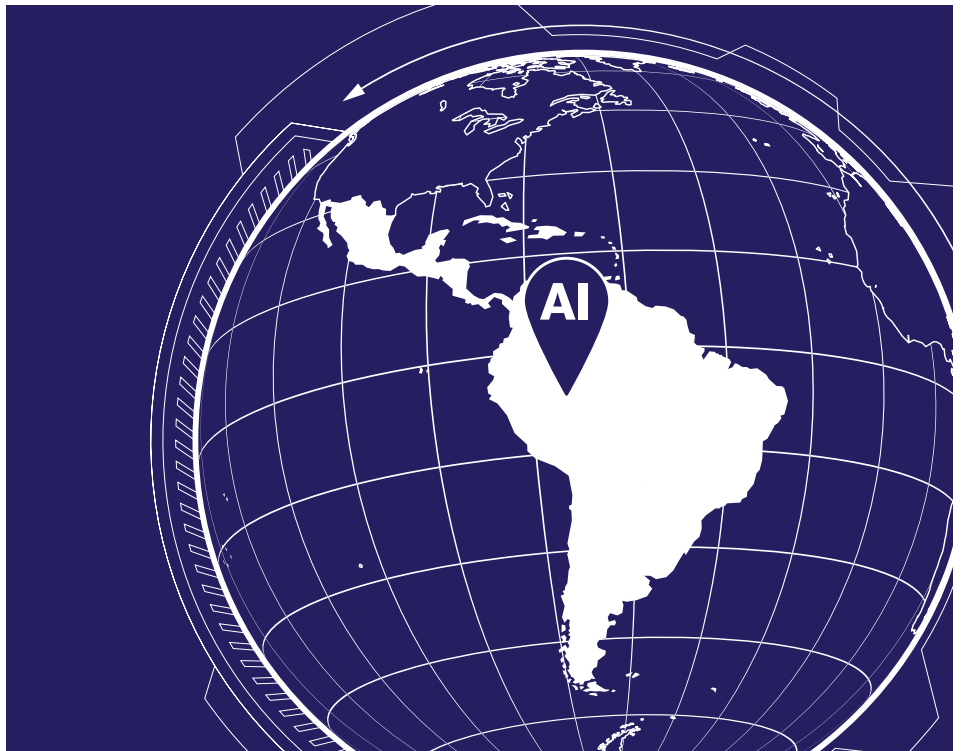


# The global AI agenda: Latin America



Latin America's AI ecosystem is beginning to emerge, with startups and large companies deploying data analytics to tackle critical issues facing the region, including food security, smart cities, natural resources, and unemployment. Global AI giants are building their research ties to the region, evidenced most recently in a new collaboration between the São Paulo State Research Foundation (FAPESP) and IBM.<sup>1</sup> Many countries, including Brazil, Mexico, Chile, and Argentina, have penned, or are now developing, official national AI strategies. One study of five economies (Argentina, Brazil, Chile, Colombia, and Peru) predicts that AI could add up to an entire percentage point to the region's annual economic growth by 2035, yielding the largest benefit for Brazil, culminating in an additional \$432 billion to gross value added in 2035.<sup>2</sup>

Experts consider that there are many opportunities for the region, if it moves quickly. Omar Costilla-Reyes, an AI research fellow at MIT, organized an AI summit in January 2020 that brought together policymakers and the tech community to flesh out the regional agenda for AI. “We felt that the big players are gaining too much power in AI. Think about the consequence of that; this is going to be bigger than the Industrial Revolution in terms of the advantages it brings.”

This regional summary explores how executives in Latin America see AI and its benefits, based on an MIT Technology Review Insights global survey of 1,004 senior executives worldwide, from sectors including consumer goods and retail, financial services, travel, telecommunications, and manufacturing.

The headline findings show AI being initiated in Latin America at almost the same level as other regions. By the end of 2019, 79% of surveyed businesses in the region had launched AI programs, compared with 87% in North America and 95% in Asia-Pacific. Latin America’s AI investments have also borne fruit, with fewer than 2% of respondents claiming initiatives made lower-than-expected returns. Momentum will gather in the years ahead; almost two-thirds of respondents expect 21%–40%

of their processes to use AI three years from now.

## A vibrant AI ecosystem

More than half of surveyed businesses are currently using AI to improve customer services. This will continue to be a leading area of AI in the years ahead. The areas of fastest AI growth will be in logistics and supply chain management and sales and marketing—deployment of AI in both of these areas will double between 2020 and 2022, according to the survey. This represents a forceful push of new technologies into revenue-generating and service-delivery sides of the business. Until now, the majority of AI returns have been in improved operational efficiency, faster time-to-market, and management decision-making. Just a quarter of businesses have been able to use AI to increase the top line.

Companies in all industry verticals are taking advantage of AI technologies. Banking is one, helped by strong public support for automation; one survey found that 83% of Brazilian consumers said they would trust banking advice entirely generated by a computer, compared to a global average of 71%.<sup>3</sup> Chatbots and virtual assistants, which can improve response times and lighten administrative loads, are being used by banks

## About The global AI agenda

This report is part of “The global AI agenda,” a thought leadership program by MIT Technology Review Insights examining how organizations are using AI today and planning to do so in the future. Featuring a global survey of 1,004 AI experts conducted in January and February 2020, it explores AI adoption, leading use cases, benefits, and challenges, and seeks to understand how organizations might share data with each other to develop new business models, products, and services in the years ahead.

The respondents are evenly distributed globally, with 20% based in each of North America, Europe, Asia, Latin America, and the Middle East and Africa. Some 26% of respondents are C-level executives, 30% are directors, 16% heads of AI, and 10% heads of data or analytics. Over half (55%) of the organizations they represent are large, earning annual

revenue of \$1 billion or more; nearly one-third (32%) generate revenue of \$5 billion or more.

Of the 11 sectors represented, the largest contingents come from manufacturing (15%), IT and telecommunications (14%), consumer goods and retail (13%), financial services (11%), and pharma and health care (10%). The other sectors in the survey are professional services, energy and utilities, transport and logistics, travel and hospitality, media and marketing, and government.

In addition, MIT Technology Review Insights conducted in-depth interviews with leading AI experts globally, from organizations such as the World Economic Forum, Emirates Group, Vodafone, Walmart, Bank of Singapore, Lemonade Insurance Company, and Loom.ai, among others.

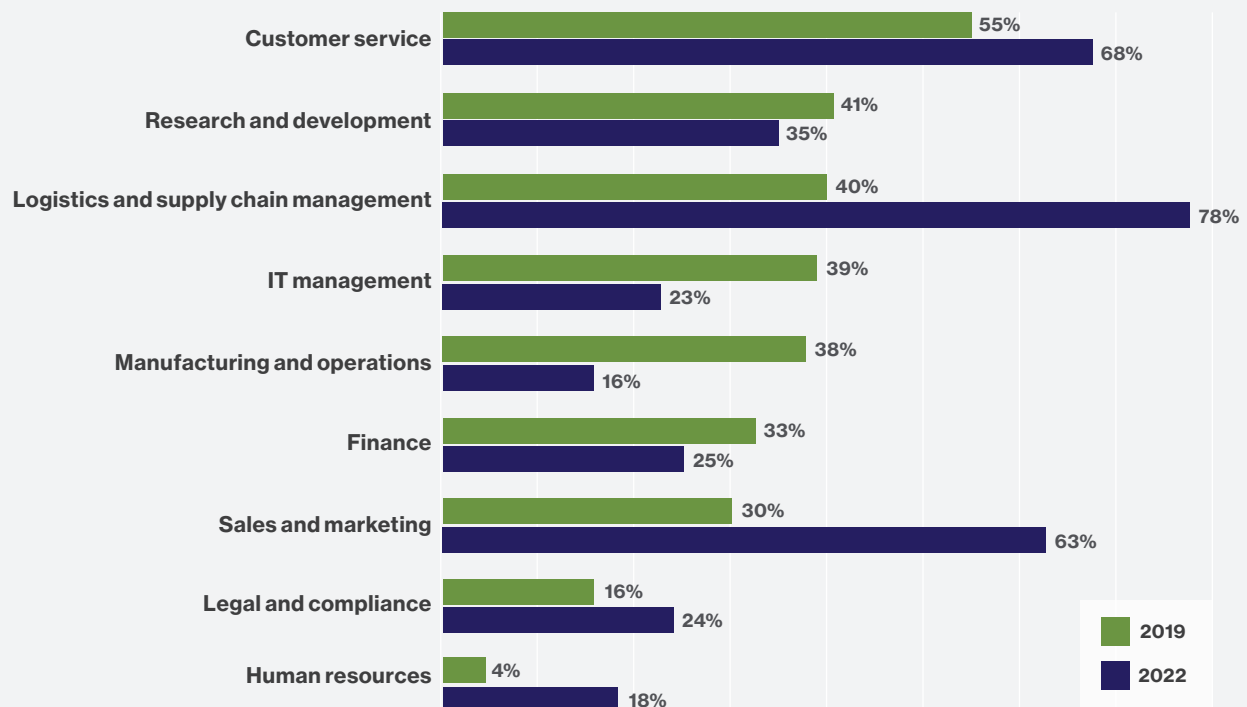
Latin American consumers are broadly positive about AI in customer service channels. One survey found that 83% of Brazilian consumers said they would trust banking advice entirely generated by a computer, compared to a global average of 71%.

across the region including BBVA, Banco Galicia, and Banco de Crédito del Perú, with bots being introduced in Facebook Messenger and WhatsApp.<sup>4</sup>

Beyond banking, chatbot tools are being used by airlines like Colombia's Avianca, and in e-commerce platforms such as Brazilian e-tailer Shop Fácil.<sup>5</sup> AI customer service-focused startups in the region include Jampp in Argentina, which has developed a machine learning system to analyze app activity and behavioral signals to understand how apps are used in different locations and weather conditions to predict purchasing decisions. Argentinian e-commerce platform MercadoLibre and Colombian on-demand delivery startup Rappi are two further notable AI-driven consumer brands.

The survey shows that few businesses in Latin America are using AI in human resource management—just 4%. This is set to increase over the coming three years, and by

**Figure 1: In which three parts of your business are AI technologies being used most actively today and three years from now? (% of respondents, Latin America)**



Source: MIT Technology Review Insights survey, 2020

2022 close to one in five businesses will use AI in people management processes. The region has produced promising startups in this domain. AIRA, from Chile, offers a system that helps recruiters select candidates by analyzing psychometrics, emotions, and facial expressions through video consultations. In Paraguay, a government-supported platform, ParaEmpleo, uses AI to analyze applicant capabilities and match them to job opportunities. The potential for AI-powered human resources and labor market matching is huge in a continent that has long struggled with high unemployment.

The survey reveals that manufacturing and operations and research and development are top-three areas of AI application for more than a third of respondents across Latin America. The natural resource sector is one relevant test bed. Researchers from Peru's National Engineering University, for instance, have developed a four-wheeled robot that autonomously explores mines to detect methane, carbon dioxide, and ammonium.<sup>6</sup> Codelco in Chile, which reportedly controls 19% of the world's reserves of copper, has been a global pioneer in adopting autonomous trucks.<sup>7</sup> In agriculture, Brazilian sugar and ethanol producer Raízen partners with Space Time

Analytics to forecast sugarcane harvests.<sup>8</sup>

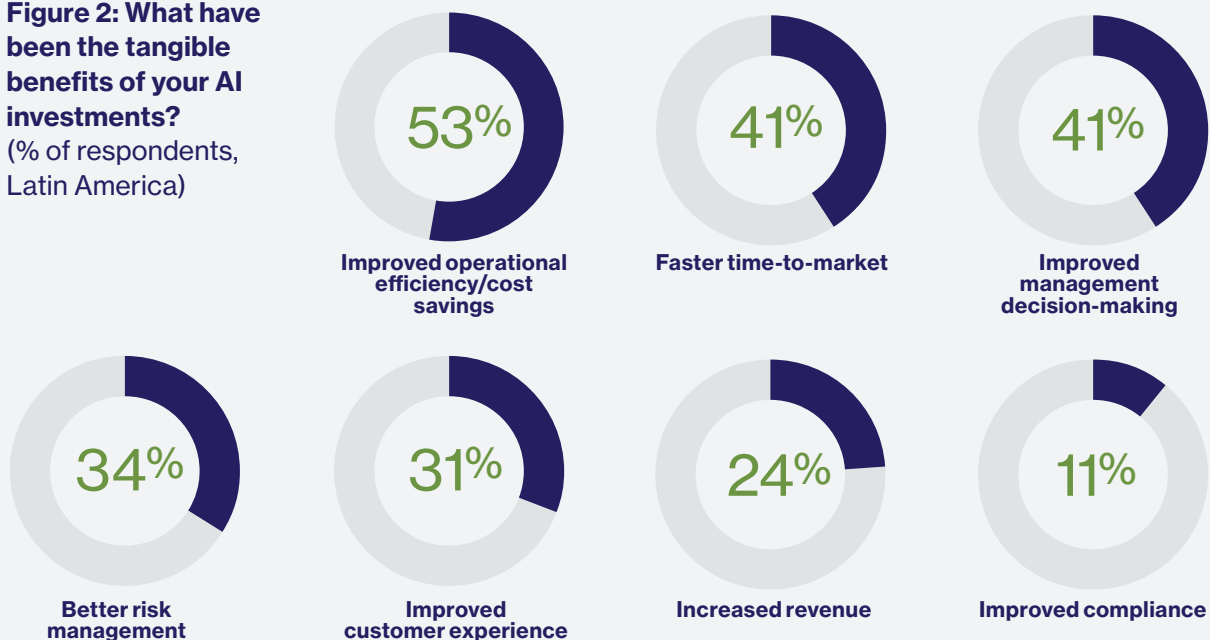
In terms of transport and logistics, there are many emerging examples of AI being used in the public and private sectors. Chile's transport ministry uses data from traffic app Waze, which is downloaded by roughly half of drivers, to improve traffic planning.<sup>9</sup> Chazki, Peru's "Uber of logistics," is using AI to develop new postal maps of hard-to-reach locations, which can enable new distribution opportunities for e-commerce retailers.

### Skills and the university ecosystem

Latin America's AI challenges largely reflect those in other regions. Difficulty in adapting business processes to use AI insights, a shortage of talent, and the quality or availability of data are the greatest obstacles. A bottleneck to the region's AI prospects is an ongoing brain drain. "Latin America has always been this place where if you have talent, you go somewhere else," says Costilla-Reyes.

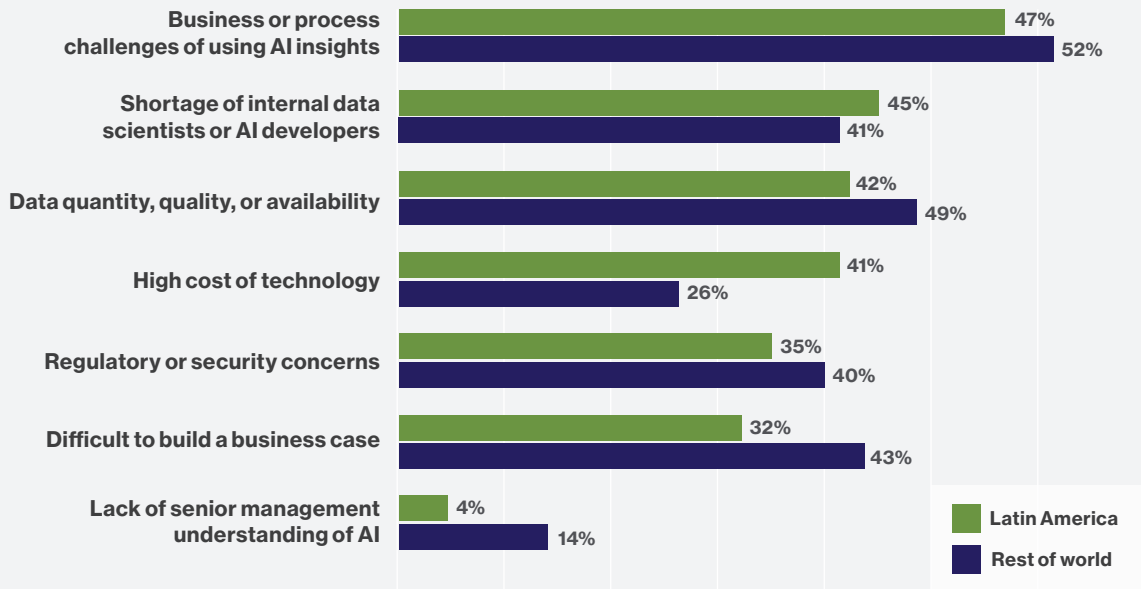
This is compounded by the region's universities seeing a limited adoption of AI and advanced technology generally, and a disconnect between universities and industry, according to Angélica Natera, executive director of Laspau, a higher education capacity-building institution

**Figure 2: What have been the tangible benefits of your AI investments?**  
(% of respondents, Latin America)



Source: MIT Technology Review Insights survey, 2020

**Figure 3: What are the greatest constraints to your company's use of AI?**  
(% of respondents, Latin America and Rest of world)



Source: MIT Technology Review Insights survey, 2020

affiliated with Harvard University. “Universities could leapfrog and innovate more if they could adapt or accelerate the adoption of AI. Most people in the region attend public universities with large classes that could benefit from personalized learning and tools that adjust to learning styles.” The Inter-America Development Bank’s 2018 report on the economic impact of AI in Latin America and the Caribbean argues that personalizing education plans with the help of AI reduces remediation costs by 40% and increases exam pass rates by 15%.<sup>10</sup> Some universities are also using AI to improve their own operations; u-planner, a Chilean-founded platform for tertiary education providers, uses AI to help universities optimize their resource planning and student management.

For startups, there may be more tech talent available than for other areas of the private sector. Chile is home to The Not Company, an alternative foods startup with an algorithm that analyzes animal protein-based ingredients and generates recipes for vegan alternatives. While the company’s founders met in the US, they decided to locate in Santiago partly for its lower cost base but also because the talent pool was as strong, and its distance from Silicon Valley made the company a more exotic pull. They also

wanted to focus their innovation in a region with significant malnutrition.<sup>11</sup>

The Global Talent Competitiveness Index (2018-20) produced by INSEAD, Adecco, and Google notes significant disparities in the strength of skills across Latin America. The index ranked 132 countries across six pillars including regulatory landscape, lifelong learning, and mid- and high-level skills. It placed Chile at 31 globally and Costa Rica at 34 (although Argentina fared worse at 50, and Brazil, at 61, scored below Indonesia and one place above Mongolia).<sup>12</sup> Yet Brazil scored well in a separate AI index produced by Stanford University as one of the five fastest-growth markets in terms of AI hiring between 2015 and 2019 (along with Singapore, Australia, Canada, and India).<sup>13</sup> That index also highlighted Argentina as a global leader for female representation in AI research, with women authoring more than 30% of AI papers published on arXiv.

## Policies and politics

Where government policy can be a lever in catalyzing AI development in terms of regulation and innovation funding, it can also hinder the sector, especially in a context like

Latin America, where governments are often quick to scrap initiatives of their predecessors. Experts note that this politically fragmented region cannot compete with the European Union, the US, or China in terms of resource allocation or regulatory coherence, but they do find in other countries proof that smart supportive policies can make a difference to R&D. “If we conduct effective AI policy, we can see benefits,” says Julio Pertuzé, assistant professor at Pontificia Universidad Católica de Chile. “Israel is a good example of this. It is a small country, but they have good R&D policies and they are capturing an entrepreneurial share of AI.”

Many governments in Latin America have produced or are developing AI plans. Brazil has published a national IoT plan and the government has committed to a network of eight AI laboratories across strategic areas including cybersecurity and defense.<sup>14</sup> It has also embarked on a digitization program across government services and, prior to Covid-19, was preparing to launch a biometric digital identity program for over 100 million Brazilians in 2020.<sup>15</sup>

Chile is developing its own AI strategy in coordination with civil society groups, which makes it very democratic, says Pertuzé. The process involves understanding how AI is currently being used within segments, and thus far the data indicates a big digital divide in many industries. “In agriculture, you have large number of small firms that don’t use computers or data, but then you have large agricultural firms that are using sensors, IoT, and AI,” says Pertuzé.

Governments themselves could use AI to strengthen regional ties. Experts have argued that AI could help improve regional integration, such as crunching large datasets on trade flows, tariffs, and rules, to find areas of consensus in multilateral negotiations and, through anticipatory models, create predictive regional trade scenarios. AI models have a 300% greater predictive capacity than traditional econometric models, according to the Inter-American Development Bank.<sup>16</sup>

One of the biggest governance challenges is political volatility in the region, from Venezuela’s economic meltdown to the violence blighting Central American countries. AI policies have been interrupted or discontinued in Mexico and Argentina as the keys of government changed hands. A second challenge is strengthening



## While a politically fragmented region like Latin America cannot compete with Europe, the US or China on AI, smart national policies do reap benefits.

regional coordination and presenting a unified voice on the global stage on issues like ethical and regulatory frameworks for AI.

One concern, says Pertuzé, is that AI ethics discussions are dominated by other voices, especially Europe, which is also leading the conversation on data privacy. “What worries us is that Europe is one or two steps forward and its strict regulations could hamper tech development in Latin America, as we have a different social reality.” The General Data Protection Regulation (GDPR), for instance, is a heavy imposition on less-developed countries that lack institutional capacity. “We could have holes that make us unable to interact with Europe.” Some countries, such as Japan, have negotiated bridge agreements with GDPR to encourage business ties between the regions without having entirely consistent regulatory regimes, but “I don’t see Latin America having the negotiating strength for that, at least currently,” he says.

### Enthusiasm for data sharing

It is not just governments that could benefit from sharing data across the region. Survey respondents also foresee that increased data sharing with third parties might lead

**Figure 4: What do you envision are the top three benefits of sharing data between companies in your own or adjacent industries? (% of respondents, Latin America)**



Source: MIT Technology Review Insights survey, 2020

to a number of benefits for their businesses. The top three benefits to sharing data would be faster and more innovative product development, greater speed and visibility across supply chains, and more efficient or innovative manufacturing. Executives in Latin America are the most enthusiastic globally about the potential for data sharing. Some 30% describe themselves as “very willing” to share data, compared with just 8% of those in

Asia-Pacific and 11% in Europe. A further 50% of respondents in Latin America said they are “somewhat willing.”

Developments that might spur an increase in data-sharing initiatives include the establishment of agreed industry standards (according to 64% of respondents), competitors’ efforts to share data (also 64%), and greater regulatory clarity (61%).

## Key takeaways

# 1

**Almost 80% of large Latin American businesses are using AI.** As of 2019, four in five businesses in Latin America have launched AI initiatives. Early results show benefits, primarily to operational efficiency and management decision-making. By 2022, AI will be used across 21%-40% of business processes at two-thirds of organizations surveyed in the region. The region has a robust ecosystem of startups, yet a lack of talent and the high cost of technology remain obstacles to AI.

# 2

**Future AI investments will target sales and marketing and logistics and supply chain.** Over half (55%) of respondents cited customer service as their main AI application so far, and evidence across the region shows innovations like chatbots and AI-driven customer analytics in sectors including banking, air travel, transport, and e-commerce. By 2022, the number of companies using AI in sales and marketing and in logistics and supply chain will double. In three years, logistics and supply chain will be the region’s most widely applied AI use case.

# 3

**Latin America’s AI ecosystem would benefit from greater policy continuity and regional collaboration.** Many countries in the region have developed or are developing national AI plans, but political volatility is interrupting or limiting policy continuity. A second challenge is the region’s limited voice and participation in the development of global AI governance and ethics frameworks; experts are concerned that the dominance of other blocs, especially the EU, could result in frameworks that are harder for Latin American companies to adhere to.



This report, “The global AI agenda: Latin America,” is an executive briefing paper by MIT Technology Review Insights produced in partnership with Genesys. It is part of a series of regional papers published as part of The global AI agenda research program. Claire Beatty was the editor of this report, Nicola Crepaldi was the producer.

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### Illustrations

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