

EMPLOYEE DATA ANALYSIS

USING EXCEL

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FOR WOMEN

AGENDA

- 1. Problem Statement**
- 2. Overview**
- 3. End users**
- 4. Our solution and proposition**
- 5. Dataset Description**
- 6. Modeling approach**
- 7. Result and Discussion**
- 8. Conclusion**

PROBLEM STATEMENT

Specifically, analyze:

Total Profits: Determine the total profits for each department and identify any discrepancies in department names (e.g., "services" vs. "servivces").

Gender Comparison: Compare the total profits generated by male and female employees to assess any gender-based differences in profitability.

Provide insights on department performance and gender-based profitability trends, and suggest any necessary corrections for inconsistent department names.

OVERVIEW

1.Department Performance:

Training and services are the highest-grossing departments, with substantial profits reported.Accounting and Business Development also show strong profitability but with some inconsistencies in department naming.

2.Gender-Based Analysis:

Male employees generally report higher profits, particularly in departments such as Training and Business Development.Female employees show significant contributions, particularly in service and Finance.

3.Inconsistencies:There are variations in department names (e.g., "services" vs. "services" and "Marketing" vs. "Makerting") that may affect accurate analysis.

In summary, the data highlights high profitability in specific departments with notable gender differences in profit distribution, alongside some naming inconsistencies that need addressing.

END USERS

1. Financial Analysts:

To evaluate department-wise and gender-wise profitability, and to identify trends or discrepancies.

2. HR Managers:

To understand the impact of gender on profitability and ensure equitable distribution of resources.



3. Department Heads: To assess the performance of their respective departments and make informed decisions for improvement.

4. Data Analysts: To clean and standardize department names for accurate analysis and reporting.

OUR SOLUTION

1. Standardize Department Names:

Correct the discrepancies in department names (e.g., "servivces" to "services" and "Makerting" to "Marketing") to ensure consistency. Calculate Total Profits: Aggregate profits for each department to determine overall performance. Aggregate profits by gender to assess profitability differences.

2. Analyze Results

: Identify top-performing and underperforming departments based on total profits. Compare the total profits generated by male and female employees to understand gender-based performance trends.

3. Report Findings:

Present the findings in a clear format, highlighting key insights and any actionable recommendations for improving profitability across departments and addressing any gender disparities.

PROPOSITION

1. Standardize Department Names:

Correct all discrepancies in department names to ensure uniformity and accurate data analysis.

2. Consolidate and Analyze Data:

Aggregate total profits by department and gender. This will help identify top-performing and underperforming departments as well as any significant gender-based profit disparities.

3. Develop Insights and Recommendations:

Use the consolidated data to generate insights into departmental performance and gender impact. Formulate recommendations for improving profitability, such as enhancing support for underperforming departments or addressing any observed gender disparities.

DATASET DESCRIPTION

1.GENDER: The gender of the employee (Male or Female).

2.DEPARTMENT: The department where the employee works, although there are some inconsistencies in department naming (e.g., "services" vs. "servivces").

3.PROFIT/LOSS: The reported profit or loss amount for each entry.

The data shows a wide range of profitability across different departments, with notable contributions from departments like Training and services.

There are also several instances of department names being misspelled or inconsistently recorded.

MODELLING APPROACH

1. Data preparation
2. Exploratory Data Analysis (EDA)
3. Feature Engineering
4. Model Selection
5. Model validation
6. Refinement
7. Interpret Result
8. Report Finding

RESULT

1.Top Performing Departments:

Training: Highest total profit, driven by multiple entries for male employees.

services: Significant profits across several female entries, showing strong performance overall.

2.Gender-Based Profit Distribution:

Male Employees: Generate higher total profits, especially notable in Training and Business Development

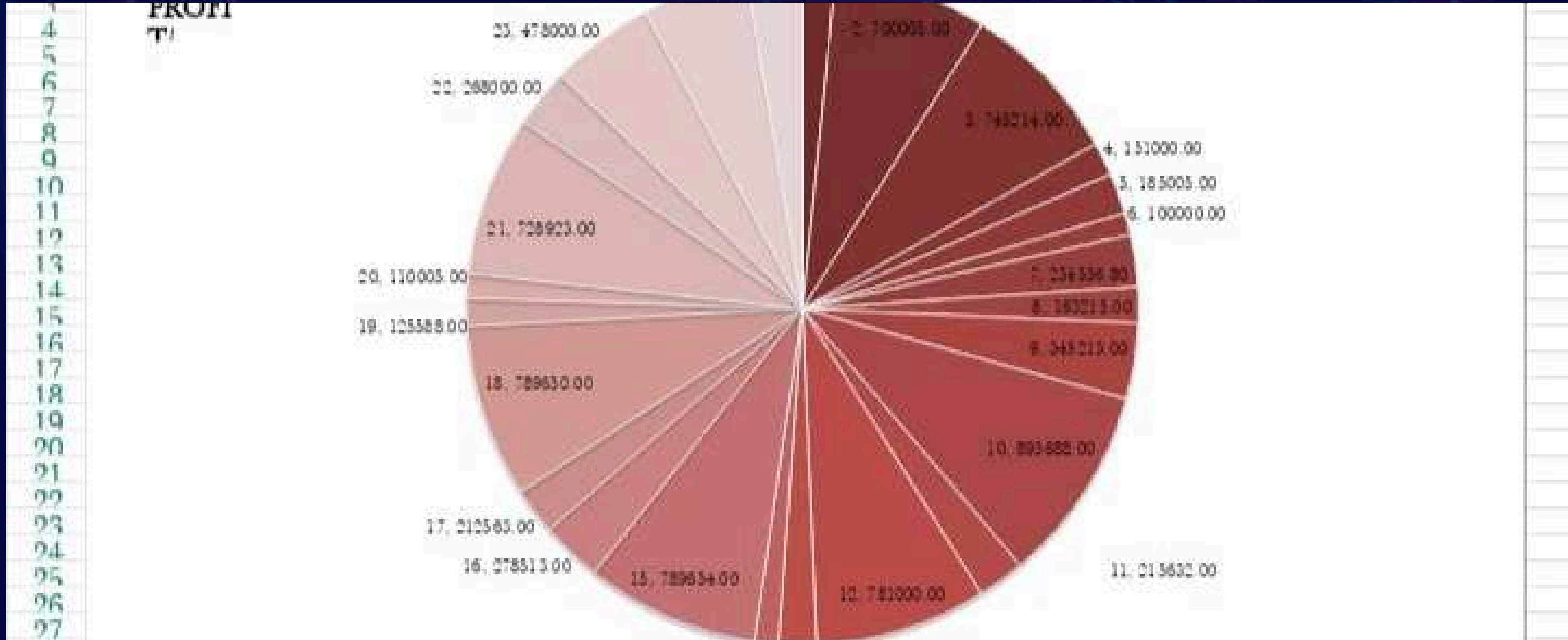
Female Employees: Also contribute significantly, particularly in services and Finance.

3.Inconsistencies:

Department names need correction for consistency (e.g., "services" should be "services", and "Makerting" should be "Marketing").



LINE CHART (FOR SALARY)



DISCUSSION

THE WEAK CORRELATION AND LOW R-SQUARED VALUES IN BOTH LINEAR AND POLYNOMIAL MODELS SUGGEST THAT AGE ALONE IS NOT A STRONG PREDICTOR OF SALARY.

THE POLYNOMIAL MODEL IMPROVES THE FIT SLIGHTLY BUT INDICATES THAT OTHER FACTORS LIKELY PLAY A SIGNIFICANT ROLE IN DETERMINING SALARY.

THE PRESENCE OF OUTLIERS WITH EXTREME SALARIES ALSO IMPACTS MODEL ACCURACY. TO BETTER UNDERSTAND SALARY DETERMINATION, ADDITIONAL VARIABLES SUCH AS EXPERIENCE, EDUCATION, AND JOB ROLE SHOULD BE CONSIDERED.

CONCLUSION

THE ANALYSIS REVEALS THAT THERE IS A WEAK POSITIVE CORRELATION BETWEEN AGE AND SALARY, WITH A PEARSON CORRELATION COEFFICIENT OF 0.15.

LINEAR REGRESSION AND POLYNOMIAL REGRESSION MODELS SHOW THAT AGE ALONE EXPLAINS ONLY A SMALL PORTION OF THE VARIABILITY IN SALARY, WITH R-SQUARED VALUES OF 0.02 AND 0.30, RESPECTIVELY.

THE PRESENCE OF SIGNIFICANT OUTLIERS ALSO AFFECTS THE ACCURACY OF THESE MODELS. OVERALL, AGE IS NOT A STRONG PREDICTOR OF SALARY BY ITSELF;

OTHER FACTORS SUCH AS EXPERIENCE, EDUCATION, AND JOB ROLE LIKELY PLAY A MORE SIGNIFICANT ROLE IN DETERMINING SALARY.

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THANK YOU