



LinkedIn Data Primer

Indicators, Dimensions, and Coverage of LinkedIn Data
Available through the Development Data Partnership

July 2022



Executive Summary

As of July 2022, LinkedIn offers 5 indicators covering 81 countries, which can be cut by 5 dimensions

Indicators

Indicator	What it is	Sample insight
LinkedIn Hiring Rate	The share of workers in an industry or country that added a new employer to their LinkedIn profile.	Between Jan and Mar 2022, the hiring rate in Ecuador’s manufacturing sector exceeded that of other LatAm manufacturing sectors.
Career Transitions	The number of job-to-job moves between occupations, industries, or countries.	Artificial Intelligence Specialists are moving from Tech to Manufacturing with increasing frequency.
Skills Genome	A ranked list of the 50 skills that are most representative of a given occupation, industry, or country.	In the past 5 years, SQL has become a critical skill for data scientists around the world.
Skills Similarity	The skills similarity of two occupations or industries (as described by their top 50 most representative skills).	Hospitality workers have 55% of the skills needed to become Customer Service Representatives.
Skills Penetration	The share of an occupation’s, industry’s, or country’s top 50 skills that come from a singular skills group.	Technological skills play a larger role in the Brazilian financial sector than they do in the financial sector of any other major Latin American economy.

Dimensions

					
Aggregated	National	Industry	Parent Occupation*	Skill Groups / Categories	Gender
Granular	Subnational	Sub-Industry	Occupation	Skill	-

*Parent occupation still in development

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LinkedIn Hiring Rate

Monthly Refreshes Available

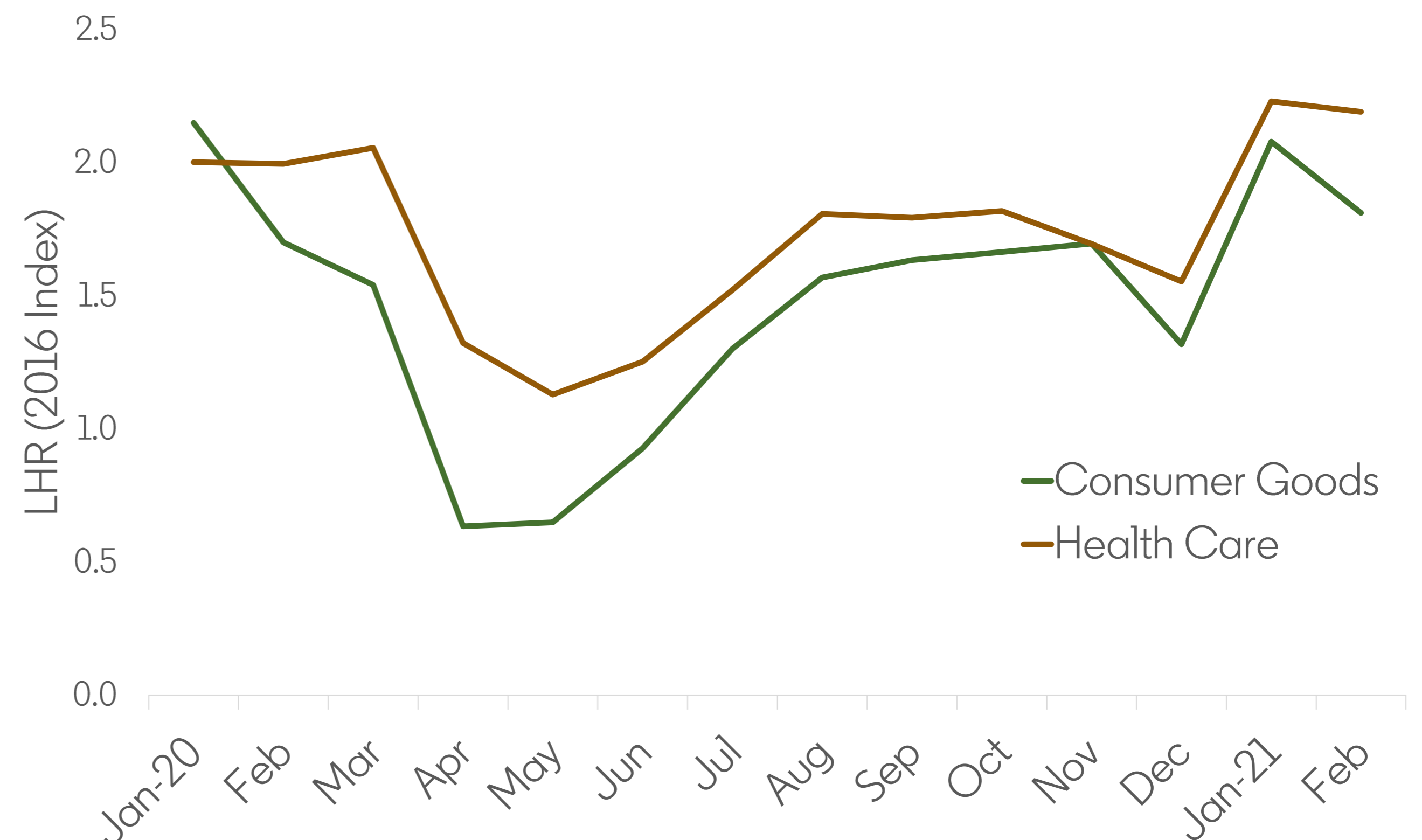
Indicator Description

The number of LinkedIn members who added a new employer to their profile in the same month the new job began, divided by the total number of LinkedIn members in that entity (e.g. country, industry, country-industry pair, etc.), indexed to the average month in 2016.

Sample Data Description

This sample forms the basis of a larger dataset which aims to quantify the impact of the COVID-19 pandemic in Latin America industries.

LinkedIn Hiring Rate for Brazil, by Month and Industry (2020-21)



Career Transitions

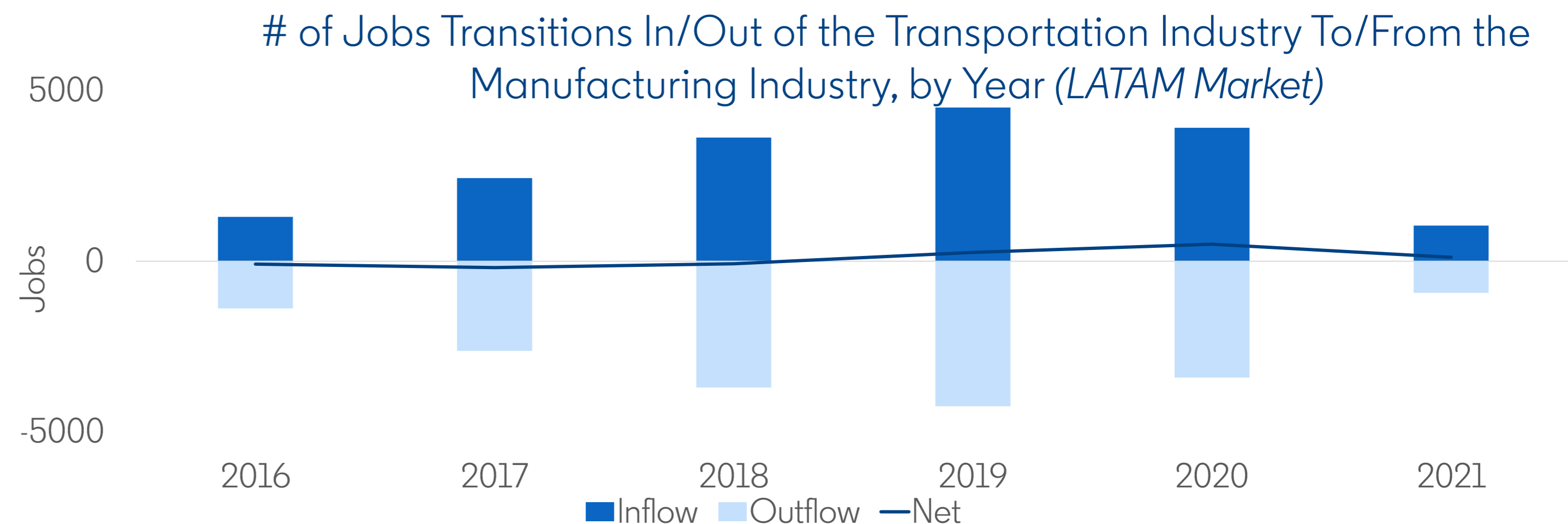
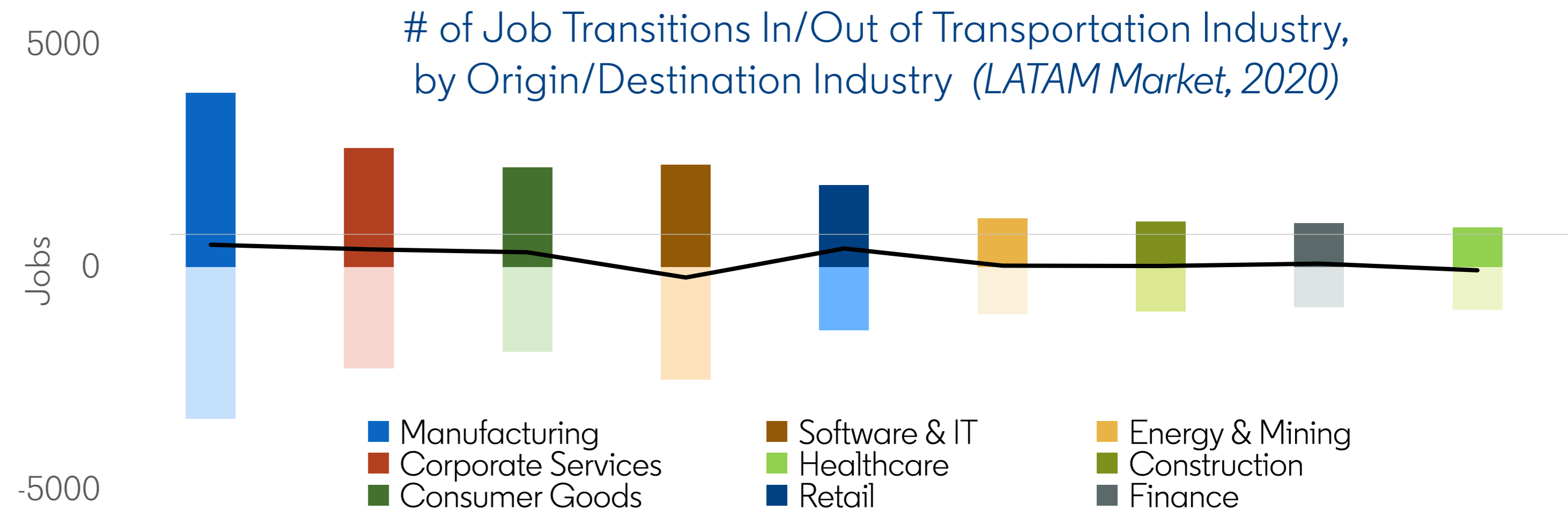
Quarterly Refreshes Available

Indicator Description

Career Transitions shows the aggregate number of job to job moves between entities (e.g. occupational pairs or industries). This can include transition to jobs within the same companies (internal) or to another company (external).

Sample Data Description

This sample forms the basis of a larger dataset which aims to understand the number of transitions into and out of the transportation industry in Latin America over the last 5 years.



Skill Genome

Yearly Refreshes Available



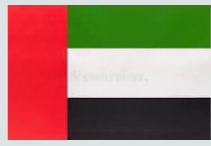

Indicator Description

For any entity (occupation or job, country, industry, etc), the skill genome is an ordered list (a vector) of the 50 'most characteristic skills' of that entity. These most characteristic skills are identified using a TF-IDF algorithm to identify the most representative skills of the target entity, while down-ranking ubiquitous skills that add little information about that specific entity (e.g. Microsoft Word).

Sample Data Description

This sample forms the basis of a larger dataset which aims to understand the unique skills of the Software & IT Services industry group in various countries.

10 Most Characteristic Skills of the Software and IT Services Industry, by Country (2020)

Rank	 France	 India	 UAE	 USA
1	Agile Methodologies	Core Java	Requirements Analysis	Software Development Life Cycle (SDLC)
2	Git	Software Development Life Cycle (SDLC)	Pre-sales	Software as a Service (SaaS)
3	Cloud Computing	Requirements Analysis	Software Development Life Cycle (SDLC)	Enterprise Software
4	SQL	SQL	Vendor Management	Agile Methodologies
5	Integration	C (Programming Language)	Cloud Computing	Salesforce.com
6	Pre-sales	Java	SQL	Cloud Computing
7	Scrum	Manual Testing	Business Analysis	Requirements Analysis
8	Linux	Agile Methodologies	Integration	Integration
9	Software as a Service (SaaS)	JavaScript	Enterprise Software	Amazon Web Services (AWS)
10	Java	Unix	Solution Architecture	Vendor Management

Skill Similarity

Yearly Refreshes Available

Indicator Description

The Skills Similarity indicator measures the level of skill alignment between two occupations or industries. Entities that are highly similar from a skills perspective will have a high skill similarity score. The skill similarity score ranges from 0 (fully dissimilar) to 1 (the same).

Sample Data Description

This sample shows the top 20 occupations which are most similar to a Data Scientist in the US from a skills perspective.

20 Occupations Most Similar to “Data Scientist” (USA, All Industries, 2020)

Rank	Occupation	Score
1	Data Scientist	1.000
2	Data Science Specialist	0.971
3	Data Science Manager	0.940
4	Director Data Science	0.909
5	Data Science Researcher	0.888
6	Chief Data Scientist	0.879
7	Data Consultant	0.873
8	Head of Data Science	0.853
9	Machine Learning Specialist	0.823
10	Machine Learning Researcher	0.820
11	Machine Learning Engineer	0.816
12	Data Science Vice President	0.811
13	Machine Learning Consultant	0.748
14	Analytics Consultant	0.723
15	Applied Scientist	0.722
16	Analytics Specialist	0.709
17	Artificial Intelligence Engineer	0.699
18	Data Team Lead	0.692
19	Data Analyst	0.689
20	Artificial Intelligence Researcher	0.681

Skill Penetration

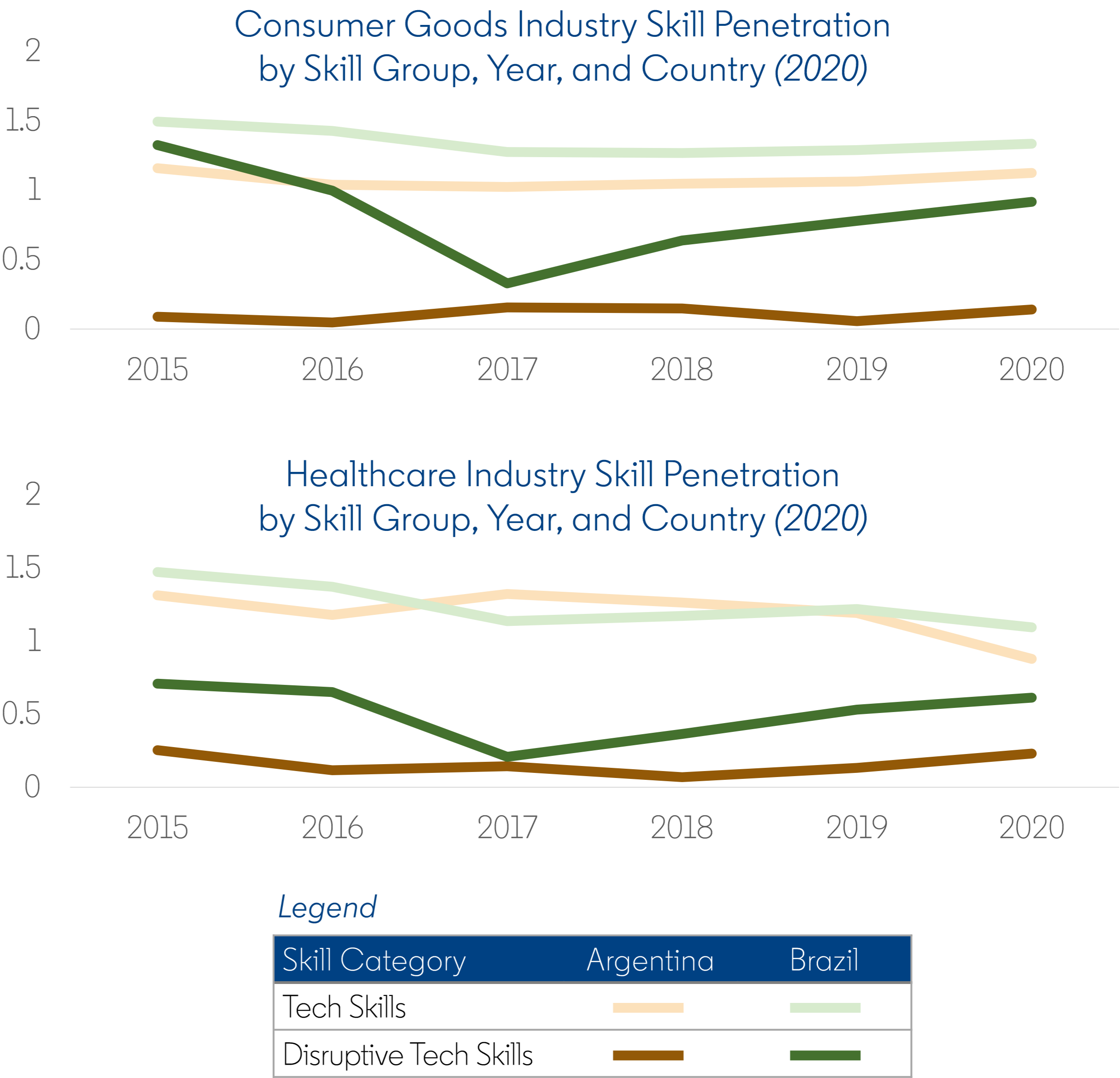
Yearly Refreshes Available

Indicator Description

The Skill Penetration metric calculates the share of an occupation’s, industry’s, or country’s top 50 skills that come from a singular skills group. For example, if 5 of 50 skills for Data Scientists in the Information Services industry fall into the Artificial Intelligence skill group, Artificial Intelligence has a 10% penetration for Data Scientists in Information Services.

Sample Data Description

This sample forms the basis of a larger dataset which aims to benchmark country-industry pairs in Latin America against each other with respect to technical skills.



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Sections

1 Indicator Samples

2 Geographic Coverage and Representativeness

3 Green and Specialized Skill Categories

Appendix: Data Snapshots

Geographic Coverage

Data availability varies by country

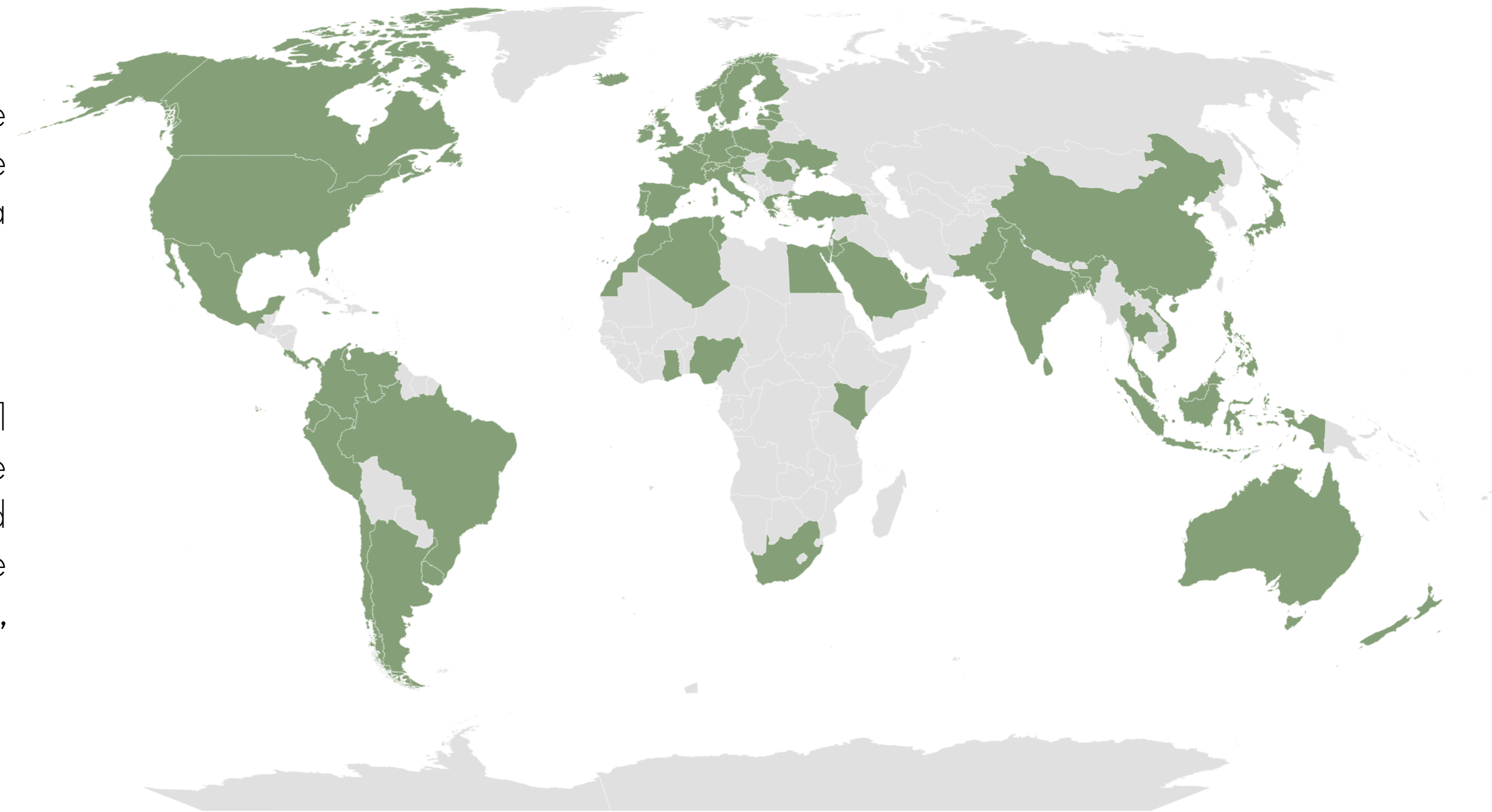
81 Available Countries

Currently, LinkedIn can provide at least some data for 81 countries. Cutting datasets by more (and more granular) dimensions will reduce data availability.

Regional Grouping

Where LinkedIn can not share data on individual countries, the Data for Impact team *may* be able to group countries with similar economic and coverage profiles to share regional data for some indicators (e.g. Eastern Europe, Central America, West Africa, etc.).

Geographic Coverage of LinkedIn's DDP Data (2022)



Representativeness

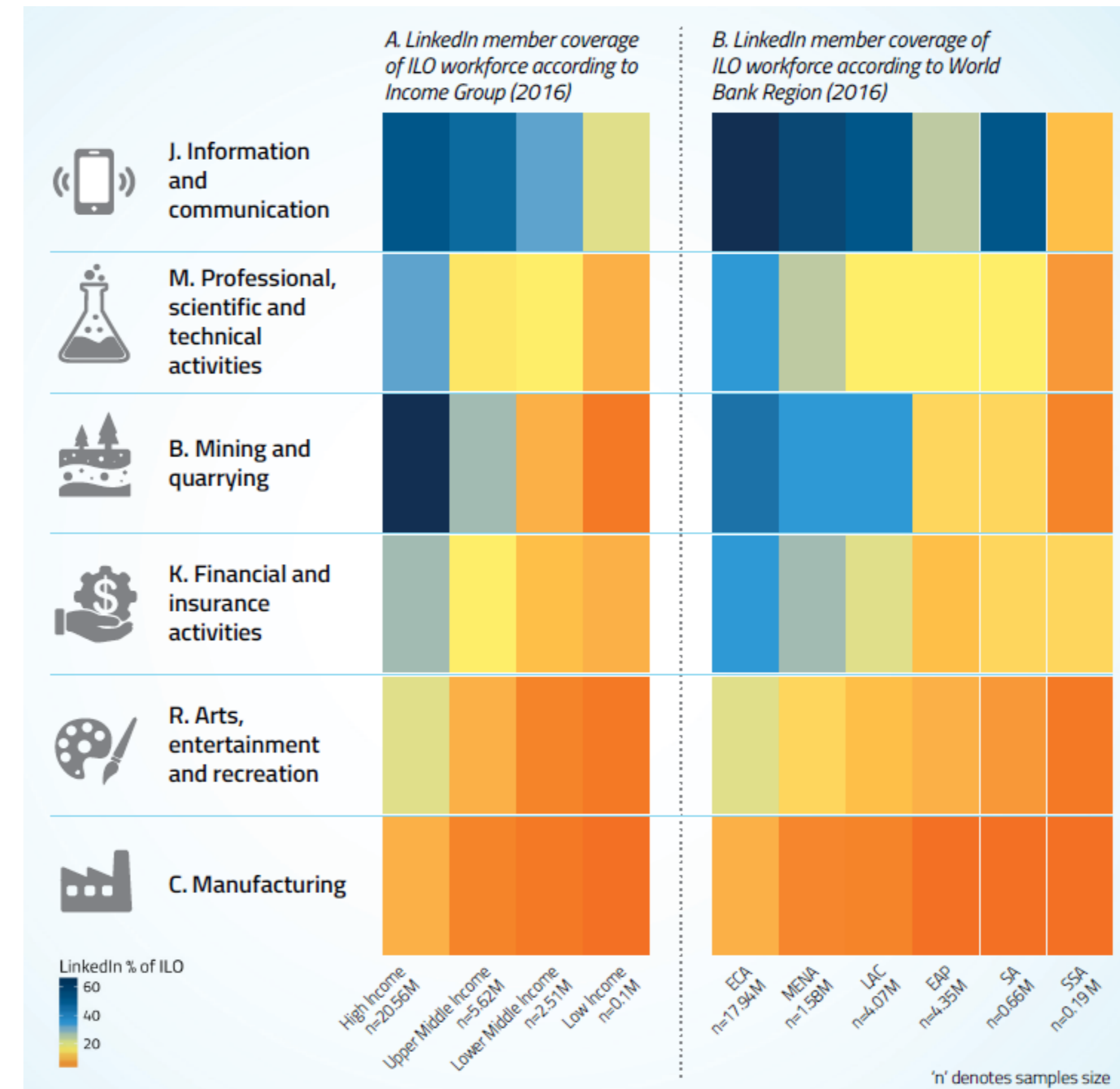
Representativeness varies by industry and region

A Complementary Dataset

LinkedIn data represents some of the most comprehensive, granular sources of labor market and skills data available. It is, however, influenced by how members choose to use the platform, which can vary based on professional, social, and regional culture, as well as overall site availability and accessibility. As such, aggregated LinkedIn datasets shared through the DDP will likely be most useful when paired with traditional sources of labor market and economic data.

**LinkedIn's global membership has grown by 50+% since this analysis, so we anticipate that data is even more representative in 2022 than in 2016; an updated analysis is forthcoming.*

Representativeness of LinkedIn's DDP Data (2016*)



Based on calculation using LinkedIn and International Labor Organization (ILO) data in 92 countries

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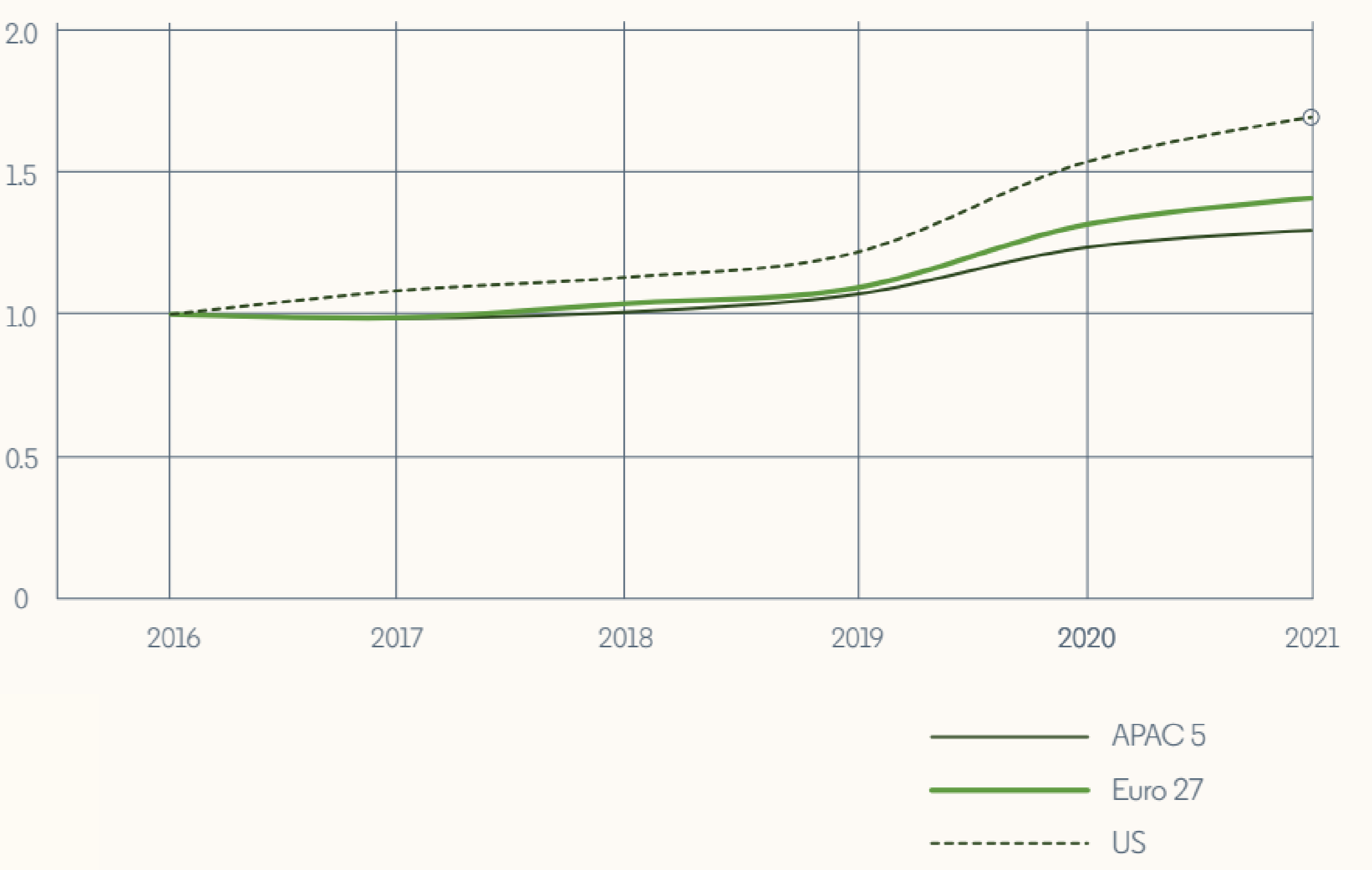
Green Data

See [2022 Green Global Green Skills Report](#)

Sample Green Data Analysis

Green Dimension	Definition
Green skills	Skills that enable the environmental sustainability of economic activities
Green jobs	Jobs that cannot be performed without extensive knowledge of green skills
Greening jobs	Jobs that can be performed without green skills, but typically require some green skills
Greening potential jobs	Jobs that be performed without green skills, but occasionally require some level of green skills
Non-green jobs	Jobs that do not require green skills to be performed
Green talent	A LinkedIn member who has explicitly added green skills to their profile and/or are working in a green or greening job

Chart 17: Growth in % share of hiring by year (data indexed to 2016 levels) — Green Jobs



Specialized Skill Categories

Skills are annotated as pertaining to specific skill categories, which can be applied as indicator dimensions

Skill Group Category	Description
Soft Skills	Non-cognitive skills or personality traits valued in the labor market but not assessed by achievement tests. IQ or achievement tests cannot predict these skills.
Business Skills	Knowledge and skills required to start or operate an enterprise. Examples include Business Management, Project Management, Entrepreneurship.
Tech Skills	Defined as a range of abilities to use digital devices, communication applications, and networks to access and manage information. They enable people to create and share digital content, communicate and collaborate, and solve problems.
Disruptive Tech Skills	Skills associated with developing new technologies that are expected to impact labor markets in the coming years. Examples include Robotics, Genetic Engineering, and Artificial Intelligence. Artificial Intelligence can be isolated as a skill group category itself (see OECD.AI).
Specialized Industry Skills	Skills that are domain or industry specific and that do not fall in any of the other categories. May be less transferable across jobs compared to other categories.

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LinkedIn Hiring Rate

Data Snapshot

month_begin_date	country_region	industry_group_name	hiring_rate
1/1/2020	Brazil	Consumer Goods	2.149
2/1/2020	Brazil	Consumer Goods	1.701
3/1/2020	Brazil	Consumer Goods	1.540
4/1/2020	Brazil	Consumer Goods	0.633
5/1/2020	Brazil	Consumer Goods	0.648
6/1/2020	Brazil	Consumer Goods	0.927
7/1/2020	Brazil	Consumer Goods	1.301
8/1/2020	Brazil	Consumer Goods	1.568
9/1/2020	Brazil	Consumer Goods	1.634
10/1/2020	Brazil	Consumer Goods	1.664
11/1/2020	Brazil	Consumer Goods	1.696
12/1/2020	Brazil	Consumer Goods	1.317

Career Transitions

Data Snapshot

month_begin_date	origin_industry	Destination_industry	n_trans	skill_similarity_level
2017-01-01	Manufacturing	Transportation & Logistics	2439	Medium
2017-01-01	Corporate Services	Transportation & Logistics	1667	High
2017-01-01	Consumer Goods	Transportation & Logistics	1498	Medium
2017-01-01	Software & IT Services	Transportation & Logistics	1270	Medium
2017-01-01	Retail	Transportation & Logistics	955	Medium
2017-01-01	Energy & Mining	Transportation & Logistics	750	High
2017-01-01	Construction	Transportation & Logistics	688	High
2017-01-01	Finance	Transportation & Logistics	618	Medium
2017-01-01	Health Care	Transportation & Logistics	569	High

Skill Genome

Data Snapshot

country_region	industry_group_name	tfidf_skill_rank	skill_group_name	skill_name
United Arab Emirates	Software & IT Services	1	Software Development Life Cycle (SDLC)	Requirements Analysis
United Arab Emirates	Software & IT Services	2	Sales Operations	Pre-sales
United Arab Emirates	Software & IT Services	3	Software Development Life Cycle (SDLC)	Software Development Life Cycle (SDLC)
United Arab Emirates	Software & IT Services	4	Business Management	Vendor Management
United Arab Emirates	Software & IT Services	5	Data Storage Technologies	Cloud Computing
United Arab Emirates	Software & IT Services	6	Data Storage Technologies	SQL
United Arab Emirates	Software & IT Services	7	Management Consulting	Business Analysis
United Arab Emirates	Software & IT Services	8	Software Development Life Cycle (SDLC)	Integration
United Arab Emirates	Software & IT Services	9	Enterprise Software	Enterprise Software
United Arab Emirates	Software & IT Services	10	Software Development Life Cycle (SDLC)	Solution Architecture

Skill Similarity

Data Snapshot

country_name	occupation_name	comparator_occupation_name	skill_similarity
United States	Data Scientist	Data Scientist	1.000
United States	Data Scientist	Data Science Specialist	0.971
United States	Data Scientist	Data Science Manager	0.940
United States	Data Scientist	Director Data Science	0.909
United States	Data Scientist	Data Science Researcher	0.888
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United States	Data Scientist	Machine Learning Specialist	0.823
United States	Data Scientist	Machine Learning Researcher	0.820
United States	Data Scientist	Machine Learning Engineer	0.816
United States	Data Scientist	Data Science Vice President	0.811

Skill Penetration

Data Snapshot

year	country_region	industry_group_name	skill_type	relative_skill_group_penetration	wb_income	wb_region
2015	Argentina	Consumer Goods	Disruptive Tech Skills	0.089	High income	Latin America & Caribbean
2016	Argentina	Consumer Goods	Disruptive Tech Skills	0.048	High income	Latin America & Caribbean
2017	Argentina	Consumer Goods	Disruptive Tech Skills	0.156	High income	Latin America & Caribbean
2018	Argentina	Consumer Goods	Disruptive Tech Skills	0.148	High income	Latin America & Caribbean
2019	Argentina	Consumer Goods	Disruptive Tech Skills	0.057	High income	Latin America & Caribbean
2020	Argentina	Consumer Goods	Disruptive Tech Skills	0.141	High income	Latin America & Caribbean
2015	Argentina	Consumer Goods	Tech Skills	1.158	High income	Latin America & Caribbean
2016	Argentina	Consumer Goods	Tech Skills	1.039	High income	Latin America & Caribbean
2017	Argentina	Consumer Goods	Tech Skills	1.023	High income	Latin America & Caribbean
2018	Argentina	Consumer Goods	Tech Skills	1.047	High income	Latin America & Caribbean
2019	Argentina	Consumer Goods	Tech Skills	1.063	High income	Latin America & Caribbean
2020	Argentina	Consumer Goods	Tech Skills	1.125	High income	Latin America & Caribbean