



# PropTech in Latin America and the Caribbean.

HOW TECHNOLOGY CAN HELP  
REDUCE THE HOUSING DEFICIT

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# 1. Prologue

We started this study by questioning if specific business models that applied technology to the real estate market could help reduce quantitative and qualitative housing deficits, market fragmentation in affordable housing provision, and inequality in the access to adequate and affordable housing and housing finance.

We acknowledge the widespread concern that disruptions created by technology have not yet benefited middle- and low-income households but have rather made an already noninclusive real estate market more inequitable. Housing specialists feared that innovation driven by investors' appetite for tangible goods and fixed assets exacerbated inequality in access to housing in the region and failed to address issues such as lack of transparency, high transaction costs, low mortgage financing, and tedious landlord requirements. However, this report aims to challenge that line of thinking. For this, we needed to understand the current landscape of technological innovation in housing and its applications to address the identified housing deficits.

With this in mind, we began this study with the aim of identifying new business models that could positively impact housing challenges in the region, with a particular focus on the poor or vulnerable populations.

With this approach, we found that even if housing markets are increasingly complex – with its multiple actors (developers, finance providers, buyers, and renters) and its varied challenges regarding accessibility, affordability and sustainability– there are still many opportunities for responding to them by developing new business models that leverage technology.

As the housing market in Latin America and the Caribbean (LAC) continues to change, this exploratory study reveals several emerging trends that offer insight to those thinking about digital transformation in the housing and real estate sector and serve as the foundation for more research.

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# 2.

# Introduction

Although often viewed as a commodity, housing is first and foremost a safety net and a human right. Furthermore, adequate housing is not merely a physical structure. According to the United Nations Committee on Economic, Social, and Cultural Rights, adequate housing is one that provides sufficient privacy, space, security, lighting and ventilation, basic infrastructure, and location concerning work and basic facilities, all at a reasonable cost (Office of the United Nations High Commissioner for Human Rights & UN HABITAT, 2009).

The Covid-19 pandemic and the strict lockdown measures that many Latin American and Caribbean countries imposed as a result only exacerbated the importance of housing for the health and wellbeing of individuals and families (Habitat for Humanity, n.d).

Moreover, in the face of changing climatic conditions, adequate housing must also withstand changing temperatures and a higher overall incidence of natural disasters. Both the frequency and reoccurrence of climate-related catastrophes have made housing less accessible and affordable in places prone to disasters, and this instability will only continue to aggravate in regions vulnerable to climate-related disasters.

Furthermore, the evolution of housing and real estate markets is central to global climate change mitigation efforts. The global real estate industry, which consumes 40% of the world's energy and generates 40% of greenhouse emissions, faces enormous environmental challenges (World Economic Forum, 2016)(UNEP, 2022).

Despite the importance of housing, the real estate market nowadays is still rife with inefficiencies, including complex and bureaucratic processes, asymmetric information, and high entry barriers. Due to the mismatch between supply and demand and limited affordability, housing shortages often emerge, and informal markets arise.

This is especially pervasive in Latin America and the Caribbean (LAC), a region with high quantitative and qualitative housing deficits, a rapidly growing urban population, and low penetration of financial services. All these factors exacerbate market inefficiencies, creating vast opportunities for innovation.

Given this context, this report aims to map the actors and trends that apply information technology and platform economics to housing real estate markets in LAC.

This report is divided into four sections. The first section outlines the basics of property technology or PropTech. The second section delves into the importance of tech innovation for addressing LAC housing challenges. The third section evaluates the findings of the research, current trends, and areas in which PropTech players are most active. The final section explores how the IDB Group, as a strategic partner of the public and private sectors, can support the expansion of PropTech solutions to produce a more inclusive real estate market in LAC. Lastly, the conclusions outline further analyses needed to make the most of the sector's possibilities for growth.

The information was collected from secondary sources and interviews with entrepreneurs. This mapping is not exhaustive and does not claim to be fully representative of the ecosystem of actors. Rather, the report aims to present a snapshot of private-sector initiatives that, supported by new technologies, are addressing current problems in the housing and real estate industry. The purpose of IDB Lab is to create a portfolio centered on housing inclusion with a special focus on technological innovation, advancing the IDB Group's mission to improve lives in the region.



# 3.

# What is PropTech?

PropTech, short for property technology, refers to technological innovations that disrupt the real estate industry. Therefore, it includes all types of business models and applications that utilize technology, such as software, hardware, artificial intelligence, and virtual reality, to streamline and replace traditional industry processes.

PropTech startups are companies with a high potential for growth that aim to develop new business models and technology and apply them to the real estate market. These companies are usually backed by venture

capital, a form of high-risk equity financing attributed to companies with potential for long-term growth.

PropTech is reshaping how property is bought, sold, leased, designed, financed, managed, and marketed. This study utilizes a broad definition of PropTech, including most phases of the housing value chain, from the unit's supply side (land, construction, access to essential services, and home improvement) to the demand side (financing, renting, buying, selling, and commercializing units).



# 4.

## Why is this Relevant to LAC?

The world is facing a global housing crisis as more than 1 billion people living in cities across the globe live in substandard housing without clean water or proper sanitation (UN HABITAT, 2020). Thus, although the adequate housing shortage is not specific to LAC, some region-specific factors make it especially critical for the region.

LAC's housing shortage is two-fold: qualitative and quantitative. The quantitative deficit refers to the disparity between the supply and demand of housing. In other words, how many units have to be built per year to keep up with demand.

The qualitative deficit refers to the inadequate conditions of the existing housing options, including the quality of materials and construction, access to basic services, housing tenure, overcrowding, and location in regard to distance from workplaces. Although the qualitative deficit represents more than 90% of the total deficit in urban areas, current housing policies have remained focused on the quantitative deficit, which often emphasizes subsidies for new construction, while complementary measures for housing reform that promote access to urbanized land or facilitate access to credit are not prioritized (Libertun de Duren et al., 2018).

Expanding the accessibility of high-quality, affordable, and resilient housing through innovative models is an opportunity to address both types of deficits in the region.

Second, LAC is experiencing rapid urbanization, at a rate of 4%-10% annually (Libertun de Duren et al., 2018). Urbanization is often correlated with poverty reduction and an increase in economic productivity. However, a lack of urban planning adds to the strain on the city's public infrastructure, such as water, sanitation, transportation, and health care, severely impacting the quality of life for urban dwellers. Because the housing supply is subject to significant capacity constraints, housing costs inevitably increase when supply cannot meet demand.

Unplanned urban growth often leads to urban inequality and informal settlements, commonly known as slums. Slums normally lack essential services or a guarantee of the most basic quality standards, such as improved water sources, sanitation facilities, sufficient space, housing durability, and secure tenure (Libertun de Duren et al., 2018). High urbanization rates will contribute to the region's quantitative and qualitative housing deficit if urban planning fails to keep up.



Third, the region's high level of economic informality and the low penetration of financial services such as banking, investing, saving, and insurance hinder access to financial resources for affordable housing. Close to 60% of workers in LAC work in the informal economy (VOXLACEA, n.d.). Most traditional financial institutions do not lend to informal workers, nor to those without income or credit history, such as the migrant population, either because banks do not know how to assess their credit worthiness or because they do not see them as a good business prospect. As a result, these groups have to seek alternative means of financing, such as savings, microloans, or consumer credit, and often resort to informal land acquisition and incremental self-construction strategies, being at risk of becoming victims of high-interest rates and fraud. Ultimately, the unmet needs of this underserved market present ample opportunities for solutions for the informal worker population and other excluded groups. Indeed, studies show that countries with more developed housing finance markets also have a lower incidence of informal settlements (Libertun de Duren et al., 2018).

Fourth, several current real estate market inefficiencies are ripe for tech disruption. Currently, in LAC, on average, it takes 360 days to sell a property and 90 days to receive mortgage credit approval (Londono, 2022). These lengthy processes caused by information asymmetries, complex paperwork requirements, and a slow bureaucracy hinder real estate owners across the region. Migrating to tech-enabled processes can increase transparency and speed in real estate transactions.

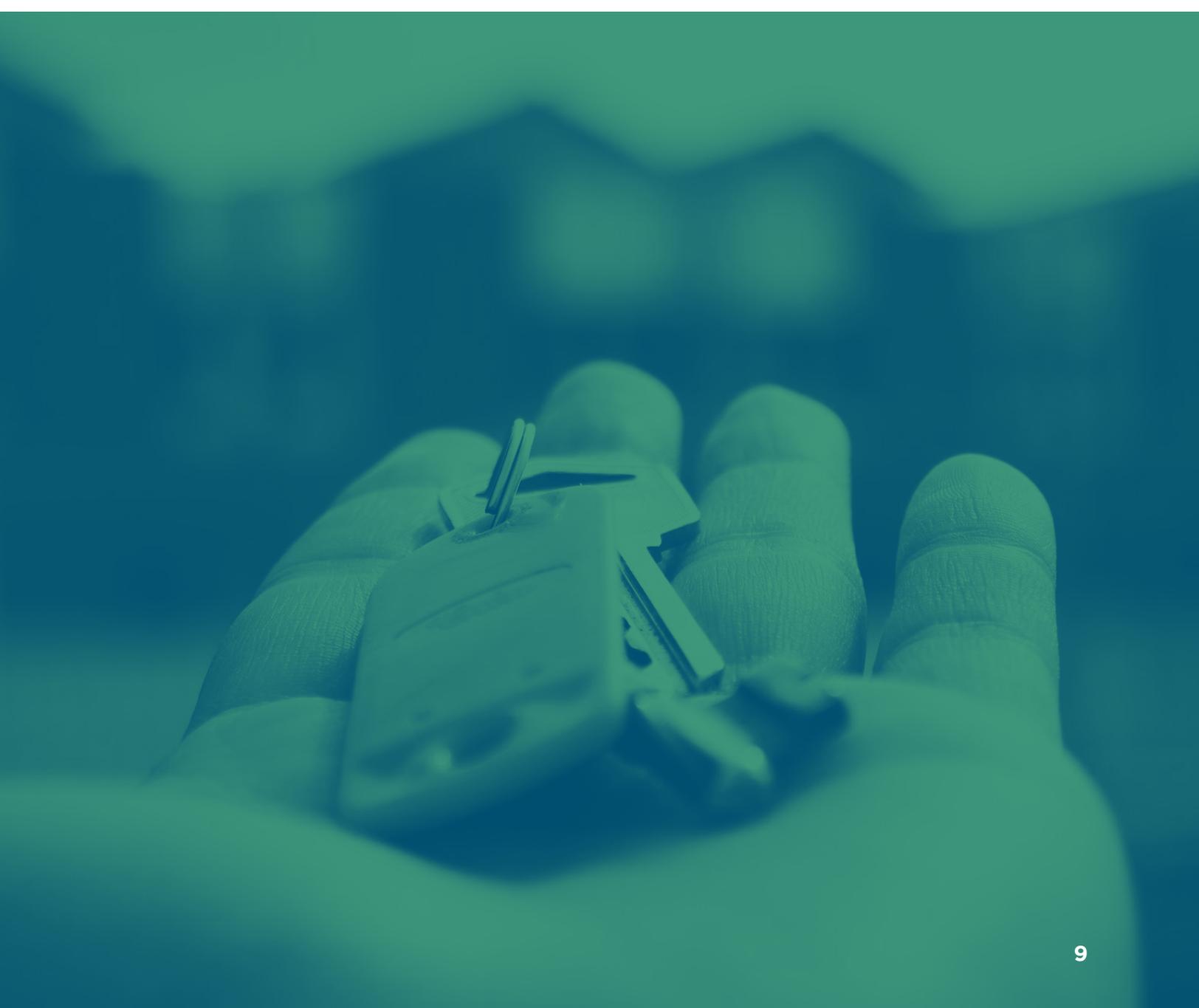
In addition, cross-cutting issues that must be considered are climate change with its impact on housing instability and the real estate industry's environmental impact, which accounts for 40% of global greenhouse emissions annually (World Economic Forum, 2016)(UNEP, 2022).

In the face of these challenges, multiple opportunities for innovation arise and entrepreneurs are finding solutions to simplify and streamline the traditional brokerage industry with the use of digital tools, developing new building technologies, circular economy in materials, energy efficiency, clean energy, water and sanitation, efficient logistics and distribution chains, and so on.

PropTech entrepreneurship has recently been gaining more and more prominence in LAC. In 2021, venture capital (VC) investment in PropTech in LAC amounted to US\$1,308 million invested across 23 deals, compared to US\$261 million raised in 2020, an increase of 500% (for reference, a total of US\$14.8 billion in VC was poured into the region during 2021) (Alvarez et al., 2022).

Globally, the PropTech market is predicted to account for US\$86.5 billion in 2032, up from US\$18.2 billion in 2022 (Future Market Insights, 2022). PropTech presents a growing business opportunity as well as the potential to solve vital needs for the population.

The following sections provide an overview of the LAC PropTech market and the technology solutions being developed for traditional real estate.



# 5.

# What Have We Found?

## METHODOLOGY

To present a snapshot of the LAC PropTech ecosystem, this study considered a sample of 234 for-profit early-stage companies that use technology as a core business model component, are venture capital backed, or have participated in an accredited entrepreneurship acceleration program.

Information on these PropTech companies was collected from public sources, such as Crunchbase, Pitchbook, and LinkedIn, as well as primary research in the form of interviews with key industry players and stakeholders.

Although many non-profit organizations and public institutions are leveraging technology to increase access to housing for vulnerable populations, this study focuses exclusively on the private sector. Thus, the findings discussed in this section are not intended to represent all the initiatives already underway in the region but rather present a snapshot of scalable, private-sector-led solutions currently deployed to solve pressing housing problems in the region.

Due to limited public information on this emerging sector, it was not possible to fully assess each company and subsector in terms of its revenue, profitability, or financing. Only 60% of sampled companies had public financing information on sources like Pitchbook and Crunchbase. Companies highlighted vary significantly in current stage and size, and there are innovative solutions with great potential for growth across all areas.

Figure 1 summarizes the categories used to classify the different PropTech firms sampled and the category of the housing value chain they fall under. The complete list of actors identified can be found in [this link](#).

**FIGURE 1**

VALUE CHAIN STAGE	CATEGORY	DESCRIPTION
<b>LAND, CONSTRUCTION, AND INFRASTRUCTURE</b> 	<b>Land Provision and Titling</b>	Land Provision and Titling startups facilitate secure rights to land and property.
	<b>Materials, and Technology for Construction and Infrastructure</b>	Materials, and Technology for Construction and Infrastructure startups design and produce innovative materials, and technology tools to make the construction industry more efficient.
	<b>ConTech Marketplaces</b>	ConTech Marketplaces facilitate the exchange of goods and services in the construction industry through online platforms.
<b>HOME MANAGEMENT AND IMPROVEMENT</b> 	<b>Home Improvement and Renovation</b>	Home Improvement and Renovation startups offer tech-enabled services for home improvements and renovations, such as architecture and design tools, construction finishes, and maintenance services.
	<b>Property Management</b>	Property Management startups offer landlords and Real Estate professionals tools to streamline management operations.
<b>RENTAL</b> 	<b>Transactional Rental Marketplaces</b>	Transactional Rental Marketplaces aggregate the supply and demand of rental offerings, enable rental transactions, and offer other value-added services, such as rental credit.
<b>HOME BUYING AND SELLING</b> 	<b>Real Estate Data and Analytics</b>	Real Estate Data and Analytics startups offer real estate market information for users, including digitized listings.
	<b>iBuyers</b>	iBuyers acquire properties to remodel and resell at a more competitive price.
	<b>Rent-to-Own</b>	Rent-to-Own startups allow prospective buyers to buy a property after renting it for a set time.
	<b>Technology-enabled Brokerage</b>	Technology-enabled Brokerage startups replace traditional real estate brokers with digital processes.
	<b>Enablers for Real Estate Agents</b>	Enablers for Real Estate Agents offer digital tools for brokers, Real Estate Agents, and companies to improve their services through technology.
<b>INVESTMENT</b> 	<b>Mortgages and Credit</b>	Mortgage and Credit startups facilitate access to conventional mortgages, offer tech-enabled mortgages or other non-mortgage financing alternatives.
	<b>Investment and Collective Financing</b>	Investment and Collective Financing startups facilitate investment in real estate projects and provide crowdfunding for real estate developers.

■ SUPPLY-SIDE

■ DEMAND-SIDE

**Source:** Prepared by the authors based on data obtained as a result of mapping the actors and trends in the PropTech sector in Latin America and the Caribbean for this report.

# FINDINGS

## Main findings

This study aspires to find PropTech startups developing solutions that address the region's pressing housing challenges. Undoubtedly there are several opportunities to seize large unattended markets, and the study has found several players addressing the region's main challenges through private sector initiatives.

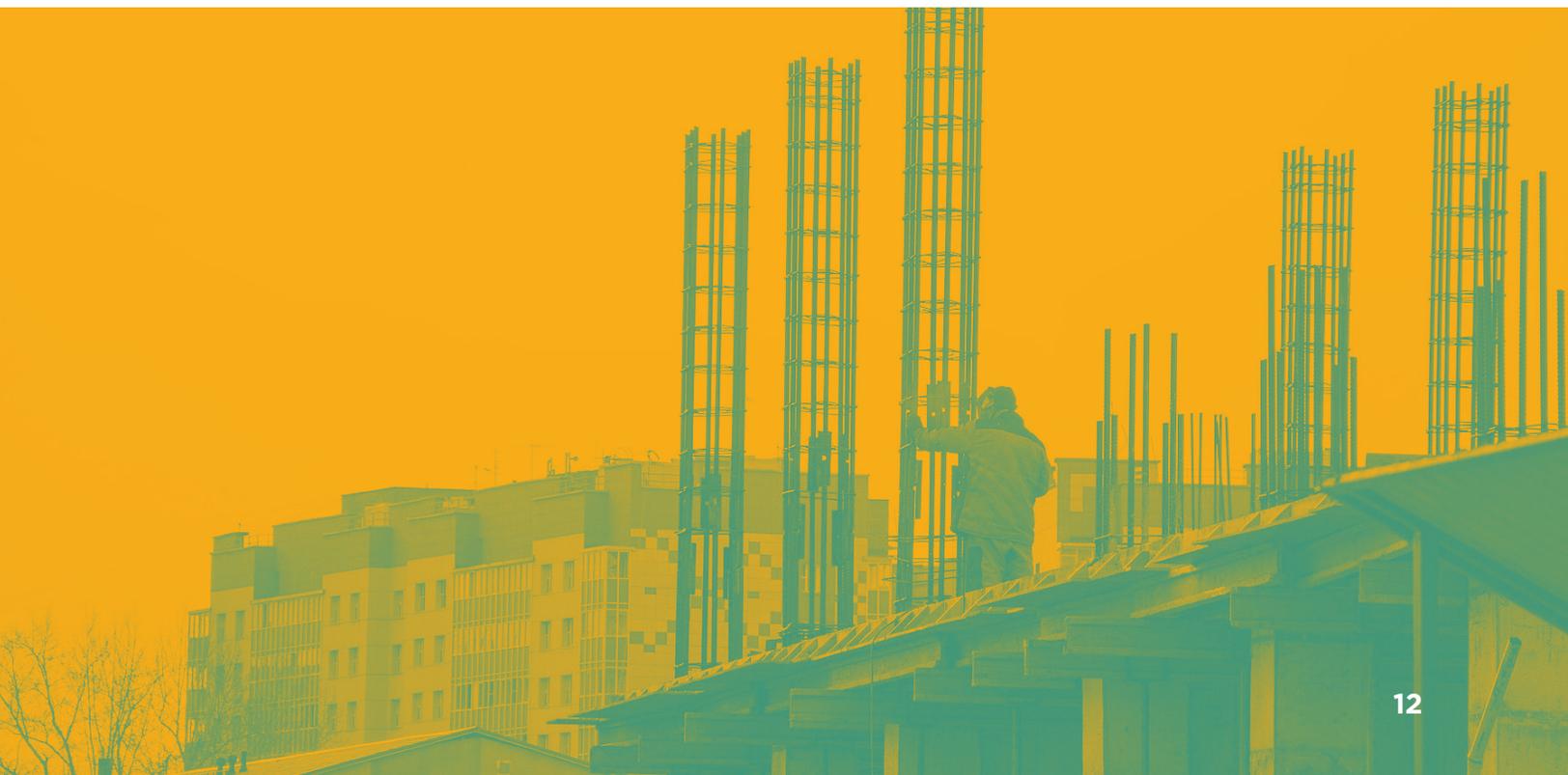
With this in mind, companies fall into two categories: mainstream companies versus those that are proactive in their approach to positively impact a social problem. In each one, players have the potential to create scalable impact and expand access to property for lower-income groups but face different challenges.

On the one hand, private, for-profit, VC-backed companies are usually discouraged from creating business models targeting low-income populations since barriers to entry are high and commissions are low.

For-profit, VC-backed private startups are developing PropTech solutions for middle,

upper-middle, and upper socioeconomic groups. 78% of players in our mapping are targeting these consumers. These companies require risk capital early in their R&D and product development journey. Consequently, these companies need to develop digital services with higher profit margins to sustain the company's growth. Thus, their unit economics rely on a certain ticket size range in order to be profitable.

As these startups grow and acquire market share, they may expand into solutions for affordable housing. In this process, a challenge these players face is understanding and segmenting the needs of lower-income populations and their main housing challenges. For affordable housing advocates, there are several approaches to incentivize this expansion and IDB Lab is uniquely positioned to support companies in developing product offerings for these consumer groups, for instance, by providing technical assistance to co-create pilot



projects to target lower socio-economic levels. A later section will cover other ways in which IDB Lab can help these actors.

On the other hand, 12% of actors mapped are earlier-stage socially-oriented startups developing solutions for lower-middle and low-income populations. For these business models, the main challenges are obtaining sufficient financing and creating solutions that are scalable and profitable.

These players often face a mismatch with investors, as prioritizing social impact may be seen as riskier, less profitable, and not as scalable as mainstream business models. In contrast, VC investors seek short- and medium-term returns and exponential scaling potential. Investors often face

limited exit options when evaluating socially-oriented ventures due to lower growth projections and prioritizing other opportunities. This is evident throughout the sample of companies, as only 40% of socially-oriented players have obtained financing. There remains ample opportunity to fund companies with lower rates of return and a lower risk profile that is yet to be filled.

For these players to scale they require patient capital, as many of these models take longer to become profitable. It is at this stage that IDB Lab can work with companies to help them scale their operations, successfully tracking their social impact, and communicating growth potential to impact investors to secure financing.

## ECOSYSTEM MAP TRENDS

### 1. Most PropTech startups are still at early stages of development.



70% of the identified PropTech startups are still at an early stage of development. The relative growth stage of the companies was determined by the number of employees, financing raised, and geographic scope (see Figure 2). This finding has promising implications for the PropTech sector in LAC, suggesting that it is still a developing market with room for new players to innovate.

Other metrics reinforce the sector's early stage of development. First, the share of international expansion among PropTech startups is 15%, meaning that most companies do business in just one country. Differences between the various regulatory frameworks, capital-intensive business

models, and models that benefit from local network effects are all factors that may explain why startups have preferred to increase market share in a single country before expanding internationally.

Second, the median number of employees in the sample is 19, while the average is 111. This suggests that companies have generally kept teams small except for a few outliers. It should be noted that the use of technology as a core component of a business model can distort these figures, as technologies allow businesses to gain international traction without having to set up brick-and-mortar operations and automate tasks without having to hire as many employees.



Third, for companies with financing information available, about 60% of the sample, the median equity financing amount raised is US\$1.5 million, while the average amount is US\$28 million. In VC, a US\$1.5 million financing round is usually considered a pre-seed or seed round, where startups raise financing from angel investors and early-stage VC investors. Again, this suggests that companies are still at the

early stages of the financing cycle, with a few outliers pulling up the average.

Lastly, the median founding year is 2018, while the average is 2017. This means that, on average, companies have been in operation only 5 years. Since startups typically take three to four years to become profitable, these different business models are still developing (Kolmar, 2022).

**FIGURE 2**

<b>GROWTH STAGE</b>			
	<b>EARLY</b>	<b>GROWTH</b>	<b>EXPANSION</b>
<b>Number of employees</b>	<50	50-100	>100
<b>Financing</b>	<1M	1-10M	>10M
<b>Geographic scope</b>	Not yet expanded	Expanded nationally	Expanded internationally

*Companies were categorized under one Early, Growth or Expansion if they met two out of the following three criteria.*

**Source:** Prepared by the authors based on data obtained as a result of mapping the actors and trends in the PropTech sector in Latin America and the Caribbean for this report.

## 2. Most PropTech startups are developing solutions for Home Buying and Selling.

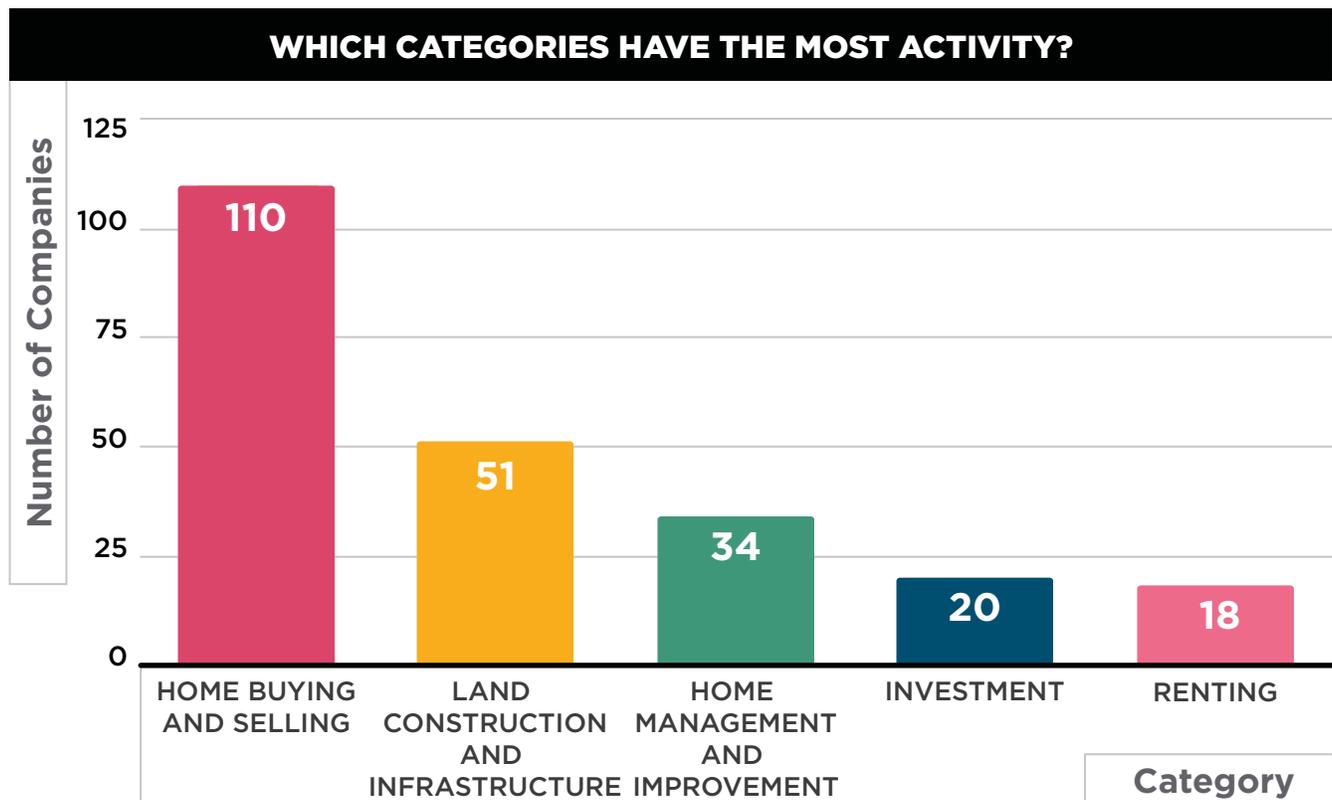


As illustrated in Figure 3, most actors in the LAC PropTech sector are working in Home Buying and Selling solutions (88%), specifically under the Tech-enabled Brokerage model. Under this model, firms create products that replace traditional real estate brokers with digital processes.

Startups developing Home Buying and Selling solutions are also at a more developed stage than the average. Specifically, 36% of startups in this category are at a Growth and Expansion development stage (see Figure 2), higher than the overall average of 30%.

Home Buying and Selling offers the widest range of subcategories, ranging from marketplaces to data solutions and financing options for optimizing existing transaction processes and increasing access to affordable housing. However, Home Buying and Selling solutions in the sample mostly solve demand-side problems within the existing housing stock, and for the conventional, middle-class buyer. The following section presents a deeper dive into the tech solutions offered for Home Buying and Selling.

**FIGURE 3**



**Source:** This report was prepared by the authors based on data obtained as a result of mapping the actors and trends in the PropTech sector in Latin America and the Caribbean. N=233 companies.

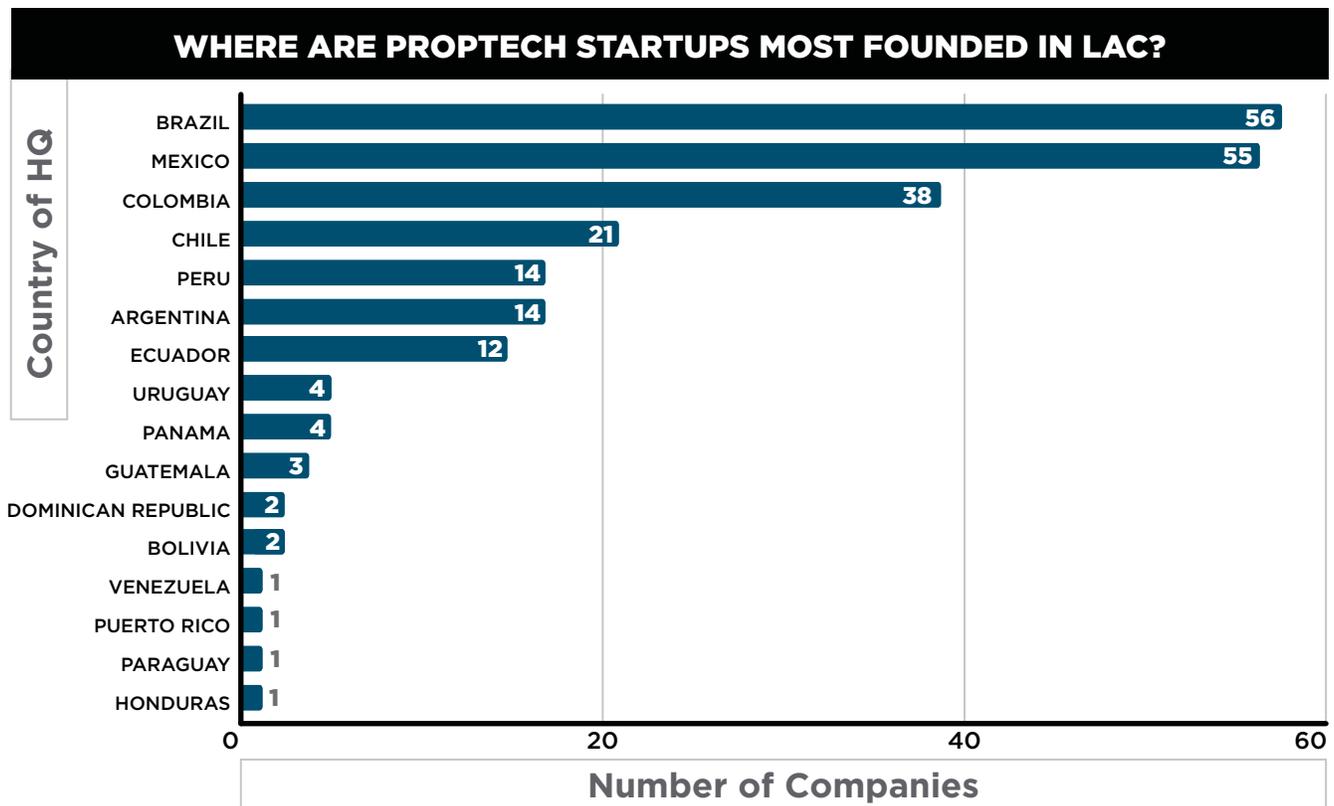
### 3. Brazil, Mexico, and Colombia are consolidating as PropTech hubs.



Across the region, the housing market is experiencing innovation, with some nations developing robust local ecosystems and momentum for the development of PropTech solutions. From the sample, Brazil leads the region as the country where the most startups were founded (Figure 4), however, Mexico is the country where the most PropTech startups have operations (Figure 5). Although Brazil is the largest market in the region, with a total population of 212.6 million, due to language barriers, Mexico appears to be a more attractive destination for the internationalization of Spanish-speaking LAC firms. Colombia is a close runner-up as both an HQ for PropTech companies and a destination for international expansion.

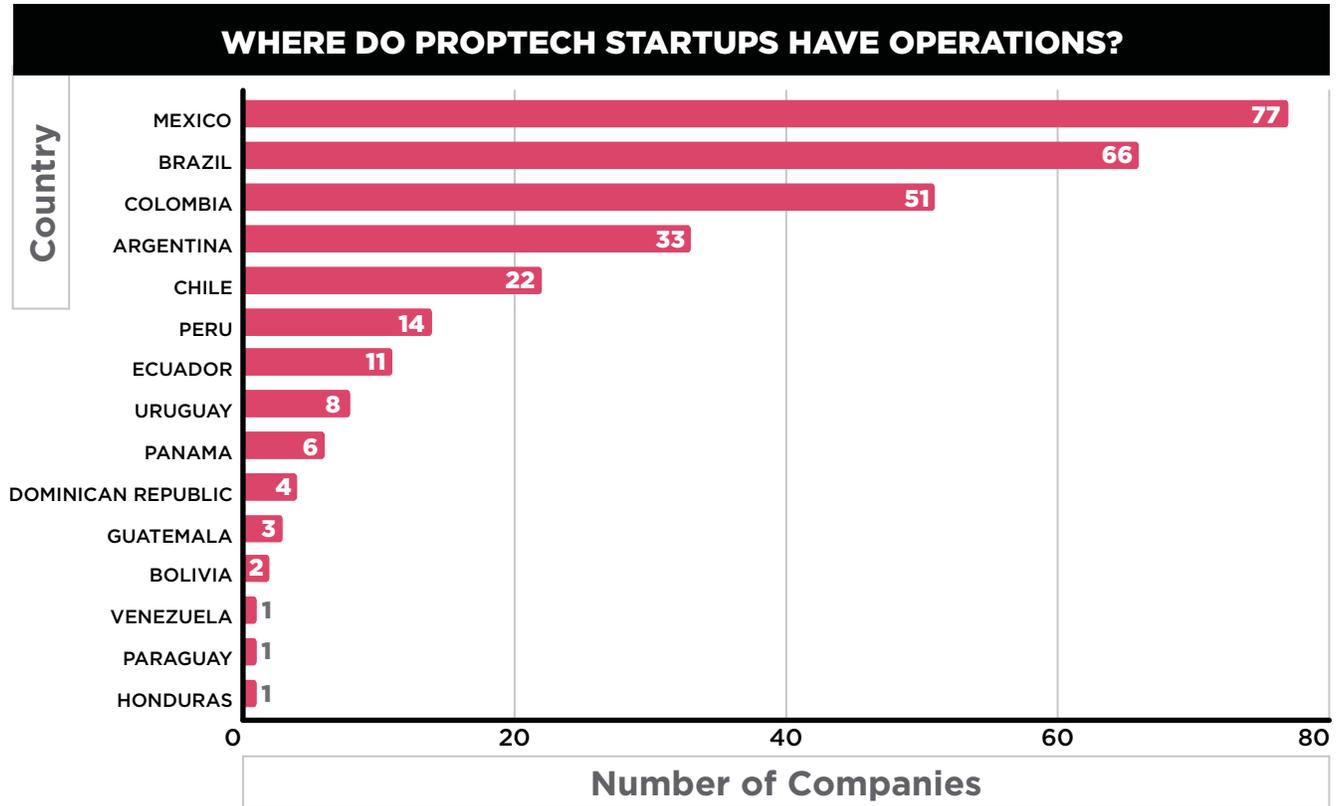
Figures 4 and 5 illustrate that the PropTech sector activity is mostly concentrated in a few countries. This has important implications for entrepreneurs starting in less developed markets, such as in the Caribbean. Usually, smaller local networks force entrepreneurs to seek international mentorship and advice. Indeed, in recent years, several private-sector initiatives have sought to develop PropTech networks throughout the region, such as PropTech LATAM and PropTech LATAM Hub. Moving forward, these networks are essential for PropTech founders to connect with other international players to seek advice and opportunities and facilitate international expansion opportunities in a later stage.

**FIGURE 4**



**Source:** Prepared by the authors based on data obtained as a result of mapping the actors and trends in the PropTech sector in Latin America and the Caribbean for this report. N=229 companies.

**FIGURE 5**



**Source:** Prepared by the authors based on data obtained as a result of mapping the actors and trends in the PropTech sector in Latin America and the Caribbean for this report. N=234 companies.

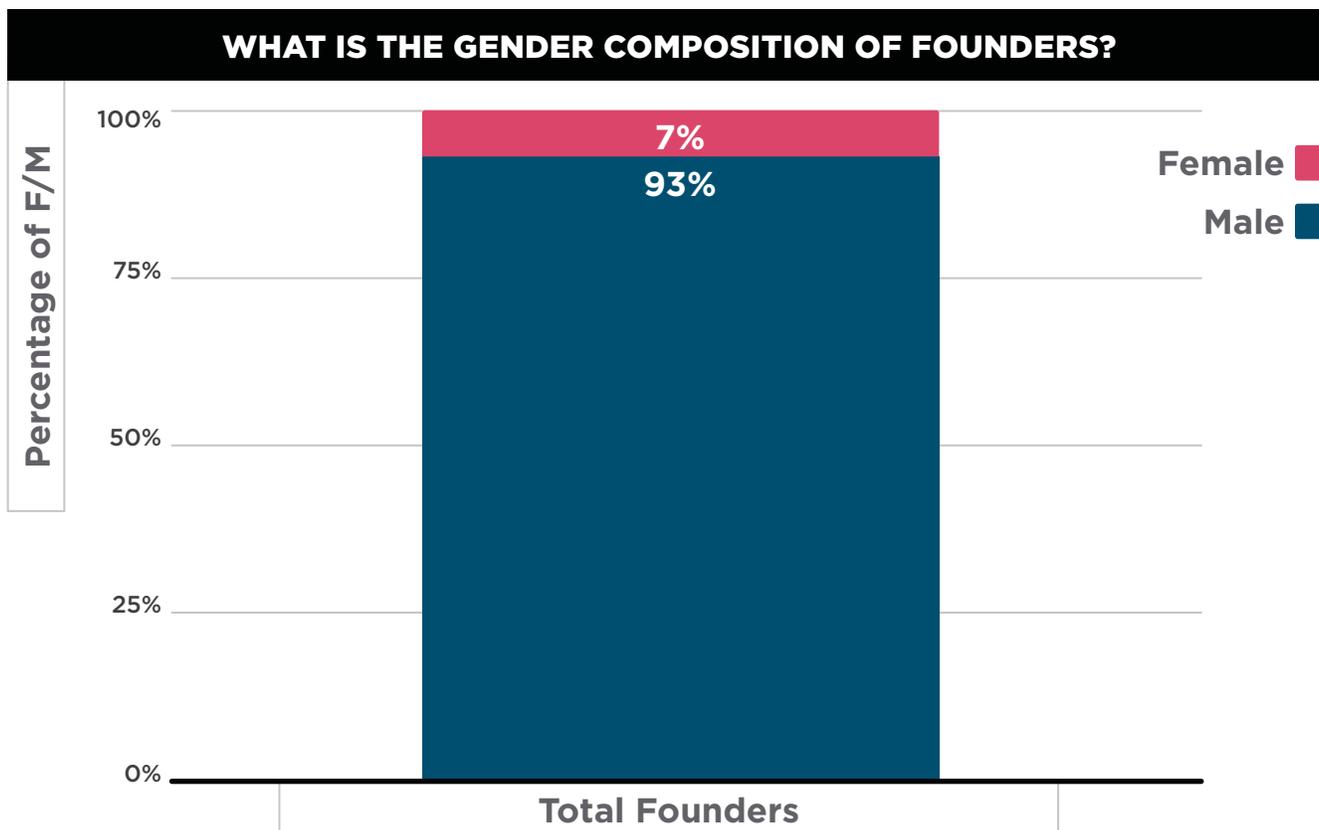


## 4. PropTech is still a male-dominated field.

Only 7% of founders in the aggregate sample of PropTech startups are women, as shown in Figure 6. According to a recent study by Endeavor Mexico and Glisco Partners, in the region, only 5% of the founding teams of startups and scaleups in the region were made up solely of women. This is critical as women entrepreneurs face additional challenges in accessing capital and building networks in a male-dominated sector.

Women systematically have less access to housing opportunities in terms of access to financing and ownership. An IFC study calculated that only 6% of women in Central America have a home loan (Swissinfo.ch, 2020). A disproportionate gender representation among decision-makers can prevent the creation of more inclusive models and exacerbates the shared fear that disruption created by technology is pushing an already not inclusive real estate market.

**FIGURE 6**



**Source:** Prepared by the authors based on data obtained as a result of mapping the actors and trends in the PropTech sector in Latin America and the Caribbean for this report. N=234 companies.



## 5. Few companies currently consider climate impact as a core element of their value proposition.

As mentioned before, housing solutions should address climate impact. In LAC, efforts to reduce the environmental impact are mostly concentrated around the construction and infrastructure sectors.

Both subcategory selections Materials and Technology for Construction and Infrastructure and ConTech Marketplaces included in the following section outline several innovative products that are working towards a lower carbon footprint. For example, through the development and use of recycled and recyclable materials and the reduction of waste and inefficiencies in the construction process.

However, few companies currently consider climate impact as a core element of their value proposition outside these two groups.

Opportunities remain for startups to explore housing solutions that strengthen adaptation to climate change and curb the harmful environmental impact of existing units. In construction, sustainability is mostly addressed in new units. Startups that retrofit existing units and alleviate the qualitative deficit are also helping to address sustainability and must scale their operations.

# PLAYERS

This section aims to highlight entrepreneurial success cases that then create ripple effects and inspire further innovations. Profitability and scalability lead to the next generation of risk-taking. This is especially true in LAC where several PropTech startups have scaled rapidly and yet numerous inefficiencies in the real estate market remain ripe for disruption.

## 1. Land, construction and infrastructure

### 1.1 Land Provision and Titling

For low-income groups, land and housing development and purchasing primarily occur outside formal markets. This leads to informal land acquisition strategies and insecure land tenure.

As defined by the Economic Commission for Latin America and the Caribbean (ECLAC), secure land tenure entails secure rights to land and property, free from outside interference, and able to reap the benefits of labor and capital invested.

In Colombia, land formalization processes can take several years (Guzman, 2022). There is a lack of data cohesiveness, and information is usually stored on different government databases, often inaccessible to the public. Additionally, there are several routes to take when formalizing property titles, and the process can vary greatly according to the specific situation.

Technology can speed up formalization services significantly. For instance, integrating artificial intelligence to instantly scan documents when looking through huge databases or tailoring the process according to the client's needs and available information.

In Colombia, **Suyo** provides services to formalize housing and land titles for low-income families. Formalizing property titles often involves lengthy paperwork that can take several years. Suyo can provide clear guidelines on the different routes, technical and legal requirements to formalize properties through its team and IT platform. Suyo works with both the public and private sectors through different initiatives. Since 2020, Suyo has been positioning itself as an operator of mass formalization projects as result of its role in the Land for Prosperity program in partnership with Tetra Tech and USAID Implementing formalization projects in Caceres (Antioquia), Fuentedeoro and Puerto Lleras (Meta) covering more than 14 thousand parcels in rural areas specially. In addition, Suyo works directly with families seeking to formalize their property through subsidy models with the private sector. To expand the scope of its work, Suyo is exploring opportunities to provide advisory services and technology solutions for governments and businesses to deliver formalization services.



## 1.2 Materials and Technology for Construction and Infrastructure

An ever-present challenge in housing is attaining construction efficiency and scalable solutions while using greener materials and adapting housing structures to local environments.

Startups in this subcategory are developing alternatives to traditional construction methods and materials to make the construction process more efficient and reduce the final cost of the housing units. In addition, they create and use more sustainable and less polluting materials, producing more durable units over time.

On the one hand several several of these startups are innovating in the use of materials. One approach is through developing alternative materials for construction, from recycled or repurposed inputs. For example, **WAS Co**, a startup based in Mexico, produces a concrete replacement made from industrial plastic waste called Polycrete.

Other startups are encouraging the use of natural biodegradable materials with low carbon footprints. **TechnoClay**, based in Bolivia, designs construction materials made out of soil, wood, and vegetable fibers.

On the other hand, modular housing has great potential to generate efficiencies in the construction process. One example is a

Peruvian startup, **Ecobuildtec**, which develops low-cost, fast-build housing structures with a circular economy approach, where it reuses construction waste, increasing sustainability and reducing the final cost of the units. Ecobuildtec's housing is being used to help the mining industry provide housing facilities in extreme environments. Ecobuildtec has patented technology to prefabricate the entire building which provides thermal and acoustic insulation, and package it for transportation and quick installation.

An underexplored field is the intersection between modular housing innovations and new materials, where startups can prioritize energy efficiency and minimize waste by sourcing recycled materials.

As mentioned earlier, adequate housing is not limited to physical infrastructure, and should include access to essential services infrastructures, such as water and sanitation, transport, and health care. Such services are often large-scale infrastructure investments, therefore these startups often work with the public sector or large private corporations as clients, developing business models usually known as B2G and B2B.

An example of this outside of LAC is **Litro de Luz**. Litro de Luz is an organization founded

in the Philippines with operations in 35 countries. In 2011, Camilo Herrera brought the idea of “A Liter of Light” to Colombia, where it expanded to several other LAC countries including Ecuador, Brazil, Dominican Republic, Argentina, Ecuador, and Bolivia.

Litro de Luz’s first product was affordable lighting poles made from recycled plastic bottles, and later in 2015, Litro de Luz built ELIOT (energy, light, and Internet of Things), a lighting post with a built-in internet router.

Litro de Luz typically works with rural communities to install the lighting posts when starting a project, where they select members of the community as “light ambassadors”, responsible for solving maintenance problems and reporting any issues with the lighting poles (Fernández Sánchez, 2018). That is one of the few ways they involve local communities in the installation process and ensure the project’s success. In LAC, Litro de Luz has granted lighting services for more than more than half a million people and internet access for more than 3,500 people.

### 1.3 ConTech Marketplaces

Additionally, opportunities for innovation in construction also lie in creating technology and streamlining processes for current players. Currently, construction materials supply in LATAM is a USD 122Bn per year opportunity (Del Rio, 2022). Several marketplaces have emerged recently aiming to tackle these challenges. Ultimately, increasing efficiency in operations can reduce the use of inputs and waste generation and therefore the cost of supplying new units to homeowners while having a positive environmental impact.

Peruvian startup **EQUIP** markets itself as LATAM’s one-stop shop for construction materials. In the region, small construction companies usually buy supplies at the local hardware store at a high markup. EQUIP’s platform offers a more efficient and cost-effective alternative, allowing constructors to save up to 20% of the cost and speed up to 10 times the process. It allows users to find fifteen thousand products spanning over one hundred brands, saving smaller construction companies time and money on their purchases. Currently, EQUIP is piloting a credit service for construction companies that need funding to complete housing developments.

Streamlining the process of materials and saving costs is a great opportunity to ensure that the construction of new units is achieved on time and thus work to reduce the housing deficit or quantitative deficit. This is indeed the case of EQUIP, given that the startup currently caters primarily to social housing developers.

Chilean ConTech, **ObraLink**, is also working to increase productivity and reduce the costs of construction projects. ObraLink has developed data collecting hardware for construction projects. Specifically, ObraLink’s hardware can autonomously collect information and send it to the site modeling (BIM) system. The product is typically attached to a structure with visibility of the entire construction project, such as a tower crane. This allows tracking several activities without workers intervention, such as pouring concrete, formwork, and concrete strength in real time.

Ultimately, startups are taking different approaches to solving inefficiencies in the construction industry processes that lead to higher costs, longer project times, and higher environmental impact.

## 2. Home Management and Improvement

### 2.1 Home expansion and renovation

In LAC, people employing informal housing construction techniques usually rely on the materials and resources available to them. It is estimated that 90% of government-subsidized homes in Colombia are delivered unfinished, i.e. often without doors, windows, or appliances, reducing the upfront property cost by up to 20%. This increases accessibility by reducing a price that would otherwise be unaffordable for many.

Brazilian PropTech, **Nova Vivenda**, is a platform that accompanies users throughout the self-construction process, generally starting with the previously mentioned unfinished housing approach. The company's mission is to restructure informal housing developments built along the outskirts of Brazilian cities. After registering on the online platform, users are able to find design, materials and construction experts and financing options to start the work. Nova Vivenda has impacted more than 3,000 families by making housing construction in Brazil's informal settlements safer, more durable, and more cost-effective. Nova Vivenda's information systems gather how the housing reforms supported contribute to climate change mitigation and adaptation (i.e. protection against storms and rains, sanitary contamination, etc.), and it has a partnership with Ambar, a Brazilian Construtech working with sustainable building technologies.

Home Improvement and self-building credit are big opportunities from both the environmental and social impact perspectives. A key obstacle to formal solutions in the credit market is the region's high level of informality, as more

than 130 million Latin Americans are informally employed. Although credit brokers are filling some of the gaps in transparency, underwriting methods still have a long way to go.

A Peruvian startup, **Mi Bolsillo**, aims to improve financial literacy and health in Latin America. It currently has 221,000 users of its finance app distributed among five countries across the region. Besides helping users track their expenses and adopt healthy financial habits, Mi Bolsillo is working to increase financial literacy by granting its users access to a library of resources that can answer users' questions such as the effect of inflation on prices or how mortgage loans work. Mi Bolsillo has expanded into the financial marketplace, partnering with financial institutions and matching users with credit options when requested. Together with Habitat for Humanity's Terwilliger Center for Innovation, La Mezcladora Innovation Hub, and Peruvian real estate developer Menorca, Mi Bolsillo is leveraging user data to pilot a credit scoring mechanism to underwrite the risk of a credit home improvement loan. By analyzing users' spending trends, savings priorities and proof of payments of other services, Mi Bolsillo enables its partner lending institutions to provide more affordable credit to some of the most underserved sectors of the population. Not having enough user information about users' ability and willingness to pay often causes banks to establish high-interest rates or outright deny potential clients.

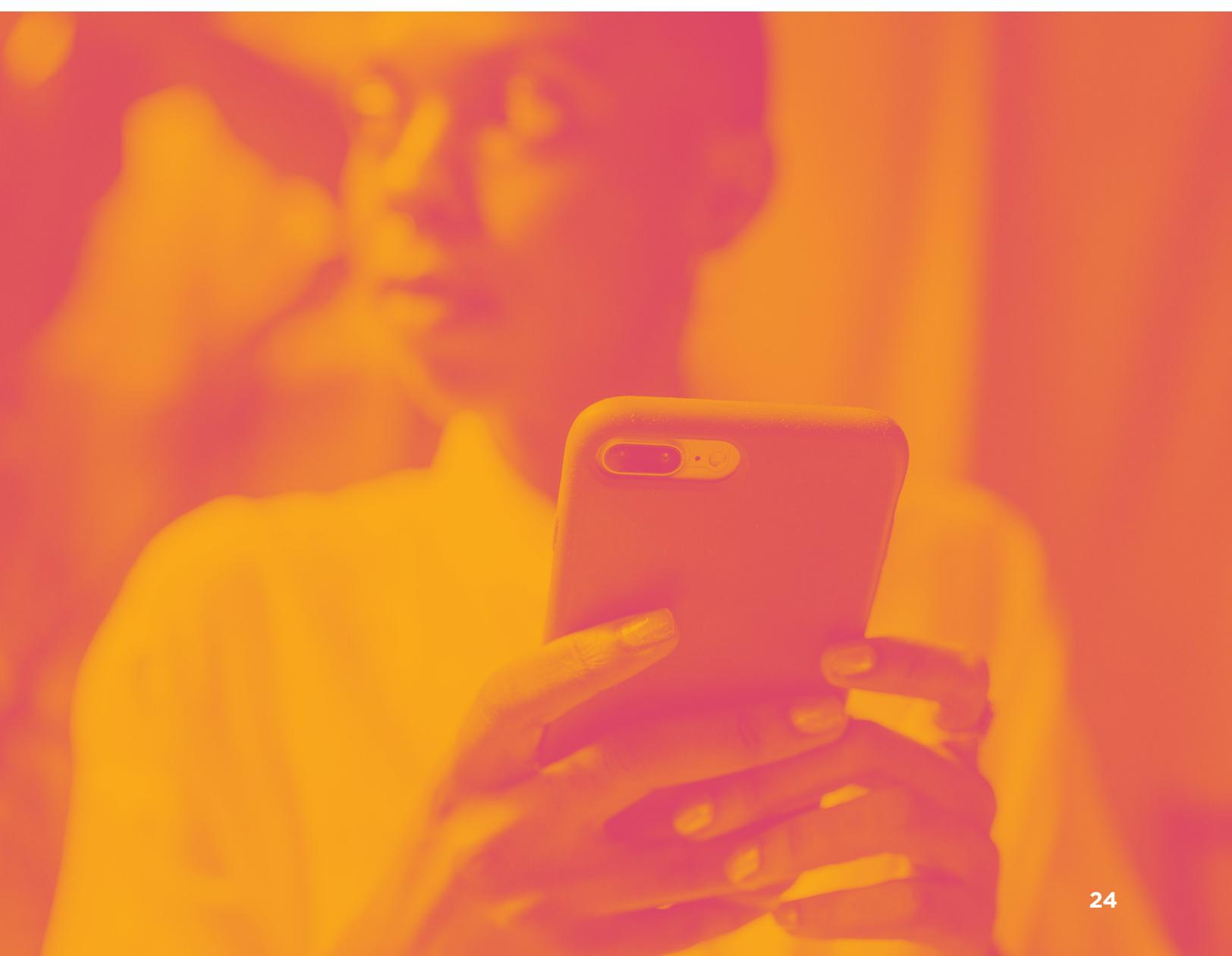
## 2.2 Property management

These platforms seek to simplify management processes, from the administration of tenant contracts and the calculation of everyday expenses to the registration of income, expenses, funds, and remunerations, among other functions. In particular, property management platforms can be great for overseeing large multifamily condominiums.

**Neivor**, a Colombian PropTech with operations in Mexico is a vertical Software as a Service (SaaS) company for residential and multifamily buildings. Aside from tracking expenses and facilitating

condominium management, Neivor's residential management app also offers a payment processing function. So far, this PropTech has raised US\$5 million in equity financing to develop its digital tools.

For multifamily condominiums, poor management practices lead to negative consequences, as properties with unpaid rents and dues risk losing value. Residential management apps can help multifamily condominiums reduce administrative costs, better track finances, and increase security measures in condominiums.



## 3. Rental

### 3.1 Transactional Rental Marketplaces

In urban areas in LAC, 40% of people still live in rentals. An IDB study examining 19 metropolitan areas in Argentina, Brazil, Chile, Colombia, El Salvador, Jamaica, Mexico, Peru, and Uruguay detected a diversity of trends in the residential rental markets: in some areas the share of households renting as opposed to buying rises as income rises whereas, in other areas, rental housing concentrates among middle-income households (Blanco et al., 2014).

Renting poses several benefits compared to homeownership. For instance, rental properties accommodate a mobile working economy and allow people to reside in central locations without the expense of buying property, but it's often inaccessible for low-income households due to lack of previous rental references, credit history, or lack of funds for a security deposit or rent prepayment requirements. Indeed, rental housing is highly popular among some of the more dynamic and mobile population groups, such as young people, one-person households, and divorced individuals (Blanco et al., 2014).

Transactional Rental Marketplaces tackle inefficiencies in the rental market, such as informational asymmetries, high transaction costs, and high upfront costs.

Companies in this subcategory such as Mexican **Homie**, Chilean **Houm**, and Colombian **Aptuno** target a major obstacle faced by many in the formal rental market: the need for a guarantor. In addition to connecting landlords and tenants through their marketplace, these startups conduct a thorough evaluation of the potential tenant, upon which they agree to take on the role of the guarantor. This both assures the

landlord of monthly payments and assists lower-income tenants access the formal rental market by eliminating the need for a guarantor, an often insurmountable obstacle.

Aside from lengthy processes and increased paperwork, renting a property can also involve high upfront costs. After observing that first-time renters often struggled to pay the security deposit, Chilean PropTech startup **uHomie** piloted a 'rental loan'. uHomie, founded in 2019, by a Venezuelan entrepreneur matches landlords and potential tenants, specifically targeting first-time tenants. uHomie also provides several funding modalities and digital tools for tenants and owners to facilitate rental transactions. For example, the rental loan allows tenants to pay their security deposit in several monthly installments. The need for rental loans quickly became evident as the company received around 1,200 loan requests before even launching the product. With this, uHomie is working to make the leasing process faster and more accessible.

## 4. Home buying and selling

### 4.1 Technology-enabled brokerage

The PropTech startups in this vertical focus on offering products that simplify and streamline the brokerage industry's processes using digital tools. These startups differ from iBuyers, a category explored later in this section, in that, unlike iBuyers, they do not purchase properties but rather facilitate rental and property transactions.

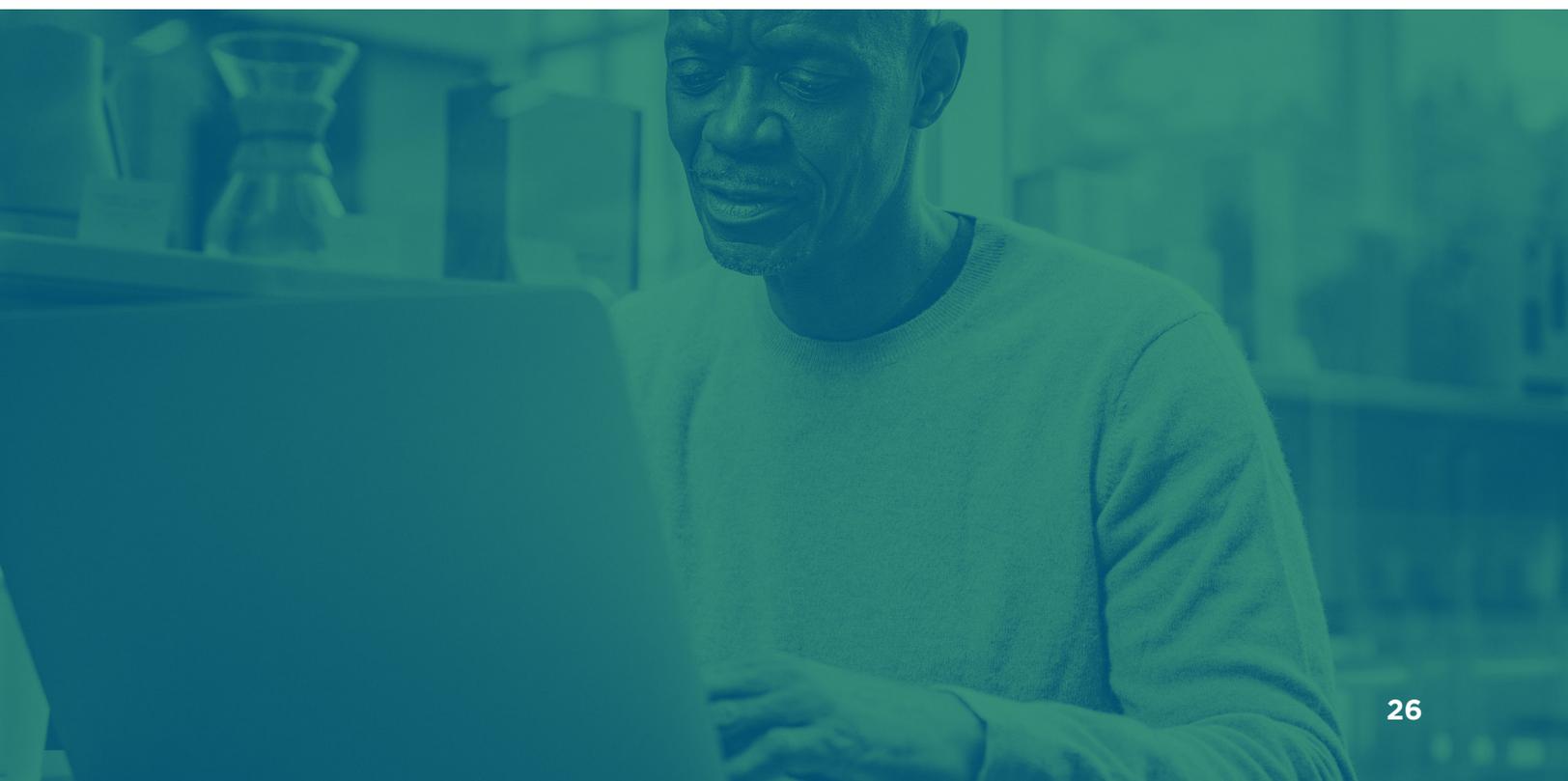
In Colombia, **La Haus** is an online-first technology-enabled broker. The company offers a platform that lists multiple properties and matches customers with real estate specialists. Digitizing listings and bringing transactions online create safer and more agile processes for landlords and tenants. Recently, La Haus launched "La Haus Now" a new product to provide financing for real estate developers, guaranteeing up to 25% of units purchased in the first 90 days.

Startups in this category also offer tools for landlords to sell their properties more efficiently. For instance, **pulppo**, a Mexican

tech-enabled broker founded in 2022, offers real estate brokers an array of services to strengthen their selling process, such as a valuation tool, arranging virtual tours, marketing leads and team management platform. Automating and professionalizing home selling activities can simplify and speed up the selling process.

**Livima**, a Brazilian startup, offers landlords a platform to list their property and sell it online. Livima's platform is linked to the top digital listing web pages in Brazil, such as OLX and Viva Real, which allows landlords to get more leads and potential offers for their property listings.

Ultimately, companies in this category mainly facilitate real estate transactions through digital platforms. Digitizing these transactions increases transparency in the market, allowing buyers and sellers to compare property list prices and purchase-intent information in real-time to better inform their buying and selling decisions.



## 4.2 Rent-to-Own

During the last five years, rent-to-Own startups have gained popularity in the US and the business models are trickling down to LAC. Rent-to-Own services have different modalities but usually allow customers to buy a house after becoming tenants for a set time. Depending on the particular service tenants may have to pay part of the down payment upfront or save it during tenancy while becoming tenants with the option to buy. With the monthly rent, tenants can increasingly contribute to the house's equity. In parallel, Rent-to-Own tenants build a credit score over time through their monthly payments. After saving money towards a down payment and building a credit score, tenants can apply

for a mortgage and buy the property from the startup or a third party after a set time.

**Casa Bravo**, a Mexican Rent-to-Own startup, is offering an alternative housing financing scheme that allows future homeowners to work towards being mortgage-eligible. Asking only for a minimum three percent down payment, Casa Bravo uses between three and six months' income records to underwrite tenants before purchasing the property. This way, typically high down payment costs are reduced, and tenants can build towards their future down payment and improve their credit score while renting the apartment. Casa Bravo is aiming to facilitate the purchase of 100 properties by the end of 2022.



## 4.3 Enablers for Real Estate Agents

These startups create digital tools that allow players in the traditional industry to benefit from technology in their current operations. Real estate agents often have the industry expertise but not the digital tools to streamline their sales and brokerage processes online. Examples include 3D tools for real estate agents to guide their clients through the property and CRM tools for real estate companies.

Mexican **Morada Uno** helps real estate agents and companies to underwrite and insure their rental customers. The startup allows real estate brokers to improve their tenant screening process and insure residential leases. As such, Morada Uno can

facilitate underwriting so that brokers can offer properties without needing a guarantor to co-sign the lease.

Lastly, working as a real estate agent is not only a full-time job but can also be a source of extra income for people, such as gig economy workers. For example, Colombian transactional marketplace **Aptuno** created a referral program where people are encouraged to submit rental listings they spot to the marketplace. In this way, people can receive USD\$25 for each published property and up to 30% of the first rent of each rented property, enabling gig economy workers to have additional sources of income.

#### 4.4 Real Estate Data and Analytics

In LAC there is limited public transaction data or centralized listing services where real estate brokers post listing and closing property prices, such as the Multiple Listing Service (MLS) in the United States. This presents a great opportunity for startups looking to centralize information on the real estate market.

Startups such as **Lamudi**, a real estate classified website based in Berlin, Germany and operating in 34 countries, publish yearly reports on real estate trends and transactions.

**Place Analyzer**, a PropTech startup from Paraguay is a smart real estate appraisal web platform. Using artificial intelligence, Place Analyzer's algorithm can value land without comparing nearby prices. In an interview with Place Analyzer's founder

and CEO Gustavo Mayeregger, he shared that the company's algorithm is suited to analyze all geolocated data.

Notably, Place Analyzer has carried out mapping efforts in areas of Paraguay not surveyed by Google Maps.

This category also includes digitized listing platforms, where real estate classified ads are vetted and posted.

Digitizing rental information makes real estate data accessible, transparent and inclusive. Digital portals allow consumers to make better-informed decisions due to the real-time availability of information and price comparison. Lastly, public information on prices, transactions, and real estate market trends reduce likelihood of scams.



#### 4.5 iBuyers

iBuyers startups offer an alternative to the traditional approach of buying and selling properties. These companies acquire properties, remodel them and then resell them at a more competitive price.

iBuyers' value proposition for homeowners lies in facilitating simplified and safe transactions. iBuyers take on the task and risk of purchasing, remodeling, marketing, and reselling the property, often taking care of all the necessary paperwork. Given that more than half of homeowners are looking to sell in order to solve an urgent economic need, the immediate liquidity granted by iBuyers seems to be their greatest selling point.

For example, Colombian **Home Capital** is a 'Housing Outlet,' working to make housing more accessible by offering properties at discounted prices. Originally, the company bought indebted homes about to enter a moratorium; however, it now purchases all types of properties. Between February 2021 and June 2022, more than 600 families

bought and sold homes with Home Capital. Within buying and selling transactions, the company can digitize up to 80% of the transaction process, streamlining property rotation in their platform to an average of 60 days. The greater rotation of properties allows Home Capital to buy homes at not-so-below-market prices and to sell them at a discount compared to traditional sellers. Home Capital is also piloting several credit offerings to advance financial inclusion, drawing from user data to calculate the risk of pre-approved credit products. Home Capital currently operates in 3 cities in Colombia and has raised an equity round of US\$5 million from Bancolombia as a lead investor and an additional US\$20 million from different financial instruments to finance the buying and selling of houses.

In all, iBuyers address the qualitative housing deficit by reintroducing housing units as remodeled properties often at a more accessible price and in better conditions.

## 4.6 Mortgages and Credit

One of the region's main problems affecting access to housing is the low penetration of financial services and informality. Mortgages are a prime example. Currently, there is a lack of mortgage offerings with favorable rates and terms, especially for lower socioeconomic groups and informal workers. Often, low-income and informal workers build their houses incrementally, using savings and consumer loans to finance the construction of new rooms and other improvements. In LAC, mortgage loans constitute only 10% of GDP, compared to 50% in the US.

There are numerous opportunities for tech innovations in mortgage lending, and startups are tackling this challenge through different approaches. First, digital-first brokers are increasing transparency in mortgage options for consumers. Colombian **Vecindario**, for example, guides users through the entire mortgage application process. Technology has enabled Vecindario to connect hundreds of data sources to predict when a family can purchase a home and access sources of financing without requesting it. As a result, 37% of homes were sold to people who believed it was impossible due to a lack of financial literacy. Instead of simply providing information about the various mortgage options available, Vecindario teaches people how to purchase and finance a house. Currently, Vecindario has over 340,000 users learning about mortgages, financing, and home buying.

Mexican startup **Yave** offers a platform with a mortgage guarantee or current mortgage refinancing. Yave's evaluation process is fully online. Its platform allows customers to upload documents needed for credit scoring, monitor credit approval status, and process payments. The startup's digital-first process allows them to pre-approve credits in less than 12 hours and apply credits in

less than three weeks. Relative to traditional banks, Yave claims to shorten the credit obtaining process by 3x for its users.

Increasingly, startups are treating mortgage and credit products as an ecosystem of solutions. For instance, **DD360**, a Mexican PropTech founded in 2021, combines FinTech service offerings for housing development, construction, and acquisition. Specifically, DD360 offers financing and support for real estate developers to manage their projects through their platform. In parallel, the company also offers individual mortgage loans to home buyers. By having information on the demand and control of the individual mortgages granted, DD360 can calculate informed projections on the risk and potential success of a project for developers. In August 2022, DD360 raised US\$91 million in equity financing to complement the US\$140 million in credit lines.

Chilean PropTech **Phillipo** offers a financial alternative to conventional loans of immediate liquidity for property owners looking to sell. In this case, the cash offer, which can be almost two-thirds of the appraised value, is effective even before the property is sold. Often, this advance payment cancels the current mortgage, allowing homeowners to obtain new credit. For a set time, homeowners then become tenants in their property, paying rent until the property is sold and have the upside of benefiting from any increase in property valuation. Phillippo's technology performs an automatic valuation and a financial analysis to give the approval and coordinate the appraisal and the offers on the property. Phillippo has raised equity investment from renowned investors such as YCombinator, Soma Capital, Goodwater Capital, Magma Ventures and Fen Ventures, and holds partnerships with firms such as Mercado Libre, Banco Santander, Houm, and Nexxos.

Currently, Filippo holds a portfolio of 23 properties and will continue expanding its acquisition of properties.

However, a strategy to attend underserved customers has yet to be addressed.

Traditional banks have not yet developed a modern mechanism to assess credit risk for unbanked customers, about 60% of the

population (Demirgüç-Kunt & Klapper, 2018). Looking into the future, there is a great opportunity for startups to partner with traditional banks and integrate technology into their existing services. For instance, artificial intelligence can automate parts of the traditional underwriting, generate unbiased credit scores, and agile services to reduce mortgage processing time.



## 5. Investment

### 5.1 Investment and Collective Financing

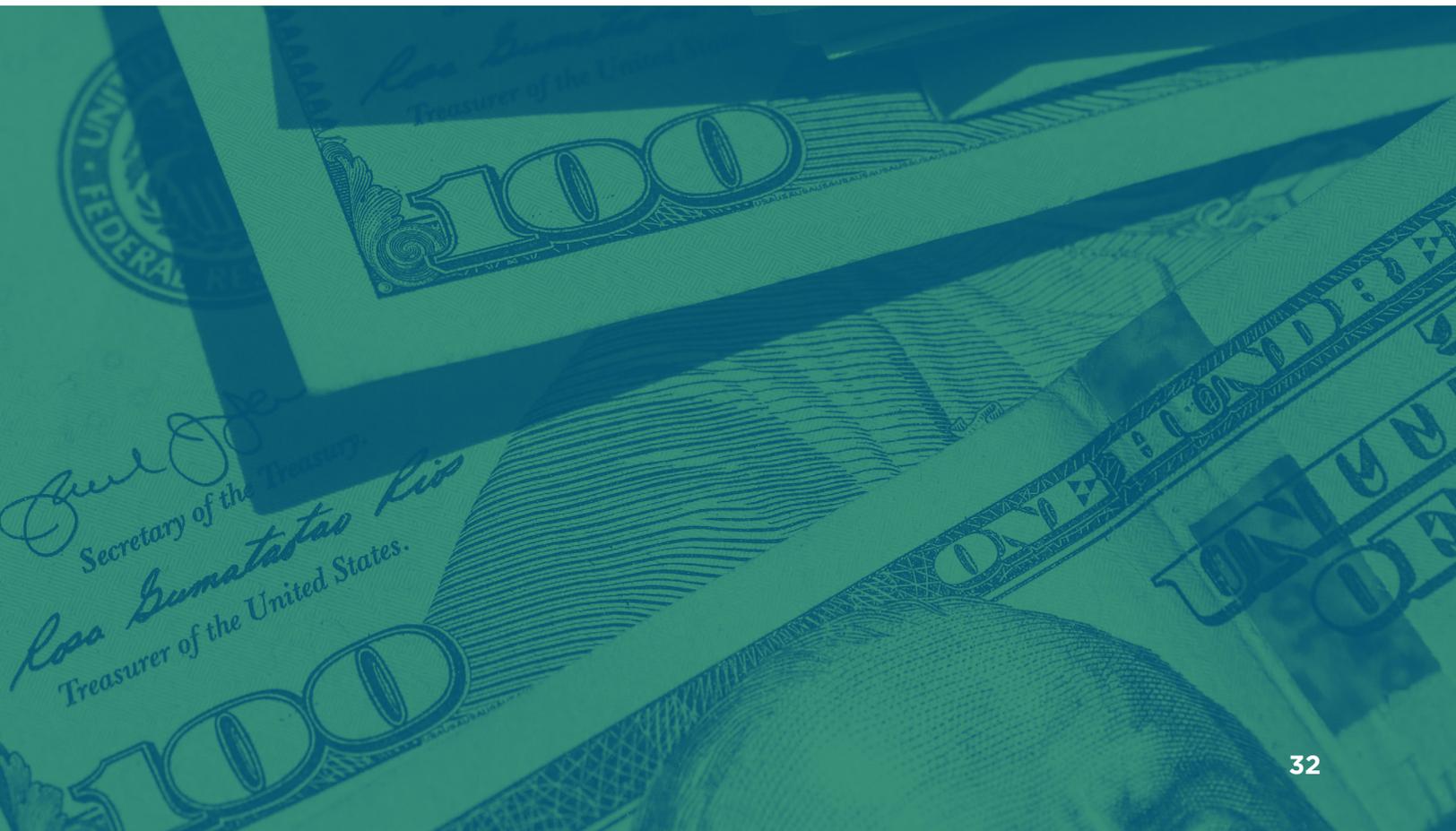
In Latin America, real estate is a relatively illiquid asset. On average it can take between four to six months or even up to two years to sell a property (Pintle, 2021). However, political instability and currency volatility make it a valuable investment asset, as its valuation and demand are guaranteed over time.

Peruvian startup **Proper's** mission is to help people purchase property as an investment. Proper's platform allows users to review information on the listed projects and personalize investment decisions, obtaining personalized guidance and offers. Additionally, having an online process allows customers to ensure access, secure transactions, and increase customer confidence in purchasing these assets.

Additionally, crowdfunding or collective ownership startups have emerged to allow

people to invest fractional amounts in real estate projects, such as Mexican startups **briq.mx** and **100 Ladrillos**. **briq.mx** allows customers to invest minimum ticket sizes of US\$5. Investors hold a prorated share of the apartment's equity and later get their return on the investment when the property is sold.

In addition to presenting a relatively liquid investment opportunity for people who want to deposit their extra savings, collective financing platforms can provide a solution for real estate developers. Considering the quantitative deficit, it is feasible to channel these resources into multifamily living and social housing projects, as the lack of high profitability margins often causes real estate developers to opt for other types of projects. However, given that Latin America is a region with low savings rates, this opportunity has yet to be explored (Inter-American-Development Bank et al., 2016).



# 6.

## How can the IDB Group Contribute?

The IDB Group is uniquely positioned to support actors carrying out digitalization and innovation efforts. Through its understanding of regional and country challenges, it can support innovative entrepreneurs in addressing critical economical and social gaps with both its public and private sector windows. Specifically, IDB Lab, with its appetite for risk and innovation, and its financial instruments centered on emerging business models, can help build those that are developing socially inclusive and green solutions while remaining profitable, shaping the evolution of PropTech in the region.

Second, the IDB Group is strategically positioned to connect government leadership and private initiatives. The latter can be enabled and supported by public policy, while public funds can be leveraged by private investment. As the public sector becomes overstretched with demands and fewer resources, market-based solutions play a critical role in addressing the underlying causes of housing deficits – lack of access to credit, lack of differentiated solutions per income segment; inadequate self construction practices; cumbersome titling processes and/or deficient access to basic services, among others– while reducing fiscal pressures. The IDB Group can work with governments to create regulatory sandboxes

and more agile testing processes so that entrepreneurs can test the viability of their products in a low-risk environment.

Lastly, IDB Group can help players in less-developed entrepreneurship ecosystems succeed. As mentioned earlier, most PropTech startup activity is concentrated around the three largest LAC markets: Brazil, Mexico, and Colombia. Entrepreneurs from less developed PropTech markets may struggle to find mentorship, financing, and opportunities to expand into other markets. Thanks to its regional expertise and understanding of the pressing housing challenges in LAC at a local level, IDB Group support can provide the resources, technical expertise, and private sector connections for entrepreneurs to tap into a regional network and learn from the region's success cases.

# 7.

# Conclusion

This study has analyzed the array of value propositions within the PropTech sector. Worldwide, the global PropTech market is already worth US\$18.2 billion, and is set to grow to US\$86.5 billion in 2032 (Future Market Insights, 2022).

In LAC, PropTech remains a nascent sector, where most companies mapped were founded in the last decade and are at an early stage. Brazil, Mexico, and Colombia are emerging as PropTech hubs, however, significant activity has not yet penetrated the rest of the region. In addition, PropTech is still a male-dominated field, and few companies currently consider climate impact as a core element of their value proposition outside of those working around construction and infrastructure.

PropTech startups mainly address two key issues in the traditional real estate market: lack of transparency and processes' inefficiencies. Reducing costs and making information available equalizes the market's playing field. The opportunity for PropTech startups to develop business models that cover lower income brackets is still largely unexplored. Currently, profitable businesses are mostly serving high-income bracket groups. Thus, large-scale solutions that would make investing in the low-income segment profitable remain an opportunity for PropTech companies to target. Moreover,

opportunities for innovation lie all along the value chain.

Further analysis is needed to make the most of the sector's possibilities for growth. The aim of these analyses should be to understand and describe the market for each segment by studying a variety of populations, such as the elderly, lower-income groups, migrants, and informal workers, and their concerns, needs, and preferences. Another area for potential growth for PropTech companies is climate change: how to make housing greener, not only during construction, reducing emissions and climate impact, as well as how to make housing more resilient to climate disasters. There are a few PropTech companies (Litro de Luz, Nova Vivenda, etc.) that are making strides in this, more is needed.

The importance of tech innovation in real estate is clearer than ever. There is an opportunity for technology to renew the traditional brokerage models and thus reduce the qualitative and quantitative deficit. Investing in technology can help create business models that increase access and affordability of housing options for vulnerable and lower income groups. PropTech initiatives, with the support of private investors and the public sector, are uniquely positioned to fill this gap.

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