

Predicting Workplace Absence

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Domain: Human Resources – Absence Management

Employers know that workplace absences occur for many different reasons. Workplace absences can have a considerable effect on several different aspects of a business including productivity, employee morale, and profits. Being able to predict patterns that lead to higher rates of workplace absences could provide an employer with important insights that could be used to develop strategies to mitigate absenteeism.

References:

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Dataset:

The dataset contains 740 observations with 21 features detailing reasons for employee absences and personal/demographic information of the employee. This dataset was recorded by a courier company in Brazil between July 2007 to July 2010.

<https://archive.ics.uci.edu/ml/datasets/Absenteeism+at+work>

Research Questions:

What are the main causes of high absenteeism? Can absenteeism be predicted?

Are there patterns in absence rates by season or day of the week?

Are there groups of contributing factors that lead to high absenteeism?

By identifying potential trends in absenteeism, businesses may be able to better provide absence management that can mitigate the effect of absenteeism in the workplace.

Method:

I plan to follow the CRISP-DM methodology while conducting this project. I have identified the business intelligence need of reducing absenteeism. I have collected a dataset that I intend to use for analysis. From here, I will need to clean and wrangle the data. Explore the data and understand all the potential information that could be gleaned from it. Then I plan to use classification modeling methods to identify trends in absenteeism by season or day of the week. I hope to identify trends that can be used to predict when higher rates of absenteeism occur. I plan to use clustering modeling methods to identify potential groups of features that could indicate if an employee is at risk of having higher absenteeism counts.

Potential Issues:

There is potential for not having enough data to identify patterns. In that case, I have identified the Bureau of Labor Statistics as a potential source for supplemental data.

Another potential issue is I do not have much experience with using clustering algorithms and I will be attempting hone these skills while working on this project.

Concluding Remarks

Workplace absenteeism negatively impacts businesses in a number of ways. It reduces overall productivity, it negatively impacts employee morale, and it cuts down on the profit margin of the business. “According to the Bureau of Labor Statistics (BLS), the absence rate from work for full-time employees is 2.9 percent.” (Cushard, B., 2021). This project will use data collected from a business on employee absenteeism over a period of three years to conduct research using data science methodologies and techniques to identify possible causes and patterns in absenteeism. Providing employers with information on when higher absenteeism will occur and reasons surrounding the absences will provide them with information that can be used to assist in absence management and ultimately lead to better productivity, a more positive employee experience, and higher profit margins.