



**Coursera Global Skills analysis - Data Processing,
Visualization and Consulting using Tableau**

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Problem Statement

Coursera is an online learning platform providing a plethora of courses in various verticals. The courses are created by prestigious universities and corporates in a video lecture and peer review assignments format. In this business problem the company aims to look at the skills in demand, the courses the company must work on and the regions where consumers are taking the courses. Analysts need to identify distribution patterns of their product (online courses) to meet the demand in several regions.

Objectives

- To analyse in which region/continent/country is the demand for courses in Business, Technology and Data Science Skills the most
- To identify countries with high GDP spending and tap into female learners
- To identify the core skills with maximum demand under three major segments of courses across the continents

Data Source and Summary

Data has been sourced from [Coursera Global Skills 2021 | Kaggle](#) , curated from Coursera's Global Skills Report 2021

Data Consists continent wise ranking and skills demanded in the segments of Business, Technology and Data Science. The ranking is based on percentile measures with

Cutting Edge: 76th percentile or above

Competitive: 51st-75th percentile

Emerging: 26th-50th percentile

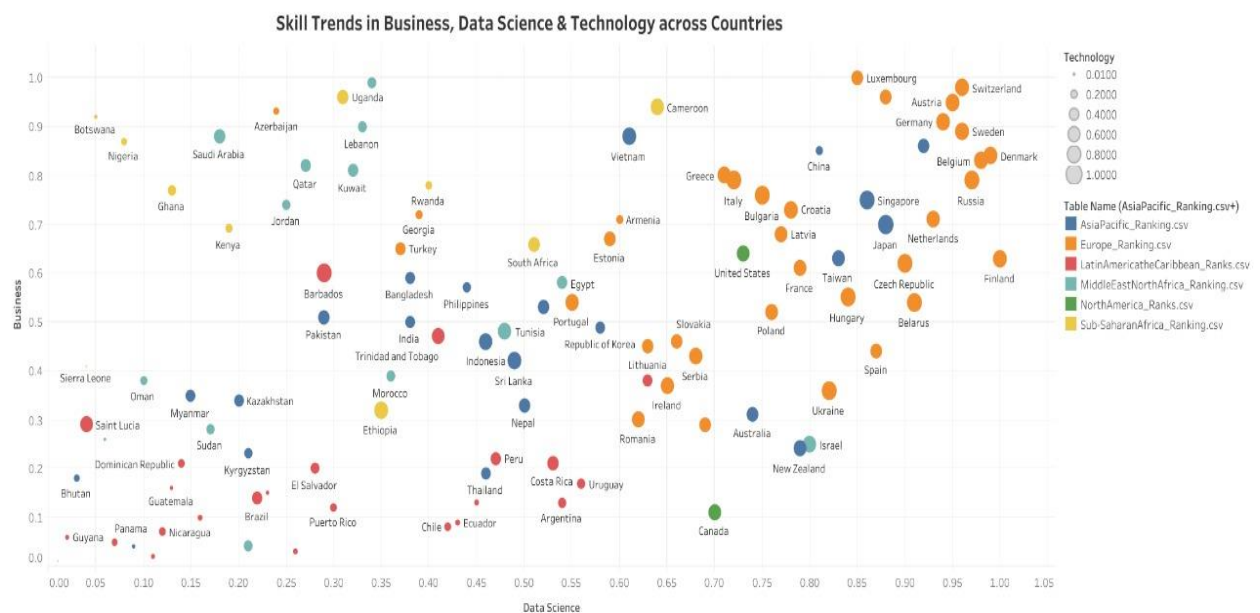
Lagging: 25th percentile or below

The measures involve

- GDP dedicated to education
- Internet Penetration
- Female Learners
- Number of people learning on mobile
- Total number of Coursera learners
- Median age
- Domain and core skills
- Overall ranking of the course across countries
- Ranking in each vertical (Business, Technology and Data Science)

Results and Findings

Skill Trends in Business, Data Science and Technology across Countries



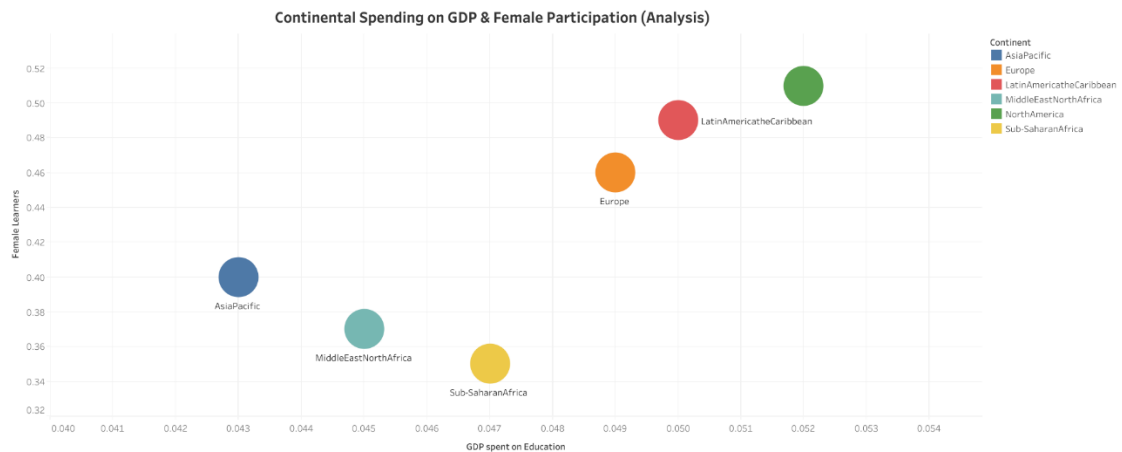
- This graph shows the spread of 108 countries according to the proficiency levels across three verticals (Business, Data Science and Technology). For example, Switzerland which lies at the topmost right corner of the graph has 98% proficiency in business, 96% in Data Science and 84% in Technology.
- Again, Somalia lies at the bottom left corner with 1% proficiency in each of Business, Data Science and Technology
- This graph helps Coursera understand the proficiency levels and demand for trending skills for countries across the world. Most of the countries in the top left section with greater proficiencies belong to Europe while those from Latin America and some from Asia lie in the lower left region. This shows the potential for Coursera to invest in such skills from universities and institutions to cater towards the needs of people according to their countries; for increasing their revenue
- One exception that can be noticed in the above graph is the place of Cameroon which even belonging to Sub Saharan Africa has attracted attention to future Business and Data Science skills for improving their economy. This shows a potential for Coursera

to open Africa specific centres to cater to the needs of the African people and continue to increase their revenue base and learner count

Internet Penetration and Learner Count *(The associated graph is present in the Tableau file)*

- This graph shows us the user base of Coursera across different continents and the associated accessibility to internet percentages in each of the six continental regions presented in the graph. For example, 83% of the population in Europe has access to internet contributing to 14.2 mn learners of Coursera in Europe
- On the other hand, only 28% of the people have access to stable internet in Sub Saharan Africa which is a big factor in only 2.40 mn users from countries in Sub Saharan Africa
- We can conclude that internet penetration plays a big role in increasing Coursera's opportunities for reaching greater number of people to increase their revenue. The four continental areas of Asia Pacific, Middle East North Africa, Latin America Caribbean, and SubSaharan Africa possess enough potential base of new users as access to internet will hopefully grow in the future. Thus, Coursera should actively devote their resources to understand learner requirements to tap the new user base as and when they become available

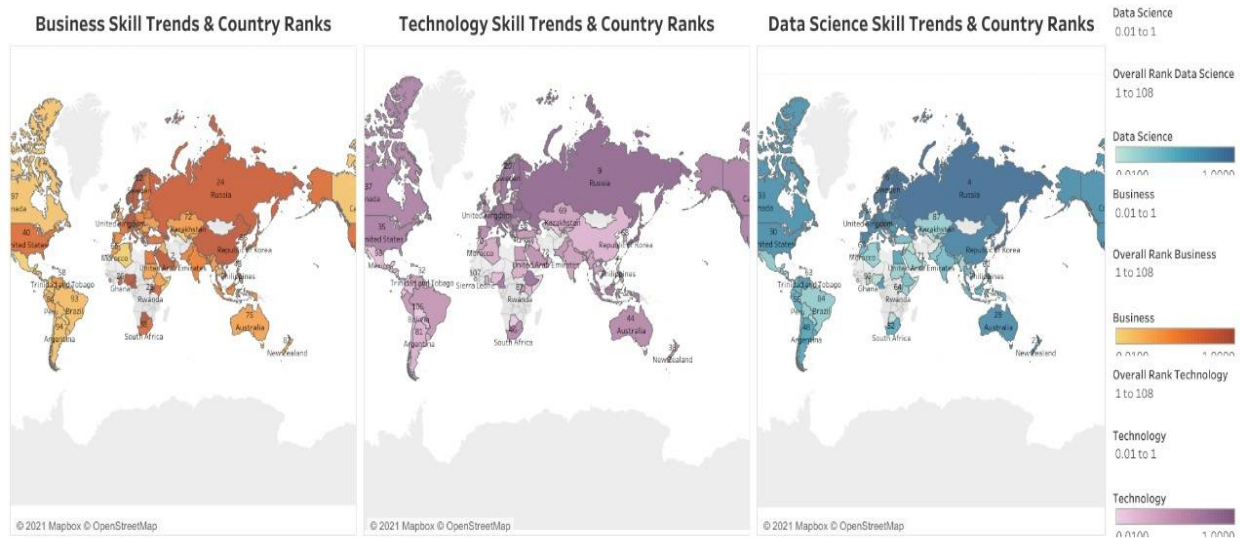
Continental Spending of GDP and Female Participation *(The associated geographical graph is present in the Tableau file)*



- The present graph is an analysis of the relation between percentage of GDP spent on Education and Female Participation on Coursera across the six continental areas presented on a Scatter Plot
- If we look at Europe, Latin America and Caribbean, and North America respectively we will notice that with the increase in GDP percentage on education the percentage of women learners have increased. This shows a positive correlation between percentage of GDP spent on Education and women participation and learning
- Alternatively, Asia Pacific, Middle East North Africa and Sub Saharan Africa show a decreasing percentage of GDP on education spending with lesser number of women learners
- Coursera, as the largest global e-learning platform through its data should encourage governments of different continental areas to increase spending on education, thus, positively contributing to increased participation of women in education. This would increase the potential base of women learners for Coursera contributing to their increased revenue

Skill trends & Country Ranks

Business, Technology & Data Science Skill Ranks across Countries



Data Science

The following courses have been identified as the top 10 trending skills in Data Science for learners across all the 6 continental regions

- Data Analysis
 - Data Management
 - Data Visualisation
 - Machine Learning
 - Mathematics
 - Probability & Statistics
 - Statistical Programming
 - SQL
- We have applied filters for proficiencies ranging from 0.01 i.e. 1% to 1 i.e. 100% for all the countries. Similarly, rankings of countries have also been filtered from 1 to 108 to identify countries with respect to their rankings
 - So for analysis, if we look at top 10 countries in data science all of them are found to belong from Europe. Thus, as Europeans are proficient in Data Science courses there lies a potential for Coursera to invest in courses of Data Science with leading universities for its European learners leading to increased revenue

Business

The following courses have been identified as the top 10 trending skills in Business for learners across all the 6 continental regions

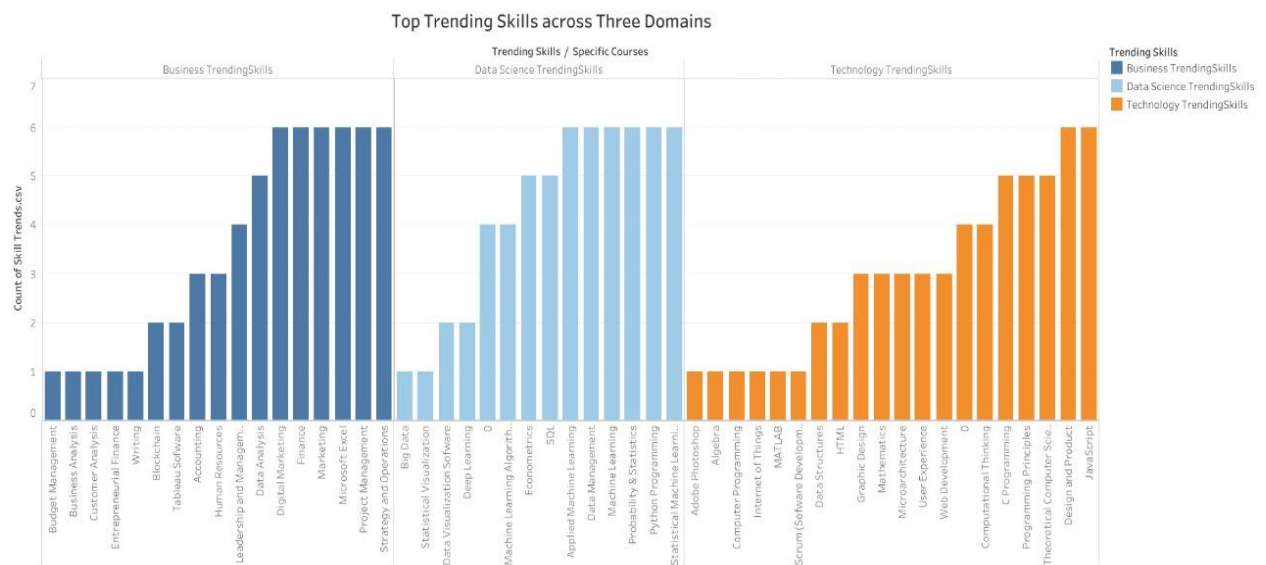
- Strategy and Operations
- Project Management
- Microsoft Excel
- Digital Marketing
- Leadership and Management
- Marketing
- Finance
- Accounting
- Human Resources
- We have applied filters for proficiencies ranging from 0.01 i.e. 1% to 1 i.e. 100% for all the countries. Similarly, rankings of countries have also been filtered from 1 to 108 to identify countries with respect to their rankings
- If we look at the top 10 countries for business skill proficiencies, it presents us with an interesting dynamic. Six countries belong to Europe, three from Sub Saharan Africa, and one from Middle East North Africa which is UAE. The rise of business oriented skills in these countries of the developing world shows a change in dynamic to embrace and adapt change in mode of education in order to lead the domestic economies on business fronts.
- Coursera should identify the potential for introducing courses on soft skills such as Marketing, Leadership, Human Resources, etc which may be attractive to potential learners from the developing world.
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Technology

The following courses have been identified as the top 10 trending skills in Technology for learners across all the 6 continental regions

- Theoretical Computer Science
 - C Programming
 - Programming Principles
 - Design and Product
 - Adobe Photoshop
 - Computational Thinking
 - Graphic Design
 - Web Development
 - JavaScript
 - Microarchitecture
-
- We have applied filters for proficiencies ranging from 0.01 i.e. 1% to 1 i.e. 100% for all the countries. Similarly, rankings of countries have also been filtered from 1 to 108 to identify countries with respect to their rankings
 - Japan is the world leader in Technology skills. Japan has long been a leader in industrial automation and robotics and has recently made significant investments in accelerating the commercialization of quantum computing with initiatives like the Quantum Innovation Initiative Consortium. Nevertheless, regional peers like Singapore and Vietnam show up strongly in our rankings and present increased competition
 - Eastern European countries such as Bulgaria, Czech Republic and Belarus also have proficient learners in technology courses. The rise of app development and such decentralized internet skills may be a possible explanation of increase in proficiency in these countries. Thus, Coursera by investing in technology oriented courses for newly developed economies would contribute to a decentralizing internet =, thereby increasing its potential user base and revenue growth

Top trending skills across three domains



The above graph shows the occurrence of top trending skills across the three domains Business, Data Science and Technology. For example, Applied Machine Learning as part of a Data Science course appears six times in the top ten trending skills for all the six continental regions. Thus, we can identify Applied Machine Learning as a course for the future which is in demand globally. Thus, this graph presents Coursera with such trending courses which are future proof and will lead to increased revenue from greater number of learners.

Recommendations

- The seven KPIs presented as part of the visualization assignment provide keen insights for Coursera to increase their user base and thereby revenue and profit.
- The developing countries in Asia Pacific, Latin America and Caribbean and Middle East North Africa provide immense opportunities for Coursera with abundance in population and subsequent increase in Internet accessibility.
- Also, Coursera should open continent specific offices to understand the requirements of local learners and invest in those courses.
- Increase in GDP per cent on education spending will contribute to more women participating in e-learning courses. This allows Coursera to lobby local governments to increase education spending.

- Country proficiencies in trending courses in Business, Data Science and Technology provides Coursera with insights for investments in similar courses for capturing greater market share as far as the respective countries are concerned.
- The identification of future proof trending skills provides Coursera with a head start to lead the future of hybrid learning. Thus, they are recommended to collaborate and partner with leading organizations and institutions to shape future learning globally.