Youth Portraits

Career and Skills Pathways around the World

MISK GLOBAL FORUM
منتدى مسك العالمي

FutureFit AI

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A research partnership between the Misk Global Forum and FutureFit AI

About

Misk Global Forum

Misk Global Forum brings young leaders, creators and thinkers together with established global innovators to explore, experience and experiment with ways to meet the challenge of change. It is the flagship global platform of the Misk Foundation, a non-profit philanthropic foundation established by Crown Prince Mohammad bin Salman to discover, develop and empower young people in Saudi Arabia, and beyond to become active participants in the future economy. The forum furthers the foundation's mission internationally through engagement, partnerships and events.

FutureFit AI

FutureFit AI is an AI platform for the Future of Work. Our vision is to build the world's most comprehensive and intelligent map of work, skills, and learning to address the significant and impending negative impact of AI and automation. Built on over 1 billion data points, FutureFit AI works with enterprises, organizations, and governments to connect Work, Talent, & Learning data and map pathways for up/reskilling people for the future. FutureFit AI is a NextAI venture and has already won awards and recognition from the US Government, TD Bank, and the Google Social Impact Challenge.

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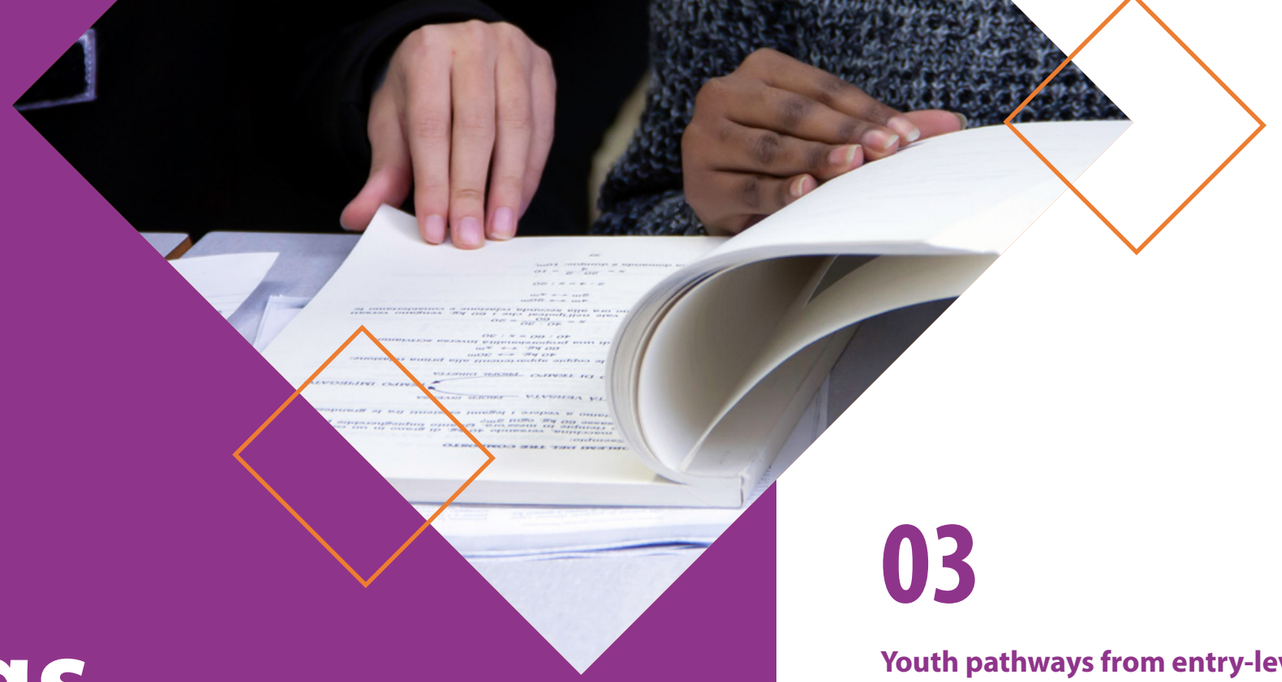


Key Findings

01

Education pathways are neither deterministic nor irrelevant for youth career outcomes across.

Throughout the profiles we looked at, we found that a significant number of the top career outcomes by educational discipline matched the field in which they studied for. This increased significantly for those disciplines which had a specialized focus, such as Health and Education and Computer and IT majors. We also found that at the mid-lower end of the spectrum, job outcomes varied. This varied much more for the Social Sciences and Culture, Language, and Fine Arts majors. What proved to be much more deterministic of career outcomes, when evaluated between countries, was industrial specialization and growth within that country. Science, Engineering, and Math graduates have a much more linear path into Oil and Energy in Nigeria and Saudi Arabia, while most graduates with similar education have an easier path into Health and Education in Canada and the U.S.

02

Youth with a background in Humanities or Business have a higher number of valuable transferable skills.

Skills most commonly cited by graduates coming from Social Sciences; Culture, Language, and Fine Arts; and Business and Communications include cross-cutting "human skills" that apply to roles across industries including Management, Public Speaking, Teamwork, Strategic Planning, and various forms of Communication. While some of these graduates lack specialized training, very few end up in low-skill retail positions or underemployed later in their career as is sometimes assumed. Furthermore, most graduates that enter into higher education through a specialized field take some form of business training further into their career.

03

Youth pathways from entry-level work to specialized work varies between countries.

Youth in Saudi Arabia or Nigeria are much more likely to start their career in applied work relevant to their education through positions like "Intern" or "Trainee" and progress to Managerial roles by the fourth job. Youth in Canada, the US, and Mexico are much more likely to work in customer facing or retail roles early in their career and stay in them for longer periods of time. One of the most accessible and specialized job areas across countries is Software Engineering and Development.

04

Financial Services and Information Technology are the two most common industrial clusters for youth employment between countries and disciplines.

As significant parts of the thriving digital economy, Financial Services and Information Technology employ a wide range of roles from a diverse range of disciplines that require a mix of both technical and nontechnical skills. As countries specialized in Oil and Energy or other natural resources start to diversify, we anticipate these two sectors increasing their share as stable employers of youth talent.

05

In the future, youth will need to shift focus from just their education or career path to their "skills path".

We noted above that educational choices are neither deterministic nor irrelevant for youth career outcomes. They fail to be deterministic because we observe youth that make a diverse range of career choices from educational backgrounds, while at the same time, specialized training instills technical skills that enable linear trajectories. At a high-level, youth with the most agile skill sets are provided with the most opportunities for career choices, while many with specialized training going into a smaller set of jobs in just a few industries. But as more routine or specialized work is digitized and automated, we believe youth that are able to blend technical and nontechnical skills will have first access to emerging jobs regardless of educational background.

Introduction

Trends in labour markets around the world - from AI and automation to aging populations to the rise of the gig economy - are disrupting common forms of work that the youth may have traditionally had access to.

Lower levels of work experience and less-developed skill sets make young people one of the most impacted by the future of work. A natural orientation to digital environments, openness to learning new things, and a portfolio of unique experiences (travel, volunteering, extracurricular, etc.) can also make them well-positioned for adapting to change and the opportunities the future of work brings. As machines and automated software handle more common workplace functions - up to half over the next six years[1] - their ability to adapt to this change in entry-level work will be put to the test.

Globally, a record number of young people - up to 60 million each year - become working age[2]. And each year, these 60 million young people entering the workforce are presented with unique challenges in attaining employment with secure earnings and signaling their talent and skills to employers beyond credentials. Despite the increasing access to education and qualifications we observe in youth pathways, young people often lack work experience, knowledge of their skills, social networks, and other assets in effectively signaling and matching their skills with work opportunities in the early days of their career.

But what does this look like in practice? What do the career and skills pathways of youth look like today and how might they compare in different regions across the world?

Through a research partnership between the Misk Global Forum and Future Fit AI, this report attempts to paint a global picture of youth pathways around the world - how youth access education, employment, and skills across five different countries in three continents: Canada, Mexico, Nigeria, Saudi Arabia, and the United States. The report aims to present a data-driven approach by pulling on over 860,000 online professional profiles of youth and recent graduates across a variety of disciplines from the FutureFit AI database. The sections that follow aim to give a comprehensive overview of each country in terms of its youth population, education and career pathways, and highlights on job outcomes and skill themes observed. The report ends by taking a comparative view of each country in assessing country-specific insights of youth pathways, as well as common themes we see across countries.

1. World Economic Forum, "The Future of Jobs Report," January 2018, https://www.weforum.org/reports/the-future-of-jobs-report-2018

2. Integrated Youth Employment Programs, World Bank Group, Jobs Working Paper,#24, 2018, https://www.s4ye.org/sites/default/files/2019-10/Stocktake%20of%20evidence%20on%20Youth%20Employment%20Programs.pdf.

Methodology

This report pulls on FutureFit AI's comprehensive database of work and skills built on over 2 billion data points and 200 million professional profiles focused on five countries to isolate and analyze education, employment, and skills outcomes for graduates across a variety of disciplines. This data comes from a combination of sources including resumes and online professional profiles.

The main areas of post-secondary disciplines include[3]:

- **Business and Communications**
- **Computer and IT**
- **Construction and Trades**
- **Culture, Language, and Fine Arts**
- **Health and Education**
- **Law and Government**
- **Science, Math, and Engineering**
- **Social Science**
- **Tourism and Hospitality**

3. These categories were developed by accessing over 200 million online professional profiles worldwide, which includes over 1,000 different higher education programs. These higher education programs and areas of study have been grouped into the Major Areas of Studies listed. While the nine Major Areas of Study listed are comprehensive, the majority of the analysis in this report focused on six priority Major Areas of Study (Science, Math, and Engineering; Computer and IT; Health and Education; Business and Communications; Social Science; and Culture, Language, and Fine Arts).

Youth Portraits from a Global Perspective

In an effort to represent a broad range of education, employment, and skill profiles from around the world, we chose countries with a distinct and large regional representation from three continents spanning North America, Asia, and Africa totaling over 860,000 young people.

North America

Canada	253,000
United States	500,000
Mexico	22,000

Asia

Saudi Arabia	37,000

Africa

Nigeria	51,000

The ultimate aim of the analysis that follows is comparison - to highlight career and skill profiles taken by the youth across various disciplines by country. While policy makers and business leaders around the world express concern about youth employment access and outcomes, the goal here is to present youth pathways side by side by discipline and country to better understand the diversity of pathways youth currently have access to at a high level. For this purpose, we've surveyed the first to sixth jobs of graduates from 2012 to 2019 to assess some of the most common career paths and employers in each country. We also consider the diversity of educational paths that lead to these careers.

We also perform text analysis on the skills that each of these workers include across different education and career pathways. We do this to better understand how the youth may perceive their own work and how they may position themselves to employers and wider networks. We highlight major skill themes we observe across the most common jobs held by youth, as well as the most common skills observed by Major Area of Study.

While we believe the insights that follow shed an important light on real-time youth career and skills pathways, it's important to bear a few caveats in mind when interpreting this data.

First, because we are relying on a broad sample of online professional profile and resume data from multiple sources, the analysis that follows only captures those segments of the labour force that have made this data available. Second, because the availability of this kind of data does vary between the regions, specifically so for youth cohorts that might lack detail in their professional profile due to limited education and work experience, the regional samples included do not exactly approximate equal proportions between the different youth populations.

Youth Portraits Around the World

Canada

Canada is a country in the northern part of North America with ten provinces and three territories that extend from the Atlantic to the Pacific and northward into the Atlantic Ocean. Canada is home to just over 37 million people, but covers nearly 10 million square kilometers, making it the world's second-largest country by total area.

There are over seven million youth across Canada, aged 15 to 29, approximately 19% of the total population. Those aged 25 to 29 make up the largest proportion of youth at 36%. While Canadian youth are more diverse, educated, and connected socially than past youth in Canada, temporary employment, unemployment, and overqualification post-graduation remain as issues of concern for some segments of the Canadian youth population.[4]

Youth Profile

To examine the youth pathways in Canada, we dive into just over 250,000 youth profiles to explore youth education, employment, and skill trends. We find that Canadian youth in our sample are highly educated and employed across business roles, social science fields, and STEM careers. While Canada has a large natural resources and energy economy, Oil and Energy continues to decline as what was once a large employer of young professionals in the STEM fields.[5] The youth in Canada are increasingly entering career paths primarily in Healthcare and Business, as well as digital careers in Computer Software and Information Technology.

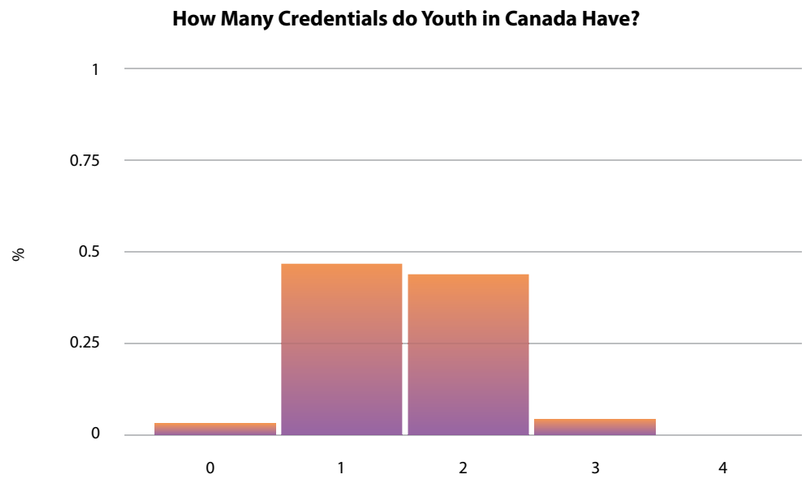
4. Statistics Canada, "A Portrait of Canadian Youth" March 2019 Updates," March 2019, https://www150.statcan.gc.ca/n1/pub/11-631-x/11-631-x2019003-eng.htm

5. PetroLMI, "Diversifying Canada's Oil and Gas Workforce: A Decade in Review," June 2018, ,https://careers-oil-gas.s3.amazonaws.com/publications/30/en/FINAL_Diversifying_Report.pdf.

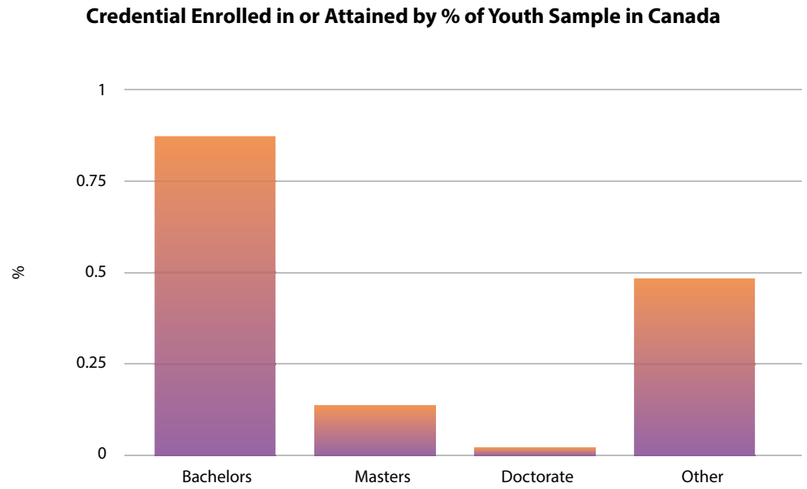
Educational Attainment

How many credentials do youth in Canada have?

Almost 50% of youth in Canada demonstrate having one post-secondary credential and an almost equally large number have two, with a small number of under 3% lacking credentials or still attending high school.



In Canada, 87% of youth sampled are enrolled in or have a Bachelor's degree, 13% are enrolled in or have a Masters, 2% are enrolled in or have a Doctorate, and a high percentage of almost 50% are enrolled in or have other forms of credentials[6] Canada has the highest percentage of youth that are enrolled in or possess credentials at the Doctorate level (but is comparable to the U.S. at 1.8%).

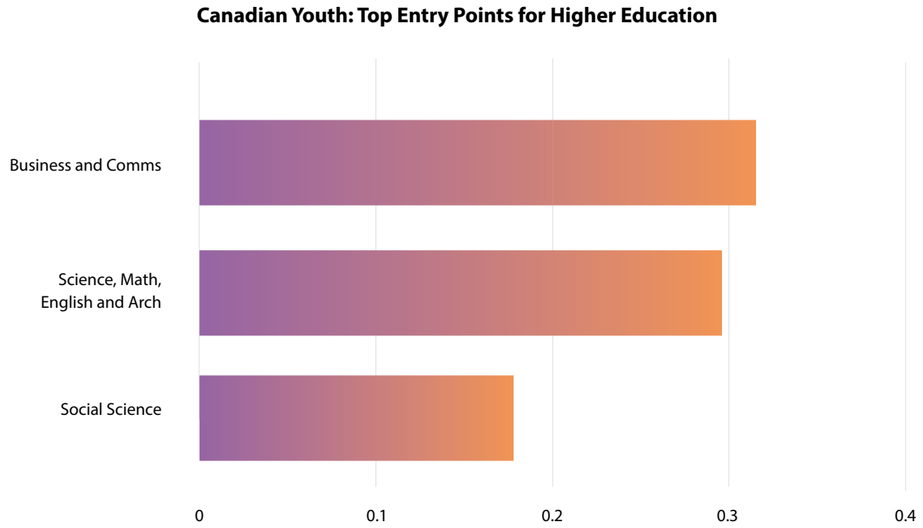


6. Note that it is possible for youth to be enrolled in or have multiple credentials so totals will not sum to 100%.

Major Area of Study

What are the most popular areas of study for youth?

The majority of Canadian youth begin their educational paths in either Business and Communications or Science, Math, and Engineering, with the Social Sciences in third place. Social Sciences make up the largest contribution to the top three entry points between all five countries at 18%. The top three entry points in Canada are followed by Culture, Language, and Fine Arts and Health and Education.

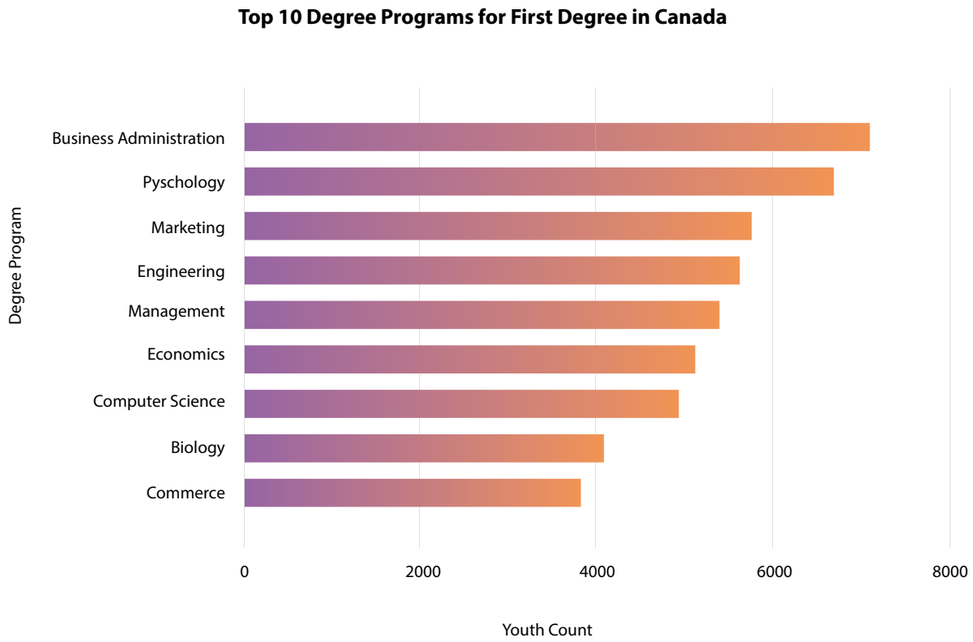


Top Major Areas for First Degree
By First Post-Secondary Credential

#	Major Area	%
1	Business and Communications	31%
2	Science, Math, and Engineering	30%
3	Social Science	18%
4	Culture, Language, and Fine Arts	9.5%
5	Health and Education	5%
6	Computer and IT	4.5%
7	Law and Government	1%
8	Tourism and Hospitality	0.8%
9	Construction and Trades	0.3%

As young people continue to attain higher education, this ranking order stays exactly the same with Business and Communications remaining as the top choice for additional credentials and degrees.

Dispersed between the top major areas, we see just over 56,000 Canadian youth in our sample choosing one of ten specific degree programs for their first degree, with Business degrees at the top including Accounting and Business Administration, followed by Social Science degrees like Psychology and Economics and STEM degrees in Engineering and Computer Science.



Entry Level Work Experience

Where do yong people in Canada begin their career journey?

For young people in Canada, entry-level work experience includes customer facing and retail roles like Sales Associate, Customer Service Representative and Cashiers, as well as assistant positions as Research and Teaching Assistants. Intern positions are also common, but not mentioned as often as countries like Nigeria and Saudi Arabia. None of the top entry-level roles are highly specialized.

The top five skills posted in these positions approximate the kinds of skills attained by Canadian youth in their first work experience. These are largely human-centered skills such as Customer Service, Sales, and Teamwork, but also include basic digital skills like Microsoft Office and Social Media.

Most Common First Jobs for Canadian Youth

#	Job Title	Top 5 Skills
1	Sales Associate	retail, customer service, sales social media, teamwork
2	Customer Service Representative	customer service, call centers, time management, customer experience, data entry
3	Cashier	time management, cash register, customer service, teamwork, microsoft word
4	Research Assistant	research, matlab, statistics, spss, qualitative research
5	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
6	Administrative Assistant	data entry, administrative assistance, event planning administrative, assistants, office administration
7	Server	event planning, restaurants, customer service, teamwork, social media
8	Sales Representative	sales operations, sales management, direct sales, account management, cold calling
9	Assistant Manager	customer satisfaction, retail, team management, customer service, time management
10	Teaching Assistant	LaTex, research, data analysis, teaching, statistics

When do youth progress in their career journeys?

To approximate where youth progress following entry-level positions, we populated lists of the top jobs up youth are employed in until the sixth job listed. We find that assistant and customer service jobs remain at the top of the list for youth in Canada, with jobs like Project Coordinator and Software Developer starting to emerge at about the fourth job in the career pathway.

Because Canadian youth, on average, possess more credentials and at higher levels than other regions with many youth having two or more, this seems to contribute to more time spent in either entry-level job roles or research / teaching assistant positions. Evaluating what is likely a host of factors that affect a delayed labour market progression is an area for further research. The rise of Software Developers stands at #7 as one of the only specialized roles which is also a common theme we observe in other regions.

Most Common Advanced Jobs in Canadian Youth Pathways
Estimated at Fourth Job

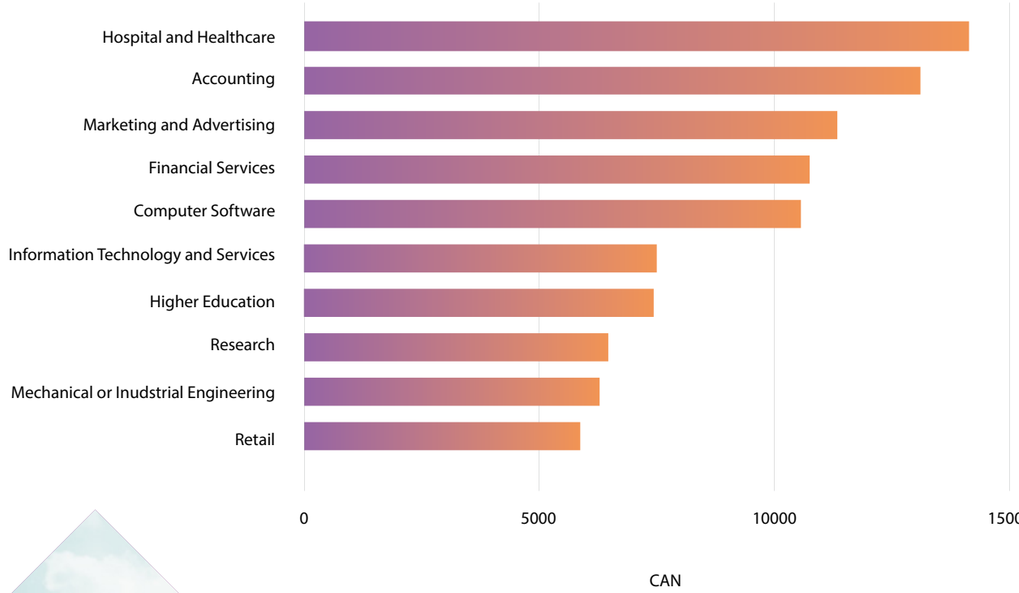
#	Job Title	Top 5 Skills
1	Research Assistant	research, matlab, statistics, spss, qualitative research
2	Sales Associate	retail, customer service, sales, social media, teamwork
3	Teaching Assistant	LaTex, research, data analysis, teaching, statistics
4	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
5	Customer Service Representative	customer service, call centers, time management, customer experience, data entry
6	Server	event planning, restaurants, customer service, teamwork, social media
7	Software Developer	Javascript, sql, software development, java, microsoft sql server
8	Administrative Assistant	data entry, administrative assistance, event planning administrative, assistants, office administration
9	Project Manager	project planning, construction management, construction, program management, contract management
10	Sales Representative	sales operations, sales management, direct sales, account management, cold calling

Industry

What industries define these youth career paths?

Up to 37% of workers in Canada can be found within the top ten industry clusters displayed below, with Hospital and Health Care at the top, followed by Accounting and Marketing and Advertising. Canadian youth are employed by a diverse range of industries ranging from Higher Education to Financial Services to Computer Software.

Top 10 Industry Clusters of Youth Career Paths in Canada



37%

of Canadian youth employment is concentrated in the top 10 industries

Employers

Who's hiring youth in Canada?

In Canada, the youth are primarily employed in the Food Services and Retail industries in entry-level customer service positions. Financial services employers like TD Bank, Scotiabank, and RBC appear more prominently by the second or third job in youth career pathways.

Top Youth Employers in Canada

As % of Top

#	Employer	% of Top[7]
1	McDonald's Corporation	20%
2	Tim Hortons	14%
3	University of Toronto	12%
4	TD Bank	10%
5	Shoppers Drug Mart	9%
6	Canadian Tire	7%
7	Starbucks	7%
8	University of Waterloo	7%
9	McMaster University	7%
10	Sobeys	7%

7. May not add to 100% due to rounding.

Pathway Insights in Canada

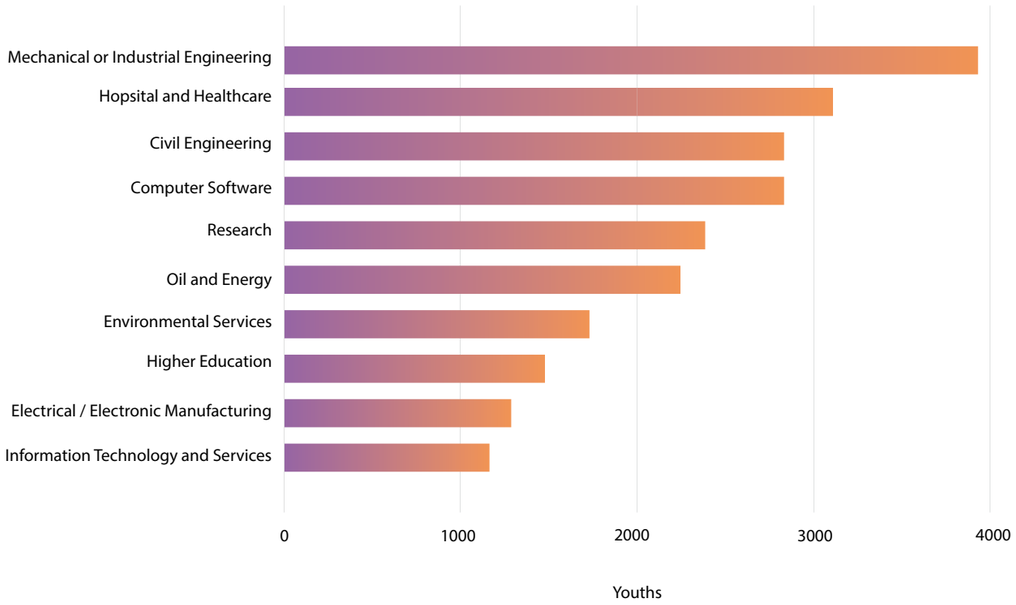
From Education to Employment
Do youth stay in the field they study for?

Top Industries by Major Areas of First Degree

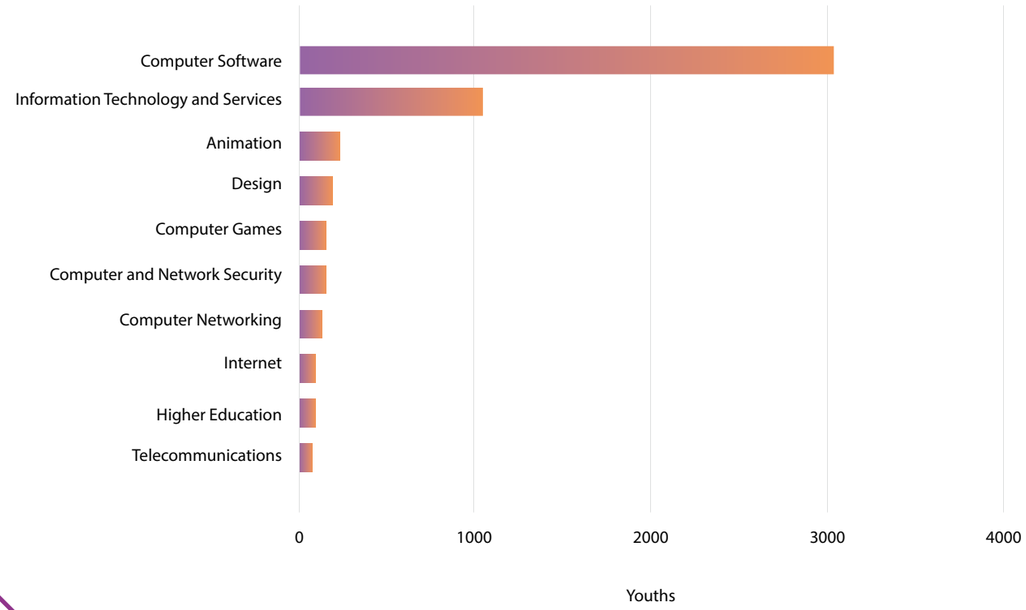
In Canada, the fields of Computer and IT and Health and Education lead to the most specific career paths by industry, which include Computer Software and Hospital and Health Care career paths, respectively.

In contrast to other regions where Business and Communications tend to lead to a wide variety of career paths, in the charts below we show that this field seems to lead to specific career paths in Accounting, Marketing, and Financial Services. Science, Math, and Engineering lead to either Engineering or other technical career paths, like Environmental Services, as well as teaching roles in similar domains. As might be expected, Social Science and Culture, Language, and Fine Arts tend to lead to broader domains from Financial Services to Hospital and Healthcare for the former to Design and Retail for the latter.

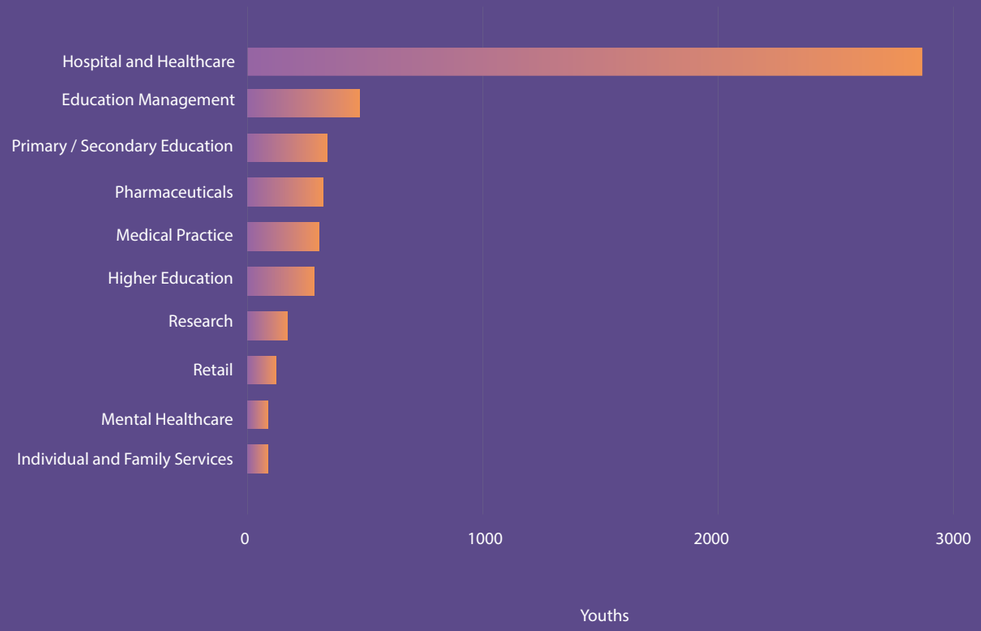
Top 10 Career Paths for Science, Engineering and Math in Canada



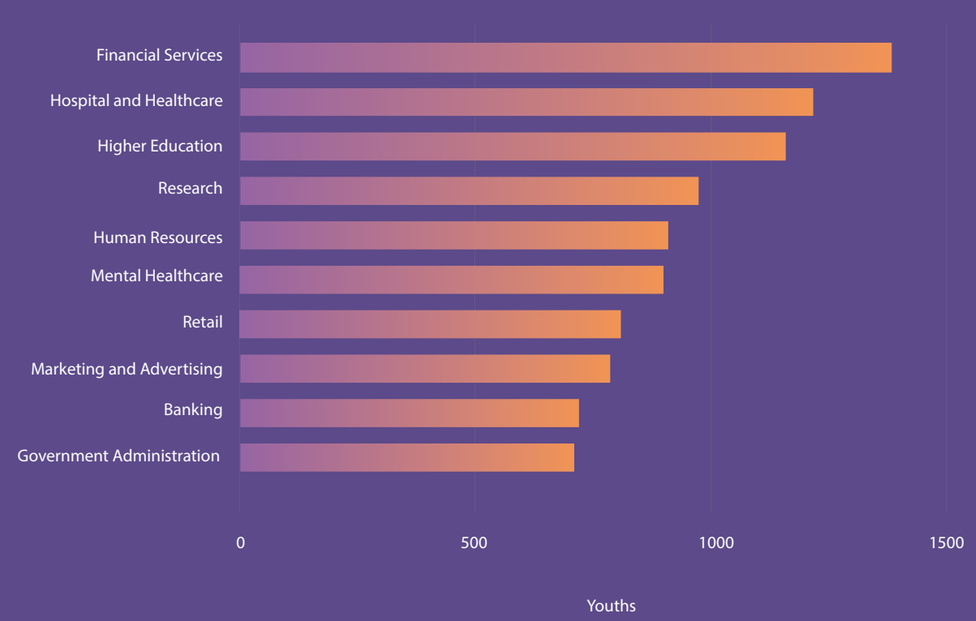
Top 10 Career Paths for Computer and IT in Canada



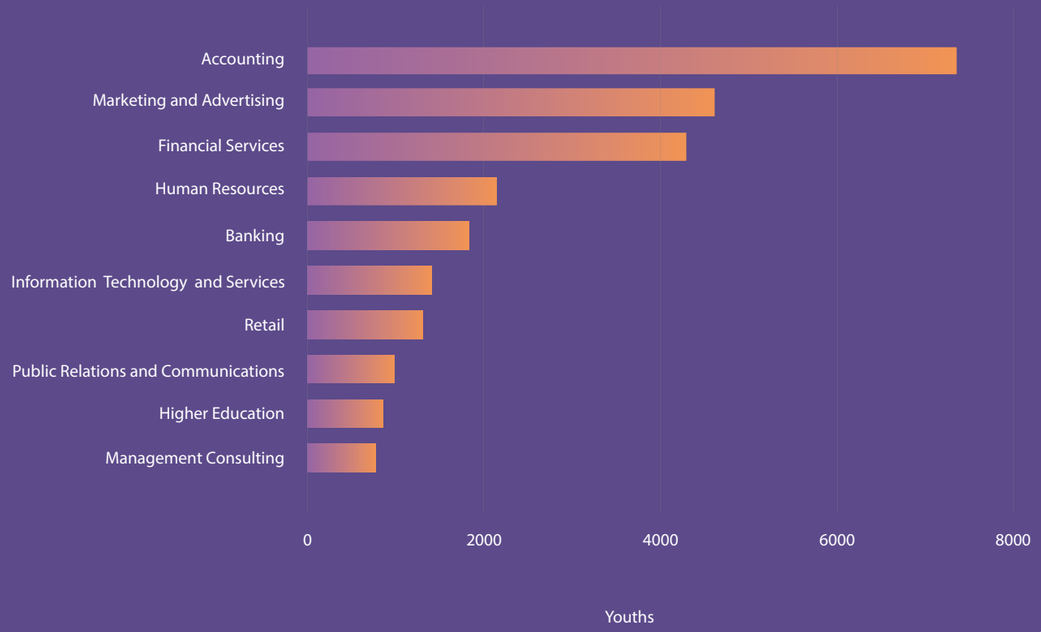
Top 10 Career Paths for Health and Education in Canada



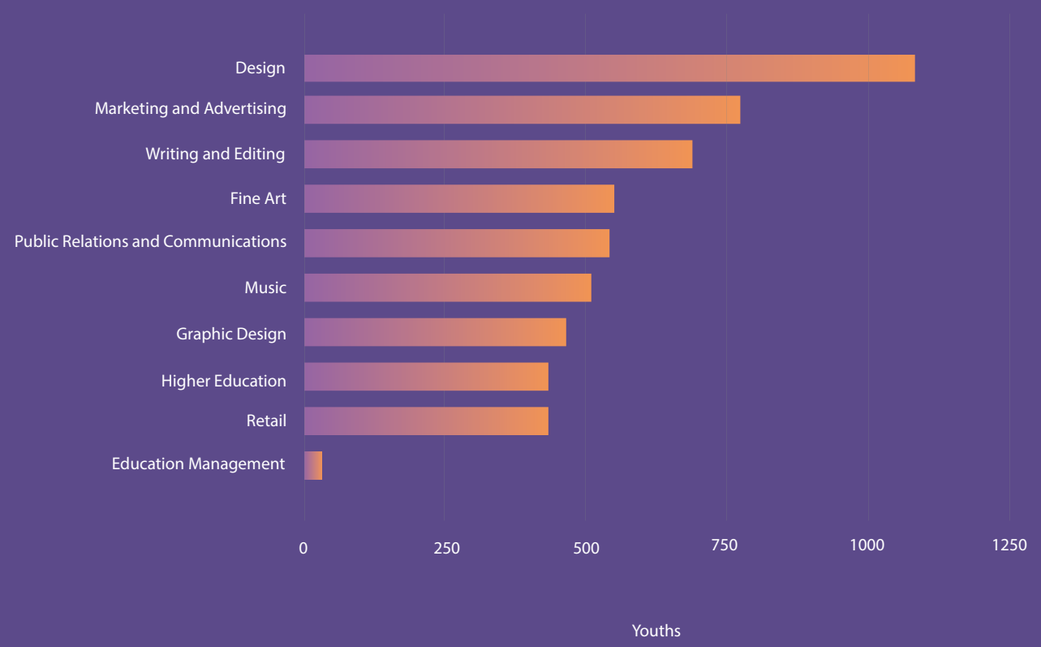
Top 10 Career Paths for Social Science in Canada



Top 10 Career Paths for Business and Communications in Canada



Top 10 Career Paths for Culture, Language and Fine Arts in Canada



Skill Themes in Canada

The major skills themes for for Canadian graduates by Major Area of Study are outlined below. Across all disciplines, basic digital skills in Microsoft Office, soft skills like Leadership and Teamwork, and Research skills were included in the most frequently mentioned skills. Both the common and specialized skill areas are listed to proxy for how young people are communicating their expertise and what skills they use most often in their daily work.

Most Common Skill Areas Across Disciplines:

01 Microsoft Office

02 Customer Service

03 Teamwork

04 Leadership

05 Time Management

Science, Math, and Engineering Skills:

The major themes for Science, Engineering and Math Skills graduates are Science and Research, Information Technology, Engineering, and Analysis. AutoCad, Matlab, C++, and C are frequently used tools and programming languages, highlighting the prominence of Software Engineers in Canada. Java, Solidworks, and Python are also mentioned.

Top Specialized Skills:

01 Matlab

02 Autocad

03 Engineering

04 Data Analysist

05 C++

Computer and IT Skills

The major themes for Computer and IT graduates are much more specialized than other disciplines and include Information Technology tools and languages. In Canada, the most common language mentioned among graduates is Java, followed by Javascript and C++, which are both common languages for building web and mobile applications. Canada is also one of the only countries to list Python (in addition to the U.S.) - a fast growing open source language - in its top ten skills by Computer and IT graduates.

Top Specialized Skills:

01 Java

02 Javascript

03 C++

04 HTML

05 SQL

Health and Education Skills

The major themes for Health and Education graduates are directly related to the Healthcare and/or Education industry, with a larger proportion in Health and more specifically Nursing. Supplementary business skills frequently mentioned include Management, Event Planning, and Strategic Planning.

Top Specialized Skills:

01 Healthcare

02 Teaching

03 Nursing

04 Hospitals

05 CPR Certified

Business and Communications Skills

The major themes for Business and Communications graduates are Sales, Marketing and Public Relations, and Finance. In Canada, Finance skills in Accounting, Financial Analysis, and Reporting are listed as the most specialized areas, followed by Sales, Marketing, and Analysis.

Top Specialized Skills:

01 **Management**

02 **Sales**

03 **Marketing**

04 **Accounting**

05 **Financial Analysis**

Social Science Skills

The major themes for Social Science graduates are Science and Research, Business, Sales, and Analysis. Other more specialized skills practiced at advanced levels of Social Science include Qualitative Research, SPSS, and Policy Analysis. Psychology and Economics are the most common domain-specific skills mentioned.

Top Specialized Skills:

01 **Research**

02 **Event Planning**

03 **Sales**

04 **Data Analysis**

05 **Project Management**

Culture, Language and Fine Arts Skills

The major themes for Culture, Language, and Fine Arts graduates are Marketing and Public Relations, Design, Business, and Media and Writing. Common digital tools other than Social Media include Photoshop and Adobe Creative Suite. Common social media channels like Facebook are also mentioned frequently.

Top Specialized Skills:

01 **Social Media**

02 **Photoshop**

03 **Editing**

04 **Management**

05 **Sales**

Mexico

Mexico is a country situated between the U.S. and Central America known for its diverse landscape and tropical beaches across the Pacific and Gulf of Mexico. As the fifth largest country in the Americas, Mexico is home to a population of over 129 million people - the most populous Spanish-speaking country in the world.

Youth aged 15-24 make up just over 17% of the overall population, which includes the median age of 28 years old.[8] By 2022, Mexico will have the largest number of youths in its history. While Mexican unemployment is relatively low by international standards at about 7.5-8% and continues to fall, it remains at double the unemployment rate for the general population.[9]

Youth Profile

To examine youth pathways in Mexico, we dive into just over 22,000 youth profiles to explore youth education, employment, and skill trends. We find that Mexican youths in our sample are highly educated and employed across business roles, social science fields, and STEM career paths. Patterns observed across Mexican youth largely mirror those of Canada, specifically with credential attainment.

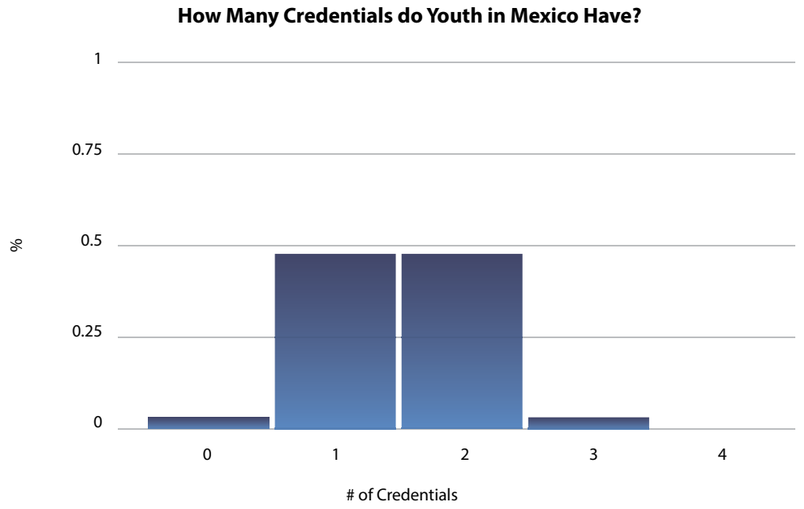
8. Statistics based on data from the CIA World Factbook: https://www.cia.gov/library/publications/the-world-factbook/geos/mx.html

9. Youth Economic Opportunities, "The Youth Employment Crisis- A Perspective from Mexico,""https://youtheconomicopportunities.org/blog/8499/youth-employment-crisis-perspective-mexico

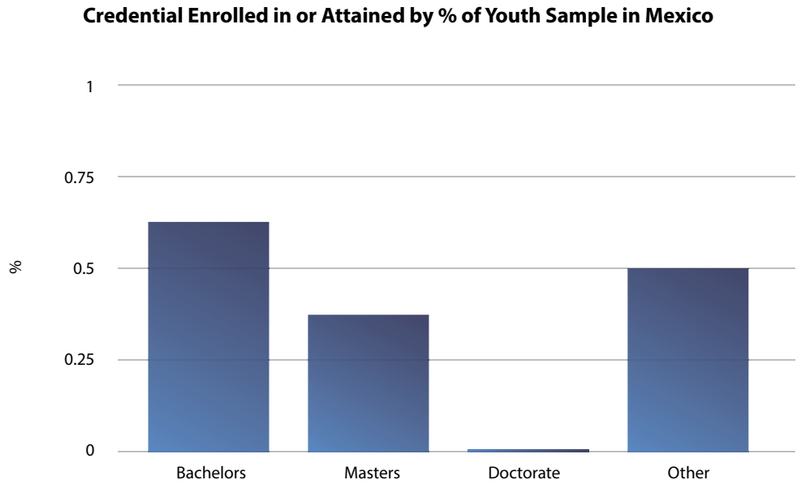
Educational Attainment

How many credentials do youth in Mexico have?

A significant majority of Mexican youths have 1-2 credentials, with almost 50% having one post-secondary credential and another 50% having two. Just 3% lack credentials or are still attending high school, while 2.5% have 3 or more. The distribution of credentials follows a similar trend to Canada with a higher than average number of youth possessing two post-secondary credentials.



In Mexico, 63% of youth sampled are enrolled in or have a Bachelor's degree, 37% are enrolled in or have a Masters, 1% are enrolled in or have a Doctorate, and 50% are enrolled in or have other forms of credentials.[10] Mexico has the highest rate of youth enrolled in or attending "Other" forms of post-secondary education that include certificates, diplomas, etc. both online and offline.



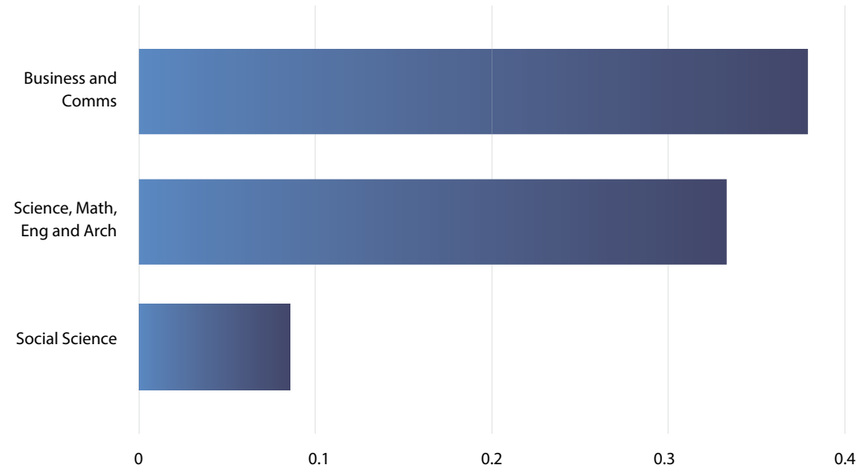
10. Note that it is possible for youth to be enrolled in or have multiple credentials so totals will not sum to 100%.

Major Area of Study

What are the most popular areas of study for youths?

The majority of Mexican youth begin their educational paths in either Business and Communications or Science, Math, and Engineering, with the Social Sciences in third place. Business and Communications make up the largest contribution to the top three entry points between all five countries at 38%. The top three entry points are followed by Culture, Language, and Fine Arts; Computer and IT; and Health and Education.

Mexican Youth: Top Entry Points for Higher Education



Top Major Areas for First Degree
By First Post-Secondary Credential

#	Major Area	%
1	Business and Communications	38%
2	Science, Math, and Engineering	33%
3	Social Science	8.5%
4	Culture, Language, and Fine Arts	8%
5	Computer and IT	3%
6	Health and Education	3%
7	Law and Government	2%
8	Tourism and Hospitality	1%
9	Construction and Trades	0.2%

As youth in Mexico continue to attain higher education, this ranking order stays the same with Business and Communications remaining as a prominent top choice for additional credentials and degrees.

Dispersed between the top major areas, we see over 5,000 young people in our sample choosing one of ten specific degree programs for their first degree, with business degrees at the top including Marketing and Business Administration, followed by STEM degrees like Engineering, Robotics, and Computer Science. Other major areas like Social Science or Health and Education do not appear in the top ten list for degree programs.

5,000+

youths in our sample are choosing one of ten specific degree programs for their first degree

Entry Level Work Experience

Where do youths in Mexico begin their career journey?

For the youth in Mexico, entry level work experience includes customer facing and retail roles like Sales Associate, Customer Service Representative and Cashiers, as well as assistant positions as Research and Teaching Assistants. Intern positions are also common, but not as accessible as other regions we looked at. None of the top roles are highly specialized.

The top five skills posted in these positions approximate the kinds of skills attained by Mexican youth in their first work experience. These are largely concentrated in administrative and basic digital skills developed in Internships and Assistant positions that include Microsoft Office, Data Entry, Market Research, and Social Media.

Most Common First Jobs for Mexican Youth

#	Job Title	Top 5 Skills
1	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
2	Internship	microsoft office, microsoft excel, microsoft word, powerpoint, matlab
3	Practicante (Practitioner)	leadership, business leadership, continuous improvement, business strategy, project planning,
4	Administrative Assistant	data entry, administrative assistance, event planning administrative, assistants, office administration
5	Research Assistant	research, matlab, statistics, spss, qualitative research
6	Trainee	microsoft office, teamwork, microsoft excel, autocad, matlab
7	Becario (Summer Intern)	matlab, powerpoint, microsoft excel, research, market research
8	Customer Service Representative	customer service, call centers, time management, customer experience, data entry
9	Auxiliar Administrativo (Administrative Clerk)	microsoft powerpoint microsoft windows, operational systems, sales, business planning
10	English Teacher	language teaching, esl, english teaching, translation, teaching

When do youths progress in their career journeys?

To approximate where youth progress following their entry-level positions, we populated lists of the top jobs up until the sixth job listed. We find that jobs such as “Intern” or “Trainee” remained at the top of the list until the fourth job position held, which takes on average four years to reach.

By the fourth job, youth begin to work in more jobs that require both additional expertise and human skills applied to the contexts of their specialized training and knowledge. In Mexico, we observe jobs like Project Manager and Software Engineer / Developer appear in the top jobs list as soon as the second job. Following the fourth job, we also see job titles in entrepreneurial positions like “Co-Founder” and “Founder” make the top ten list, as well.

Most Common Advanced Jobs in Mexican Youth Pathways
Estimated at Fourth Job

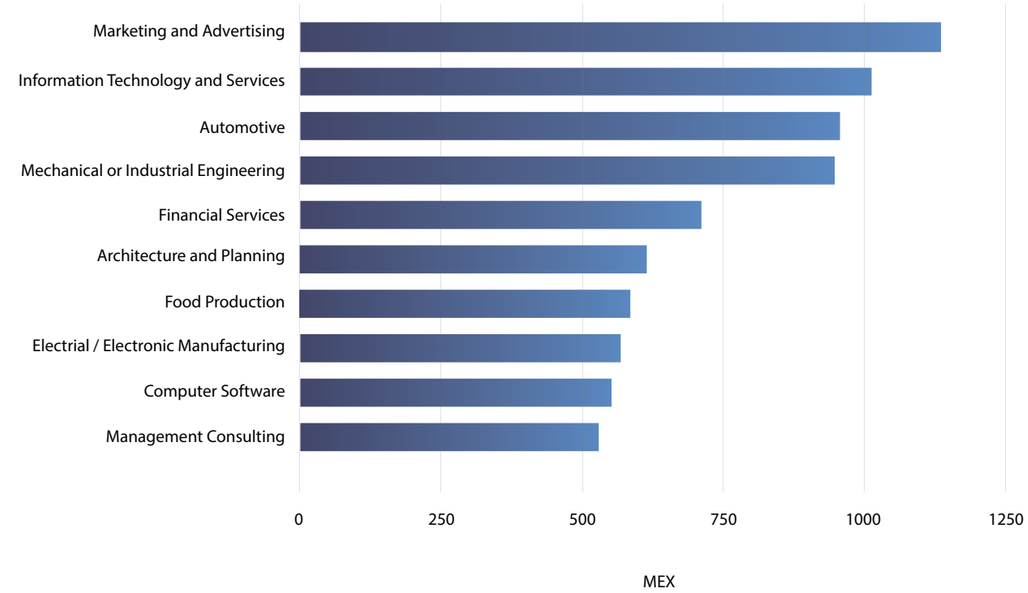
#	Job Title	Top 5 Skills
1	Project Manager	project planning, construction management, construction, program management, contract management
2	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
3	Software Engineer	javascript, sql, software development, c++, xml
4	Internship	microsoft office, microsoft excel, microsoft word, powerpoint, matlab
5	Associate	legal research, legal writing litigation, legal advice, commercial litigation
6	Manufacturing Engineer	lean manufacturing, root cause analysis, kaizen, value stream mapping, manufacturing
7	Consultant	management consulting strategy, business analysis, business intelligence
8	Quality Engineer	root cause analysis, pc kaizen, supplier quality, ppap
9	Financial Analyst	Finance, financial modeling, forecasting, corporate finance, financial reporting
10	Software Developer	javascript, sql, software development, java, microsoft sql server

Industry

What industries define these youth career paths?

Up to 34% of youth in Mexico can be found within the top ten industry clusters displayed below, with Marketing and Advertising at the top, followed by Information Technology and Services and Automotive. Mexico's prominent place as an automotive manufacturing hub for North America can be seen in both its industrial youth employment and top ten jobs for youth further along the career path (Manufacturing Engineer). Mexico is the only region where we see Automotive make the top ten industry cluster list.

Top 10 Industry Cluters of Youth Career Paths in Mexico



34%

of Mexican youth employment is concentrated in the top 10 industries

Employers

Who's hiring youths in Mexico?

In Mexico, youths are primarily employed in entry-level positions in Information Technology firms like Teleperformance, IBM, Cemex, and Flextronics. Energy company, Pemex; International automotive company, Ford Motor Company; and international consultancy, Deloitte, also make the top ten.

Top Youth Employers in Canada

As % of Top

#	Employer	% of Top[11]
1	Tecnológico de Monterrey	22%
2	Teleperformance	18%
3	Pemex	11%
4	IBM	10%
5	Ford Motor Company	8%
6	Cemex	7%
7	Flextronics	6.5%
8	Pepsico	6%
9	Deloitte	6%
10	Delphi	6%

11. May not add to 100% due to rounding.

Pathway Insights in Mexico

From Education to Employment

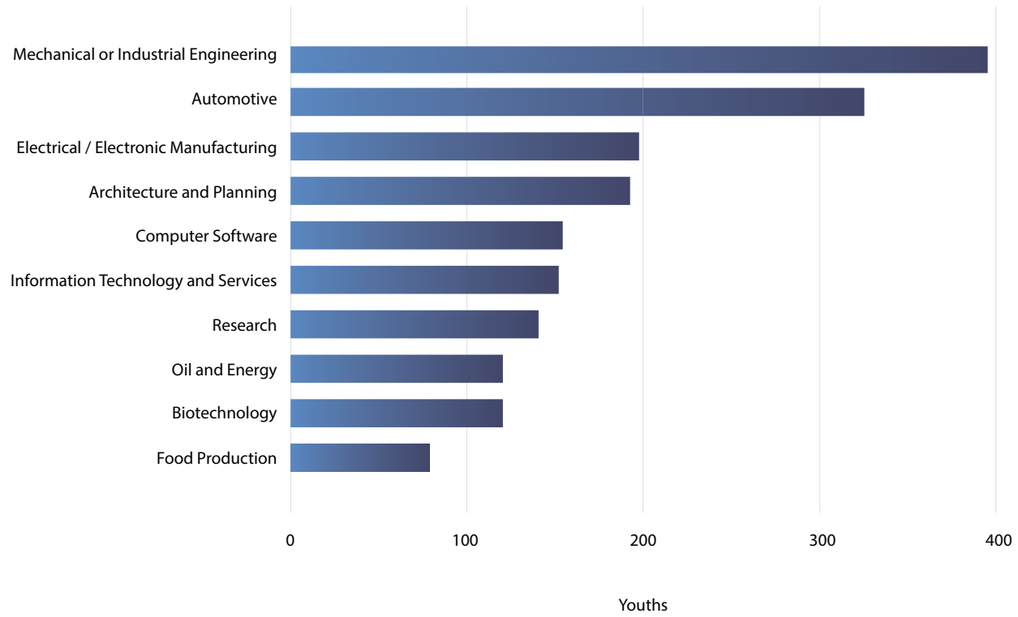
Do youths stay in the field they study for?

Top Industries by Major Areas of First Degree

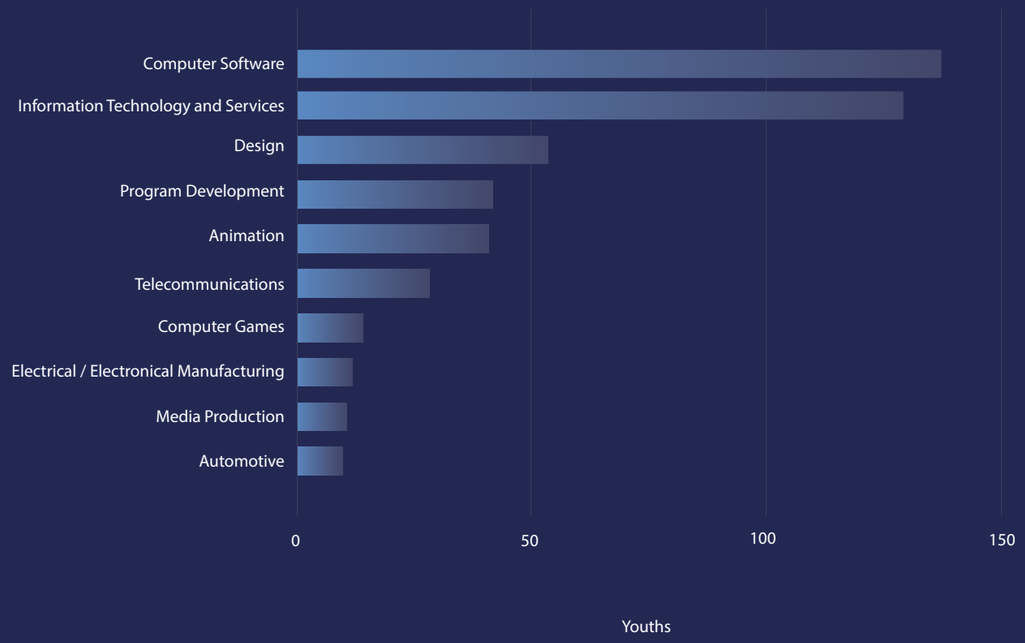
In Mexico, the fields of Computer and IT and Business and Communications have the most concentrated of outcomes - Computer Software and Marketing and Advertising, respectively. This is in stark contrast to most other regions where Business and Communications might lead to the widest variety of industries due to the general skills the discipline provides. Both Marketing and Advertising and Information Technology also top the list of industrial employment of youth in Mexico, making these fields valuable options for Mexican youth. A large proportion of graduates from Culture, Language and Fine Arts are also employed in Marketing and Advertising.

In the charts below, we also show that STEM graduates become employed in Engineering, Automotive, and Manufacturing positions, while Health and Education graduates end up in a wider range of jobs across Health, Education, and Human Resources. Social Science graduates have more career optionality across Finance, International Affairs, Information Technology and various business roles.

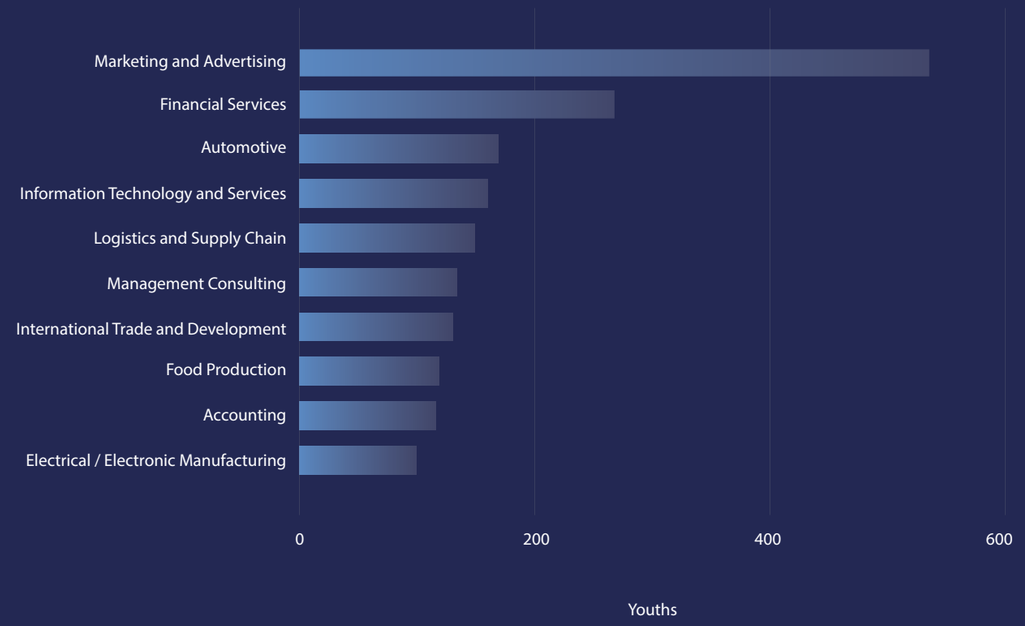
Top 10 Career Paths for Science, Engineering and Math in Mexico



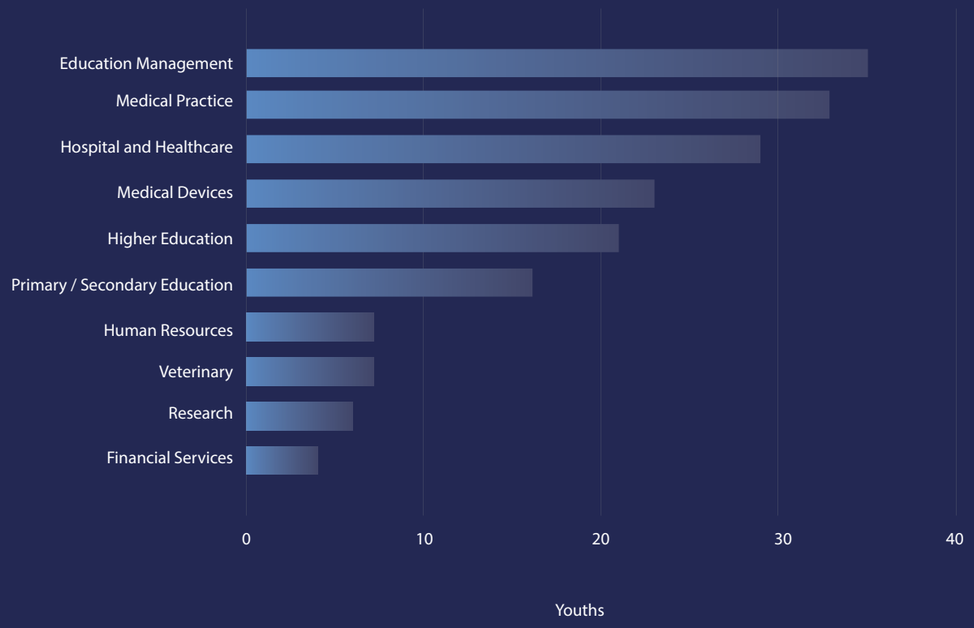
Top 10 Career Paths for Computer and IT in Mexico



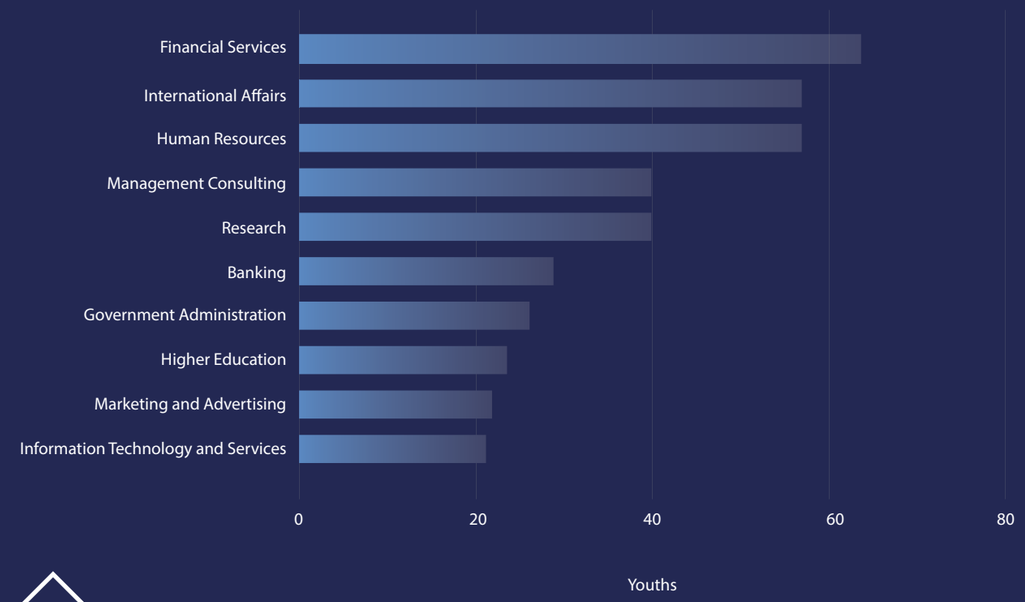
Top 10 Career Paths for Business and Communications in Mexico



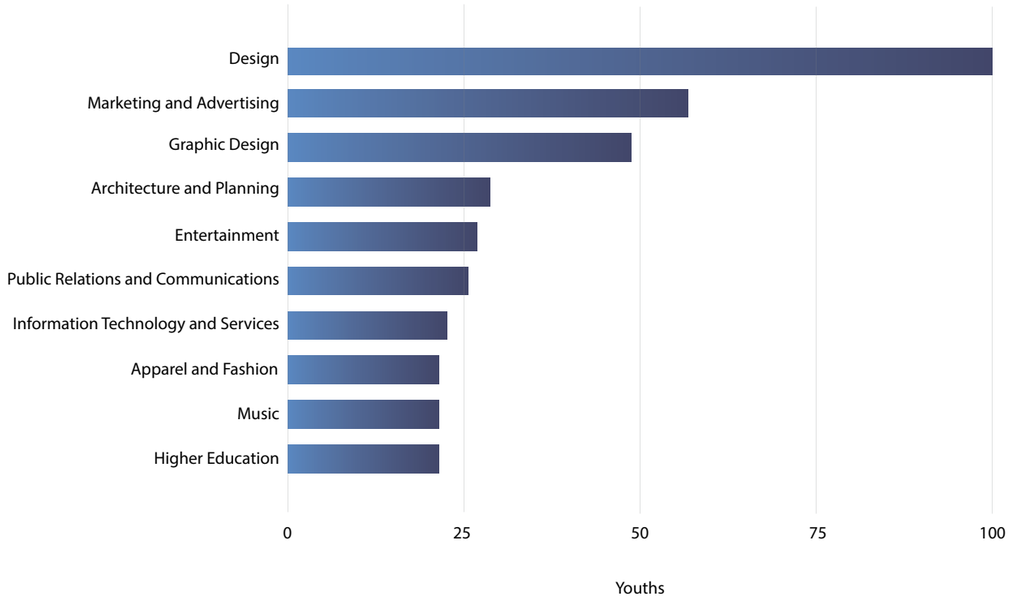
Top 10 Career Paths for Health and Education in Mexico



Top 10 Career Paths for Social Science in Mexico



Top 10 Career Paths for Culture, Language and Fine Arts in Mexico



Skill Themes in Mexico

The major skills themes for for Mexican graduates by Major Area of Study are outlined below. Across all disciplines, basic digital skills in Microsoft Office, soft skills like Leadership and Teamwork, and business skills like Strategic Planning were included in most frequently mentioned skills. Both the common and specialized skill areas are listed to proxy for how youths are communicating their expertise and what skills they use most often in their daily work.

Most Common Skill Areas Across Disciplines:

01

Microsoft Office

02

Research

03

Project Management

04

Strategic Planning

05

Leadership

Science, Math, and Engineering Skills

The major themes for Science, Engineering and Math Skills graduates are Engineering, Manufacturing, and Information Technology. AutoCad and Matlab are the most frequent tools mentioned after Microsoft Office, but are followed closely with programming languages, C++ and Java.

Top Specialized Skills:

01 Autocad

02 Engineering

03 Learn Manufacturing

04 Matlab

05 Solidworks

Computer and IT Skills

The major themes for Computer and IT graduates are much more specialized than other disciplines that include Information Technology tools and languages. In Mexico, the most common language - which is also the most common skill mentioned overall, even above Microsoft Office - is Java, followed by Javascript.

Top Specialized Skills:

01 Java

02 Javascript

03 MySQL

04 HTML

05 SQL

Health and Education Skills

The major themes for Health and Education graduates are directly related to the Healthcare and/or Education industry, with a larger proportion in Education. Language skills and Tutoring are also common skills specific to the Education industry.

Top Specialized Skills:

01 Research

02 English

03 Teaching

04 Strategic Planning

05 Project Management

Business and Communications Skills

The major themes for Business and Communications graduates are Business, Analysis, Marketing and Public Relations, and Sales. In Mexico, there is a unique emphasis in Marketing skills as the most specialized area within broader business skills.

Top Specialized Skills:

01 **Strategic Planning**

02 **Management**

03 **Business Strategy**

04 **Marketing**

05 **Marketing Strategy**

Social Science Skills

The major themes for Social Science graduates are Business, Science and Research, and Analysis. SPSS is listed as a common analysis tool after Microsoft Excel.

Top Specialized Skills:

01 Research

02 Strategic Planning

03 Management

04 Business Strategy

05 Economics

Culture, Language and Fine Arts Skills

The major themes for Culture, Language, and Fine Arts graduates are Design and Media and Writing. Photoshop, Social Media, and Illustrator are listed as the most common tools for these graduates.

Top Specialized Skills:

01 Photoshop

02 Social Media

03 Illustrator

04 Graphic Designer

05 Photography

Nigeria

Nigeria is a Western African country located on the Gulf of Guinea and often referred to as the "Giant of Africa", owing to its large population and economy. The most populous country in Africa and seventh most populous country in the world, Nigeria is home to over 190 million people. Nigeria also has the world's third-largest youth population just after India and China with more than 90 million people under the age of 18.

With what is now Africa's largest economy, Nigeria hosts an abundant supply of natural resources, as well as well-developed financial and business sectors.[12]

Youth Profile

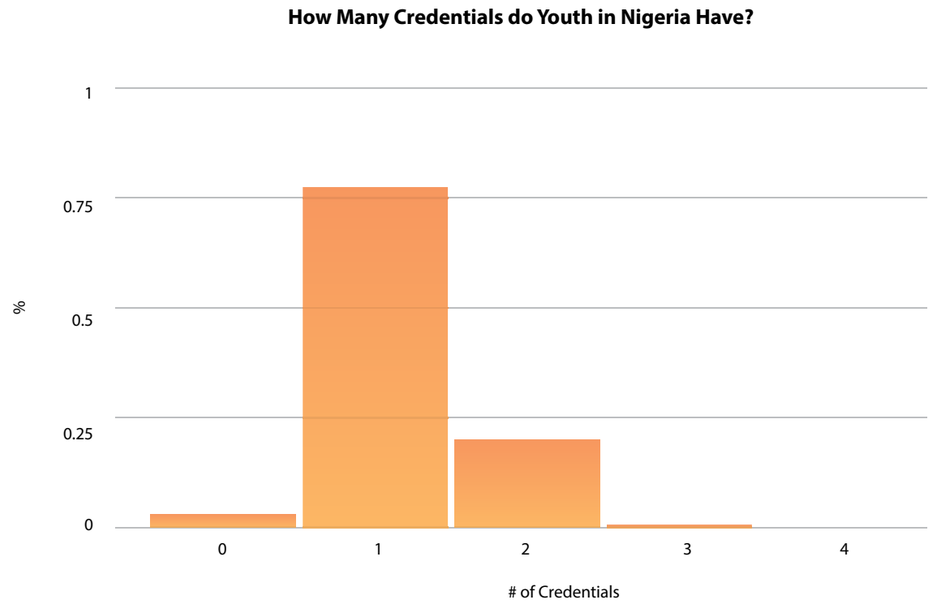
To examine youth pathways in Nigeria, we dive into just over 50,000 youth profiles to explore youth education, employment, and skill trends. We find that Nigerian youth in our sample are skilled across both STEM and business fields across Science, Math, and Engineering, Computer and IT, and Business and Communications, as well as highly employed in the country's Information Technology and Oil and Energy sectors.

12. Statistics based on data from the CIA World Factbook: https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html

Educational Attainment

How many credentials do youths in Nigeria have?

A significant majority (76%) of Nigerian youth have at most one post-secondary credential, with 20% having two, and 1% having three or more. 3% of youths in our sample lack post-secondary credentials or are still in high school.



In Nigeria, 87% of youths sampled are enrolled in or have a Bachelor's degree, 13% are enrolled in or have a Masters, 0.8% are enrolled in or have a Doctorate, and 18% are enrolled in or have other forms of credentials.[13] Both Nigeria and Saudi Arabia have a higher concentration (over 75%) of youth with undergraduate education than other regions.

76%

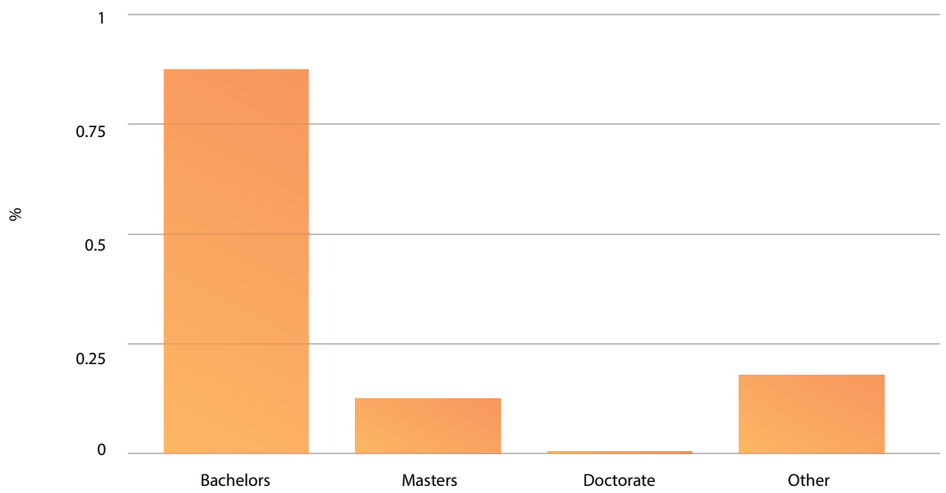
of Nigerian youth have at most one post-secondary credential

87%

of Nigerian youth sampled or are enrolled in or have a Bachelor's degree

13. Note that it is possible for youth to be enrolled in or have multiple credentials so totals will not sum to 100%.

Credential Enrolled in or Attained by % of Youth Sample in Nigeria

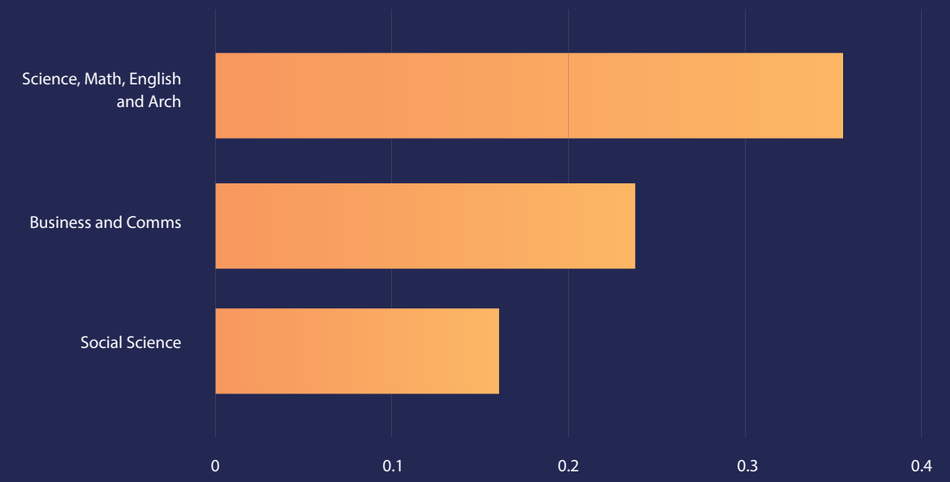


Major Area of Study

What are the most popular areas of study for youth?

The majority of Nigerian youth begin their educational paths in either Science, Math, and Engineering or Business and Communications, with the Social Sciences in third place. The top three entry points are followed by Computer and IT; Health and Education; and Culture, Language, and Fine Arts.

Nigeria Youth: Top Entry Points for Higher Education



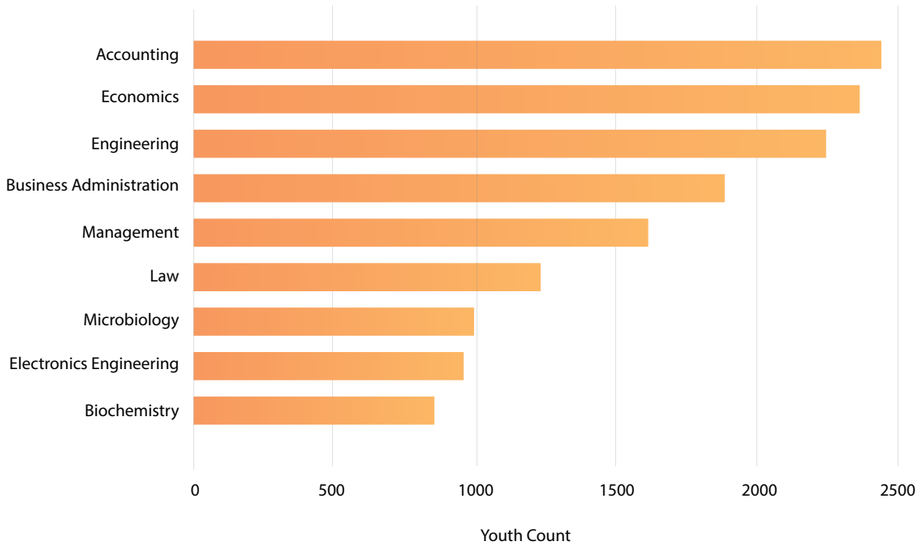
Top Major Areas for First Degree
By First Post-Secondary Credential

#	Major Area	%
1	Science, Math, and Engineering	36%
2	Business and Communications	24%
3	Social Science	16%
4	Computer and IT	8%
5	Health and Education	6%
6	Culture, Language, and Fine Arts	6%
7	Law and Government	4.5%
8	Construction and Trades	0.4%
9	Tourism and Hospitality	0.2%

After youths have attained at least one post-secondary credential, Business and Communications becomes the most popular area for youths to upskill over their educational path. And while Science, Math, and Engineering is the most popular choice at the undergraduate level, Business and Communications is the preferred choice for those students who go on to pursue a Master's degree or higher.

Dispersed between the top major areas, we see as many as over 17,000 Nigerian youth in our sample choosing one of ten specific degree programs for their first degree, with Business degrees at the top including Accounting, Economics, and Business Administration, and Management, followed by STEM degrees like Engineering and Microbiology, and degrees in Law.

Top 10 Degree Programs for First Degree in Nigeria



Entry Level Work Experience

Where do youths in Nigeria begin their career journey?

For youths in Nigeria, entry level work experience is wide-ranging and includes expected positions like Intern and Trainee (Industrial), but also includes more advanced positions like Manager and specialist positions like Accountant.

The top five skills posted in these positions approximate the kinds of skills attained by Nigerian youth in their first work experience. These range from basic digital skills like Microsoft Office and Social Media to management skills like Leadership and Time Management to human skills like Teamwork and Public Speaking.

Most Common First Jobs for Nigerian Youth

#	Job Title	Top 5 Skills
1	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
2	Industrial Trainee	front office, hospitality management hospitality industry, micros, re opening
3	Internship	microsoft office, microsoft excel, microsoft word, powerpoint, matlab
4	Manager	customer service, leadership, inventory management, sales team, management
5	Teacher	lesson planning, curriculum design teaching, classroom, classroom management
6	Sales Representative	sales operations, sales management, direct sales, account management, cold calling
7	Accountant	customer satisfaction, customer experience, customer service, call centers, team leadership
8	Administrative Assistant	data entry, administrative assistance, event planning administrative, assistants, office administration
9	Customer Service Representative	customer service, call centers, time management, customer experience, data entry
10	Secretary	administrative assistance, outlook, microsoft word, office administration, event planning

When do youth progress in their career journeys?

To approximate where youth progress following their entry-level positions, we populated lists of the top jobs up until the sixth job listed. Nigeria is unique in that experienced positions like Manager appear as early as the first job in a youth's career journey, alongside more traditional youth roles like Intern and Trainee.

Up until the sixth job, the role of Intern remains as the most common job throughout a youth's career path, but is accompanied with roles like Associate, Software Developer / Engineer, and Business Development Manager by the fourth job. Founder and CEO appears in the top ten list by the fourth job, adding to the entrepreneurial career paths that youth pursue across different disciplines.

Most Common Advanced Jobs in Nigerian Youth Pathways
Estimated at Fourth Job

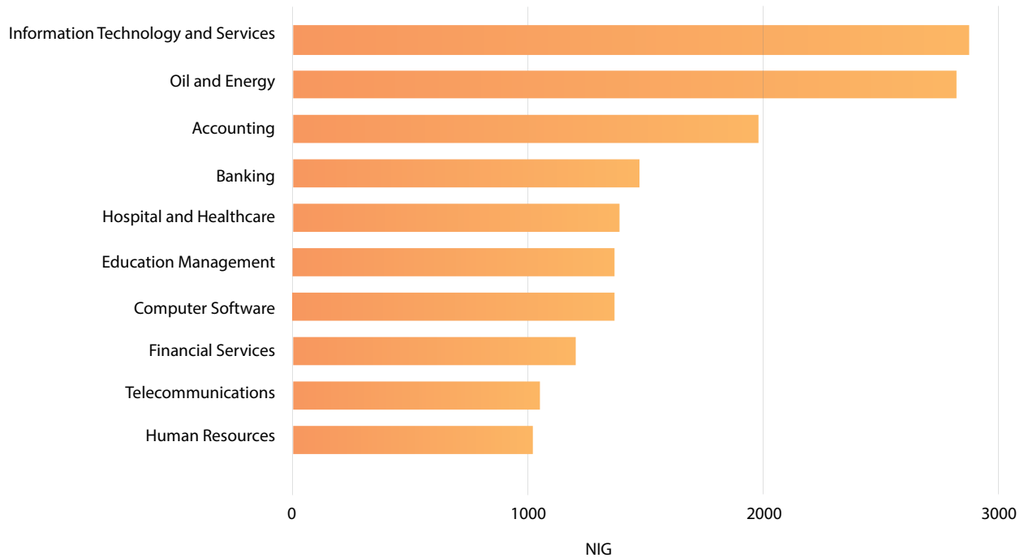
#	Employer	Top 5 Skills
1	Intern	teamwork, public speaking, microsoft office
2	Associate	legal research, legal writing litigation, legal advice, commercial litigation
3	CEO	business development, startups, business planning, strategy, strategic planning
4	Software Developer	javascript, sql, software development, java, microsoft sql server
5	Software Engineer	javascript, sql, software development, c++, xml
6	Teacher	lesson planning, curriculum design teaching, classroom, classroom management
7	Business Development Manager	new business development, crm, account management, business strategy, sales management
8	Founder	entrepreneurship, strategy, e commerce, digital marketing, business development
9	Customer Service Representative	customer service, call centers, time management, customer experience, data entry
10	Creative Director	creative strategy, art direction, concept development, brand development, interactive advertising

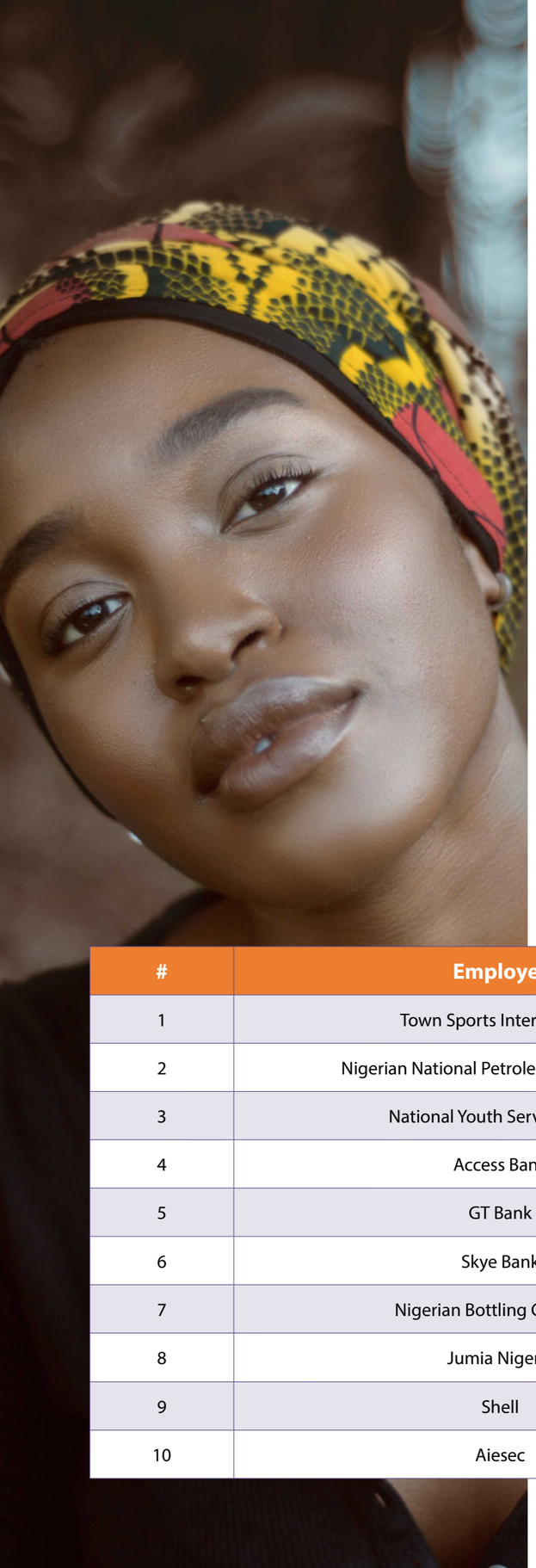
Industry

What industries define these youth career paths?

Up to 32% of youth in Canada can be found within the top ten industry clusters displayed below, with a relatively high concentration of youth employed in the top two industry clusters: Information Technology and Services and Oil and Energy. This is followed by industry clusters in financial services including Accounting and Banking.

Top 10 Industry Clusters of Youth Career Paths in Nigeria





Employers

Who's hiring youth in Nigeria?

In Nigeria, youth are employed by a wide range of employers from retail to energy to finance, including Town Sports International, an operator of fitness centers, and NNPO, a federal oil corporation at the top of the list, followed by financial firms, Access Bank, GT Bank and Skye Ban, as well as the National Youth Service Corps.

Top Youth Employers in Nigeria
As % of Top

#	Employer	% of Top
1	Town Sports International	20%
2	Nigerian National Petroleum Corporation	14%
3	National Youth Service Corps	12%
4	Access Bank	10%
5	GT Bank	9%
6	Skye Bank	7%
7	Nigerian Bottling Company	7%
8	Jumia Nigeria	7%
9	Shell	7%
10	Aiesec	7%

Pathway Insights in Nigeria

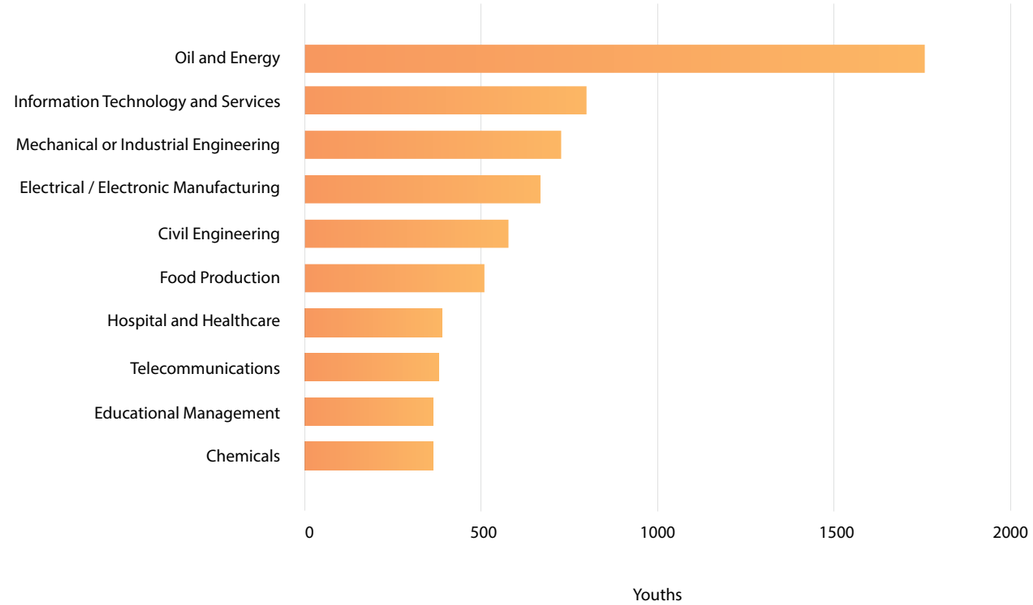
From Education to Employment
Do youths stay in the field they study for?

Top Industries by Major Areas of First Degree

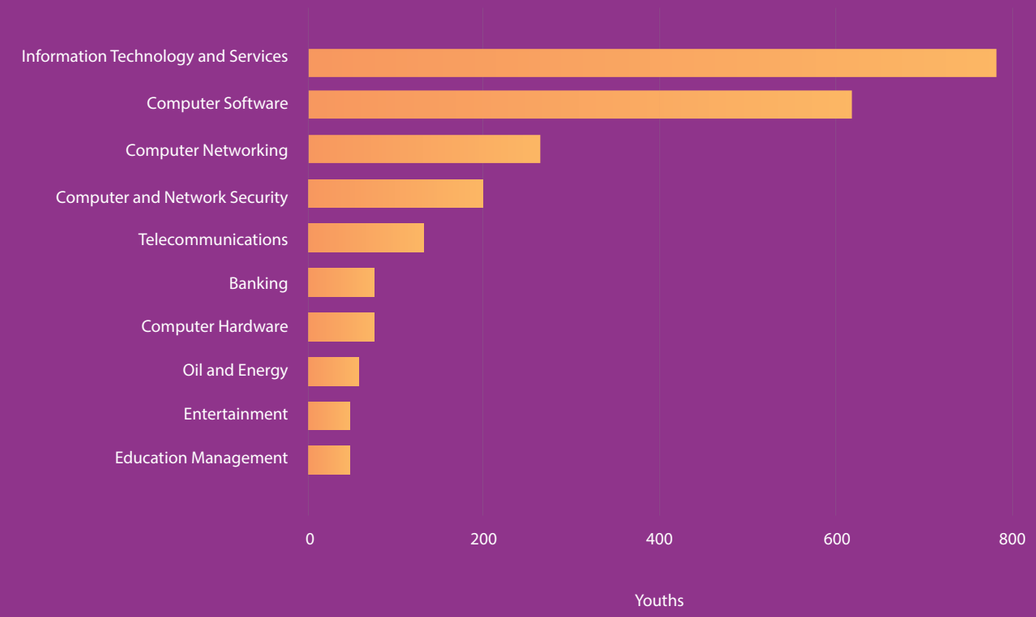
In Nigeria, the majority of disciplines across STEM, Health and Education, and Business and Communications, lead to specific career paths. Nigeria is the only region where Science, Math and Engineering graduates enter into Oil and Energy at a majority, rather than Mechanical or Industrial Engineering. Accounting also seems to dominate the career path chosen by most Business and Communications graduates, followed by Banking and Financial Services.

While Social Science mostly leads to broader career path outcomes, a good number of Social Science graduates also enter into Financial Services, as well as industries across Information Technology and Services and Oil and Energy. Culture, Language and Fine Arts graduates also have access to a broad range of career paths in Broadcast Media, Writing, Public Relations, and more.

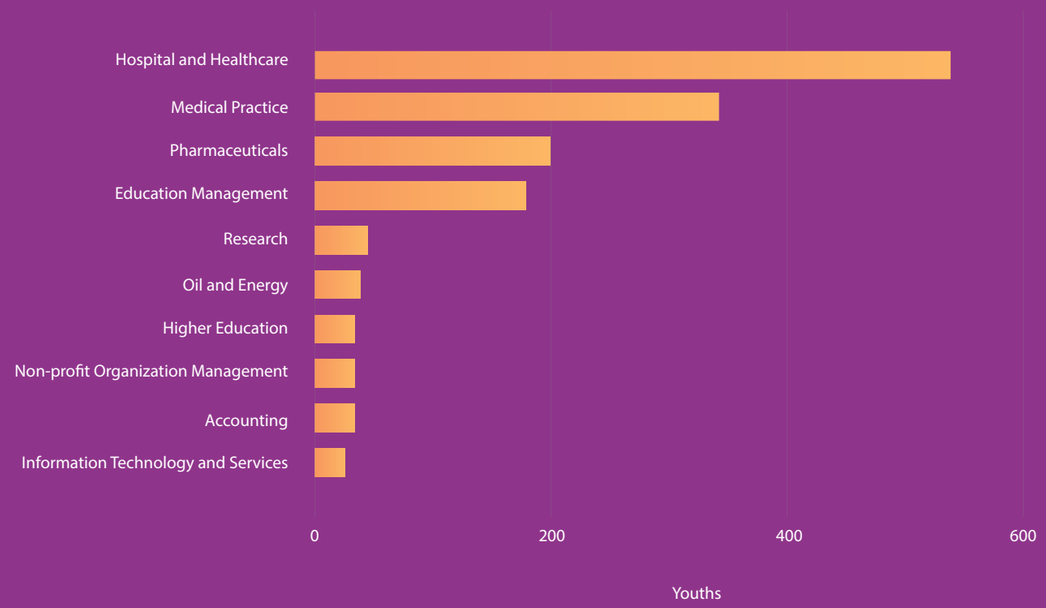
Top 10 Career Paths for Science, Math and Engineering in Nigeria



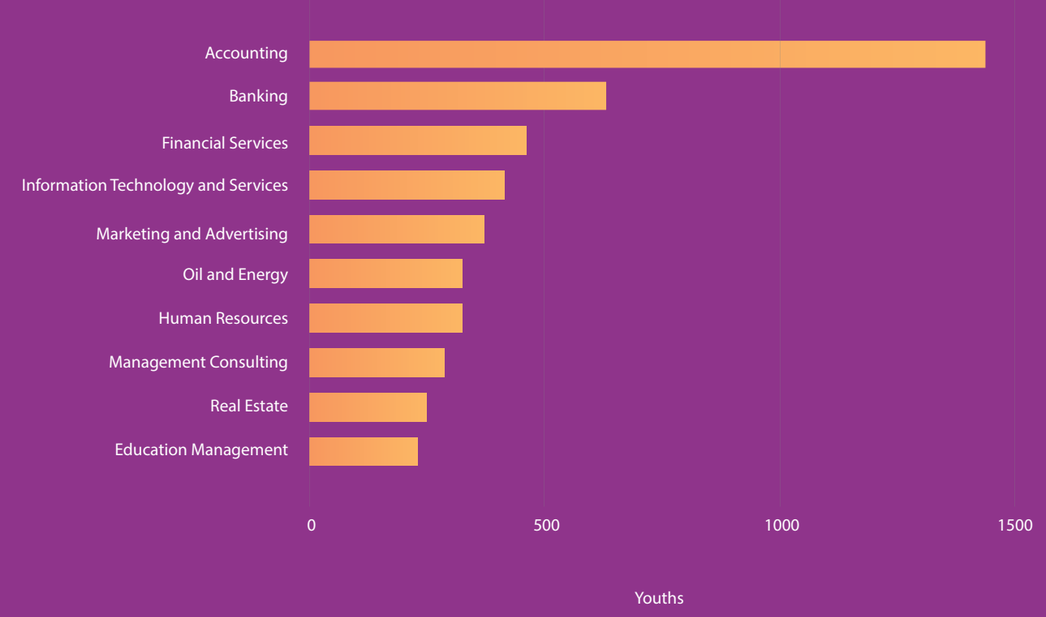
Top 10 Career Paths for Computer and IT in Nigeria



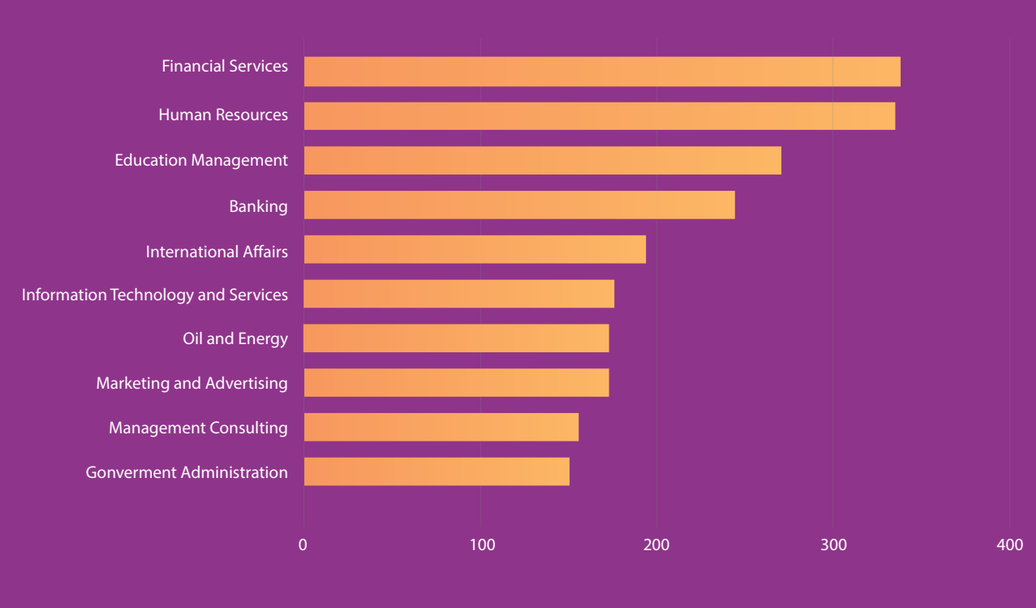
Top 10 Career Paths for Health and Education in Nigeria



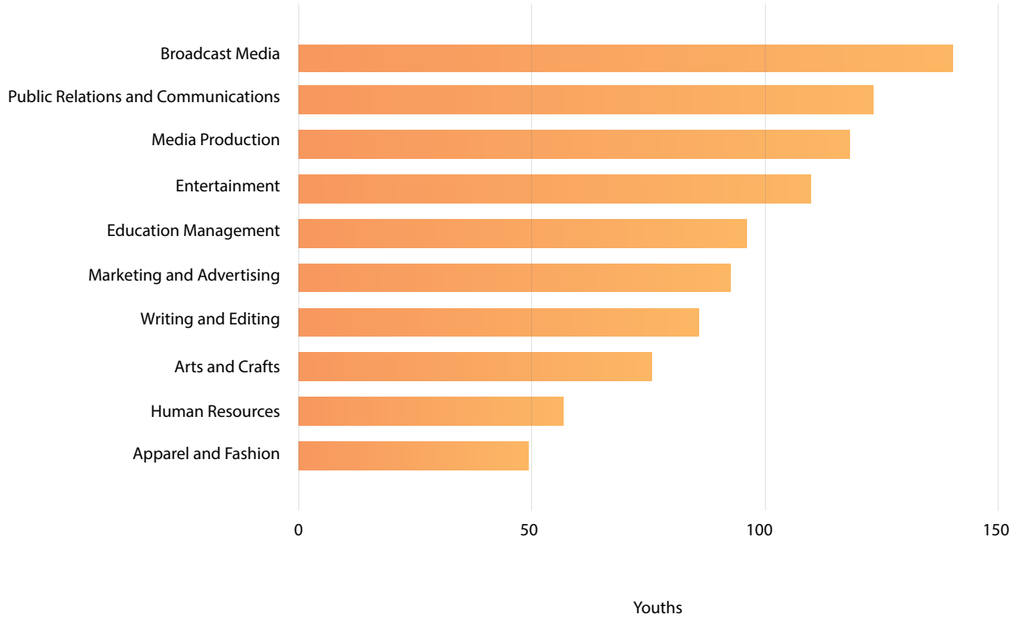
Top 10 Career Paths for Business and Communications in Nigeria



Top 10 Career Paths for Social Science in Nigeria



Top 10 Career Paths for Culture, Language and Fine Arts in Nigeria



Skill Themes in Nigeria

The major skills themes for Nigerian graduates by Major Area of Study are outlined below. Across all disciplines, basic digital skills in Microsoft Office, soft skills like Leadership and Public Speaking, and business skills like Project Management and Strategic Planning were included in most frequently mentioned skills. Both the common and specialized skill areas are listed to proxy for how youths are communicating their expertise and what skills they use most often in their daily work.

Most Common Skill Areas Across Disciplines:

01

Microsoft Office

02

Customer Service

03

Research

04

Project Management

05

Leadership

Science, Math, and Engineering Skills

The major themes for Science, Engineering and Math Skills graduates are Engineering, Sales, Information Technology and Analysis. AutoCad and Matlab are the most frequent tools mentioned after Microsoft Office.

Top Specialized Skills:

01 Engineering

02 AutoCad

03 Sales

04 Data Analysis

05 MatLab

Computer and IT Skills

The major themes for Computer and IT graduates are much more specialized than other disciplines and include Information Technology tools and languages. In Nigeria, the most common language mentioned among graduates is HTML - a language used to build webpages - followed by Java.

Top Specialized Skills:

01 HTML

02 Java

03 SQL

04 Javascript

05 PHP

Health and Education Skills

The major themes for Health and Education graduates are directly related to the Healthcare and/or Education industry, with a larger proportion in Health. Supplementary business skills frequently mentioned include Project Management, Sales, and Marketing.

Top Specialized Skills:

01 Healthcare

02 Strategic Planning

03 Clinical Research

04 Teaching

05 Medicine

Business and Communications Skills

The major themes for Business and Communications graduates are Business, Analysis, Marketing and Public Relations, and Sales. In Nigeria, Financial Analysis is listed as the most specialized area, followed by Marketing and Accounting.

Top Specialized Skills:

01 Management

02 Business Strategy

03 Sales

04 Financial Analysis

05 Marketing

Social Science Skills

The major themes for Social Science graduates are Marketing and Public Relations, Business, Sales, and Media and Writing. Various forms of Analysis (business, financial, etc.) are mentioned frequently at the top of the list.

Top Specialized Skills:

01

Project Management

02

Social Media

03

Sales

04

Financial Analysis

05

Marketing

Culture, Language and Fine Arts Skills

The major themes for Culture, Language, and Fine Arts graduates are Marketing and Public Relations, Design, Business, and Media and Writing. Social media is mentioned as both a common skill and tool for these graduates, above more traditional tools like photography and film.

Top Specialized Skills:

01

Social Media

02

Public Relations

03

Project Management

04

Editing

05

Marketing

Saudi Arabia

The Kingdom of Saudi Arabia spans the vast desert of the Arabian Peninsula in Western Asia and is home to just over 33 million people as the second largest state in the Arab world.[15] The economy of Saudi Arabia is one of the top 20 economies globally and is largely dependent on its oil production as the world's largest petroleum exporter.

Youths aged 15-24 make up just over 15% of the overall population which includes the median age of 29 years old. While youth unemployment remains relatively high, Saudi Arabia has taken steps to incentivize job creation and economic growth in the private sector in order to diversify its economy and to employ more Saudi nationals. Historically, Saudi has diversified and seen growth in power generation, telecommunications, natural gas exploration, and petrochemical sectors.[16]

Youth Profile

To examine youth pathways in Saudi Arabia, we dive into approximately 37,000 youth profiles to explore youth education, employment, and skill trends. We find that Saudi youth in our sample are highly skilled and educated in Science, Math, and Engineering due to the country's oil production economy. Not only do the youth study in this field, but many make their first steps into the labour market in technical internship or engineering positions.

15%

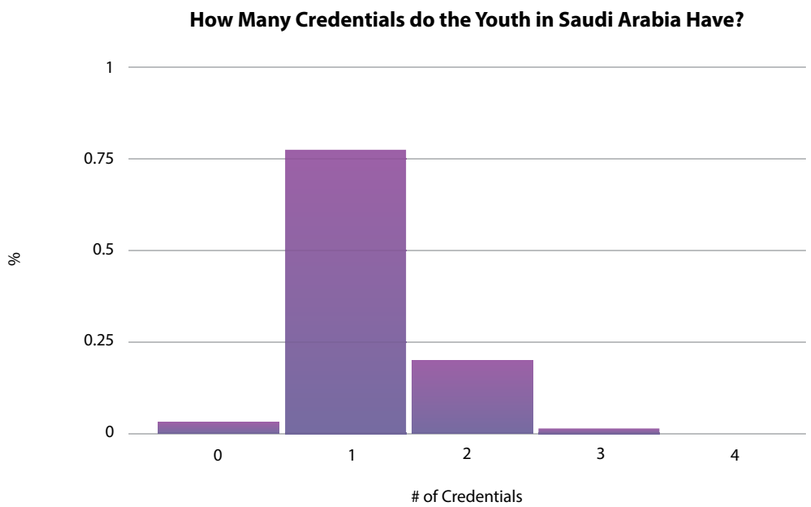
of the overall population of Saudi Arabia are aged 15-24

15. Based on Work Bank Data estimates updated in 2018: https://data.worldbank.org/country/saudi-arabia.
16. Statistics based on data from the CIA World Factbook: https://www.cia.gov/library/publications/the-world-factbook/geos/sa.html

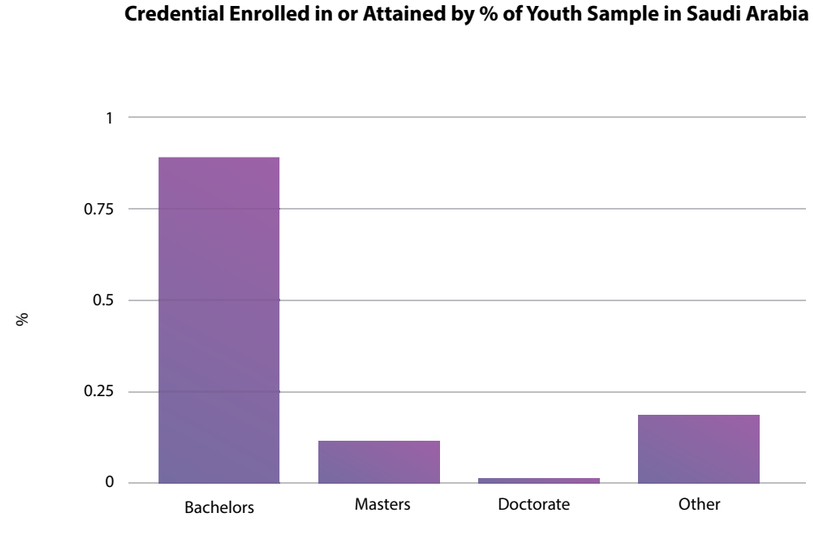
Educational Attainment

How many credentials do youths in Saudi Arabia have?

Almost 75% of youths in Saudi Arabia demonstrate having one post-secondary credential, with a small number of under 5% lacking credentials or still attending high school.



In Saudi Arabia, 89% of youths sampled are enrolled in or have a Bachelor's degree, 11% are enrolled in or have a Masters, 1% are enrolled in or have a Doctorate, and 18% are enrolled in or have other forms of credentials.[17]



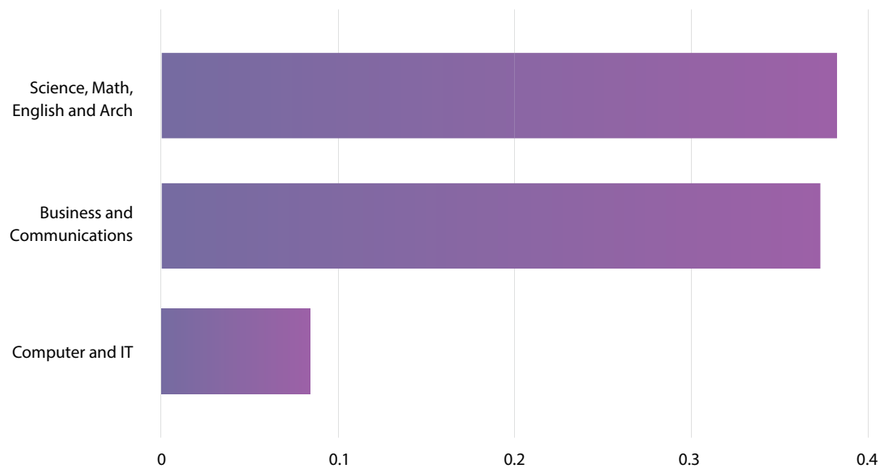
17. Note that it is possible for youths to be enrolled in or have multiple credentials so totals will not sum to 100%.

Major Area of Study

What are the most popular areas of study for young people?

The majority of Saudi youths begin their educational paths in either Science, Math, and Engineering; Business and Communications; or Computer and IT, while softer disciplines like Social Science or Culture, Language and Fine Arts are less common as entry points into higher education. Saudi Arabia is the only country among the five with Computer and IT making the top three list.

Saudi Youth: Top Entry Points for Higher Education



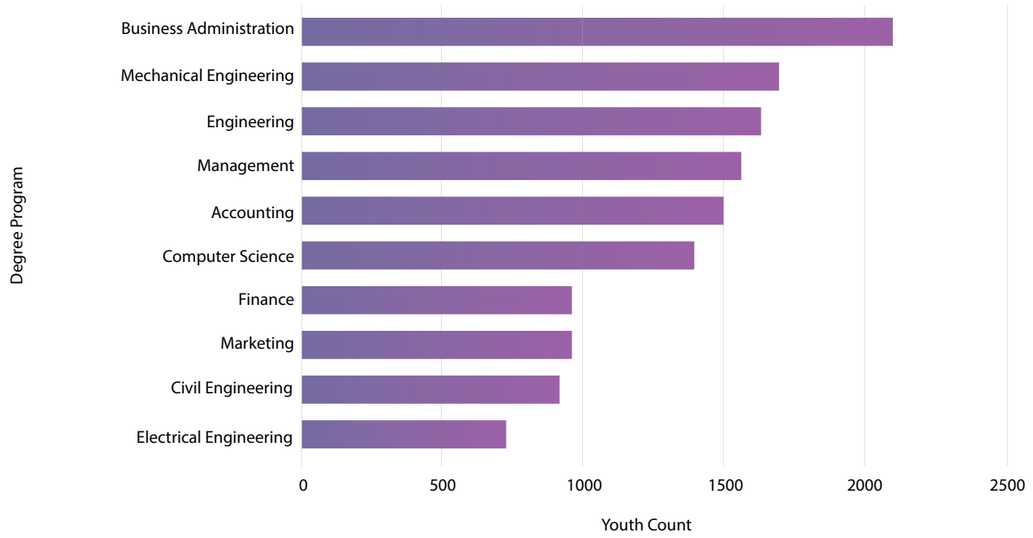
Top Major Areas for First Degree
By First Post-Secondary Credential

#	Major Area	%
1	Science, Math, and Engineering	38%
2	Business and Communications	37%
3	Computer and IT	8.3%
4	Culture, Language, and Fine Arts	8.2%
5	Health and Education	6.5%
6	Social Science	0.92%
7	Law and Government	0.63%
8	Tourism and Hospitality	0.14%
9	Construction and Trades	0.11%

After young people have attained at least one post-secondary credential, Business and Communications becomes the most popular area for youths to upskill over their educational path. And while Science, Math, and Engineering is the most popular choice at the undergraduate level, Business and Communications is the preferred choice for those students who go on to pursue a Master's degree or higher.

Dispersed between the top major areas, we see just over 13,000 youths choosing one of ten specific degree programs for their first degree, spanning Business Administration as a top choice, as well as various forms of Engineering, Accounting, Finance, Marketing, and Computer Science.

Top 10 Degree Programs for First Degree in Saudi Arabia



Entry Level Work Experience

Where do youths in Saudi Arabia begin their career journey?

For youths in Saudi Arabia, entry-level work experience includes expected positions like Trainees and Interns, but also includes more advanced positions in Engineering and Finance, as well as customer facing roles in Customer Service.

The top five skills posted in these positions approximate the kinds of skills attained by Saudi youth in their first work experience. These range from basic digital skills like Microsoft Office and Social Media to specific skills like AutoCad and Matlab to human skills like Teamwork and Public Speaking.

Most Common First Jobs for Saudi Youth

#	Employer	Top 5 Skills
1	Trainee	microsoft office, teamwork, microsoft excel, autocad, matlab
2	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
3	Accountant	financial reporting, financial accounting, account reconciliation, financial analysis, general ledger
4	Internship	microsoft office, microsoft excel, microsoft word, powerpoint, matlab
5	Summer Trainee	matlab, market research, rural marketing, teamwork, c
6	Mechanical Engineer	solidworks, cad, finite element analysis, engineering, autocad
7	Electrical Engineer	power distribution, power systems, plc, electronics, commissioning
8	Customer Service Representative	customer satisfaction, customer experience, customer service, call centers, team leadership
9	Site Engineer	concrete, earthworks, autocad, structural engineering, highways
10	Civil Engineer	Sap2000, autocad, microstation, structural engineering, structural analysis

When do youth progress in their career journeys?

To approximate where youth progress following their entry-level positions, we populated lists of the top jobs up until the sixth job listed. We find that jobs such as "Intern" or "Trainee" remained at the top of the list until the fourth job position held, which takes on average four years to reach.

By the fourth job, young people begin to work in jobs that require additional human skills applied to the contexts of their specialized training and knowledge. This is also when we start to observe additional upskilling in the area of Business and Communications for positions like Project Manager in developing planning and management skills.

Most Common Advanced Jobs in Saudi Youth Pathways

Estimated at Fourth Job

#	Job Title	Top 5 Skills
1	Project Manager	project planning, construction management, construction, program management, contract management
2	Project Engineer	project engineering autocad, civil engineering, commissioning, manufacturing
3	Accountant	financial reporting, financial accounting, account reconciliation, financial analysis, general ledger
4	Trainee	microsoft office, teamwork, microsoft excel, autocad, matlab
5	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
6	Mechanical Engineer	solidworks, cad, finite element analysis, engineering, autocad
7	Internship	microsoft office, microsoft excel, microsoft word, powerpoint, matlab
8	Electrical Engineer	power distribution, power systems, plc, electronics, commissioning
9	Site Engineer	concrete, earthworks, autocad, structural engineering, highways
10	Architect	sketchup, architecture, sustainable design, design research, revit

42%

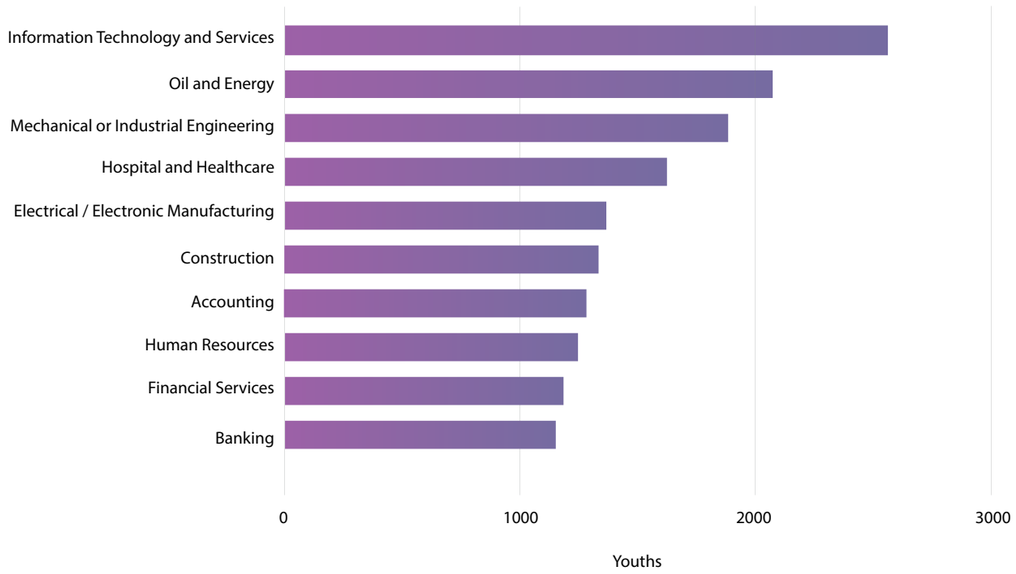
of youths employed in Saudi Arabia can be found in the top ten industries

Industry

What industries define these youth career paths?

Close to half of the youths employed in Saudi Arabia (42%) can be found within the top ten industry clusters displayed below, mirroring the importance of the Oil and Energy sector to the Saudi economy. This is the highest concentration of youth employment among the top ten industries among the five regions evaluated. Other top industries include Information Technology and Services and Mechanical or Industrial Engineering, followed by Hospital and Healthcare.

Top 10 Industry Clusters of Youth Career Paths in Saudi Arabia



Employers

Who's hiring youth in Saudi Arabia?

In Saudi Arabia, youths are primarily employed by state owned energy and utility companies, as well as universities and financial institutions, employing just over 3,000 youths total in the top ten.

Top Youth Employers in Saudia Arabia
As % of Top

#	Employer	% of Top[18]
1	Saudi Aramco	33%
2	Sabic	12%
3	Saudi Electricity Company	11%
4	Saudi Telecom Company	9%
5	Riyad Bank	6%
6	King Saud University	6%
7	Sabb	6%
8	Schlumberger	6%
9	Al Rajhi Bank	6%
10	King Faisal Specialist Hospital	5%

18. May not add to 100% due to rounding.

Pathway Insights in Saudi Arabia

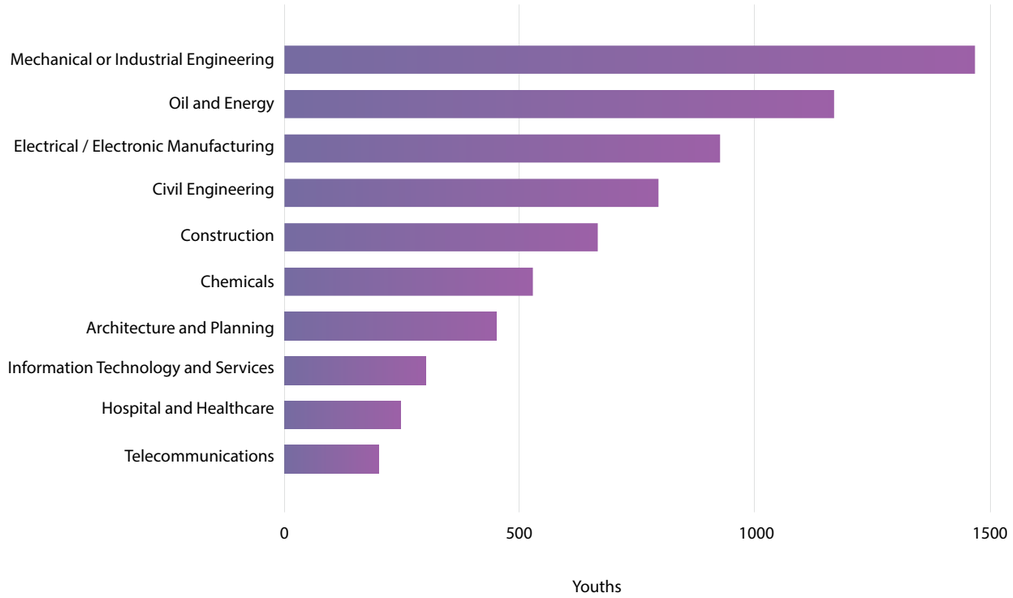
From Education to Employment

Do youths stay in the field they study for?

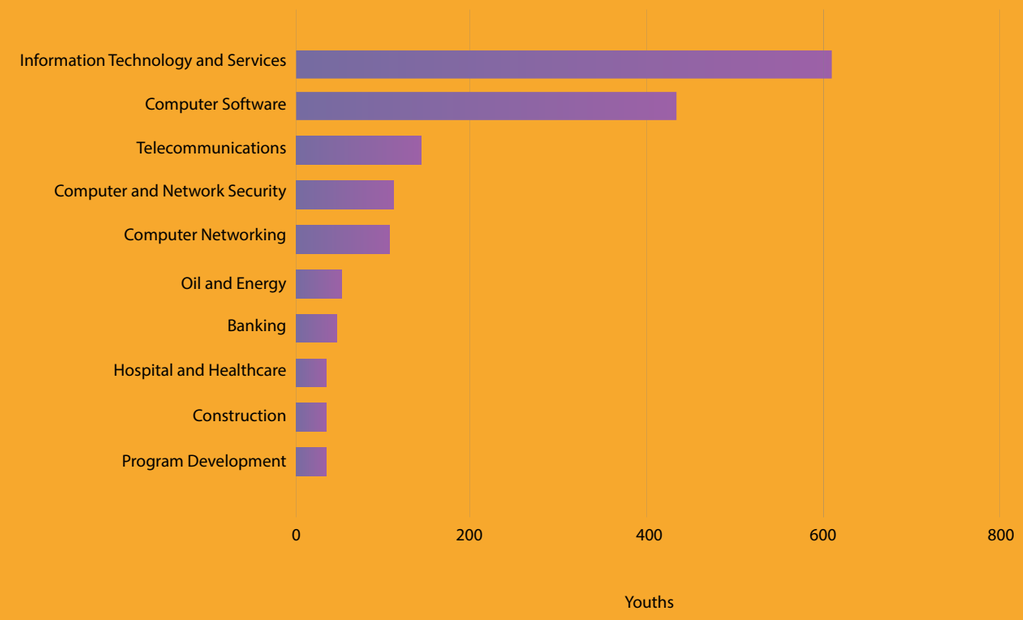
Top Industries by Major Areas of First Degree

As might be expected, more technical disciplines like Science, Math, and Engineering and Computer and IT tend to match more specifically with the careers these education programs are designed for, while others like Social Science lead to much broader career outcomes. In the charts below, we show that more technical STEM fields tend to be more concentrated in just a few industries, while broader educational backgrounds tend to lead to more career options. Business and Communications in particular provide applicable general skills that lead to the widest variety of industry sectors, crossing Information Technology, Health and Education, Marketing, Oil and Energy, Construction and more.

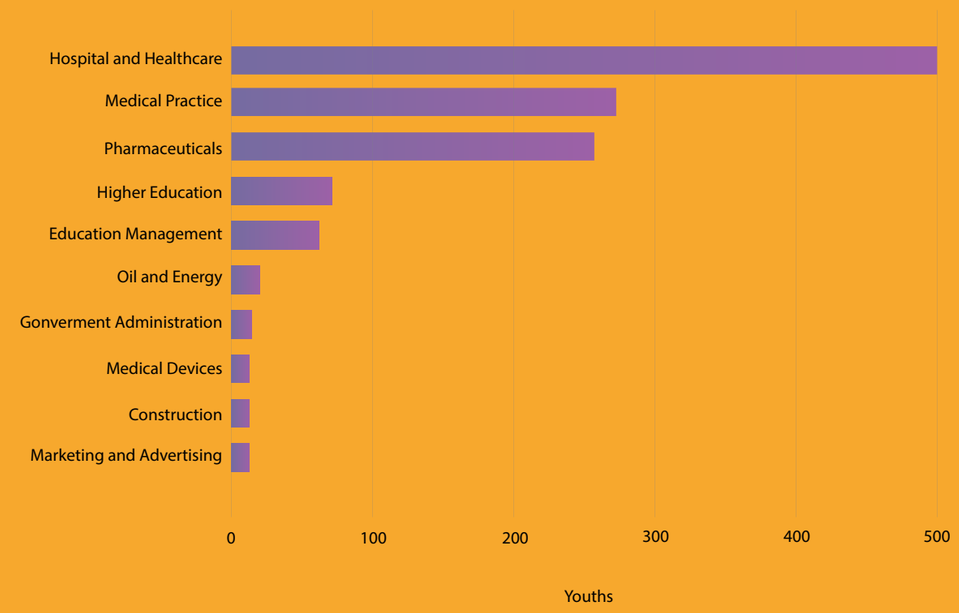
Top Career Paths for Science, Engineering and Math in Saudi Arabia



Top Career Paths for Computer and IT in Saudi Arabia

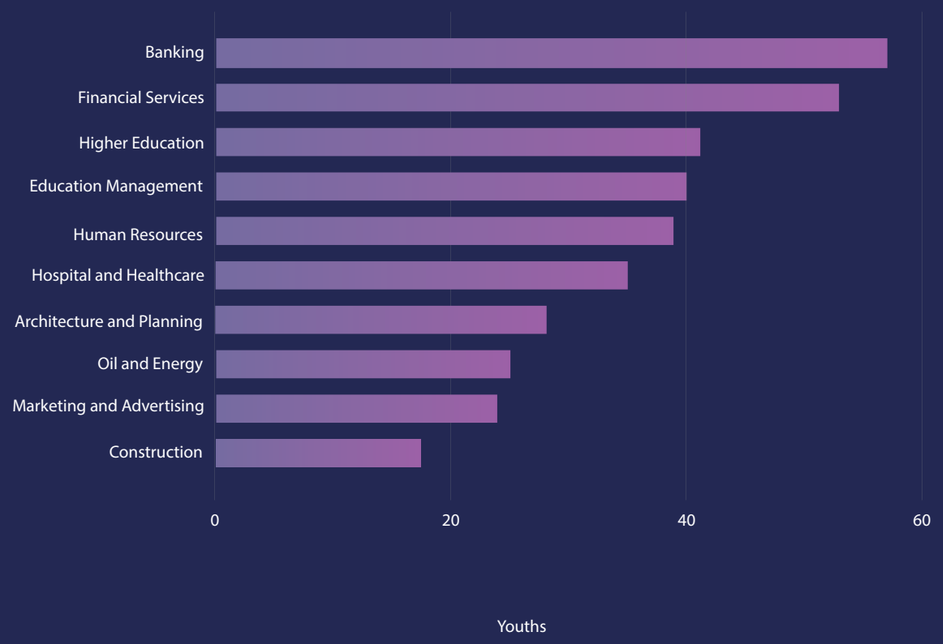


Top Career Paths for Health and Education in Saudi Arabia

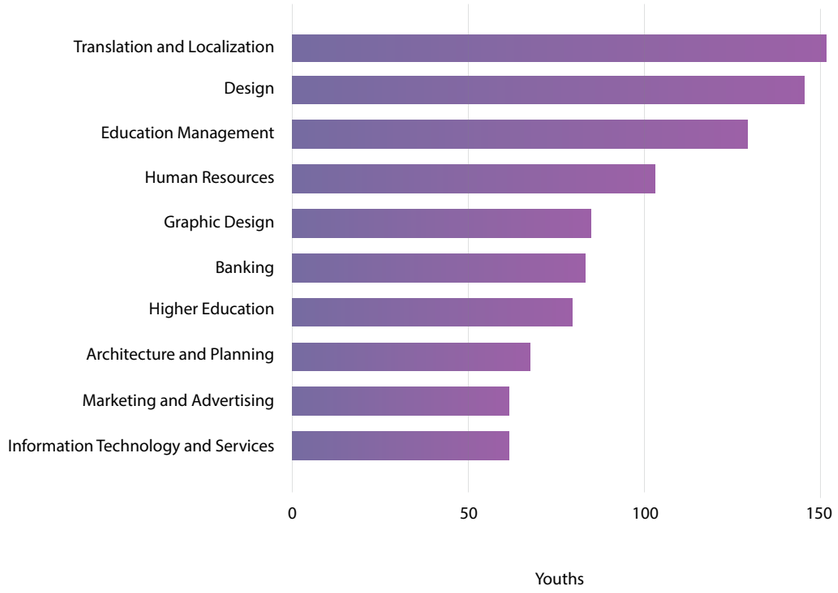


Top Career Paths for Business and Communications in Saudi Arabia

Top Career Paths for Social Science in Saudi Arabia



Top Career Paths for Culture, Language and Fine Art in Saudi Arabia



Skill Themes in Saudi Arabia

The major skills themes for Saudi Arabian graduates by Major Area of Study are outlined below. Across all disciplines, basic digital skills in Microsoft Office, soft skills like Leadership and Teamwork, and business skills like Project Management and Customer Service were included in most frequently mentioned skills. Both the common and specialized skill areas are listed to show how youths are communicating their expertise and what skills they use most often in their daily work.

Most Common Skill Areas Across Disciplines:

01

Microsoft Office

02

Management

03

Teamwork

04

Leadership

05

Project Management

Science, Math, and Engineering Skills

The major themes for Science, Engineering and Math Skills graduates are Engineering, Business, Information Technology, and Construction. AutoCad and Matlab are the most frequent tools mentioned after Microsoft Office, closely followed by C++.

Top Specialized Skills:

01 Engineering

02 AutoCad

03 Project Management

04 Matlab

05 Construction

Computer and IT Skills

The major themes for Computer and IT graduates are much more specialized than other disciplines and include Information Technology tools and languages. In Saudi Arabia, the most common language mentioned among graduates is Java, followed by HTML and SQL. Saudi Arabia is the only country to list several business skills like Project Management in the top ten.

Top Specialized Skills:

01 Java

02 HTML

03 SQL

04 Project Management

05 C++

Health and Education Skills

The major themes for Health and Education graduates are directly related to the Healthcare and/or Education industry, with a larger proportion in Health. Other areas of specialized knowledge related to health at the top of the list include Patient Safety and Pharmaceuticals.

Top Specialized Skills:

01 Healthcare

02 Clinical Research

03 Hospitals

04 Medicine

05 Healthcare Management

Business and Communications Skills

The major themes for Business and Communications graduates are Business, Analysis, and Finance. In Saudi Arabia, Finance skills in Financial Analysis, Accounting, and Reporting are among the more specialized and most frequent, followed by Sales and Human Resources.

Top Specialized Skills:

01 **Project Management**

02 **Strategic Planning**

03 **Analysis**

04 **Financial Analysis**

05 **Sales**

Social Science Skills

The major themes for Social Science graduates are Business, Analysis, and Marketing and Public Relations. Social Science graduates also demonstrate Finance skills in Banking and Economics.

Top Specialized Skills:

01 Research

02 Project Management

03 Strategic / Project Planning

04 Analysis

05 Training

Culture, Language and Fine Arts Skills

The major themes for Culture, Language, and Fine Arts graduates are Marketing and Public Relations, Business, and Design. Social media is the most common tool mentioned, followed by Photoshop and AutoCad - software more commonly seen in Engineer and STEM disciplines.

Top Specialized Skills:

01 Social Media

02 Project Management

03 Photoshop

04 Teaching

05 Project Planning

United States

The United States (U.S.) is a country in North America spanning a vast proportion of the continent neighboring both Canada and Mexico, with Alaska in the northeast and Hawaii in the Pacific. The U.S. is a prominent country in international affairs and a founding member of the United Nations, World Bank, the International Monetary Fund, and other international organizations. With a population of over 327 million people, the U.S. is the third most populous country in the world.

Youths aged 15-24 make up just over 13% of the overall population and, unlike other regions in this report, does not include the median age of 38 years old. While the U.S. has one of the most technologically powerful economies in the world, the U.S. also struggles with declining youth labour force participation, underemployment, and overqualification, with its youth unemployment hovering at 8%.[19]

Youth Profile

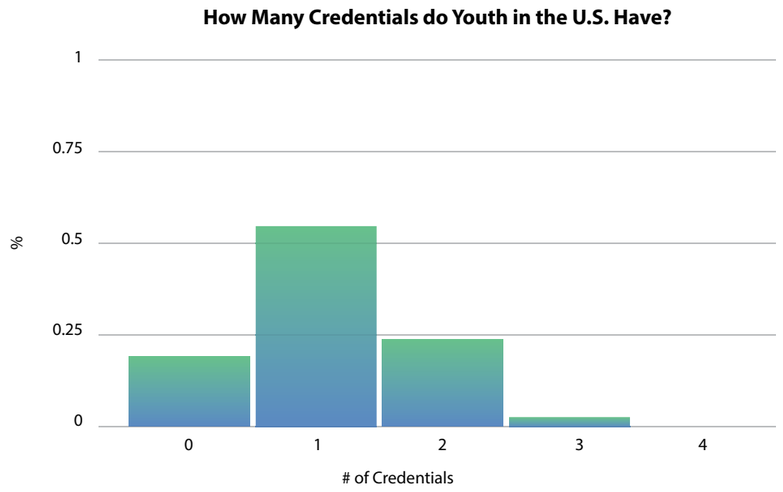
To examine youth pathways in the United States, we dive into approximately 500,000 youth profiles to explore youth education, employment, and skill trends. We find that American youths in our sample are highly educated with both formal and alternative credentials and employed across industries that include a large number in Hospital and Healthcare, as well as various business and technology sectors. The U.S. is unique in that it's primary employer for youths is overwhelmingly the U.S. Government through the Military.

19. Statistics based on data from the CIA World Factbook: https://www.cia.gov/library/publications/the-world-factbook/geos/us.html

Educational Attainment

How many credentials do youths in the U.S. have?

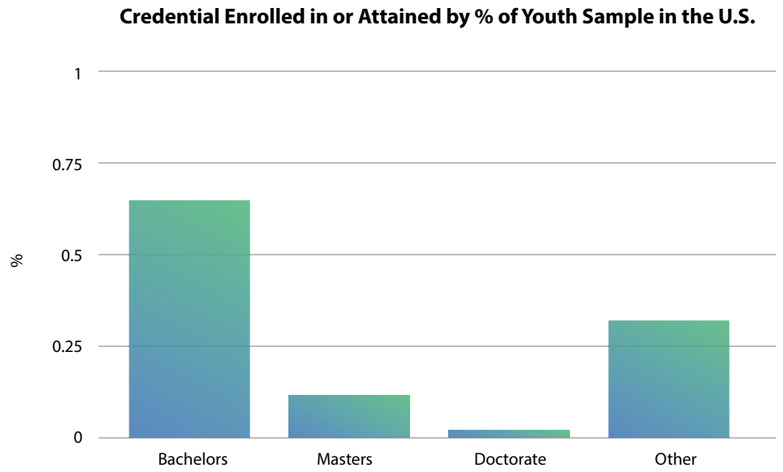
Just over 50% of youths in the U.S. demonstrate having at most one post-secondary credential, with relatively larger number of 19% (compared to other regions) lacking credentials or still attending high school.[20] Almost 25% have at most two post-secondary credentials and 2.5% have three or more.



50%

of youths in the U.S demonstrate having at most one post-secondary credential

In the U.S., 65% of youth sampled are enrolled in or have a Bachelor's degree, 11% are enrolled in or have a Masters, 1.8% are enrolled in or have a Doctorate, and a relatively high number of 32% are enrolled in or have other forms of credentials.[21]



19%

of youths in the U.S are lacking credentials or are still attending high school

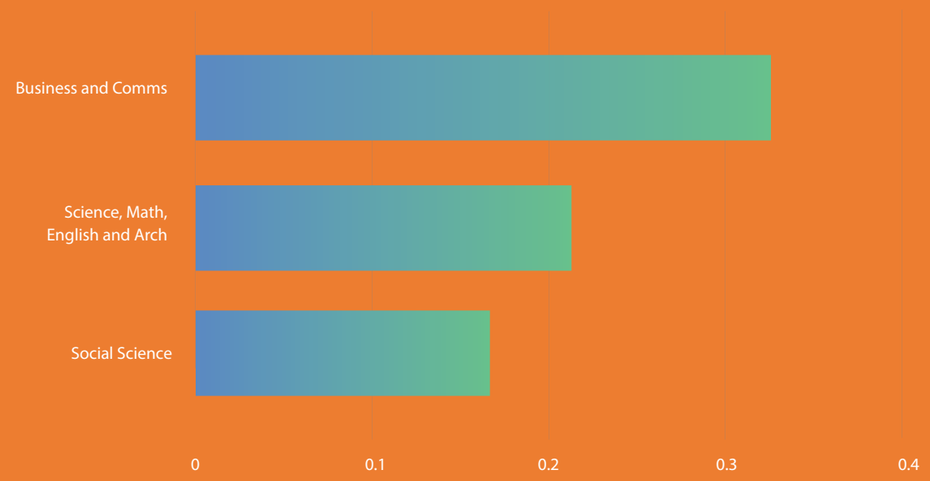
20. Due to the higher availability of youth profile data from the U.S. in our sample (500,000 records), the U.S. data set likely captures a higher proportion of younger youths still attending high school versus other samples.
21. Note that it is possible for youths to be enrolled in or have multiple credentials so totals will not sum to 100%.

Major Area of Study

What are the most popular areas of study for the youth?

The majority of American youths begin their educational paths in either Business and Communications; Science, Math, and Engineering; or Social Science. These are followed by Culture, Language, and Fine Arts; Health and Education; and Computer and IT. Overall, the U.S. has the lowest percentage of youth entering Science, Math, and Engineering at just 21% for the first post-secondary credential and the highest percentage entering into Culture, Language, and Fine Arts at 11%.

American Youth: Top Entry Points for Higher Education



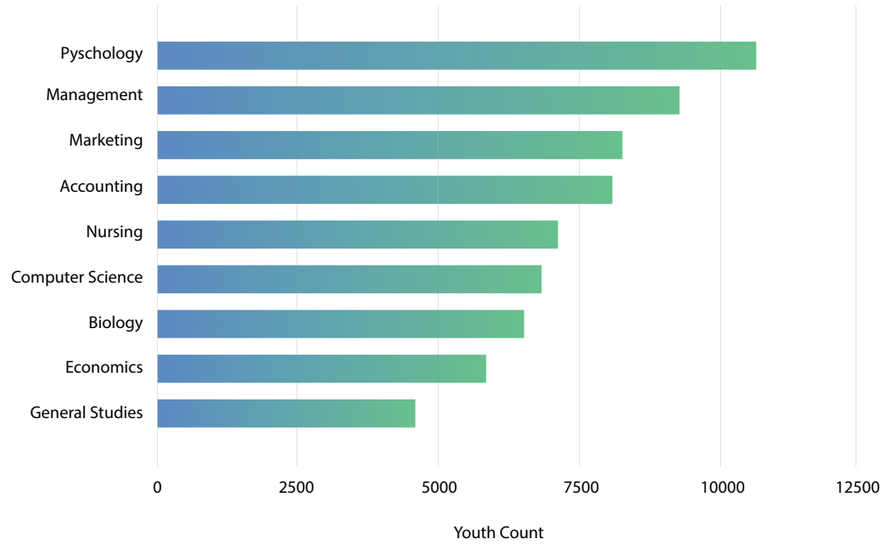
Top Major Areas for First Degree
By First Post-Secondary Credential

#	Major Area	%
1	Business and Communications	32%
2	Science, Math and Engineering	21%
3	Social Science	17%
4	Culture, Language, and Fine Arts	11%
5	Health and Education	8%
6	Computer and IT	5%
7	Law and Government	3%
8	Tourism and Hospitality	1%
9	Construction and Trades	0.5%

As young people continue to attain higher education, this ranking order stays the same with Business and Communications remaining as the top choice for additional credentials and degrees.

Dispersed between the top major areas, we see just over 88,000 American youths in our sample choosing one of ten specific degree programs for their first degree, with Business degrees at the top including Business Administration, Management, and Marketing, followed by Social Science degrees like Psychology and Economics and Health and Education degrees in Nursing. The U.S. is the only region with Nursing in the top ten degree programs by first degree most likely due to its larger and more advanced health care system.

Top 10 Degree Programs by First Degree in the U.S.



Entry Level Work Experience

Where do youths in U.S. begin their career journey?

For youths in the U.S., entry level work experience includes customer facing and retail roles like Sales Associate, Customer Service Representative and Cashiers, as well as clerical positions like Administrative and Office Assistants. Positions in management are also accessible to youths even early in the career path.

The top five skills posted in these positions approximate the kinds of skills attained by American youths in their first work experience. These are largely human centered skills such as Customer Service, Sales, and Teamwork, but also include basic digital skills like Microsoft Office and Social Media and Management skills like Leadership and Time Management.

Most Common First Jobs for American Youth

#	Job Title	Top 5 Skills
1	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
2	Sales Associate	retail, customer service, sales, social media, teamwork
3	Cashier	time management, cash register, customer service, teamwork, microsoft word
4	Administrative Assistant	data entry, administrative assistance, event planning administrative, assistants, office administration
5	Server	event planning, restaurants, customer service, teamwork, social media
6	Research Assistant	research, matlab, statistics, spss, qualitative research
7	Assistant Manager	customer satisfaction, retail, team management, customer service, time management
8	Manager	customer service, leadership, inventory management, sales team, management
9	Customer Service Representative	customer service, call centers, time management, customer experience, data entry
10	Office Assistant	event planning, data entry, microsoft word, powerpoint, microsoft excel

When do youths progress in their career journeys?

To approximate where youths progress following their entry-level positions, we populated lists of the top jobs up until the sixth job listed. We find that Intern actually remains atop of the list passed the sixth job, with Software Engineer appearing at the first specialist advanced job by the fourth job.

Other popular roles between the fourth and sixth job include Marketing Intern, Account Executive, and Project Manager. Similar to Canada, it looks like "job hopping" and underemployment may be more common in a more competitive skilled labour market relative to the other regions investigated.

Most Common Advanced Jobs in American Youth Pathways
Estimated at Fourth Job

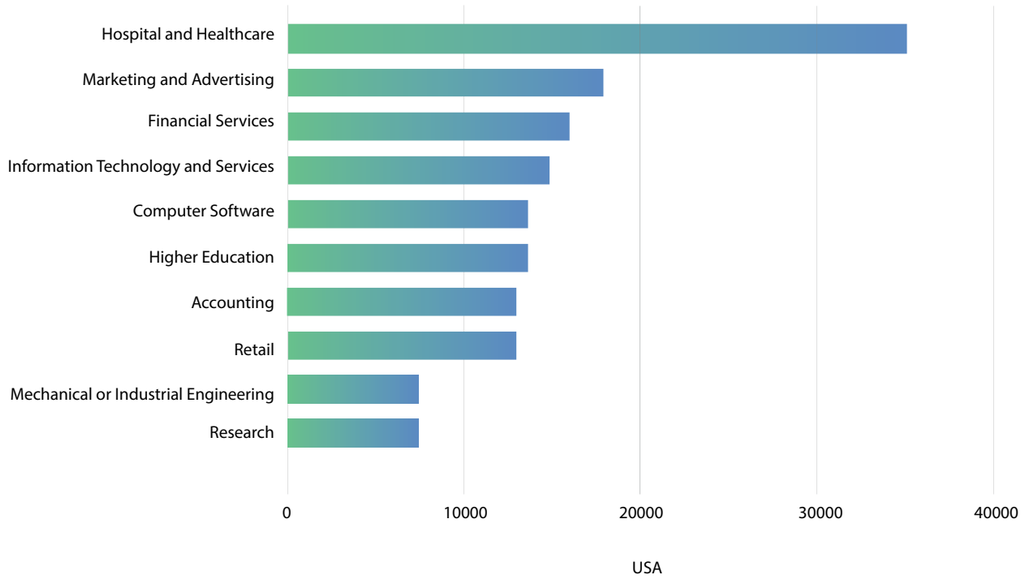
#	Job Title	Top 5 Skills
1	Intern	social media, powerpoint, teamwork, public speaking, microsoft office
2	Sales Associate	retail, customer service, sales, social media, teamwork
3	Research Assistant	LaTex, research, data analysis, teaching, statistics
4	Server	event planning, restaurants, customer service, teamwork, social media
5	Marketing Intern	customer service, call centers, time management, customer experience, data entry
6	Administrative Assistant	data entry, administrative assistance, event planning administrative, assistants, office administration
7	Software Engineer	Javascript, sql, software development, java, microsoft sql server
8	Teaching Assistant	LaTex, research, data analysis, teaching, statistics
9	Customer Service Representative	customer service, call centers, time management, customer experience, data entry
10	Summer Intern	Matlab, powerpoint, microsoft excel. research, market research

Industry

What industries define these youth career paths?

Up to 30% of youths in the U.S. can be found within the top ten industry clusters displayed below, with Hospital and Health Care at the top (similar to Canada), followed by business functions in Marketing and Advertising and Financial Services. The U.S. has the highest concentration of youth employment in just one industry cluster in Hospital and Health Care at a 23% share of the top ten clusters. Other top clusters include Information Technology and Services, Computer Software, and Higher Education.

Top 10 Industry Clusters of Youth Career Paths in the U.S.



30%

of American youth employment is concentrated in the top 10 inudstries

23%

of youth employment in the U.S is within Hospital and Health

Employers

Who's hiring youths in the U.S.?

In the U.S., youths are primarily employed by the U.S. government by the Army, Navy, Marine Corps, or Air Force at a combined share of 59% of the top 10 employers. Other employers include Food Service and Retail including McDonald's, Target, and Walmart. The U.S. government remains at the top positions for the second and third top jobs of youths but is then followed by large technology firms like Amazon and Best Buy.

Top Youth Employers in the U.S.

As % of Top

#	Employer	% of Top[22]
1	U.S. Army	21%
2	U.S. Navy	14%
3	U.S. Marine Corps	12%
4	U.S. Air Force	12%
5	McDonald's Corporation	10%
6	Target	8%
7	Walmart	8%
8	Best Buy	6%
9	Starbucks	5%
10	Walgreens	4%

22. May not add to 100% due to rounding.

Pathway Insights in the U.S.

From Education to Employment

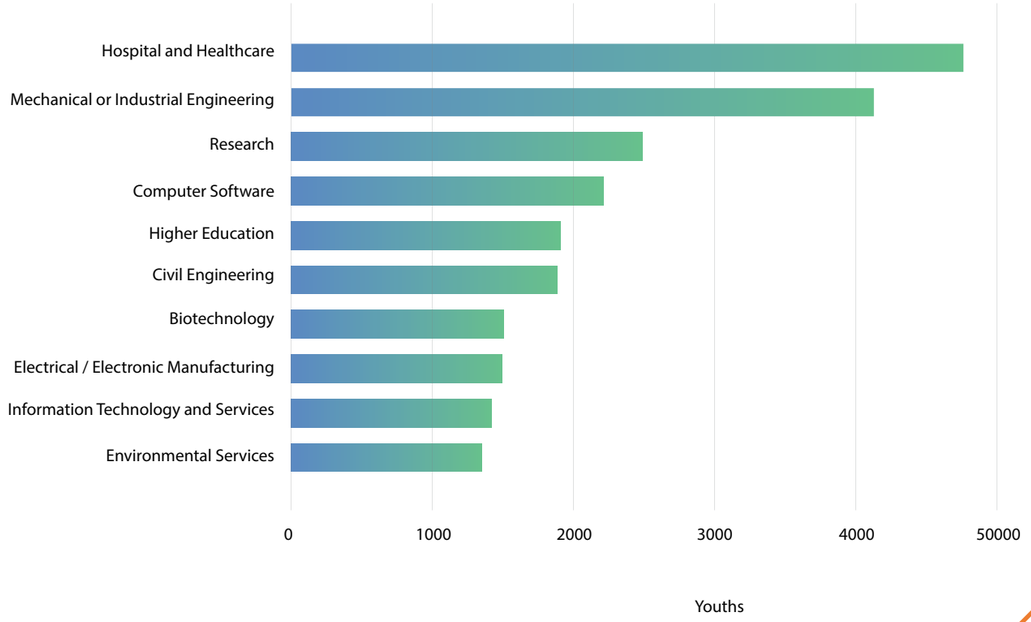
Do youths stay in the field they study for?

Top Industries by Major Areas of First Degree

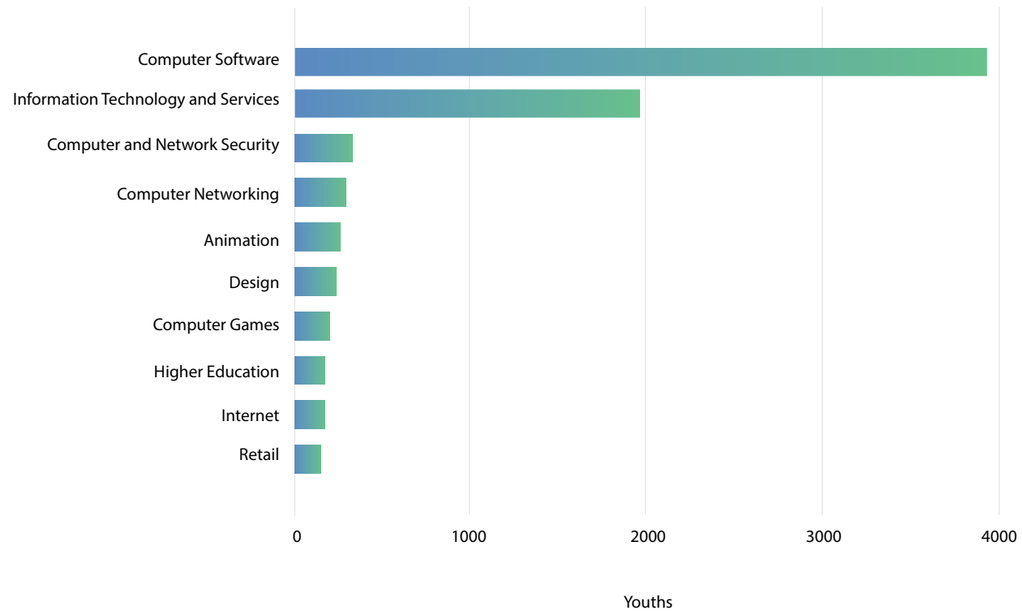
In the U.S., the largest industry for youth employment by multiple disciplines is the Hospital and Health Care industry. Both Science, Math, and Engineering and Health and Education graduates are largely employed here, as well as some from Business and Communication and Social Science. Meanwhile, Computer and IT graduates are almost entirely employed in the Computer Software industry.

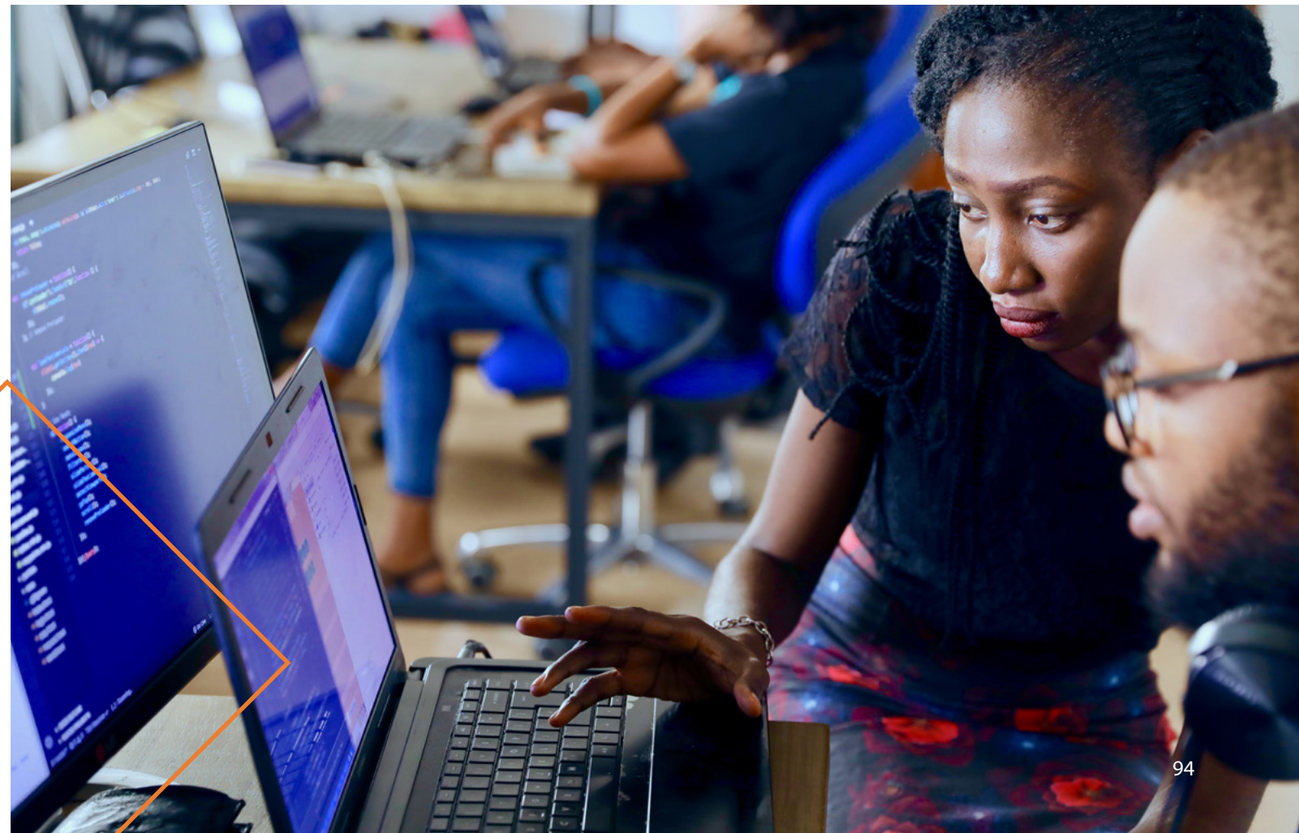
Business and Communications leads to broader career path outcomes for youths in the U.S. across Accounting, Marketing and Advertising, and Financial Services, as well as Health Care yet again. Social Science graduates also lead to broader outcomes across Health, Education and Financial Services. Culture, Language, and Fine Arts graduates find employment across Design, Marketing and Advertising, and Music.

Top 10 Career Paths for Science, Math and English in the U.S.

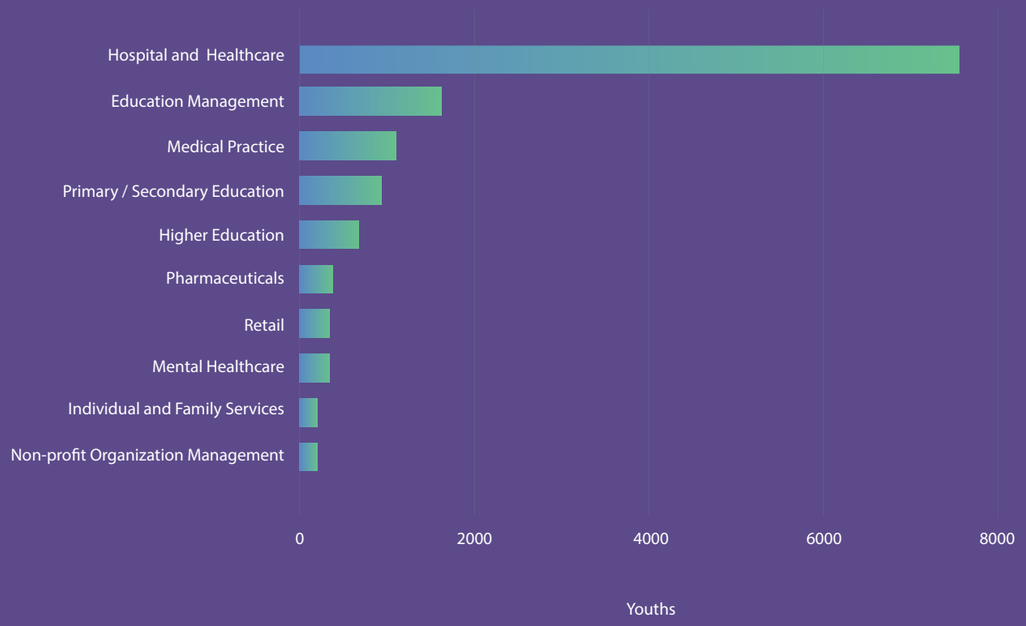


Top 10 Career Paths Comptuer and IT in the U.S.

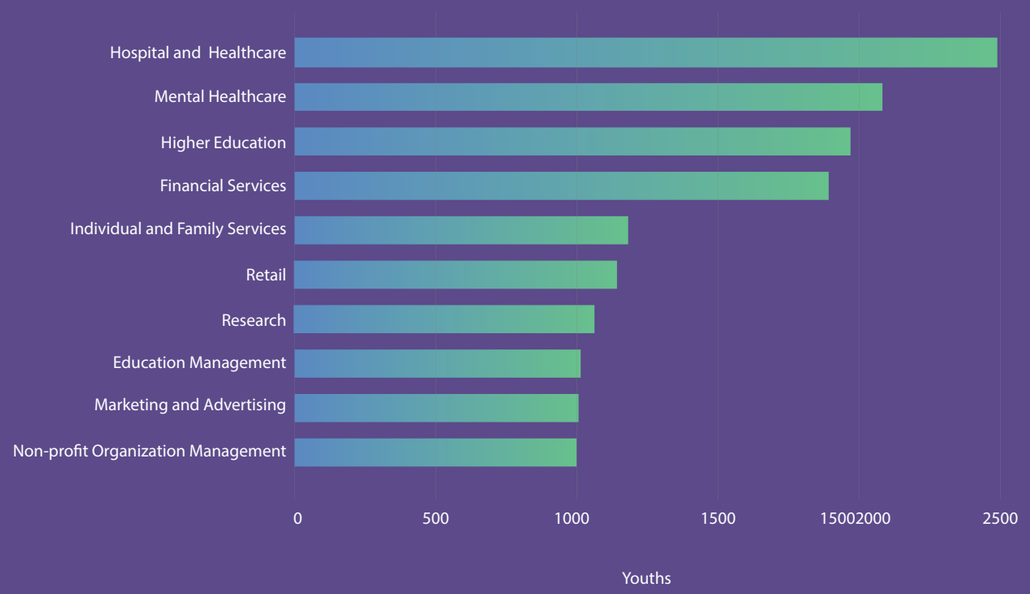




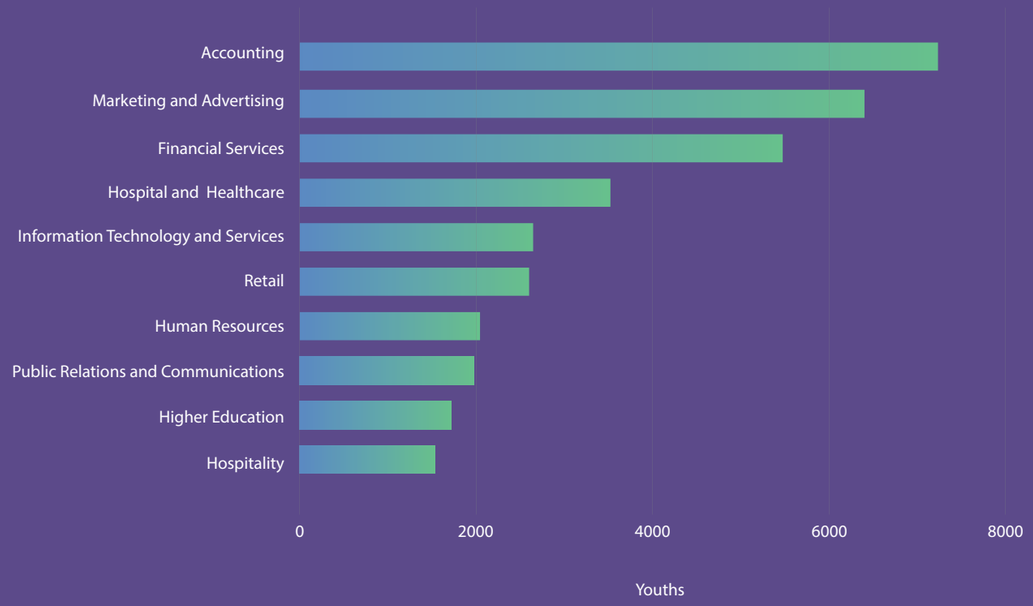
Top 10 Career Paths for Health and Education in the U.S.



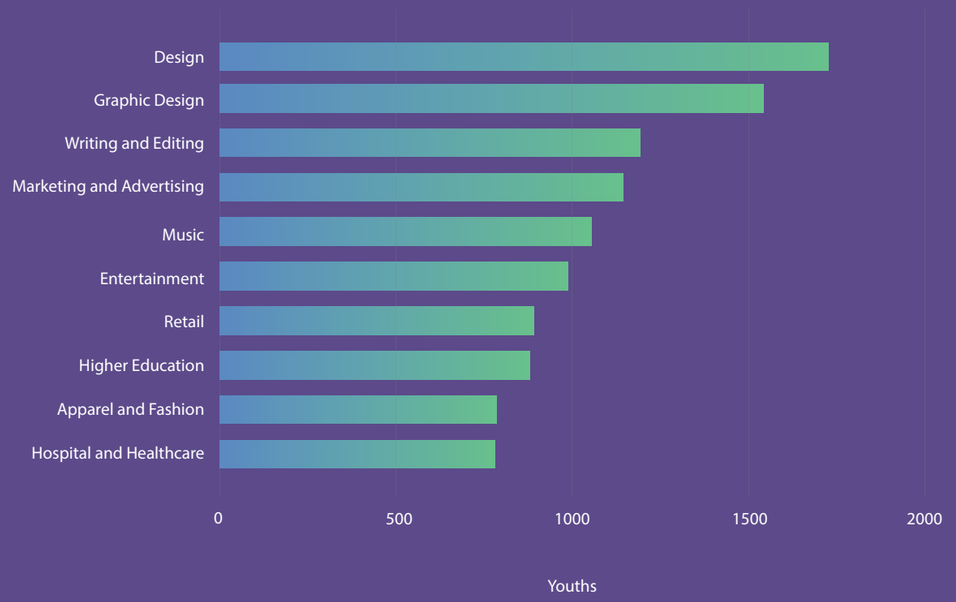
Top 10 Career Paths for Social Science in the U.S.



Top 10 Career Paths for Business and Communications in the U.S.



Top 10 Career Paths for Culture, Language and Fine Arts in the U.S.



Skill Themes in the U.S.

The major skills themes for for American graduates by Major Area of Study are outlined below. Across all disciplines, basic digital skills in Microsoft Office, soft skills like Leadership and Public Speaking, and Research skills were included in most frequently mentioned skills. Both the common and specialized skill areas are listed to proxy for how youths are communicating their expertise and what skills they use most often in their daily work.

Most Common Skill Areas across Disciplines:

01 **Microsoft Office**

02 **Customer Service**

03 **Leadership**

04 **Public Speaking**

05 **Research**

Science, Math, and Engineering Skills

The major themes for Science, Engineering and Math Skills graduates are Science and Research, Information Technology, Engineering, and Analysis. AutoCad, Matlab, C++, and Java are frequently used tools and programming languages, highlighting the prominence of Software Engineers in the U.S. Java, Solidworks, and Python are also mentioned. Data Analysis is also listed as a more common skill, above Engineering, demonstrating the rise of the field specific to STEM careers.

Top Specialized Skills:

01 Matlab

02 AutoCad

03 Data Analysis

04 Engineering

05 C++

Computer and IT Skills

The major themes for Computer and IT graduates are much more specialized than other disciplines and include Information Technology tools and languages. In the U.S., the most common language mentioned among graduates is Java, followed by HTML and C++. The U.S. is also one of the only countries to list Python (in addition to Canada) - a fast growing open source language - in its top 10 skills by Computer and IT graduates.

Top Specialized Skills:

01 Java

02 HTML

03 C++

04 Javascript

05 SQL

Health and Education Skills

The major themes for Health and Education graduates are directly related to the Healthcare and/or Education industry, with a larger proportion in Health and more specifically Nursing. Other frequently mentioned specialized skills include CPR Certification, Patient Safety, and Basic Life Support (BLS).

Top Specialized Skills:

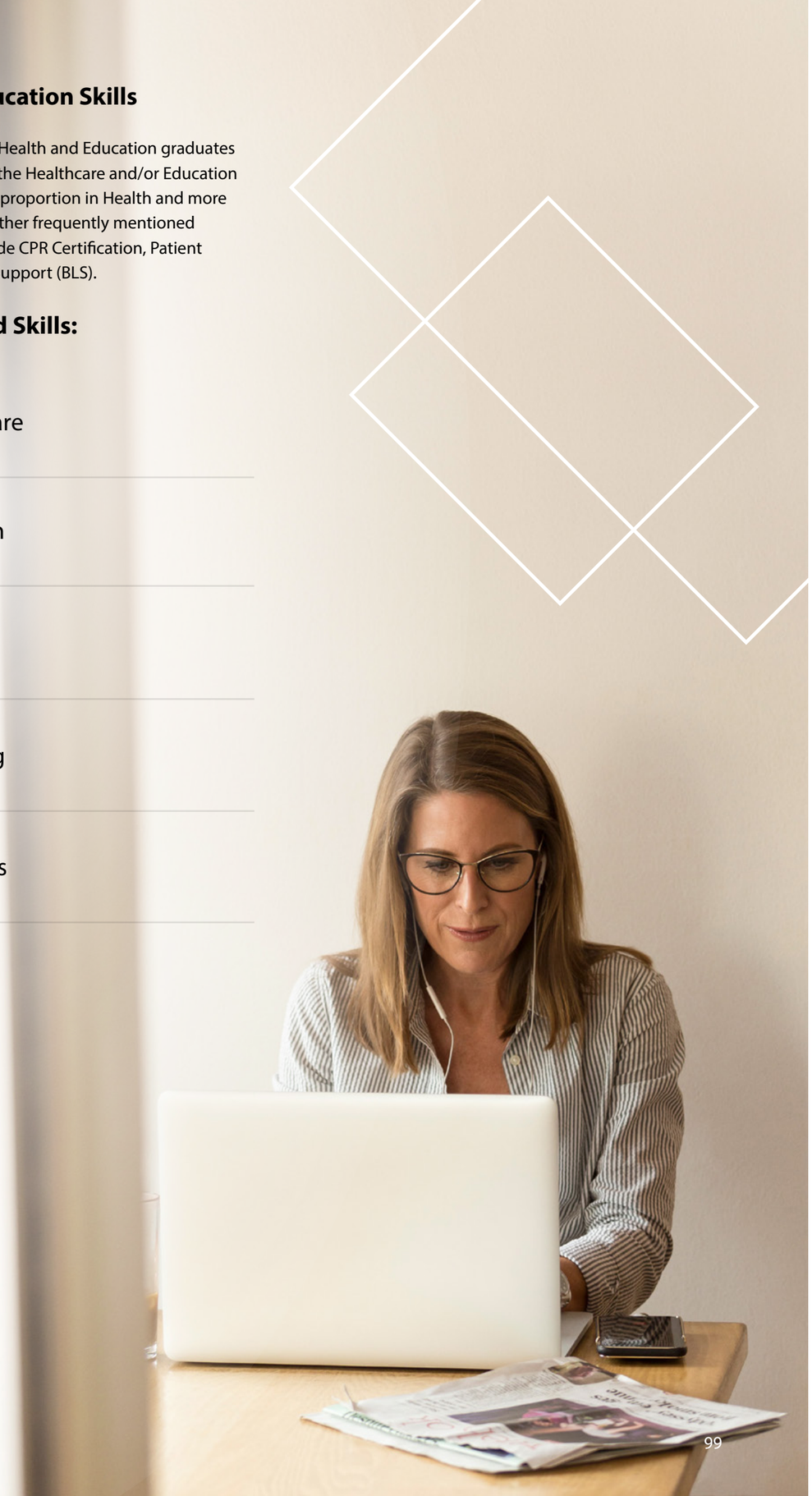
01 Healthcare

02 Research

03 Nursing

04 Teaching

05 Hospitals



Business and Communications Skills

The major themes for Business and Communications graduates are Sales, Marketing and Public Relations, and Finance. In the U.S., Marketing skills in Social Media Marketing, Facebook, Public Relations, and Marketing Strategy are listed as the most specialized areas.

Top Specialized Skills:

01

Management

02

Research

03

Marketing

04

Strategic Planning

05

Social Media Marketing

Social Science Skills

The major themes for Social Science graduates are Science and Research, Business, Sales, and Analysis. Skills in Community Outreach, Nonprofits, and Fundraising are mentioned frequently in the U.S., followed by skills in Analysis, including Data Analysis, Data Entry, and SPSS. Psychology receives the highest number of mentions regarding a specialized field of the Social Sciences.

Top Specialized Skills:

01 Research

02 Event Planning

03 Sales

04 Community Outreach

05 Data Analysis

Culture, Language and Fine Arts Skills

The major themes for Culture, Language, and Fine Arts graduates are Marketing and Public Relations, Design, Business, and Media and Writing. Common digital tools other than Social Media include Photoshop, Adobe Creative Suite, Illustrator, and InDesign. Common social media channels like Facebook are also mentioned frequently.

Top Specialized Skills:

01 Social Media

02 Photoshop

03 Editing

04 Management

05 Adobe Creative Suite

Comparative Outcomes Across Countries

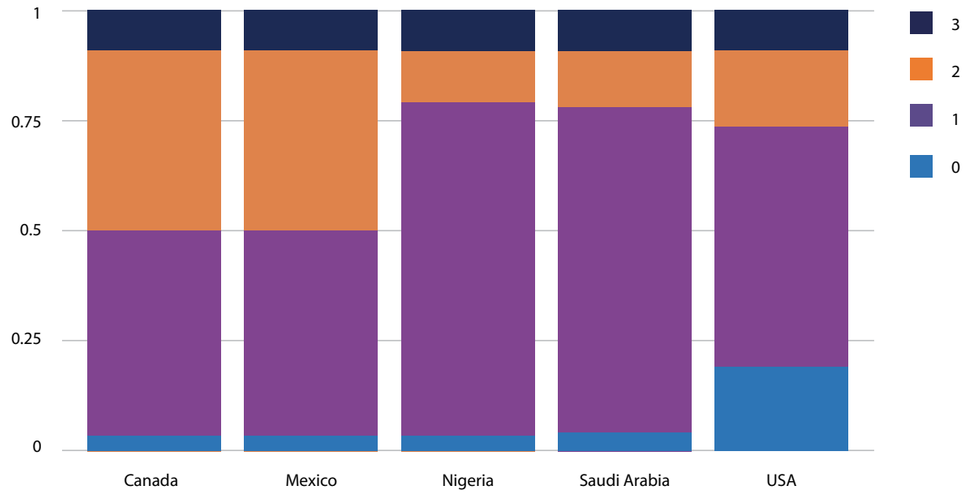
To supplement our detailed view of youth pathways by country, in the section below we dive into greater detail on major themes of comparison between countries, highlighting unique differences in Educational Attainment, Major Areas of Study, Entry-Level Work Experience, Industry Clusters, and Career Pathways.

Educational Attainment

In our data samples, we observe the highest rates of educational attainment by the youth in both Canada and Mexico, with 50% of youths having two credentials or more. Nigeria and Saudi Arabia are equally alike with 75% of their youths having one credential and just under 25% having two or more. Finally, 50% of American youths have one credential, with just over 25% having two or more.

Educational Attainment and Youth

Number of Credentials in the Youth Population by Country



50%

of youths in Canda and Mexico have two credentials or more

75%

of youths in Nigeria and Saudi Arabia have one credential

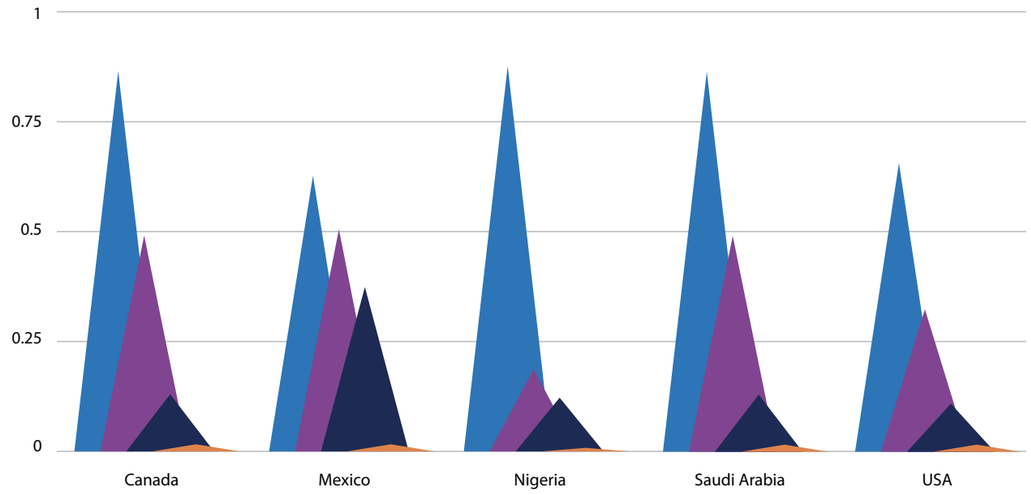
50%

of youths in U.S. have one credential

As might be expected, Bachelor's degrees are the most common form of post-secondary credential across countries. Mexico has the highest rate of Masters degrees in its youth population, with both Canada and Mexico having high rates of "Other" forms of credentialing following secondary education.

Credential Enrollment or Attainment and Youth

Level of Credentials Enrolled in or Attained in the Youth Populations by Country

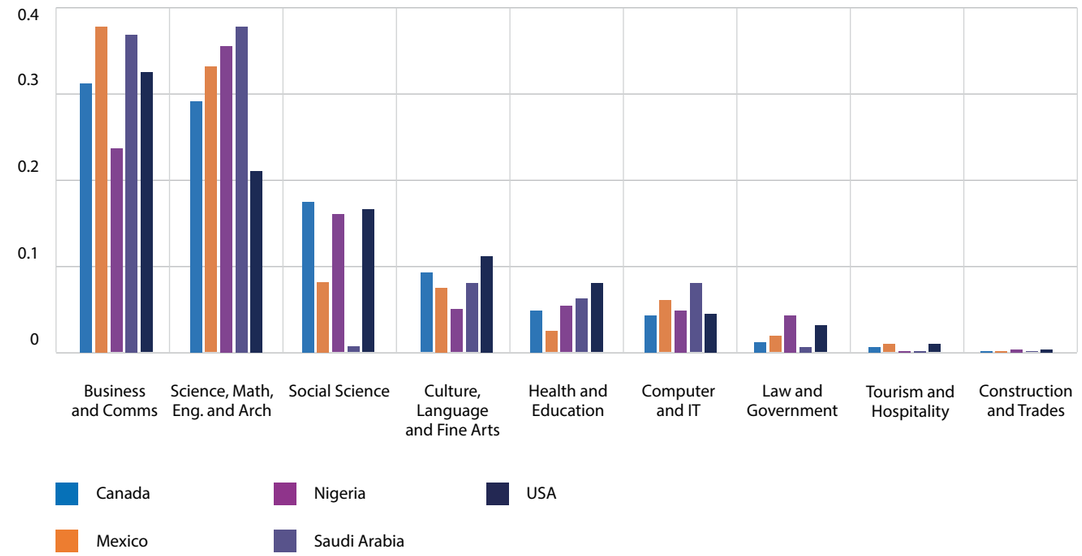


Major Area of Study

The top entry point for higher education collectively is Science, Math, and Engineering, closely followed by Business and Communications. Saudi Arabia has the highest level of graduates combined in the top two entry points, but significantly lower levels of graduates in the Social Sciences.

Top Entry Points for Higher Education Across Countries by Area of Study

As % of Youth Enrolled or Attained First Degree



Entry-Level Work Experience

Countries differ slightly in the kinds of entry-level work experiences youths are commonly employed in for their first job. Canada and U.S. youths are often employed in customer facing or retail roles like Sales Associate and Customer Service Representatives, with Internships as less common for earlier work experience. Internship and Trainee positions are much more common in Mexico, Nigeria, and Saudi Arabia leading to early specialized roles like Engineering (especially in Saudi Arabia) by the fourth job.

Overall, youths in Canada and the U.S. appear to start their work experience both earlier and in less-skilled positions before transitioning into ones that fit their eventual career path.

Top 5 Most Common Entry-Level Work Experiences

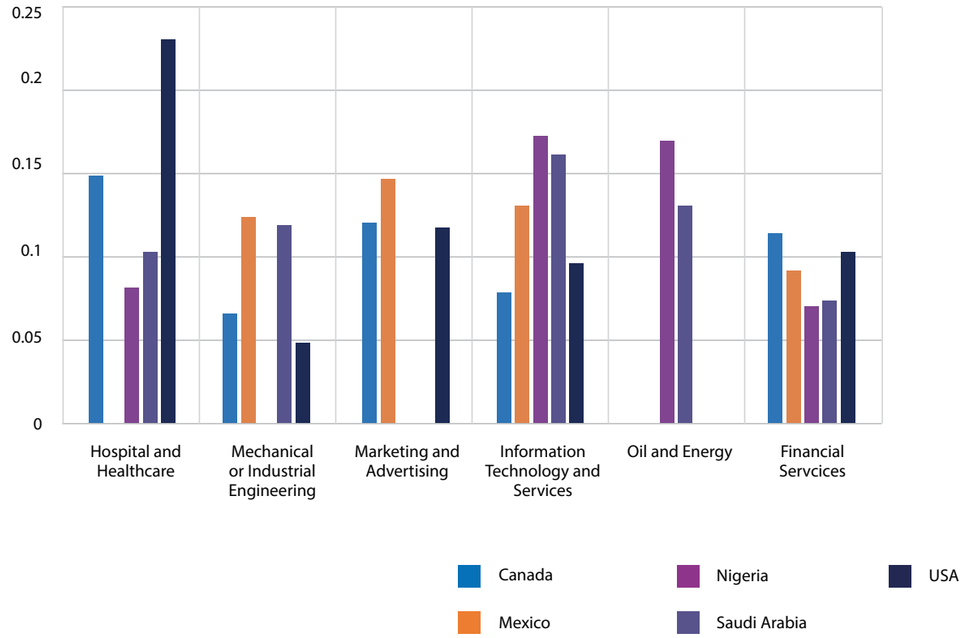
Canada	Mexico	Nigeria	Saudi Arabia	U.S.
Sales Associate	Intern / Internship	Intern	Trainee	Intern
Customer Service Rep	Administrative Assistant	Industrial Trainee	Intern	Sales Associate
Cashier	Research Assistant	Internship	Accountant	Cashier
Research Assistant	Trainee	Manager	Mechanical Engineer	Administrative Assistant
Intern	Customer Service Rep	Teacher	Electrical Engineer	Server

Top Industry Clusters

We observe quite diverse outcomes at the level of industry cluster for youth career paths. Canada and the U.S. have strong Healthcare sectors, Nigeria and Saudi Arabia have strong employment in Information Technology and Oil and Energy, and Mexico has a strong Marketing and Advertising sector. All five countries have comparable youth employment in Financial Services, averaging at about 10% of the top ten industries for youths, and prominent employment in Information and Technology.

Top Industry Clusters of Youth Career Paths Across Countries

As % of Country's Top 10 Industries for Youth Employment



10%

of the top industries for youth employment is in Financial Services

Pathways

Across our five countries, we see that most graduates broadly stay within the area they study for when evaluating top industries for youth employment by discipline. Most graduates in technical and applied disciplines like Computer and IT and more specialized disciplines like Health and Education are more likely to be employed in just a few industries directly related to the field. One of the biggest differences we observe between countries is the size and scale of the Health and Education sector in Canada and the U.S, employing graduates beyond Health and Education, including Science, Math and Engineering and Social Sciences. In contrast, Nigeria and Saudi Arabia graduates across disciplines are largely employed in Oil and Energy and Engineering sectors, whereas Mexico graduates have a high rate of employment in Business and Communications, specifically Marketing, and Manufacturing.

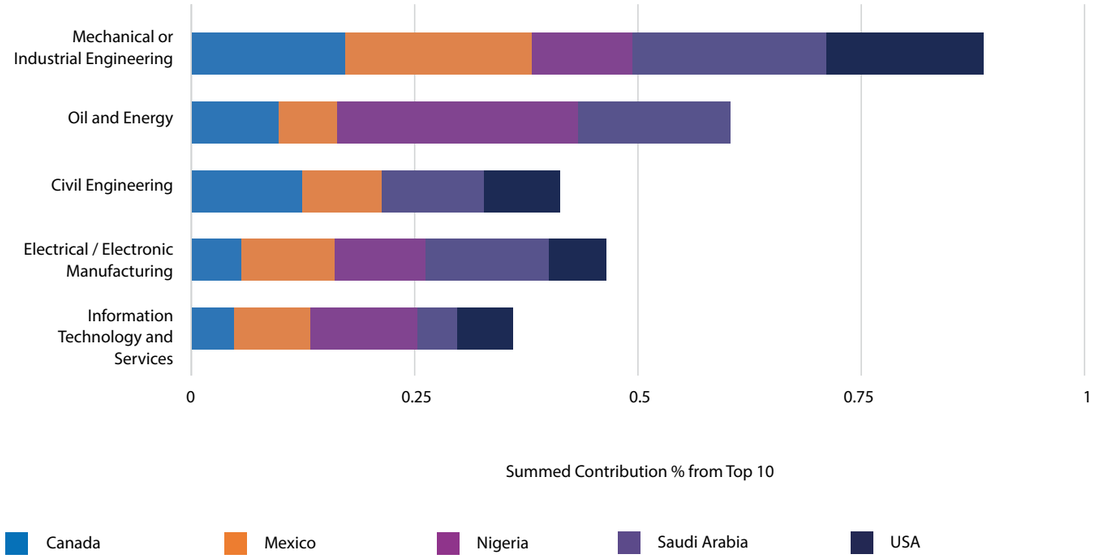
Below we've compared the composition of the top ten industries in each country by Major Area of Study to highlight major themes.

Science, Math, and Engineering

Mechanical or Industrial Engineering is the most common career path for most Science, Math, and Engineering graduates across countries, with the exception of Nigeria whose graduates are largely employed in the Oil and Energy industry. Other forms of Engineering are common, as well, alongside a growing number of graduates employed in the Information Technology and Services industry. The U.S. however also has a high number of their graduates employed in the Hospital and Healthcare industry, which is a trend not seen across many other countries beside Canada.

Top 5 Career Paths for Science, Math and Engineering

As % of Top 10 Industries for Graduates in each Country

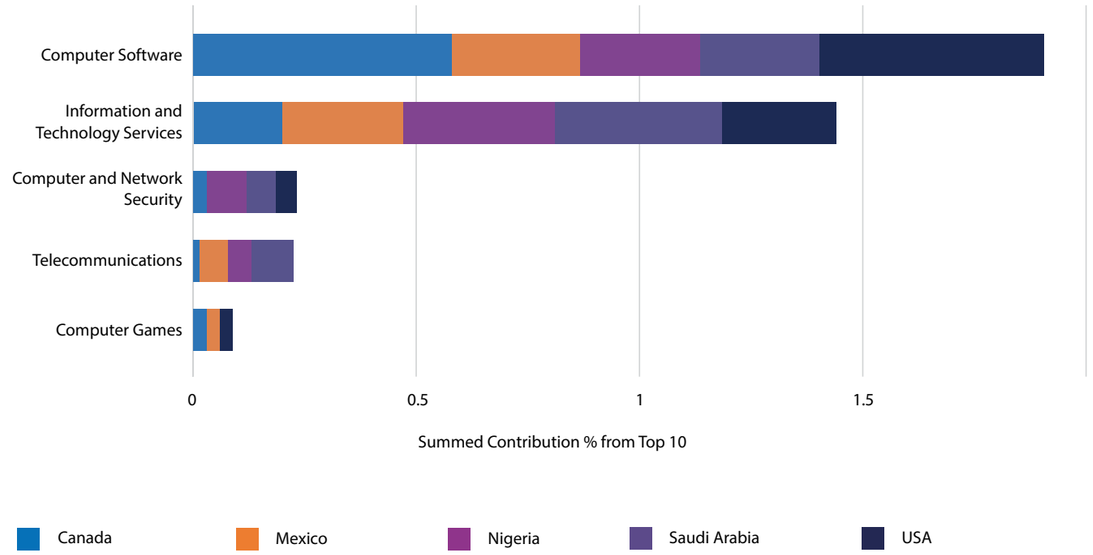


Computer and IT

Computer Software is the leader across most countries for Computer and IT graduates, with the exception of Saudi Arabia with a higher concentration in Information Technology and Services. Oil and Energy and Banking are two non-computer specific career paths seen more commonly in Nigeria and Saudi Arabia for Computer and IT graduates.

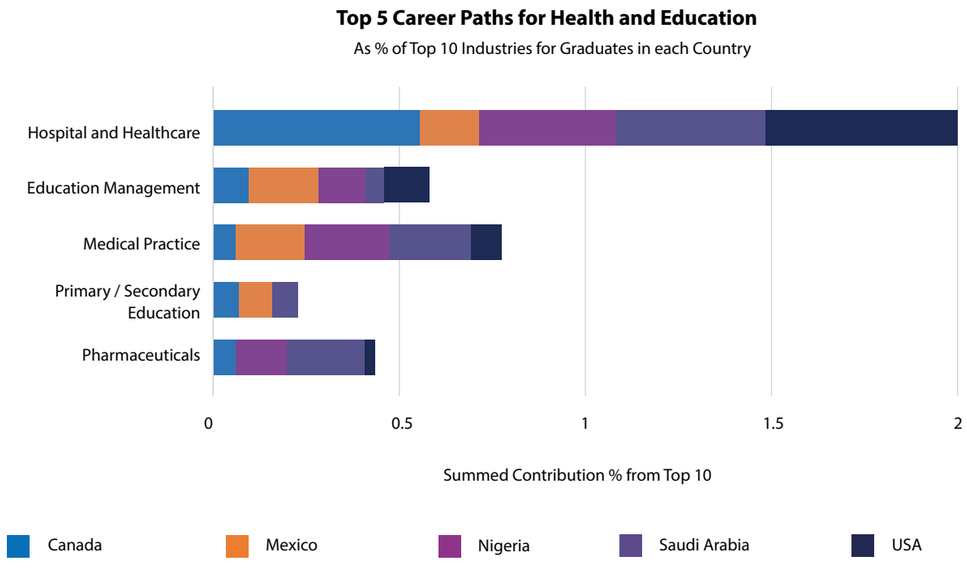
Top 5 Career Paths for Computer and IT

As % of Top 10 Industries for Graduates in each Country



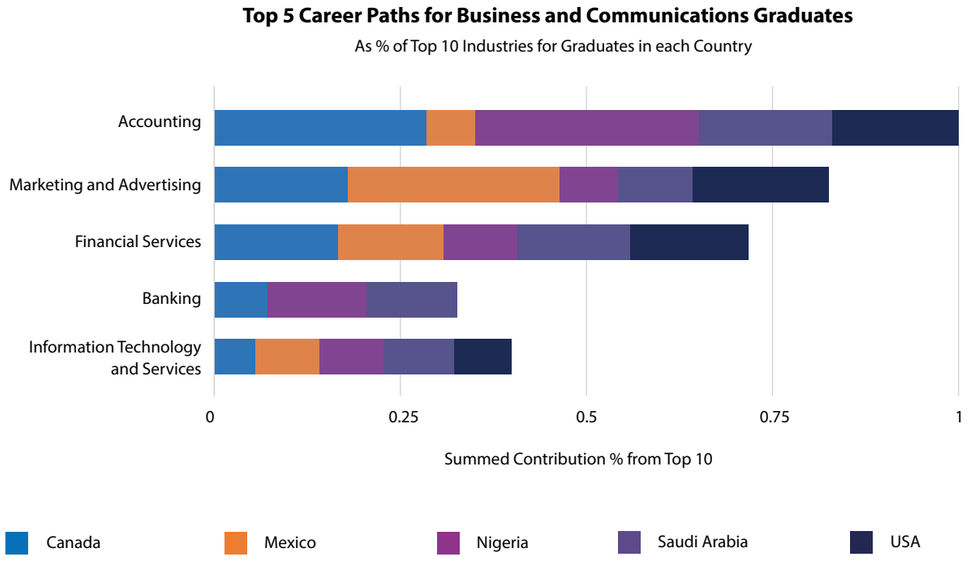
Health and Education

Graduates in Health and Education have the highest employment concentration across disciplines in just one industry: Hospital and Healthcare. The Pharmaceuticals industry is particularly large within Saudi Arabia with the highest rate of employment across countries.



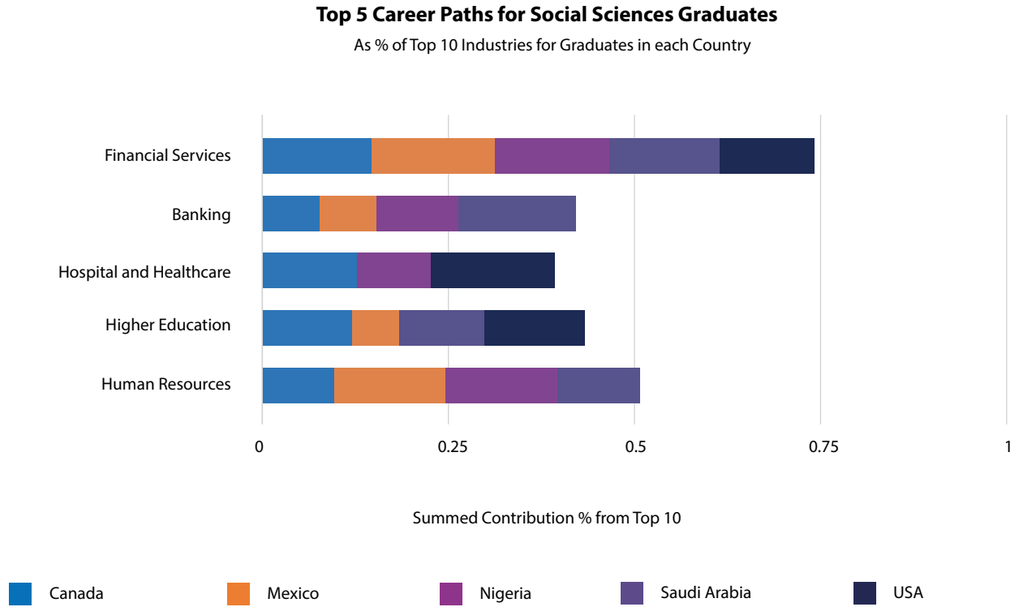
Business and Communications

A significant proportion of Business and Communications graduates across countries are concentrated in Accounting, Marketing and Advertising, and Financial Services. Across all five regions, Business graduates are increasingly becoming more technical and entering into IT and service-related jobs, as well, demonstrating some unexpected overlap with Computer and IT and STEM disciplines.



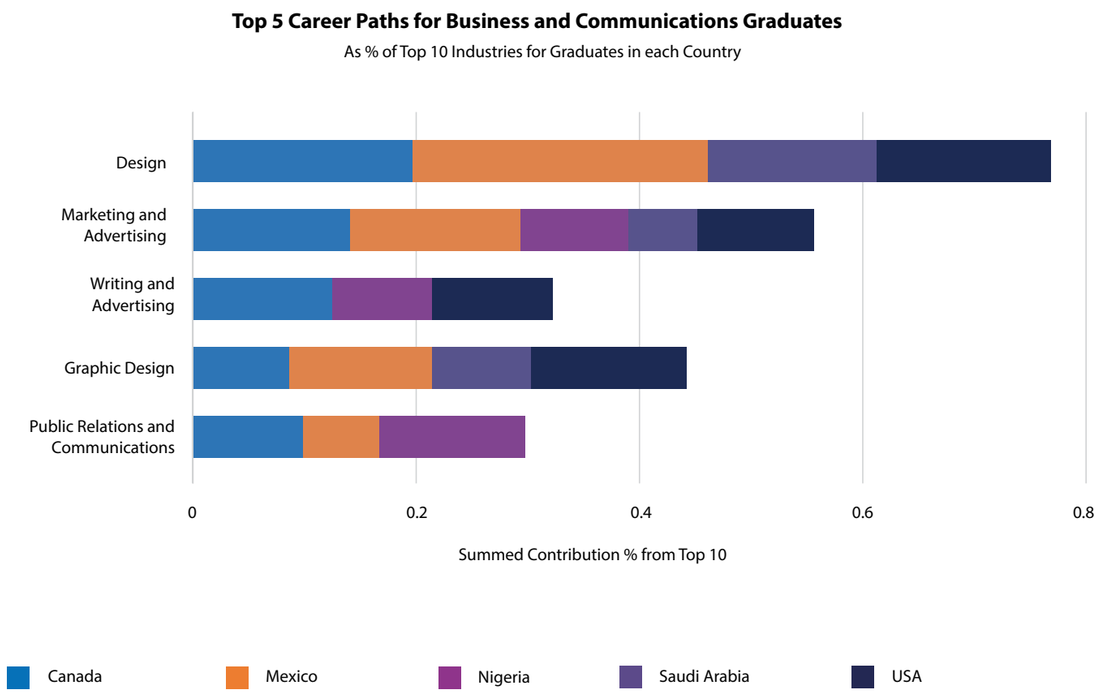
Social Science

Similar to Business and Communications, career paths for Social Science graduates have a higher degree of spread, varying from analytical roles in Financial Services as the most common industry across countries to human care work in Hospital and Health Care, Higher Education, and Human Resource roles. While Business and Communications shares some overlap with the Social Sciences, Social Science graduates are more likely to enter into human care roles, whereas Business and Communications graduates have more exposure to roles in IT services.



Culture, Language, and Fine Arts

Career paths in Design and Graphic Design seem to be most common for graduates in Culture, Language, and Fine Arts, with the exception of Nigeria where careers in Broadcast Media and Public Relations are more common. Culture, Language, and Fine Arts graduates seem to be most skilled at the communication of ideas relative to other disciplines.



Common Themes & Conclusion

Throughout our analysis, we found both expected and surprising commonalities throughout educational, career, and skills pathways taken by youths between countries. These are highlighted below.

Growing Level of Education Attainment and Rise of "Other" Credentials

Across our group of countries, it's no longer common to have just one post-secondary credential, but multiple. And this trend is not isolated to the most developed economies but appears across youth populations and most notably in Mexico, with up to 50% of the youth population having at least two credentials. Alongside this trend, we observe a rise in "Other" credentials in the form of certificates and professional certifications. We expect this trend to continue as the education and employment landscape continues to become more competitive and youths continue to upskill over their career path.

Transferable Skills Provided in Humanities and Business Education

One key insight we observed across countries is that graduates with a Humanities (Culture, Language, and Fine Arts and Social Science) and Business background demonstrate a high degree of "transferable skills" that apply to roles across industries. While these broader fields of study have a lower proportion of graduates entering one specific industry, these graduates cover a wide range of sectors with both positive growth prospects and salary outcomes. Skills often cited by these graduates include cross-cutting human skills like Management, Public Speaking, Teamwork, and Strategic Planning that will likely apply to the jobs of tomorrow no matter what form they might take. This view lies in stark contrast to the view that believes unless you have some form of technical expertise, your destiny is to be employed as a Barista for life.

Youth Underemployment Common in Competitive Labour Markets

While we definitely observe a positive story for graduates with an education in Humanities and Business, in more competitive labour markets we simultaneously observe signs of youth underemployment in the early stages of career development. Most notably, in both the U.S. and Canada, the most common fourth, fifth, and sixth jobs in a youth's employment pathway stagnate at lower skilled personal service jobs like Customer Service Representative and Sales Associate making them largely overqualified at this point in their career.

Entry-Level Work May Be More Susceptible to Disruptive Trends

Similarly, we also observe a key pattern across countries where most entry-level positions for youths tend to be highly susceptible to automation, the gig economy, and short term or temporary employment patterns. Trends in technology such as the emergence and integration of AI in both common routine and non-routine work tasks, as well as robotics and sophisticated software in entry-level jobs, are disrupting the kinds of early work experience that youths may traditionally have access to. Work models such as the gig economy and freelance work are further breaking up traditional jobs into tasks that can be outsourced digitally. Cashiers and Customer Service Representatives are susceptible to automated forms due to digital checkout stations and ecommerce, and occupations in Office, Administrative, and Research Assistance are now commonly outsourced to freelancers online. Further, a growing share of temporary or short-term contract jobs in labour markets worldwide mean that youths may need to change jobs more often than previous generations.

Computer Software and IT a Growing and Accessible Industry for Youths

In contrast, we see Software Engineering and Development as a promising and rather accessible career path youths are able to access from STEM backgrounds early into their career. It is consistently listed across most countries in the top ten jobs by the fourth job along youth pathways, demonstrating both high demand and decent salary range.

Business Education is the Top Field of Study after First Credential Attained

While countries vary by most common Major Area of Study for youths during their first degree, Business and Communications remains as a top choice for those who continue to attain post-secondary credentials throughout their career journey. This is especially evident in the career pathways of most technical and specialized professionals across industries as they move into higher-level managerial roles like Project Management. Youths that bridge the technical with the non-technical earlier are likely to outperform their peers that choose to focus solely on technical skills.

Top Employers Serve as Key Access Points for Continuous Youth-Skilling

While highlighting top employers in this report composed only a small contribution to the analysis, we believe that these employers serve a critical purpose in supporting youths as they bridge the gap from education to employment. While many of these large employers likely experience high volumes and turnover rates of youth employees, they should see themselves as key investors in youth pathways, particularly in soft and human skills that are best developed outside the classroom. Governments and policy makers should also consider these employers as critical stakeholders in the employment services landscape.

Concluding Notes: The Future of Youth Portraits

Highlighted below, we've distilled the data and insights outlined in this report into key take-away notes for youths, employers, and educators. These takeaways are directed towards building a more positive future for youths globally and founded on the core belief that to build this future we must look at the lifelong skilling process as a collaborative venture. We believe this requires an ecosystem of stakeholders (and beyond those players listed below) to upgrade their approach to career pathways as one founded on a core nexus of skills, rather than formal education or work experience alone.

For Youths: Paint your Own Portrait

01

Market yourself with specific skills you can speak to

One thing we continuously observe across youth profiles is both a brevity and general lack of detail when it comes to skills signaling. As employers shift to a more specific skills-centric approach to hiring and talent sourcing, it will become even more vital to market yourself based on your skills, rather than just your education or work experiences alone. Being able to communicate and demonstrate the skills developed through a diversity of learning and work experiences will become vital in carving out a career path youths create and the picture they paint for their future.

02

Own your skilling path, not just your career path

Additionally, we believe that the most successful youths will be those that own their skills journey beyond the degree or diploma. Those that can develop themselves at the intersection of both technical and non-technical skills will have the best career prospects in the human + machine age of work.

For Employers: Embrace a Different Canvas

01

Diversify recruitment strategies beyond specific degree areas and sets of work experiences

While targeting role-specific hiring to specific degree programs may seem strategic, in the realities of the fast-changing world of work, this is likely to do more harm than good. By broadening reach into fields like Social Science for roles that don't require advanced specialized expertise, you may find highly adaptable and transferable skill sets in less competitive environments. When paired with a skills-specific hiring strategy, your talent is likely to be more diverse and more agile for the future of work.

02

Start mapping your digital transformation to a workforce transformation

Over 90% of organizations have a digital strategy, but over half of organizations surveyed agreed that the digital talent gap is hampering their digital transformation programs. A successful digital transformation in the organization can only be realized by upgrading workforce strategies alongside it. This includes asking tough questions like what your onboarding process for youths or entry-level workers might look like if some of those key occupations become automated or outsourced. It also includes asking what kinds of skill shifts your organization might need to go through in how it hires, transitions, and continues to develop its workers. By understanding the skills you have today and mapping where you need to be tomorrow, your organization can proactively plan for and enable robust internal career pathways that invest in the future youths are seeking to create for themselves.

For Educators: Go Beyond Black and White

01

Help provide the critical soft and business skills all roles will need

The youth of today are under more pressure than ever to be digitally and technically skilled to the extent that many view technology skills as the end all be all in positioning themselves for success. What we observe in the data across all countries is that many graduates from technical fields wait until the fifth or sixth job to really focus on core business and communications skills. While these may still be necessary in certain managerial roles, we believe educators serve a vital role in communicating the vital importance of strategic and tactical communications, business operations, and management. Teachers, career advisors, and employment service providers are important players in making students more aware of these skills and can help them be intentional about preparing to enter the workforce. This is especially important in more competitive labour markets where youths may already be underemployed.

02

Rethink the delivery of alumni offerings and "continuing studies" programs

While many higher education institutions are already expanding the educational offerings available to alumni through continuing education classes (certificates, second bachelors, graduate-level, etc.), we believe that there is further room to innovate on the delivery of those offerings. We think higher education institutions have tremendous potential to further extend and personalize to the needs of alumni at various stages of their career journey, beginning with opening up courses and designing more modular offerings that address common skills gap in local labour markets.

23 Capgemini, "The Digital Talent Gap--Are Companies Doing Enough?", October 2017, https://www.capgemini.com/news/capgemini-and-linkedin-release-new-report-on-the-digital-talent-gap-employees-are-investing-their-own-resources-to-remain-competitive/?utm_campaign=elearningindustry.com&utm_source=%2Fupskilling-employees-digital-transformation-retain-engage-workforce&utm_medium=link.

Acknowledgements

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Othman Almoamar
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Othman is the Chair of the Youth 20 engagement group in 2020 and a Research Lead at the Misk Foundation where he leads multiple research initiatives that aim not only to understand the challenges faced by young people, but also young people can take the lead in solving them. He leads the development of the Global Youth Index that tracks youth development in 25 countries and a Global Future Skills initiative that aims to uncover future learning journeys for youth in six cities globally. Othman manages the content creation of various white papers relevant to youth affairs. He holds his Bachelor's degree in Finance from Penn State University, and a Master's degree from Duke University.

FutureFit Ai