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2023 LDC U.S. Latinos in Technology - AI Edition

LATINOS & THE AI FUTURE

THE RISE OF AI & LATINOS IN THE U.S.

2023

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MESSAGE FROM THE LDC

SOL TRUJILLO

Co-Founder and
Chairman of the Board

ANA VALDEZ

President
and CEO

"We at the Latino Donor Collaborative stand ready as a resource to provide data, insights, and new ideas to support businesses and organizations in informed decision-making and help maximize the growth opportunities presented by this transformative era."

Dear Partners and Readers,

We are delighted to present the 2023 U.S. Latinos in Artificial Intelligence Report, where we examine the profound impact of Artificial Intelligence (AI) on the U.S. Latino community and its potential to drive technological transformation, mirroring their current role in propelling America's economic growth.

The report also underscores the crucial role of empowering the Latino community and promoting AI education to bridge the digital gap, and contribute significantly to the economy, potentially adding $3.7 trillion USD to the U.S. Economy.

Moreover, the report stresses the necessity of diverse representation within AI systems to counteract existing stereotypes and biases in AI technologies. It highlights the importance of responsible and inclusive AI practices to prevent the reinforcement of biases and ensure fair representation of all communities in AI-generated content and decision-making.

To sustain the nation's technological competitiveness, achieving representation parity relative to the U.S. Latino population share in the top technology and AI companies is pivotal. By proactively recruiting technologically savvy young Latinos, who are stepping up by enrolling in engineering schools at the highest pace, these organizations can enhance their competitiveness in current-day markets. With one in four young Americans being of Latino descent, ensuring their active participation in this evolving digital environment is critical for our collective progress.

The AI revolution is indeed upon us, and the young and growing U.S. Latino cohort is ready to quickly adapt to this rapidly changing technological landscape. We at the Latino Donor Collaborative stand ready as a resource to provide data, insights, and new ideas to support businesses and organizations in informed decision-making and help maximize the growth opportunities presented by this transformative era.

We encourage decision-makers and resource allocators to analyze the data presented in this report and develop strategies that properly represent and engage the influential U.S. Latino demographic. We will be knocking at your door to help you use these tools for growth. As we embark on this analysis and journey together, let us recognize the potential for innovation and sustainable growth that lies within our reach.

Sincerely,

Sol Trujillo
Co-Founder and Chairman
Latino Donor Collaborative
Latino Data Collaborative Think Tank

Sincerely,

Ana Valdez
CEO
Latino Donor Collaborative
Latino Data Collaborative Think Tank

MESSAGE FROM THE EVP

Executive Vice President,
Wells Fargo Technology Diversity,
Community & Sustainability

TALI BRAY

"Wells Fargo's commitment to diversity, equity, and inclusion extends to our Latino customers and employees through providing equal access to financial opportunities. We are dedicated to fostering innovation within the tech community through strategic partnerships and investments."

Wells Fargo & Company (NYSE: WFC) is a leading financial services company that has approximately $1.9 trillion in assets, proudly serves one in three U.S. households and more than 10% of small businesses in the U.S., and is a leading middle market banking provider in the U.S. We provide a diversified set of banking, investment and mortgage products and services, as well as consumer and commercial finance, through our four reportable operating segments: Consumer Banking and Lending, Commercial Banking, Corporate and Investment Banking, and Wealth & Investment Management. Wells Fargo ranked No. 47 on Fortune's 2023 rankings of America's largest corporations. In the communities we serve, the company focuses its social impact on building a sustainable, inclusive future for all by supporting housing affordability, small business growth, financial health, and a low-carbon economy.

News, insights, and perspectives from Wells Fargo are also available at Wells Fargo Stories.

Additional information may be found at www.wellsfargo.com

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Opportunities Accelerated.

Conectado is an immersive experience and gaming destination aimed at increasing Latino representation in STEM, with particular focus on the tech industry. By providing a comprehensive ecosystem of resources, relationships, and opportunities, Conectado empowers Latinos to excel in the STEM fields. The platform offers an immersive and interactive experience, connecting users with mentors, educational institutions, businesses, and social impact organizations committed to diversity and inclusion. Our value proposition is to create a holistic and supportive environment that fosters personal and professional growth for Latinos in technology.

Our Mission:

From Classroom to Career to the Boardroom

Wherever you are in your journey
Conectado is there for you!

Fueled by our roots, our experiences and our passion for a more equitable world, we are building a multiverse to help you access opportunities faster through an immersive experience.

We’re bringing together individuals, educational institutions, social impact organizations and corporations to improve millions of livesand increase representation.

Together, we are safely building more sustainable **connections** through digital, cultural and human intelligence.

“We are experiencing a “Light-speed Moment” where the Rise of AI and Technology intersects with the Latino education, employment and economic power - creating an even greater Superpower in the U.S.”

Guillermo Diaz Jr., Founder & CEO, Conectado Inc.

Latinos & AI are taking off

THE FUTURE HAS BEGUN

01.

U.S. LATINOS ARE BOOMING

02.

AI IS BOOMING

03.

THE COMBINATION: AN EXPONENTIAL GROWTH OPPORTUNITY

This revolution is different. It differs from the innovation our ancestors would have experienced or even imagined. We stand at the precipice of a once-in-a-species event, a transformational juncture comparable to when humans first harnessed the elemental power of fire or tapped into the boundless energy of electricity. For Latinos this is a unique and massive opportunity.

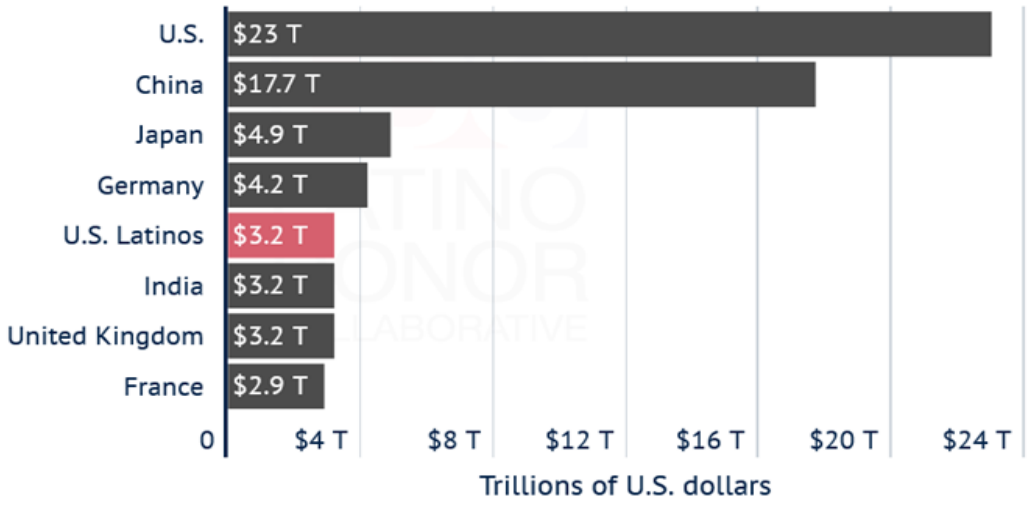
U.S. LATINOS SHAPING THE COUNTRY'S ECONOMY

Latino Gross Domestic Product

U.S. Latinos are a powerful force, significantly driving the economy and redefining American market dynamics. While the report focuses on the U.S. Latinos in Artificial Intelligence, the topic must be framed within the larger context of how members of this growing demographic shape the country's economy.

Latino Gross Domestic Product. If the population of Latinos in the United States were its own country, it would be the fifth-largest GDP in the world[1] (See Figure 1.1).

Figure 1.1: The Latino GDP on the World Stage[1]

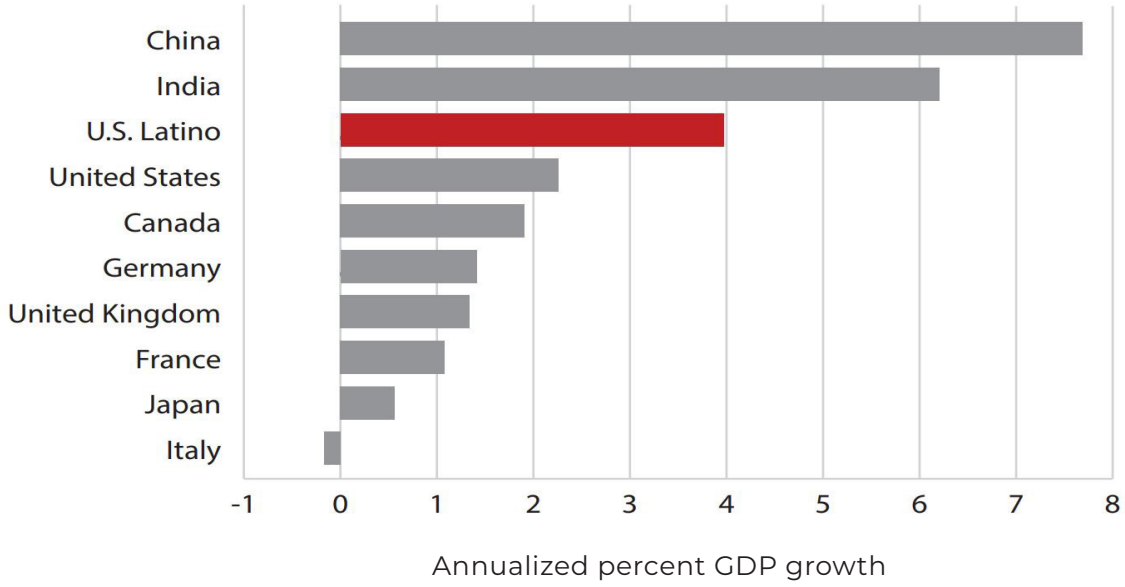


The world's leading economies in 2021 compared to the U.S. Latino GDP as estimated from expenditures name "by and behalf" of members of this demographic.

Latino Economy Growing Fast

U.S. Latinos boast a remarkable total economic output of $3.2 trillion,[1] making them the third-fastest-growing economy among major powerhouses behind only China and India (Figure 1.2).

Figure 1.2: Real Annualized Percent GDP Growth Among the World's Leading Economies Between 2011 and 2021



Latinos are the third fastest-growing economy in the world

Latino Purchasing Power

Since the LDC started measuring it, the Latino GDP has consistently ranked among the top 10 global economies (Table 1.1).

Table 1.1: In Eleven Years, the U.S. Latino GDP has Increased by 88%.[1, 2]

	Latinos as a percentage of U.S. population	U.S. Latino GDP	If U.S. Latinos were their own country, its economy would be the...
2010	16.0%	$1.7 T	-
2015	17.0%	$2.1 T	7th largest
2017	18.4%	$2.3 T	8th largest
2018	18.7%	$2.6 T	8th largest
2019	18.7%	$2.7 T	7th largest
2020	19.0%	$2.8 T	5th largest
2021	19.1%	$3.2 T	5th largest

Latino Purchasing Power. U.S. Latinos have tremendous purchasing power, measured at $3.4 trillion in 2021.[1] Even more remarkable are the linked growth rates: Latino income exhibited a genuine annualized growth of 4.7%, in contrast to 1.9% among non-Latinos.[1] Equally noteworthy are the robust growth rates in consumption and purchasing power, surpassing those of non-Latino counterparts by over a factor of two[1]. These figures underscore the substantial contribution the Latino community makes in driving the advancement of the U.S. economy.

Latino Entrepreneurs

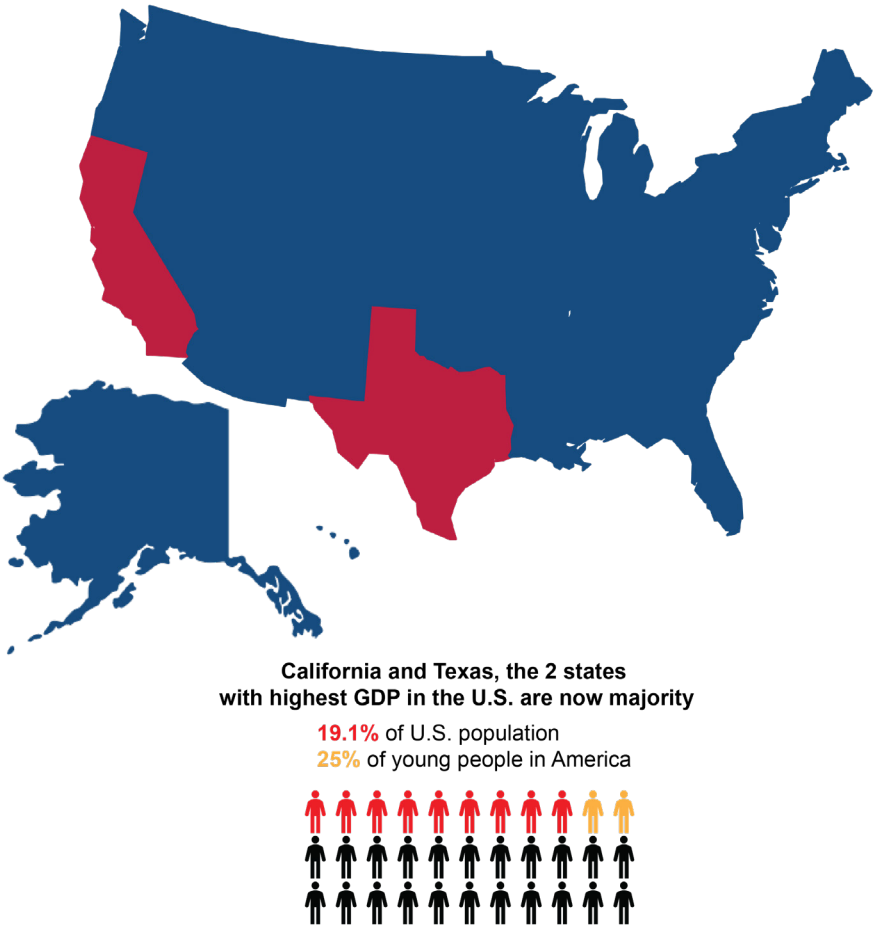
Latinos are often entrepreneurs by nature, accounting for 50% of net new small businesses over the past decade (2007–2017).[2] Even during the COVID-19 pandemic from 2019 to 2022 Latino-owned businesses experienced exceptional growth, increasing revenue by 25% and outpacing their White-owned counterparts, which grew by only 9% (Figure 1.3)[2].This notable achievement underscores the entrepreneurial spirit and resilience embodied within the U.S. Latino community, whose members are 1.7% more likely to become entrepreneurs than non-Latinos.[2]

Figure 1.3: Median Annual Revenue Growth Rate of Latino-Owned Businesses Compared to White-Owned Businesses from 2019 to 2020[2]

Latino Population Growth

The U.S. Latino population constitutes nearly 20% of the U.S. population[3] and 25% of young people in the U.S. (Figure 1.4)[4]. This impressive display of population and economic strength is substantiated by tangible evidence, as demonstrated by California and Texas, two states with majority Latino populations[5,6] that rank among the highest in GDP nationally[7]. These two states account for 30% of the total GDP of the United States.

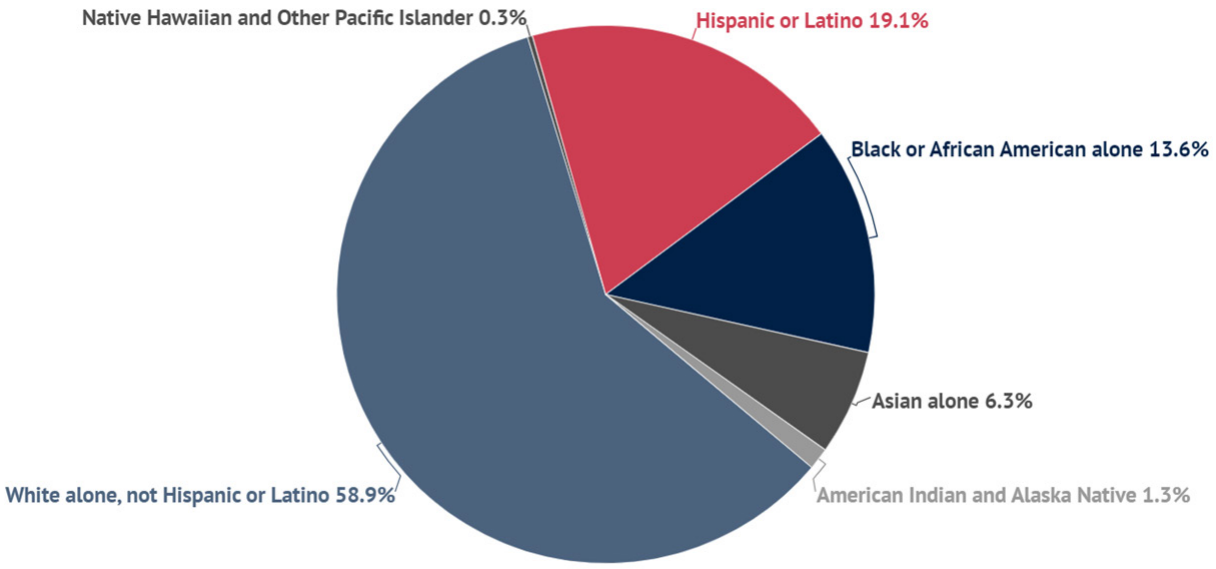
Figure 1.4: U.S. Latino Population and Latino Majority in Top U.S. GDP States[5,6]



Population Breakdown

The U.S. Latino population is the largest group other than non-Hispanic whites in the U.S.[3], as seen in Figure 1.5. The Latino proportion of the total numbers grows even higher when one looks at the younger segment of the U.S. population demographics of the U.S. Latino cohort.

Figure 1.5: U.S. Population Breakdown by Race/Ethnicity

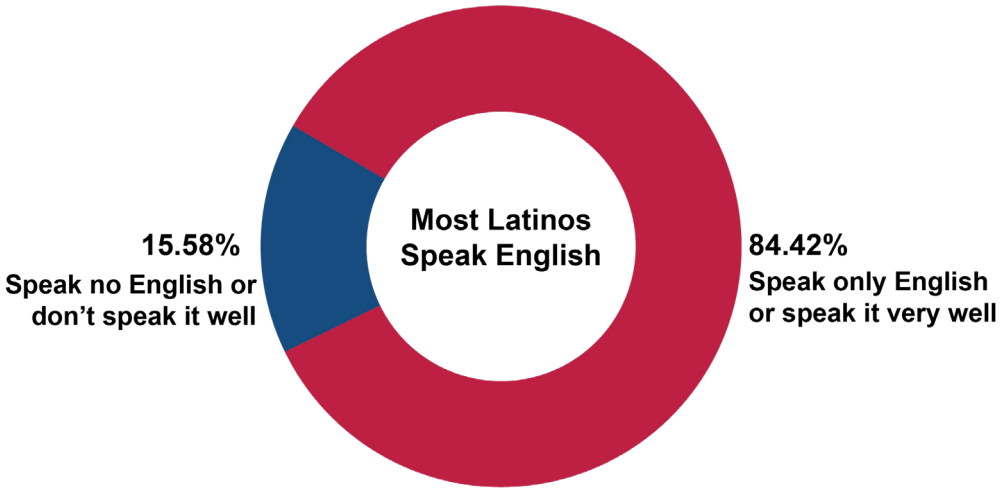


Source: US Census Bureau, 2021

Latino Youth Drive Change

U.S. Latinos are younger than the average American (median age 30 years vs. 38 years),[8] and 84.1% of them speak English.[9] For example, their significant contribution to the English-language media landscape underlines the compelling impact they can have and the need to prioritize their authentic representation.

Figure 1.6: English Language Proficiency Among Latinos



Source: US Census Bureau, 2021

U.S. Latinos' collective influence, rooted in demographics, purchasing power, and cultural affinity, holds the potential to reshape multiple industries. Resource allocators, educators, and everyone interested in the well-being of America need to know the indispensable value of engaging this dynamic cohort to drive growth by establishing proportionate segmentation.

EXECUTIVE SUMMARY

The 2023 U.S. Latinos in Artificial Intelligence Report examines the profound impact of Artificial Intelligence (AI) on the U.S. Latino community and its potential to drive technological transformation, mirroring their current role in propelling America's economic growth. Key themes explored encompass the evolving employment landscape, narrowing the digital divide, combating bias and misrepresentation, and realizing the opportunities that AI presents for the Latino community.

The report underscores the growing influence of U.S. Latinos in shaping the nation's economy. It stresses the urgency of strategies that empower Latinos for a digital future, ensuring they possess the skills and opportunities to excel in an AI-driven world. With Latinos comprising one in five Americans today[3] and one in four Americans under 18[4], their equitable representation in the AI-driven future is not only necessary but strategically imperative for the nation's technological competitiveness. Equipping younger Latinos with essential skills is vital, given the current digital divide and the rising demand for digital literacy.

Moreover, the geographic concentration of AI industry leaders in states like California, Texas, Massachusetts and New York with significant or majority Latino populations[10] underscores the importance of Latino engagement in the AI landscape.

The report also addresses the prominence of AI in financial, scientific, and public administration roles[11], emphasizing the need for Latinos to play a pivotal role in these fields, given their significant growth in science and engineering enrollment, with a notable 65% increase in science and engineering (S&E) programs from 2012-2022 [12], and promising trends specifically in their undergraduate engineering enrollment, which grew by 73.6% between 2010 and 2021, surpassing the growth rates of any other ethnic group[13].

Addressing bias and misrepresentation in AI development and deployment is another vital aspect. The report advocates for diverse representation to counteract existing stereotypes. It underscores that AI's flaws stem from biased training data, in areas like facial recognition technology for instance, and underscores the importance of responsible and inclusive AI practices to prevent reinforcement of biases.

The report concludes with recommendations for industry success, including fostering partnerships, investing in education and training, and facilitating mentorship and networking opportunities for Latinos in AI.

In summary, this report underscores the potential of combining the Latino cohort with AI to drive economic growth and technological advancement for the U.S. It emphasizes the importance of empowering the Latino community, narrowing the digital gap, challenging bias and misrepresentation, and fostering collaboration between the AI industry and Latino talent. By implementing these strategies and recommendations, stakeholders can unlock an exponential growth opportunity for them and the broader economy.

To maintain its position as a leading international economic power, the United States must harness the economic potential of the dynamic Latino cohort. This demographic represents the fastest-growing workforce and the world's third-fastest-growing economy[1]. Promoting AI education among Latino students and communities, with the allocation of adequate funding, can contribute significantly to increased participation in the GDP, potentially adding $15.7 trillion USD to the global economy and $3.7 trillion to the North American economy by 2030.[45] Prioritizing and supporting initiatives that ensure AI's benefits are accessible to and supportive of Latinos in the U.S. is imperative for sustaining the nation's economic growth.

"Promoting AI education among Latino students and communities, with the allocation of adequate funding, can contribute significantly to increased participation in the GDP, potentially adding $15.7 trillion USD to the global economy and $3.7 trillion to the North American economy by 2030.[45]"

AI WAVE

AI AND LATINOS: CATALYSTS FOR ECONOMIC GROWTH & TECHNOLOGICAL TRANSFORMATION

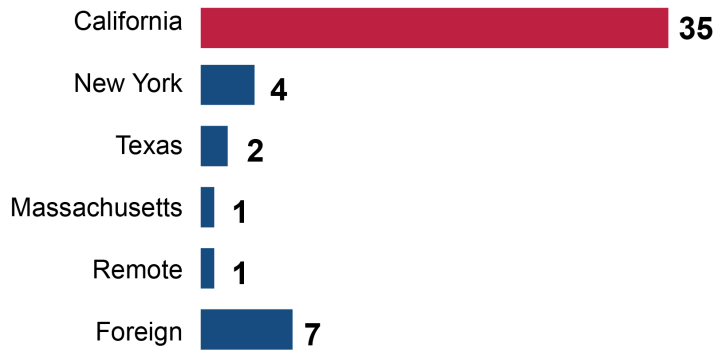
The field of Artificial Intelligence (AI) is rapidly advancing and poised to reshape the future of the United States. AI, defined by McKinsey as a machine's ability to perform the cognitive functions we usually associate with human minds, has a strong history of research and development in the nation, leading to its integration into various aspects of daily life, from homes and businesses to academic institutions and transportation networks. Simultaneously, the Latino community in the U.S. has emerged as a potent force, leaving its mark on every facet of American life. Although seemingly unrelated, both AI and the Latino population are integral to the nation's economic prosperity. As the United States undergoes a technological transformation and experiences a demographic shift driven by Latinos, these two forces are poised to shape the nation's trajectory, fostering not only economic growth but also a more inclusive society. Without the Latino population, no company can prosper and no industry can be competitive.

Research shows that the prominence of AI is already evident, indicating that 47% of top technology officers consider AI their primary budgetary focus for the next year. Key figures in executive positions, including chief information security officers and chief technology officers, are actively working to ensure AI products reach American households. The synergy between AI's evolution and the Latino population's influence has the potential to redefine the country's economic landscape, social dynamics, and geopolitical standing, with the prospect of a more prosperous American society on the horizon.

The growing importance of leading AI executives shifting their focus towards artificial intelligence, coupled with the growing economic and technological impact of the U.S. Latino community in shaping the journey towards AI dominance, demands consideration. As significant capital investments are being funneled into AI by major technology giants like Alphabet (Google), Amazon, Apple, Meta (Facebook), and Microsoft, a notable AI wave is underway. AI companies must proactively engage with and cater to the Latino community, ensuring representation in their AI models and algorithms.

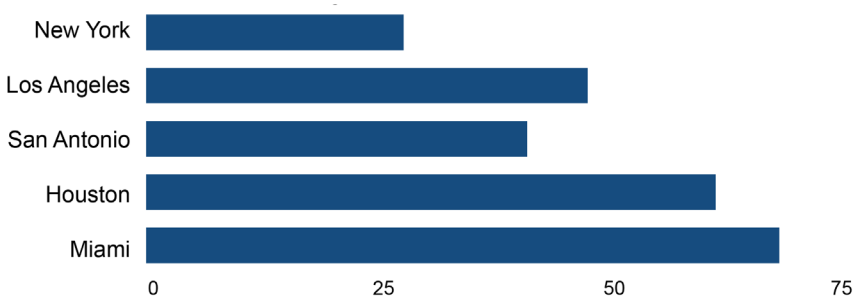
With AI poised for a 37.3% annual growth rate from 2023 to 2030[18], aligning the economic and technological potential of Latinos with the AI industry's expansion promises significant mutual benefits. **Recognizing that most of the 43 U.S. members of the Forbes AI 50 list have their headquarters located in California, Texas, Massachusetts and New York, three of which have significant Latino populations, and two being majority Latino, underscores the importance of Latino engagement in the AI landscape** (Figure 2.1 and 2.2).[10] . As Latinos represent one in five Americans today[3], and one in four Americans under the age of 18[4], their parity representation in the AI-driven future is not only a necessity but a strategic imperative to ensure the nation's technological competitiveness.

Figure 2.1: Distribution of U.S. Forbes AI 50 List Members



Source: Forbes, Sequoia Capital, Meritech Capital; Chart: Axios Visuals

Figure 2.2: % of Latinos in Major U.S. Cities



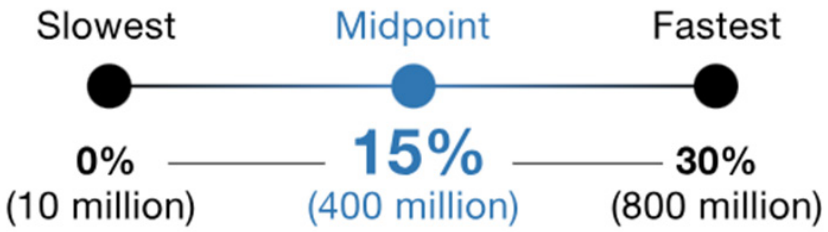
Source: U.S. Census 2021

In conclusion, embracing the synergy between AI and the Latino community holds the promise of driving both economic growth and technological leadership in the United States. To fully harness this potential, AI companies must actively integrate Latinos into their AI ecosystem, recognizing their increasing importance in the country's demographic makeup and economic landscape.

AI'S IMPACT ON THE EMPLOYMENT LANDSCAPE

The ongoing technological transformation is poised to significantly impact the job landscape, with automation being a key driver of change. According to McKinsey & Co., the extent of this impact can vary widely. In the most conservative scenario, between 2016 and 2030, automation may displace approximately 10 million workers globally. However, if automation progresses rapidly without addressing disparities, this number could rise to a staggering 800 million job displacements (Figure 3.1).[19]. Changes in the labor market are likely to happen to occupations largely made up of physical activities in highly structured environments such as construction and factory jobs; also positions in data processing or collection will see declines[19], as AI can now outperform and complete tasks such as computer programming and writing at significantly higher rates of efficiency.

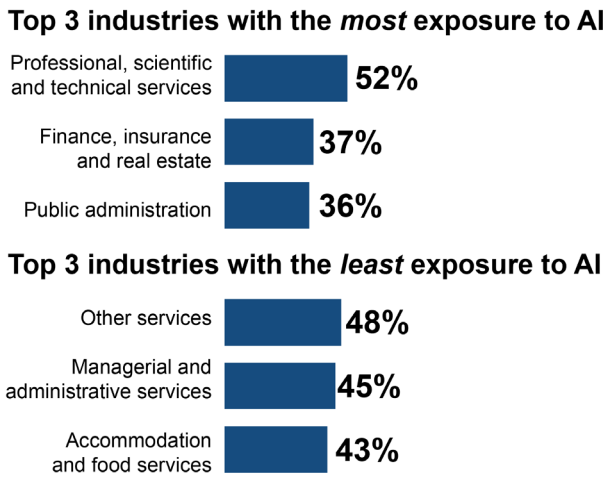
Figure 3.1: Percentage of Workers Potentially Displaced by Adoption of Automation, by Adoption



Source: McKinsey & Co.

While AI may replace certain jobs, it will also create new opportunities. Additional labor demand will increase within a range of 21% to 33% of the global workforce (between 555 million and 890 million new jobs will be added to the job market before 2030, more than offsetting the numbers of jobs lost, which will be between 10 million to 800 million[19]. Most of them will have some sort of level of exposure to AI. Indeed, it will depend on which industry the occupation specializes in. According to Figure 3.2, financial, scientific, and public administration roles will deal with AI technologies more prominently than those in employments such as managerial and administrative services, as well as, positions in accommodation and food services.[11]

Figure 3.2: Percentage of U.S. Workers in an Industry Who Are Most Likely to See High or Low Exposure to AI (2022)



Source: PEW Research Center

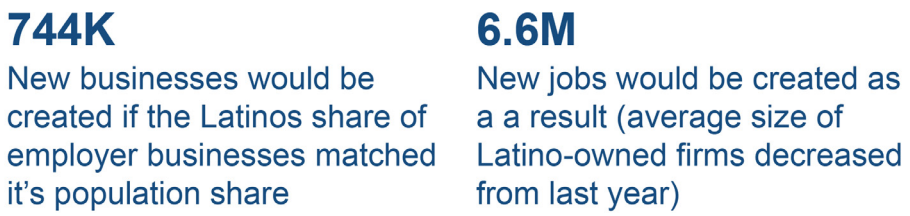
The significant 65% increase in Hispanic/Latino enrollment in science and engineering (S&E) programs between 2012 and 2022 underscores the growing presence and readiness of U.S.[12] Latinos to play a pivotal role in driving growth within these fields which will be the most exposed to AI.

AI technologies are designed to optimize decision-making, streamline processes, automate repetitive tasks, enhance data visualization, and provide recommendations. Their goal is to empower individuals to achieve a healthier work-life balance, reducing the pressure and stress associated with work[20]. For example, new research reveals that software engineers can now code up to twice as fast using AI, writing tasks can also be completed twice as fast, and economists can be 10-20% more productive using Large Language Models (LLMs).[21]

For emerging AI-centered roles, this technology can significantly improve work-life balance by boosting productivity and facilitating predictive analytics to efficiently manage workloads[20]. Moreover, it can empower individuals to become business owners on a larger scale, by utilizing AI for small business development and self-training. This application of AI improves efficiency, reduces operational costs, enhances data management, and fosters growth opportunities, as confirmed by the CEOs of Forbes' Top 50 AI companies[22]. This offers an opportunity for upward mobility to Latinos, who are statistically 1.7% more likely to become entrepreneurs than non-Latinos.[2]

While U.S. Latinos accounted for 50% of net new small businesses over the past decade (2007–2017)[2], AI advancements that take into account and empower the Latino community have the potential to stimulate the emergence of more than 744,000 new businesses, with some leveraging AI directly, while others harness AI advancements to enhance their services and customer engagement. (Figure 3.3).[23] With this, it becomes imperative to achieve market parity representation of Latino-owned businesses.

Figure 3.3: The Economic State of Latino Business Owners in the U.S.



Source: McKinsey & Co.

AI can empower Latinos to enhance their quality of life and achieve greater financial security. Some examples of entrepreneurial spaces that Latinos could focus their efforts on and lead are:

- **AI Solutions:** Latinos could venture into AI-driven solutions for industries like healthcare, education, or real estate.
- **App Development:** Demand remains high for apps solving specific issues, especially those pertinent to particular communities like the Latino community.
- **Online Retail:** AI aids in inventory management, customer service, and targeted marketing, making the e-commerce landscape efficient.
- **Healthcare:** Latinos with expertise can leverage AI algorithms for diagnostics or treatment planning.
- **Education & Training:** Courses can offer specialized skills, focused on preparing for an AI-dominated future.

Other examples of new job opportunities that could be created by AI for Latinos encompass roles such as AI prompt engineers, AI trainers, AI auditors, AI ethics experts, and machine managers.

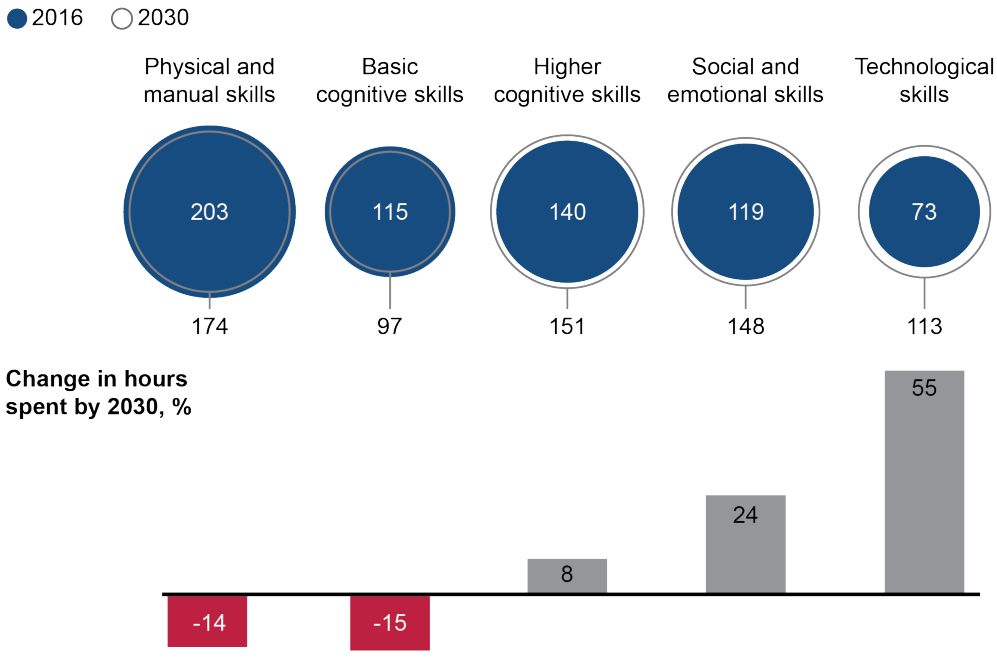
As previously discussed in this report, U.S. Latinos serve as pivotal engines of economic growth in the United States[1]. Therefore, it is imperative to actively engage them in this technological revolution, as their participation can foster the creation of additional job opportunities and sustain ongoing economic growth.

BRIDGING THE DIGITAL GAP: EMPOWERING LATINOS FOR A DIGITAL FUTURE

McKinsey & Co. global institute calculated that the demand for certain skills such as programming, social, emotional, and higher cognitive skills, like creativity, critical thinking, and complex information processing will also see a growing demand in the years to come[19]. Furthermore, basic cognitive skills such as the ability to pay attention proactively, enforce one's short-term memory, process things quickly in a fast-paced environment, comprehend and use language in a useful manner, solve problems critically, and apply logical reasoning to simple tasks will no longer be as sought after.

According to Figure 4.1 the chart below, there will be a 55% increase in hours worked in jobs that require technological skills from 2020 to 2030. On the other hand, they forecast a 14% decrease in jobs that necessitate physical and manual skills in the same ten-year span[19]. Indeed, the dip could be greater but before the gap grows even bigger, the Latino community needs to prepare for an AI future.

Figure 4.1: Total Hours Worked in Europe and U.S., 2016 vs 2030 Estimate (Billion)



Source: McKinsey Global Institute Workforce Skills Model; McKinsey Global Institute Analysis

To effectively prepare the Latino community for the AI-driven era, a multifaceted approach is essential. This involves enhancing education and awareness about AI to ensure a thorough understanding of its implications and opportunities. Collaborative partnerships within the tech industry can offer valuable resources and training avenues.

Supporting innovation and entrepreneurship within the Latino community in the field of AI can stimulate growth and enhance representation. The establishment of mentorship programs with seasoned AI professionals is pivotal in fostering skill development and career progression. Furthermore, adapting careers and acquiring skills in fields less susceptible to automation can provide long-term job security.

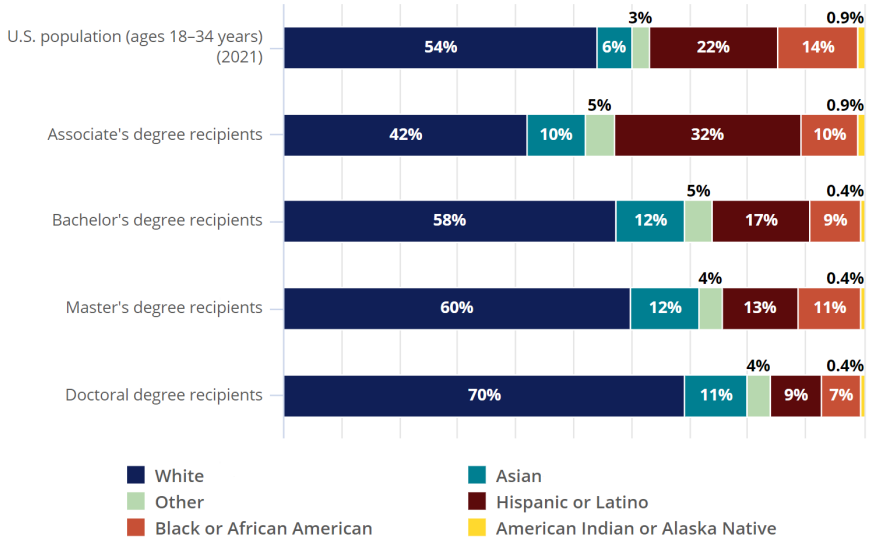
Simultaneously, it is imperative to elevate cultural awareness and demand for equity through the promotion of ethical AI practices. In this rapidly evolving landscape, acquiring tech-related skills is paramount for all Latino professionals to remain competitive and keep contributing meaningfully to the evolving job market, where human intellect and emotional finesse complement machine work.

With these rapid advancements driven by AI technology, the demand for STEM-focused education among Latinos becomes crucial, giving them an opportunity to actively participate and excel. Equipping U.S. Latinos, especially younger ones, with the necessary skills will be essential as they navigate and shape technological changes in the future. This is particularly critical given the current digital divide, as the demand for fundamental digital skills continues to rise. With older generations often facing challenges in utilizing sometimes basic digital devices, the responsibility falls on younger individuals who need to be adequately equipped for the increasing necessity of technological literacy. As highlighted earlier in this report, one in four young Americans is of Latino descent[4], underscoring the urgency of ensuring their active participation in this evolving digital environment.

The Latino community can greatly benefit from acquiring a diverse set of skills. This includes proficiency in coding languages such as Python and Java, improving mathematical skills in areas like statistics, calculus, and linear algebra, and gaining expertise in data analysis using tools like Excel, SQL, and Tableau. Additionally, a foundational understanding of machine learning and cloud computing can be valuable. Soft skills like effective communication, critical thinking, teamwork, project management, business skills, and financial literacy are also essential for personal and professional growth within any community.

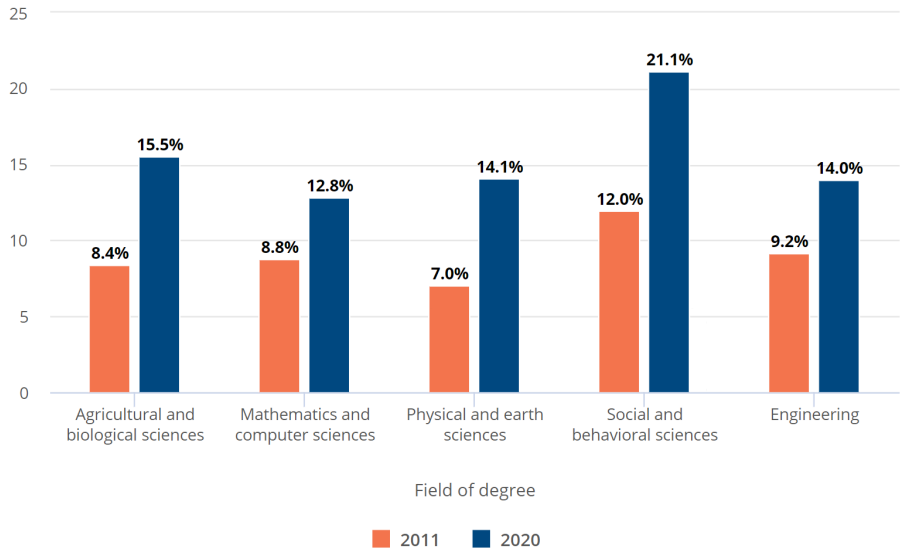
Encouragingly, Latinos have made significant advancements across various academic disciplines, they have grown in virtually every degree program, particularly in Science and Engineering associate degree programs (Figures 4.2 and 4.3).[12] Notably, there was a 65% increase in Hispanic/ Latino enrollment in science and engineering (S&E) programs from 2012-2022[12], and promising trends were also witnessed specifically in their undergraduate engineering enrollment, which grew by 73.6% between 2010 and 2021, surpassing the growth rates of any other ethnic group[13].

Figure 4.2: U.S. Population Ages 18-34 and S&E Degree Recipients, by Degree Level and Race and Ethnicity (2020)



Source: NCSES 2023

Figure 4.3: S&E Bachelor's Degrees Awarded to Hispanic or Latino Students, by Field (2011 and 2020)



Source: NCSES 2023

To continue these positive trends, it is vital to provide support and resources that keep attracting and retaining Latino students in higher education, particularly in STEM fields. The Society of Hispanic Professional Engineers (SHPE), plays a pivotal role in addressing these needs to facilitate student graduation via diverse programs and scholarships

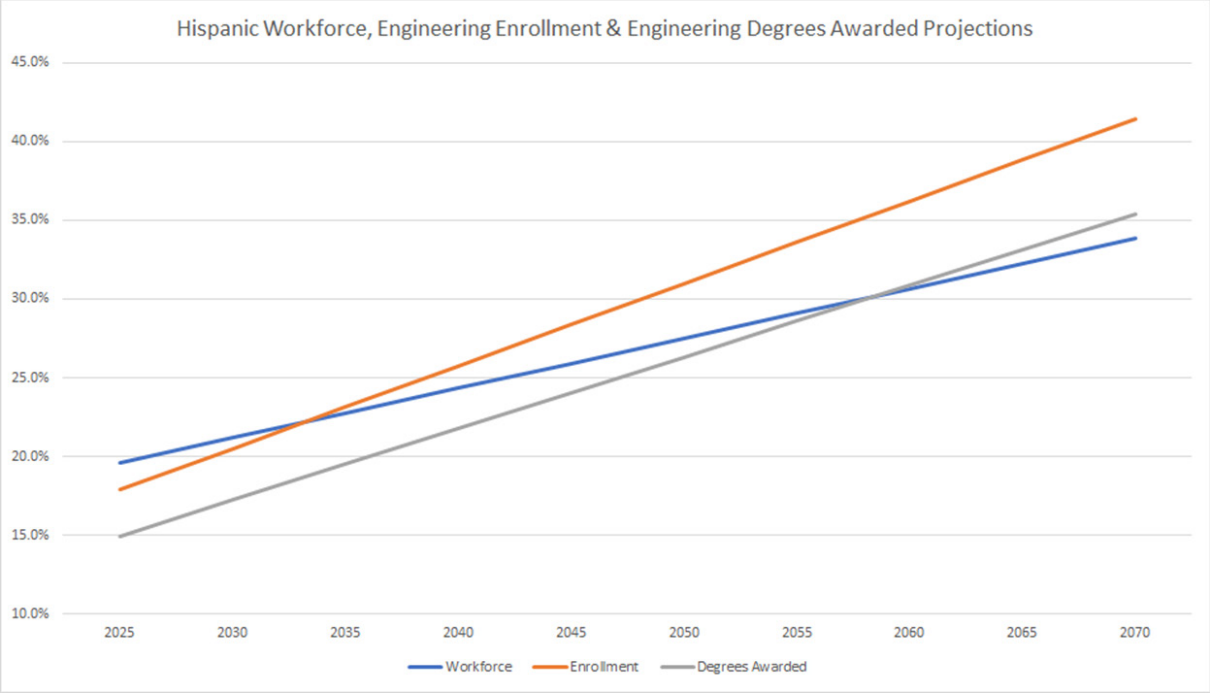
Contrary to common stereotypes, education is one of the strongest values in the U.S. Latino culture. In 2019, 36% of Hispanic high school graduates ages 18-24 were enrolled in college, a significant increase from 22% in 1999[24].

However, a notable discrepancy persists in achieving proportionate representation. SHPE analysis determines enrollment is expected to reach parity with workforce numbers by 2035 and engineering degrees awarded will reach parity with workforce projections by 2060 (Figure 4.4).

SHPE's overarching aspiration is for parity in engineering degrees awarded to occur well before 2060, and AI could contribute to this with specialized tutorship, for instance.[13]

Educating AI to effectively teach U.S. Latinos with culturally sensitive elements is a critical endeavor. This entails nurturing AI systems, capable of understanding and respecting the unique cultural backgrounds and needs of Latino students. By integrating culturally friendly elements into AI-driven educational tools, we can foster a more engaging learning experience, ultimately empowering Latino youth to thrive in the digital age.

Figure 4.4: Hispanic Workforce, Engineering Enrollment, and Degrees Awarded (Projections)[13]

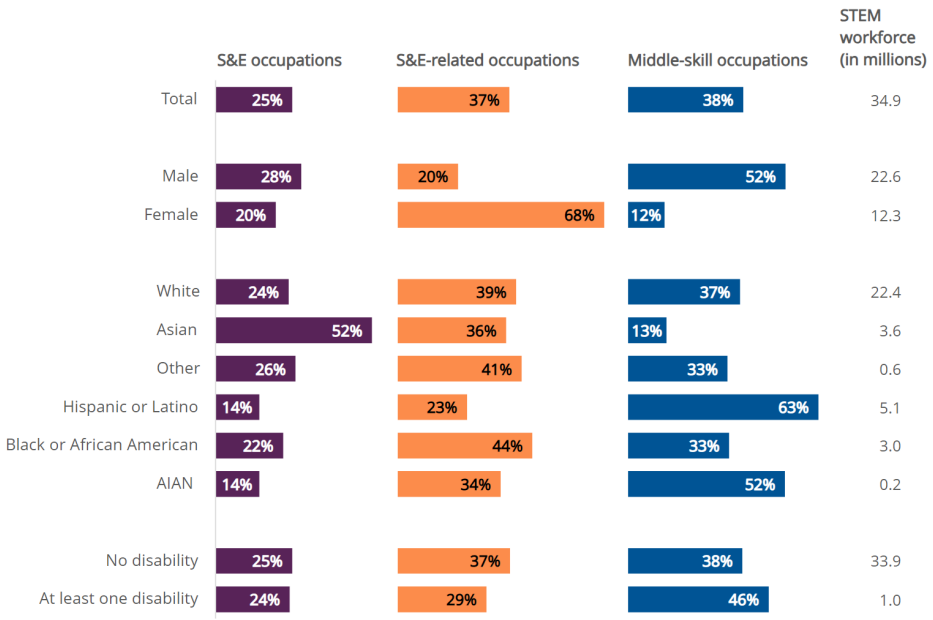


*SHPE operationalized this goal by adapting an approach used by SHPE member Dr. Christopher J. Hernandez to project the timing of parity

It is imperative that we establish comprehensive metrics across all Science, Technology, Engineering, and Mathematics (STEM) fields, given that AI's influence transcends these domains, presenting a significant opportunity for Latinos to advance into higher-paying occupations. As a notable illustration, the median wage for STEM occupations among the Asian demographic stands at $91,914, while for Latinos, it is $45,480, emphasizing the existing wage gap.[25]

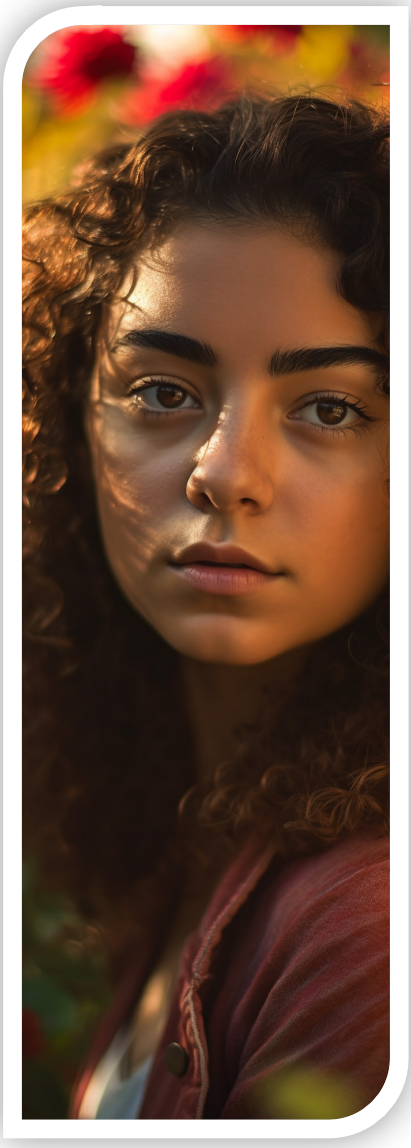
Additionally, it's noteworthy that among the top five global technology companies at the forefront of driving AI, four have Asian CEOs, including Microsoft, Google, Nvidia, and Adobe.[26] Addressing these disparities and promoting Latino representation in leadership roles within the technology industry is pivotal for its growth.

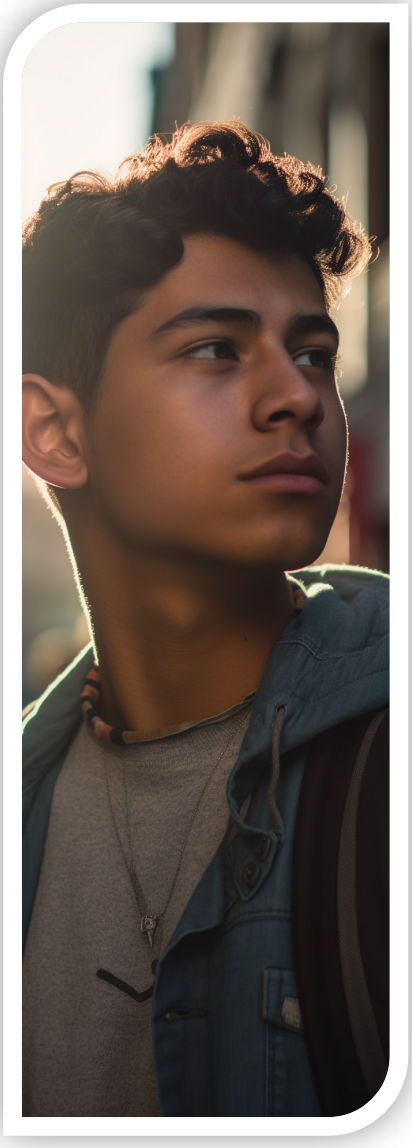
Figure 4.5: Occupations of the STEM Workforce Ages 18-74, by Sex, Ethnicity, Race, and Disability Status: 2021



Source: NCSES 2023

An essential objective is to facilitate a transition from middle-skill occupations, which are undoubtedly crucial but typically demand an associate's degree or less, towards higher-skill roles that command higher remuneration (Figure 4.5). This shift leftwards, from occupations requiring lower educational thresholds to those demanding advanced skills, is instrumental in elevating earning potential and career prospects for individuals in the workforce.





Midjourney Prompt:
“Display image of a CEO in the US.”

AI AND THE LATINO COMMUNITY: CHALLENGING BIAS & MISREPRESENTATION

Artificial Intelligence (AI) has, in certain cases, aggravated social exclusion and invisibility. For instance, facial recognition technology often shows greater accuracy when identifying individuals with lighter skin tones, highlighting an inherent bias in its design. Moreover, the diminished accuracy of facial recognition in recognizing darker-skinned individuals elevates the risk of wrongful criminal identifications, subjecting them to increased surveillance.[28]

Moreover, A.I. biases exist in healthcare due to various factors, such as race and gender, that can lead to skewed outcomes and unequal treatment. This bias can potentially result in disparities in diagnosis and treatment, worsening existing health inequalities.[27]

The image on page 32 shows how AI systems characterize a CEO when asked the question: Display image of a CEO in the U.S.

It's essential to clarify that AI itself is not inherently exclusionary; rather, it is a product of flawed human systems and decisions. The concern lies in the datasets used to train AI models (the quality and quantity of the training data, the choice of model, and the training process all influence the algorithm's learning and performance)[29]. **If these datasets contain biases, the resulting AI models will also exhibit those biases.** As Akgun (2021) points out, when algorithms are developed, they are typically trained on historical data that may carry inherent biases from society's past and systemic inequities. These biases can manifest as algorithmic biases in the AI system's outputs and decisions.[30] A glaring example of this bias can be seen when searching for images of individuals from California, Texas, Florida, or New York. Despite the significant Latino demographic presence in these states, AI-generated images often fail to include Latinos, as reported by Unilad, Yahoo News, and Buzzfeed.[31,32,33] Addressing these biases is a critical consideration in the development of responsible and fair AI algorithms.

SHOW ME A CALIFORNIAN:

California and Texas are the states with the highest percentage of Latinos, however, only one seemingly brown individual can be seen out of all six people that appear in the AI-generated images. The rest are white-passing men and women which is not to say that Latinos cannot be white, but the average Latino appears more as a mestizo individual mixing European genes with Indigenous American features. Moving on to the next two top states with the highest Latino populations in the United States: Florida and New York.

The representation of Latinos in these AI-generated images is nowhere to be found, however, the stereotypical “Florida man” indeed does make an appearance. There is an evident erase of Latinos from the narrative of these states. Though **AI models are only as good as the data they are trained on, the images are feeding misinformation to their viewers**.

The portrayal of Latinos needs to improve and the information that is fed to AI-image generative models must reflect the current population and actual nature of U.S. states.

SHOW ME A TEXAN:

SHOW ME A FLORIDIAN:

SHOW ME A NEW YORKER:

Latinos play an active and transformative role in the daily life and local culture of these states. Unknowingly, AI image-generation systems erase them, despite their presence and contributions to these states. While there is a slight exception in California where some Latino representation is present, this does not diminish the overall call for fair representation. Given that California boasts the largest Latino population of any U.S. state[34], it is essential for AI-generated images to include more Latinos. The current lack of Latino representation in these images only serves to amplify existing stereotypes against the Latino community.

On the other hand, when it comes to the representation of nationalities themselves, they vary depending on whether the identity of the individuals is not solely native from Latin America but instead, happens to be a U.S.-born and raised American with a Latino background. The comparison is evident when one searches “Image of a Mexican person” vs “Image of a Mexican-American person” (results below).

The initial generated image reinforces the stereotype that all Mexicans are male and wear hats. These images depict individuals with a copper complexion and prominent mustaches. When examining the images of Mexican-Americans, while there is now a representation of a woman, she does not appear to belong to a higher socioeconomic status.

This inadvertently perpetuates the misconception that all Mexican-Americans hail from economically disadvantaged backgrounds, which does not accurately reflect reality.

A similar pattern emerges when searching for images of other nationalities, further propagating the idea that all indigenous Latin Americans are uniformly brown and marginalized. For example, in the case of requesting an “Image of a Venezuelan person” or an “Image of a Colombian person,” the recurring image portrays an older gentleman who appears to be indigenous and living in poverty (as evident in the images below).

Indeed, the portrayal of these countries through biased databases in AI models does not align with the diverse and multifaceted reality of Latinos. It’s important to emphasize that neither Venezuela nor Colombia has an indigenous majority[35], and the majority of their populations are not over the age of 40[36]. AI developers must exercise caution to present the truths and complexities of these regions rather than perpetuating stereotypes that misrepresent their rich diversity.

The Latino community in the United States is exceptionally diverse, comprising individuals from various backgrounds, such as Mexican, Colombian, Honduran, Puerto Rican, among others. This wide-ranging diversity encompasses variations in language, cultural preferences, and day-to-day communication. While Spanish serves as a common language among Latinos, distinct regional dialects and language nuances have emerged over time due to historical and indigenous influences. Given that AI systems are predominantly developed in English and Chinese, they may encounter challenges in accurately capturing and representing these linguistic and cultural differences. Consequently, this can result in a lack of authentic cultural representation for each specific country or subgroup within the U.S. Latino community. Therefore, it is imperative to develop AI models that take into account features like multi-dialect support, code-switching, local idioms and slang, and feedback loops.

Google Translate, DeepL, and Yandex Translate are some examples of the AI models that are being used currently to capture the linguistic nuances of Spanish dialects.

The accuracy and relevance of AI systems to the Latino community pivot on the training data used. If the training data fails to encompass the diversity within the Latino community, it can perpetuate negative stereotypes about Latinos, worsen prejudices and hinder efforts to promote parity. Our findings reveal significant discrepancies in the gathering of representative training data for several Large Language Models (LLMs) focused on Latino accomplishments. The lack of accurate and recent data showcasing Latino achievements, culture, and values may lead to political discussions and legislation that overlook the concerns and issues affecting the Latino community. This underscores the importance of responsible and inclusive AI practices to prevent the reinforcement of biases and ensure fair representation of all communities in AI-generated content and decision-making.

Policies that demand the data, or better said the Corpus of Knowledge, found in these AI models to have the cultural competence to present people from different parts of the world correctly and righteously must be introduced. Having access to the process in which lobbyists are stewards of factual data in AI's Large Language Model (LLM) systems is key. Corporations must adopt transparent Large Language Models (LLMs) to offer a more ethical choice, providing comprehensive insights into the predictive processes of LLMs. Transparent AI ensures model clarity through the assessment of algorithms using distinct metrics, such as algorithm explainability, model versioning techniques, data identification, data selection methodologies, and the mitigation of dataset biases. This approach not only addresses a substantial AI-related risk but also imparts confidence in the reliability of data and evaluation methods for consumers.

Besides, AI generative and predictive models can have functions that allow their primary language to be translated to the Spanish equivalent so that the system's lingua franca analyzes the cultural and grammatical nuances between both languages. If the Large Language Models (LLM) that perform the natural language processing Large Language Providers (LLP) for the AI models are not trained with enough key sources and documents that portray the veritable nature of Latino presence and culture in the United States and worldwide, then the responses the system provides will continue to be inaccurate.

The Latino Data Collaborative think tank is dedicated to generating and disseminating data that highlights the significant contributions of Latinos to the United States. It is noteworthy that when conducting searches on popular search engines such as Microsoft's Bing, Google, and Yahoo, there are over 4 million results related to the LDC. The question arises as to why this valuable information is not being incorporated into all AI databases. Only Google Bard demonstrated success in recognizing, supplying, and delivering crucial statistics for for the top U.S. Latino related reports examined. It is worth mentioning that Google Bard operates as an integrated LLM with access to the comprehensive Google search engine database. In contrast, the performance of ChatGPT 3.5 and the ChatGPT 4 series was not satisfactory.

Incorporating data from reputable organizations like the Latino Data Collaborative can certainly enhance the representation of Latino contributions in AI databases and promote accurate AI systems.

Finally, we recommend that U.S. Latinos also get involved in the data input supply chain to make AI models more fair and representative by becoming independent data curators, independent data packagers, lived experience roundtables, independent data examiners and independent data lobbyists.

CONNECTING U.S. LATINOS WITH AI: A WORLD OF OPPORTUNITIES

There are several steps that can make AI more accessible to everyone across the country. Many have to do with several elements of the computer system and its design.[37]

Some general challenges that could be faced while introducing individuals to AI are educational challenges, economic obstacles, since the substantial expenses linked to pursuing AI specializations often require advanced and costly degrees, and cultural hurdles, since factors such as stereotype threat and systemic discrimination can impede opportunities for talented individuals within Latino communities, for instance. Language barriers can also limit the effectiveness and reach of technology, so making these platforms multilingual could be a game-changer.

Concerted efforts, both within and outside the Latino community must be intensified to promote the adoption of AI technologies.

Some actions to connect Latinos with AI opportunities and initiatives include:

- Strengthen AI education in schools and community centers to cultivate interest and comprehension among the younger generation.
- Back local startups and projects focused on incorporating AI for community improvement, providing financial support and resources to foster innovation among Latino entrepreneurs interested in AI.
- Form partnerships with technology organizations to secure access to AI resources and training opportunities.
- Joining the NIST Trustworthy & Responsible Artificial Intelligence Resource Center (AIRC). https://airc.nist.gov/Home
- Joining big data initiatives such as NIH All of Us for healthcare data inclusion https://allofus.nih.gov/

Initiatives and organizations, such as Sabio, are emerging to address this gap.

Organizations like Sabio, a coding bootcamp founded by Liliana Aide Monge, are making strides in promoting diversity and inclusion in the technological industry. Sabio provides training and mentorship in tech-related fields, contributing to the growth of Latino representation in technology.[38]

Techqueria is another valuable organization that offers resources and support to Latino professionals in the tech sector. Through events, meetups, mentorship programs, and job boards, Techqueria facilitates connections and advancement opportunities for Latino tech workers.[39]

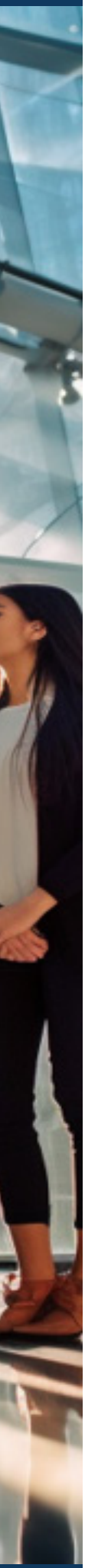
Additional initiatives or organizations focused on creating AI opportunities for Latinos encompass AI4ALL, Mark Cuban Foundation AI Boot Camps, Conectado AI Boot Camps, and Accel. AI. Furthermore, notable instances of international workshops, mentoring programs, and conferences designed to enhance AI accessibility for the Latino community include Latinx in AI Summit, Google AI for Social Good Fellowship, and IBM AI4ALL Scholars Program.

Many of these organizations offer scholarships, grants, discounted rates, or free admission to increase accessibility, such as:

- Event-specific diversity scholarships (ex. NeurIPS, Grace Hopper)
- General minority scholarships (ex. AnitaB.org, Code2040)
- Academic scholarships (ex. Microsoft, Google)
- Travel grants (ex. ACM, IEEE)
- Free online courses (Coursera, edX, Udacity)

To amplify the impact of these initiatives, it is crucial to increase awareness among Latinos about these opportunities and encourage more community engagement. Besides, national-level efforts should prioritize improving the understanding of AI systems among Latino users. This can be achieved through measures such as enhancing the comprehensibility of AI design, providing explanations about the limitations and specializations of AI systems, empowering users, and tailoring the user experience. These actions will significantly contribute to bridging the digital divide.

Additional essential measures to eliminate this divide include government-led endeavors to extend broadband access, private sector initiatives to offer affordable internet plans, and the establishment of community centers providing free computer and internet access. Through the expansion of broadband infrastructure, the provision of affordable connectivity solutions, and the creation of accessible community spaces, we can facilitate increased engagement in the digital landscape, effectively mitigating disparities in access and opportunities for all.

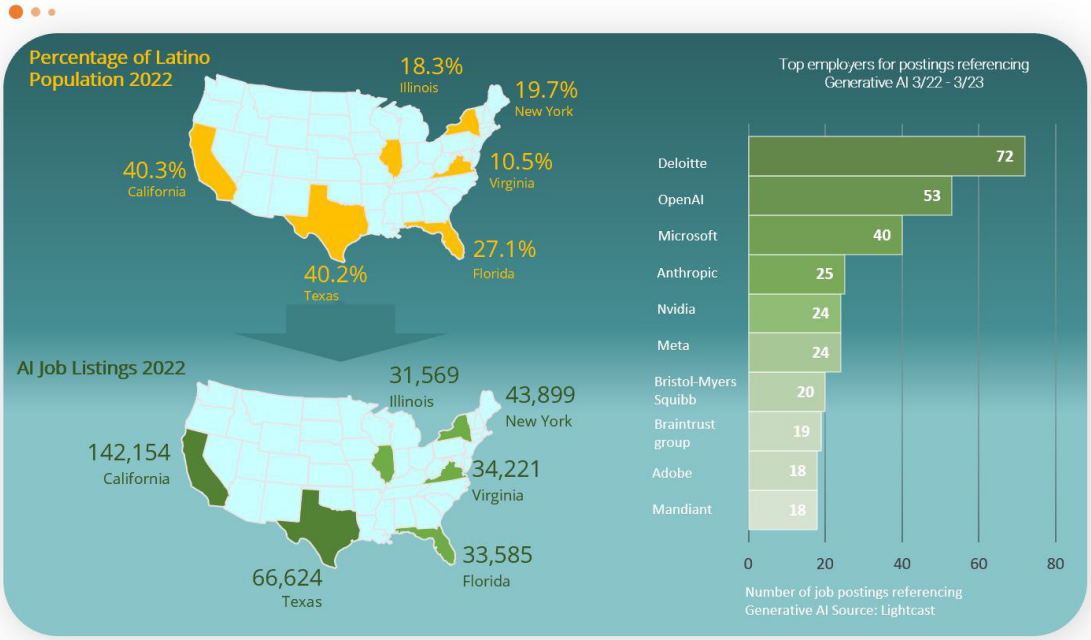


LATINO TALENT AND AI: STRATEGIES FOR INDUSTRY SUCCESS

Latinos are a prominent group and have a significant impact on the U.S. economy. Their entrepreneurial endeavors, participation in the labor force, and ownership of their businesses have resulted in almost 80% of the net new additions to the labor force in the past decade. Notably, the Latino workforce is currently the fastest-growing in the nation. From 2010 to 2020, Latinos contributed an average of 600,000 workers per year to the U.S. labor force.[1] Ultimately, the overall success of the nation's economy relies on the comprehensive success of Latinos. If AI does not include the Latino community, the industry will not be competitive in the future. Therefore, with the continued rise of AI and the digitization of the labor market, it is crucial to ensure equitable access to career opportunities for the Latino population and workforce – a task of unparalleled importance.

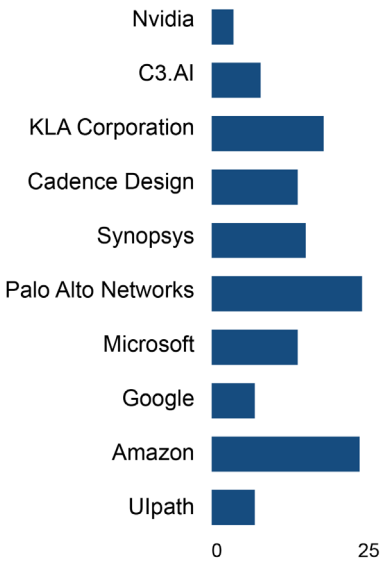
The underrepresentation of Latinos in major tech firms, where they make up only 5-8% of the workforce, and their even lower presence in technical and leadership positions, is a significant concern.[40] Figures 5.1 and 5.2 provide a visual representation of the current situation within prominent technology and AI-related companies.

Figure 5.1: AI Jobs are in States with Significant Latino Populations



Sources: PWC, Census

Figure 5.2: : Percentage of Latino Employees in the Top Ten Technology Companies



Sources: PWC, Census

A general scope of the current state of things within well-known AI-affiliated companies is that they are at the forefront of AI research but are also dealing with concerns about ethics. They are competing intensely to hire the best AI talent but are making slow progress in promoting diversity, equity, and inclusion. These companies are also being challenged for having too much market power and expanding globally. Furthermore, they need to work on building public trust in their AI technologies and promote greater AI literacy among the broader population.[41]

It is imperative that we work towards achieving equal representation and parity for Latinos in these organizations, beginning with the top ten firms in the industry. This initiative is particularly crucial, given that many of these companies are headquartered in states where Latinos constitute the majority of the population. Addressing this disparity is an essential step towards representing the broader demographics of our society.

It is essential to ensure that the hiring practices of the top ten technology and AI companies, as well as the top ten Large Language Providers, are aligned with the preferences and expectations of their consumers, while also considering the nuances of cultural and social contexts embedded in the Corpus of knowledge. By proactively recruiting talent that reflects the diversity and insights of their consumer base, these organizations can enhance their cultural competency and adaptability, ultimately enabling them to create products and services that resonate effectively with a wider range of consumers, contributing ultimately to their growth.

Latino talent can play a pivotal role in enhancing AI market share within the Latino market by actively engaging in several strategic initiatives. This includes joining tech companies to advocate for Latino consumer perspectives, initiating startups that cater to the specific needs of the Latino community, contributing multilingual training data to improve Natural Language Processing (NLP) models, offering valuable insights to ensure inclusive and ethically designed AI solutions, and conducting comprehensive market research to tailor AI products and services to meet the unique requirements of Latinos. These actions collectively have the potential to drive growth and innovation within the AI market, ensuring it better serves and represents the Latino population.

Rising Latino leaders must be connected to AI opportunities and initiatives so as to close the gap that currently exists in the AI industry. College students who have already graduated from college with a computer science or engineering major can use networking tools such as alumni societies that can connect AI opportunities to Latino talent. Groups like, HACT Alumni Association, NSHE Alumni Association, LCF Fellows Alumni Network and NHTCouncil Alumni Network offer networking events, mentoring programs, and resources tailored for Latinos in tech/AI.[42]

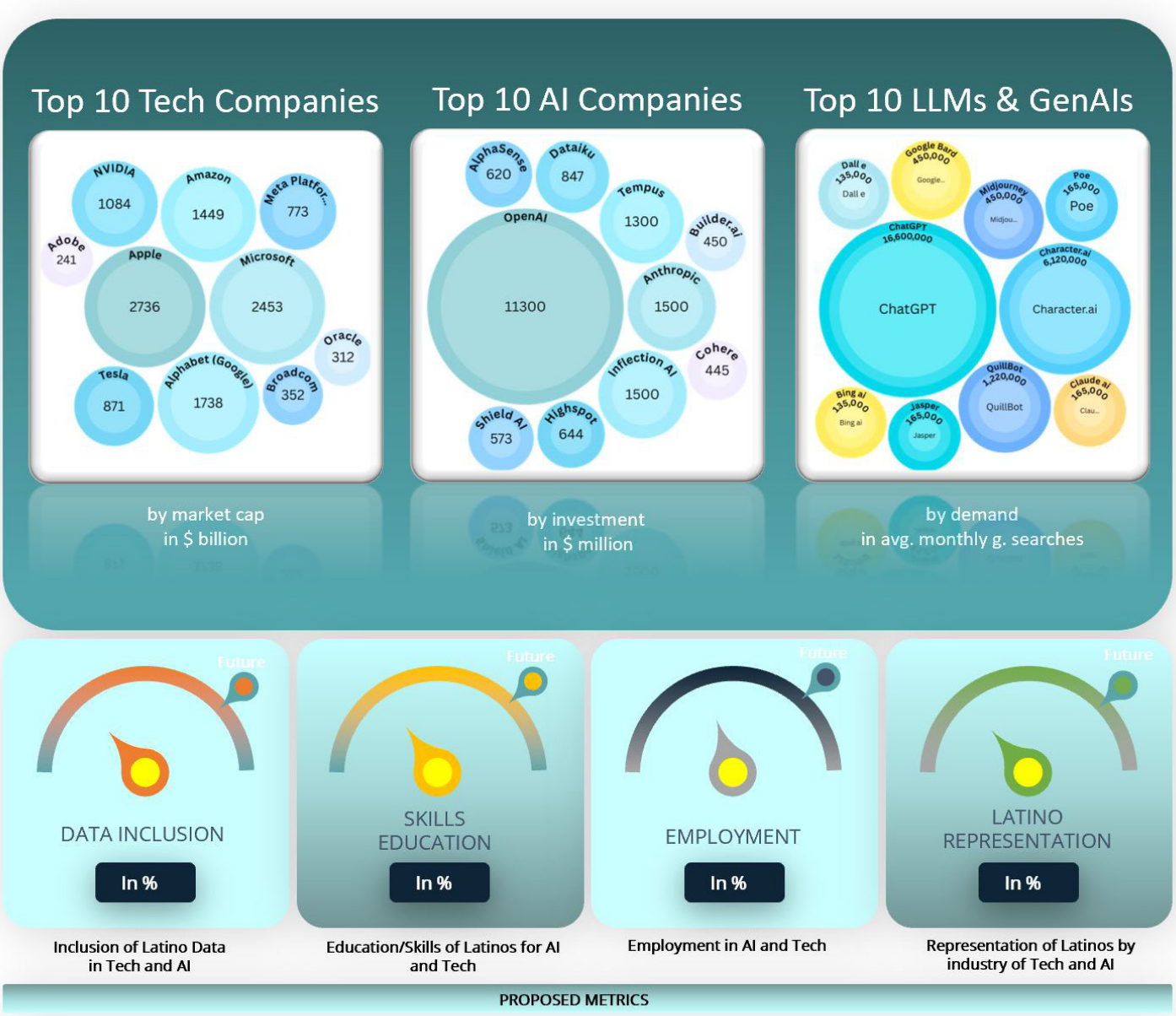
Initiatives that make it easier for executives to hire diverse talent include corporate diversity and inclusion programs, specialized recruitment platforms, partnerships with academic institutions and community groups, events like diversity career fairs and networking mixers, and executive mentorship programs. Additionally, The Guerrero Search, a talent search engine created by Pedro Antonio Guerrero to introduce more Latinos into white-majority fields in technology such as AI, characterizes itself by simplifying the recruitment of diverse executives. [43]

To enhance transparency and accountability among leading companies, we're recommending a coalition to track Latino representation in data inclusion, education, skills, employment, and leadership. We will introduce the Latino Action Initiative (L.AI) dashboard, offering real-time benchmarks and dynamic updates. Microsoft and Google, as leaders in AI and particularly Generative AI, serve as prime examples. They rank in the top ten for tech, AI, and LLMs. As these metrics grow, so will representation and data inclusivity for the burgeoning Latino community. Many of the AI organizations, especially concerning Generative AI and LLMs, are groundbreaking and have only developed within the last year, but our dashboard will offer essential insights and measurements.

Refer to the Figure 5.3 on next page.

Figure 5.3: Proposed Metrics

Several of the measures we plan to track in the evolution of this report include the following:

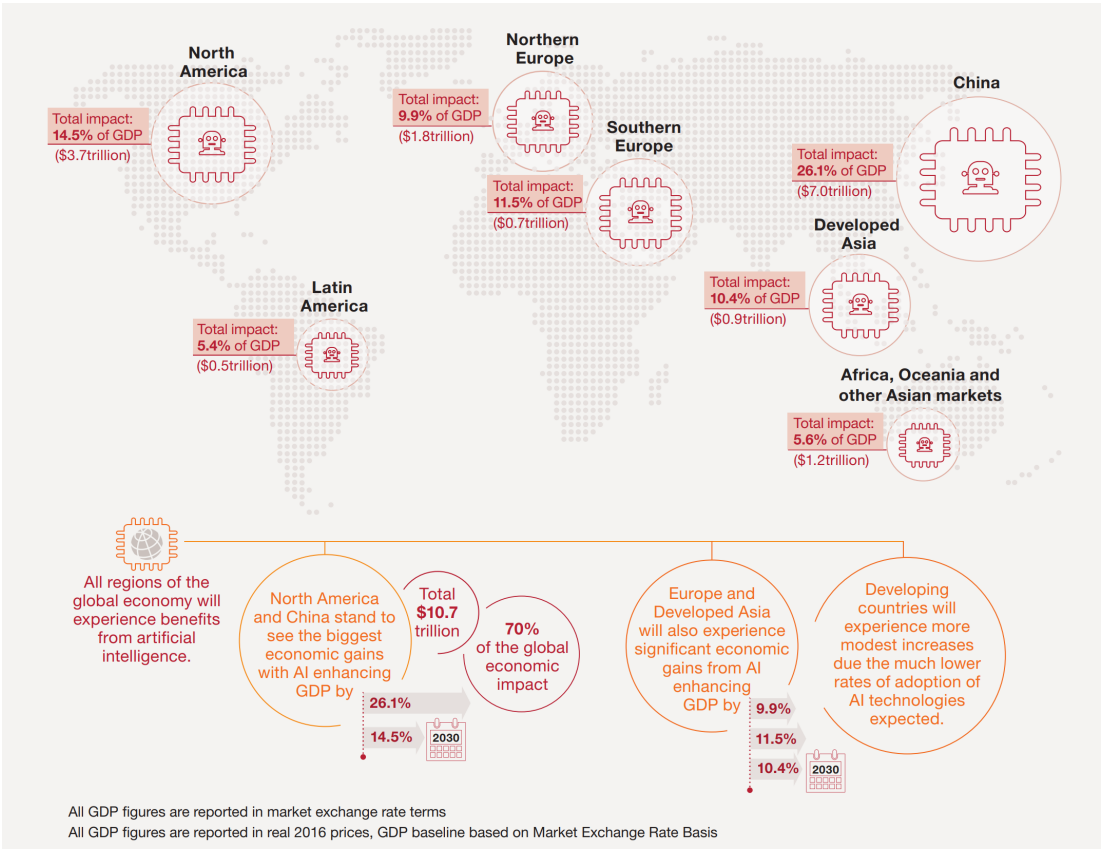


CONCLUSION

The higher amount of capital and academic preparation will allow Latinos to explore opportunities in their newfound positions, particularly in addressing the diversity gaps that still exist in the field of AI. The objective is to envision a scenario where a greater presence of Latinos in the AI workforce can collectively contribute to advancing the interests of the Latino market, one of the most powerful in the United States.[1] The importance of representation cannot be overstated, as having more Latinos in leadership positions, utilizing research, design, and marketing strategies in conjunction with AI, will lead to a more inclusive and prosperous future for the nation.

It's worth noting that generative AI has the potential to enhance sales productivity, with estimated gains of 3 to 5 percent of current global sales expenditures.[44] This signifies that AI can significantly amplify the impact of the Latino community on American society. To achieve this, it is imperative that Latinos are actively involved in the decision-making processes related to AI.[44] Promoting AI education among Latino students and communities, with the allocation of adequate funding, can contribute significantly to increased participation in the GDP, potentially adding $15.7 trillion USD to the global economy and $3.7 trillion to the North American economy by 2030.[45]

Figure 6.1: Regions with the Largest Growth (GDP) from AI



Source: PWC

It is essential to recognize that China represents a formidable competitor, and they are projected to experience a significant GDP growth of up to +26% through their AI initiatives (Figure 6.1). In contrast, the United States as the world's largest economy, inclusive of the U.S. Latino cohort representing the world's fifth-largest economy, stands to benefit significantly by incorporating local economies into AI-driven initiatives, potentially achieving a GDP growth of 14.5% by 2030[45] (see previous chart).

Moreover, if the United States intends to maintain its position as the leading international economic power, it must harness the economic potential of the Latino cohort, a powerful economic engine. While both North America and China have much to gain from the AI-driven transformation, the United States possesses the unique advantage of having a vibrant and diverse Latino community. This demographic not only represents the fastest-growing workforce in the country, but also the world's third-fastest-growing economy.[1] To capitalize on this advantage, it is imperative to prioritize and support initiatives that ensure AI's benefits are accessible to and supportive of Latinos in the U.S.

RECOMMENDATIONS

We encourage all the well-known AI-affiliated companies to achieve parity representation (Nvidia, C3.AI, KLA Corporation, Cadence Design Systems, Synopsys, Palo Alto Networks, Microsoft, Google, Amazon, and Uipath).

The government can help by providing educational support through scholarships and AI integration in schools, facilitating skill development via training centers and tech company partnerships, offering financial backing for Latino startups and entrepreneurs, investing in community tech hubs and digital infrastructure, ensuring inclusive policies and Latino representation in AI advisory roles, supporting research and innovation collaborations with Latino organizations, and using AI to enhance healthcare and public services. They could also potentially explore consortiums across industry to make commitments to hiring Latinos.

Other activities that should be considered are:

- **Language Inclusivity:** Develop AI systems that support multiple languages, including Spanish.
- **Cultural Sensitivity:** Incorporate cultural awareness into AI design to avoid biases and ensure that AI applications are culturally relevant and respectful.
- **Education and Training:** Promote AI literacy through educational programs tailored to Latino communities, emphasizing the benefits and opportunities offered by AI technologies.
- **Affordability**: Make AI technologies and devices more affordable to reduce barriers to entry for lower-income populations.
- **Community Engagement:** Foster partnerships between AI developers and Latino community organizations to create AI solutions that address specific community needs.
- **Ethical AI:** Prioritize ethical AI development, emphasizing fairness, transparency, and accountability, to build trust.
- **Data Inclusivity:** Ensure diverse data representation in AI training datasets to avoid underrepresentation and bias in AI outcomes.
- **Government Initiatives:** Encourage government policies and incentives that support AI accessibility and inclusion for Latino communities.
- **Digital Literacy Programs:** Establish programs that teach digital skills, including AI utilization, to empower Latino individuals to engage with AI technologies confidently.
- **Public Awareness Campaigns:** Launch awareness campaigns to inform Latino communities about the potential benefits and responsible use of AI technologies.
- **Role Models and Diversity:** Promote diversity within the AI industry, including Latino representation, to inspire and mentor future generations of AI professionals.
- **User-Centered Design:** Prioritize user-friendly AI interfaces and experiences that accommodate varying levels of digital literacy among Latino users.
- **Feedback Mechanisms:** Implement channels for feedback from Latino communities to continuously improve AI systems and address specific concerns.
- **Cross-Cultural Collaboration:** Encourage collaboration between AI researchers, developers, and Latino community leaders to co-create AI solutions that align with community values.
- **Partnerships and Alliances:** Build alliances with organizations and institutions that serve Latino populations to facilitate AI adoption and provide necessary support.

METHODOLOGY

The primary research for this report was conducted by the participating organizations. Additional sources were categorized into five distinct types: news outlets, consulting / research firms, government agencies / commissions, professional networks / platforms, and coaching / career development pages. They all conduct research in different ways but are some of the most reliable in their own industries.

Their research methods are vast but similar. News outlets, for instance, employ a range of research methods to gather data and the most recent stories to produce news content. They conduct interviews with relevant sources and first-hand accounts, produce document analysis to uncover facts and verify claims, and collect data and its analysis to identify trends, patterns, and statistical predictions. Their online research also heavily relies on news archives, the monitoring of social media platforms, field reporting, fact-checking, and collaboration between each other. Consulting and research firms use all of the previously mentioned research methods but also employ surveys, focus groups, case studies, expert panels, and secondary research to support their consulting services and provide valuable insights to their respective readers/ clients. Lastly, government agencies employ all the formerly mentioned methods plus literature reviews, experiments, randomized controlled trials (RCTs), and policy analysis/evaluation to base their research on their political needs. The other sources such as the professional networks/ platforms, and coaching/ career development pages base their research methods on everything previously mentioned.

Utilizing AI Technologies: Capitalizing on the advancements in AI, our study also uses AI technologies to analyze large datasets, identify underlying patterns, generate insights, and provide an AI perspective. The AI-driven analysis forms a crucial component of the study, enabling human-to-A AI comparisons and enhancing the depth of the research.

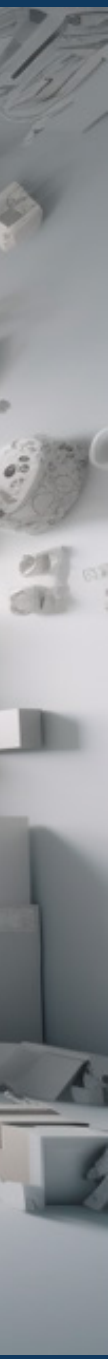
THANK YOU

IMAGE CREDITS

AI generated

conectado

REFERENCES



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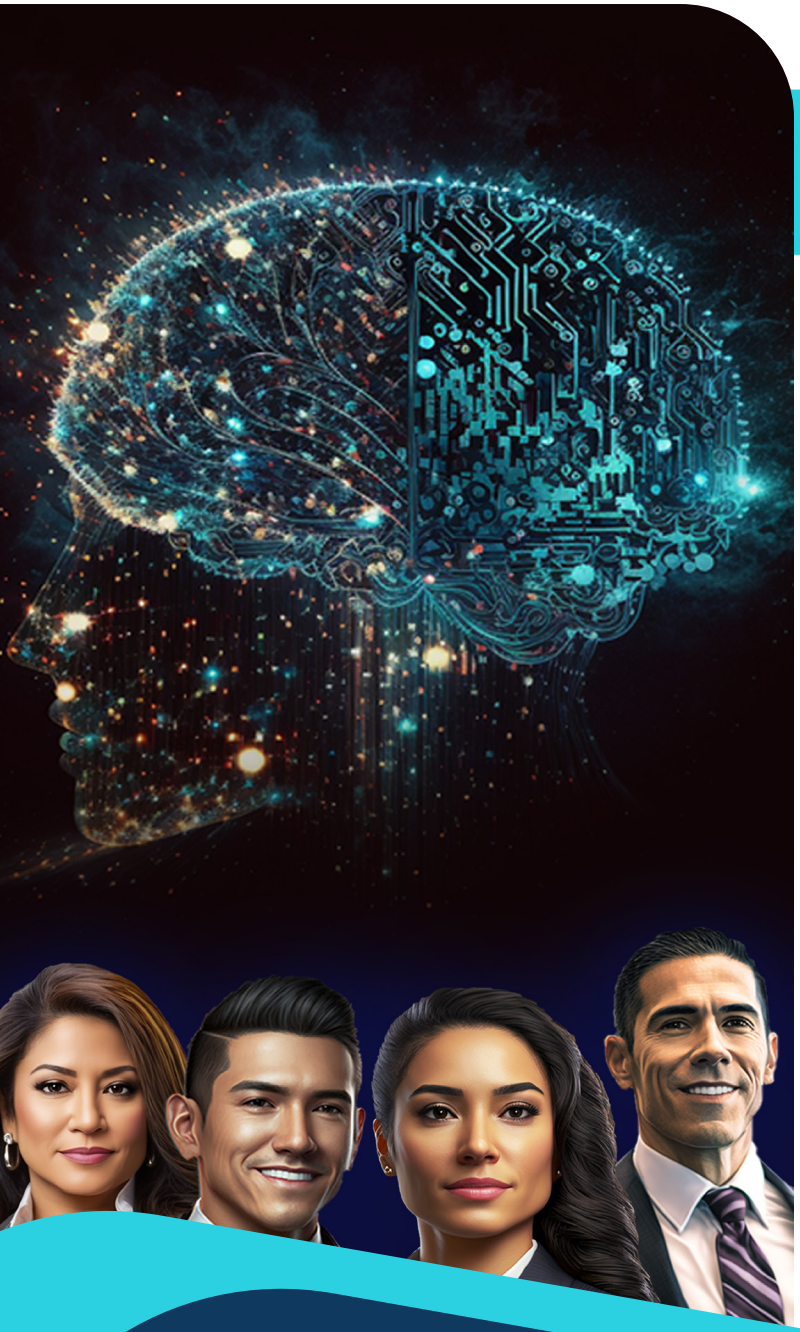

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