

Analytics on Key Factor for an Employee Attrition – An Overview

***A.Noorul Ameen**

****Dr.M.Ganesh babu**

*Research Scholar,

PG and Research Department of Business Administration,

Rajagiri Dawood Batcha College of Arts & Science

**Assistant Professor, PG and Research Department of Business Administration, Rajagiri

Dawood Batcha College of Arts & Science, Papanasam, Thanjavur District

Introduction

In today's aggressive company environment, the impact of attrition on a company can be harmful to both the bottom line and confidence. It is a critical concern in an organization nowadays. It can impact the loss of employees or the loss of customers finally loss in revenue. Either employee turnover or failure to retain customers over time can challenge the management. To reduce attrition, Management must understand the causes of customer and employee return, the costs connected with attrition, and finally, introduce process to diminish attrition rates.

Today companies begin to collect and analyse the feedback from their employees to curb attrition, boost confidence and measure employee satisfaction. But gathering and parsing this unstructured data is a time-consuming and labour intensive undertaking.

KPI for identification of attrition

We can collect data from different appropriate streams to construct an unprocessed dataset to be used for this analysis.

- Analysis, exploration and transformation of the raw data, in order to create usable features for the model, such as
 - Total number of companies he has worked prior to this job
 - Position/Designation changes
 - Average tenure in an organization
 - Compensation
 - Total experience
 - Nature/Role of Job
 - Education
 - Location
 - Total Duration of service in current organization
 - Expertise in Technology
 - New learning's
 - Relationship with Manager
 - Relationship with Co employee
 - Duration in office
 - Number of leave taken
 - Productivity in current role

- Knowledge sharing
- Ownership of activity performed
- Time spend in social media
- Websites visited
- Work life balance
- Over time details
- Influence of Personal factors
- Categorization of data values to define a variable that would help the most in predicting attrition like Tenure period etc.
- Model building by using multiple techniques like decision trees and regressions;
- Top factors identification by measuring the odds of the factors being able to explain attrition events better than the baseline.

Identification of proper analytics to identify the cause of attrition

There is a need to analyse a holistic attempt which is avital part of the employee life-cycle and not something that is restricted to end of year compensation planning. This has some key implication for construction and consuming the analytics. Framework, attrition model help's them management to plan and to make strategic initiative.

- A variety of Analytics will be required:
 - Predictive Analytics to capture patterns within the data that effect attrition risk; maybe it's career velocity, compensation, or churn?
 - Content Analytics to find patterns of activity across the business to find root causes of attrition; maybe its employee sentiment, project involvement, skills, or experience.
 - Social Network Analytics to identify patterns across the social network that help effectively action attrition risks; from finding hot-spots, identifying attrition influencers, and factoring in social network effects.
- Incorporating a variety of drivers:
 - Internal; such as employee sentiment, engagement, projects, compensation (relative to peers), career progression, skills alignment, experience, performance, or work environment.
 - External; such as compensation (relative to market), market demand (for skills), economic, or personal factors.
- From different data sources:
 - HR databases, CRM solutions, enterprise social networks, and associated content.
- It needs to be **broadly consumable** by a variety of solutions across the employee life-cycle:
 - For example; if skills alignment is the #1 risk factor for a specific target group, that fact needs to be available to the learning system so that it can impact training plans or the project management system to adjust job assignments.

This means there should be a framework, to combine collaborative as a workflow:

- *Identify Risk* of attrition across the organization, determining the employee attrition risk and drivers through analysis of relevant data captured from HR systems, business processes and applications, social and collaboration systems, and external market and industry data.
- *Assess Impact* to the business by analysing and evaluating factors ranging from; total cost of attrition (replacement, productivity, training, salary inflation), impact to operations

(employee impact, skills, influence, expertise), impact to revenue (customer or partner relationships, external influence, current projects), impact to strategy (skills gap analysis, skills alignment, growth plays), etc.

- *Build Action Plan* incorporating a wide range of levers (salary increase, promotion, job transfer, project assignment, skills development, change in contract, adjustment of company policies, organizational changes) to mitigate risk and prevent unwanted voluntary attrition.
- *Evaluate Performance* by assessing impact of past actions in order to improve decision making over time and optimize retention strategies across the business.

Predictive Attrition Model

Through predictive algorithms, organization gain better understanding and can undertake preventive measures for employee attrition.

On a basic level, the model works by clustering/ classifying employee profiles based on above said KPI's such as age, sex, marital status, education level, work experience, distance from hometown, etc. and generates various levels of risk of attrition. Occasionally, other parameters like performance over the years, pay raise, work batch, educational institution are also taken into consideration.

However, the accuracy of the model is directly proportional to the selection of parameters, which in turn, leads to the generation of the 'type' of predictive model most suitable for the organisation.

Creating the Model

Various statistical and machine learning algorithms are designed to construct the predictive models. For instance, 'classification' models catalog the employees based on their risk to leave the company; whereas 'non-linear regression' model gives the 'probability of attrition' when the outcomes are dichotomous.

Likewise, 'decision trees' model evaluate loss based on factors like gini index, information gain and variation reduction. For models involving multiple parameters, the decision trees tend to become very large and complex.

In such circumstances, 'Random Forest' method combines several decision trees using multiple algorithms to classify and understand complexities and predictions. Besides, these models aim to provide good predictability. However, seamless implementation depends on choosing the right model. Thus, different models are chosen based on the aforementioned parameters, data availability, budget, computational power and the requirements of decision makers. For example, in one organisation, a model using artificial neural network may provide better predictability than a decision tree model, but a decision tree model may be easier to understand and implement at a lower cost. Thus, depending on the organizational contexts, different models have to be tried and evaluated before making the final selection.

Output

The output depends on the chosen model. For instance, 'logistic model' produces scorecards for employees based on their predicted 'attrition risk' parameters; while the classification model catalogues the employees into wider parameters, such as-more likely or less likely to quit, high risk or low risk, etc.

However, the bottom line is to keep it simple enough for HR managers to understand and implement accordingly. Changing the various factors help in assessing the impact of changes and making the right decisions.

Benefits of Predictive Attrition Model

This model is helpful while making the following decisions:

- Evaluation of employee requirements, their strengths and weaknesses
- Minimize cost of new talent acquisition based on the employee profiling and company requirements
- Analysis and assessment of the loss in expertise and skill sets
- Measurement of financial and productivity loss due to attrition
- Able to plan and minimize the loss
- Provides good understanding of workforce supply and demand
- Able to prepare contingency plans based on the insight and foresight provided by the model

It may not be immediately evident, but effective HR analytics can result in stronger organizational values. For example, insights about employee development can help in improving the skills and competencies of your workforce - which can subsequently lead individual employees towards higher achievement and greater fulfilment at work. Similarly, business leaders can make use of insights to improve the employees' level of motivation. They can also demonstrate that the organization is committed to transparency by sharing insights with their workforce.

Conclusion

Predictive Attrition Model helps in not only taking preventive measures but also into making better hiring decisions. Deriving trends in the candidate's performance out of past data is important in order to predict the future trends, as well as to board new employees. Moreover, HR can use the employee data to predict attrition, the possible reasons behind it and can take appropriate measures to prevent it.

To address the uncertainties of economic and political conditions, business leaders must be able to constantly fine tune decisions about their employee. Fortunately, it is now possible for organizations to excel in answering questions about their employee and making decisions to optimize the employee through the power of metrics and analytics. HR Analytics delivers comprehensive dashboards, along with logical analytical workflows, through the various Key Performance Indicator (KPI) that deliver insights from available information to support actions.

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