

SALARY SURVEY ANALYSIS

MILESTONE-2

INTRODUCTION

- Analyzes a global dataset to explore career and salary trends
- Focuses on multiple industries and professional roles
- Examines key factors influencing compensation (e.g., age, job title, education)
- Provides insights into how experience and geography impact salaries

DATASET OVERVIEW

The data set contains 28K rows and 8 columns. The following is the description of each column:

1. **Age Range:** The age group of the individual.
2. **Industry:** The sector in which the individual works.
3. **Job Title:** The official position held by the individual.
4. **Clarification of Job Title:** Additional details about the job title.
5. **Annual Salary:** The individual's annual salary or earnings.
6. **Additional Monetary Compensation:** Extra earnings beyond the base salary (e.g., bonuses, commissions).
7. **Currency:** The currency in which salary and compensation are reported.
8. **Income Clarification:** Additional context regarding the income structure (e.g., commission-based).
9. **Country:** The country where the individual works.
10. **State:** The state or province of employment (if applicable).
11. **City:** The city where the individual works.
12. **Years of Professional Experience Overall:** The total number of years the individual has worked professionally.
13. **Years of Professional Experience in Field:** The number of years the individual has worked in their specific field.
14. **Highest Level of Education Completed:** The highest degree or educational level attained.
15. **Gender:** The gender identity of the individual.

DATA CLEANING AND PREPROCESSING

- Addressed Missing Entries**

- Numerical gaps were filled using average values or dropped if unsuitable.*
- Categorical blanks were substituted with “N/A” or categorized as “Others”.*

- Aligned Data Formats**

- Verified and corrected data types across all fields for consistency.*

- Simplified Column Names**

- Standardized lengthy or unclear column headers (e.g., “Years of Professional Experience Overall” → “Overall Experience”).*

- Exported for Use**

- Final version of the cleaned dataset was saved as a CSV for future analysis steps.*

CLEANED DATASET

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Age Range	Industry	Job Title	Clarification of	Annual Salary	Additional Monetary	Currency	Income Clarification	Country	State	City	Overall Experience	Professional Experience	Highest Graduation	Gender
2	25-34	Education (Higher	Research and Ir	N/A	55,000	0	USD	N/A	USA	Massachusetts	Boston	5-7 years	5-7 years	Master's degree	Woman
3	25-34	Computing or Tech	Change & Intern	N/A	54,600	4000	GBP	N/A	UK	Others	Cambridge	8 - 10 years	5-7 years	College degree	Non-binary
4	25-34	Accounting, Banki	Marketing Speci	N/A	34,000	0	USD	N/A	USA	Tennessee	Chattanooga	2 - 4 years	2 - 4 years	College degree	Woman
5	25-34	Nonprofits	Program Manag	N/A	62,000	3000	USD	N/A	USA	Wisconsin	Milwaukee	8 - 10 years	5-7 years	College degree	Woman
6	25-34	Accounting, Banki	Accounting Mar	N/A	60,000	7000	USD	N/A	USA	South Carolina	Greenville	8 - 10 years	5-7 years	College degree	Woman
7	25-34	Education (Higher	Scholarly Publis	N/A	62,000	0	USD	N/A	USA	New Hampshir	Hanover	8 - 10 years	2 - 4 years	Master's degree	Man
8	25-34	Publishing	Publishing Assi	N/A	33,000	2000	USD	N/A	USA	South Carolina	Columbia	2 - 4 years	2 - 4 years	College degree	Woman
9	25-34	Education (Primar	Librarian	High school, FT	50,000	0	USD	N/A	USA	Arizona	Yuma	5-7 years	5-7 years	Master's degree	Man
10	45-54	Computing or Tech	Systems Analyst	Data developer/I	112,000	10000	USD	N/A	USA	Missouri	St. Louis	21 - 30 years	21 - 30 years	College degree	Woman
11	35-44	Accounting, Banki	Senior Account	N/A	45,000	0	USD	I work for a Charter	USA	Florida	Palm Coast	21 - 30 years	21 - 30 years	College degree	Woman
12	25-34	Nonprofits	Office Manager	N/A	47,500	0	USD	N/A	USA	Others	Boston, MA	5-7 years	5-7 years	College degree	Woman
13	35-44	Education (Higher	Deputy Title IX C	N/A	62,000	0	USD	N/A	USA	Pennsylvania	Scranton	11 - 20 years	5-7 years	PhD	Woman
14	35-44	Accounting, Banki	Manager of Info	N/A	100,000	0	USD	N/A	USA	Michigan	Detroit	11 - 20 years	11 - 20 years	College degree	Man
15	25-34	Law	Legal Aid Staff A	A non-profit law fi	52,000	0	USD	N/A	USA	Minnesota	Saint Paul	2 - 4 years	2 - 4 years	N/A	Woman
16	18-24	Health care	Patient care coc	N/A	32,000	0	CAD	N/A	Canada	Others	Remote	1 year or less	1 year or less	College degree	Woman
17	35-44	Utilities & Telecom	Quality And Con	N/A	24,000	500	GBP	N/A	UK	Others	Lincoln	11 - 20 years	5-7 years	College degree	Man
18	35-44	Business or Consu	Executive Assist	N/A	85,000	5000	USD	N/A	USA	Illinois	Chicago	8 - 10 years	8 - 10 years	Some college	Woman
19	45-54	Art & Design	graphic design	N/A	59,000	0	USD	N/A	USA	California	Pomona	21 - 30 years	21 - 30 years	College degree	Woman
20	35-44	Business or Consu	Senior Manager	N/A	98,000	1000	USD	N/A	USA	Georgia	Atlanta	11 - 20 years	2 - 4 years	Master's degree	Woman
21	35-44	Education (Higher	Assistant Direct	N/A	54,000	0	USD	N/A	USA	Florida	Boca Raton	11 - 20 years	11 - 20 years	Master's degree	Woman
22	25-34	Health care	Data Programm	N/A	74,000	0	USD	N/A	USA	Pennsylvania	Philadelphia	5-7 years	5-7 years	Master's degree	Woman
23	35-44	Nonprofits	Program Coordi	N/A	50,000	0	USD	N/A	USA	Others	Atlanta	5-7 years	2 - 4 years	PhD	Woman
24	35-44	Nonprofits	Event Planner	N/A	63,000	0	CAD	N/A	Canada	Others	Toronto	11 - 20 years	8 - 10 years	Master's degree	Woman
25	35-44	Government and P	Researcher	N/A	96,000	1000	USD	N/A	USA	Ohio	Dayton	8 - 10 years	2 - 4 years	PhD	Woman
26	25-34	Public Library	Teen Librarian	N/A	44,500	0	USD	N/A	USA	Florida	Bradenton	5-7 years	2 - 4 years	N/A	Woman
27	35-44	Education (Higher	Communication	N/A	60,000	0	USD	N/A	USA	Michigan	Ann Arbor	11 - 20 years	1 year or less	Master's degree	Woman
28	25-34	Nonprofits	Program Directc	I manage staff m	62,000	0	USD	N/A	USA	District of Colum	Washington D	5-7 years	2 - 4 years	College degree	Man
29	35-44	Law	Bookkeeper/Bill	N/A	48,000	4000	USD	N/A	USA	Maryland	Silver Spring	11 - 20 years	2 - 4 years	College degree	Woman
30	35-44	Government and P	Economist	N/A	140,000	0	USD	N/A	USA	District of Colum	Washington	11 - 20 years	11 - 20 years	Master's degree	Woman
31	25-34	Engineering or Ma	Research Engin	N/A	80,000	0	USD	N/A	USA	Texas	San Antonio	5-7 years	5-7 years	College degree	Woman
32	25-34	Nonprofits	Volunteer and G	N/A	39,000	0	USD	N/A	USA	Minnesota	Minneapolis	2 - 4 years	2 - 4 years	College degree	Woman
33	35-44	Media & Digital	Editor	N/A	125,000	0	USD	N/A	USA	District of Colum	Washington, D	11 - 20 years	8 - 10 years	Master's degree	Woman

INCORPORATING THE CLEANED DATA INTO MYSQL

- Created the **survey** Database

- *Initiated a new database in MySQL Workbench to organize and manage the cleaned dataset.*

- Built the **salary** Table

- *Structured a table with accurately defined columns and data types to match the dataset schema.*

- Imported Cleaned Data

- *Leveraged the import functionality in MySQL Workbench to load the processed CSV file into the salary table.*

- Performed Analytical Queries

- *Executed various SQL queries to explore patterns, relationships, and key statistics within the data.*

QUERIES

a. Average Salary by Industry and Gender

```
SELECT Industry,Gender,AVG(Annual_Salary) AS Avg_Salary
FROM salary GROUP BY Industry,Gender ORDER BY Industry,Gender;
```

	Industry	Gender	Avg_Salary
▶	Buyer	Woman	76650
	Veterinary medicine	Woman	155000
	"Government Relations"" (Lobbying) "	Woman	65
	Academia	Man	56
	Academia	Woman	16946.666666666668
	Academia	Woman	15
	Academia - STEM	Woman	32000
	Academia / Research	Woman	68
	Academia--cell and molecular biology	Woman	48
	Academic Medicine	Man	55

b. Total Salary Compensation by Job Title

```
SELECT job_title,SUM(Annual_Salary + Additional_Monetary_Compensation) AS total_compensation
FROM salary GROUP BY Job_Title ORDER BY total_compensation DESC;
```

	job_title	total_compensation
▶	Investment Banking Analyst	6000114100
	Senior IT Consultant	120004114
	Regional Operations & Training Manager	120000870
	Legal editor	43958282
	ESL English Teacher	36000000
	Pharmacist	27239987
	Software engineer	25372825
	Voice Actor	21800000
	Senior Software Engineer	16355545
	Director	10651661

QUERIES

c. Salary Distribution by Education Level

```
SELECT Highest_Graduation,AVG(Annual_Salary) AS avg_salary,MIN(Annual_Salary) AS min_salary,MAX(Annual_Salary) AS max_salary
FROM salary GROUP BY Highest_Graduation ORDER BY avg_salary DESC;
```

	Highest_Graduation	avg_salary	min_salary	max_salary
	Some college	22698.504339440693	0	99000
	PhD	27784.0435699227	0	99000
	High School	28466.104361370715	0	98,000
	Master's degree	31851.143486114248	0	99952
	Professional degre...	47143.398638426625	0	99780
	N/A	86737.77927927928	0	96000

d. Number of Employees by Industry and Years of Experience

```
SELECT Industry,Overall_Experience,COUNT(*) AS employee_count
FROM salary
GROUP BY Industry, Overall_Experience ORDER BY Industry, Overall_Experience;
```

	Industry	Overall_Experience	employee_count
►	Buyer	11 - 20 years	1
	Veterinary medicine	31 - 40 years	1
	"Government Relations"" (Lobbying) "	5-7 years	1
	Academia	1 year or less	1
	Academia	2 - 4 years	2
	Academia	8 - 10 years	1
	Academia	8 - 10 years	1
	Academia - STEM	2 - 4 years	1
	Academia / Research	11 - 20 years	1

QUERIES

f. Job Titles with the Highest Salary in Each Country

```
SELECT Job_Title, Country, MAX(Annual_Salary) as Max_salary FROM salary  
GROUP BY Job_Title, Country ORDER BY Job_Title, Country;
```

	Job_Title	Country	Max_salary
▶	Analyst	USA	65,300
	Brand Manager	USA	78750
	Business Systems Analyst	USA	59,000
	CAP team	USA	34,320
	derical	USA	72,800
	Cloud Architect	USA	172,000
	CNA	USA	33280
	Commercial Manager	England	38000
	Content Development Specialist	USA	59000
	Controller	USA	102,000

g. Average Salary by City and Industry

```
SELECT City, Industry, avg(Annual_Salary) as avg_salary  
FROM salary GROUP BY City, Industry ORDER BY avg_salary DESC;
```

	City	Industry	avg_salary
	Tokyo	Engineering or Manufacturing	8000000
	Pinebrook	Sales	5000044
	Hong Kong	Accounting, Banking & Finance	5000000
	Tokyo	Utilities & Telecommunications	4500000
	Osaka	Education (Higher Education)	4160020.5
	tokyo	Education (Primary/Secondary)	4000000
	Tokyo	Media & Digital	3120000
	Newyork	Computing or Tech	2600000
	Bengaluru	Insurance	2000000
	Milwaukee	Social networks	2000000

QUERIES

i. Total Compensation by Job Title and Years of Experience

```
SELECT Job_Title,Overall_Experience,SUM(Annual_Salary + Additional_Monetary_Compensation)
AS total_compensation
FROM salary GROUP BY Job_Title,Overall_Experience ORDER BY Job_Title,Overall_Experience;
```

Job_Title	Overall_Experience	total_compensation
Analyst	8 - 10 years	2565
Brand Manager	5-7 years	86625
Business Systems Analyst	11 - 20 years	59
CAP team	8 - 10 years	2234
clerical	21 - 30 years	72
Cloud Architect	21 - 30 years	10172
CNA	5-7 years	33280
Commercial Manager	5-7 years	38000
Content Development Specialist	2 - 4 years	63500
Controller	8 - 10 years	10102

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

```
SELECT Industry,Gender,Highest_Graduation,avg(Annual_Salary) as avg_salary
from salary GROUP BY Industry,Gender,Highest_Graduation
ORDER BY Industry,Gender,Highest_Graduation;
```

Industry	Gender	Highest_Graduation	avg_salary
Buyer	Woman	Some college	76650
Veterinary medicine	Woman	Professional degree (MD, JD, etc.)	155000
"Government Relations"" (Lobbying) "	Woman	College degree	65
Academia	Man	PhD	56
Academia	Woman	Master's degree	40
Academia	Woman	PhD	25400
Academia	Woman	PhD	15
Academia - STEM	Woman	College degree	32000
Academia / Research	Woman	Master's degree	68
Academia--cell and molecular biology	Woman	PhD	48

CREATE DASHBOARD IN TABLEAU

- **Import Data into Tableau**

The query results which was saved as CSV file was imported into Tableau.

- **Create a Dashboard Stor**

interactive dashboard was created that visualizes the key insights from the data imported.

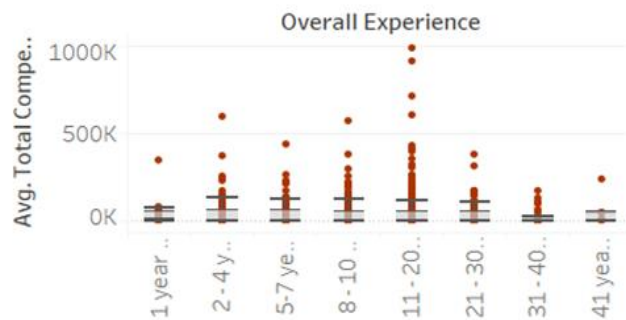
- **Write Insights**

After completing the dashboard, various insights were derived from the analysis.

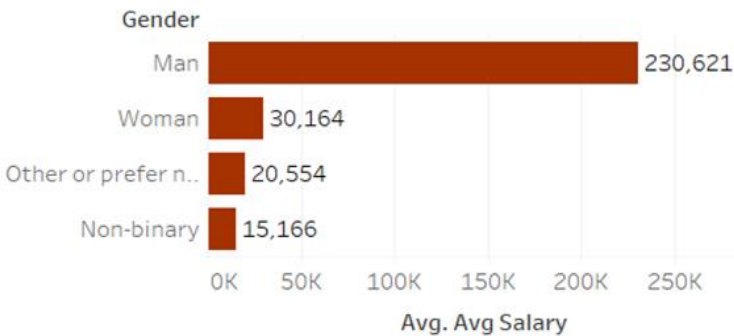
TABLEAU DASHBOARD

SALARY SURVEY DASHBOARD

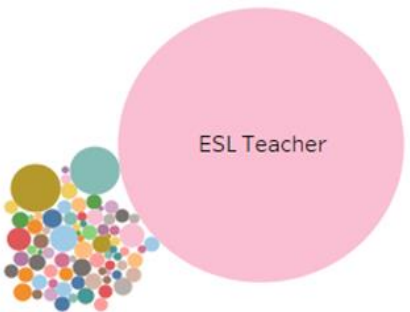
Overall Experience vs Avg Total Compensation



Avg Salary By Gender



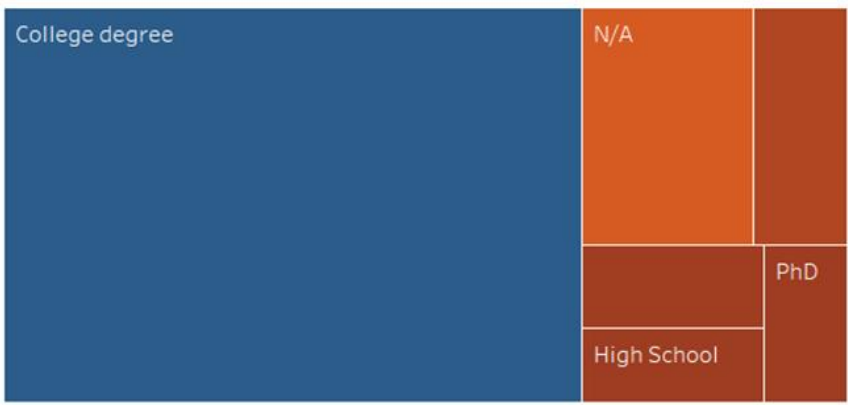
Avg Salary By Industry



Country vs Max Salary



Avg Salary By Highest Education



- Industry
- Null
 - Accounting, ..
 - Aerospace
 - Aerospace M..
 - Agriculture o..
 - Archaeology/..
 - Architecture, ..
 - Art & Design
 - Automotive
 - Behavior ana..
 - Benefits Ad..
 - Bioinformati..
 - Biopharmace..
 - Biotech
 - Biotech phar..
 - Biotech R&D
 - Biotech/phar..
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 - Biotech/soft..
 - Biotechnology
 - Bitech
 - Business or C..
 - Cannabis co..
 - Chemicals
 - Chemicals/ M..
 - Clinical Rese..
 - Commercial ..
 - Communicati..
 - Computing o..
 - Construction
 - Consulting
 - Consulting O..
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 - Corporate Tr..

INSIGHTS

- **Accounting Managers** with 11–20 years of experience received the highest average total compensation
- **Norway and India** recorded the highest maximum salaries across countries
- Individuals with a **college degree** had the highest average salary in the education category
- **Men** had the highest average salary, reaching \$230,621, compared to other gender groups
- The **ESL Teacher** industry reported the **highest average salary** among all job sectors

CONCLUSION

- Leveraged Excel, MySQL, and Tableau for a complete data analysis workflow
- Discovered key salary influencers: job role, experience, education, industry, and location
 - Uncovered significant pay disparities across sectors and demographics
- Highlighted the need for greater transparency and equity in compensation trends