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Implications for Financial Inclusion

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Abstract*

Digital payments have increasingly been adopted by consumers and firms in Latin America and the Caribbean. This policy research paper analyzes recent post-pandemic data on digital payments in the region to describe adoption patterns, measure adoption gaps, and identify adoption barriers. The data reveal a positive trend in the use of financial accounts for receiving wages, and of payment apps and digital wallets for purchases in-person and online. Despite increased average adoption, sizable gaps remain both between countries and within countries. At the consumer level, factors associated with delayed adoption include low income, old age, indigenous status, and rural location. At the firm level, factors include small size, retail sector, and limited credit access. Four types of adoption barriers appear to be important: technological, economic, informational, and behavioral. These observations are supported with detailed microdata from Mexico. The paper proposes policy solutions for achieving digital payments inclusion of vulnerable consumers and firms.

JEL classifications: D18, G23, G50

Keywords: Digital payments, Adoption gaps, Adoption barriers, Financial inclusion

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1. Introduction

As Internet penetration has grown, digital technologies are increasingly employed to facilitate a wide range of economic transactions in Latin America and the Caribbean (LAC). The trend started before the Covid-19 pandemic and has continued unabated post-pandemic. Purchases, sales, payroll, and transfers have been gradually transitioning to online platforms and are being initiated from Internet-connected smartphones, tablets, or computers. While the trend was to be expected for online commerce, in-person transactions are also relying more on digital payments. As consumers and firms make and receive payments digitally, both online and offline, the demand for cash by consumers and acceptance of cash by firms declines. In this new digital economy, consumers and firms lacking the devices and knowledge for making and receiving digital payments may be restricted from accessing the full range of economic opportunities.

The ability to make and receive digital payments is a basic step toward financial inclusion in an increasingly digital economy. In LAC currently, one in five adults are still cash-only consumers, and only one in three can be considered fully financially included (Mastercard AMI, 2023). In the conventional economy, being financially included was traditionally defined as having a bank account (World Bank, 2012). Being a bank customer gave a consumer or firm access to basic financial services such as deposits and payments. This created a customer history and a banking relationship that opened the door to more complex financial services, such as credit and loans.

In the new digital economy, however, financial services may be also provided by nonbank institutions, such as fintechs or online merchants. These providers offer nonbank transaction accounts in the form of digital wallets or payment apps (IDB, 2022). Digital-based alternatives to traditional bank accounts create an excellent opportunity to expand financial inclusion of vulnerable groups with limited access to banking infrastructure, such as rural communities. On the other hand, because of the complexities of new technologies and the necessary behavioral adjustments, other vulnerable groups facing higher adjustment costs, such as the elderly, may be excluded. In a digital economy where cash is no longer widely accepted and banks shrink their physical branch networks, cash-dependent individuals incur transaction costs and may risk losing

access to a range of services. Thus, it is important to understand both the opportunities and the constraints coming from the demand side of digital payments.¹

Several questions guide the analysis in this paper. How have the payment choices of consumers and firms changed post-pandemic? What types of new digital payment instruments have become available, and which ones tend to be more widely adopted? Who are the users that still rely heavily on cash and are least inclined to transition to the new payments ecosystem? What types of barriers prevent broader adoption of digital payments? And finally, what can government institutions and financial providers do to mitigate and overcome these barriers? The objectives of this policy research paper are to: discuss key issues in the context of the existing literature, highlight important patterns in the data that raise new research questions, and advance policy ideas for improvements in digital payments inclusion that add economic value to consumers and firms.

This paper uses recent data and reviews new developments in the digital payments ecosystem in LAC to provide insights on four points: adoption, gaps, barriers, and policies. In terms of adoption, the paper looks at recent trends in usage by consumers and firms, focusing on identifying the users that have not yet switched from cash reliance to digital solutions. The data reveal an upward trend post-pandemic in the use of financial accounts for receiving wages, and of payment apps and digital wallets for daily consumer expenses in-person and online. Despite the upward trends, sizable gaps remain both across countries and within countries. Across the region, most of the adult population prefers electronic payments over cash; however, countries differ markedly in levels of adoption. At the consumer level, factors associated with delayed adoption include low income, old age, indigenous status, and rural location, all markers of vulnerable groups. At the firm level, the factors are small size, retail sector, and limited credit access.

Next, the paper seeks to characterize the barriers that delay digital payments inclusion. Four types of barriers appear to be important: technological, economic, informational, and behavioral. On average across countries, the main barriers to adoption appear to be connectivity, due to insufficient infrastructure availability; switching costs, due to limited merchant acceptability, low digital capabilities and financial literacy, as well as usage frictions or habit formation; and finally, concerns about digital transaction privacy and security. These observations

¹ Digital payment tools generate alternative data that can support innovative credit scoring models using Artificial Intelligence (AI) algorithms (Beck et al., 2022; Vlaicu, 2024). Credit access is an essential component of financial inclusion. Traditional underwriting and ability-to-pay assessments, however, have closed off many consumers from credit opportunities that enhance financial well-being and economic resilience.

are supported with detailed microdata from Mexico. The paper concludes with policy solutions for facilitating digital payments adoption by vulnerable consumers and firms, among them improvements in infrastructure, balanced and updated standards and regulations, widely accessible public education and social support for financial literacy and digital capability, and user-centered design and customization promoting digital and financial trust.

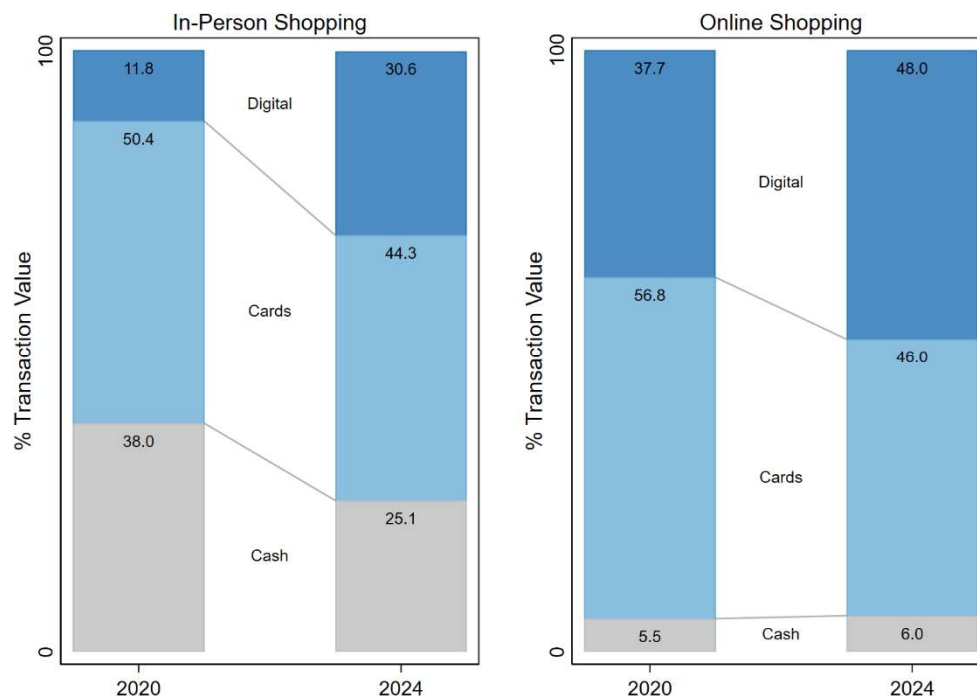
The last five years have witnessed major changes in the financial sector, driven by a high pace of innovation in digital technologies. During this period, LAC has experienced a doubling of financial technology (fintech) firms, the introduction of real-time payment systems in several countries, and novel uses of digital mechanisms for disbursing social benefits, among other developments. Consumers and firms have responded to the new ecosystem by adopting digital forms of payment at a high rate, with important benefits in terms of expanded accessibility, higher speed, and lower fees. These trends present a new opportunity to expand and deepen financial inclusion, as the new tools are data-rich and reduce some of the main informational costs of providing financial services. At the same time, new risks arise, including the exclusion of certain vulnerable groups, and challenges related to cybersecurity, fraud, and data privacy. How governments navigate this process of change has first-order implications for consumer welfare and firm growth in the region.

2. Adoption of Digital Payments

The Covid-19 pandemic was a pivotal event for the payments sector around the globe (World Bank, 2022). Because of disruptions to face-to-face commerce, many consumers and firms shifted to online shopping, which is more dependent on remote forms of payment. Therefore, digital transactions increased faster than cash transactions. That was the case in LAC, as well. In the aftermath of the pandemic, however, has there been a reversion to cash or has the adoption and use of digital payments continued?

According to WorldPay data, the aggregate transaction value of in-person shopping in LAC increased at a rate of about 11 percent per year during the 2020-2024 period, while online shopping increased two-and-a-half times faster, at 27 percent per year. Therefore, on average, a larger share of consumer payments has moved online. At the same time, there has been a shift in the composition of payments for both types of commerce, with a greater presence of digital payments both in-person and online. The trends in payment types post-pandemic are shown in Figure 1,

Figure 1: Digital Payments Expanded Post-Pandemic

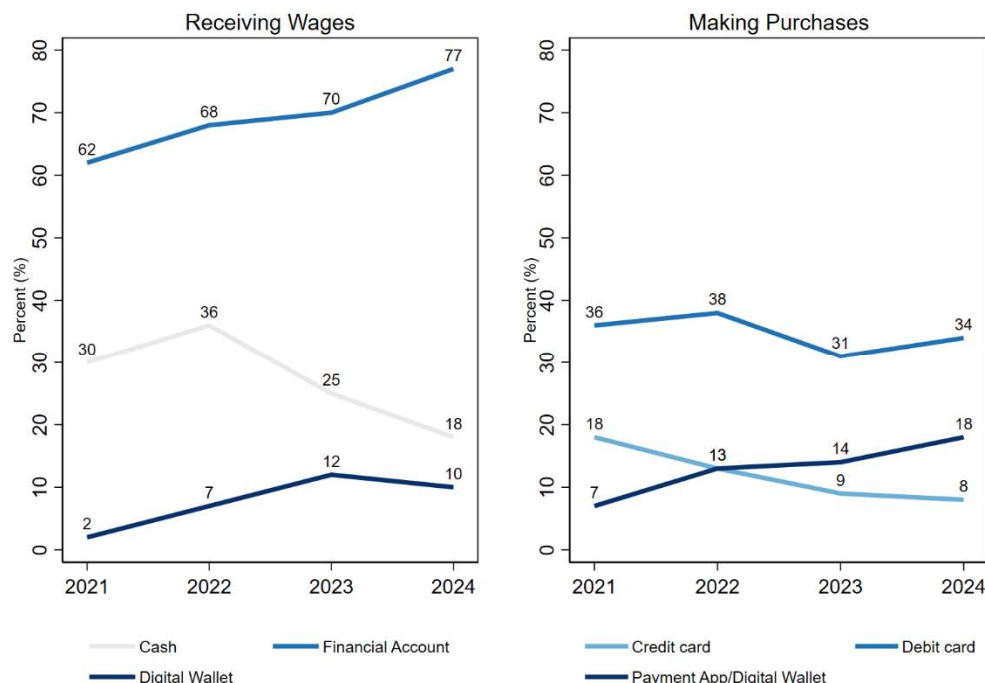


Note: Based on data from WorldPay *Global Payments Report 2021* and 2025. Digital payments include Digital/Mobile Wallets, A2A real-time transfers and direct debits to a bank account, BNPL/POS Financing like PostPay and Buy now Pay Later methods and other methods like PrePay and Cryptocurrencies. Card payments include Credit, Debit, Prepaid and Charge Cards. Dataset covers Argentina, Brazil, Chile, Colombia, Mexico and Peru.

based on WorldPay transactions data from the largest economies in the region. It distinguishes between cash, cards, and digital. The left panel shows the breakdown among payment methods used for in-person shopping. The right panel shows the breakdown for online shopping. In both cases, there has been an increase in the percentage digital payments, conducted through such tools as payment apps or digital wallets. Digital payments have been capturing a larger market share away from cash as well as debit and credit cards.

Making or receiving payments digitally requires a transaction account: a deposit or cash balance account that can store, receive, and send funds. Preferably, a transaction account would not limit the number of transactions that the account holder can make and must provide relatively unrestricted and costless access to account funds. Common types of transaction accounts with minimal restrictions and costs include bank and credit union checking accounts, fintech digital deposit accounts, and nonbank accounts with online payment service providers. Transaction accounts with higher restrictions and costs include debit cards, general purpose reloadable (GPR)

Figure 2: Payment Apps and Digital Wallets Becoming Increasingly Common



Note: Based on data from Credicorp Ipsos Peru, *Índice de Inclusión Financiera de Credicorp 2024*. Estimates are equal-weighted averages across eight countries: Argentina, Bolivia, Chile, Colombia, Ecuador, Mexico, Panama and Peru.

prepaid cards, and government-administered prepaid cards used to transfer social benefits. Credit cards, while an important payment instrument, are not strictly speaking considered transaction accounts because they cannot store funds, cannot receive digital payments, apart from purchase refunds, and may face limitations in making certain payments, for example for utility bills (Greene et al., 2024). In what follows, the paper focuses on digital payments made from bank or nonbank transaction accounts that impose minimal restrictions and costs on the storage, receipt, and sending of funds.²

In an increasingly digital economy, cash transactions may decline in importance. Even so, there are several reasons why cash access will continue to play a critical, though limited, role. For example, cash may be needed as a contingency tool in cases of natural disasters, power outages,

² In principle, central bank digital currency (CBDC) can function as a transaction account, in this case maintained by the national monetary authority. The same applies to blockchain-based cryptocurrency or stablecoins issued by private entities, although these instruments may raise consumer protection issues.

Table 1. Top Reasons for Using Digital Payments

Consumer Benefits		Firm Benefits	
Convenience and Time Savings	75%	Faster and More Convenient	66%
Use Less Cash	74%	Safer to Handle Than Cash	49%
Better Planning and Control	58%	Helps Make More Sales	46%
Access Credit and Investments Easily	51%	Reduce Hassle of Finding Change	38%
Respond to Financial Emergency	48%	Automatic Record of Sales	28%

Note: Based on survey data from Mastercard AMI (2023). Percentages reflect respondents who agree or strongly agree with the stated benefit. Sample consists of 2,815 individuals of which 19% are self-employed or micro-entrepreneurs. Estimates are equal-weighted averages across eight countries: Argentina, Brazil, Colombia, El Salvador, Guatemala, Mexico, and Peru.

and cyberattacks.³ To provide an adequate digital substitute for cash, it is important to emphasize that a smooth and efficient transition to a digital payments economy requires transaction accounts that can both receive and make digital payments. Both types of transactions are necessary to reduce reliance on cash for everyday transactions. Otherwise, an extensive and costly cash-in/cash-out infrastructure needs to be maintained to convert funds from cash to digital and from digital to cash. If instead transaction accounts can be debited digitally through employer and government wage or transfer payments to consumers and credited digitally through consumer purchases from retailers or transfers to peers and government, then most everyday payments can be settled and cleared through digital payment rails without the need for cash.

Trends on both sides of the ledger seem to move in this direction. The left panel of Figure 2 shows the evolution of financial methods of receiving salaries and wages during the period 2021-2024 in eight economies in LAC. The data show a clear increase in use of financial accounts and digital wallets, and a corresponding decrease in cash-based wage payments. The right panel shows the evolution of consumer payments through cards and digital tools. It is notable that payments through apps and digital wallets have outpaced debit and credit cards. Smartphone-based payments have grown from 7 percent of consumers in 2021 to 18 percent in 2024.

What are the benefits to consumers and firms from adopting digital payments? Table 1 lists the top five reasons provided by respondents in a Mastercard AMI survey conducted in 2023 across seven countries in the region. For consumers, the benefits range from convenience and time savings (75 percent) to helping respond to financial emergencies (48 percent). For firms, benefits

³ Sweden in 2021 and the United Kingdom in 2023 have passed legislation to protect cash access for the population. Some states and cities in the United States have also mandated cash acceptance.

of accepting digital payments range from speed and convenience (66 percent) to providing an automatic record of sales (28 percent). It is worth noting that the most widely accepted digital payment by small firms is person-to-person (P2P) payments.⁴

Although causal evidence using Latin American data is lacking, a study using data from the Chinese payments fintech Alipay found that cashless payment adoption increased consumer credit access by 56.3 percent, and a 1 percent rise in payment app usage increased credit line by 0.41 percent. The effects were stronger for the less educated and the older, suggesting benefits to overall financial inclusion (Ouyang, 2023).⁵

Another angle into factors behind consumer preference for digital payments comes from the Latinobarómetro 2023 survey conducted across 18 countries in the region. The survey asked nationally representative samples from each country about their views on various features of electronic payments (including digital payments) compared to cash. Across the region, 38.5 percent of respondents said they made half or more of their payments electronically. When asked about attributes of electronic payments, 56.5 percent answered that they are more reliable than using cash, and these respondents were twice as likely (49 percent vs. 24 percent) to make most of their payments electronically; 44.2 percent answered that their electronic payment data are secure, and these respondents were more likely (47 percent vs. 31 percent) to make most of their payments electronically; 72.1 percent answered that it was safer to walk on the street without cash and pay electronically, and these respondents were twice as likely (45 percent vs. 22 percent) to make most of their payments electronically. Thus, safety from street crime emerges as a key preference factor in favor of electronic payments, tempered by concerns about data privacy.⁶

Industry studies for firms show important business benefits from adopting digital payments: small firms using digital payments experience better business resilience and growth. The payments firm Visa conducted a survey of more than 3,000 MSMEs in Brazil, Colombia, and three other countries, and found that firms that embraced digital commerce and cross-border transactions have generally withstood the pandemic better than those that relied primarily on face-

⁴ It is common for small firms to use a personal account, instead of a business account, as online platforms typically do not require the business to be formalized.

⁵ In the context of mobile money, a telecom-based technology common in Africa, rural users benefit from being able to tap into wider non-local social networks for financial transfers after a negative income shock (Riley, 2018). In Colombia, receiving government cash transfer payments into digital bank accounts reduced defaults on credit cards and debt with non-financial firms, and improved access to credit (Alvarez-Arango et al., 2024).

⁶ In Chile, the implementation of a technological innovation that eliminated cash transactions on buses led to a large reduction in robberies (Domínguez, 2022).

to-face transactions. In LAC, online MSME exporters reach on average twenty foreign markets, while offline exporters only reach two to five (IDB and WEF, 2022). Digital payments may level the playing field between large and small retailers by allowing MSMEs to diversify and expand their business. Evidence from the 2020 national rollout of PIX in Brazil shows that it alleviated payment frictions that disproportionately affect small, cash-intensive firms, raising labor demand in low-skill sectors (Céspedes et al., 2024).⁷

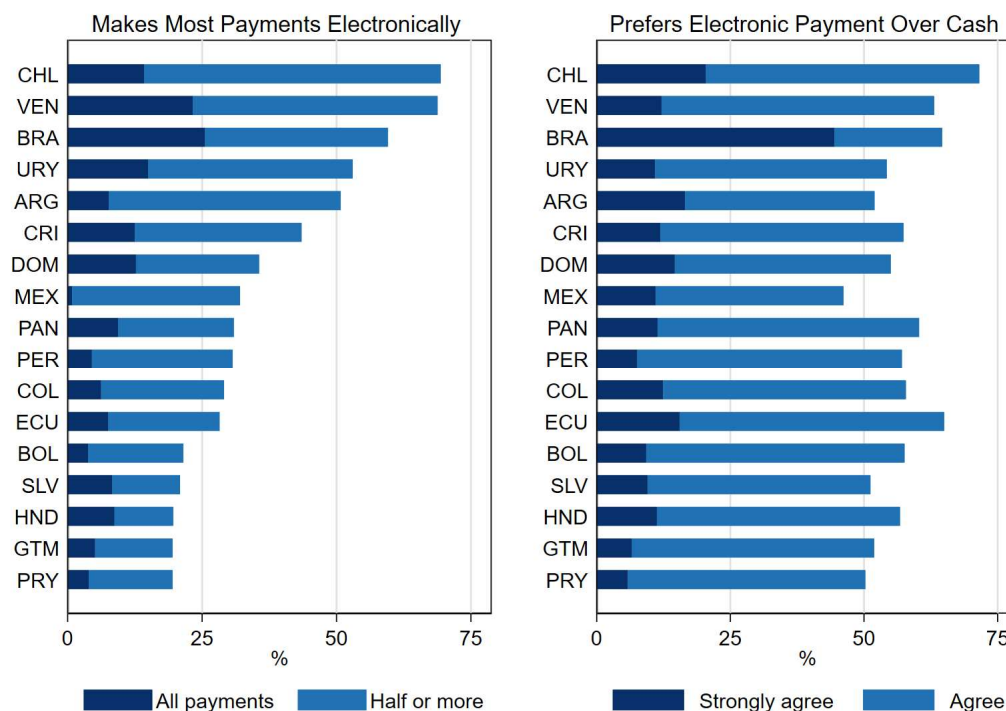
These data suggest significant progress in digital financial inclusion post-pandemic. What factors can explain these developments? Four drivers seem to have played a critical role. First, fintech innovation in LAC increased the availability and awareness of low-cost digital accounts for consumers, and acceptance by retailers and governments. The number of fintechs grew from 703 in 18 countries to 3,069 in 26 countries (IDB, 2022). Second, expanded penetration of smartphones and internet connectivity made it easier for consumers to engage with digital financial services. By the end of 2023, about 65 percent of the LAC population used mobile internet and 80 percent owned smartphones (GSMA, 2024). Third, network effects created by interoperable free real-time person-to-person (P2P) digital transfers. In some cases, these services were provided by central banks, such as PIX in Brazil or SINPE Móvil in Costa Rica, or by private-sector fintechs, such as Mercado Pago in Argentina or Yape in Peru. And fourth, prompted by the Covid-19 pandemic, many governments in the region chose to deliver financial relief through digital channels, incentivizing consumers, particularly low-income individuals, to open bank accounts or use digital wallets for the first time (Hernández Romero et al., 2024).

3. Adoption Gaps

Digital payments are an example of a two-sided market where users—consumers and firms—transact with each other and among themselves via an online platform managed by a digital provider. Two-sided markets feature network effects: as more consumers use a digital payment platform, it becomes more valuable to other consumers and merchants, and vice versa (Jullien, Pavan, and Rysman, 2021). The success of the platform hinges on its ability to attract and balance participation from both sides, consumers and firms. On the other hand, users need not adopt a

⁷ In Singapore, the introduction in 2017 of mobile payment technology by the largest bank increased firm creation particularly among small firms and industries with higher cash handling costs (Agarwal et al., 2020).

Figure 3: Consumer Use/Preference for Digital Transactions Across Countries



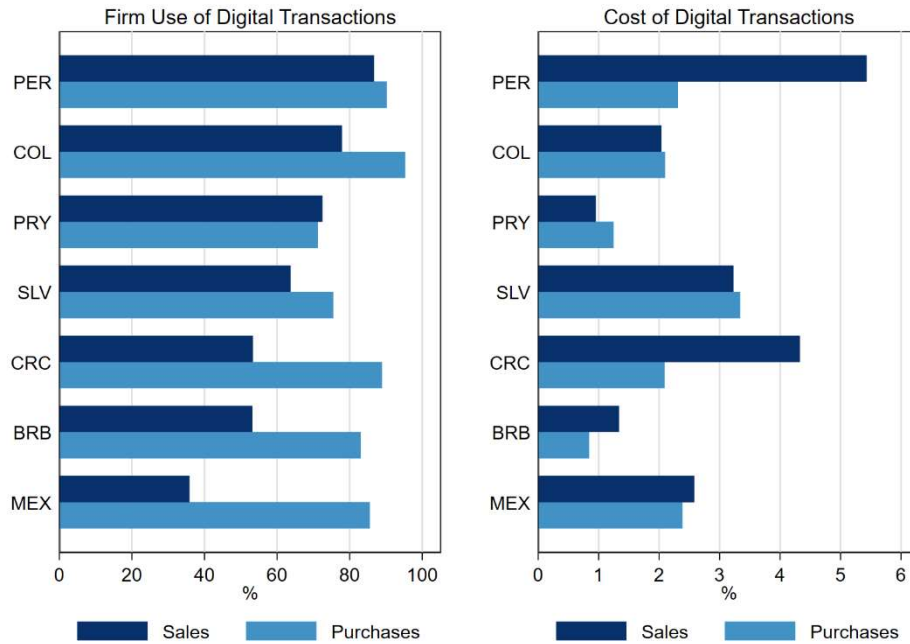
Note: Based on data from Latinobarometro 2023. Electronic payments include debit and credit cards, QR codes and other digital methods. Preference for electronic payment over cash (right panel) represents the percentage of individuals that agree or strongly agree with the statement: “Whenever I can, I choose to pay electronically instead of cash.” Sample contains 19,205 adults.

payment method to the exclusion of all others. Instead, users diversify their payment options to have the flexibility to adjust payment type to transaction context.⁸

The adoption of digital payments in LAC varies widely across countries and across demographic groups within countries. Variation across countries is due to differences in infrastructure, regulatory environments, and consumer preferences. Some regions have embraced real-time payment systems and innovative fintech solutions, driving significant growth in payment apps and digital wallets. For others, traditional methods like cash and debit cards still dominate, though digital alternatives are gradually gaining traction. Economic factors, such as inflation, have also influenced the use of cryptocurrencies in some areas. Despite rapid advancements in a few markets, challenges like uneven internet access, regulatory hurdles, and fintech market structure remain.

⁸ Evidence from a government rollout of debit cards to low-income consumers in Mexico shows significant network effects, with higher-income consumers and small retailers increasing adoption (Higgins, 2024).

Figure 4: Firm Use/Cost of Digital Transactions Across Countries

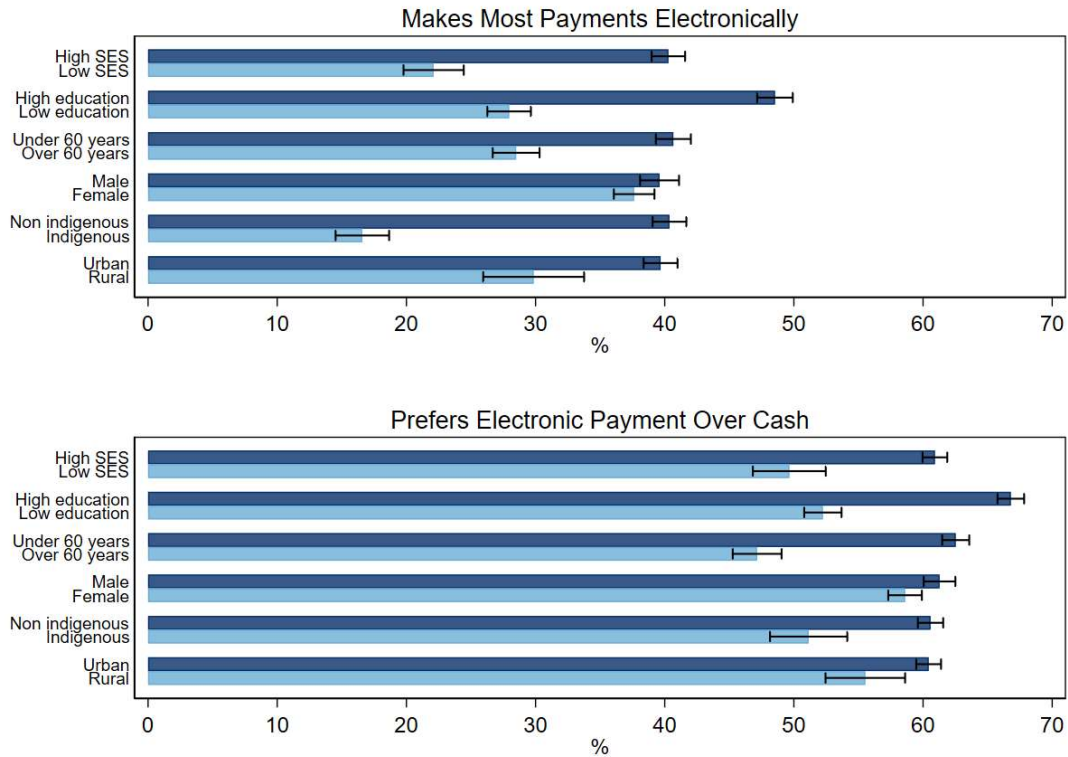


Note: Based on data from the World Bank Enterprise Survey 2023. Use of digital transactions represents the percentage of firms whose sales/purchases using digital payments (internet and mobile banking, including direct debit transfer, e-money and e-wallet, excluding mobile money), in value, accounts for the largest proportion of their total sales/purchases in a typical month. The costs of digital transactions represent the cost of accepting digital payment for sales/purchases as a % of a typical transaction.

Based on recent Latinobarómetro survey data, the left panel of Figure 3 suggests significant variation in the use of electronic payments (including digital payments) across the region. In the five countries at the top, more than half of the population makes the majority of their payments electronically, while in the five countries at the bottom that is the case for less than a quarter of the population. Interestingly, usage does not correlate with preferences for electronic payments over cash. In the right panel of Figure 3, more than half of respondents in every country except Mexico prefer to pay electronically. This suggests that consumers' payment preferences may not be the main constraint in expanding digital payments.

An alternative constraint is the level of acceptance of digital payments by firms. The left panel of Figure 4, based on the World Bank Enterprise Survey, shows variation across LAC countries in digital transactions by formal firms, both sales and purchases. Overall, it appears that digital transactions are less common for sales than for purchases, and there is more variation for

Figure 5: Consumer Gaps in Digital Payment Adoption



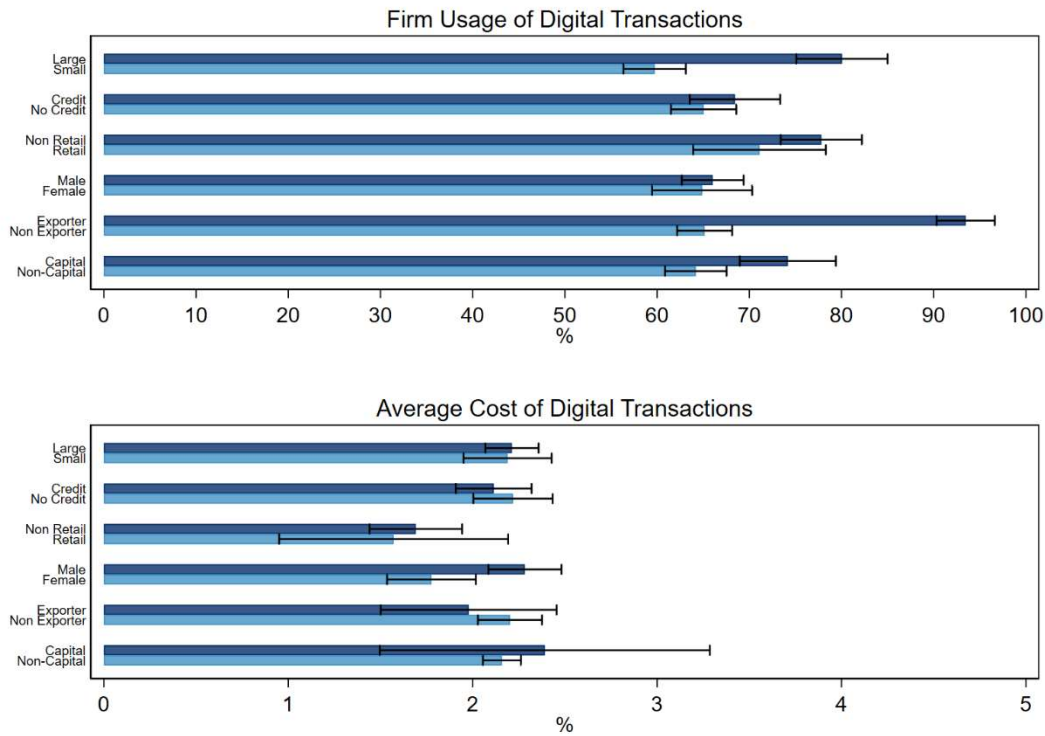
Note: Based on data from Latinobarometro 2023. For outcome variables and countries covered, see note to Table 3. High education defined as completed secondary school. High SES includes individuals whose socioeconomic level, assessed by the interviewer, is good or very good. Ranges at the end of the bars represent 95% confidence intervals.

sales. The right panel shows that digital transaction costs incurred by firms vary from 1 percent to 5 percent.⁹

Within countries, variation in digital payments adoption across consumers and firms is influenced by geographic, economic, racial, and cultural factors. Urban populations tend to adopt digital payments more readily due to better infrastructure, higher smartphone penetration, and greater access to financial services. In contrast, rural communities often face barriers like limited internet connectivity and fewer banking options, which hinder their ability to use digital payment systems. Younger generations are typically more inclined to embrace digital payments, driven by familiarity with technology and mobile apps, while older individuals may prefer traditional payment methods due to concerns about security or lack of digital literacy. Additionally, women

⁹ By comparison, Value Added Tax (VAT) rates in the region average around 15 percent, with a range between 9-22 percent.

Figure 6: Firm Gaps in Digital Payment Adoption



Note: Based on data from the World Bank Enterprise Survey 2023. For outcome variables and countries covered, see note to Table 4. Small defined as less than 20 workers. Credit includes firms that applied for a credit or loan. Female defined as 50% or more of the owners are female. Exporter if 10% or more of their sales are exported directly. Capital defined as firm located in the capital city area. Ranges are 95% confidence intervals.

and micro, small, and medium-sized enterprises (MSMEs) are increasingly adopting digital payments as they gain access to financial inclusion initiatives and tailored solutions.

Latinobarómetro survey data reveal large gaps in consumer usage of electronic payments (including digital payments) across economic, demographic, and geographic factors. Figure 5 depicts estimated gaps averaged across the 18 countries in the sample. The top panel of Figure 5 indicates that the groups that lag behind are characterized by low income and low education, old age, indigenous, and rural location. In some cases, the gaps exceed 50 percent difference. These are groups traditionally excluded from formal financial services in LAC (Credicorp, 2024).¹⁰

These data indicate that, despite more of a decade of gains in participation in formal financial services, significant gaps remain. It underscores the importance of understanding the

¹⁰ Crouzet et al. (2024) develop a formal model and report evidence of the role of age and other demographics in the adoption of mobile payments in India.

nature and causes of these gaps to inform policy action. The bottom panel of Figure 5 shows gaps in consumer preferences for electronic payments. It is notable that preference differences track usage differences, however, the gaps in preferences are less marked, again suggesting that demand for non-cash payments may not be the main constraint to broader adoption.

Turning to gaps in digital payments usage among firms in LAC, Figure 6 based on recent World Bank surveys of firms, suggests the differences are less pronounced than among consumers. The top panel of Figure 6 shows the types of firms less likely to use digital payments for sales and purchases: small firms, retail firms, non-exporter firms, and firms located outside the capital city metropolitan area. The bottom panel of Figure 6 suggests no significant differences in cost of firms' digital transactions, with the exception of female-run firms, which appear to enjoy lower costs.¹¹

4. Adoption Barriers

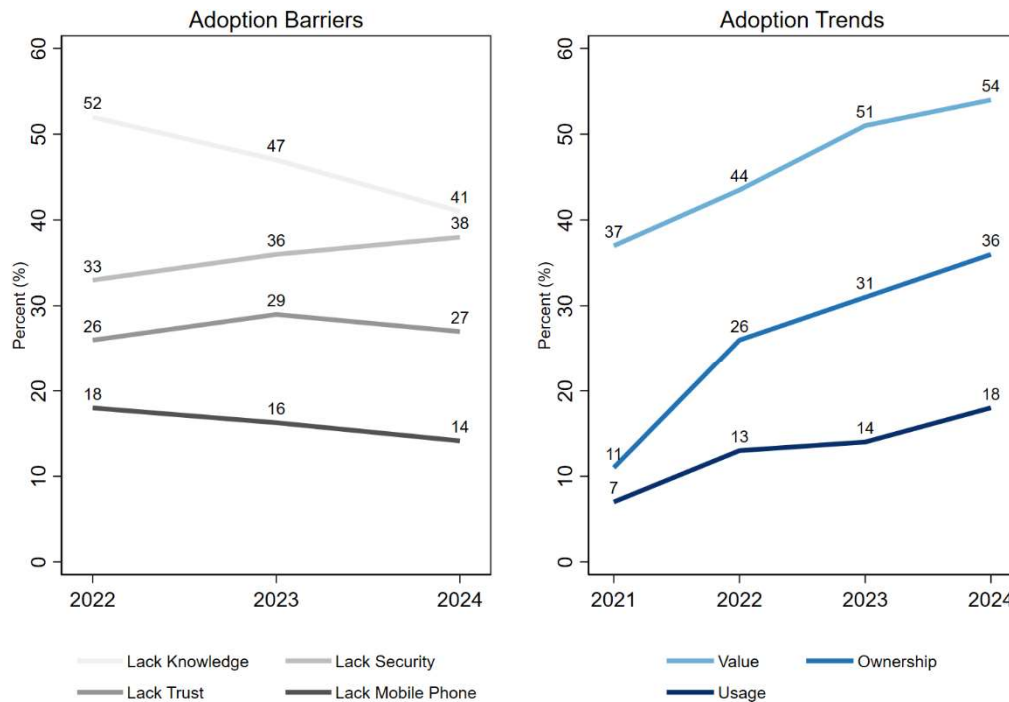
Several types of barriers may restrict the broader adoption of digital payment methods in LAC. Some barriers originate on the supply side, while others come from the demand side. Access to the necessary technology, like smartphones or reliable internet, remains an obstacle, particularly in rural or low-income areas. The direct costs associated with digital transactions, such as fees for using platforms or services, discourage adoption, as well as limited interoperability among payment services providers.

At the consumer and firm level, a significant challenge remains the lack of trust in financial institutions and digital platforms, stemming from concerns about security, fraud, and economic instability which tends to increase the demand for cash. Some of these perceptions may reflect the relative novelty of these technologies which create lack of awareness about the potential benefits and actual security of digital payments. Many individuals also face limited digital capability or financial literacy, which prevents them from understanding and utilizing digital payment systems effectively. Lastly, cultural preferences for cash and a general resistance to change further slow the transition to digital payments.

Adoption barriers, therefore, can be categorized into at least four types: technological, economic, informational, and behavioral. Technological barriers are limited supply of technology

¹¹ Small local firms, including agricultural firms, are more dependent on relationship banking built on soft information that may not always translate into digital format. A study in Brazil found that the closure of bank branches reduced establishments with active operations by up to 8 percent and formal employment by 0.5 weekly hours, with micro and agricultural firms being the most affected (Fang and Vlaicu, 2024).

Figure 7: Consumer Barriers and Digital Payment Adoption Trends



Note: Based on data from Credicorp Ipsos and GSMA. Lack of knowledge defined as not have heard of mobile wallets and digital payments apps as a financial product. Lack of security defined as hesitation of using digital payments to make transactions. Lack of trust defined as money not being safe in financial entities. Lack mobile phone defined as not owning a mobile phone. Estimate for 2024 extrapolated using the average annual growth rate of the years 2020-2023. Estimates are equal-weighted averages across eight countries: Argentina, Bolivia, Chile, Colombia, Ecuador, Mexico, Panama and Peru.

necessary for the smooth operation of digital payments, such as connectivity infrastructure, reliable financial networks, or financial software applications for smartphones. Economic barriers are the costs and fees associated with adoption and use of digital payments. Informational barriers are limited awareness about available new digital payments options and knowledge about how to use them. Finally, behavioral barriers are status quo bias due to habit formation, biased perceptions, and lack of trust in either the payment technology itself or the banks and fintechs that provide it.

Examining recent data helps shed further light on these factors to better delineate the nature of adoption barriers. Data from Credicorp Ipsos Peru based on consumer surveys conducted in eight countries in the region yearly after the Covid-19 pandemic provide an opportunity to examine trends in factors that may hinder consumers from using digital payments. The left panel of Figure 7 shows trends in potential barriers for the period 2022-2024. In terms of levels, lacking a mobile

Table 2: Top Barriers to Adopting Digital Payments

Consumer Barriers	
Lack Need/Interest Using Phone for Financial Transactions	51%
Don't Trust the Digital Payment Format	28%
Don't Understand/Know How to Use Technology	15%
Not Enough Phone Data	7%
Businesses Do Not Accept Phone-Based Payments	7%

Note: Based on survey data from Mastercard PCMI (2024). Percentages reflect respondents who select a given reason why they are not using a mobile phone to pay for services or to send or receive money. Sample consists of 1,848 individuals. Estimates are equal-weighted averages across six countries: Argentina, Brazil, Chile, Colombia, Mexico, and Peru.

phone is the least stringent barrier, affecting under 20 percent of the population, whereas lack of knowledge is the most common, affecting over 40 percent of the population. Perceived lack of security of digital transactions and lack of trust in financial institutions are relevant to about 30 percent of the population. In terms of trends, a steep decline of more than 10 percentage points is noticeable in the knowledge barrier. The phone ownership barrier has also relaxed over time. On the other hand, concerns about digital security and financial institutions appear more persistent.

These barriers notwithstanding, there is clear growth in adoption and usage, supported by strong positive trends in the value consumers associate with payment apps and mobile wallets. See the right panel of Figure 7. Ownership of these forms of payment has increased more than threefold, from 11 percent in 2021 to 36 percent in 2024. About half of those who have these tools on their smartphone also use them regularly. The positive trend appears in every country in the study. At the same time, sizable differences in adoption across countries should be noted. As of 2024, Argentina (65 percent) and Panama (63 percent) lead in adoption of digital wallets, whereas Chile (20%) and Mexico (11%) are at a considerably lower level of digital wallet adoption, instead leading in the adoption of debit cards.

Other surveys ask consumers directly the reasons why they do not take advantage of digital payments technology. In 2024, Mastercard conducted a survey in collaboration with PCMI in six countries in the region. The results are presented in Table 2. The top three reasons given for not using a mobile phone for financial transactions such as payments and transfers were lack of interest, lack of trust in the digital payment format, and lack of understanding and knowledge of the workings of the payments and transfers technology.

Consumer concerns about digital account and transaction security are not unfounded. Financial fraud is an ongoing problem in LAC, estimated at 20 percent of total e-commerce revenue by Mastercard, the second highest among world regions after Asia. Consumers are more exposed to account takeover (ATO) fraud and have fewer mechanisms for dispute resolution with digital payments than with cards. In 2022, 44 percent of ATO victims were defrauded up to five times, and ATO attempts increased 131 percent during that period. With real-time payments a common scam is the authorized push payment (APP) where fraudsters use social engineering to nudge the victim to initiate a payment. Brazil reported losses to APP scams of 1 percent of PIX e-commerce. Balancing the tradeoff between payment speed and fraud prevention is an ongoing challenge for platforms and regulators.¹² On the positive side, a secure digital payments infrastructure can enhance the security of government to person (G2P) payments of social benefits. An evaluation of India's transition to digital transfer payments found that it significantly reduced leakage from two large antipoverty programs (Muralidharan et al., 2016).

Turning now to the firm side, region-wide surveys of firm barriers to digital payments adoption are not available. Future survey research on this question could be valuable. The vast majority of firms in the region are in the MSME category. These firms face several barriers to adopting digital payments. Reliable access to mobile broadband or payment hardware like POS terminals or QR readers may not be readily available or may be cost prohibitive. As in the case of consumers, awareness of available financial services and the knowledge to use them is as important as access to infrastructure. Entrenched mistrust in the formal financial system and informality can lead merchants to miss opportunities to digitalize their business, establish an online presence, or upgrade their current operations. Firms may also face behavioral barriers, such as present bias and limited memory. An intervention in Mexico where firms received reduced-cost offers to adopt digital payments through a private fintech found that reminders increased take-up by 15 percent on average, and deadlines increased take-up by 8 percent for smaller firms (Gertler et al., 2025).

Overly strict and cumbersome know-your-customer (KYC) requirements are another barrier to MSME participation in the digital financial system. As a standard due diligence process, KYC requires banks to verify the identity and assess the risk factors associated with opening accounts for prospective client firms. KYC processes in the region rely on in-person, paper-based

¹² Artificial Intelligence (AI) capabilities to create deep fakes posing as real people and opening fake accounts may further complicate efforts to rein in digital fraud.

formalities, which can be a barrier to firms operating in rural areas or to self-employed individuals who may not have government-issued identification or knowledge and skills to fill out long paper forms (IDB and WEF, 2022).

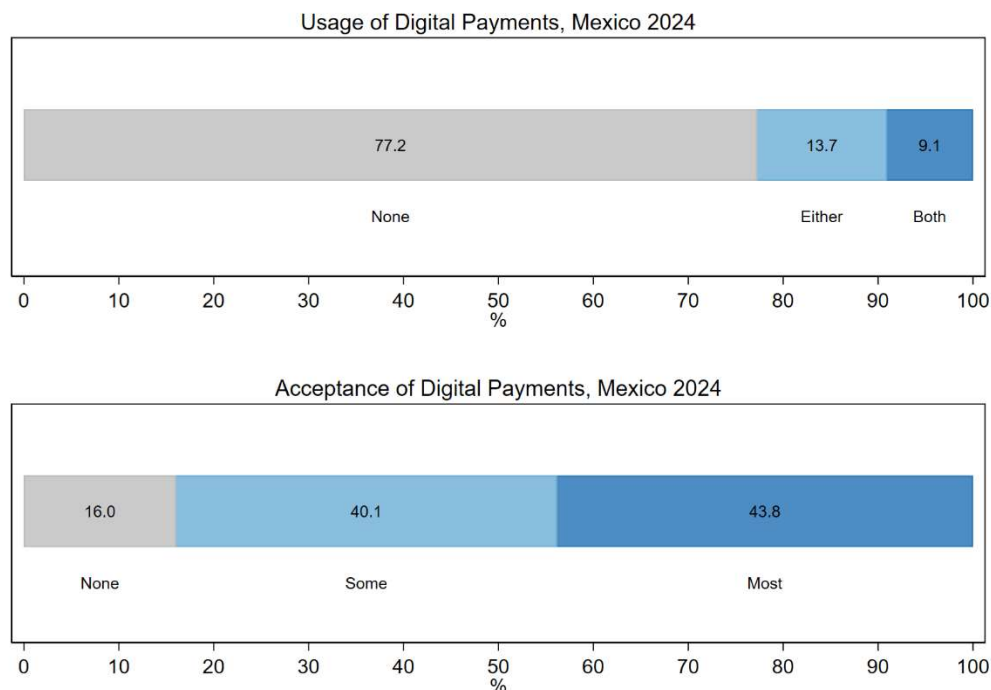
A lack of internationally recognized standards like the ISO messaging standards and EMVCo can add friction to transactions, increasing costs for merchants and reducing adoption. For example, the Mexican QR payment framework CoDi uses domestic standards rather than EMV international standards, which likely contributed to low adoption by nonbank institutions and MSMEs. In the Caribbean, weak interoperability between digital payments systems has sustained the continued preference for cash. For example, money can be held virtually in a mobile account or even a digital wallet, but the framework is not yet in place to allow for the easy transfer from these types of accounts to a debit or a credit card account (Marius, 2021).

5. Case Study: Demand for Digital Payments in Mexico

To better understand the characteristics of the slow adopters and the reasons that delay their inclusion in digital payments, this section presents a more detailed analysis of the latest microdata from Mexico. This is an interesting case because Mexico is one of the largest and most diversified economies in LAC, featuring vibrant tech and financial sectors, yet broad-based digitalization of payments has been relatively slow and uneven. The datasets employed in this section are nationally representative surveys of household income (ENIGH), financial inclusion (ENIF), and information technology access (ENDUTIH).

Mexico's digital payments ecosystem has undergone significant transformations in recent years, driven by technological innovation, government interventions, and the fast expansion of online commerce. Mexico's fintech sector features nearly 1,000 companies. Over the past five years, the domestic sector has witnessed impressive growth, with a notable compound annual growth rate of 18.4 percent in the number of startups. In addition, the central bank developed two public real-time payment systems. CoDi (Cobro Digital, launched in 2019) is a QR (quick response) code-based system designed to facilitate small transactions. DiMo (Dinero Móvil, launched in 2023) simplifies person-to-person (P2P) and business-to-business (B2B) transfers by linking bank accounts using smartphone numbers. Mobile wallets and blockchain technologies are also gaining traction. Mexico has the second-largest online marketplace, after Brazil, and its

Figure 8: Digital Payment Usage by Consumers and Acceptance by Firms



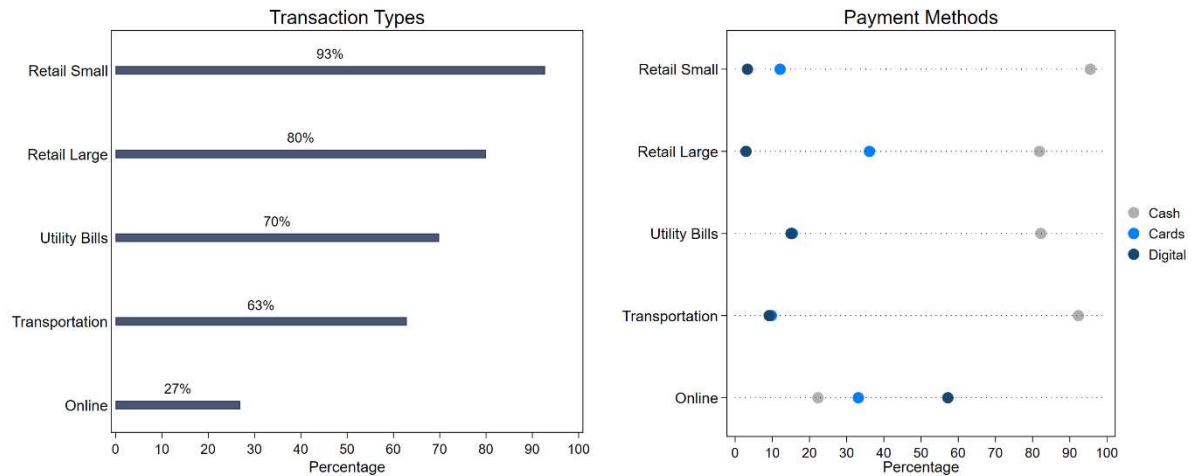
Note: Based on data from Encuesta Nacional de Inclusión Financiera (ENIF) 2024 Mexico. Usage of Digital Payments is percentage of individuals who pay digitally for either in-person or online purchases in the last three months before the survey. Acceptance of Digital Payments is the percentage of individuals that report that most (all or almost all), some (some or a few) or none (none or doesn't know) of the businesses where the individual regularly shops accept digital payments. Sample size for usage: 13,122 households. Sample size for acceptance: 13,502 households.

growth is helping to reduce cash dependence, as more consumers embrace online shopping and digital payment options.

Despite these advancements, digital payments penetration remains lower in Mexico than in countries at similar levels of economic development. According to ENIF 2024, cash is still the preferred payment method for the majority of consumers, and about 37 percent of Mexico's population lacks a bank account. This reliance on cash underscores the need for accessible, affordable, and safe financial services, particularly in rural and low-income areas.

Consumer adoption of digital payment methods in Mexico is below the average for the LAC region. The top panel of Figure 8 shows estimates of the percentage of the population that used digital payments for either in-person or online purchases, or both, in the last three months before the survey. Less than a quarter of the population, about 23 percent, reported being users. The bottom panel of Figure 8 presents the percentage of the population reporting that businesses

Figure 9: Forms of Payment for Different Transaction Types, Mexico 2024



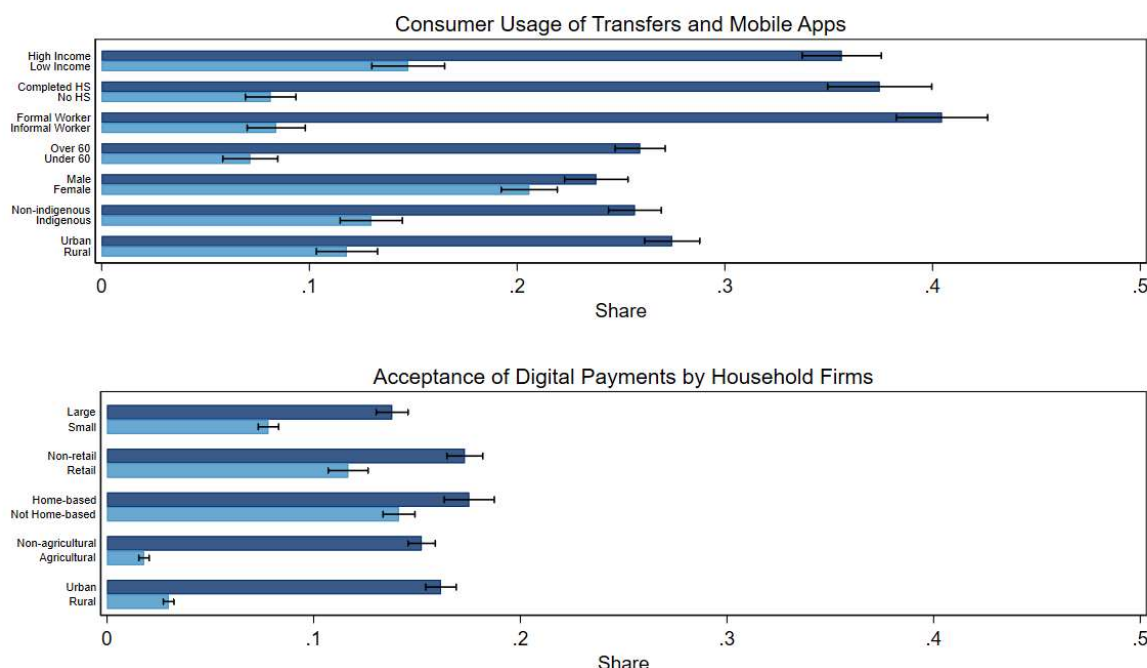
Note: Based on data from ENIF 2024. Left panel shows the percentage of individuals who made a payment in any given category. Small retail includes local markets, butcher shops, hardware stores, beauty salons, etc., while large retail includes supermarkets, department stores, pharmacies, etc. Transportation includes both private and public services, including taxis, Uber, Didi, metro, bus, etc. Online shopping consists of purchases made on mobile phones or through the internet on sites such as Amazon, Mercado Libre, Shein, etc. Cards reflects physical use of debit or credit cards. Digital payments consist of electronic transfers or mobile apps. The sample consists of 13,502 individuals responding on behalf of their household. Estimates are weighted using nationally representative individual weights.

where they regularly shop accept digital payments. For about 44 percent of the population, merchant acceptance is common, and for another 40 percent digital payments are accepted by at least some of the businesses where they shop. From these data, it appears that merchant acceptance may not a binding constraint.

Consumers may prefer to use digital payments for particular types of transactions, thus penetration may differ depending on where the transaction takes place. The left panel of Figure 9 shows the prevalence of different types of transactions in Mexico. Retail purchases are the most frequent, particularly in small stores, followed by utility bills and transportation payments. Online shopping is a frequent transaction for less than a third of respondents.

The right panel of Figure 9 shows that cash is still the most common payment form for in-person transactions (first four categories). However, debit and credit cards also have significant usage at large retailers (second category), and digital payments are more common for paying utility bills (third category). For online shopping, digital payments surpass cards and cash; almost 60 percent of respondents report usage. As more commercial activity is moving online, it is expected that digital payments adoption among consumers will expand, with potential spillover effects to in-person transactions.

Figure 10: Gaps in Digital Payments Adoption, Mexico 2024



Note: Based on data from Encuesta Nacional de Inclusión Financiera (ENIF) 2024 and Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH) 2022 Mexico. Top panel shows share of each subgroup that made a payment using a transfer or mobile app in the three months prior to the survey. Bottom panel shows the share of household firms that accept transfers, direct deposits, or mobile payments. High-income individuals are those above the median; formal workers are those with access to healthcare plans through their employment; under 60 refers to individuals aged 18–59; and rural areas are those with under 15,000 population. ENIF sample consists of 13,502 individuals responding on behalf of their households. Estimates weighted using nationally representative individual weights. Large firms are those within the top three deciles of expenditure in the past trimester; non-retail household firms are non-agricultural industrial or service firms; and rural areas are those with fewer than 2,500 people. ENIGH sample consists of 41,110 household firms. Estimates weighted using individual weights for firm owner. Ranges are 95% confidence intervals

Digital payment adoption among Mexican consumers is low on average, representing less than a quarter of the population, as shown in Figure 8. Adoption, however, differs markedly across economic and demographic characteristics. Figure 10 presents gaps in digital payment adoption for consumers, in the top panel, and for firms, in the bottom panel. For consumers, low adoption is associated with low socio-economic status, low education, informal employment, elderly, female, indigenous, and rural location.

For small firms, low acceptance of non-cash payments (including digital payments) is associated with small size, retail sector, non-home based establishment, agricultural activity, and

Table 3: Top Barriers to Digital Payment Adoption in Mexico

Consumer Barriers		Firm Barriers	
Prefers to Do It in Person	53%	Doesn't Believe It Necessary	57%
Not Interested or Doesn't Need It	15%	Size of the Business	27%
Doesn't Know How to Do It	13%	Lack Knowledge about Options	6%
Distrusts the Security of the Process	12%	Distrusts Payment Methods	4%
Lacks Card or Online Banking Services	5%	Lack of Infrastructure or Devices	2%

Note: Based on survey data from ENDUTIH 2023 in the first column, and ENIGH 2022 in the second column. First column reports the percentage of respondents who listed the option as the main reason for not making payments online. Sample contains 24,473 individuals 18 or older. Estimates weighted to be nationally representative. Second column reports the percentage of firms stating their main reason for not accepting non-cash payments. The sample consists of 36,556 household firms. Estimates weighted using the nationally representative household weights.

rural location. As is evident from the figure, some of the gaps exceed 50 percent difference. Agricultural and rural firms have some of the lowest rates of acceptance, at less than 5 percent.¹³

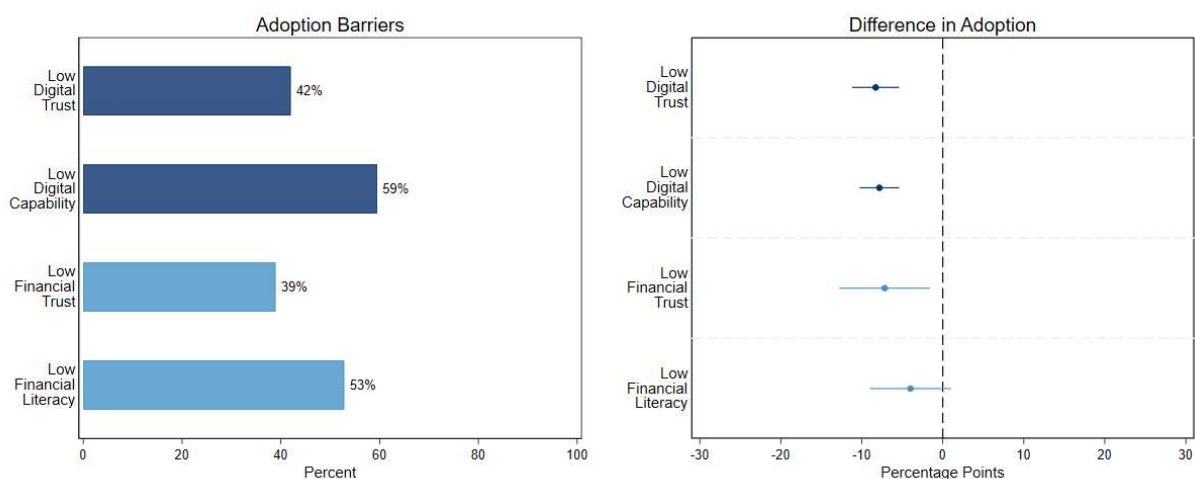
A better understanding of the nature of these gaps can be gained by examining survey questions where respondents reporting not using digital payments are offered the opportunity to explain the reasons for this choice. The technology access survey ENDUTIH contains such a question. The answers are tabulated in the left column of Table 3. The reason selected by more than half of respondents is a preference for in-person payment. Other common reasons are lack of knowledge and concerns about the security of the payment process.

Reasons for non-adoption among small household firms are presented in the right column of Table 3, based on the national household survey ENIGH. More than half of small business owners do not see digital payments as necessary. About a quarter of respondents point to the size of their business as the main reason. As for consumers, lack of knowledge and lack of security are mentioned as reasons as well. Only 2 percent of small business owners attribute their decision to a lack of infrastructure or devices.

Two recurring themes seem to emerge from survey questions about adoption barriers: lack of trust in the security of the digital format and lack of knowledge about new tech-based financial products; see also Figure 7 and Table 2 above, based on multi-country surveys from the region. It would be useful to quantify the magnitude of these factors in the adoption decision. Given the

¹³ An analysis of factors behind digital payment adoption in Peru, using pre-pandemic (2015-2018) national household microdata, finds similar factors associated with low adoption, and two with high adoption: 25–40-year-old group and location in area with high density of financial institutions (Aurazo and Vega, 2021).

Figure 11: Barriers to Using Digital Payments Online, Mexico 2024



Note: Based on data from ENDUTIH 2023 for the digital outcomes and ENIF 2024 for the financial outcomes. Low digital trust refers to individuals who in the past three months have not searched online for health information. Low digital capability refers to individuals who in the past three months have not downloaded software or apps. The sample consists of 46,535 individuals aged 18+. Low financial trust refers to individuals who consider that their money would not be safe in a bank or financial institution. Low financial literacy defined as answering correctly two or less out of four financial literacy questions. The sample consists of 13,502 individuals responding on behalf of their households. Estimates weighted using nationally representative individual weights. In both surveys, digital payments for transactions conducted via transfers or mobile apps. Ranges in the right panel are 95% confidence intervals

available data, this question may be easier to address for the consumer sector, although see the research by Gertler et al. (2025) quantifying behavioral constraints for firms.

The recent technology access survey ENDUTIH 2023 and financial inclusion survey ENIF 2024 from Mexico provide measures of trust and knowledge about both digital and financial products. Using variables from the technology survey, one can define “digital trust” as consumers’ reliance on information available online, and “digital capability” as the ability to download new apps and software from the Internet. Using variables from the financial inclusion survey, one can define “financial trust” as confidence in the safety of depositing money with banks and other financial institutions, and “financial literacy” as knowledge about basic financial concepts such as inflation and compound interest. The left panel of Figure 11 shows the significant prevalence of low digital trust and low digital capability among Mexican consumers (the dark blue bars) and similarly common prevalence of low financial trust and low financial literacy (the light blue bars).

To what extent do trust and informational factors hinder consumers’ adoption of digital payments? A simple correlational analysis shows that these types of adoption barriers are associated with 5-10 percentage points reduction in usage of digital payments for online

transactions. This is shown graphically in the right panel of Figure 11. Given that about 60 percent of Mexican consumers who make online transactions use digital payments (see Figure 9), the non-adoption associated with low trust and information suggest that they are important moderating factors. Lack of financial trust particularly affects low-income consumers. Data from the World Values Survey shows that in Mexico 71 percent of respondents with less than a primary school education report low trust in banks (Garz et al., 2021).¹⁴

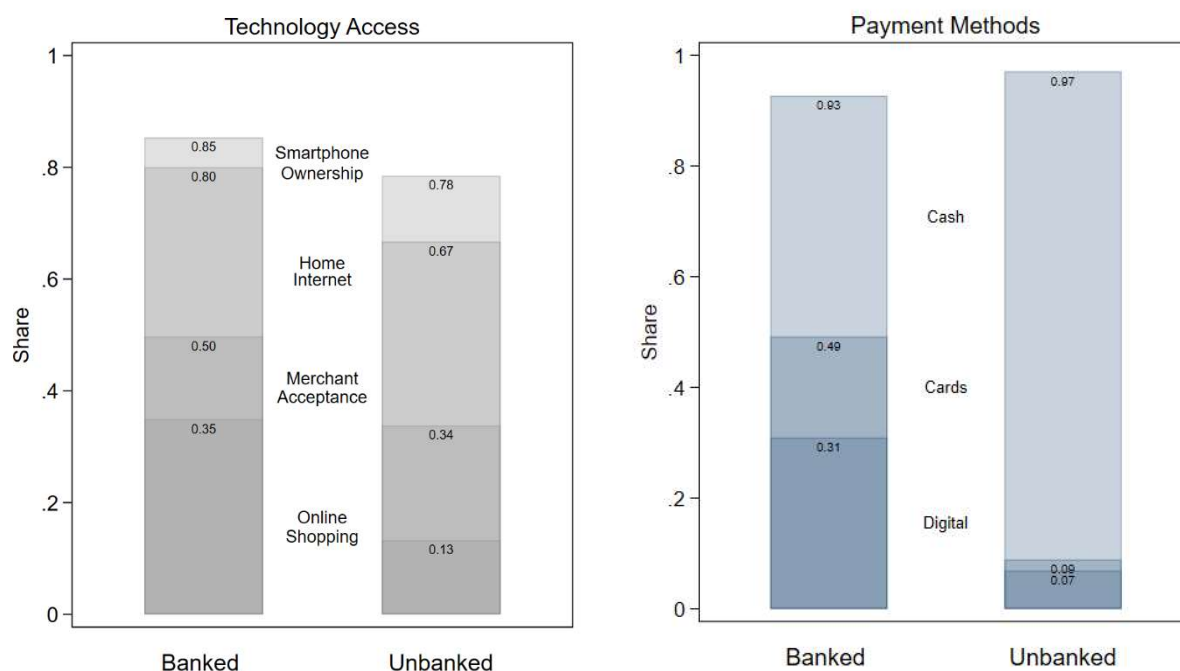
Digital payments have been proposed as a technology solution for the “last-mile problem” of reaching the unbanked, who lack access to bank services or branches due either to high costs or remote location. The fintech solution is to offer nonbank transaction accounts that can be opened online and are more affordable than traditional bank accounts as they do not require maintaining a physical infrastructure. Consumers would fund their nonbank accounts through direct deposit and use balances to make purchases using a physical card, a digital wallet, or a payment app. To what degree do the unbanked take advantage of digital transaction accounts as a substitute for traditional bank accounts? Data from Mexico can help shed light on this question.

The financial inclusion survey ENIF allows a side-by-side comparison of payment methods used by the banked versus the unbanked. The estimates are presented in the right panel of Figure 12. Several observations can be made. The unbanked are only marginally more likely to use cash for purchases, 97 percent versus 93 percent. On the other hand, the unbanked are five times less likely to use debit and credit cards, and four and a half times less likely to use digital payments. It appears that non-cash payments like cards and apps serve as complements rather than substitutes for the banked. At the same time, they are mostly avoided by the unbanked.

Unbanked consumers in Mexico, therefore, do not seem to internalize the full benefits of recent technological innovations in digital payments. Perhaps the unbanked have lower access to the Internet and digital devices. While there does appear to be a technological divide between the banked and the unbanked, the magnitudes cannot fully explain the digital payments adoption gap. The left panel of Figure 12 compares technology access and use by the banked versus the unbanked. Smartphone ownership is only slightly lower for the unbanked, and home internet is somewhat lower, while merchant acceptance and online shopping are about half as common among

¹⁴ Using digital tools for payments also raises the issue of cognitive accessibility when interacting with new technologies. In this respect, at-risk populations are older adults and people with neurodiverse needs who require more human support (Dai et al., 2023).

Figure 12: Technology Access and Payment Choices by Banked Status, Mexico 2024



Note: Based on ENIF 2024. Left panel shows share of individuals who own a smartphone, those who report that all or almost all the stores they frequent accept transfers or card payments, and those who have made an online purchase via mobile phone or the internet. Right panel shows the share of individuals who reported making a payment with cash, a debit or credit card, or a digital method (transfer or mobile app) in the past three months for retail, utilities, transport, or online purchases. Banked individuals are those with an account at a financial institution. Sample consists of 13,502 individuals responding on behalf of their households. Estimates were weighted using nationally representative individual weights.

the unbanked. Thus, differences in technology choices are noticeably lower than differences in payment choices. Something about cash, perhaps anonymity or physical possession or habit formation, may be making it more attractive to the unbanked than existing financial products aiming to close the digital divide in payments. Another possibility is that it is correlated with the decision to keep transactions informal. Further research is needed to understand the underpinning of cash dependence by the unbanked.¹⁵

6. Policy Considerations

The use of digital technologies for making and receiving payments, such as digital wallets or payment apps provided by banks and fintechs, is becoming increasingly common among consumers and firms in the LAC region, extending the increases seen during the Covid-19

¹⁵ Evidence from the 2014 financial inclusion reform in Uruguay that incentivized the use of electronic payments shows that tax compliance by firms was unaffected (Brockmeyer and Sáenz Somarriba, 2025).

pandemic. Despite the overall positive trends across the region, significant disparities remain between countries as well as within countries, particularly for disadvantaged or vulnerable groups such as rural communities, independent workers, senior citizens, indigenous peoples, and small businesses. The data and research presented in this paper indicate that four main types of barriers may prevent broader inclusion of underserved groups in digital payments across the LAC region: technological, economic, informational, and behavioral.

Addressing these barriers effectively is important both for providing equitable access to economic opportunities in an increasingly digitalized economy and for supporting economic growth through the efficiency gains of a more frictionless payments system. Closing digital payments adoption gaps requires policy solutions at macro and micro levels, and from the public and private sectors (Annan et al., 2024). Policy makers, regulators, and financial services providers all can play important roles in shaping the digital payments ecosystem (Garz et al., 2021).

Digital connectivity has advanced considerably in LAC, nevertheless it is not nearly close to universal. In Mexico, for example, 22 percent of unbanked consumers do not own a smartphone and 33 percent do not have home internet access; see Figure 12 above. Expanding and enhancing mobile and particularly broadband internet in underserved areas remains necessary for increasing access to digital payments in LAC. Governments could collect data to conduct broadband mapping to identify areas with high infrastructure needs. They may connect libraries and other community anchor institutions to provide public access to broadband internet. Investments in digital infrastructure can be incentivized through public-private partnerships, or competition may be promoted in the mobile data services industry, ensuring network affordability and reliability (Puig Gabarró, 2021). The costs of purchasing a smartphone and the monthly data plan service charges can be made more affordable by regulating competition in the telecom sector.

Disadvantaged or vulnerable groups may also adopt digital payments more slowly due to weak economic incentives. According to the data presented above, for the average user time savings and efficiency are powerful motivators for the adoption and consistent use of digital payment services, as they alleviate common daily inconveniences associated with handling cash or with traditional banking. Some consumers and firms, however, still perceive significant costs of adoption: either the fees associated with digital transactions, or the lack of adoption by other consumers or firms they typically transact with.

In LAC, digital financial services tend to be bank-centric and characterized by low competition and high costs for financial consumers. A World Bank (2020) study on competition in retail banking services in LAC found evidence of high and growing market concentration.¹⁶ Government regulations such as licensing and capital requirements or data and reporting rules enhance security and address privacy concerns but have the unintended consequence of creating market access barriers. Fintech start-ups may not have the capital or personnel needed to meet all regulatory requirements. Open access to payment infrastructure is necessary to foster competition and innovation. Bank and nonbank payment providers using the same payment rails would compete on an equal footing to increase quality and reduce costs of user-facing applications (IDB and WEF, 2022).

Slow adopters may also have weak economic incentives when the consumers or firms they transact with are not adopting either. A digital payments network is a two-sided market in which users benefit only when their counterparts also use the payment platform. In this type of market, adoption decisions can be subject to coordination failures. Strategic complementarities can lead to suboptimal outcomes and multiple equilibria in adoption of person-to-person (P2P) payments, as individuals wait for others to adopt before doing so themselves (Alvarez et al., 2023). Consistent with this model, transaction-level data on a P2P payment app developed by the Central Bank of Costa Rica shows that changes in the share of peers in the network are associated with changes in the intensity with which users in that network use the app. Targeted policy interventions can be implemented to mitigate coordination failures by encouraging early adopters to kickstart the adoption process. Positive spillover effects resulted from a large-scale government program that distributed one million debit cards to poor households in Mexico. Small retail firms on the supply side adopted point-of-sale terminals to accept card payments, which in turn triggered a positive knock-on response in card adoption among consumers on the demand side (Higgins, 2024).

Payment services providers could also use customization to improve user experience (UX) and make payment products more beneficial to users. It may be possible to leverage comprehensive data-driven insights to develop financial solutions that dynamically adapt to consumer needs.

¹⁶ Empirical evidence suggests that higher bank market shares are correlated with less competitive pricing in retail products (Beck et al., 2006). Real-time payment systems may increase competition for deposits among large and small banks (Sarkisyan, 2024).

Tailored solutions that address specific segment needs and lifestyles offer the potential to enhance product relevance and usability (Mastercard PCMI, 2024).

Informational barriers reflect lack of familiarity with using digital devices or lack of awareness of new payment products. Digital capability and financial literacy can be built through education or experience. Traditional passive educational approaches, however, have proven insufficient for meaningful financial literacy building. Instead, financial education strategies must evolve towards more interactive, engaging, and embedded experiences (Attanasio et al., 2019). Providers could seamlessly integrate financial education into their products and services, allowing consumers to learn and practice financial skills organically as they manage their finances. This approach not only enhances financial literacy but also builds consumer confidence in managing digital financial tools. Gamified methods and intuitive educational interventions, embedded subtly into daily financial interactions, may further solidify financial literacy skills (Araya et al., 2019).

Repeated use of digital payments builds experience over time, which in turn can lead to better-informed users: individuals with more experience rely less on agents and are charged lower transaction fees (Breza et al., 2020). Whether accumulated consumer experience spills over into new transaction modes is an important avenue for future research, particularly how consumer experience with P2P transfers affects their willingness to engage in person-to-business (P2B) and person-to-government (P2G) digital payments.

Digital payments can be subject to fraud and errors, with negative consequences for user trust. One approach to increasing payments security is by promoting competition among providers. Empirical evidence is lacking, however, on the impact of market competition on fraud mitigation in digital payments services. In designing a payments ecosystem, it would be useful to know if consumers and firms put more trust in public providers, e.g., a central-bank fast-payments system, or in private providers. Other approaches include stronger regulatory oversight, user complaint systems, and public provision of transparent and real-time information about fraud incidence. Low trust in financial institutions by disadvantaged groups may be overcome in some cases through education. In Peru, a randomized evaluation of a 3-hour training session designed to build trust in financial institutions for beneficiaries of a conditional cash transfer program found a 33 percent increase in trust and a lengthening of deposit periods in a public bank (Galiani et al., 2022). Similar interventions can be tested for effectiveness in building trust in private fintech providers.

These policy solutions, implemented collaboratively by policymakers, regulators, and financial services providers, can contribute to alleviating remaining barriers and pave the way for deeper, sustained payments inclusion throughout Latin America, ultimately fostering greater economic resilience, opportunity, and growth.

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