile), those in quintiles 2, 3, 4 and 5 are respectively -5.8, -9.2, -12.1 and -17.8 percentage points less likely to not have contracted any financial products. Regarding the probability of using a debit card, the

estimators take significant, negative values, but they are lower than the probability of not using FP: -0.1, -0.4, -0.8, and -1.7 percentage points for quintiles 2 to 5 respectively. Regarding the probability of using credit products, the estimators are positive and statistically significant, with values of 5.9, 9.6, 12.9 and 19.4 percentage points for quintiles 2 to 5, respectively, when compared to quintile 1. We conclude that the likelihood of individuals using more complex financial products increases with their income level.

Regarding countries' income level (logarithm of GDP per capita, adjusted for PPP), a higher national income reduces the likelihood of not using financial products, increases the likelihood of using debit products, and increases the likelihood of using credit products.

6.3.2. Other specifications

In the case of gender laws, both laws retain the sign observed in the analysis of financial access, but their interactions with the female gender variable are not significant. According to the baseline model, on the one hand, the equal pay law decreases the likelihood of not using financial products (by -4.1 percentage points) and increases the likelihood of using debit (by 0.1 percentage points) and credit (by 4 percentage points) (Table 6, columns 4 to 6). On the other hand, the law that prohibits discrimination by creditors increases the likelihood of not using financial products (by 2.3 percentage points), and decreases the likelihood of using debit (by -0.1 percentage points) and credit (by -2.2 percentage points). Thus, we find that the equal pay law is effective, while the non-discrimination law for creditors is not.

The size of the financial system measured by the amount of internal credit provided by the financial sector (Table 6, columns 7 to 9) decreases the likelihood of not using FP, increases the likelihood of using debit products, and increases the likelihood of using credit. These

results are in line with our expectation that the greater the development of the financial market, the greater the use of financial products.

The institutional governance indices (Table 7) also yield results in line with our expectations. Enhanced regulatory quality decreases the likelihood of not using financial products and increases the likelihood of using debit products and credit. The same results are obtained for corruption control and the strength of legal rights. These findings highlight the importance of promoting better governance policies.

Finally, greater proximity of financial services (Table 8) decreases the likelihood of not using financial products and increases the likelihood of using credit, in accordance with our expectations. The evidence on the use of debit is mixed, which goes against our positive expectation.

6.4. Sensitivity and specificity

We performed a sensitivity analysis for the models. By sensitivity, we understand the ratio of positive cases correctly predicted by the model with respect to all real positive cases. Furthermore, by specificity we understand this same ratio but with respect to negative cases (in the particular case of this study, this would be not using or having contracted any financial product). As shown in Table 9, the sensitivity of the four financial access models averages at 88.4% and they have an average specificity of 55.8%, with a mean of 78.9% correctly predicted cases. This underlines the fact that, in studies of financial inclusion from the perspective of financial access, the variables included are powerful predictors of the probability of individuals contracting a financial product. Regarding the depth of the financial system, we observe that, on average, the specificity achieved is 83.9%, the sensitivity for the use of credit products is 71.9%, but only 11.7% for the use of debit products, which represents

a mean of 60.1% correctly classified cases. This implies that our conclusions regarding the non-use of financial products and the use of credit products are robust, contrary to the possible conclusions regarding debit products.

7. Conclusions

Financial inclusion helps to improve people's quality of life, by allowing them to plan and achieve long-term goals and face potential setbacks. Financial inclusion is a fundamental tool for women's empowerment, making it a public policy goal. In order to guide policies adequately, we analyzed financial inclusion considering gender policies, political risk measures (control of corruption and regulatory quality), legal strength, and the accessibility of financial products.

This study shows that gender not only affects the probability of contracting a financial product, but it also determines the type of products used. We find evidence of a gender gap that widens as the level of product sophistication grows. For example, it is especially large for credit products.

When controlling for gender laws, we find that the enforcement of equal pay laws has a positive effect on financial inclusion in terms of access to financial products, but the effect is not as strong for women. We also find that the enforcement of laws prohibiting gender discrimination by creditors has a negative effect on financial inclusion, both in terms of financial access and in financial depth. Hence, this measure has a negative impact on both men and women, which is likely contrary to the law's desired effect.

The results of this study indicate that there are several challenges to enhanced financial inclusion of women. It will be necessary to reduce gender gaps in other areas, such as education and the labor market (through equal wages and job opportunities), to afford women

greater opportunities to be part of the financial market. Both regulators and the financial sector also face a long-term challenge to find alternatives that promote and encourage female participation in order to improve society's well-being and generate greater economic development.

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Table 1: Countries grouped by Geo-economic Zone

High income: OECD	High income: non-OECD	Sub-Saharan Africa (excluding high income)	Europe and Central Asia (excluding high income)
Australia	Cyprus	Botswana	
Austria	Hong Kong SAR, China	Cameroon	Albania
Belgium	Hungary	Congo, Rep.	Armenia
Chile	Kuwait	Ivory Coast	Bulgaria
Czech Republic	Lithuania	Gabon	Croatia
Denmark	malta	Ghana	Kazakhstan
Estonia	Saudi Arabia	Kenya	Russian Federation
Finland	Singapore	Mali	Serbia
France	Trinidad and Tobago	Mozambique	Turkey
Germany	United Arab Emirates	Namibia	**East Asia and the Pacific (excluding high income)**
Greece	**Latin America and the Caribbean (excluding high income)**	Niger	
Ireland		Senegal	China
Israel		Sierra Leone	Indonesia
Italy	Argentina	South Africa	Malaysia
Korea, Rep.	Brazil	Tanzania	Mongolia
Latvia	Colombia	Togo	Myanmar
Luxembourg	Costa Rica	Uganda	Philippines
Netherlands	Dominican Republic	Zambia	Thailand
New Zealand	Ecuador		Vietnam
Norway	El Salvador	**Middle East and North Africa (excluding high income)**	
Poland	Guatemala		**South Asia**
Portugal	Haiti		Bangladesh
Slovak Republic	Honduras	Algeria	India
Slovenia	Mexico	Egypt, Arab Rep.	
Spain	Nicaragua	Morocco	
Sweden	Panama		
United Kingdom	Paraguay		

Source: Own elaboration using the Global Findex 2017 Database.

Table 2: Variable correlation matrix

Abr.	Variable	A	D	F	A	E	E1	E2	E3	Q1	Q2	Q3	Q4	Q5	GDP	B1	B2	B3	L1	L2	SF	R1	R2	LE	BR	AT	PS	PO
A	FI.Access	1,00																										
D	FI.Depth	0,72	1,00																									
F	Female	-0,11	-0,10	1,00																								
A	Age	0,06	0,06	-0,01	1,00																							
E	Employment	0,29	0,30	-0,26	-0,04	1,00																						
E1	Primary educ.	-0,41	-0,44	0,08	0,05	-0,25	1,00																					
E2	Secondary educ.	0,17	0,16	-0,07	0,00	0,10	-0,63	1,00																				
E3	Terciary educ.	0,23	0,28	0,00	-0,06	0,15	-0,32	-0,54	1,00																			
Q1	Income.Q1	-0,10	-0,12	0,05	-0,02	-0,09	0,14	-0,02	-0,12	1,00																		
Q2	Income.Q2	-0,05	-0,06	0,04	0,00	-0,04	0,07	0,01	-0,09	-0,21	1,00																	
Q3	Income.Q3	-0,01	-0,01	0,01	0,01	-0,02	0,02	0,03	-0,05	-0,22	-0,22	1,00																
Q4	Income.Q4	0,02	0,03	-0,02	0,00	0,04	-0,04	0,01	0,02	-0,23	-0,24	-0,25	1,00															
Q5	Income.Q5	0,12	0,13	-0,07	0,01	0,10	-0,16	-0,03	0,21	-0,26	-0,27	-0,28	-0,30	1,00														
GDP	lnGDP (PPA)	0,47	0,55	-0,03	0,15	0,23	-0,49	0,23	0,25	-0,02	0,00	0,00	0,01	0,01	1,00													
B1	Prim.ed.country	-0,19	-0,19	0,03	-0,05	-0,05	0,22	-0,10	-0,11	0,00	0,01	0,01	0,00	-0,02	-0,24	1,00												
B2	Sec.ed.country	0,34	0,34	-0,03	0,09	0,17	-0,42	0,24	0,16	-0,01	-0,02	-0,01	0,00	0,03	0,48	-0,63	1,00											
B3	Ter.ed.country	0,33	0,38	-0,01	0,11	0,15	-0,38	0,15	0,23	-0,01	-0,01	0,00	0,01	0,00	0,67	-0,32	0,27	1,00										
L1	IncomeLaw	0,04	0,15	-0,03	0,04	0,04	-0,14	0,05	0,09	-0,01	-0,01	0,00	0,01	0,02	0,24	0,02	0,06	0,05	1,00									
L2	CreditorLaw	0,07	0,16	-0,02	0,06	0,07	-0,18	0,10	0,07	-0,01	-0,01	0,00	0,00	0,02	0,30	-0,14	0,29	0,00	0,70	1,00								
SF	Size fin.sist.	0,14	0,22	-0,03	0,07	0,04	-0,08	0,00	0,09	-0,02	0,01	0,01	0,00	0,00	0,41	0,06	-0,07	0,08	0,43	0,33	1,00							
R1	Regulatory	0,36	0,43	-0,04	0,12	0,19	-0,34	0,15	0,19	-0,02	-0,01	0,00	0,01	0,01	0,73	-0,19	0,33	0,49	0,20	0,21	0,27	1,00						
R2	Corruption	0,31	0,43	-0,04	0,13	0,14	-0,28	0,10	0,18	-0,02	0,00	0,00	0,01	0,00	0,71	-0,06	0,24	0,38	0,38	0,31	0,51	0,71	1,00					
LE	LegalEnforc.	0,19	0,09	0,03	0,03	0,09	-0,16	0,08	0,07	-0,01	-0,01	0,00	0,00	0,01	0,14	-0,17	0,24	0,34	-0,32	-0,24	-0,28	0,06	-0,10	1,00				
BR	Branchs	0,24	0,30	-0,02	0,06	0,09	-0,25	0,11	0,14	-0,02	0,00	0,00	0,01	0,02	0,45	0,01	0,13	0,36	0,35	0,39	0,32	0,22	0,23	-0,09	1,00			
AT	ATM	0,11	0,14	0,01	0,04	0,05	-0,08	0,03	0,06	-0,01	0,00	0,01	0,02	-0,02	0,31	-0,16	0,00	0,34	-0,15	-0,21	0,14	0,26	0,29	0,09	-0,08	1,00		
PS	PSP	0,17	0,12	-0,01	0,02	0,03	0,00	-0,04	0,04	-0,01	0,00	0,01	0,01	-0,02	0,22	-0,16	0,03	0,19	-0,21	-0,25	0,13	0,28	0,28	0,16	-0,01	0,76	1,00	
PO	POS	0,10	0,14	0,01	0,04	0,04	-0,09	0,02	0,07	-0,01	0,00	0,01	0,02	-0,02	0,33	-0,15	-0,01	0,35	-0,13	-0,18	0,18	0,28	0,32	0,06	-0,01	0,98	0,75	1,00

Source: Own elaboration

Table 3: Individual descriptive statistics

		Women		Men		Diff.
	Obs.	Mean	Std. Dev.	Mean	Std. Dev.	
Age	65,997	40.75	10.4	40.90	10.4	-0.14***
Employed	65,997	64.96%	0.3	86.60%	0.5	-21.64%***
Income (Quintile 1)	65,997	18.79%	0.4	14.60%	0.4	4.2%***
Income (Quintile 2)	65,997	19.41%	0.4	15.88%	0.4	3.54%***
Income (Quintile 3)	65,997	19.48%	0.4	18.24%	0.4	1.23%***
Income (Quintile 4)	65,997	20.22%	0.4	22.05%	0.4	-1.83%***
Income (Quintile 5)	65,997	22.10%	0.5	29.24%	0.4	-7.14%***
Primary education	65,997	35.06%	0.4	27.47%	0.5	7.59%***
Secondary education	65,997	45.64%	0.5	51.58%	0.5	-5.94%***
Tertiary education	65,997	19.30%	0.4	20.95%	0.4	-1.65%***
Access	65,997	66.83%	0.4	75.69%	0.5	-8.85%***
Depth=0	65,997	41.73%	0.5	31.84%	0.5	9.89%***
Depth=1	65,997	25.44%	0.5	28.92%	0.4	-3.48%***
Depth=2	65,997	32.83%	0.5	39.24%	0.5	-6.41%***

Source: Own elaboration using the Global Findex 2017 database.

Table 4: Country descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Max
Ln GDP per capita (PPP)	96	259.16	221.3	10.13	1,076.41
Equal pay law	96	0.48	0.5	0	1
Law prohibiting gender discrimination against creditors	96	0	0.5	0	1
Political Risk Index: Regulatory quality	96	0.70	0.2	0.36	1
Political Risk Index: Control of corruption	96	0.48	0.2	0.17	0.92
Strength of legal rights Index (0–12)	96	5.77	2.8	1	12
Completed Primary Education (% of population)	96	15.62	10.00	4.00	50.00
Completed Secondary Education (% of population)	96	27.89	20.00	1.20	72.00
Completed Tertiary Education (% of population)	96	11.04	10.00	0.01	35.00
Number of ATMs per 1000 km^2	84	168.1	595.5	0.9	4,385.1
Number of points of sale per 1000 km^2	65	6,158.4	31,586.6	5.01	250,347.7
Number of financial service points (1000 km^2)	59	59.7	104.3	0.8	600.8
Bank branches for every 100,000 adults.	89	21.2	18.8	1.6	89.7
Domestic credit of the financial sector (% GDP)	96	89.0	0.6	16.6	250.0

Source: Own elaboration using the Global Findex 2017 database.

Table 5: Marginal effects on Probit Model – Financial access

VARIABLES	(1) Baseline	(2) Gender laws	(3) Size fin. Sist.	(4) Regulations	(5) Corruption	(6) Legal rights	(7) ATM	(8) PSP	(9) POS
Female	-0.030***	-0.021***	-0.030***	-0.030***	-0.031***	-0.031***	-0.029***	-0.016***	-0.016***
	(0.004)	(0.005)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)
Age	0.008***	0.008***	0.008***	0.008***	0.007***	0.008***	0.006***	0.002*	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	-0.078***	-0.079***	-0.086***	-0.078***	-0.078***	-0.08***	-0.062***	-0.017***	-0.044***
*(10^-3)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)	(0.017)
Employed	0.121***	0.121***	0.120***	0.121***	0.121***	0.120***	0.117***	0.092***	0.111***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Completed secondary education	0.106***	0.105***	0.110***	0.106***	0.107***	0.108***	0.089***	0.065***	0.075***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Completed tertiary education	0.184***	0.182***	0.184***	0.184***	0.183***	0.185***	0.154***	0.116***	0.131***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Ln GDP per capita (PPP)	0.094***	0.095***	0.063***	0.093***	0.085***	0.094***	0.058***	0.090***	0.114***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
Law 1: Equal pay law		0.040***							
		(0.006)							
Female*Law 1		-0.029***							
		(0.008)							
Law 2: Law that prohibits gender		-0.014**							
discrimination against creditors		(0.007)							
Female*Law 2		0.005							
		(0.008)							
Domestic credit of the financial sector			0.111***						
(% GDP)			(0.005)						
Political Risk (Regulatory quality/Control				0.011	0.226***	0.009***			
Corruption/Legal rights index)				(0.022)	(0.020)	(0.001)			
Bank branches for every 100,000 adults							0.002***	0.002***	0.002***
							(0.000)	(0.000)	(0.000)
Access points 1000 km^2 (ATM/PSP/POS)							0,095***	0,633***	0,001***
*(10^-5)							(0,009)	(0,030)	(0,000)
Observations	65,997	65,997	65,997	65,997	65,997	65,997	54,506	38,429	43,926
Geo-economic zone controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income country quintile controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R squared	0.304	0.305	0.312	0.304	0.306	0.306	0.317	0.380	0.341
Log-likelihood	-27692	-27671	-27369	-27692	-27631	-27602	-21314	-13019	-16161

Standard error in parenthesis *** $p<0.01$, ** $p<0.05$, * $p<0.1$ **Source: Own elaboration**

Table 6: Marginal effects on ordered probit – Financial depth (1/3)

	Baseline			Gender laws			Size of financial system		
VARIABLES	(1) No use of FP	(2) Use of debit FP	(3) Use of credit FP	(4) No use of FP	(5) Use of debit FP	(6) Use of credit FP	(7) No use of FP	(8) Use of debit FP	(9) Use of credit FP
Female	0.035***	-0.001	-0.034***	0.033***	-0.001***	-0.032***	0.035***	-0.001***	-0.034***
	(0.004)	(0.000)	(0.003)	(0.005)	(0.000)	(0.005)	(0.004)	(0.000)	(0.003)
Age	-0.021***	0.001***	0.020***	-0.021***	0.001***	0.020***	-0.021***	0.001***	0.021***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
Age squared *(10^-3)	0.235***	-0.008***	-0.228***	0.237***	-0.008***	-0.229***	0.246***	-0.007***	-0.238***
	(0.018)	(0.001)	(0.017)	(0.018)	(0.001)	(0.017)	(0.018)	(0.001)	(0.017)
Employed	-0.141***	0.016***	0.125***	-0.140***	0.016***	0.124***	-0.141***	0.016***	0.125***
	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)
Completed secondary education	-0.147***	0.004***	0.143***	-0.146***	0.004***	0.142***	-0.152***	0.004***	0.149***
	(0.005)	(0.001)	(0.005)	(0.005)	(0.001)	(0.005)	(0.005)	(0.001)	(0.005)
Completed tertiary education	-0.228***	-0.041***	0.270***	-0.227***	-0.041***	0.268***	-0.232***	-0.044***	0.275***
	(0.004)	(0.002)	(0.006)	(0.004)	(0.002)	(0.006)	(0.004)	(0.002)	(0.006)
Ln GDP per capita (PPP)	-0.108***	0.003***	0.104***	-0.107***	0.003***	0.103***	-0.076***	0.002***	0.073***
	(0.004)	(0.001)	(0.004)	(0.004)	(0.001)	(0.004)	(0.004)	(0.000)	(0.004)
Law 1: Equal pay law				-0.041***	0.001***	0.040***			
				(0.006)	(0.000)	(0.006)			
Female*Law 1				0.012	-0.000	-0.012			
				(0.008)	(0.000)	(0.008)			
Law 2: Law that prohibits gender discrimination against creditors				0.023***	-0.001***	-0.022***			
				(0.007)	(0.000)	(0.006)			
Female*Law 2				-0.008	0.000	0.008			
				(0.008)	(0.000)	(0.008)			
Domestic credit of the financial sector (% GDP)							-0.099***	0.003***	0.096***
							(0.004)	(0.000)	(0.004)
Observations	65,997	65,997	65,997	65,997	65,997	65,997	65,997	65,997	65,997
Geo-economic zone controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income country quintile controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R squared	0.208	0.208	0.208	0.208	0.208	0.208	0.212	0.212	0.212
Log-likelihood	-56930	-56930	-56930	-56901	-56901	-56901	-56624	-56624	-56624

Standard error in parenthesis *** $p<0.01$, ** $p<0.05$, * $p<0.1$ **Source: Own elaboration**

Table 7: Marginal effects on ordered probit – Financial depth (2/3)

	Regulatory quality			Control of corruption			Legal rights		
VARIABLES	(4.1.0) No use of FP	(4.1.1) Use of debit FP	(4.1.2) Use of credit FP	(4.2.0) No use of FP	(4.2.1) Use of debit FP	(4.2.2) Use of credit FP	(4.3.0) No use of FP	(4.3.1) Use of debit FP	(4.3.2) Use of credit FP
Female	0.036***	-0.001	-0.035***	0.037***	-0.001***	-0.036***	0.035***	-0.001***	-0.034***
	(0.004)	(0.000)	(0.003)	(0.004)	(0.000)	(0.003)	(0.004)	(0.000)	(0.003)
Age	-0.021***	0.001***	0.020***	-0.021***	0.001***	0.020***	-0.021***	0.001***	0.020***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
Age squared *(10^-3)	0.235***	-0.007***	-0.228***	0.24***	-0.007***	-0.234***	0.237***	-0.008***	-0.229***
	(0.018)	(0.001)	(0.017)	(0.018)	(0.001)	(0.017)	(0.018)	(0.001)	(0.017)
Employed	-0.140***	0.016***	0.124***	-0.141***	0.016***	0.126***	-0.140***	0.016***	0.124***
	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)
Completed secondary education	-0.148***	0.004***	0.144***	-0.148***	0.003***	0.145***	-0.147***	0.004***	0.144***
	(0.005)	(0.001)	(0.005)	(0.005)	(0.001)	(0.005)	(0.005)	(0.001)	(0.005)
Completed tertiary education	-0.229***	-0.041***	0.270***	-0.227***	-0.042***	0.270***	-0.229***	-0.041***	0.270***
	(0.004)	(0.002)	(0.006)	(0.004)	(0.002)	(0.006)	(0.004)	(0.002)	(0.006)
Ln GDP per capita (PPP)	-0.099***	0.003***	0.096***	-0.081***	0.002***	0.079***	-0.108***	0.004***	0.105***
	(0.004)	(0.000)	(0.004)	(0.004)	(0.000)	(0.004)	(0.004)	(0.001)	(0.004)
Political Risk Index: Regulatory quality	-0.175***	0.006***	0.170***						
	(0.020)	(0.001)	(0.020)						
Political Risk Index: Control of corruption				-0.405***	0.011***	0.394***			
				(0.017)	(0.002)	(0.016)			
Strength of the Legal Rights Index (0–12)							-0.003***	0.000***	0.003***
							(0.001)	(0.000)	(0.001)
Observations	65,997	65,997	65,997	65,997	65,997	65,997	65,997	65,997	65,997
Geo-economic zone controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income country quintiles control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R squared	0.209	0.209	0.209	0.212	0.212	0.212	0.208	0.208	0.208
Log-likelihood	-56895	-56895	-56895	-56667	-56667	-56667	-56921	-56921	-56921

Standard error in parenthesis *** $p<0.01$, ** $p<0.05$, * $p<0.1$ **Source: Own elaboration**

Table 8: Marginal effects on ordered probit – Financial depth (3/3)

	ATM			PSP			POS		
VARIABLES	(5.1.0) No use of FP	(5.1.1) Use of debit FP	(5.1.2) Use of credit FP	(5.2.0) No use of FP	(5.2.1) Use of debit FP	(5.2.2) Use of credit FP	(5.3.0) No use of FP	(5.3.1) Use of debit FP	(5.3.2) Use of credit FP
Female	0.037***	0.003***	-0.040***	0.031***	0.006***	-0.037***	0.031***	0.004***	-0.036***
	(0.004)	(0.000)	(0.004)	(0.004)	(0.001)	(0.005)	(0.004)	(0.001)	(0.004)
Age	-0.020***	-0.002***	0.021***	-0.016***	-0.003***	0.018***	-0.018***	-0.002***	0.020***
	(0.002)	(0.000)	(0.002)	(0.002)	(0.000)	(0.002)	(0.002)	(0.000)	(0.002)
Age squared *(10^-3)	0.224***	0.017***	-0.242***	0.178***	0.032***	-0.21***	0.196***	0.025***	-0.221***
	(0.018)	(0.002)	(0.02)	(0.02)	(0.004)	(0.024)	(0.02)	(0.003)	(0.022)
Employed	-0.143***	0.003***	0.140***	-0.131***	-0.008***	0.139***	-0.143***	-0.002**	0.145***
	(0.005)	(0.001)	(0.004)	(0.006)	(0.001)	(0.005)	(0.005)	(0.001)	(0.005)
Completed secondary education	-0.132***	-0.010***	0.142***	-0.124***	-0.022***	0.146***	-0.122***	-0.015***	0.138***
	(0.005)	(0.001)	(0.005)	(0.006)	(0.001)	(0.007)	(0.006)	(0.001)	(0.006)
Completed tertiary education	-0.210***	-0.061***	0.271***	-0.192***	-0.086***	0.278***	-0.194***	-0.068***	0.262***
	(0.005)	(0.003)	(0.007)	(0.005)	(0.004)	(0.009)	(0.005)	(0.003)	(0.008)
Ln GDP per capita (PPP)	-0.082***	-0.006***	0.089***	-0.111***	-0.020***	0.131***	-0.133***	-0.017***	0.150***
	(0.004)	(0.001)	(0.004)	(0.006)	(0.001)	(0.007)	(0.006)	(0.001)	(0.006)
Bank branches for every 100,000 adults	-0.001***	-0.000***	0.002***	-0.001***	-0.000***	0.001***	-0.001***	-0.000***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Number of ATMs per 1000 km^2*10^(-3)	-0.068***	-0.005***	0.073***						
	(0.400)	(0.000)	(0.004)						
Number of financial service points (1000 km^2)*10^(-3)				-0.271***	-0.049***	0.320***			
				(0.025)	(0.005)	'(0.029)			
Number of points of sale per 1000 km^2*10^(-3)							-0.001***	0.000***	0.001***
							(0.000)	(0.000)	(0.000)
Observations	54,506	54,506	54,506	38,429	38,429	38,429	43,926	43,926	43,926
Geo-economic zone controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income country quintiles control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R squared	0.207	0.207	0.207	0.238	0.238	0.238	0.213	0.213	0.213
Log-likelihood	-47073	-47073	-47073	-31868	-31868	-31868	-37653	-37653	-37653

Standard error in parenthesis *** $p<0.01$, ** $p<0.05$, * $p<0.1$ **Source: Own elaboration**

Table 9: Model sensitivity and specificity

VARIABLES		(1) Baseline	(2) Gender laws	(3) Size of fin. Sist.	(4.1) Regulation	(4.2) Corruption	(4.3) Legal enforc.	(5.1) ATM	(5.2) PSP	(5.3) POS
Access to financial products										
Specificity	Pr(P0| 0)	55,25%	55,23%	57,26%	55,26%	55,89%	55,86%	51,97%	59,30%	53,19%
Sensitivity	Pr(P1| 1)	88,39%	88,38%	88,25%	88,40%	88,26%	88,33%	90,10%	91,64%	90,93%
Correctly classified		**78,75%**	**78,74%**	**79,23%**	**78,76%**	**78,84%**	**78,88%**	**80,22%**	**84,01%**	**81,64%**
Depth of financial inclusion										
Specificity	Pr(P0| 0)	84,06%	83,84%	84,06%	83,86%	83,71%	83,98%	80,77%	78,11%	77,71%
Sensitivity	Pr(P1| 1)	11,20%	11,32%	13,09%	11,27%	12,25%	11,20%	13,95%	21,71%	17,79%
	Pr(P2| 2)	71,94%	71,95%	71,65%	71,99%	71,68%	72,08%	73,83%	75,27%	74,40%
Correctly classified		**60,03%**	**59,98%**	**60,44%**	**59,99%**	**60,09%**	**60,05%**	**59,66%**	**60,67%**	**59,37%**

Source: Own elaboration