

An Analysis of Career Trajectories: Salary & Experience Across Global Industries

Objective

This project aims to analyse global salary trends and uncover insights across demographics and job attributes using real-world data.

Tools & Technologies Used:

Excel for data cleaning, pivot analysis, and dashboard creation. MySQL for structured data storage and querying.

Dataset overview:

Attributes of the given Salary Survey dataset:

- Age Range: The age group of the individual.
- Industry: The sector or field in which the individual works.
- Job Title: The official title of the individual's position.
- Clarification of Job Title: Additional context or details about the job title.
- Annual Salary: The individual's annual salary or earnings.
- Additional Monetary Compensation: Extra earnings beyond the base salary (e.g., bonuses, commissions).
- Currency: The currency in which the salary and compensation are reported.
- Other Currency: A custom currency if it doesn't match the standard options.
- Income Clarification: Additional context regarding the income structure (e.g., commission-based).
- Country: The country where the individual works.
- State: The state or province where the individual works (if applicable).
- City: The city where the individual works.
- Years of Professional Experience Overall: The total number of years the individual has worked professionally.

- Years of Professional Experience in Field
- Highest Level of Education Completed: The highest degree or educational level attained by the individual.
- Gender: The gender identity of the individual.

Age Range	Industry	Job Title	Clarification of Job title	Annual Salary	Additional Monetary Compensation	Currency	Other Currency	Income Clarification	Country
25-34	Education (Higher Education)	Research and Instruction Librarian		55,000	0	USD			United States
25-34	Computing or Tech	Change & Internal Communications Manager		54,600	4000	GBP			United Kingdom
25-34	Accounting, Banking & Finance	Marketing Specialist		34,000		USD			US
25-34	Nonprofits	Program Manager		62,000	3000	USD			USA
25-34	Accounting, Banking & Finance	Accounting Manager		60,000	7000	USD			US
25-34	Education (Higher Education)	Scholarly Publishing Librarian		62,000		USD			USA
25-34	Publishing	Publishing Assistant		33,000	2000	USD			USA
25-34	Education (Primary/Secondary)	Librarian	High school, FT	50,000		USD			United States
45-54	Computing or Tech	Systems Analyst	Data developer/ETL Developer	1,12,000	10000	USD			US
35-44	Accounting, Banking & Finance	Senior Accountant		45,000	0	USD		I work for a Charter School	United States
25-34	Nonprofits	Office Manager		47,500	0	USD			United States
35-44	Education (Higher Education)	Deputy Title IX Coordinator/ Assistant Director Office of Equity and Diversity		62,000	0	USD			USA
35-44	Accounting, Banking & Finance	Manager of Information Services		1,00,000	0	USD			United States
25-34	Law	Legal Aid Staff Attorney	non-profit law firm	52,000	0	USD			United States
18-24	Health care	Patient care coordinator		32,000		CAD			Canada
35-44	Utilities & Telecommunications	Quality And Compliance Specialist		24,000	500	GBP			United Kingdom
35-44	Business or Consulting	Executive Assistant		85,000	5000	USD			USA
45-54	Art & Design	graphic designer		59,000		USD			usa
35-44	Business or Consulting	Senior Manager		98,000	1000	USD			USA
25-44	Education (Higher Education)	Assistant Director of Academic Advising		54,000		USD			United States

Data Cleaning Process:

Removed Rows

Missing values in the following 4 critical columns were not tolerated — such rows were entirely removed:

Years of Professional Experience Overall Years of Professional Experience in Field Highest Level of Education Completed Gender

Imputed Remaining Columns

Categorical columns → filled with "Unknown"

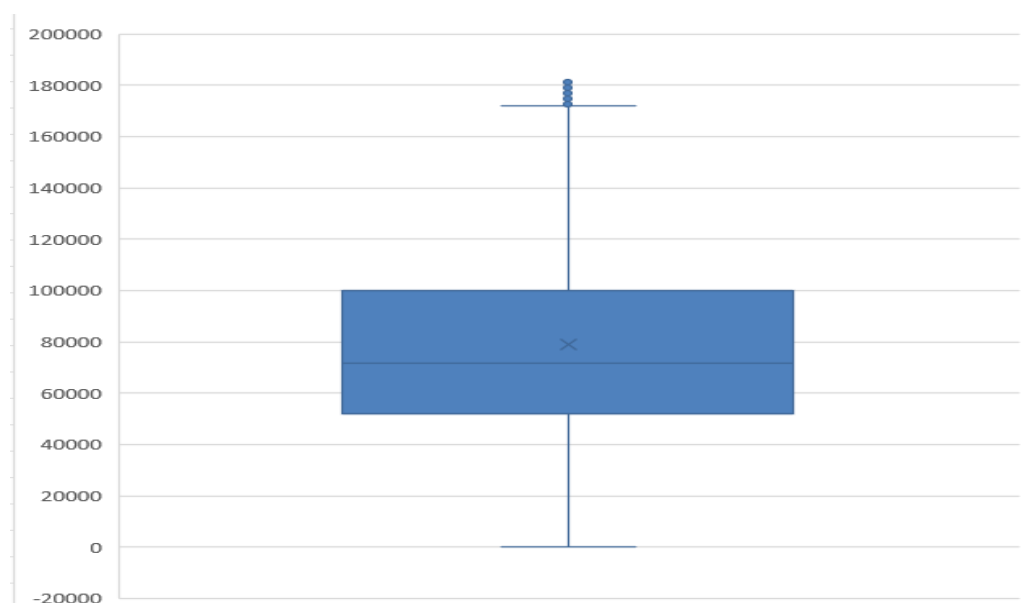
Numerical columns → filled with 0

	No.of Blank space
Age Range	0
Industry	75
Job Title	0
Clarification of Job title	20826
Annual Salary	0
Additional Monetary Compensation	7312
Currency	0
Other Currency	27883
Income Clarification	25045
Country	0
State	5033
City	0
Years of Professional Experience Overall	0
Years of Professional Experience in Field	0
Highest Level of Education Completed	223
Gender	171
Total	86568

Outlier Detection:

outlier data is a datapoint that differ from rest of datapoint.

There are outlier value occurs in salary column.



Q1	52000
Q3	100000
IQR	48000
High	172000
Low	-20000

Sql Queries Performed:

1. Average Salary by Industry and Gender:

```
-- 1. Average Salary by Industry and Gender
select Industry_Category,Gender,ROUND(AVG(Annual_salary), 2) as Average_Salary
from servey_4
where
    salary_in_usd is not null
    and Gender is not null
    and Industry_Category is not null
group by Industry_Category,Gender;
```

2. Total Salary Compensation by Job Title

```
-- 2. Total Salary Compensation by Job Title
select Job_Title,sum(Annual_Salary+Additional_Monetary_Compensation) as total_salary_compensation
from servey_4
where
    Job_Title is not null
    and Salary_in_USD is not null
    and Additional_Monetary_Compensation is not null
group by Job_Title
order by total_salary_compensation desc;
```

3. Salary Distribution by Education Level

```
-- 3. Salary Distribution by Education Level
-- average salary
select Highest_Level_of_Education_Completed, avg(Salary_in_USD) as average_salary_USD
from servey_4
where
    Highest_Level_of_Education_Completed is not null
    and Salary_in_USD is not null
group by Highest_Level_of_Education_Completed
order by average_salary_USD desc;

-- minimum salary
select Highest_Level_of_Education_Completed, min(Salary_in_USD) as min_salary_USD
from servey_4
where
    Highest_Level_of_Education_Completed is not null
    and Salary_in_USD is not null
group by Highest_Level_of_Education_Completed
order by min_salary_USD desc;
```

4. Number of Employees by Industry and Years of Experience

```
-- 4. Number of Employees by Industry and Years of Experience
select Industry,Years_of_Professional_Experience_Overall as Exprience,count(Job_Title) as Number_o
from servey_4
where
    Industry is not null
    and Years_of_Professional_Experience_Overall is not null
    and Job_Title is not null
group by Industry,Years_of_Professional_Experience_Overall
order by Number_of_Employees desc;
```

5. Median Salary by Age Range and Gender

```
-- 5. Median Salary by Age Range and Gender
select Age_Range,Gender,(max(Salary_in_USD)+min(Salary_in_USD))/2 as salary_USD
from servey_4
where
    Age_Range is not null
    and Gender is not null
    and Salary_in_USD is not null
group by Age_Range,Gender
order by salary_USD desc;
```

6. Job Titles with the Highest Salary in Each Country

```
-- 6. Job Titles with the Highest Salary in Each Country
select Country,max(Salary_in_USD) as max_salary_USD
from servey_4
where
    Country is not null
    and Salary_in_USD is not null
group by Country
order by max_salary_usd desc;
```

7. Average Salary by City and Industry

```
-- 7. Average Salary by City and Industry
select Industry_Category,City,avg(Salary_in_USD) as average_salary_USD
from survey_4
where
    Industry_Category is not null
    and Salary_in_USD is not null
    and city is not null
group by Industry_Category,City
order by average_salary_USD desc;
```

8. Percentage of Employees with Additional Monetary Compensation by Gender.

```
-- 8. Percentage of Employees with Additional Monetary Compensation by Gender
select Gender,
    ((COUNT(CASE WHEN Additional_Monetary_Compensation IS NOT NULL
        AND Additional_Monetary_Compensation != 0
        THEN 1 END) * 100.0) / COUNT(*)) AS Percentage_With_Compensation
from
    survey_4
group by Gender;

-- 9.Total Compensation by Job Title and Years of Experience
select Years_of_Professional_Experience_Overall,Job_Title,sum(Annual_Salary+Additional_Monetary_Co
from survey_4
where
    Years_of_Professional_Experience_Overall is not null
    and Job_Title is not null
    and Annual_Salary is not null
    and Additional_Monetary_Compensation is not null
group by Years_of_Professional_Experience_Overall,Job_Title
order by total_compan desc;
```

9. Total Compensation by Job Title and Years of Experience

```
-- 9.Total Compensation by Job Title and Years of Experience
select Years_of_Professional_Experience_Overall,Job_Title,sum(Annual_Salary+Additional_Monetary_Co
from survey_4
where
    Years_of_Professional_Experience_Overall is not null
    and Job_Title is not null
    and Annual_Salary is not null
    and Additional_Monetary_Compensation is not null
group by Years_of_Professional_Experience_Overall,Job_Title
order by total_compan desc;
```

10. Average Salary by Industry, Gender, and Education Level

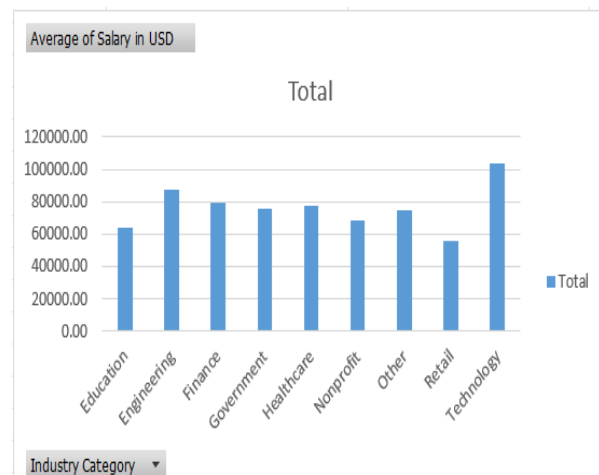
```
-- 10. Average Salary by Industry, Gender, and Education Level
select Industry, Gender, Highest_Level_of_Education_Completed, avg(Salary_in_USD) as average_salary_U
from servey_4
where
    Industry is not null
    and Gender is not null
    and Highest_Level_of_Education_Completed is not null
    and Salary_in_USD is not null
group by Industry, Gender, Highest_Level_of_Education_Completed
order by average_salary_USD desc;
```

Pivot Tables & Charts:

Created pivot tables to summarize and compare salaries, experience, education, and gender across industries and countries.

Developed interactive charts from these pivots to highlight key patterns and support dashboard visualizations.

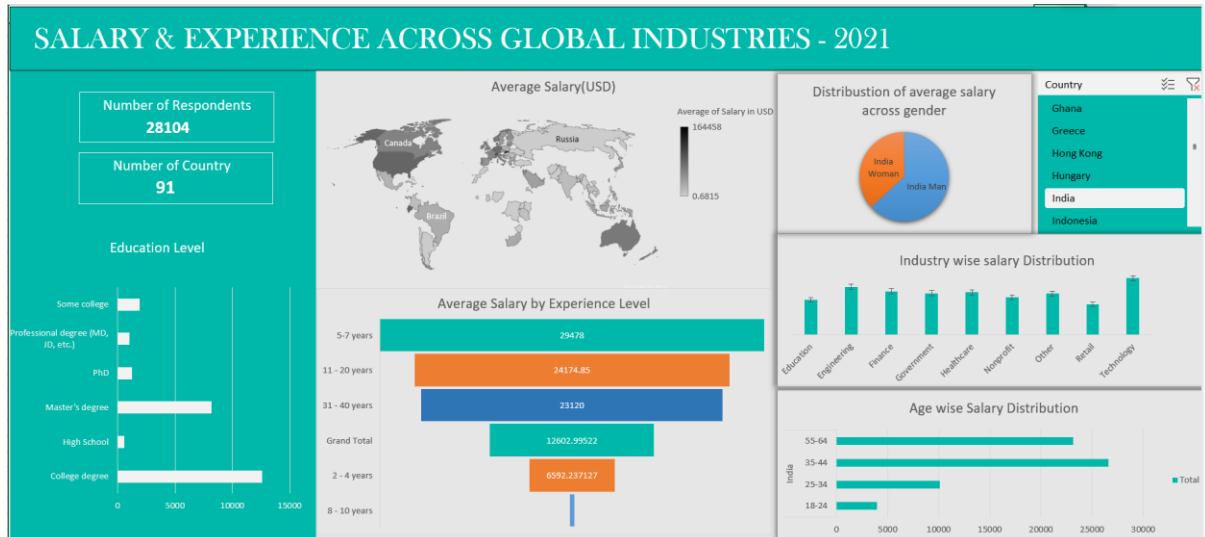
Industry Category	Average of Salary in USD
Education	63745.90
Engineering	87836.98
Finance	79628.47
Government	76141.88
Healthcare	77853.38
Nonprofit	68456.89
Other	75063.89
Retail	55540.80
Technology	103482.34
Grand Total	78740.86



Dashboard:

Integrated multiple pivot tables and charts into a single interactive dashboard for quick insights.

Enabled dynamic filtering by industry, gender, country, and experience for deeper analysis.



Key Insights:

- The survey covers 28,104 respondents from 91 countries, providing a global perspective on salary trends.
- The majority of respondents hold a college degree, followed by a master's degree, suggesting higher education is common among the surveyed workforce.
- Professionals with 5–7 years of experience have the highest reported average salary (\$29,478 USD), indicating strong earning potential at mid-career stages.
- The Technology sector reports the highest industry-wise average salaries, outpacing fields like Education, Government, and Retail.
- The 2–4 years of experience earn just \$6,592 USD on average, underscoring the initial struggle for higher pay early in careers.

Recommendation:

Low salaries for professionals with 2–4 years of experience can lead to early job exit.

Provide competitive starting packages and rapid skill development to quickly bridge the gap

As the tech sector commands higher salaries, encourage cross-training and skill upgrades to help employees in lower-paying sectors transition to tech-related jobs.

Since most high earners hold college or master's degrees, invest in tuition reimbursement or scholarship programs to encourage higher education among employees.

Conclusion:

- Analysis is based on self-reported survey data, capturing salary trends across industries, experience levels, education, and locations.
- Experience strongly impacts salary, with rapid early growth, then leveling off in later years.
- Higher education levels correspond to higher reported salaries.

Results reflect survey participants and may not fully represent the entire job market.