# **Milestone Project**

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

Insight Project Report

Submitted By
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DATA ANALYTICS & DATA SCIENCE

**Batch: February-2025** 

#### Introduction

The dataset, titled "Salary Survey 2021," contains detailed salary and employment information from various professionals across multiple industries. It includes 1,248 entries with 16 columns covering key attributes such as age range, industry, job title, annual salary, additional monetary compensation, currency, country, state, city, years of professional experience, highest education level, and gender. The data spans diverse sectors like education, technology, healthcare, law, nonprofits, and more, with salaries reported in different currencies (e.g., USD, GBP, CAD). This dataset provides valuable insights into compensation trends, demographic distributions, and the impact of factors like experience and education on earnings. It is useful for analysing salary disparities, industry benchmarks, and regional variations.

### **Objectives**

- ✓ Industry Pay Comparison Compare average salaries across industries to determine which sectors offer higher or lower compensation.
- ✓ Job Title Analysis Examine salaries for similar roles in different industries or locations to spot variations.
- ✓ Regional Salary Trends Analyze pay differences across countries, states, or cities to identify geographic disparities.

# **Cleaning process**

- Removed duplicates
- Spell checked
- Standized city names
- Grouping genders
- Converted currency values
- Identified outliers

### **Raw Data**

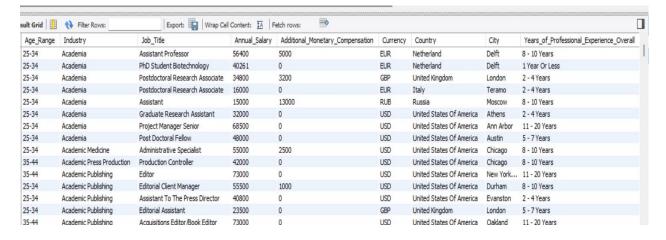
S.no	Age Range	Industry	Job .	Title	Annual Sala	Additional	Currency	Other Curr	Income Cla	Country	State	City	Years of Pr	Years of Pr	Highest Le	Gender
14796	25-34	Academia	Assistant P	rofessor	56,400	5000	EUR			Netherland	s	Delft	8 - 10 year:	5-7 years	PhD	Man
15119	25-34	Academia	PhD studer	t biotechn	40,261		EUR			The Nether	lands	Delft	1 year or le	1 year or le	Master's d	Woman
20481	25-34	Academia	Postdoctor	al research	34800	3200	GBP		Additional	UK		London	2 - 4 years	2 - 4 years	PhD	Woman
22861	25-34	Academia	Post Doc		16000	0	EUR			Italy		Teramo	2 - 4 years	2 - 4 years	PhD	Woman
7697	25-34	Academia	Assistant	Research +	15,000	13000	USD			Russia		Moscow	8 - 10 years	5-7 years	PhD	Woman
25244	25-34	Academia - STEM	Graduate n	esearch ass	32000		USD			USA	Georgia	Athens	2 - 4 years	2 - 4 years	College deg	Woman
14939	25-34	Academia / Research	Project ma	nager senio	68,500	0	USD			USA	Michigan	Ann Arbor	11 - 20 yea	8 - 10 year	Master's d	Woman
2613	25-34	Academia cell and molecular biology	post docto	ral fellow	48,000	0	USD			USA	Texas	Austin	5-7 years	5-7 years	PhD	Woman
189	25-34	Academic Medicine	Administra	lowest leve	55,000	2500	USD			USA	Illinois	Chicago	8 - 10 year:	5-7 years	College de	Man
13201	35-44	Academic Press Production	Production	I'm basical	42,000		USD			United Stat	Illinois	Chicago	8 - 10 year:	5-7 years	Master's d	Woman
930	35-44	Academic publishing	Editor	Lead role f	73,000	0	USD			USA	New Jersey	NY Metro	11 - 20 yea	11 - 20 yea	Master's d	Woman
1319	25-34	Academic Publishing	Editorial Cl	Managing	55,500	1000	USD			United Stat	North Card	Durham	8 - 10 year:	5-7 years	College deg	Woman
4991	25-34	Academic publishing	Assistant to	the (Press	40,800		USD			USA	Indiana	Evanston, I	2 - 4 years	2 - 4 years	PhD	Woman
11984	25-34	Academic Publishing	Editorial As		23,500		GBP			UK		London	5-7 years	2 - 4 years	Master's d	Woman
25322	35-44	Academic Publishing	acquisition	Plot Area	73000	0	USD			United Stat	California	Oakland	11 - 20 yea	11 - 20 yea	College deg	Woman
8382	35-44	Academic Publishing	Acquisition	s editor	30,000		USD		I am freela	United Stat	Wisconsin	Milwaukee	8 - 10 year:	11 - 20 yea	Master's d	Woman
5542	35-44	Academic research	Research P	job duties	56,500	1500	USD		extra is lon	USA	Texas	Galveston	11 - 20 yea	11 - 20 yea	Master's d	Woman
6149	25-34	Academic research	Senior Rese	arch Assist	48,000	0	USD			United Stat	Oregon	Portland	5-7 years	5-7 years	Master's d	Woman
12838	25-34	Academic research	postdoctor	al fellow	64,000	0	USD			USA	California	San Diego	2 - 4 years	2 - 4 years	PhD	Woman
14754	35-44	Academic research	Research as	ssistant	52,000	0	CAD			Canada		Hamilton,	8 - 10 years	8 - 10 year	Master's d	Woman
15666	35-44	Academic research	Research A	nalyst	63,500		USD			United Stat	Arizona	Tucson	11 - 20 yea	11 - 20 yea	College deg	Man

### **Cleaned Data**

Age Rang ▼	Industry	Job Title 🔻	Annual Salary 🔻	Annual Salary(USD)	Additional Monetary Compensation	Additional Monetary Compensation(US *	Currency
25-34	Academia	Assistant Professor	56,400	\$62,040	5,000	\$5,500	EUR
25-34	Academia	PhD Student Biotechnology	40,261	\$44,287	0	\$0	EUR
25-34	Academia	Postdoctoral Research Associate	34,800	\$44,892	3,200	\$4,128	GBP
25-34	Academia	Postdoctoral Research Associate	16,000	\$17,600	0	\$0	EUR
25-34	Academia	Assistant	15,000	\$180	13,000	\$156	RUB
25-34	Academia	Graduate Research Assistant	32,000	\$32,000	0	\$0	USD
25-34	Academia	Project Manager Senior	68,500	\$68,500	0	\$0	USD
25-34	Academia	Post Doctoral Fellow	48,000	\$48,000	0	\$0	USD
25-34	Academic Medicine	Administrative Specialist	55,000	\$55,000	2,500	\$2,500	USD
35-44	Academic Press Production	Production Controller	42,000	\$42,000	0	\$0	USD
35-44	Academic Publishing	Editor	73,000	\$73,000	0	\$0	USD
25-34	Academic Publishing	Editorial Client Manager	55,500	\$55,500	1,000	\$1,000	USD
25-34	Academic Publishing	Assistant To The Press Director	40,800	\$40,800	0	\$0	USD
25-34	Academic Publishing	Editorial Assistant	23,500	\$30,315	0	\$0	GBP
35-44	Academic Publishing	Acquisitions Editor/Book Editor	73,000	\$73,000	0	\$0	USD
35-44	Academic Publishing	Acquisitions Editor	30,000	\$30,000	0	\$0	USD
35-44	Academic Research	Research Project Manager	56,500	\$56,500	1,500	\$1,500	USD
25-34	Academic Research	Senior Research Assistant	48,000	\$48,000	0	\$0	USD
25-34	Academic Research	Postdoctoral Fellow	64,000	\$64,000	0	\$0	USD
35-44	Academic Research	Research Assistant	52,000	\$36,400	0	\$0	CAD
35-44	Academic Research	Research Analyst	63,500	\$63,500	0	\$0	USD
35-44	Academic Research	Senior Scientist	80,000	\$80,000	0	\$0	USD
18-24	Academic Research	Database Specialist	37,440	\$37,440	0	\$0	USD

# Import to SQL

- > Create Database
- > Create table
- > Import data



# **SQL Questions, Queries & Outputs**

## 1. Average Salary by Industry and Gender

SELECT Industry, Gender, AVG(Annual\_Salary) AS Avg\_Salary FROM salary data GROUP BY Industry, Gender;

Industry	Gender	Avg_Salary
Academia	Male	56400.0000
Academia	Female	36365.8571
Academic Medicine	Male	55000.0000
Academic Press Production	Female	42000.0000
Academic Publishing	Female	49300.0000
Academic Research	Female	51588.0000
Academic Research	Male	71750.0000
Academic Research (Psychology)	Female	36883.0000
Academic Research (Social Science)	Female	45000.0000
Academic Science	Female	43500.0000
Academic Science	Non-Bi	40322.0000
Academic Scientific Research	Female	35600.0000
Accessibility	Non-Bi	4000.0000
Accessibility	Female	74000.0000
Accounting, Banking & Finance	Female	86830.4013

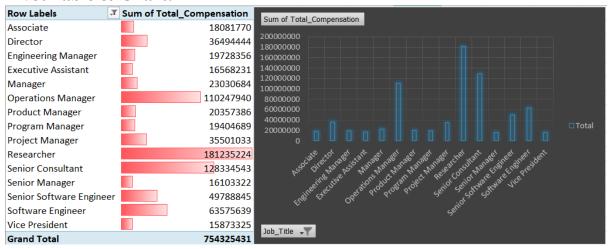
#### **Pivot Table & Chart:**



# 2. Total Salary Compensation by Job Title

SELECT Job\_Title,SUM(Annual\_Salary + Additional\_Monetary\_Compensation) AS Total\_Compensation FROM salary data GROUP BY Job Title;

Assistant Professor	10156506
PhD Student Biotechnology	40261
Postdoctoral Research Associate	163000
Assistant	1096056
Graduate Research Assistant	338284
Project Manager Senior	192750
Post Doctoral Fellow	102000
Administrative Specialist	662224
Production Controller	42000
Editor	6906997
Editorial Client Manager	56500
Assistant To The Press Director	40800
Editorial Assistant	385531
Acquisitions Editor/Book Editor	73000
Acquisitions Editor	291100
Acquisitions Editor	291100



# 3. Salary Distribution by Education Level

SELECT Education,
MIN(Annual\_Salary) AS Min\_Salary,
MAX(Annual\_Salary) AS Max\_Salary,
AVG(Annual\_Salary) AS Avg\_Salary
FROM salary\_data GROUP BY Education;

Education	Min_Salary	Max_Salary	Avg_Salary
PhD	130	180000000	252033.1582
Master's Degree	1	43800000	107051.3164
College Degree	10	870000000	175920.4458
Some College	35	102000000	130709.5927
High School	40	5000000	85920.1997
Professional Degree	90	11500000	149150.0890
NULL	18	8320000	165493.7412



# 4. Number of Employees by Industry and Years of Experience

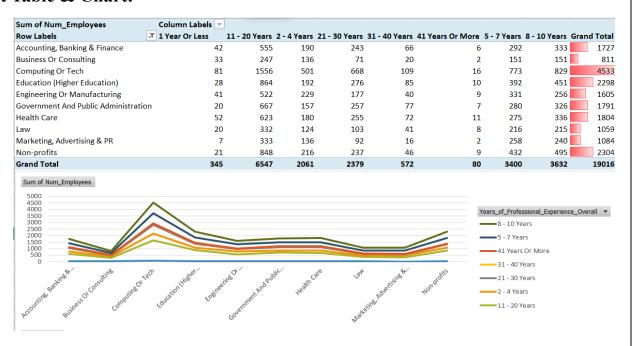
### **SELECT**

Industry, Years\_of\_Professional\_Experience\_Overall, COUNT(\*)

AS Num\_Employees

FROM salary\_data GROUP BY Industry, Years\_of\_Professional\_Experience\_Overall;

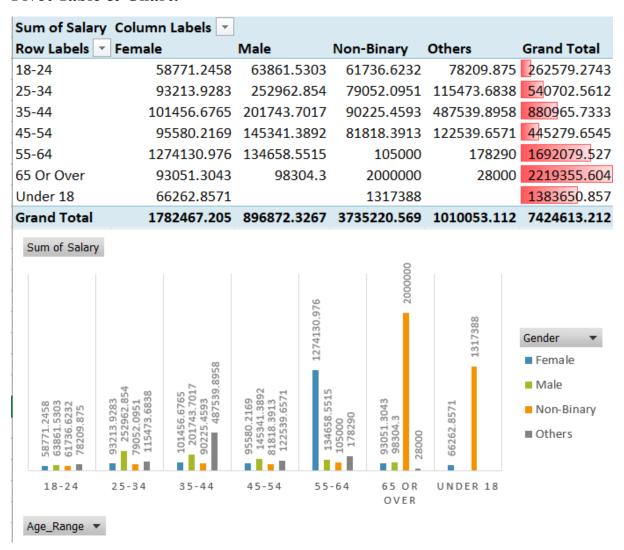
Industry	Years_of_Professional_Experience_Overall	Num_Employees
Academia	8 - 10 Years	2
Academia	1 Year Or Less	1
Academia	2 - 4 Years	3
Academia	11 - 20 Years	1
Academia	5 - 7 Years	1
Academic Medicine	8 - 10 Years	1
Academic Press Production	8 - 10 Years	1
Academic Publishing	11 - 20 Years	2
Academic Publishing	8 - 10 Years	2
Academic Publishing	2 - 4 Years	1
Academic Publishing	5 - 7 Years	1



# 5. Median Salary by Age Range and Gender

select Age\_Range,Gender,avg(Annual\_Salary) as Salary from salary\_data group by Gender,Age\_Range order by Age\_Range;

Age_Range	Gender	Salary
18-24	Female	58771.2458
18-24	Male	63861.5303
18-24	Non-Binary	61736.6232
18-24	Others	78209.8750
25-34	Male	252962.8540
25-34	Female	93213.9283
25-34	Non-Binary	79052.0951
25-34	Others	115473.6838
35-44	Female	101456.6765
35-44	Male	201743.7017
35-44	Non-Binary	90225.4593



# 6.Job Titles with the Highest Salary in Each Country

SELECT s.Country, s.Job\_Title, s.Annual\_Salary

FROM salary\_data s

JOIN (SELECT Country, MAX(Annual\_Salary) AS Max\_Salary

FROM salary\_data GROUP BY Country) max\_salaries

ON s.Country = max\_salaries.Country AND s.Annual\_Salary = max salaries.Max Salary;

Country	Job_Title	Annual_Salary
Russia	Assistant	15000
Bermuda	Office Manager And Executive Assistant	132500
Cayman Islands	Senior Analyst	81000
Austria	DevOps Lead	120000
Panama	Quality Analyst Coordinator	27600
Estonia	Email Marketing And SMS Specialist	27960
Belgium	Compliance	180000
Poland	Planning And Forecasting Lead	180000
Zimbabwe	Manager	20000
China	Student	5000000
Myanmar	Risk Management Associate	1200

Row Labels	Sum of Annual_Salary	Sum of Annual Salary			
Content Creator	2000000				
Customer Service Specialist	2300000	Voice Actor	20800000		
Director	1750000	Student	5000000		
Ent Agile Coach	4000000		120000000		
Inside Sales Manager	5000044	Regional Operations & Training		870000000	
Legal Editor	43800000	Product Manager	2111538		
Machine Learning Engineer	2500000	Pharmacist  Machine Learning Engineer	24000000 2500000		
Pharmacist	24000000	Job_Title -\ Legal Editor	<b>2</b> 300000		□Total
Product Manager	2111538	Inside Sales Manager	5000044		
Regional Operations & Training Manager	870000000	Ent Agile Coach	4000000		
Senior Consultant	120000000	Director	1750000		
Student	5000000	Customer Service Specialist	2300000		
Voice Actor	20800000	Content Creator	2000000		
Grand Total	1103261582		0 40000000	0 800000000	

# 7. Average Salary by City and Industry

SELECT City,Industry,AVG(Annual\_Salary) AS Avg\_City\_Salary FROM salary\_data GROUP BY City, Industry;

City	Industry	Avg_City_Salary
Delft	Academia	48330.5000
London	Academia	34800.0000
Teramo	Academia	16000.0000
Moscow	Academia	15000.0000
Athens	Academia	32000.0000
Ann Arbor	Academia	68500.0000
Austin	Academia	48000.0000
Chicago	Academic Medicine	55000.0000
Chicago	Academic Press Production	42000.0000
New York metropolitan area	Academic Publishing	73000.0000
Durham	Academic Publishing	55500.0000



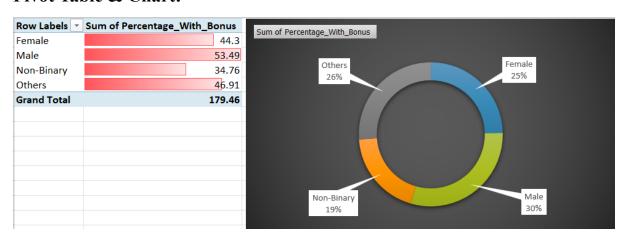
# 8. Percentage of Employees with Additional Monetary Compensation by Gender

SELECT Gender,ROUND(COUNT(CASE WHEN Additional\_Monetary\_Compensation > 0 THEN 1 END) \* 100.0 / COUNT(\*), 2) AS Percentage\_With\_Bonus

FROM salary\_data GROUP BY Gender;

Gender	Percentage_With_Bonus
Male	53.49
Female	44.30
Non-Binary	34.76
Others	46.91

#### **Pivot Table & Chart:**



# 9. Total Compensation by Job Title and Years of Experience

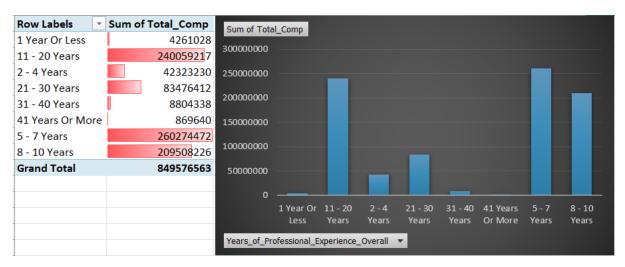
### **SELECT**

Job\_Title,Years\_of\_Professional\_Experience\_Overall,SUM(Annual\_Salary + Additional\_Monetary\_Compensation) AS Total\_Comp

FROM salary\_data GROUP BY Job\_Title, Years\_of\_Professional\_Experience\_Overall;

Job_Title	Years_of_Professional_Experience_Overall	Total_Comp
Assistant Professor	8 - 10 Years	2619535
PhD Student Biotechnology	1 Year Or Less	40261
Postdoctoral Research Associate	2 - 4 Years	54000
Assistant	8 - 10 Years	43900
Graduate Research Assistant	2 - 4 Years	170084
Project Manager Senior	11 - 20 Years	68500
Post Doctoral Fellow	5 - 7 Years	48000
Administrative Specialist	8 - 10 Years	185500
Production Controller	8 - 10 Years	42000
Editor	11 - 20 Years	3270292
Editorial Client Manager	8 - 10 Years	56500

### **Pivot Table & Chart:**

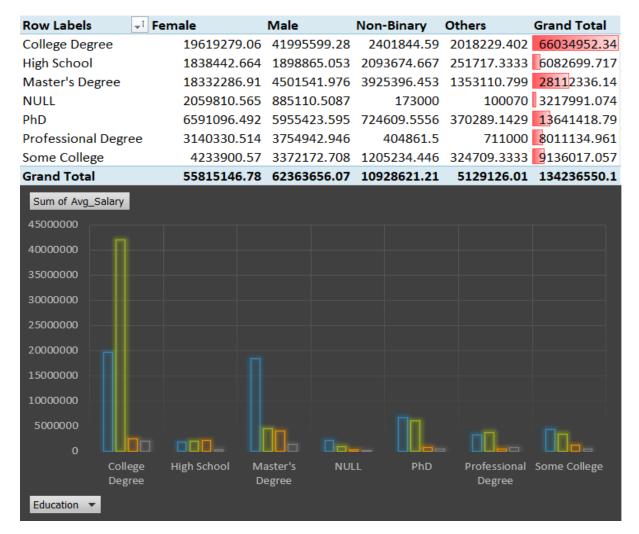


## 10. Average Salary by Industry, Gender, and Education Level

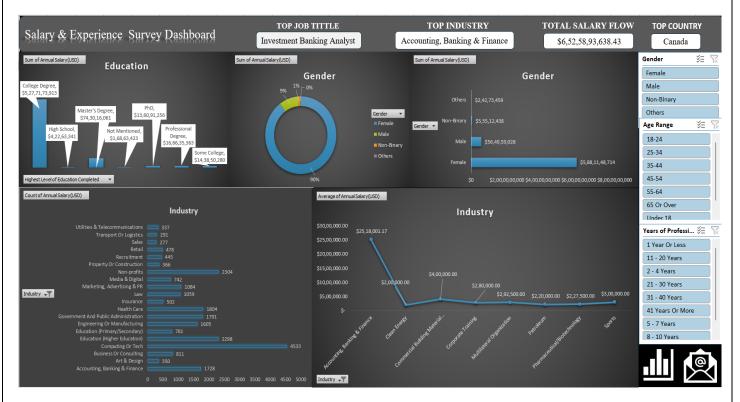
SELECT Industry, Gender, Education, AVG(Annual\_Salary) AS Avg\_Salary FROM salary data GROUP BY Industry, Gender, Education;

Industry	Gender	Education	Avg_Salary
Academia	Male	PhD	56400.0000
Academia	Female	Master's Degree	54380.5000
Academia	Female	PhD	28450.0000
Academia	Female	College Degree	32000.0000
Academic Medicine	Male	College Degree	55000.0000
Academic Press Production	Female	Master's Degree	42000.0000
Academic Publishing	Female	Master's Degree	42166.6667
Academic Publishing	Female	College Degree	64250.0000
Academic Publishing	Female	PhD	40800.0000
Academic Research	Female	Master's Degree	52166.6667
Academic Research	Female	PhD	64000.0000

### **Pivot Table & Chart:**



#### **Dash Board**



#### **About the Dashboard:**

This Salary & Experience Survey Dashboard visualizes aggregated data from a salary and experience survey. The dashboard highlights various key metrics like gender distribution, education level, top job title, top industries, country, and salary flows. Here's a detailed breakdown of each component.

# 1.1 Key Metrics:

- Top Job Title:
  - o Investment Banking Analyst Indicates the most frequently reported or highest-paying job role.
- Top Industry:
  - o Accounting, Banking & Finance The industry with the highest representation or total salary contribution.
- Total Salary Flow:
  - \$6,52,58,93,638.43 (USD) This represents the total sum of annual salaries reported in the survey.
- Top Country:
  - Canada
     Indicates the country with the highest number of respondents or highest cumulative salary data.

# 1.2 Education Section (Top-left):

Chart: Sum of Annual Salary (USD) by Education Level This bar chart compares total salaries across different education levels:

- College Degree: \$5,27,71,73,913 the highest.
- Professional Degree: \$16,66,35,363
- Master's Degree: \$74,30,16,061
- PhD: \$13,60,91,256
- High School: \$4,22,63,341
- Some College: \$14,38,50,280
- Not Mentioned: \$1,68,63,423

# 1.3 Gender Distribution (Top Centre & Right)

1. Donut Chart (Top Centre):

Shows gender participation as a percentage:

- o Female: 90%
- o Male: 9%
- o Non-Binary: 1%
- Others: <1%
- 2. Bar Chart (Top Right): Sum of Annual Salary (USD) by Gender:
  - o Female: \$5,88,11,48,714
  - o Male: \$56,49,59,028
  - o Non-Binary: \$5,55,12,438
  - o Others: \$2,42,73,459

# 1.4 Industry Insights

- I. Bar Chart (Bottom Left): Count of Salaries by Industry Reflects the number of respondents from each industry:
  - a. Computing Or Tech: Highest with 4533 entries
  - b. Education (Higher Ed): 2298
  - c. Non-profits: 2304
  - d. Health Care: 1804
  - e. Accounting, Banking & Finance: 1728
- II. Line Graph (Bottom Right): Average of Annual Salary by Industry Shows industries with their average salary:
  - a. Accounting, Banking & Finance: ~\$25,18,001.17
  - b. Commercial Building Material: ~\$4,00,000
  - c. Corporate Training: ~\$2,92,500
  - d. Multilateral Organization: ~\$2,80,000

- e. Sports: ~\$3,00,000
- f. Others like Clean Energy, Petroleum, Biotech are lower.

### Slicers on Right Sidebar

- Gender: Filter by Female, Male, Non-Binary, Others
- Age Range: 18-24 to 65 or Over
- Years of Professional Experience: From "1 Year or Less" to "41 Years or More"

#### **Conclusion:**

- ➤ Higher education levels correlate with greater earnings, with College Degree holders earning the most (5.27B) and High School graduates the least (5.27B) and High School graduates the least (42.2M). Advanced degrees (Master's, PhD, Professional) command significantly higher salaries than basic education. Organizations should consider education as a key factor in compensation and career development strategies.
- Mid-career professionals (11-20 years) contribute the highest salary sum (864.9M), reflecting their experience and leadership roles. Surprisingly, employees with 2-4 years of experience account for the largest salary share (864.9M), reflecting their experience and leadership roles. Surprisingly, employees with 2-4 years of experience account for the largest salary share (4.39B), likely due to a high concentration of mid-level roles. Senior professionals (31+ years) and entry-level workers (≤1 year) have the lowest salary totals, indicating lower representation or pay scales at career extremes.

