

Introduction

Title: Data-Driven Decisions: An HR Exploration of Employee Attrition and Recommendations in a Pharmaceutical Company

Objective: To analyze employee attrition using HR analytics, identify key factors influencing attrition, and provide data-driven recommendations to reduce turnover in a large pharmaceutical corporation.

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1. Introduction and Background

1.1 Background

The focus is on a large pharmaceutical corporation experiencing high workforce turnover. The organization currently relies on standard monthly reports in Excel files to monitor Human Resource Metrics. Recognizing the limitations of this approach, the company is eager to adopt more advanced analytics tools like Tableau to gain a better understanding of the data and address the high attrition problem.

1.2 Overview of the Business Problem

Attrition refers to a decrease in workforce size due to factors such as voluntary resignations, mortality, and retirement. The company's overall attrition rate is currently 19.15%. The main objective is to identify prominent factors affecting attrition and present the findings to the Board members.

1.3 Importance of the Problem

High attrition rates can lead to financial losses, negatively impact the knowledge base, reduce employee engagement, and lower productivity. Addressing attrition is crucial for maintaining organizational efficiency and achieving timely organizational goals.

1.4 Challenges Faced

Employee attrition causes various operational issues such as knowledge loss, workflow disruption, financial costs, and strain on human resources. It also affects teamwork, job satisfaction, client relationships, and service quality. Hiring replacements incurs significant costs, including hiring, training, and conducting interviews.

1.5 Analytical Tasks and Role of Analytics

The initial analytical step involves integrating data into Tableau for exploration and quality assessment. Exploratory analysis identifies significant patterns, leading to a comprehensive report that improves decision-making within the business.

2. Methodology

2.1 Proposed Solution Design

The CRISP-DM methodology, an industry-neutral process model for data mining, is used. This process includes six iterative phases, focusing on descriptive analysis.

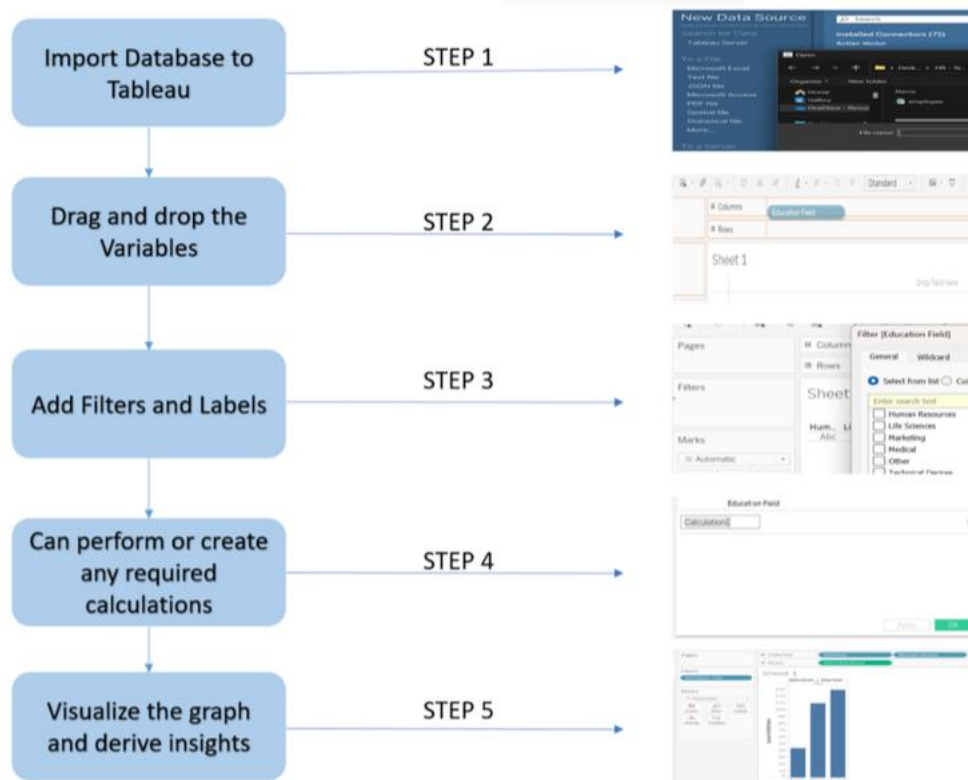
2.2 Chosen Methods

CRISP-DM Steps:

1. **Business Understanding:** Evaluate the business environment and identify objectives.
2. **Data Understanding:** Acquire data from various sources, examine, and depict data integrity.

3. **Data Preparation:** Establish criteria for data selection, address data integrity issues.
4. **Data Visualization:** Present numerical data in a visual framework for better understanding and processing.

2.3 Step-by-Step Flowchart or Infographic



2.4 Applicability and Efficacy of the Methods

CRISP-DM offers a systematic framework for successful project development, enhances classification model accuracy through correlation-based feature selection, and improves decision-making precision.

3. Findings

3.1 Visualizations and Insights

3.1.1 Overtime vs. Attrition:

- Employees working overtime have higher attrition rates (37.35%) compared to non-overtime employees (11.98%).

3.1.2 Age vs. Attrition:

- Mid-career professionals (ages 26-40) show the highest attrition rate (59.29%).

3.1.3 Gender/Marital Status vs. Attrition:

- Male employees, particularly single males, have the highest attrition rates.

3.1.4 Job Level vs. Attrition:

- Junior positions exhibit the highest attrition rate (50.89%).

3.1.5 Gender vs. Attrition:

- More males (172) leave the organization compared to females (109).

3.1.6 Attrition vs. Job Role:

- Sales executives show the highest attrition rate (35.94%).

3.1.7 Department vs. Attrition:

- The Sales department has the highest attrition rate (30.56%), followed by HR (19.05%) and R&D (13.87%).

3.1.8 Attrition vs. Percent Salary Hike:

- Lower salary hikes are associated with higher attrition rates across all departments.

3.1.9 Key Performance Indicators:

- Includes total employee count, attrition count, number of active employees, attrition rate, and average age.

3.2 Choice of Chart Types

Bar Chart: Efficient for categorizing numerical data.

Line Chart: Connects discrete numerical data points.

Pie Chart: Represents relative proportions or percentages of information.

3.3 Use of Parameters and Calculations

- **Attrition Count:** IF [Attrition] = 'Yes' THEN 1 ELSE 0 END
- **Number of Active Employees:** COUNT([employee]) - SUM([Attrition_count])
- **Attrition Rate:** SUM([Attrition_count]) / COUNT([employee])

4. Recommendations and Discussions

4.1 Recommendations to Reduce Attrition

- Implement systems to monitor and regulate overtime hours.
- Foster open communication and seek input from married employees.

- Collaborate between sales and marketing divisions to reduce stress, enhance compensation, and provide professional development opportunities.
- Develop effective retention techniques for new hires, including incentives and rewards.

4.2 Literature-Based Recommendations

According to Al-Suraihi et al. (2021), businesses should use retention methods such as:

1. Structured internal job posting systems.
2. Skills training for employees.
3. Rigorous training classes on industry trends.
4. Actively monitoring and increasing employee project engagement.
5. Recognizing and praising employee contributions.
6. Immediate awards, employee recognition, and performance-based compensation.
7. Acknowledging individual traits and strategically assigning projects.
8. Encouraging open communication, productivity, and a positive company culture.

5. Future Work

5.1 Follow-Up and Future Work

Advanced analytics offers benefits like higher forecasting accuracy, faster decision-making, and better risk management. Future work involves leveraging advanced analytics to enhance decision-making and strategy development.

6. References

A comprehensive list of references, including sources from HR analytics, business problem analysis, and methodology literature, is provided.