

Case Study on Workforce Data Analysis

Salary and Remote Work Trends
Across Job Titles and Company
Locations"

Objectives



1. Business Insights and Strategic Decision Making



Salary Benchmarking: By analyzing the highest and lowest average salaries by job title, experience level, company size, and location, businesses can establish salary benchmarks to remain competitive in the market.



Identify Growth Markets: The analysis of salary growth rates by job title, location, and experience level will help identify the regions or industries that are growing faster, enabling companies to focus their expansion strategies on these areas.



Talent Retention Strategies: Identifying countries and positions offering the highest salaries or observing salary growth trends over time will help businesses devise better talent retention strategies by ensuring competitive pay and benefits.



Remote Work Optimization: By analyzing trends in remote work (e.g., fully remote positions by country and experience level), companies can make informed decisions about remote work policies, which is especially relevant in the post-pandemic landscape.

Objectives

2. Talent Acquisition and Workforce Planning

Targeting Specific Markets for Recruitment: Identifying countries with high-paying jobs or large companies will allow businesses to target specific regions for recruitment. For instance, understanding which countries offer the highest remote salary opportunities for certain job titles will help attract talent in remote-friendly regions.

Demand for Experience Levels: Knowing the percentage of employees with different experience levels (e.g., mid-level, senior) allows for better workforce planning and recruiting strategies. For example, if mid-level employees are being paid higher in a particular market, businesses can focus on hiring and promoting in that region.

Talent Scarcity Analysis: Analyzing the availability of part-time versus full-time positions, and comparing it with salary data, can indicate job market gaps or excesses. This helps identify where there is a shortage or oversupply of specific skills or roles.

Objectives



3. Workforce Optimization and Cost Control



Optimizing Salaries by Location: Understanding where senior, mid-level, or entry-level employees are paid the most and least will help businesses make informed decisions about where to hire or relocate talent. For example, if mid-level salaries in one country are significantly lower than the global average, businesses might move roles to that location.



Adjusting Compensation Models: By calculating the average salary increases for each role and experience level, businesses can plan appropriate pay raises, bonuses, and promotions to ensure employee satisfaction while maintaining cost-effectiveness.



Workplace Flexibility Analysis: By analyzing the distribution of remote and in-office work, businesses can adjust their workplace policies to cater to market demand. For instance, if top job titles offering fully remote work are attracting the best talent, companies can use this data to adjust policies and attract top talent.

Objectives

4. Market Trends and Competitive Analysis

Understanding Job Title and Experience Level Trends: By analyzing job titles and experience levels across various markets, businesses can better understand the demand for specific roles and positions, allowing them to stay competitive.

Predicting Salary Trends: Through salary growth rate analysis over multiple years, companies can predict salary trends and adjust their pay scales accordingly to stay competitive in attracting and retaining talent.

Emerging Roles and Career Growth Opportunities: Identifying the top job titles with the highest salary growth rates allows businesses and employees to understand which roles are emerging in the market and where career growth opportunities lie.

Industry Competitiveness: Comparing salary growth and work arrangements (remote, part-time) across industries allows companies to benchmark against competitors and remain competitive in terms of compensation packages and work flexibility.

Objectives



5. Geographical and Remote Work Insights



Remote Work Adoption: Analyzing the adoption of fully remote work across regions and experience levels will provide insights into how different countries or sectors are responding to the shift towards remote work. This allows businesses to adjust their hiring and office space strategies based on location-specific data.



Location-Specific Salary Insights: Understanding where entry-level salaries exceed market averages, or where senior employees are paid the most, enables businesses to fine-tune their hiring strategies based on the geographic availability of talent and salary competitiveness.



Localized Talent Pools: The analysis of the top countries with the most large companies and highest-paying job titles gives insights into where the most robust talent pools are. This is crucial for companies expanding their operations or looking to attract global talent.

Objectives



6. HR Policy Enhancements



Performance-Based Incentives: By comparing salary trends across years for various job titles, businesses can introduce performance-based pay structures that align with market trends.



Level-Specific Training Programs: Knowing the salary growth trends by experience level and job title helps HR departments create targeted training programs to prepare employees for the roles that offer the highest salary growth.

Objectives



7. Employee Career Pathing and Domain Switching



Domain Transition Opportunities: Employees and employers can leverage the salary data to guide transitions between domains. For example, if data suggests that certain roles within a specific industry offer better salary growth, employees can be guided toward upskilling for those domains.



Entry-Level Growth Potential: By identifying entry-level roles and locations that offer the highest growth potential, businesses can help guide early-career employees toward roles that promise better career trajectories and higher earning potential.

Achievable Goals



Salary Optimization: Ensure employees are paid competitively by understanding salary trends across different regions and job titles.



Workforce Planning: Adjust recruitment, hiring, and talent retention strategies based on data-driven insights into company size, experience level, and geography.



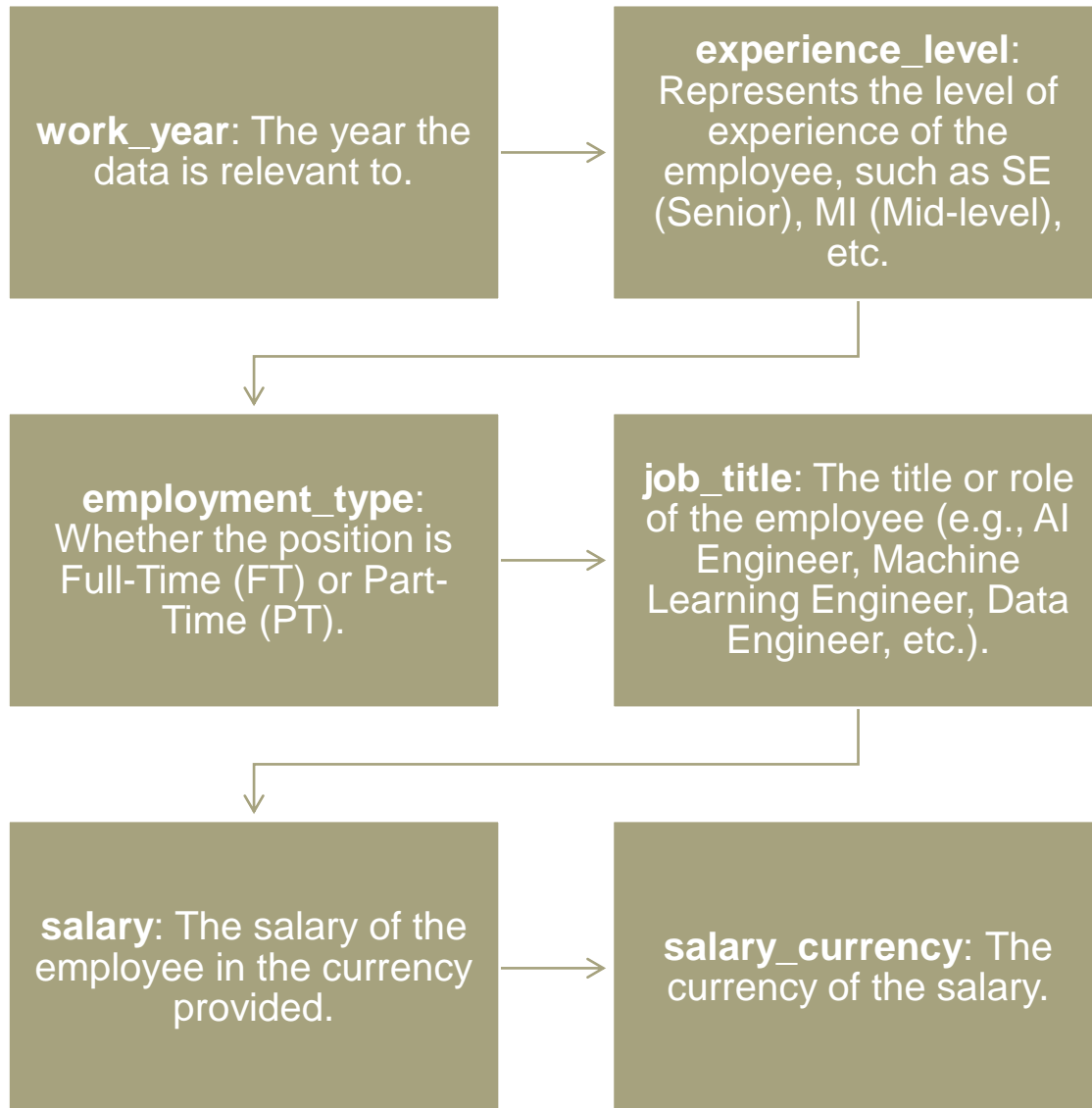
Remote Work Policy Development: Use remote work adoption data to structure flexible work policies that align with current trends and preferences.



Cost Management: Optimize workforce costs by leveraging data on salary trends and experience level distributions across different markets.

Achievable Goals

Build	Target	Stay ahead	Identify
<p>Talent Retention: Build better compensation models and benefits packages to retain top talent in competitive markets.</p>	<p>Business Expansion: Target regions with high salary growth or large companies for business expansion or talent acquisition.</p>	<p>Competitiveness: Stay ahead of competitors by offering market-driven salaries, bonuses, and remote work opportunities.</p>	<p>Upskilling and Career Pathing: Identify career paths and domains where transitioning can lead to better salary outcomes for employees, guiding them in their professional growth.</p>



Descriptions about Datasets

salary_in_usd: The salary converted to USD for uniform comparison.

employee_residence: The location of the employee (e.g., AE, US, AU).

remote_ratio: The percentage of remote work for the employee, where 0 means fully in-office, 100 means fully remote, and values in between represent hybrid work.

company_location: The location of the company.

company_size: The size of the company, where S = Small, M = Medium, and L = Large.

Descriptions about Datasets

Task-1



Investigating the job market based on company size in 2021:



Task: You need to count how many employees are working in different companies, categorized by size (S, M, L).



Hint: Use a WHERE clause to filter for work_year = 2021, and then group the data by company_size to count the number of employees for each size.

Task-2



Top 3 job titles with the highest average salary for part-time positions in 2023:



Task: Identify the highest-paying job titles for part-time positions while ensuring you only include countries with more than 50 employees.



Hint: Filter by `employment_type = PT` and `work_year = 2023`. Then, use an aggregate function like `AVG(salary)` and `GROUP BY job_title`. After that, apply a condition on the employee count using a `HAVING` clause.

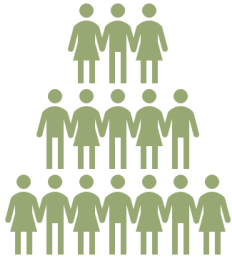
Task-3

Countries where mid-level salary is higher than the overall mid-level salary in 2023:

Task: Identify countries where the average salary for mid-level employees (MI) is greater than the overall average for that level.

Hint: First calculate the overall average salary for mid-level (MI) employees and then compare that with country-wise average salary for mid-level roles in 2023.

Task-4



Highest and lowest average salary locations for senior-level employees in 2023:



Task: Identify which countries pay senior-level (SE) employees the highest and lowest average salaries.



Hint: Filter the data by `experience_level = SE` and `work_year = 2023`. Group by `company_location` and use aggregate functions to find the max and min values.

Task-5



Salary growth rates by job title:



Task: Calculate the percentage increase in salaries for various job titles between two years (e.g., 2023 and 2024).



Hint: Use the formula for percentage increase and compare the salary values between the two years. This involves calculating the difference in salary divided by the original salary.

Task-6



Top three countries with the highest salary growth for entry-level roles from 2020 to 2023:



Task: Find the countries with the most significant salary growth in entry-level positions.



Hint: Calculate the growth rate for each country and rank them. Ensure that companies have more than 50 employees (HAVING clause for filtering based on the employee count).

Task-7

Updating remote work ratio for employees earning more than \$90,000 in the US and AU:

Task: Update the remote_ratio for employees based on their salary and location.

Hint: Filter for employees with salary_in_usd > 90000 and employee_residence in ('US', 'AU'). Then, apply an UPDATE statement to set their remote_ratio to 100 for remote work

Task-8



Salary updates based on percentage increases by level in 2024:



Task: Update the salaries for various experience levels (SE, MI, etc.) according to predefined percentage increases.



Hint: Use a CASE statement to apply the percentage increases for each experience level (e.g., SE = 22%, MI = 30%, etc.) in an UPDATE query.

Task-9

Year with the highest average salary for each job title:

Task: Identify which year had the highest average salary for each job title.

Hint: Group by job_title and use an aggregate function to calculate the average salary for each year. Then, use a subquery or MAX() to get the highest value.

Task-10



Percentage of employment types for different job titles:



Task: Calculate the percentage of full-time and part-time employees for each job title.



Hint: Use a PIVOT style query to calculate the percentage distribution of employment types (`employment_type`) for each `job_title`. You'll need to group by job titles and use conditional aggregates to calculate percentages.

Task-11



**COUNTRIES OFFERING FULL REMOTE
WORK FOR MANAGERS WITH SALARIES
OVER \$90,000:**



**TASK: FIND COUNTRIES WHERE MANAGERS
EARN MORE THAN \$90,000 AND WORK FULLY
REMOTELY.**



**HINT: FILTER THE DATA FOR JOB_TITLE
CONTAINING 'MANAGER', SALARY_IN_USD >
90000, AND REMOTE_RATIO = 100. THEN,
GROUP BY EMPLOYEE_RESIDENCE.**

Task-12



Top 5 countries with the most large companies:



Task: Identify which countries have the highest number of large companies.



Hint: Filter the data for `company_size = L` and group by `company_location`. Use `COUNT()` to rank the top 5.

Task-13

Percentage of employees with fully remote roles earning more than \$100,000:

Task: Calculate the percentage of fully remote employees earning more than \$100,000.

Hint: Filter by `remote_ratio = 100` and `salary_in_usd > 100000`, and then calculate the percentage against the total number of employees.

Task-14

Locations where entry-level average salaries exceed market average for entry level:

Task: Identify locations where entry-level salaries surpass the market average.

Hint: Calculate the overall market average salary for entry-level roles and compare it with location-wise averages.

Task-15

Countries paying the maximum average salary for each job title:

Task: For each job title, identify which country pays the highest average salary.

Hint: Group by job_title and employee_residence, and use MAX(salary_in_usd) to find the highest-paying country.

Task-16

Countries with sustained salary growth over three years:

Task: Identify countries with consistent salary growth over the past three years.

Hint: For countries with salary data for three years (e.g., 2021, 2022, 2023), calculate the salary growth trend and identify those with continuous growth.

Task-17



**PERCENTAGE OF FULLY REMOTE WORK
BY EXPERIENCE LEVEL (2021 VS 2024):**



**TASK: COMPARE THE ADOPTION OF
FULLY REMOTE WORK ACROSS
EXPERIENCE LEVELS BETWEEN 2021
AND 2024.**



**HINT: CALCULATE THE PERCENTAGE OF
EMPLOYEES WITH REMOTE_RATIO = 100
FOR BOTH YEARS, GROUPED BY
EXPERIENCE_LEVEL.**

Task-18



Average salary increase percentage by experience level and job title (2023 to 2024):



Task: Calculate the average salary increase for each experience level and job title.



Hint: Use the salary data for 2023 and 2024 to compute the percentage increase for each combination of experience level and job title.

Task-19

1

Role-based access control for employees based on experience level:

2

Task: Implement security to restrict access based on an employee's experience level.

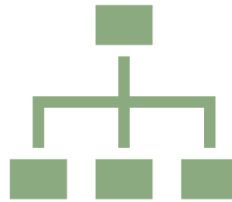
3

Hint: Use conditional queries and access control mechanisms, ensuring employees can only access records relevant to their experience level.

Task-20



Guiding clients in switching domains based on salary insights:



Task: Based on an employee's data (experience, job title, location), suggest new domains they can transition to, based on salary trends.



Hint: Analyze salary trends for various roles and provide recommendations for transitions that offer higher salaries or better opportunities.

Submission Guidelines

- Format: PowerPoint or PDF

Length: 1-20 slides.

Sections: Introduction, Key Findings, Actionable, Methodologies , Approaches, Insights, Conclusions.

- **Tools and Technologies :**

- **SQL/ MS-SQL SERVER**

- **Deadline:**

- Submit your report and presentation within 27 Days from the day you will start.

Thank you

