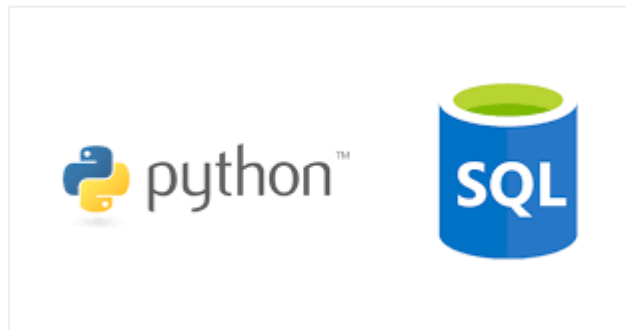


Conclusion

The case study will help students learn more about gender-related statistics and also grasp the basic concepts of the Data Science programming languages - SQL and Python.









The details of the various concepts that the students learned through the case study are given below.

Programming Concepts Learned	
SQL	PYTHON
<ul style="list-style-type: none">• Selecting some columns & rows• Aliasing & Renaming columns• Conditioning Filtering using "WHERE"• Multiple Filtering using And/OR/ BETWEEN• Aggregation functions like Count, Count Distinct, Sum, Maximum, Minimum• Sorting using "ORDER BY"• Grouping using "GROUP BY"• Limiting the number of rows• Creating new columns using existing columns	<ul style="list-style-type: none">• Getting total number of rows and columns from the dataset• Getting specific rows and columns from dataset• Renaming columns• Conditional Filtering• Multiple Conditional Filtering• Finding the range of values from a column using "MIN" & "MAX"• Aggregation & Statistical functions• Grouping using "GROUPBY"• Sorting using "SORT_VALUES"• Reshaping dataset and Pivoting using "PIVOT"

Using these technical concepts, the students will be able to prepare a report on various development indicators through a gender lens. This will enable policymakers to make data-driven policies and prioritize gender development projects.

Report Conclusion

Demographic Indicators	Education Indicators	Health Indicators	Labor Indicators	Financial Indicators	Other Indicators
					
Analyze trends in total and percentage of female population across countries over a period of time	Analyze literacy rate and other education trends across countries through a gender lens	Analyze health indicators like life expectancy, mortality rate, and HIV across scountries over a time period	Analyze the percentage of female employment in agriculture, industry, and services	Analyze financial inclusion through a gender lens with indicators like debit card ownership among adult females	Analyze other indicators like HCI, opportunities available to women to get a job or to open a bank account

Development Indicator Analysis through a gender lens

The case study will help students learn more about gender-related statistics while analyzing raw data through Data Science programming languages - SQL and Python.

Here are the statistics of various development indicators that can be derived through the dataset. These statistics are critical for the organization to advise policy-makers in each country on development programs across different impact verticals.



1. Demographics



- 1.1. The total female population per year increased from 3.5Bn in 2012 to 3.8Bn in 2020
- 1.2. We see that the global female population has increased from 3.5 Bn or 49.57% of the total population in 2012 to 3.8 Bn or 49.58% of the overall population in 2020
- 1.3. Countries with the highest percentage of the female population in 2020 are Nepal, Hong Kong, Latvia, Lithuania, and Ukraine

Recommendation:

The countries with the worst percentage of female population should run programs to prevent female foeticide and adopt ways to promote the birth of a girl child.

2. Education



- 2.1. We see that the countries with the lowest adult female literacy rate in the year 2019 are Pakistan and Togo
- 2.2. Between 2012 and 2019, the adult female literacy rate increased from 54% to 72% in Bangladesh
- 2.3. Switzerland has the least percentage of females out of primary school out of the total children out of primary school. Cameroon ranks the lowest

Recommendation:

Countries with low literacy rates should run programs to bring females at par with males.

Bangladesh has taken good steps to increase the female literacy rate by 18% over a period of 7 years. While there is still a long way to go to achieve 100% female literacy, Bangladesh can share the learnings from its journey so far.

Though Cameroon has improved the percentage of female children out of primary school out of the total children out of primary school from 92% to 76%, there is still a long way to go and the country should take steps to address this.

3. Health



- 3.1. We see that among SAARC countries, Maldives has the highest life expectancy for both females at 81 years and males at 77 yrs, with the lowest being in Afghanistan for both females (67) and males (64)
- 3.2. Pakistan has the worst under-5 mortality rate for both females and males with Maldives being the best for both genders. Afghanistan has the least life expectancy for both females (65) and males (62)
- 3.3. The bottom 5 countries in terms of the prevalence of HIV in females are South Africa, Lesotho, Botswana, Mozambique, and Zambia.

Recommendation:

Afghanistan should look into the reasons for low life expectancy and take steps to improve it. Pakistan must take steps to reduce the under-5 mortality rate by providing better neonatal care facilities. HIV awareness programs should be run in countries with a higher prevalence of HIV among females.

4. Labor



- 4.1. Employment in agriculture for females has reduced from 32% to 27% between 2012 and 2019
- 4.2. Employment in the industry sector for females has also dropped a bit from 16.3% to 15% between 2012 and 2019
- 4.3. Employment in the service sector for females has increased from 51% to 57% between 2012 and 2019

Recommendation:

Overall we see a shift in female employment from Agriculture to the Services sector. This is great progress. Women role models would further encourage female employment in the services sector.

5. Finance



- 5.1. There is an increase in the percentage of adult females, who own a debit card from 36% in 2014 to 43% in 2017 indicating an increase in financial inclusion
- 5.2. The countries with the lowest percentage of females with debit card ownership are South Sudan, Afghanistan, Chad, Sierra Leone, and Liberia

Recommendation:

Debit card ownership is an indicator of financial inclusion. The organization should partner with countries to run financial inclusion and financial awareness programs in the countries that rank lower on this metric. More females should be encouraged to apply to and adopt digital mode of payment, like debit cards.

6. Other Indicators



- 6.1. The Human Capital Index for females in India has improved from 0.45 in 2017 to 0.5 in 2020
- 6.2. The best 5 countries in terms of the Human Capital Index for females are Singapore, Hong Kong, Finland, Korea, and Estonia
- 6.3. The worst 5 countries in terms of the Human Capital Index for females are Chad, Niger, Mali, Liberia, and Angola
- 6.4. The number of countries where a woman cannot get a job the same way as a man has dropped from 23 in 2012 to 17 in 2021
- 6.5. There are still 5 countries where a woman cannot open a bank account the same way as a man. These are Bhutan, Equatorial Guinea, Guinea-Bissau, Kenya, and Suriname.

Recommendation:

There are still some countries where a woman cannot get a job the same way as a man and the countries should take steps to ensure equality for women.

→ ***Congratulations on successfully completing all parts of the case study!
You can now challenge yourself by solving the quiz questions.***