



Banking on equality: Closing the gender divide in Latin America's financial systems

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Abstract. Financial inclusion has emerged as a pivotal strategy for promoting inclusive economic growth, reducing poverty, and fostering social equity everywhere in the world. However, significant gender disparities persist in Latin America, where millions of women remain excluded from formal financial systems. The purpose of this study was to investigate the impact of gender disparities in financial access on overall financial inclusion in Latin American countries using panel data spanning 2011, 2014, 2017, and 2021 from the World Bank's global financial development database. Descriptive analysis revealed persistent gender gaps in financial access, with male populations consistently outperforming their female counterparts in account ownership, savings, credit, and credit/debit card usage. Among the countries studied, Costa Rica and Ecuador exhibited relatively wider gaps, while Uruguay showed more gender parity across indicators. Correlation analysis showed a significant negative relationship between the financial inclusion index and account ownership gap and the debit/credit card gap, suggesting that gender disparity in these areas is associated with lower overall financial inclusion. Results from the random effects panel regression model showed that account ownership gap ($\beta = -6.283$, $p > 0.05$), savings gap ($\beta = -3.193$, $p > 0.05$), credit gap ($\beta = 0.1337$, $p > 0.05$), and debit/credit card gap ($\beta = 2.6216$, $p > 0.05$) had insignificant effects on financial inclusion in the Latin American region. The results of this study can be utilised by policymakers, financial institutions, and international organisations in Latin America to develop targeted strategies aimed at reducing gender gaps in access to financial services and enhancing overall financial inclusion

Keywords: financial inclusion; gender disparities; account ownership gap; panel data; financial services

INTRODUCTION

This study is relevant as it examines the persistent gender gap in financial inclusion across Latin America, a region where financial access remains uneven despite significant economic and technological progress. Women in many Latin American countries continue to face barriers to formal banking, credit, and digital financial services which limit their ability to save, invest, and participate in economic activities. Addressing these disparities is essential for fostering inclusive growth and reducing structural inequalities that hinder social and economic development.

According to S. Hundie & D. Tulu (2023), financial inclusion is important for helping countries grow fairly, reduce poverty, and achieve long-term development. It means making sure everyone can use basic financial services like

saving money, getting loans, investing, or buying insurance at low cost. P. Raffaelli *et al.* (2025) mentioned that these services help people handle money better, stay strong during hard times, and improve their quality of life. In places like Latin America, financial inclusion helps the economy by giving people and businesses access to the right financial tools in a fair, affordable, and responsible way. Despite global advancements in financial access, significant disparities remain, particularly along gender lines and across regions, with Latin America representing a compelling context for investigation. Latin America and the Caribbean (LAC) region have experienced notable progress in financial inclusion over the past two decades, driven by financial sector reforms, digital transformation, and increased investment

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in mobile banking infrastructure. Nevertheless, S. Ansar *et al.* (2023) noted that in many Latin American and Caribbean (LAC) countries, women from rural and low-income areas are more likely to be left out of the formal financial system. The gap between men and women in owning bank accounts, saving money, and using credit or debit cards is still larger than the global average.

A. Galindo-Manrique & N. Rojas-Vargas (2025) argued that factors like social norms, income levels, education, and access to technology all contribute to this gender gap in account ownership, which is the first step to using other financial services. Even with efforts to improve access, women remain less likely than men to have bank accounts, limiting their ability to make digital payments, save money, or get credit. Similarly, S. Peter *et al.* (2025) identified disparities in savings behaviour reflect deeper structural and cultural barriers, ranging from lower income levels to lack of financial literacy and limited financial autonomy, that hinder women's ability to build financial resilience. These barriers not only inhibit women's economic participation but also constrain household welfare and broader macroeconomic development, as gender equality in financial access has been positively linked to economic resilience, entrepreneurship, and human capital investment.

The gender gap in credit access is another crucial dimension of exclusion. C. Johnen & O. Mußhoff (2022) identified that women are often perceived as riskier borrowers and face obstacles such as lack of collateral, discriminatory lending practices, and limited access to information. This not only restricts their ability to invest in businesses or human capital but also impedes broader economic development. In addition, S. Hundie & D. Tulu (2023) indicated that women's participation in formal financial systems is further limited by their lower ownership and use of debit and credit cards, especially as financial services become more digital. According to H. Ndoya & C. Tsala (2021) and N. Kowsick & K. Ramasamy (2024), these gender-specific gaps collectively weaken the impact of financial inclusion initiatives and exacerbate existing inequalities. Apart from scarcity of empirical research on financial inclusion in Latin America, existing studies, which are mostly descriptive in nature, tend to overlook the roles of gender-specific constraints in shaping financial inclusions or treat gender gap in aggregate terms, missing the nuances across different financial behaviours. As such, policy interventions often remain generalised and fail to address the gender-specific determinants of the financial inclusion. Without a nuanced understanding of how each component of the gender gap contributes to financial exclusion, policies may fall short of effectively addressing the root causes of inequality.

This study, therefore, sought to fill this empirical gap by examining the extent to which gender disparities in account ownership, savings, credit access, and debit/credit card usage influence financial inclusion across selected Latin American countries.

LITERATURE REVIEW

A. Okello (2025) explained financial inclusion as making sure people and businesses can get useful and affordable

financial services, like making payments, saving money, getting loans, and buying insurance in a fair and lasting way. These services are often available online through digital platforms. Yet, across Latin America, as in other developing regions, a persistent gender gap undermines equitable financial access. S. Peter *et al.* (2025) mentioned that women, especially those from low-income or rural areas, are still largely left out of formal financial systems due to barriers related to institutions, society, and basic structures. According to H. Ndoya *et al.* (2024), financial inclusion means making sure everyone can access and use financial services that meet their needs. S. Hundie & D. Tulu (2023) explained that financial inclusion has three key parts: access, usage, and quality. Access means that financial services are easy to find, affordable, and not blocked by legal or institutional rules. Usage captures the frequency and regularity with which individuals engage with financial products. A. Galindo-Manrique & N. Rojas-Vargas (2025) mentioned that quality addresses whether these services are tailored to diverse client needs, particularly those of marginalised or low-income populations.

From a developmental perspective, having access to financial services is important for reducing poverty, promoting fair income distribution, and supporting economic growth. Researchers like G. Desalegn & G. Yemataw (2017) noted that financial inclusion helps people save, invest, start businesses, and manage daily expenses, encouraging more participation in the economy. S. Neaime & I. Gaysset (2018) also reported that inclusive financial systems support the sustainable development goals (SDGs) by making sure economic opportunities are shared more fairly. A. Shaikh *et al.* (2023) argued that in Latin America, while efforts have been made to reach low-income groups, many financial products are still too costly or not suited to their needs. From a gender perspective, financial inclusion goes beyond simply giving women access to financial services, it also involves broader issues like equal rights, opportunities, and fairness. According to H. Ndoya *et al.* (2024), the human rights approach argues that women deserve equal access to financial services as a matter of justice. However, in many regions, including Africa and Latin America, women still face systemic barriers due to institutional rules, legal restrictions, and cultural traditions. A. Demirguc-Kunt *et al.* (2022) identified that these barriers range from the inability to own property or access national identification documents, to requiring a husband's permission to engage in financial transactions.

Women's understanding of financial matters and their ability to use formal financial services are often limited by gender gaps in financial inclusion. According to A. Kara *et al.* (2021), M. Harijan & D. Kumari (2025), these gaps usually reflect wider inequalities, like differences in education, income, and job opportunities between men and women. S. Sharif *et al.* (2022) mentioned education is especially critical: it enhances women's understanding of financial services and increases their likelihood of inclusion. Gender disparities in access to credit or bank accounts often stem from broader socio-cultural norms and gendered

expectations that restrict women's economic roles. Studies by J. Akhter & K. Cheng (2020), A. Galindo-Manrique & N. Rojas-Vargas (2025) have attributed the gender gap to four broad factors: education, legal barriers, cultural and social norms, and socio-professional status.

Gender gap in account ownership is the difference in the percentage of men and women aged 15 and above, who have an account at a formal financial institution. A. Demircug-Kunt *et al.* (2022) and N. Vyhovska *et al.* (2024) reported that having an account is the simplest way to measure financial inclusion because it is the first step to using other financial services. S. Balasubramanian *et al.* (2018) and H. Ndoya *et al.* (2024) argued that gender gap in this domain signifies structural and institutional barriers preventing women from initiating formal financial relationships, often rooted in discriminatory laws, socio-cultural norms, or lack of legal identification. Gender gap in formal savings behaviour captures the differential between men and women who report saving money at formal financial institutions. Savings behaviour reflects not only access but also trust in financial systems and the capacity to accumulate surplus income. According to S. Sharif *et al.* (2022), P. Ozili (2022), gender disparities here often stem from wage inequality, informal employment, or limited financial literacy, factors that restrict women's ability to build financial buffers or invest in long-term goals. Gender gap in credit access is the difference in how many men and women have borrowed money from a bank or other formal financial institution within a given time. Credit access is a critical enabler of entrepreneurship, asset acquisition, and social mobility. However, systemic biases, collateral requirements, and gendered financial stereotypes often limit women's access to formal credit markets (Akhter & Cheng, 2020). This gap reflects not just financial exclusion but also embedded inequalities in economic opportunity.

According to A. Kara *et al.* (2021), gender gap in debit and credit card usage refers to the difference between male and female usage rates of debit and credit cards, which are proxies for active engagement with digital and formal financial ecosystems. Usage of these instruments goes beyond mere access, it reflects financial capability, digital literacy, and transactional behaviour. Disparities in card usage often point to unequal exposure to financial education, infrastructural barriers like not having enough ATMs in rural areas, and social beliefs that limit women's financial freedom. The dependent variable in this study is a financial inclusion index (FII) constructed from multiple indicators reflecting access, usage, and quality of financial services. Disaggregated by gender, the index offers a nuanced view of inclusion that captures more than mere account ownership. The independent variables include gender gap in account ownership, gender gap in formal savings behaviour, gender gap in credit access, and gender gap in the usage of debit and credit cards.

This study was based on two related theories: the capability approach by A. Sen (1995) and feminist economic theory by N. Folbre (1994) and L. Benería *et al.* (2015).

Together, these theories help explain the different factors behind the gender gap in financial inclusion in Latin America by looking at the issue from many angles. The capability approach says that real development should be measured by how free people are to live the lives they value. From this view, financial inclusion helps people build better lives by giving them tools to handle risks, invest in health and education, start businesses, and lift themselves out of poverty. When women have limited access to financial services, it not only hurts them financially but also limits their choices and well-being. This theory points out that it is not enough to just give people access, what matters is giving them real freedom to take part in economic and social life. In this study, financial inclusion helps women gain more control over their money, start businesses, and build wealth over time. Feminist economic theory, developed by researchers like N. Folbre (1994) and L. Benería *et al.* (2015), challenges conventional economic models that fail to account for gender-based inequalities in access to resources. This theory emphasises the influence of social norms, unpaid care responsibilities, legal frameworks, and power imbalances in shaping women's financial behaviours and outcomes. It critiques the assumption of a level playing field in economic participation and highlights how systemic discrimination, asset ownership disparities, and cultural expectations can hinder women's financial inclusion. In the Latin American context, where patriarchal norms and structural inequalities persist, this framework is particularly useful for understanding how exclusionary mechanisms operate beyond market forces.

A growing body of empirical literature has investigated the gender gap in financial inclusion across different regions, emphasising the role of income, education, digital access, and structural barriers. The following studies provide insights into key determinants and contextual dynamics of gendered financial inclusion, though there remains a notable paucity of work focused specifically on Latin America. H. Ndoya & C. Tsala (2021) studied why men and women in Cameroon have different levels of access to financial services, using data from Finscope 2017 and a method called Fairlie's decomposition. They found that men still have better access to and use of financial services than women. Their findings showed that women's lower income and education levels are major reasons for this gap, with income explaining more than half of the difference in access, and education explaining over a third of the difference in usage. M. Wagbafor *et al.* (2021) conducted a similar study in Nigeria using Global Findex 2014 data. They found a financial inclusion rate of 61% among men and 43% among women, with an 18% gender gap. Key determinants included education level, income quintile, and financial behaviours such as remittance sending and bill payments. Their findings underscored the role of socioeconomic "endowments" in perpetuating gender inequality in access to finance.

A. Demircug-Kunt *et al.* (2022), using the Global Findex data, reported that although global account ownership has risen significantly, the gender gap persists, particularly in developing regions. In many cases, women are 7-9 percentage

points less likely to have a financial account than men. C. Johnen & O. Mußhoff (2022) explored the influence of digital credit on financial inclusion. Contrary to expectations, digital credit did not narrow but instead widened the gender gap. This was attributed to unequal socio-economic endowments and a lack of contract heterogeneity in digital lending platforms, revealing potential risks in assuming that digitisation is inherently inclusive. B. Fowowe (2023) examined the effect of financial inclusion and gender gaps on agricultural productivity in Mali using data from Living Standards Measurement Study – Integrated Surveys on Agriculture (LSMS-ISA). The study showed that financial inclusion improved productivity, but also revealed a 44.5-49.8% productivity gap between men and women, implying that financial gaps translate directly into real economic disadvantages for women. S. Hundie & D. Tulu (2023) used Global Findex 2017 data to investigate financial inclusion gender gaps in Ethiopia. Through decomposition methods, they found males were significantly more likely to possess formal accounts, savings, credit, and digital access tools. Education, mobile phone ownership, employment status, and wealth were all significant predictors of financial inclusion, reinforcing the structural nature of gender disparities.

N. Kowsick & K. Ramasamy (2024) conducted a systematic literature review showing that while digital tools (like mobile banking) offer potential to bridge the gap, challenges persist, including technological literacy, cultural barriers, and regulatory constraints. Their study emphasised the importance of not just access, but effective and equitable usage. M. Harijan & D. Kumari (2025) focused on digital financial inclusion in India, constructing a composite index to capture availability, accessibility, and use. Their results showed a significant gender gap (16.81% of men vs. 5.07% of women). Income and education were the most significant determinants, underscoring how structural inequalities impede digital inclusion for women. S. Peter *et al.* (2025) studied how digital financial literacy affects financial inclusion and business success among female entrepreneurs. Using survey data and Hayes Process macro modelling, they found that digital financial literacy strongly improved both. However, poor financial behaviour reduced this positive effect. This shows that behaviour, not just access or structure, plays an important role in financial inclusion.

A. Okello (2025) provided a rare reversal, showing that in Kenya's Kakuma refugee camp, women were more financially included than men. This was attributed to specific programmatic targeting, income-generating activities, and stronger social networks among women, highlighting that policy design and context matter greatly. A. Galindo-Manrique & N. Rojas-Vargas (2025) used Global Findex data to study gender gaps and digital money in low- and middle-income countries. Their research, which covered more than just Latin America, showed that digital finance helps close the gap between men and women in owning and using financial accounts. Women's financial inclusion improved when they had access to tools like smartphones, the Internet, and digital payments. This study also highlighted

the important role digital technology could play in Latin America. Despite this, few empirical studies have explicitly examined the gender gap in financial inclusion in Latin America using panel econometric techniques. Most existing studies are descriptive in nature.

MATERIALS AND METHODS

This study created a financial inclusion index to measure the gender gap in Latin America using three factors: the number of ATMs per 100,000 people, the number of bank branches per 100,000 adults, and the number of bank borrowers per 1,000 adults. The selection of these indicators was substantiated primarily based on data availability and cross-country consistency. Latin American countries, such as Mexico and Panama, do not have complete data on individual-level. The data related to financial inclusion were sourced from the World Development Indicators (WDI). To measure the gender gap in financial inclusion across Latin America, this study considered data specifically for men and women. The data included how many men and women have accounts at financial institutions, save money there, take out loans, and have debit or credit cards. These numbers came from the World Bank's Global Financial Development Database for the years 2011, 2014, 2017, and 2021. The Pesaran CD test was conducted to check if the observations from different cross-sectional units are independent of each other.

The gender gap in financial inclusion was calculated for each variable as the difference between the male and female percentages (i.e., male % – female %). If the result was positive, it meant men had an advantage; if negative, women had an advantage. To ensure consistency across countries and time, only countries with complete data across all selected years were included in the gender gap analysis. Countries such as Mexico and Panama were excluded due to incomplete records. This approach strengthened the reliability of the analysis by reducing data gaps and measurement inconsistencies. The study sample consisted of 9 countries in the Latin American region including Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Paraguay, Peru, and Uruguay.

The functional model for this study was specified as:

$$\text{Financial inclusion}_{it} = f(\text{Gender-specific variables}). \quad (1)$$

The functional model was further expressed as:

$$\text{FII} = f(\text{ACCT}, \text{SAVE}, \text{BORR}, \text{CARD}). \quad (2)$$

Then, the functional model can be expressed in panel model as:

$$\text{FII}_{it} = \alpha + \beta_1 \text{ACCT}_{it} + \beta_2 \text{SAVE}_{it} + \beta_3 \text{CRED}_{it} + \beta_4 \text{CARD}_{it} + \mu_i + \varepsilon_{it}, \quad (3)$$

where FII_{it} – financial inclusion index for country i in year t ; α = intercept, ACCT – gender gap in account ownership (% male – % female); SAVE – gender gap in savings at

financial institutions; CRED – gender gap in access to credit/borrowing from financial institutions; and CARD – gender gap in credit/debit card ownership, β_1 to β_4 are the coefficients of the explanatory variables, μ_i – unobserved country-specific effects (random or fixed); ε = error term.

Given the structure of the dataset, which included multiple countries observed over several years, a panel data approach was deemed appropriate. Initially, a pooled ordinary least squares (pooled OLS) regression was estimated, but this approach assumes that all countries are homogeneous and fails to account for unobserved heterogeneity. As such, it may produce biased results due to omitted variable bias. Subsequently, the study employed two models: fixed effects (FE) and random effects (RE). The fixed effects model used more data points to control for factors that do not change over time within each country. The random effects model, if its assumptions held, was more efficient because it assumed the unseen differences between

countries were not linked to the other variables in the study. To decide which model was better, FE or RE, Hausman test was used. If the test showed that RE model was a better fit, the result would not reject the null hypothesis ($p > 0.05$). As such, RE model would be employed for the analysis.

RESULTS AND DISCUSSION

This section presents and interprets the findings from the analysis of gender disparities and financial inclusion across selected Latin American countries. The results are structured to present key patterns identified through descriptive statistics and correlation analysis, examine statistical relationships using panel regression analysis, and discuss how gender gaps in financial access (account ownership, savings, credit, and debit/credit card usage) affect financial inclusion in Latin America. Table 1 shows the gender-specific indicators across Latin American countries (2011, 2014, 2017, 2021).

Table 1. Summary statistics table

Variable	Mean	Min	Max	Std. Dev.
Financial inclusion index	0.0291	-0.9367	4.5791	-0.9395
Financial institution account, female	48.30%	18%	87%	16.61
Financial institution account, male	55.47%	21%	88%	16.48
Saved at a financial institution, female	11.52%	3%	34%	7.91
Saved at a financial institution, male	15.23%	4%	38%	9.23
Borrowed from formal institution, female	19.22%	6%	45%	9.35
Borrowed from formal institution, male	22.07%	5%	48%	9.97
Owns debit or credit card, female	39.53%	13%	78%	15.78
Owns debit or credit card, male	46.97%	12%	81%	16.45
Gender gap variables				
Account ownership gap	0.066111	-0.0500	0.200000	0.061052
Savings gap	0.040278	-0.0300	0.100000	0.034599
Credit gap	0.048889	-0.0300	0.180000	0.045656
Debit/Credit card gap	0.075000	-0.0600	0.21000	0.069261

Source: calculated by the author

In Table 1, financial inclusion has a mean value of 0.0291, indicating relatively low average financial inclusion levels across the sample, with considerable variation ranging from -0.9367 (lowest observed value) to 4.5791 (highest observed value), and a standard deviation of 0.9395, suggesting notable differences across countries. In terms of account ownership, the average proportion of females with financial institution accounts is 48.30%, compared to 55.47% for males. This reveals a gender gap of roughly 7 percentage points on average. The standard deviations for both variables (16.61 for females and 16.48 for males) suggest moderate variability across countries.

For saving behaviour, only 11.52% of women reported saving at a financial institution, compared to 15.23% of men. This implies a noticeable gender gap in formal savings, with women participating less in institutional saving. Again, there is substantial cross-country variation, with standard deviations of 7.91 and 9.23, respectively. When it comes to borrowing from formal financial institutions, 19.22% of women and 22.07% of men reported having done so.

Although the gap is narrower here than in savings, men still slightly outperform women in access to formal credit. Ownership of debit or credit cards shows a mean of 39.53% for women and 46.97% for men. This indicates another significant gender disparity in access to financial tools for transactions, with a difference of over 7 percentage points. Both variables show relatively high standard deviations (15.78 and 16.45), reflecting notable differences across countries.

Account ownership gap shows a mean of 0.0661, indicating that, on average, men are about 6.61 percentage points more likely to own an account at a financial institution than women. However, the range spans from -5 to 20%, suggesting that while men generally have higher account ownership, some countries exhibit a reverse trend where women actually outperform men. The savings gap has a mean of 0.0403, meaning that men are on average 4.03 percentage points more likely than women to save at a financial institution. The gap ranges between -3 and 10%, indicating a smaller disparity compared to account ownership. This narrower gap suggests that while men tend to

save more formally, the difference is less severe, and in a few countries, women save more than men.

For borrowing from formal institutions, the gap averages 0.0489, with a minimum of -3 and a maximum of 18%. This shows that men are generally more likely to access formal credit, potentially reflecting structural barriers such as lower creditworthiness or limited collateral among women. Nonetheless, the presence of negative values points to instances where women surpass men in borrowing, though these are less common. The debit/credit card ownership gap exhibits the highest average disparity, with a mean of 0.0750. This suggests that men are, on average, 7.5 percentage points more likely than women to own a debit or credit card. The gap ranges from -6 to 21%, reflecting the

widest variability among the indicators. This significant gap may be attributed to differences in digital literacy, employment status, income levels, and overall financial autonomy, which are more pronounced when it comes to owning and using formal financial instruments.

In summary, the data clearly indicate that men enjoy greater financial inclusion than women across all four indicators, though the magnitude of these gaps varies. While positive mean values confirm general male advantage, the negative minimum values show that gender-inclusive financial ecosystems do exist within the region. These findings are consistent with the findings of S. Hundie & D. Tulu (2023), H. Ndoya *et al.* (2024), and N. Kowsick & K. Ramasamy (2024). Table 2 shows the gender gap by country (2011, 2014, 2017, 2021).

Table 2. Country-level summary statistics table

Country	Account ownership gap	Savings gap	Credit gap	Debit/Credit card gap
Argentina	-1.25	+3.75	+3.00	+2.00
Brazil	+6.75	+7.00	+8.25	+10.75
Chile	+4.50	+6.25	+5.25	+2.50
Colombia	+9.25	+4.25	+6.00	+10.50
Costa Rica	+14.25	-0.25	+6.25	+15.50
Ecuador	+12.25	+6.75	+7.75	+14.50
Paraguay	+1.75	+3.25	+1.75	+4.25
Peru	+11.75	+5.25	+3.25	+10.25
Uruguay	+2.75	+2.75	+0.25	+0.50

Source: calculated by the author

The country summary table, as seen in Table 2, shows the gender gaps in four key financial areas, owning debit/credit cards, borrowing, saving, and having bank accounts, in some Latin American countries. For each area, the gap is calculated by subtracting the percentage of women from the percentage of men (male % – female %). Positive outcome means more men participate, while negative means more women do. The gap between men and women owning accounts is very different across countries. The largest gaps are in Costa Rica (+14.25), Ecuador (+12.25), and Peru (+11.75), where men are much more likely than women to have accounts. Argentina is the only country with a small negative gap (-1.25), meaning women are slightly more likely than men to have accounts, which is unusual for the region.

The savings gap also generally favours men, with the largest gaps observed in Brazil (+7.00), Chile (+6.25), and Ecuador (+6.75). These figures imply that men are more likely than women to save at formal financial institutions. Notably, Costa Rica is an exception with a small negative gap (-0.25), suggesting a near-equal savings rate among women compared to men. In terms of borrowing from formal institutions, countries such as Brazil (+8.25), Ecuador (+7.75), and Colombia (+6.00) have relatively high gaps, indicating that

men are more likely to access formal credit. Uruguay shows a minimal gap (+0.25), suggesting a more balanced borrowing pattern between genders. The debit/credit card ownership gap shows some of the widest disparities in financial inclusion. Costa Rica (+15.50), Ecuador (+14.50), and Brazil (+10.75) show double-digit gaps, suggesting that men are much more likely to own these financial instruments. Even in countries with lower gaps, such as Uruguay (+0.50) and Argentina (+2.00), the advantage still favours males. Overall, these results highlight a consistent gender gap across financial inclusion dimensions, with men generally having greater access to accounts, savings, credit, and card ownership. While a few exceptions exist, such as Argentina in account ownership and Costa Rica in savings, the prevailing pattern underscores persistent structural and socioeconomic barriers limiting women’s access to financial services in Latin America.

The Pesaran CD test was conducted to check if the observations from different cross-sectional units are independent of each other. If p-value < 0.05, reject the null hypothesis of no cross-section dependence (i.e., no correlation between the observations across countries), meaning sampled countries behave independently. Table 3 shows the cross-section dependence test results.

Table 3. Cross-section dependence test

Variables	Pesaran CD
Financial inclusion index	0.0356
Account ownership gender gap	0.3178

Table 3. Continued

Variables	Pesaran CD
Savings gender gap	0.0001
Credit gender gap	0.0001
Owens debit/credit card gender gap	0.6366

Source: calculated by the author

The Pesaran CD test in Table 3 showed a p-value of 0.0356, meaning financial inclusion is connected across countries, if one country's financial inclusion changes, nearby or similar countries might be affected too. This could be due to shared financial systems or economic policies. But with a p-value of 0.3178, the gender gap in account ownership does not show this connection, meaning the differences between men and women in each country are more likely caused by local laws, culture, or institutions, not regional factors. However, both the savings gender gap and the credit gender gap show strong evidence of cross-sectional dependence, with p-values of 0.0001. This implies that gender disparities in saving and borrowing behaviours are not isolated phenomena, but rather reflect broader regional

patterns. These could be attributed to common socio-economic conditions, gender norms, or structural barriers affecting women's access to financial services across the region.

The debit/credit card ownership gender gap does not show significant cross-sectional dependence, as evidenced by a high p-value of 0.6366. This indicates that gender disparities in access to card-based financial services vary independently from one country to another, reflecting the uneven penetration of card infrastructure or differing consumer behaviour across countries. These findings highlight that while certain aspects of gendered financial inclusion (like savings and credit) are influenced by regional trends, others (like account and card ownership gaps) are more country-specific. Table 4 shows the correlation coefficients.

Table 4. Correlation coefficients table

Correlation probability	1	2	3	4	5
Financial inclusion index	1.0000 -				
Account ownership gender gap	-0.2922 0.0038	1.0000 -			
Savings gender gap	-0.1155 0.2604	0.0154 0.2899	1.0000 -		
Credit gender gap	-0.0682 0.4835	0.3121 0.0639	0.5257 0.0010	1.0000 -	
Owens debit/credit card gender gap	-0.1486 0.0027	0.6615 0.0000	0.1279 0.4605	0.5474 0.0006	1.0000 -

Source: calculated by the author

In Table 4, the correlation coefficients results provide insights into the relationships between the financial inclusion and various gender gap variables in Latin America. Financial inclusion has a significant negative correlation with the account ownership gender gap ($r = -0.2922$, $p = 0.0038$). This implies that as gender disparities in account ownership increase (i.e., the gap widens in favour of men), the overall financial inclusion level tends to decrease. Conversely, when the gender gap narrows and more women gain access to financial accounts at a level comparable to men, financial inclusion improves. A. Demirguc-Kunt *et al.* (2022) also established that efforts to reduce the gap between men and women owning accounts can help make financial services fairer for everyone in the region.

The savings gender gap has a weaker and statistically insignificant negative correlation with the financial inclusion index ($r = -0.1155$, $p = 0.2604$). This suggests that although greater disparities in formal saving behaviour are associated with slightly lower financial inclusion, the

relationship is not strong or statistically reliable. This implies that gender differences in savings behaviour, may not play a substantial or direct role in shaping the overall level of financial inclusion in Latin America. Similarly, the credit gender gap shows a very weak negative correlation with financial inclusion ($r = -0.0682$, $p = 0.4835$), indicating no meaningful relationship. This suggests that although there is tendency for financial inclusion to decrease as the gender gap in borrowing from formal financial institutions widens. In other words, variations in the difference between male and female access to credit do not strongly explain changes in financial inclusion levels across Latin America.

Similarly, financial inclusion has a significant negative correlation with debit/credit card ownership gender gap ($r = -0.1486$, $p = 0.0038$). This implies that as the gender disparity in debit or credit card ownership increases the overall level of financial inclusion in the country tends to decrease. As such, equitable access to financial tools like debit and credit cards is important for promoting

financial inclusion. When women have lower access to these financial instruments compared to men, it reflects broader exclusion from the formal financial system, limiting their ability to participate in digital payments, credit markets, and financial decision-making. To determine the appropriate panel model, both fixed effects (FE) and random effects (RE) estimations were run. The Hausman test

result ($\chi^2 = 2.5186$, $p = 0.6413$) indicates that the RE model is preferred, as the null hypothesis of no systematic difference between RE and FE coefficients could not be rejected. This implies that the unobserved heterogeneity across countries is uncorrelated with the explanatory variables, validating the use of RE. Table 5 presents the result of the random effects panel regression.

Table 5. Random effects panel regression results

Dependent variable = financial inclusion				
Variable	Coefficient	Std. Error	t-statistic	p-value
ACCT (Account ownership gap)	-6.2832	3.7374	-1.6811	0.1035
SAVE (Savings gap)	-3.1929	6.0552	-0.5277	0.6029
CRED (Credit gap)	0.1337	4.8723	0.0273	0.9781
CARD (Debit/Credit card gap)	2.6216	3.7599	0.6978	0.4915
Constant	0.3415	0.3768	0.9066	0.3722
Model diagnostics				
R-squared	0.4152			
F-statistic	8.0707			
F-statistic (prob)	0.0303			
Durbin-Watson	1.9849			
Hausman test				
Chi-square statistic	2.5195			
Degrees of freedom	4			
p-value	0.6411			
Number of observations	36			
Number of countries	9			

Source: calculated by the author

The results in Table 5 indicate that none of the gender gap variables are statistically significant predictors of financial inclusion. Although the coefficient for account ownership gender gap is negative ($\beta = -6.283$), suggesting that wider gaps may reduce financial inclusion, this relationship is not statistically significant ($p = 0.1035$). Similarly, the gender gaps in savings ($\beta = -3.192$, $p = 0.6029$), credit access ($\beta = 0.1337$, $p = 0.9781$), and debit/credit card ownership ($\beta = 2.6216$, $p = 0.4915$) do not show significant associations with financial inclusion. The insignificance of the gender gap indicators suggests that, over the study period, variations in gender-based access to financial services may not have had measurable impact on financial inclusion at the regional level. This could be conditioned by institutional factors, digital financial policies, or regional heterogeneity that

were not fully captured in the model. Nonetheless, the negative trend of key coefficients, especially for account ownership and savings, still points toward areas where gender disparity may impede financial inclusion in the long term.

The model's R-squared value of 0.4152 means that about 41.52% of the changes in financial inclusion can be explained by the variables used. The model is statistically significant, shown by the F-statistic of 8.0707 and its p-value of 0.0303. The Durbin-Watson statistic is 1.98, close to the ideal 2, meaning there is no problem with serial correlation in the errors. The Hausman test result (Chi-square = 2.5195, $p = 0.6411$) supports using the RE model instead of the FE model, confirming that the model's assumptions are valid for this study. The result of the diagnostics test is shown in Table 6.

Table 6. Diagnostic tests: Multicollinearity, heteroscedasticity, serial correlation

Diagnostic test	Test used	Statistic	p-value	Interpretation
Multicollinearity	Variance inflation factor (VIF)	3.51	-	No serious multicollinearity
Heteroskedasticity	Breusch-Pagan test	14.5	0.2821	Heteroskedasticity is absent
Serial correlation	Wooldridge test	F = 8.34	0.1051	No serial correlation detected

Source: calculated by the author

The VIF value is below the commonly accepted threshold of 5, and tolerance values are above 0.1, indicating no significant multicollinearity among the independent variables. This means the predictors are not excessively correlated with each other, so the estimated coefficients are reliable. The Breusch-Pagan test for heteroscedasticity returned a p-value of 0.2821, which is greater than 0.05, indicating no evidence of heteroscedasticity, meaning the variance of the error terms is constant. The p-value of Wooldridge test for autocorrelation in panel data is above 0.05. Thus, the null hypothesis of no serial correlation cannot be rejected. This means autocorrelation is not a problem, and the error terms are not systematically related over time.

The regression results indicate that none of the gender gap coefficients are statistically significant at conventional levels, although the point estimates suggest that wider account and savings gaps are associated with lower financial inclusion, while the credit and card gaps carry opposite signs. Nonetheless, placing results in conversation with the wider literature reveals important patterns and clarifies why outcomes diverge across studies. At the descriptive level, evidence of men exhibiting higher account ownership, savings, credit, and card usage is consistent with prior cross-country and regional research. A. Demirguc-Kunt *et al.* (2022) documented that, despite improvements in access over the last decade, a global gender gap in account ownership of around four percentage points persists. Similarly, the Alliance for Financial Inclusion (AFI) (2024) reports baseline gender disparities in financial inclusion across Latin America and the Caribbean and has developed a policy roadmap to close these gaps. O. Olaoye *et al.* (2024) likewise observed persistent though declining gender gaps in financial service access in the region. The alignment between descriptive evidence and these regional findings strengthens the conclusion that gender disparities in financial access remain a robust empirical feature across diverse contexts.

However, the absence of statistically significant coefficients in panel regression contrasts with several country-specific studies that have applied decomposition or micro-data approaches. For instance, H. Ndoya *et al.* (2024) used Fairlie-type decomposition for Cameroon and found gender gaps across multiple financial inclusion indicators, attributing part of the disparity to observable socioeconomic characteristics and part to unexplained structural factors. Similarly, S. Hundie & D. Tulu (2023) reported significant gender gaps in Ethiopia's financial inclusion indicators and identified education, income, and employment status as key explanatory variables. Unlike the current research, which modelled a composite financial inclusion index at the country-year level, the above studies employed micro-level data and decomposition techniques that are well suited to isolating the drivers of gendered disparities.

Several factors may explain why results differ from those of other researchers. First, the choice of dependent variable matters. By using a composite financial inclusion index, specification may dilute the impact of individual gender gaps that are more directly visible when account ownership or credit usage is studied separately. Second, methodological

differences are important. The decomposition methods have greater capacity to partition observed versus unexplained components of disparities, whereas random-effects panel regression relies on cross-country variation with a relatively small sample. Ultimately, evidence of cross-sectional dependence suggests that regional shocks or common policy initiatives such as those highlighted in AFI's (2024) gender inclusive finance roadmap for Latin America and the Caribbean study documenting simultaneous narrowing of gender gaps across several countries may obscure the effect of gender gaps on financial inclusion when modelled at the aggregate level. In summary, findings are consistent with the literature in documenting persistent gender gaps in financial inclusion but diverge in showing that, at the country-panel level, these gaps are not statistically significant predictors of a composite financial inclusion index. This divergence underscores the importance of measurement choice and methodology in shaping inferences about gender disparities.

CONCLUSIONS

This study examined the influence of gender gaps in financial access, specifically account ownership, savings, loans, and debit/credit card usage, on financial inclusion in Latin America. Despite evidence from correlation analysis indicating strong negative links between financial inclusion and gaps in account ownership and debit/credit card ownership, the panel regression results showed that none of the gender gap variables had significant effect on the financial inclusion in the region. Therefore, this study concludes that while gender-based financial disparities in access to financial services exist, their direct impact on financial inclusion may be influenced by other structural or institutional factors, such as economic policies, governance quality, and technological infrastructure.

The persistence of gender disparities, however, underscores the need for proactive measures to foster equitable financial access. Governments and financial institutions should introduce gender-sensitive financial products and services that address cultural, educational, and economic barriers to women's participation; educational campaigns and training programmes focusing on digital and financial literacy are particularly vital for empowering women in rural and underserved communities to adopt and effectively use formal banking services; central banks and regulatory bodies should strengthen policies that promote gender equity in financial equity by requiring gender-disaggregated data reporting, setting inclusion targets, and incentivising financial institutions to expand outreach to female clients; financial institutions should come up with FinTech solutions tailored to women's needs, such as mobile banking services that can help bridge access gaps where conventional banking networks are limited. Future study using larger panels, alternative estimators robust to cross-sectional dependence, and disaggregated indicators would be valuable in reconciling these contrasting results.

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Ставка на рівність: подолання гендерного розриву у фінансових системах Латинської Америки

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Анотація. Фінансова інклюзія стала ключовою стратегією для сприяння інклюзивному економічному зростанню, скорочення бідності та сприяння соціальній рівності в усьому світі. Однак у Латинській Америці зберігаються значні гендерні відмінності, де мільйони жінок залишаються виключеними з формальних фінансових систем. Дослідження мало на меті проаналізувати вплив гендерних відмінностей у доступі до фінансових ресурсів на загальну фінансову інклюзію в країнах Латинської Америки, використовуючи панельні дані за 2011, 2014, 2017 та 2021 роки з глобальної бази даних фінансового розвитку Світового банку. Описовий аналіз виявив постійні гендерні розриви у доступі до фінансових послуг, причому чоловіче населення постійно перевершувало жіноче населення за рівнем володіння рахунками, заощадженнями, кредитами та використанням карток. Серед досліджуваних країн, Коста-Рика та Еквадор демонстрували відносно більші розриви, тоді як Уругвай продемонстрував більший гендерний паритет за всіма показниками. Кореляційний аналіз показав значний негативний зв'язок між індексом фінансової інклюзії та розривом у володінні рахунками, а також розривом у дебетових/кредитних картках, що свідчило про те, що гендерна нерівність у цих сферах пов'язана з нижчою загальною фінансовою інклюзією. Результати панельної регресійної моделі випадкових ефектів показали, що розрив у володінні рахунками ($\beta = -6,283$, $p > 0,05$), розрив у заощадженнях ($\beta = -3,193$, $p > 0,05$), розрив у кредитуванні ($\beta = 0,1337$, $p > 0,05$) та розрив у дебетових/кредитних картках ($\beta = 2,6216$, $p > 0,05$) мали незначний вплив на фінансову інклюзію в регіоні Латинської Америки. Результати цього дослідження можуть бути використані політиками, фінансовими установами та міжнародними організаціями в Латинській Америці для розробки цільових стратегій зменшення гендерних розривів у доступі до фінансових послуг та підвищення загальної фінансової інклюзії

Ключові слова: фінансова інклюзія; гендерна нерівність; розрив у володінні рахунками; панельні дані; фінансові послуги