DIGITAL ENTREPRENEURSHIP ECOSYSTEM INDEX

LATIN AMERICA

VIGS INSTITUTE
VIENNA INSTITUTE FOR GLOBAL STUDIES

LATIN AMERICA DIGITAL ENTREPRENEURSHIP ECOSYSTEM INDEX

An expert look into the Digital Entrepreneurship Ecosystem and Digitalization Dynamics

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The Vienna Institute for Global Studies (VIGS) is an independent, interdisciplinary research institute based in Vienna, Austria. The Institute focuses on three primary research pillars:

- entrepreneurial ecosystems,
- international relations and geopolitics,
- and well-being and health.

VIGS is committed to academic excellence and impactful research that advances understanding of global economic and societal transformation.

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1

Introduction to the Digital Entrepreneurship Ecosystems and why Latin America is important

1.1 Emerging trends in digitalization and ecosystems

Digitalization has emerged as one of the most transformative forces of the 21st century, reshaping how people live, interact, and do business. Rapid advances in connectivity, cloud computing, data analytics, and artificial intelligence drive this transformation. This technological shift, commonly referred to as the Fourth Industrial Revolution, has influenced virtually every sector, disrupting traditional industries and creating new forms of economic activity (Vial, 2019; Dwivedi et al., 2021; Lafuente et al., 2024). At the organizational level, digital transformation is no longer about simply adopting new tools; it involves reconfiguring internal processes, products, and strategies to leverage digital affordances for innovation, agility, and competitiveness (Matt et al., 2015; Vaillant et al., 2025; Lafuente et al., 2026).

As digital technologies have lowered barriers to entry and expanded entrepreneurial opportunities beyond geographical constraints, a new ecosystem has emerged: the Digital Entrepreneurship Ecosystem (DEE). Unlike traditional ecosystems, which often emphasize spatial proximity and physical infrastructure, DEEs are defined by the interplay between users, digital platforms, institutions, and entrepreneurial agents operating in globally networked environments (Sussan and Acs, 2017; Lafuente et al., 2024). In DEEs, digital users are not passive consumers but active participants and co-creators in platform-mediated innovation processes (Nambisan, 2017).

The importance of DEEs lies in their systemic nature and transformative potential. Research has shown that they contribute not only to startup formation and business growth, but also to broader outcomes such as digital inclusion, sustainability, and individual well-being (Elia et al., 2020; Lafuente et al., 2023). The rise of digital platforms, open APIs, and modular technologies has enabled new business models and collaborative ventures that transcend traditional firm boundaries, redistributing agency across networks of actors, including developers, investors, accelerators, and even the technologies themselves.

To better understand and assess the performance of these ecosystems, the Digital Entrepreneurship Ecosystem Index (DEE Index) was developed. Covering 170 countries, it captures key pillars of digital infrastructure, user citizenship, platform functionality, and entrepreneurial dynamics. Unlike other composite indices, it incorporates the ”penalty for bottleneck” approach, acknowledging that one weak link (such as digital skills or regulatory quality) can hinder the overall ecosystem’s functionality (Szerb et al., 2022). Studying DEEs is particularly relevant in territories undergoing digital transition, such as Latin America, where economic and institutional conditions are highly diverse. A focus on digital entrepreneurship can provide the foundations for a more inclusive, resilient, and innovation-driven territorial development.

1.2 Why Latin America?

Connected by geography, a shared history, and deep cultural richness, Latin America is a strategically significant region in the global economy. Spanning more than 30 countries and home to over 650 million people, the region is characterized by pronounced ethnic, linguistic, and social diversity, as well as strong economic interdependencies across sub-regions (Economic Commission for Latin America, ECLA: https://www.cepal.org/en). Despite long-standing structural inequalities, institutional fragmentation, and historical development gaps, the 21st century has witnessed a growing commitment to regional cooperation, digital integration, and joint capacity-building efforts, particularly in terms of connectivity, education, financial inclusion, and innovation policy. These shared efforts provide a fertile ground for examining how digital entrepreneurial ecosystems emerge, interact, and evolve across heterogeneous national and territorial contexts.

Latin America is a region that simultaneously experiences rapid, uneven digital deepening while facing structural development constraints, particularly productivity gaps, skills bottlenecks, market fragmentation, and persistent inequality. A digital entrepreneurial ecosystem with a solid policy design can either help alleviate such socio-economic problems in the region (Acs et al., 2022). The foundations of digital entrepreneurship are being built quickly, but unevenly, and this heterogeneity is precisely what makes Latin America such an analytically rich—and policy-relevant—setting.

A defining feature of the region's DEE is its strong geographic and economic heterogeneity, which shapes both the opportunities and the limits of digital entrepreneurship. Latin America spans vast territories characterized by highly unequal population density, challenging geography, and uneven infrastructure development. Large economies such as Brazil, Mexico, and Argentina face high costs of extending broadband and digital services beyond major metropolitan areas. In contrast, many Central American and Caribbean economies confront the opposite challenge: small domestic markets that limit scale unless firms can access regional or global digital value chains. These spatial constraints influence where digital ventures emerge, how fast they scale, and whether digital tools can reduce—or instead reinforce—territorial inequality (OECD, 2019; Cruz et al., 2025).

Economic structure further conditions the development of DEEs. Many Latin American economies remain strongly reliant on natural resources, tourism, or low-productivity services, with large informal sectors and weak or developing innovation systems. These conditions affect both the demand for digital solutions—often concentrated in logistics, fintech, agri-tech, and platform-based services—and the supply of entrepreneurial capabilities, including access to risk finance, advanced skills, and managerial know-how (Katz, 2015). As a result, digital entrepreneurship in the region frequently serves as a mechanism for process upgrading and market access rather than technological innovation, making the conditions of digital ecosystems and policy coordination particularly important.

This analysis adopts a comparative perspective across Latin American and Caribbean countries, explicitly recognizing differences in income levels and structural conditions. The study covers 28 countries (Table 1), including low-income economies—Bolivia, Haiti, Honduras, Nicaragua, and Venezuela—where digital entrepreneurship emerges under severe infrastructural constraints and limited access to finance and skills. The analysis also includes a group of middle-income countries—Argentina, Belize, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Paraguay, Peru, Saint Lucia, Saint Vincent and the Grenadines, and Suriname—whose digital entrepreneurial ecosystems show heterogeneous features. Finally, the analysis adds a group of high-income economies—Bahamas, Barbados, Chile, Guyana, Panama, Trinidad & Tobago, and Uruguay—with strong digital infrastructures and more developed institutions.

Table1

Latin America Region (income classification based on World Bank data)

Low income	Middle income	High income
Bolivia	Argentina	Bahamas
Haiti	Belize	Barbados
Honduras	Brazil	Chile
Nicaragua	Colombia	Guyana
Venezuela	Costa Rica	Panama
	Dominican Republic	Trinidad and Tobago
	Ecuador	Uruguay
	El Salvador	
	Guatemala	
	Jamaica	
	Mexico	
	Paraguay	
	Peru	
	Saint Lucia	
	Saint Vincent and the Grenadines	
	Suriname	

Within this regional context, the DEE gains weight because connectivity and human capital are both constraints to overcome and strategic levers. Various individual and joint initiatives developed by the Inter-American Development Bank (IDB) and the World Bank have emphasized digital education and digital infrastructure, aiming to expand connectivity, the scope of learning platforms, and people's digital skills (Gutiérrez et al., 2025; World Bank, 2025). From the perspective of the DEE, these policies matter because education systems are not only producing the future workforce; they shape the distribution of entrepreneurial opportunity by determining who can access digital skills, participate in digital markets, and build technology-driven ventures. Digital education and digitalization are not new social policies to include in policymakers' portfolios, they constitute a core supply-side input to the region's future startup formation and innovation diffusion.

Beyond education, the OECD highlights that digital transformation can only translate into productivity and inclusion gains if firms, particularly SMEs, have the capacity to use digital technologies effectively, including organizational practices, managerial skills, access to finance, and trust in digital systems. Without these capabilities, digital technologies might deepen the divide between advanced and lagging firms (OECD, 2019). From an ecosystem perspective, this puts ecosystem actors, such as universities, incubators, and technology extension services, at the center of the DEE development policy, if the goal is to realize the digital and economic outcomes of digital infrastructures.

2 The Digital Entrepreneurship Ecosystem Structure

2.1 The Structure of the Digital Entrepreneurship Ecosystem

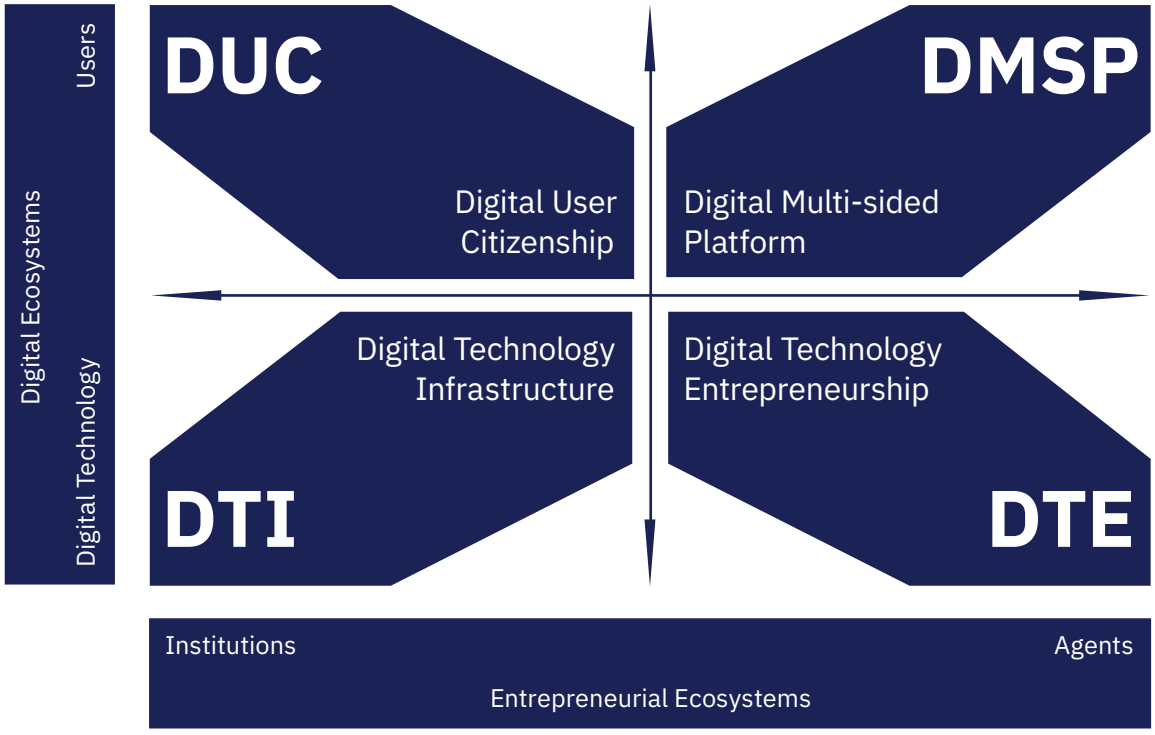
The new Digital Entrepreneurship Ecosystem (DEE) Index is a successor of the previous Digital Platform Economy (DPE) Index. The DEE, similarly, to DPE, is based on Sussan and Acs's (2017) foundational theory and Song's (2019) conceptual refinement. This approach situates the DEE at the intersection of two broader systems: the digital ecosystem, composed of users and digital infrastructure, and the entrepreneurial ecosystem, which includes agents and enabling institutions. The interaction of these systems gives rise to four key constituents of the DEE: Digital User Citizenship (DUC), Digital Technology Entrepreneurship (DTE), Digital Multi-Side Platforms (DMSP), and Digital Technology Infrastructure (DTI).

Digital User Citizenship (DUC) reflects the evolving role of users, who are no longer passive recipients but co-creators in the digital space. It captures digital inclusion, literacy, rights, and privacy, and highlights the interplay between individuals and institutions in shaping participatory and secure digital environments (Tikkinen-Piri et al., 2018). This sub- index recognizes that user agency and equitable access are foundational to a robust digital ecosystem.

Figure1

The Digital Entrepreneurship Ecosystem (DEE) framework

Note: : This figure conceptualizes the components of the Digital Entrepreneurship Ecosystem (DEE), which integrates the digital and entrepreneurial domains. Source: Adapted from Song (2019).



Digital Technology Entrepreneurship (encompasses a broader scope of entrepreneurial attitudes, including the development and integration of digital technologies into business models and innovation processes. It is structured around three pillars: digital absorption (incumbents' adoption of digital tools), digital startup (creation of new digital ventures), and digital scaleup (support for high-growth, tech-enabled firms). This sub-index acknowledges that entrepreneurial agency is distributed, meaning it is not limited to founders but also includes financiers, developers, employees, and support organizations (Elia et al., 2020).

Digital Multi-sided Platforms (DMSP) function as the core architecture of the DEE. These platforms orchestrate economic, social, and informational interactions among heterogeneous actors by facilitating Matchmaking, network effects, and digital finance mechanisms. Platforms are not merely tools but dynamic infrastructures that enable scalable business models, user engagement, and modular innovation (Nambisan, 2017; Gawer, 2014). The DMSP sub-index comprises three pillars—Networking, Matchmaking, and Financial Facilitation—each addressing a distinct element of platform functionality.

Digital Technology Infrastructure (DTI) refers to the foundational layer enabling all digital activities. It encompasses broadband access, cloud computing, mobile connectivity, and institutional arrangements such as cybersecurity regulations and open data policies. DTI is not simply an enabler but a core component of value creation in digital ecosystems, particularly when assessed through dimensions of openness, competition, and security (Autio et al., 2018; World Bank, 2021). The DEE Index uniquely incorporates institutional and technical aspects of infrastructure, acknowledging the regulatory environment's role in shaping trust and innovation.

2.2 A Systemic, Multi-actor and Non-linear Model

The Digital Entrepreneurship Ecosystem (DEE) model distinguishes itself by adopting a systemic, multi-actor, and non-linear perspective on entrepreneurial activity. At its core, this approach acknowledges that digital entrepreneurship does not arise in isolation but emerges from the dynamic interplay between heterogeneous agents, institutions, infrastructures, and digital technologies (Autio et al., 2018; Sussan and Acs, 2017).

Unlike earlier entrepreneurship frameworks that emphasized linear cause-effect relationships or isolated agents (e.g., individual entrepreneurs), the DEE framework builds on systems theory, particularly the idea that one weak component can constrain overall ecosystem performance —a concept formalized through the ”penalty for bottleneck” (PFB) methodology (Acs et al., 2014). This methodology ensures that ecosystems are not merely evaluated by aggregate performance but by their internal coherence and the interdependencies between domains. For example, high digital infrastructure alone is insufficient if digital skills or institutional support are lacking.

The model also departs from classical agency theory, which viewed agents as bounded individuals acting on behalf of principals within hierarchical structures (Jensen and Meckling, 1976). Instead, DEEs adopt a networked and distributed view of agency. Drawing on Nambisan and Zahra (2016) and Autio et al. (2018), the DEE recognizes that entrepreneurial action is co-constructed through interactions among multiple actors—users, developers, platform intermediaries, investors, policymakers, and even digital technologies such as AI.

In this view, agency is not a fixed attribute but an emergent, relational phenomenon. It is embedded in social and technological networks, where actors mutually influence each other through feedback loops, adaptive learning, and iterative coordination (Roundy et al., 2018). These complex interactions enable experimentation, modular innovation, and rapid scaling—hallmarks of digitally mediated entrepreneurship. For instance, platforms allow users to co-create products, serve as test beds for new services, or act as early-stage funders via crowdfunding mechanisms—thus collapsing traditional boundaries between producers, consumers, and financiers (Sussan and Acs, 2017; Song, 2019).

Importantly, DEEs are conceptualized as complex adaptive systems (CAS), a notion emphasized by Roundy et al. (2018). Non-linearity, feedback loops, self-organization, and path dependency characterize CAS. This means that DEEs do not evolve through centralized planning or linear progression but through decentralized experimentation and emergent behavior. Local interactions among agents—shaped by cultural, regulatory, and infrastructural contexts— give rise to macro-level patterns such as the formation of unicorns, the diffusion of digital skills, or the digital transformation of incumbent firms (Acs et al., 2017; Elia et al., 2020).

This framework also supports a multi-scalar understanding of entrepreneurship. Value creation and impact in DEEs are not confined to startups alone; they also include scaleups, transformed incumbents, and social enterprises. These actors collectively contribute to outcomes such as inclusion, sustainability, and well-being—not just firm formation or GDP growth (Lafuente et al., 2024).

The DEE model reframes entrepreneurship as a distributed, system-level phenomenon shaped by a diverse array of actors embedded in evolving technological and institutional contexts. It provides a lens that is better suited to analyzing entrepreneurial ecosystems in the digital age—where the boundaries of firms, markets, and innovation processes are increasingly blurred, and where resilience and adaptability depend not on individual excellence but on systemic coherence and inclusive participation.

3 Latin America Region: Mapping the region's DEE

Figure 2 illustrates pronounced disparities in the Digital Entrepreneurship Ecosystem (DEE) Index scores across the 28 Latin American and Caribbean countries analyzed in this report. The comparison of DEE results shows that the digital entrepreneurial ecosystem in Latin America is progressing at different speeds. High-performing economies combine infrastructure, human capital, and institutional structures, while lower-performing countries show important foundational deficits.

First, in terms of DEE score distribution, Chile (58.63), Uruguay (56.15), and Brazil (53.79) emerge as regional leaders, followed by Argentina (49.74) and Costa Rica (45.58). These countries benefit from relatively strong digital infrastructure, a well-developed institutional framework, and higher levels of digital technology adoption among economic agents. In line with the IDB report by Cruz et al. (2025), these economies exhibit high levels of technical (AI) maturity and more structured governance practices, particularly among medium-sized and large firms (pp. 31-36). This can be evidence that these countries have developed stronger infrastructural and institutional capacity that, on the one hand, improves the digital ecosystem and, on the other hand, helps businesses engage in digitalization processes.

Second, countries such as Mexico (44.14), Colombia (39.64), Panama (39.26), Peru (36.36), Dominican Republic (30.43), and Caribbean economies—i.e., Bahamas (37.91) and Barbados (33.71)—show intermediate DEE scores. Although these countries have a relatively developed digital entrepreneurial ecosystem and growing digital entrepreneurship, they still face significant bottlenecks, including digital skills shortages, uneven territorial diffusion of digital technologies, and weak governance structures. This result is consistent with Cruz et al. (2025), who emphasize that Latin America is experiencing accelerated adoption of advanced digital technologies, while governance and institutional coordination still lag behind those of other, more developed, countries (pp. 9-10).

Third, the distribution of DEE scores highlights a persistent digital divide within the region. Haiti (7.52), Nicaragua (16.54), Honduras (18.15), Guatemala (19.05), and Venezuela (20.71) are at the lower end of the DEE index. These indicators reveal systemic weaknesses in digital infrastructure, the availability of digital skills, and institutional support for digital entrepreneurship. These structural gaps are closely linked to limited adoption of complementary digital technologies—such as cloud computing, ICT training, and AI tools—which are critical enablers of the digital entrepreneurial ecosystem (Gutiérrez et al., 2025, pp. 4-7).

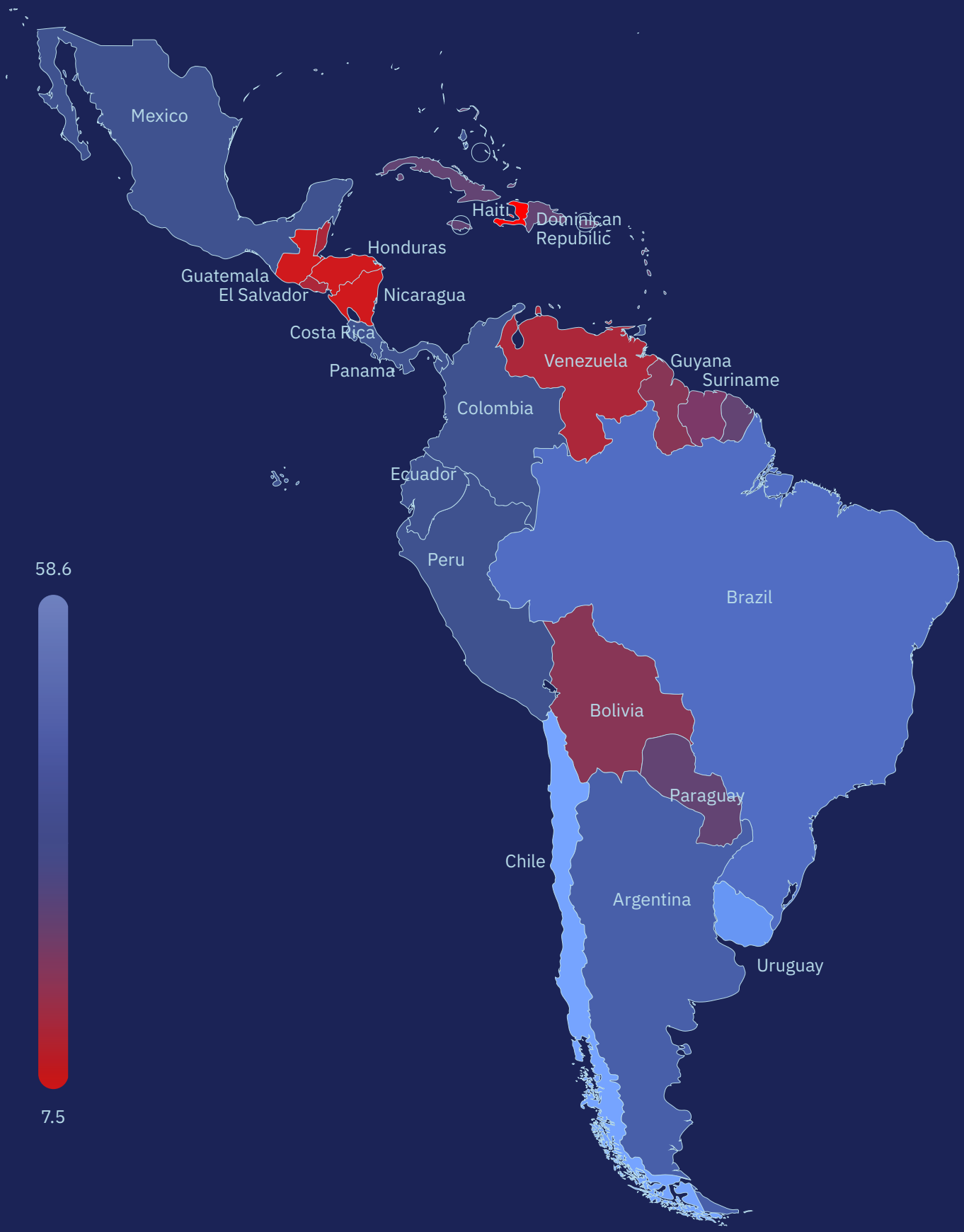
It seems clear that without targeted policies that address complementary capabilities—such as the development of digital skills, broadband access, and digitalization at the business level—the diffusion of digital technologies risks widening existing structural inequalities rather than narrowing them.

Figure2

DEE index scores for the analyzed Latin American countries (2022)

Note: Index values reflect national-level performance in the digital entrepreneurship ecosystem

Source: LAVCA, 2025.



4 Latin America DEE Analysis

Most Latin American countries have experienced notable economic growth over the past few years, but income disparities remain significant. Based on data from the World Bank (https://data.worldbank.org), the GDP per capita of the most developed countries in Latin America is still more than five times higher than in the least developed countries. Figure 3 shows the relationship between the DEE Index score and GDP per capita for the analyzed Latin American countries. The blue trend line illustrates a clear, non-linear, upward-sloping relationship: as GDP per capita increases, DEE Index scores generally rise, though at a decreasing rate. This diminishing return suggests that beyond a certain income level, greater economic wealth contributes less than proportionally to digital entrepreneurship performance.

As expected, countries such as Chile and Uruguay are positioned at the top of both GDP per capita and DEE scores, reflecting a strong alignment between economic development and the maturity of their digital entrepreneurial ecosystems. These countries combine relatively high income levels with well-developed digital infrastructures, institutions, and more advanced digital capabilities, which translate into higher DEE levels. Argentina and Costa Rica, while slightly falling below these top performers in income terms, also appear in the upper segment of the DEE distribution, indicating comparatively strong ecosystem development relative to their economic context. For these countries, the reported DEE score exceeds what their GDP per capita alone would predict, suggesting more efficient use of available resources, stronger institutions, and higher digital readiness than peers at similar levels of development. This might suggest that targeted investments in digital skills, digital openness, and entrepreneurial support can partially compensate for income constraints.

Also, middle-income countries such as Mexico and Colombia lie slightly above the fitted trend line. Their position suggests a balanced relationship between economic capacity and DEE development. This might indicate that these countries support digital upgrading and targeted policy efforts to improve connectivity, skills, and the support structures for entrepreneurship.
In these cases, DEE performance broadly matches expectations given their income levels.

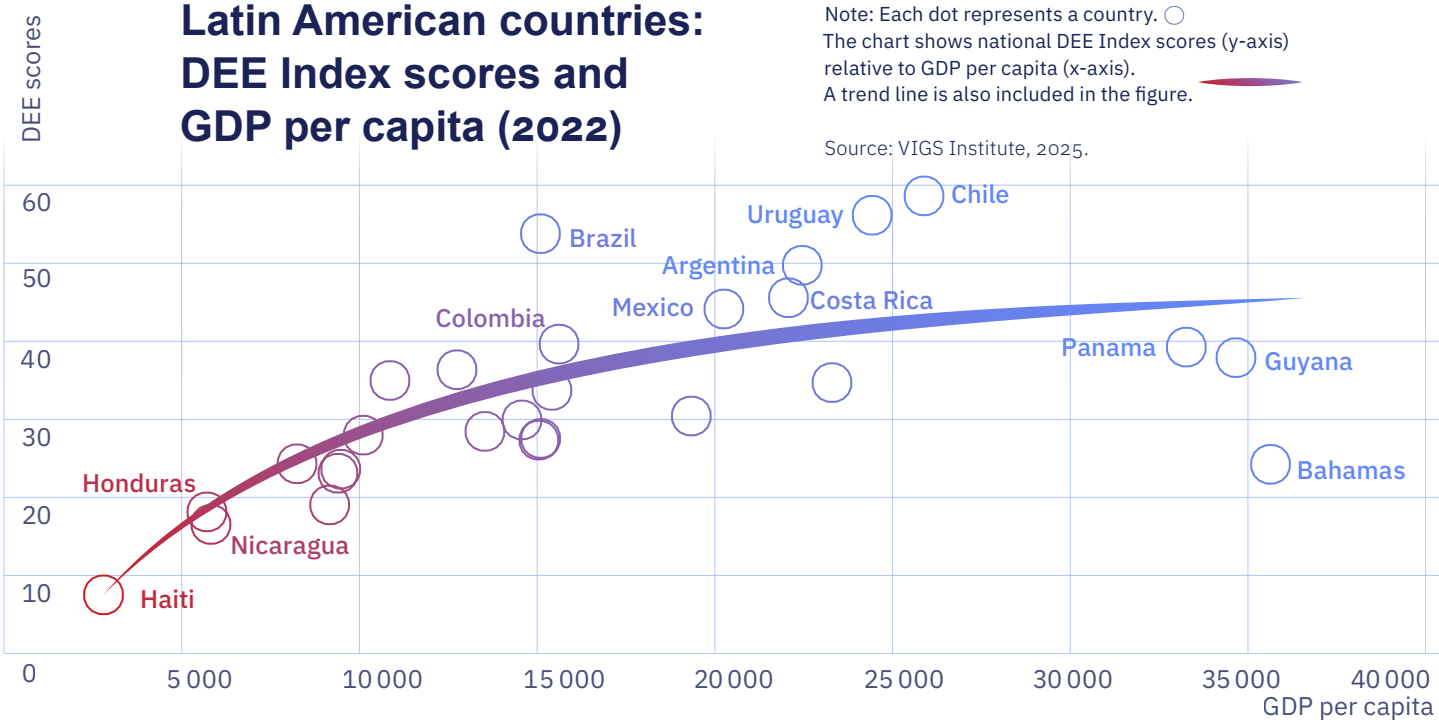
On the contrary, a group of low-income countries, including Haiti, Nicaragua, and Honduras, falls below the trend line. Their results indicate clear underperformance in DEE development relative to their economic conditions, reflecting persistent deficits in digital infrastructure, human capital, digital skills development, and institutional support for digital policies. Finally, in some high-income economies, such as the Bahamas and Guyana, the results below the prediction curve suggest that relatively high GDP per capita levels do not automatically translate into strong digital entrepreneurial ecosystems.

Figure3

Latin American countries: DEE Index scores and GDP per capita (2022)

Note: Each dot represents a country.
The chart shows national DEE Index scores (y-axis) relative to GDP per capita (x-axis).
A trend line is also included in the figure.

Source: VIGS Institute, 2025.



The next figure (Figure 4) presents the annual relative ranking of Latin American and Caribbean countries based on DEE index scores from 2017 to 2022. The figure reveals a persistent stratification in DEE performance across the region. A small group of countries—most notably Chile and Uruguay, followed closely by Brazil, Argentina, and Costa Rica—consistently occupy the top positions of the ranking throughout the period. This reflects that these countries have a comparatively mature and stable digital entrepreneurial ecosystem. These countries show limited volatility in their rankings, suggesting that early advantages in digital infrastructure, institutional quality, and entrepreneurial support have translated into sustained ecosystem leadership over time.

A second cluster of countries, including Mexico, Colombia, and Panama, remains largely in the middle of the ranking distribution, with moderate year-to-year fluctuations. Their trajectories suggest relative stability rather than convergence toward top-tier countries. Notably, only a few variations are observed in the overall ranking over time, reinforcing the notion of weak convergence toward countries with high DEE levels. While some countries—such as Colombia, Ecuador, and Panama—exhibit temporary improvements in their ranking, these gains are not always sustained, pointing to challenges in consistently translating digital investments into sustained improvements in ecosystem development. Overall, this group reflects incremental change, but it is combined with structural factors that limit upward convergence.

A third group at the lower end of the ranking—which includes countries such as Haiti, Nicaragua, Honduras, Guatemala, and Venezuela—does not show evidence of ecosystem improvements over time and, consequently, is consistently positioned at the bottom of the ranking during the analyzed period. Their persistent low rankings indicate entrenched structural barriers related to digital infrastructure deficits, limited human capital, weak institutions supporting digital rights, and high levels of economic informality. The absence of significant upward movement might indicate that foundational ecosystem elements are missing, thereby explaining the difficulty these economies face in breaking out of low-DEE trajectories. Despite some short-term reshuffling of rankings among countries with mid-level DEE scores, the figure highlights a regional pattern: most Latin American and Caribbean countries cluster in the lower half of the DEE ranking, with only a handful maintaining their positions at the top. Notably, the economies reporting the greatest declines in relative DEE rank are predominantly Caribbean countries, including Barbados (2020: 11th, 2022: 13th), the Bahamas (2020: 7th, 2022: 9th), Saint Lucia (2020: 15th, 2022: 18th), and Trinidad and Tobago (2020: 10th, 2022: 12th). These downward movements suggest growing challenges in developing a digital entrepreneurial ecosystem in small economies, where scale limitations, talent retention, and ecosystem depth might constrain long-term ecosystem performance. Guyana stands out as a notable exception, improving its position from 25th to 21st over the period, indicating ecosystem dynamism despite remaining structural constraints.

The longitudinal perspective presented in the figure reinforces the view that digital entrepreneurial ecosystems are highly path-dependent and slow to transform. Short-term policy interventions or isolated digital investments seem insufficient to generate durable improvements. Instead, the figure points to the need for sustained, coordinated, ecosystem-wide policies—spanning skills, infrastructure, and digital trust—if lagging countries are to close the gap with regional leaders and avoid persistent divergence in digital entrepreneurship outcomes.

Figure4

Ranking of DEE scores in Latin America (2017-2022)

Annual relative position of countries based on DEE Index scores

Notes: The ranking reflects each country's annual relative position in the DEE Index among Latin American nations. Colors distinguish regional groupings

Source: VIGS Institute, 2025.

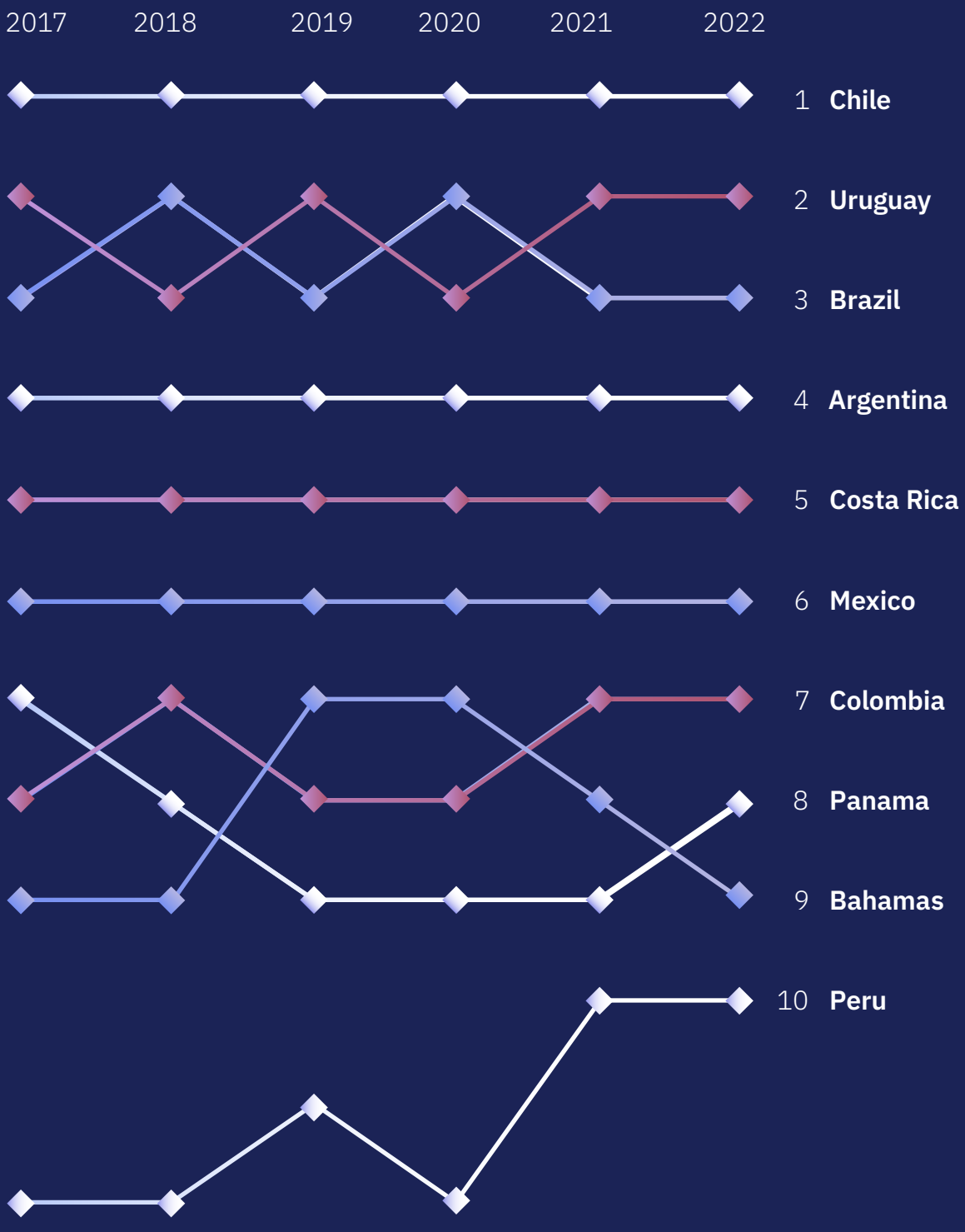


Figure 5 presents the trajectory of the overall DEE index and its four core pillars—Digital User Citizenship (DUC), Digital Technology Infrastructure (DTI), Digital Multi-sided Platforms (DMSP), and Digital Technology Entrepreneurship (DTE)—in Latin America and the Caribbean from 2017 to 2022. The figure shows a pattern of moderate improvement across all components, though the pace and depth of progress differ across the pillars.

Overall, the average regional DEE index increased by 26.54% (2017: 25.78, 2022: 32.62), which confirms progress in the region's digital entrepreneurial ecosystem. However, the divergence in pillar trajectories highlights a structural imbalance: while user capabilities and basic infrastructure are improving relatively quickly, the ecosystem's ability to convert these foundations into scalable digital entrepreneurship remains constrained. This gap underscores the need for more coordinated, ecosystem-wide policies that go beyond access and infrastructure, focusing instead on improving entrepreneurial capabilities and innovation-oriented institutional frameworks.

Digital User Citizenship (DUC) emerges as the most dynamic pillar over the period, increasing from an average of 24.60 in 2017 to 34.34 in 2022 (a 39.58% increase). This trajectory reflects important advances in digital literacy, user engagement, and access to digital services, which suggests that entrepreneurs and consumers in the region are increasingly capable of participating in digital markets. These gains point to the effectiveness of policies aimed at expanding access, skills, and digital inclusion, which are essential elements for the development of the local digital entrepreneurial ecosystem.

The pillar connected to Digital Multi-sided Platforms (DMSP) increased 28.33% over the period (2017: 25.70, 2022: 32.98). This indicates an expansion in digital platform activity, digital marketplaces, and matchmaking mechanisms. Digital Technology Infrastructure (DTI) also shows an upward trend, with an average variation of 27.79% between 2017 (average DTI: 24.59) and 2022 (average DTI: 31.42). This indicates sustained investments in connectivity, broadband coverage, and basic digital infrastructure, reinforcing DTI as a key enabling layer of the region's digital entrepreneurial ecosystem. However, unlike in more advanced digital regions, infrastructure does not clearly outperform other pillars, suggesting that progress remains uneven across countries.

Finally, the Digital Technology Entrepreneurship (DTE) pillar presents a more gradual growth. This pillar, which captures startup dynamics, innovation capacity, and firm-level digital transformation, report lower variation levels of digital technology adoption/digital transformation, startup and scaleup dynamics over the period, rising from 28.30 in 2017 to 31.78 in 2022 (a 12.29% increase). This pattern points to persistent barriers to scaling digital ventures, including limited access to finance, and weak supporting institutions, which translate in limited digital adoption and entrepreneurial growth.

Figure5

Development of DEE Index and its pillars in Latin America (2017–2022)

Trends in Digital User Citizenship (DUC)
Technology Infrastructure (DTI)
Multi-sided Platforms (DMSP)
Technology Entrepreneurship (DTE)

Note: The chart displays the evolution of the DEE Index and its four pillars across the Latin American region over time.

Source: VIGS Institute, 2025.

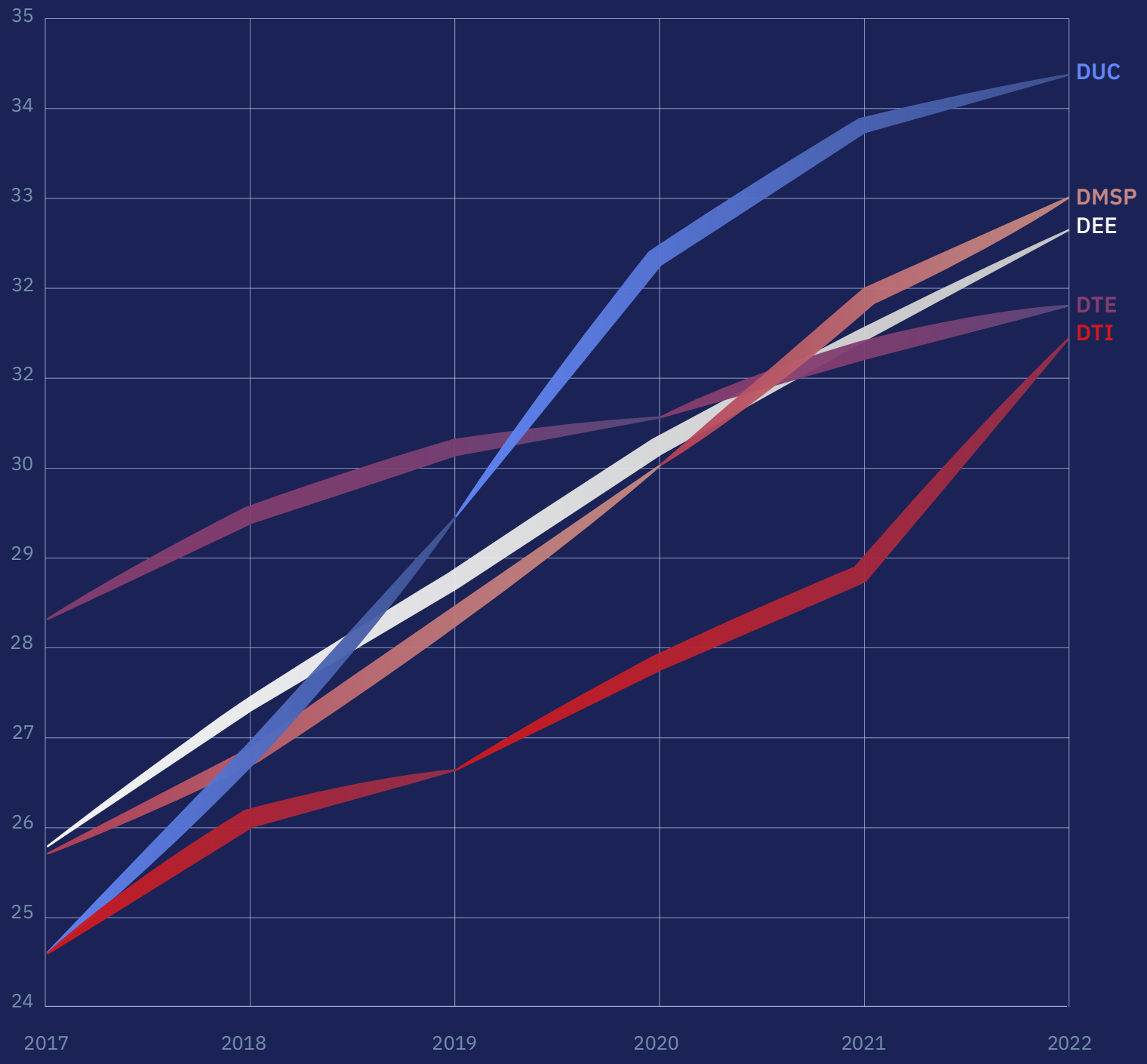


Figure 6 presents a comparative radar chart illustrating the performance of Latin America and the Caribbean across the 12 digital entrepreneurship ecosystem components included in the DEE, comparing values for 2017 and 2022. The figure highlights both areas of progress and persistent structural weaknesses across the 12 indicators that underpin the region's digital entrepreneurial ecosystem. While improvements are visible over time, as indicated before, the results clearly show that progress has been uneven across DEE dimensions, revealing a gap between digital conditions and more advanced, entrepreneurship-critical capabilities.

For all DEE indicators, values in 2022 exceed those reported in 2017, indicating a broad-based improvement. However, the largest and most persistent performance gaps remain in Financial Facilitation, Digital Startup, Digital Security, and Digital Scaleup. These dimensions are directly linked to firms' ability to access finance, connect to markets, adopt and integrate digital technologies, and scale entrepreneurial ventures. The relatively modest gains observed in these areas suggest that, despite growing digital access and usage, the region continues to face structural barriers in converting digital readiness into sustained entrepreneurial growth.

Between 2017 and 2022, Latin America performed relatively better in Digital Privacy, Digital Security, Digital Networks, and Digital Literacy, where 2022 values show clear improvements over 2017. These gains reflect progress in digital literacy and regulatory frameworks, providing a more enabling environment for digital participation of entrepreneurs and customers. Digital protection is the DEE pillar that showed the greatest improvement between 2017 and 2022, and this result suggests that users are the key drivers of the DEE variation in this period. But even in these areas, the radar chart indicates that performance remains moderate, suggesting incomplete institutional consolidation of the local DEE across countries.

More advanced ecosystem components—such as Digital Networks, Digital Rights, Digital Absorption, and Digital Privacy—show only limited expansion between 2017 and 2022. We interpret this result as evidence that the region's digital entrepreneurial ecosystem remains heavily reliant on basic infrastructure and user access, and that the capacity to activate dense, multi-actor interactions among firms, platforms, investors, and support institutions remains a challenge that policymakers and economic agents must address. The relatively flat progression in the Digital Competition, Digital Startup, and Digital Scaleup indicators further indicates challenges in fostering innovation-driven entrepreneurship that facilitates firms' growth.

The results presented in the radar chart highlight the need for policymakers in Latin America and the Caribbean to move beyond access- and infrastructure-focused digital strategies, and invest more decisively in the ecosystem levers that support entrepreneurial dynamism. Improving platform ecosystems, scaling up support mechanisms, and fostering innovation-oriented finance are critical for translating the observed digital gains into sustained entrepreneurial outcomes. Without targeted action in these areas, improvements in digital networks and rights are unlikely to narrow the gap between digital readiness and effective digital entrepreneurship across the region.

Figure6

Digital Entrepreneurship Performance across Key Pillars 2017 and 2022

Comparison of DEE key pillars for Latin American countries (2017 and 2022)

Note: The radar chart compares performance across various digital entrepreneurship pillars.

Source: VIGS Institute, 2025.

Figure 7 compares the percentage change in the DEE components between 2017 and 2022 for Latin America as a whole and for the top-5 and bottom-5 performing countries in the region. The figure reveals that Latin America is undergoing a phase of ecosystem consolidation rather than transformation. On average, the greatest improvements in the region are concentrated in foundational and regulatory pillars (digital privacy, security, networks, and openness). At the same time, entrepreneurial activation and platform-based growth remain structurally constrained (digital Matchmaking, scaleup, and freedom).

At the regional level, Latin America shows strong improvements (% variation) over the analyzed period in Digital Privacy (103.17%), Digital Security (73.52%), Digital Networks (30.18%), and Digital Literacy (27.69%). These improvements suggest that enhanced regulatory frameworks, stronger user protection, and greater access to digital skills are key prerequisites for trust and active participation in digital markets. The top-5 performing countries stand out in these dimensions, with large gains between 2017 and 2022 in Digital Privacy (68.52%) and Digital Security (56.53%), which indicates the importance of institutional upgrading and the development of more advanced data governance mechanisms. This trend suggests that leading countries are consolidating advantages in trust- and rights-oriented aspects of their digital ecosystem.

However, the figure also makes clear that the pillars of entrepreneurship show weaker, more uneven progress compared to the regulatory and user-centric dimensions. At the regional level, improvements in Matchmaking (16.70%), Digital Startup (12%), and especially Digital Scaleup (4%) remain modest, indicating limited progress in the mechanisms that connect firms to digital markets, finance, platforms, and growth opportunities. Although the Financial Facilitation variable shows significant improvement across all levels (Latin America: 24.91%, top-5 performers: 27.86%, bottom-5 performers: 29.47%), its pace remains insufficient to support entrepreneurial activation at scale. These patterns suggest that, despite overall progress, key bottlenecks persist for generating entrepreneurial dynamism in the region.

Among the top-5 performing countries, progress in entrepreneurship-oriented pillars is positive but uneven. Improvements in Digital Absorption (28.40%) and Networks (23.12%) are evident; however, they remain limited compared with the much stronger advances in Digital Privacy (68.52%) and Digital Security (56.53%). This imbalance indicates that even leading economies have prioritized regulatory elements and trust-building over the development of scalable, platform-based entrepreneurial ecosystems.

The contrast is more pronounced among the bottom 5 performers, where the pillars' progress is highly polarized. While these countries show large improvements between 2017 and 2022 in Digital Privacy (184.97%), Digital Security (148.30%), and Digital Literacy (93.37%)—reflecting catch-up effects in regulatory aspects—they experience stagnation or decline in several entrepreneurship-critical dimensions: Digital Rights (-14.06%) and Matchmaking (-9.15%) report a decline, while Digital Scaleup (0.43%) shows virtually no improvement over the period. Although important changes are observed in the Digital Startup (40.34%) and Networks (55.49%) components, these positive variations seem insufficient to offset weaknesses in ecosystem coordination and integration in digital markets.

Figure7

Pillar-Level Digital Entrepreneurship Change by Group (2017-2022)

Percent change in digital entrepreneurship performance across Latin America

Note: Change is measured as the percent difference in pillar-level performance between 2017 and 2022.

Source: VIGS Institute, 2025.

Bottom-5
Latin America
Top-5

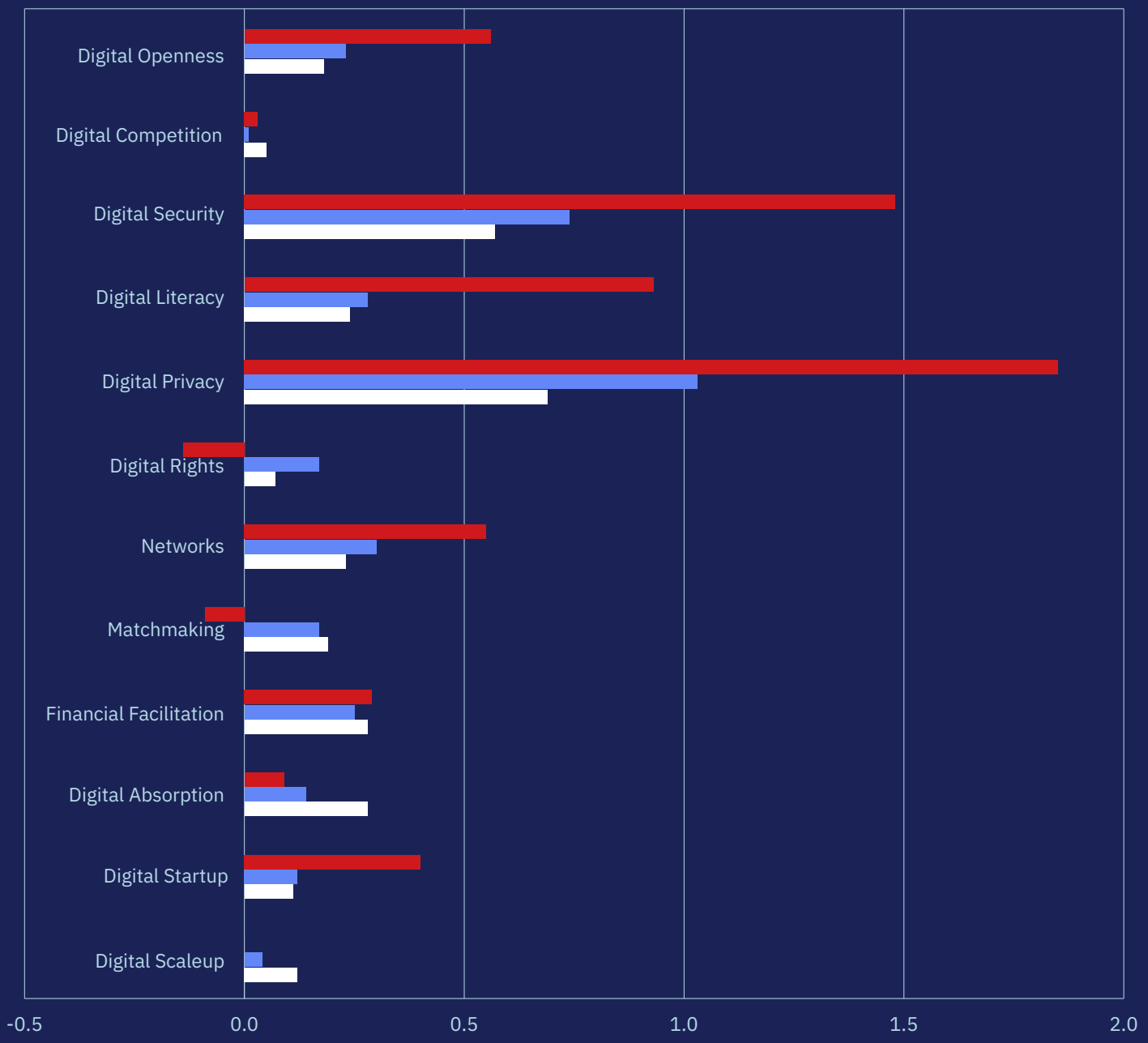


Figure 8 offers a granular view of how each DEE pillar evolved in Latin America and the Caribbean between 2017 and 2022. In the figure, for each DEE pillar, the horizontal bars illustrate both the magnitude of change and the initial and final performance levels, allowing identification of where the region has advanced most and where structural gaps persist.

The most pronounced improvements are observed in Digital Privacy and Digital Security. Digital Privacy shows the largest absolute increase, rising from 17.10 in 2017 to 34.74 in 2022, while Digital Security improved from 17.82 to 30.92 over the same period. These gains reflect a strong regional emphasis on digital trust, data protection frameworks, and cybersecurity capabilities. Such efforts are critical for user confidence, cross-platform participation, and the legitimacy of digital markets, particularly in environments historically characterized by weak trust and regulatory fragmentation. Other substantial improvements are evident in Networking (from roughly 34.76 to 45.26) and Matchmaking (from 27.62 to 32.23). These trends indicate a gradual strengthening of ecosystem connectivity, inter-firm linkages, and businesses' ability to integrate digital technologies into their operations.

By contrast, entrepreneurship-activation pillars such as Digital Startup (2017: 30.92, 2022: 32.16) and Digital Scaleup (2017: 26.24, 2022: 29.38) present modest improvements. These limited gains point to persistent barriers in new venture creation and scaling, including constrained access to growth capital, weak innovation networks, and limited pathways from startup formation to scaleup stages.

Figure8

Pillar-Level Change in Latin America

2017 - 2022

Comparative scores for digital entrepreneurship pillars in 2017 and 2022

Note: Bars indicate the change in pillar performance from 2017 to 2022.
Points represent values for each year.

Source: VIGS Institute, 2025.

Figure 9 presents the relationship between research and development (R&D) investment (horizontal axis) and the Digital Entrepreneurship Ecosystem (DEE) index (vertical axis). In this context, R&D investment is measured using the UNCTAD Frontier Technology Readiness Index (FTRI) R&D component, which captures the countries' capacity to generate, adapt, and absorb new technologies through research activity. Rather than representing raw R&D expenditure alone, this indicator reflects standardized R&D intensity, typically based on R&D expenditure relative to GDP and related inputs, normalized to enable cross-country comparability (UNCTAD, Frontier Technology Readiness methodology: https://unctadstat.unctad.org/datacentre/reportInfo/US.FTRI). Higher values, therefore, indicate stronger national innovation systems and greater readiness to engage with advanced and digital technologies.

The figure reveals a clear positive association between R&D intensity and the digital entrepreneurial ecosystem. The results suggest that countries that invest more systematically in research and innovation tend to have more developed and dynamic digital entrepreneurial ecosystems. Chile, Brazil, Argentina, and Uruguay are the top-performing countries, combining high R&D investment levels with strong DEE values. In particular, Chile and Brazil emerge as regional leaders, reflecting their relatively advanced research bases and their capacity to translate them into entrepreneurial ecosystem outcomes. These cases illustrate a virtuous cycle between innovation inputs and digital entrepreneurship outputs.

The figure also shows a group of countries, including Mexico, Colombia, Costa Rica, and Peru, clustered around the estimated line. The trend line of these countries suggests a more balanced relationship between R&D investment and DEE development, where innovation inputs are present but only partially translated into digital ecosystem outcomes. This pattern highlights the potential presence of structural and institutional frictions that limit the conversion of research capacity into scalable digital ventures, despite moderate R&D intensity levels. On the contrary, several countries, including Haiti, Honduras, Guatemala, Nicaragua, Venezuela, and various Caribbean economies, are located at the bottom of the figure, which is characterized by low levels of R&D investment and a weak DEE. This indicates that these countries face a complex disadvantage: limited innovation capacity and insufficient mechanisms to support entrepreneurs in adopting and absorbing digital technologies. This result reinforces the view that a weak digital entrepreneurship ecosystem is closely tied to underdeveloped research systems and low technological readiness.

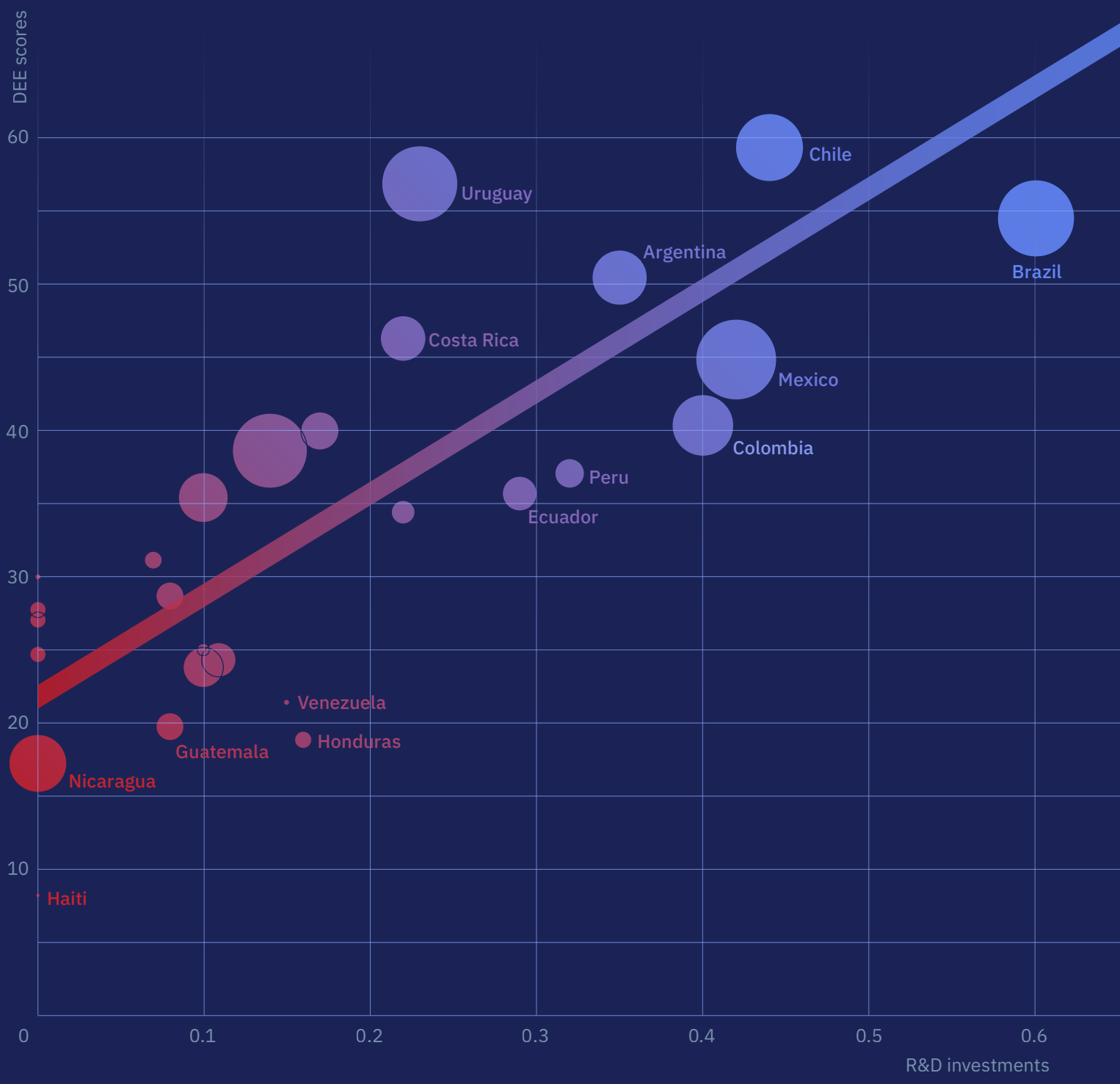
Figure9

R&D Investment and Performance of the Digital Entrepreneurial Ecosystem

Correlation between industrial R&D investment and the DEE Index in Latin America

Note: Circle size represents early-stage VC investment (combined number, adjusted for working-age population).

Source: VIGS Institute, 2025.



5 The DEE’s missing link: Strong user progress, weak startup dynamics

This chapter focuses on how Latin America's DEE is changing over time, and what that change implies for policy priorities. The core message is a structural imbalance. The region is improving fastest in the digital user citizenship (DUC) sub-index, while the entrepreneurial agency side (digital technology entrepreneurship, DTE) is comparatively stagnant (Figure 5 and 11). This pattern reveals important insights, as digital entrepreneurial ecosystems do not become innovation-driven simply by improving connectivity and developing digital rules; these key ecosystem elements must translate into startup formation and scaleup capacity.

The sub-indices trajectories between 2017 and 2022 presented in Figure 11 show how DUC is the fastest-growing sub-index, rising 39.58% (from 24.60 to 34.34). This is not a mere technical comment, and the result signals that the region's most consistent progress has concentrated in digital inclusion, and user-side literacy and capabilities, supported by improvements in the institutional 'rules of the game' that shape safer digital participation (e.g., rights, privacy, security). In practical terms, Latin America is expanding the base of people who can use digital services and engage in digital markets, which is an essential precondition for any ecosystem to grow. On the contrary, digital technology entrepreneurship (DTE) represents the key bottleneck sub-index in the region, which grew only 12.29% between 2017 and 2022 (Figure 11: from 28.30 to 31.78). This sub-index captures whether the region is transforming better access and connectivity, infrastructure, and platform activity into digitally-led venture creation (Figure 1). The slow DTE growth corroborates that, despite the progress made in the ecosystem foundations, Latin America faces important challenges in terms of venture dynamics. The DEE results align with policy diagnostics that similarly stress that the region has prioritized governance frameworks, as well as user-driven and data-driven dimensions of the digital ecosystem (García-Zaballos et al., 2021; OECD and IDB, 2024).

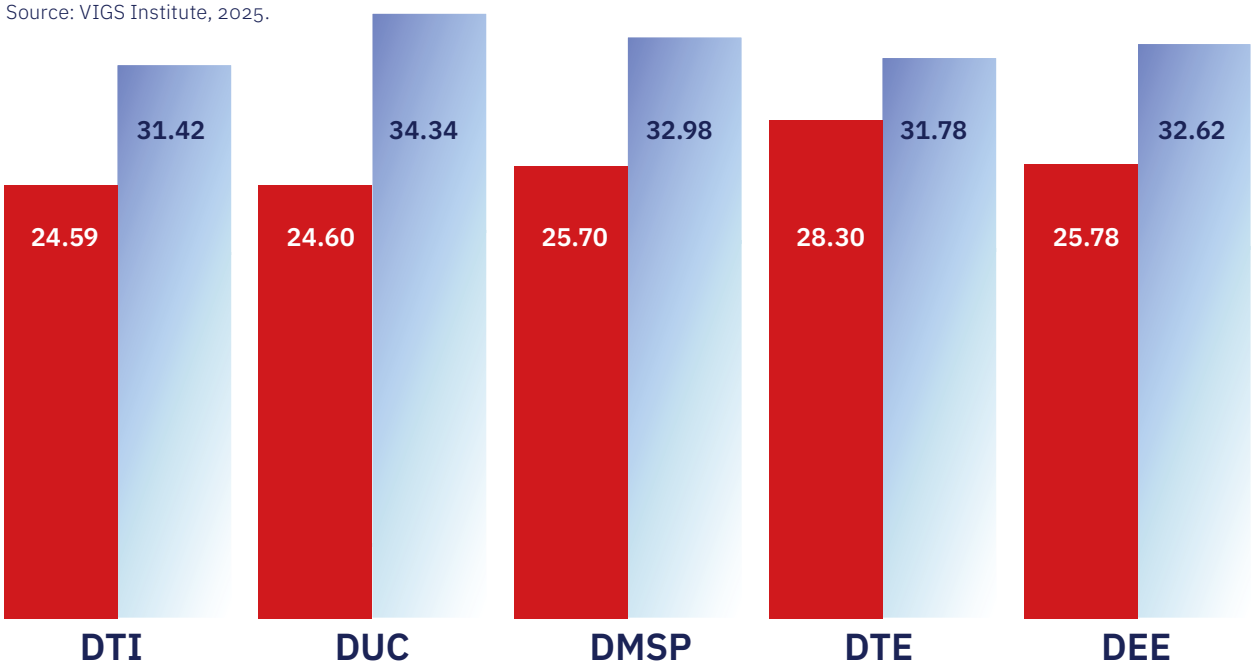
This result indicates that the region is building better conditions for participation in the digital economy, but it is still struggling to turn those conditions into sustained technology entrepreneurship. Nevertheless, digital entrepreneurship outcomes depend on complementary capabilities, including skills, finance, and ecosystem support, beyond connectivity alone. Thus, more efforts are needed to tackle important digital challenges that still prevail in the region.

In policy terms, this is the manifestation of a "technology entrepreneurship winter", that is, the gap between "more people online" and "more firms innovating, scaling, and upgrading productivity."

Figure11

Variation in the DEE sub-indices between 2017 and 2022

Source: VIGS Institute, 2025.



5.1 The ”technology entrepreneurship winter” in Latin America: Why startups remain constrained in the region?

Latin America's DEE results point to a clear tension (chapter 4): the region has improved important ecosystem enablers (digital access, user participation, and governance); however, startup formation remains structurally constrained. Technology entrepreneurship does not automatically follow from greater digital inclusion and better digital infrastructures; it depends on whether markets can fund and scale innovations (Rios-Mendez, 2025). The reason behind the poor technology entrepreneurship figures in the region is multifactor. In our interpretation, underdeveloped venture capital markets and the configuration of local markets, dominated by low-value-adding industries, limit the capacity to generate high value-added, innovation-led firms.

Underdeveloped regional venture capital markets.—Probably the biggest constraining factor of technology entrepreneurship in Latin America is the lack of solid venture capital market for startups and scaleups. As it can be seen in Figure 12, venture capital activity expanded between 2018 and 2021; however, this growth period was followed by a slowdown period where both venture capital fund and number of firms backed by venture capital drastically declined, reaching pre-Covid pandemic results in 2024. Structural financial conditions reinforce these problems. Latin America continues to face significant investment gaps in technology sectors. Structural weaknesses in capital markets mean that many technology entrepreneurs navigate uncertain local markets and struggle to fund or expand the operations of their startup projects. Besides, local financial systems remain relatively small and lack the depth required to support startups, while institutional investors play a limited role. As a result, startups primarily depend on foreign capital, making investment flows highly sensitive to changing financial conditions (OECD, 2025).

An additional key challenge in the region is the weakness of regional capital markets, as healthy entrepreneurial ecosystems rely on mergers and acquisitions (M&A) and initial public offerings (IPOs) to recycle capital and maintain investor participation. In 2024 only 79 M&A and IPOs were reported in Latin America, a number of operations that is very small for the entire region and significantly lower compared to 2021 figures (112 operations) (Cuantico VP, 2025: https://reports.cuanticovp.com/latin-america-venture-capital-report-2025).
The poorly functioning venture capital market in the region discourages investments and creates a financial atmosphere in which investors become more risk-averse. These properties limit entrepreneurs' capacity to fund their ventures and nurture the ecosystem.

Figure12

Evolution of venture capital funding and deal count in Latin America (2017-2024)

Source: Latin America venture capital report, 2025.

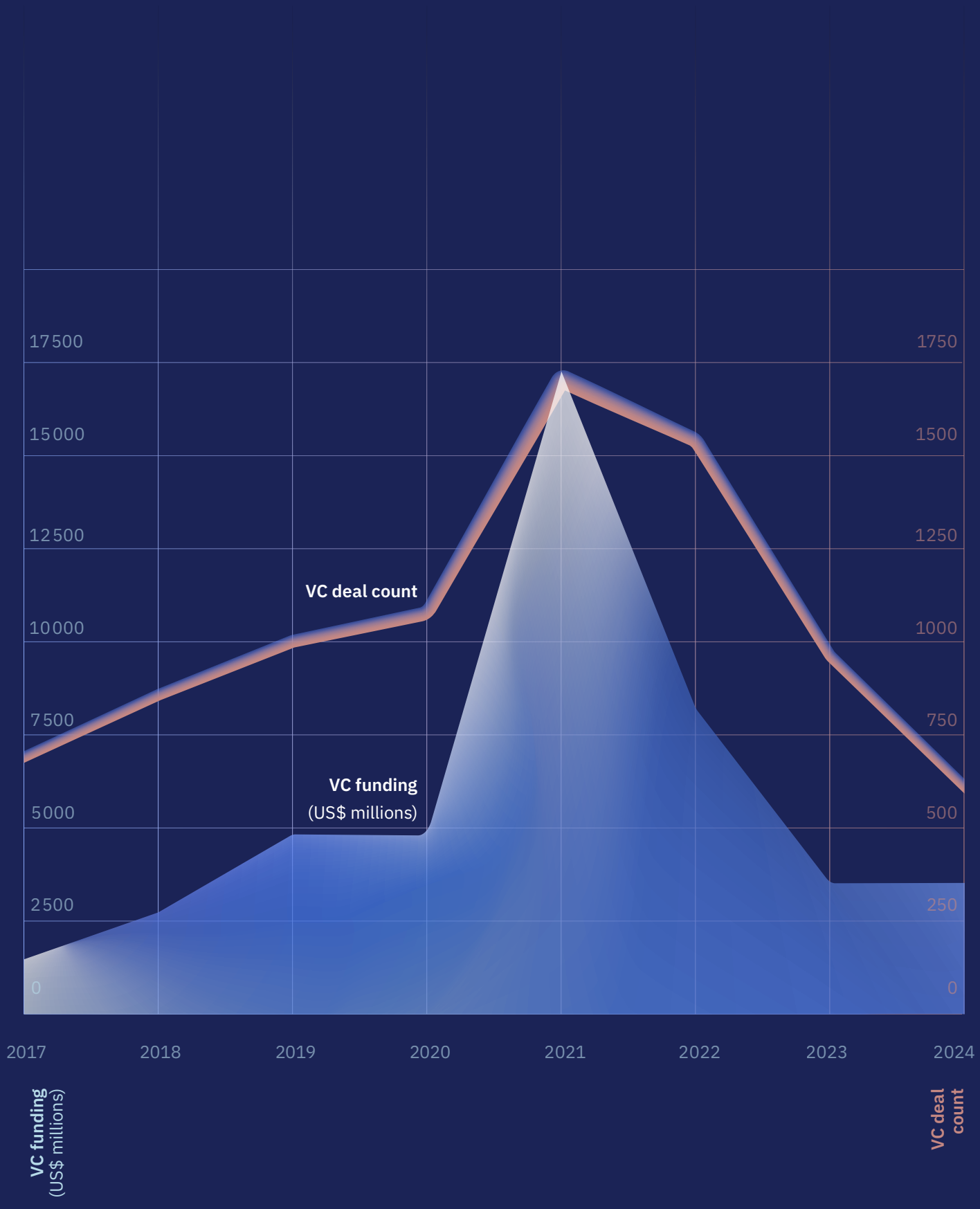


Figure13

Top Sectors in Latin America Venture Capital Investment

Source: LAVCA, 2025.

This analysis reveals structural weaknesses in entrepreneurship-oriented sub-indices, which have lagged behind improvements in infrastructure and user-centric dimensions. But, Figure 13 offers an important forward-looking signal. Fintech dominates Latin American VC activity in 2024, accounting for around 61% of total investment value and over 30% of total deals. This is noteworthy because fintech activities are closely linked to the Financial Facilitation pillar, which has underperformed in the region during 2017-2022. The boost in fintech investments may therefore indicate that market-driven mechanisms are beginning to address financial bottlenecks that constrained entrepreneurial growth in earlier years. The relevance of AI, healthtech, agtech, and logistics technologies in venture capital deal counts points to growing experimentation in startup formation and digital business models, areas that are connected to the Digital Startup and Digital Absorption pillars. However, caution is advised. The DEE shows that ecosystem transformation is gradual and path-dependent. While venture capital patterns for 2024 suggest increased activity in weak dimensions, it is still not clear if these investments are a consequence of ecosystem improvements, or if they will translate into sustained startup activity.

Table2

Connection between countries' industrial configuration and technology entrepreneurship

Source: OECD National Statistics

(https://www.oecd.org/en/data/indicators.html?orderBy=mostRelevant&page=0&facetTags=oecd-languages%3Aen), and World Bank (https://databank.worldbank.org/home). Additional sources consulted: Eurostat databases (https://ec.europa.eu/eurostat/data/database), National Institute of Standards and Technology (Published on May, 2025: https://www.nist.gov/blogs/manufacturing-innovation-blog/manufacturing-america-contributing-our-economy-employment-and), and OECD (2025).

Industry	Latin America	Europe	USA	Impact on DTE
Resource base (extractive)	6%	2%	1%	Limited innovation spillovers and startup demand
High-tech manufacturing	5%	9%	10%	Support to technological upgrading and scale opportunities
Knowledge-intensive sectors	4%	7%	11%	Innovation engine, high R&D diffusion

Low value-adding configuration of the region's industrial fabric.—As presented in table 2, Latin American economies are heavily relying on extractive industries and low- to medium-value-added services (OECD, 2020): extractive industries still have a significant weight in the GDP (nearly 6%), more than three times the values reported for the European Union (2%) or the USA (1%). Additionally, the region is predominantly specialized in low-tech industries: high-tech manufacturing in Latin America accounts for about 5% of GDP, with Mexico, Brazil, Chile Argentina, and Costa Rica leading industrial competitiveness and the production of high-tech products (motor vehicles industry, med-tech devices, and knowledge-based services) (UNIDO, 2025). This value is far below figures reported for the European Union (9%) and the USA (10%) (Table 2). This productive configuration negatively affects technology entrepreneurship through demand-side constraints. High-growth startups typically emerge in environments where advanced firms, research institutions, and industrial clusters generate complex technological opportunities. In Latin America, the limited presence of knowledge-intensive sectors (4% of GDP) reduces opportunities for startups to integrate into the local ecosystem or scale through business-to-business markets. Thus, many ventures concentrate on consumer-oriented services (e.g., payments, delivery platforms, or e-commerce) rather than technological innovation. In advanced economies, manufacturing and knowledge-based sectors (Table 2: EU= 7% of GDP and USA= 11% of GDP) generate innovation networks and demand for technological solutions, thus facilitating the creation and scaling of startups (Maloney et al., 2025).

Related, regional market fragmentation represents an additional barrier to startup growth in Latin America. Despite cultural similarities, the region functions as a group of partially integrated national markets. This market fragmentation forces startups to adapt to different regulations, tax systems, and institutional environments. Navigating through this web of dissimilar economies increases operational costs, which further discourages venture capital and slows down expansion.

6 Conclusions and Policy Recommendations

The analysis of the digital entrepreneurship ecosystem (DEE) in Latin America presented in this report reveals a region progressively advancing in digitalization, while remaining structurally constrained in entrepreneurial dynamism. Between 2017 and 2022, Latin America experienced significant improvements in connectivity, digital literacy, privacy protection, cybersecurity, and platform-related capabilities. These advances reflect sustained investments in digital infrastructure, institutional upgrading, and digital inclusion policies. However, these improvements have not translated into proportional gains in startup creation, scaleup capacity, or deep technological absorption. Rather than a phase of rapid entrepreneurial transformation, the region is undergoing a process of ecosystem consolidation.

A central finding emerging from the report is the coexistence of progress and persistent structural asymmetry. A relatively small group of countries—including Chile, Uruguay, Brazil, Argentina, Costa Rica, and Mexico—has developed comparatively stronger ecosystems by combining infrastructure investments with institutional upgrading and innovation-oriented policies. But, even among these regional top-performers, convergence toward global benchmarks remains limited. The stability of country rankings over time highlights the path-dependent nature of digital entrepreneurial ecosystems: early advantages tend to persist, while lagging countries struggle to improve their trajectories. The limited changes observed in rankings confirm that isolated or short-term interventions are insufficient to generate systemic ecosystem upgrading.

The most significant imbalance concerns the gap between digitalization progress and entrepreneurial agency. Improvements have been strongest in user-centric indictors (digital privacy, digital security, and digital literacy), which indicates that users have been the primary drivers of ecosystem advancement. This means that Latin America is becoming more digitally connected, safer, and more inclusive. However, the pillars closely associated with innovation-driven entrepreneurship (digital startup and digital scaleup) show modest and uneven progress. This pattern reflects what we defined as the ”technology entrepreneurship winter”: a structural gap between increased digital inclusion and limited capacity to translate that participation into greater growth in innovation-led ventures.

The analysis further shows that these weaknesses are not accidental but rooted in structural constraints. Small, underdeveloped venture capital markets restrict the financing and scaling of startups. Besides, the productive structure of many Latin American economies, heavily dependent on extractive and low-value-added sectors, reduces demand for advanced technological innovation. Taken together, the mismatch between the configuration of the industrial fabric in Latin America and the demands of knowledge-base sectors prevent improvements in digital inclusion and infrastructure from fully activating entrepreneurial dynamics.

The studied Latin American economies have therefore reached a new policy frontier. Unlocking the full potential of digital entrepreneurship requires moving beyond incremental digitalization toward ecosystem activation. The region's digital challenge is no longer primarily about expanding connectivity or infrastructure, but about improving systemic interactions among ecosystem actors. Governments are only one participant within the DEE and cannot independently drive ecosystem performance. Public policy is essential to enabling regulation, infrastructure, and coordination; however, effective ecosystem development depends on the collective interaction of users, entrepreneurs, investors, incumbent firms, platforms, and support organizations. Governments should act as ecosystem catalysts, fostering trust, interoperability, and collaboration rather than relying exclusively on top-down interventions.

In this context, activating the DEE is not a matter of policy expansion alone, but of fostering alignment, trust, and coordinated action among the multiple stakeholders that shape digital entrepreneurial outcomes. Policy priorities should therefore shift toward supporting entrepreneurial activation mechanisms. Regional coordination and integration can further reduce fragmentation and enable cross-border scaling.

The analysis presented in this report makes clear that ecosystem convergence is possible, but only if digital policy is treated not as a technological agenda, but as a long-term economic and entrepreneurial strategy. Priority should be given to improving innovation-oriented finance, supporting startup and scaleup programs, fostering the role of digital platforms, and improving mechanisms that connect entrepreneurs to markets, data, and talent.

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Appendix

A. The structure of the DEE Index (2017-2022 data version)

The DEE Index is structured around four sub-indices, each representing a critical dimension of the interaction between digital infrastructure and the entrepreneurial ecosystem. Together, these sub-indices encompass 12 pillars that collectively assess the systemic enablers and constraints of digital entrepreneurship within a specific territorial context. Each pillar reflects a distinct but interconnected component of the digital entrepreneurial environment—ranging from foundational infrastructure and user engagement to entrepreneurial innovation, firm growth, and value generation. The following table provides an overview of the pillars and their associated variables, underscoring them as the core structural elements of the DEE Index.

TableA1

Digital Entrepreneurship Ecosystem Pillars, Roles, Variables and Content

DTI

Digital Technology Infrastructure

Pillars	Role in the DEE	Variables	Variable content
Digital openness	Ensures institutional support for equitable access to and use of digital infrastructure, fostering broad-based participation.	▪ Digital openness institutions ▪ Digital openness technology	Capturing ICT and internet regulation, population use of G2-G5 networks, % of frequency coverage
Digital competition	Promotes fair and innovation-friendly markets through regulation and rivalry, mitigating risks of digital monopolization.	▪ Digital competition institutions, ▪ Digital competition technology	Business freedom, regulatory quality, mobile tariffs, handset prices
Digital security	Provides legal and technological protections that build trust and safeguard users and systems from cyber threats.	▪ Digital security institutions, ▪ Digital security technology	ICT competition, measuring law and regulations on cybercrime and cybersecurity, Secure Internet servers per million population

DUC

Digital User Citizenship

Pillars	Role in the DEE	Variables	Variable content
Digital literacy	Enables individuals to actively participate in, benefit from, and contribute to digitally enabled entrepreneurial processes through essential digital competencies.	▪ Digital literacy institutions, ▪ Digital literacy users	Human capital, eparticipation, digital skills among population
Digital privacy	Ensures safe and trustworthy participation in digital world through the protection of personal data and user autonomy.	▪ Digital privacy institutions, ▪ Digital privacy users	Laws and regulations on cybercrime and cybersecurity; government cybersecurity capacity, % of households with computer and internet access
Digital rights	Guarantees users' freedom to access, express, and innovate in digital spaces through the enforcement of fundamental civil and digital liberties.	▪ Digital rights institutions, ▪ Digital rights users	Personal rights, fundamental rights, internet nd intellectual propertyrights, % of individuals using the internet, gender gap in mobile ownership

DMSP

Digital Multi-sided Platform

Pillars	Role in the DEE	Variables	Variable content
Networking	Leverages network effects to scale value co-creation between users and agents through platforms, social media, and virtual services.	▪ Networking agents, ▪ Networking users	Locally developed apps, language support, social media use, e-government firms with website
Matchmaking	Facilitates efficient connections between users and agents, enabling decentralized exchanges and interactive entrepreneurial collaboration.	▪ Matchmaking agents, ▪ Matchmaking users	Number of developers and organizations, alternative financing, mobile ownership, % used mobile internet to buy something
Financial facilitation	Expands access to digital financial services, supporting inclusive and scalable digital entrepreneurial activity.	▪ Financial facilitation agents, ▪ Financial facilitation sers	Financial technology businesses, active mobile broadband, used credit/debit card, made or received digital payments

DTE

Digital Technology Entrepreneurship

Pillars	Role in the DEE	Variables	Variable content
Digital absorption	Measures the capacity of existing firms and actors to internalize and apply digital echnologies, driving intrapreneurial innovation.	▪ Digital absorption agents, ▪ Digital absorption technology	Access to finance, skills, technicians, computer education, mobile speed, access to electricity
Digital startup	Reflects the various agency support mechanisms that enable the emergence and early growth of ventures built around digital innovation.	▪ Digital startup agents, ▪ Digital startup technology	Early phase VC, researchers, top-tier engineering education, incubators, accelerators, coworking, venture capital, startup regulation, support, R&D
Digital scaleup	Captures the agency support that enable digital ventures to scale rapidly into highgrowth, high-impact firms.	▪ Digital scaleup agents, ▪ Digital scaleup technology	Later phase VC, managers, top business education, supporting services, top city-level co domains, tech centers, mentoring network


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