

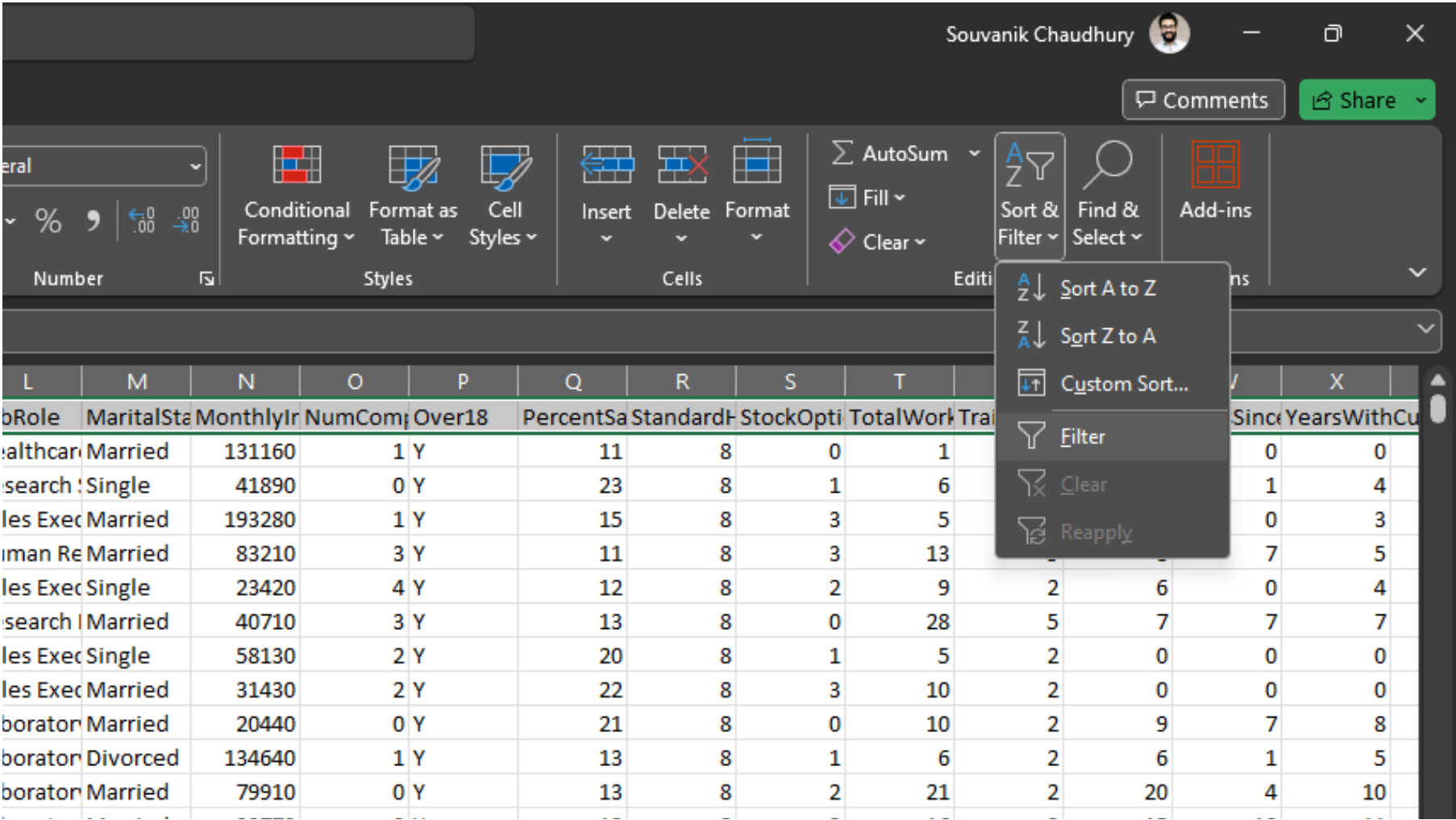


PSYUQ

HR Data Analysis

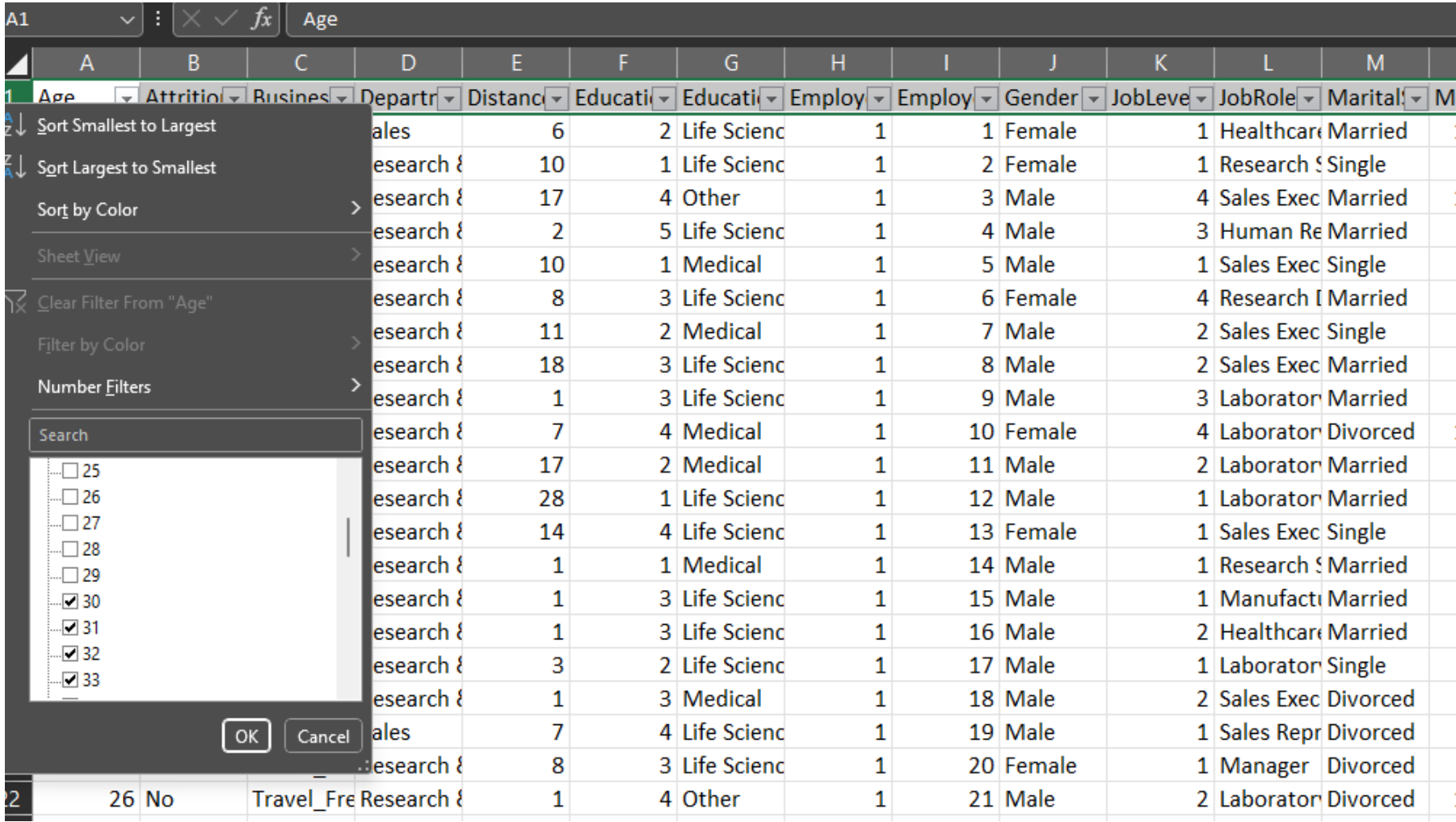
by Souvanik Chaudhury

1. Using Excel, how would you filter the dataset to only show employees aged 30 and above?



JobRole	MaritalStatus	MonthlyIncome	NumCompl	Over18	PercentSalaryHike	StandardHours	StockOptions	TotalWorkTime	YearsWithCurrentCompany
Healthcare	Married	131160	1	Y	11	8	0	1	0
Research Scientist	Single	41890	0	Y	23	8	1	6	4
Sales Executive	Married	193280	1	Y	15	8	3	5	3
Human Resources	Married	83210	3	Y	11	8	3	13	5
Sales Executive	Single	23420	4	Y	12	8	2	9	4
Research Scientist	Married	40710	3	Y	13	8	0	28	7
Sales Executive	Single	58130	2	Y	20	8	1	5	0
Sales Executive	Married	31430	2	Y	22	8	3	10	0
Laboratory Technician	Married	20440	0	Y	21	8	0	10	8
Laboratory Technician	Divorced	134640	1	Y	13	8	1	6	5
Laboratory Technician	Married	79910	0	Y	13	8	2	21	10

Apply filter to the **Age** Column



Age	Attrition	BusinessTravel	Department	DistanceFromHome	Education	EducationField	EmploymentLength	EmploymentLength2	Gender	JobLevel	JobRole	MaritalStatus
26	No	Travel_Frequently	Research & Development	1	4	Other	1	21	Male	2	Laboratory Technician	Divorced

Select **30** and **above** Age Group

2. Create a pivot table to summarize the average Monthly Income by Job Role.

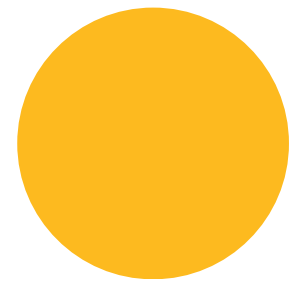
JobRole	Average of MonthlyIncome
Manufacturing Director	69183.72
Laboratory Technician	66314.05
Research Director	65473.13
Sales Representative	65370.96
Sales Executive	65186.69
Research Scientist	64975.68
Manager	63395.88
Healthcare Representative	60983.74
Human Resources	58528.08
Total	65029.31

Average Monthly Income by Job Role.

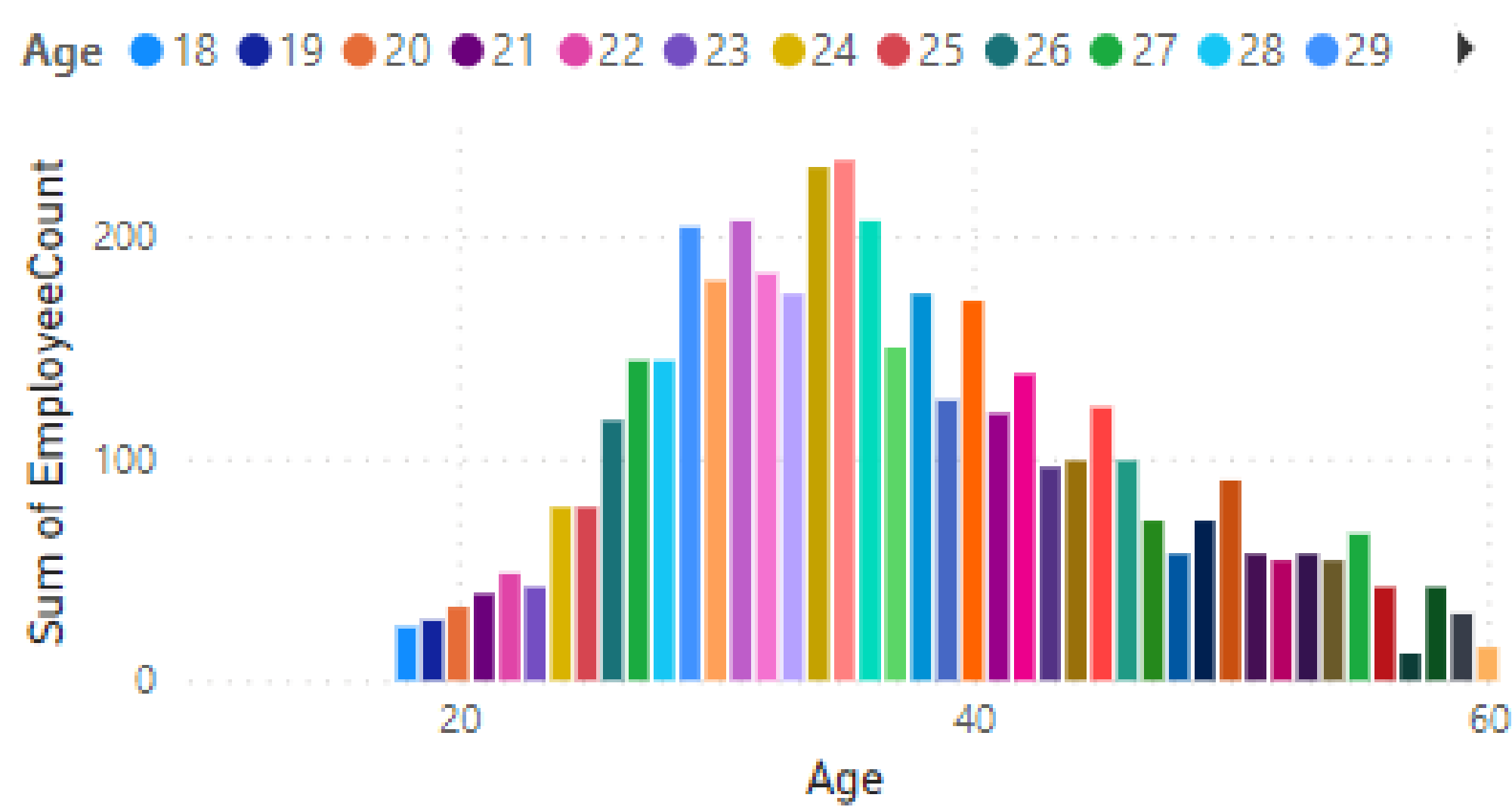
3. Apply conditional formatting to highlight employees with Monthly Income above the company's average income.

Microsoft Excel - Ribbon										
Font (Wrap Text, Bold, Italic, Underline, Color, Size)			General (Number, Date, Text, Percent, Currency, Accounting)			Styles (Conditional Formatting, Format as Table, Cell Styles)			Cells (Insert, Delete, Format)	
Editing (Fill, Clear, Sort & Filter, Find & Select)			Add-ins (Add-ins, Office Add-ins)							
E	F	G	H	I	J	K	L	M	N	O
EmployeeID	EducationField	EducationField	EmploymentType	EmploymentType	Gender	JobLevel	JobRole	MaritalStatus	MonthlyIncome	Nur
6	2	Life Sciences	1	1	Female	1	Healthcare Representative	Married	131160	
10	1	Life Sciences	1	2	Female	1	Research Scientist	Single	41890	
17	4	Other	1	3	Male	4	Sales Executive	Married	193280	
2	5	Life Sciences	1	4	Male	3	Human Resources	Married	83210	
10	1	Medical	1	5	Male	1	Sales Executive	Single	23420	
8	3	Life Sciences	1	6	Female	4	Research Director	Married	40710	
1	3	Life Sciences	1	9	Male	3	Laboratory Technician	Married	20440	
17	2	Medical	1	11	Male	2	Laboratory Technician	Married	79910	
28	1	Life Sciences	1	12	Male	1	Laboratory Technician	Married	33770	
14	4	Life Sciences	1	13	Female	1	Sales Executive	Single	55380	
1	1	Medical	1	14	Male	1	Research Scientist	Married	57620	
1	3	Life Sciences	1	16	Male	2	Healthcare Representative	Married	53460	
1	3	Medical	1	18	Male	2	Sales Executive	Divorced	41270	
7	4	Life Sciences	1	19	Male	1	Sales Representative	Divorced	24380	
8	3	Life Sciences	1	20	Female	1	Manager	Divorced	68700	
8	4	Life Sciences	1	22	Male	1	Research Scientist	Divorced	96670	
11	4	Life Sciences	1	23	Female	2	Research Scientist	Married	21480	
4	4	Life Sciences	1	24	Male	1	Manufacturing Director	Married	89260	

Conditional formatting to highlight employees with Monthly Income above the company's average income.

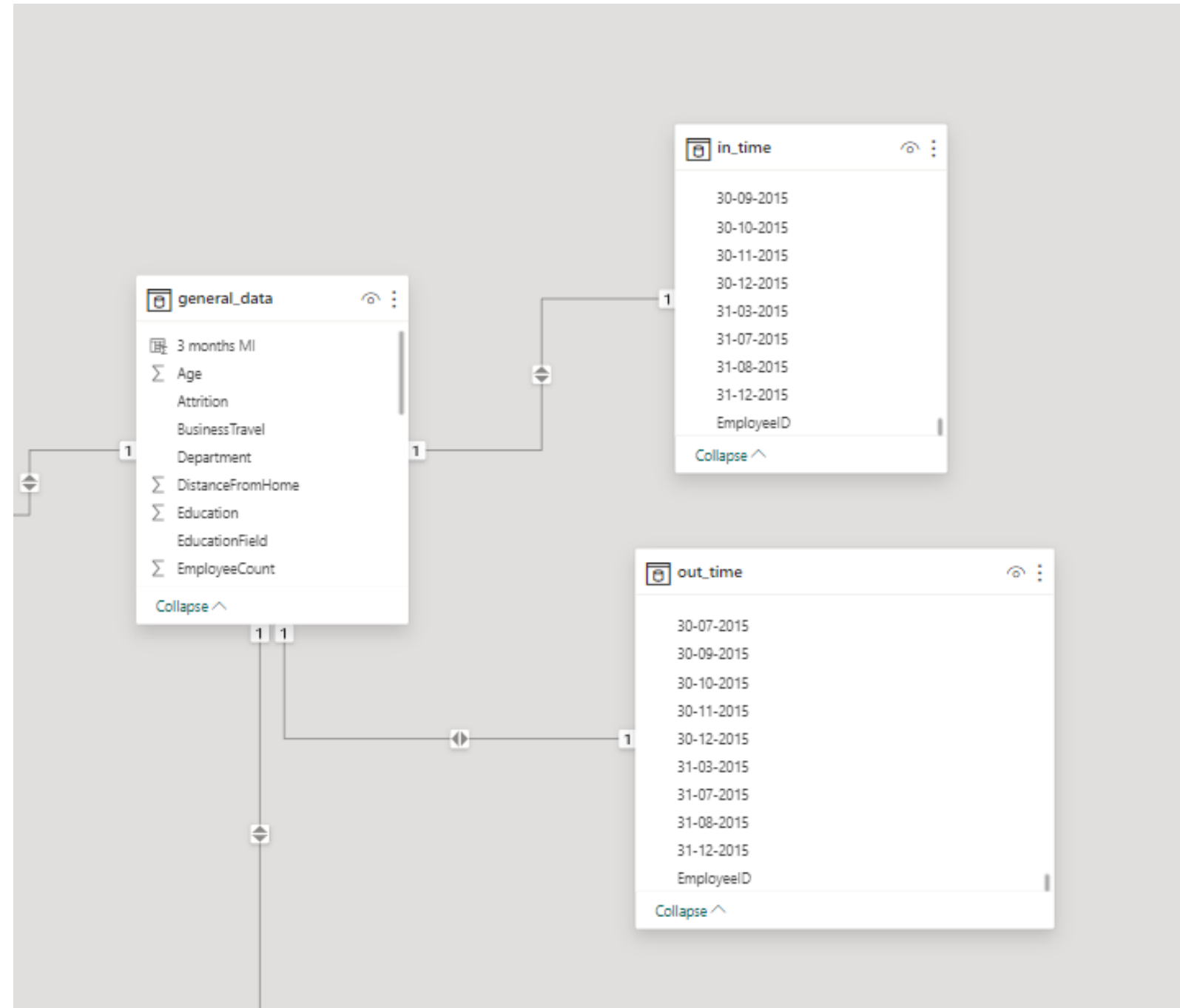


4. Create a bar chart in Excel to visualize the distribution of employee ages.

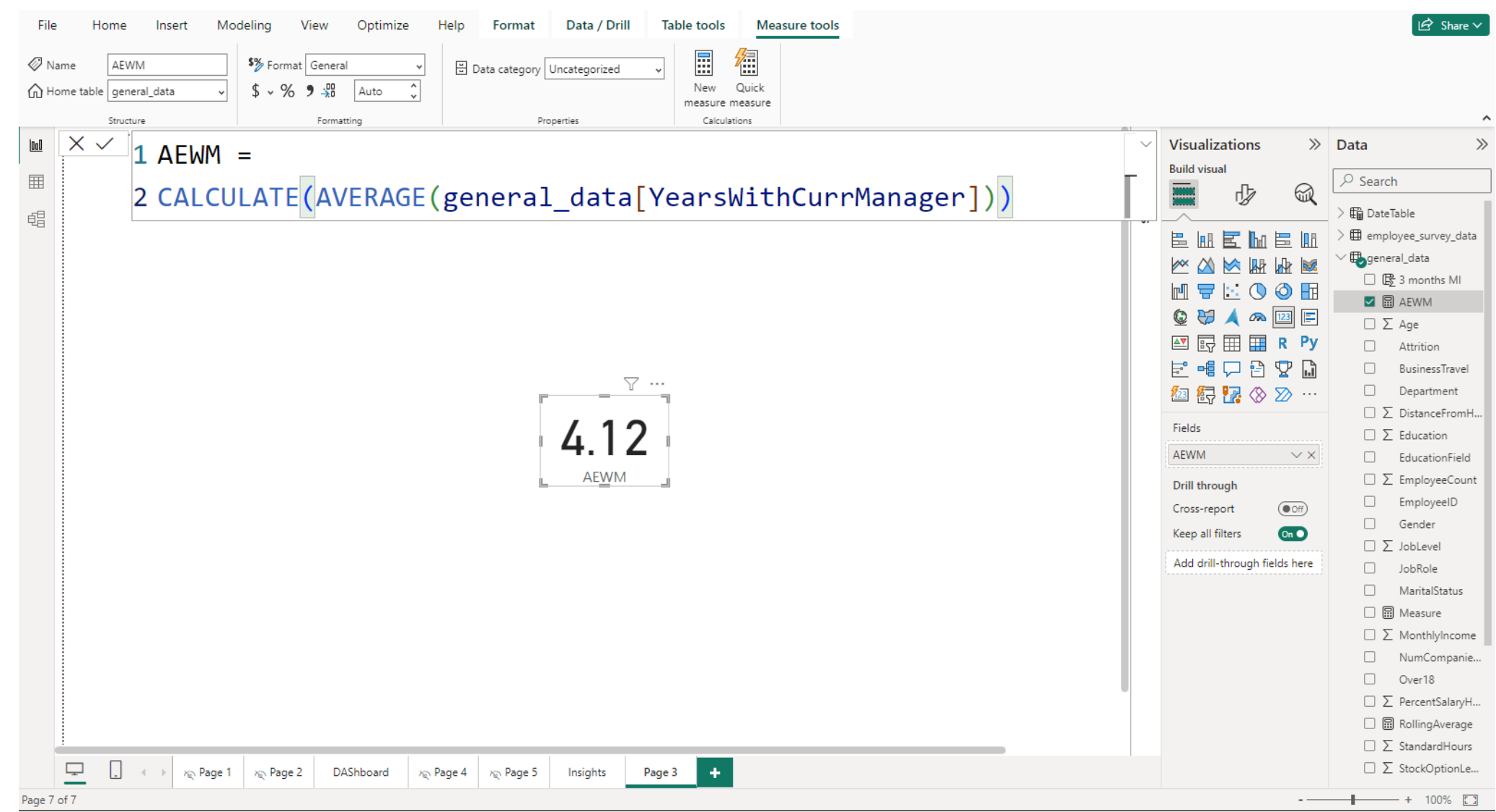


Employee Ages Distribution

5. In Power BI, establish a relationship between the "EmployeeID" in the employee data and the "EmployeeID" in the time tracking data.



6. Using DAX, create a calculated column that calculates the average years an employee has spent with their current manager



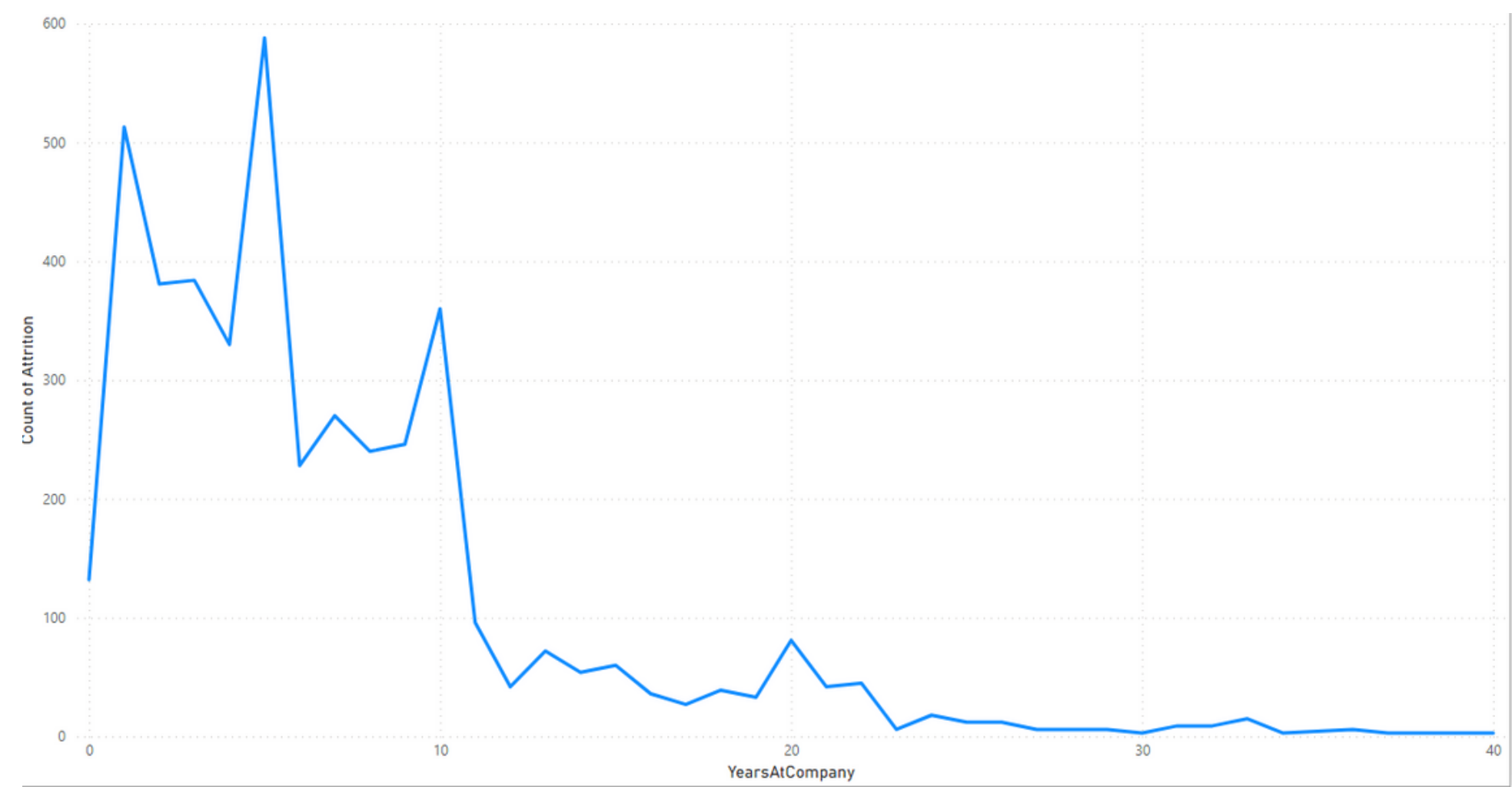
Calculated Column

7. Using Excel, create a pivot table that displays the count of employees in each Marital Status category, segmented by Department.

Department	Sum of EmployeeCount
Human Resources	189
Divorced	21
Married	96
Single	72
Research & Development	2883
Divorced	621
Married	1350
Single	912
Sales	1338
Divorced	339
Married	573
Single	426
Total	4410

Marital Status Bifurcation

8.In Power BI, create a line chart that visualizes the trend of Employee Attrition over the years



Employee Attrition

9. Using DAX, create a calculated column that calculates the average years an employee has spent with their current manager

The screenshot shows the Microsoft Power BI Desktop interface. The top ribbon includes tabs for File, Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, Table tools, and Measure tools. The 'Measure tools' tab is active, showing options for Name (AEW), Home table (general_data), Format (General), Data category (Uncategorized), and buttons for New measure and Quick measure.

The main workspace displays the DAX formula for the calculated column AEW:

```
1 AEW =  
2 CALCULATE(AVERAGE(general_data[YearsWithCurrManager]))
```

Below the formula, a card visual shows the result of the calculation: 4.12, with the label AEW underneath.

The right-hand pane is divided into 'Visualizations' and 'Data' sections. The 'Data' section shows the 'general_data' table expanded, with the calculated column 'AEW' selected. The 'Visualizations' section shows the 'Build visual' button and various chart options.

The bottom status bar indicates 'Page 7 of 7' and a zoom level of 100%.

Calculated Column

10. Create a hierarchy in Power BI that allows users to drill down from Department to Job Role to further narrow their analysis

Department	Female	Male	Total
Human Resources	4981380	5962560	10943940
Healthcare Representative	523950	307290	831240
Human Resources		60420	60420
Laboratory Technician	1188960	1842570	3031530
Manager	689610	98820	788430
Manufacturing Director	682020	654540	1336560
Research Director	223380		223380
Research Scientist	735210	1164750	1899960
Sales Executive	753900	1679460	2433360
Sales Representative	184350	154710	339060
Research & Development	77976990	115725900	193702890
Healthcare Representative	6814380	8683950	15498330
Human Resources	2787990	4154670	6942660
Laboratory Technician	12178590	21025620	33204210
Manager	7332660	6723150	14055810
Manufacturing Director	8177310	12238770	20416080
Research Director	3186870	7399920	10586790
Research Scientist	14000000	22401600	36401600

11. How can you set up parameterized queries in Power BI to allow users to filter data based

In Power BI, parameterized queries can be set up to allow users to filter data dynamically. This is particularly useful when you want to enable users to input values or make selections that will affect the data displayed in visuals. Here's a step-by-step guide to setting up parameterized queries in Power BI:

1. Load your Data:

- Start by loading your data into Power BI. You can connect to various data sources such as Excel, SQL Server, SharePoint, etc.

2. Create Parameters:

- Go to the "Home" tab and click on "Manage Parameters." This will open the "Manage Parameters" dialog.
- Click on "New" to create a new parameter. Give it a meaningful name, choose a data type (e.g., Text, Decimal, Date/Time), and set a default value. Users will be able to change this value later.

3. Reference Parameters in Queries:

- In the Power Query Editor, create or edit your queries to reference the parameters you've created. For example, if you have a SQL query, you can use the parameter in the WHERE clause.

4. Use Parameters in Filter Conditions:

- Apply the parameter to filter your data. In the Power Query Editor, you can use the "Filter Rows" or "Remove Rows" options to apply conditions based on the parameter.

5. Load Data into Power BI:

- Once you have set up your parameterized queries, close and apply the changes in the Power Query Editor to load the data into Power BI.

6.Create Visuals with Parameters:

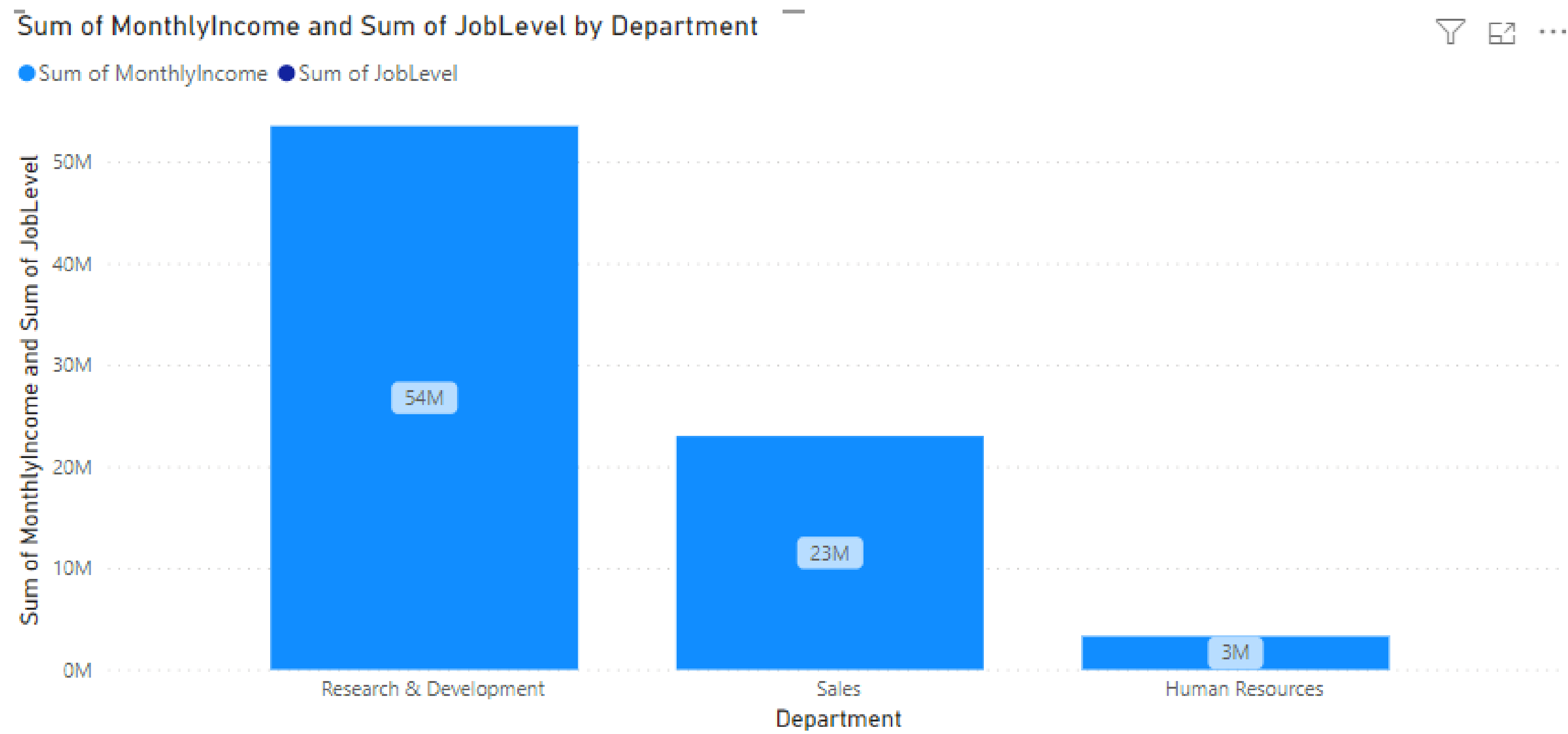
- **In the main Power BI window, create visuals (tables, charts, etc.) that you want to be influenced by the parameter.**
- **Use the parameter in filter conditions or in the measure expressions to dynamically adjust the data based on user input.**

7. Publish and Share:

- **After setting up your parameterized queries and creating visuals, publish your Power BI report to the Power BI service.**
- **Users can then interact with the report online, and they will see the parameterized visuals, allowing them to input values and see the data dynamically update.**

Remember that parameterized queries are especially useful when you want to give users the ability to filter data based on specific criteria without having to modify the underlying query manually. It provides a more user-friendly and dynamic experience in exploring data within Power BI.

12. In Excel, calculate the total Monthly Income for each Department, considering only the employees with a Job Level greater than or equal to 3



Thank You

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