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Attrition Forecast Modelling Through HR Analytics (with Special Reference to a Leading IT Company): A Critical Evaluation

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Abstract: Companies in a modern day scenario invest a substantial portion of the annual HR budget in devising models to effectively predict and control attrition, the genesis of which is controlling turnover cost and effective retention. Over the years several factors have been fostered as key indicators for attrition prediction and have a compelling role in the models being used. The paper critically evaluates one such indicator and the analysis of the same.

Keywords: HR, HR Analytics, Attrition, Forecast Modelling, Technology

1. INTRODUCTION

In the current knowledge economy, employees in an organization are considered the key competitive advantage and the most important asset. If an employee leaves an organization, they take the knowledge they have acquired with them. The loss of knowledge is a potential threat to an organization's existence, especially if an employee with valuable knowledge leaves to join a competitor.

This generates a crucial need for the development of models which can effectively evaluate the employee attrition through the exit trends and develop variables which can be mapped on the existing headcount to predict attrition. Organizations find it compelling to invest in the development of such projects as they form a crucial part of the retention tools used by the organizations. However, such forecasting models have always been criticized on their ability to effectively predict employee attrition as they rely on employee exit data and statistical errors. Even with the number of factors resulting in the skewness of the results forecasting models have in fact been a vital component for effective retention strategies.

A good forecasting model rests its foundation on the behavioural aspects of the human nature, which then are quantified on the basis of their relative occurrence and statistically modeled into variables. The whole idea is to isolate critical set of traits and behaviours which are usually illustrated by employees with

high level of attrition propensity. The simple ideation of quantification of critical behavioural patterns is a logical approach. However, developing a all-pervasive model for the complete work force leads to deviation in results. It is imperative to also consider the function and nature of work variables in the construct of the model to substantially decrease the level of deviation in the forecast results.

The research is based on the evaluation of the attrition prediction model used by a leading IT organization in India. The model typically identifies the employees to be on a high and low levels of attrition propensities. The model has been in development ever since its inception and is being primarily used to forecast attrition trends in Sales personnel. The model uses data sets of the existing employees and subsequently maps them on the critical indicators of attrition to forecast employee attrition.

1.1. Literature Review

Enormous amount of literature on the causes of voluntary employee attrition and retention can be found from the time dated back to the 1950s. Researchers have developed multivariate models, which associated with a number of factors contributing to attrition & retention, and many empirically testing of these models, have been pursued to predict why individuals stay or leave organizations. Employee attrition & retention is manifestation of employee movement in an organization, which is deliberated by researcher in HR. They are two sides of same coin. Employee attrition & retention may be result of the negative or positive influence of the various factors [1]. There is a sea change in the needs and wants of the employees. Their expectation can be expressed as their wish to be employed as a place to work to that of being employed at a Great place to work. The organizations that are able to cope up with these typological alterations of employee profile will be able to improve employee commitment, reduce attrition and hence will be able to retain their employees.

Research done in the area of employee attrition and retention has discussed domains like education [2], private public employment, financial institutes, banking, ITES industry [3] oil industry, government ministries, labour market [4], shipping[5] [6] to name a few but not much inclusive and structured work has been done in the domain of shipping sector of India, particularly Kutch. Literature review has also shown how various researchers have identified a plethora of reasons behind the escalating problem of attrition and how many of them have even suggested recommendations to combat it [7] [8] Many researchers have also worked on various domains like the HRM systems and practices [9], job satisfaction [10] organization factors for turnover [11] and burnout prevention. However, no systematic and comprehensive work has been found that collaborate all the facets to combat the most smouldering problem of the present times. On the voyage thorough these literature and in an effort to understand the various factor influencing the theses issues, some important observations have been noted. This paper attempts to present analysis and comprehend the knowledge available on the factors of attrition and retention. The acquisition, development and retention of talent form the basis for developing competitive advantage in many industries and countries [12] HR analytics helps the human resources in tracking projects, absenteeism, monitoring and Managing schedule assignment, and tracking performance of each employee. [13]. Workforce Analytics is the ultimate tool for making a strategic workforce planning. HR Analytics today is targeting critical workforce metric that link workforce strategy to business results that finally provides HR a seat at the table and the integrity to make business and workforce strategy decisions by identifying cost savings opportunities, improving the retention of key talent and increasing workforce productivity and efficiency [14]. Organizations that are capable of leveraging in data driven decision making for the workforce not only outperform their contenders, but also profit higher value to shareholders and be in a better placed to meet workforce and business demands for the future. Google has reached an extraordinary success in the marketplace by focusing on strategic focus on people management [15]. In the article “how Google is using people analytics to completely re – invent HR”

explains how Google has reinvented their focus to people management which has in turn helped them to become No. 1 spot in the list of top ten successful companies. It also explains how by re-aligning their HR strategy Google has changed its face of productivity.

There are a lot of varied definitions of what HR analytics is; this paper adopts the one from where HR analytics is defined as “demonstrating the direct impact of people data on important business outcomes”. The terms “analytics in HR” and “HR analytics” are used interchangeably. Though there is a perception that HR is a soft-area where numerical methods cannot be applied. HR is not a stranger to using data, as measurement of people (or human resources) has been a subject of interest since the time of Fredrick Taylor, who began the scientific management movement. A study by Lawler showed that use of metrics and analytics by HR increased the scope of HR being seen as a strategic partner in the organisation. Organisations such as Google, Best Buy and Sysco have been able to enhance their competitive advantage through their use of HR analytics. Researchers have also observed that the use of analytics in order to understand how HR practices and policies impact organizational performance is a powerful way for HR functions to add value to their organization.

Also organisations today have the ability to access and process a variety of data compared to a decade ago thanks to the developments made in information and communication technology [16,17]. However, despite these advances in technology over the years, HR has not been very adaptive to analytics. To help HR overcome this attitude towards analytics, researchers and consultants have proposed factors, steps and maturity models that could be leveraged by HR for using analytics in its processes and practices. The DELTA model of talent analytical applications which stands for data, enterprise, leadership, target and analysts - for successful implementation of analytics [18]. The identify three factors which could be used to gain analytical sophistication namely information management competency, analytical skills and tools and data oriented culture. An organisation should have a strong analytic culture which is built through an emphasis on decisions at every level to be based on data. However, there is a lack of discussion about the HR professionals himself in this models and steps for using analytics. This study aims to factors which can drive HR professionals to adapt more to analytics.

2. FORECAST MODEL

The attrition forecast model determines the turnover intentions of the employees on the basis of EWS (Early Warning System) factors which are individually quantified on different scales and metrics analyzing the nature of relative employee data on the model.

A set of five primary factors have been isolated from the model which tend to have a significant impact on the results derived through the model and in many ways are all-pervasive factors for employee attrition forecasting.

2.1. Tenure with the organization

Early Warning System proposes that an employee's intent to attrite is also dependent upon the tenure a particular employee completes in an organization. EWS has given three categories to gauge the level of turnover intent based on the period of time spent in the organization. The categories are:

- a. Low Intent – 49 to 80+ months of service.
- b. Medium Intent – 61 to 80 months of service.
- c. High Intent – 0 to 36 months of service.

As the tenure of an employee extends in an organization his/her turnover intentions decrease.

2.2. Employee Compensation

Early warning system considers employee compensation as a vital factor to determine the intentions for an employee to leave the organization. This is based on his perception about the ratio of his salary to his peers at same role and designation drawing salaries above or below him and on a secondary level the ratio of his salary with the current market trend for the nature of the job he/she currently undertakes. Application of this principle suggests that any employee drawing salary below his/her current internal or external compensation ratio is likely to have high intention of attrition. Again, it is the mere perception of an employee to gauge his or her compensation ratio as the correct measure of such a thing is subject to analysis at company level from a micro perspective and industry level from a macro perspective.

2.3. Satisfaction with last performance review

Annual performance rating in many ways is the thermometer of a employee in the organization. The performance review is the measure of his performance in the organization with respect to the successful achievement of his key result areas and other performance aspects. Any employee scoring low on his/her performance rating is likely to be dissatisfied and can eventually lead to intentions of turnover.

2.4. Different Career Aspirations & Other Personal Reasons

Early warning systems considers an employee's need for self-development and career aspiration as a factor for turnover intent. This factor can arise on the basis of his/her stagnation in the current role or designation he/she currently holds. This can be due to variety of reasons. The employee cannot establish enough evidence of the organization taking keen interest in the development of the employee and second factor is that over a certain period of time the employee has started to perceive the need for career development for the uniform growth of his/her career trajectory.

2.5. Employee applying outside for better opportunities

EWS presupposes that an employee applying outside the organization for a better opportunity is the direct indicator of his dissatisfaction and is directly proportional to turnover intentions. Applying outside the organization for a better opportunity can be due to a variety of reasons. And like any other factor in the EWS model it does not require a justification. In any given attrition data it would have the highest number of attrition cases subject to it.

The forecast model evaluates the employee data collected on the given parameters and categorizes each employee on the level of forecasted turnover intention which ranges between high, medium and low. The model then places the employee on a 'Value Grid' which determines the employee's probability to leave the organization with his or her relative value to the organization. Any employee with a relatively higher value to the organization with a indicative high probability to leave is considered to be a 'High Risk'. Similarly any employee with a relatively lower value to the organization with any degree of probability to leave is considered to be a 'Low Risk' asset. The forecast model also works as a real-time evaluator of the employee's value in the organization.

3. ISSUES

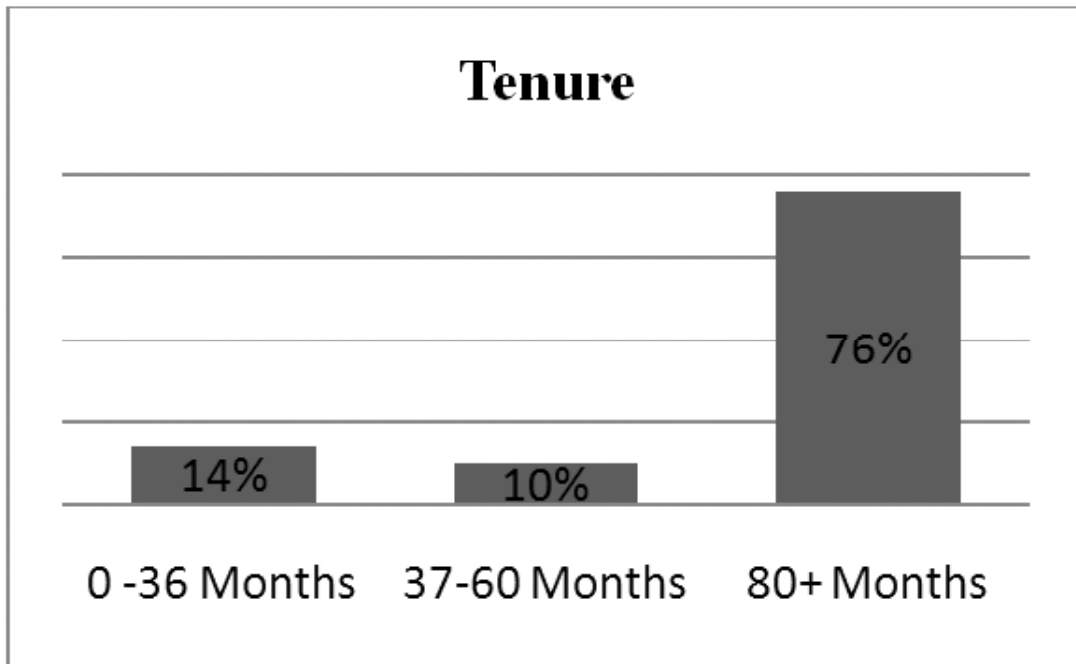
In principle the results of past attrition trends should be synchronous to the forecast parameters and their assessment respectively. However, the analysis of the past one year employee attrition data illustrated different results.

The one of the model parameter was found to have negative relationship with the attrition data.

3.1. Service Tenure

The EWS model suggests in principle the probability of an employee to attrite decreases as the tenure of the service with the organization increases and hence has also given a reference range of the same in topic 2.1

Interestingly the analysis of the employee attrition data suggested more employees tend to attrite with the increasing tenure of service.



This has a significant negative impact on the calculations of the forecast model because the factor – ‘Tenure in the organization’ has the highest weightage in the model (30% out of 100%). With the current reference range and the relative weightage in the forecast model the results are bound to have skewed results.

With the current methodology the forecast model will always predict heavy attrition probability in the employee population with service tenure between 0 – 60 months. However, in real time conditions the attrition is significant in the employee population with 80+ months of service tenure in the organization.

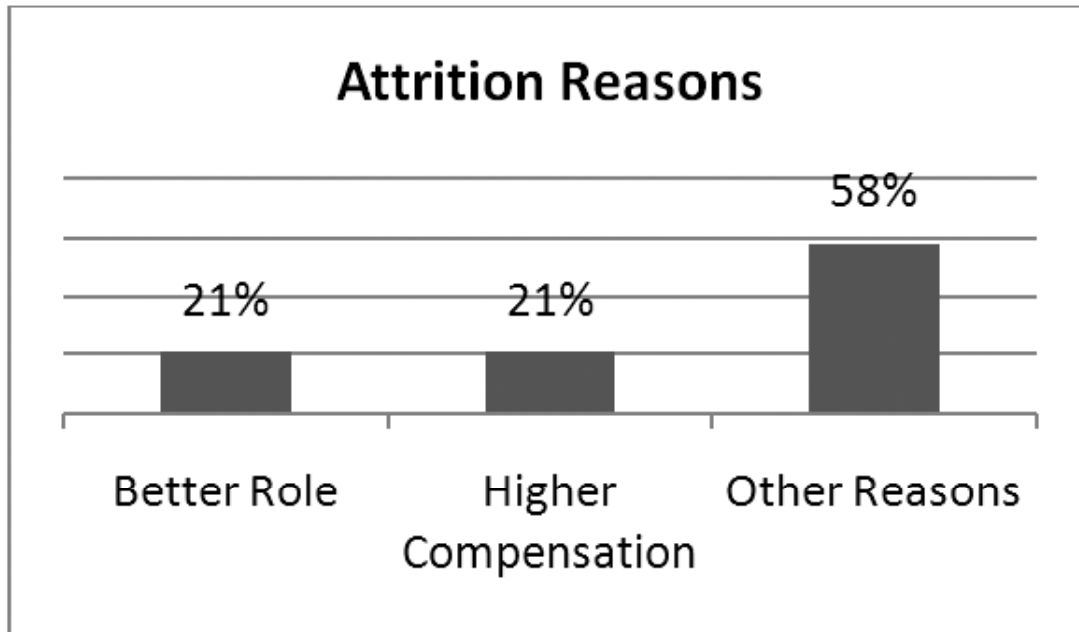
3.2. Better Opportunity & Higher Compensation amongst prominent attrition causes

Looking at the principles of employee attrition logic suggested in topic 2.1 is universally valid as employee’s tendency to face longer ramp period in the organization and failure to adapt to the organization’s environment and culture cause attrition on both voluntary and involuntary levels.

This logic only performs when other attrition drivers such as employees looking for better role and need for higher compensation is not significant in the attrition trends.

The analysis of the attrition data suggested that a consolidated 42% of the attrited employees were looking for better opportunities and felt the need for higher compensation.

There existed a potential reason for the results of ‘Service Tenure’ factors to be skewed.



There existed employees in the organization who were nearing the maturity curve of their current role and were looking for job enlargement. Also inspite of a greater above average performance ratings of the said population there existed discontentment towards the level of remuneration amongst the employees. Under such circumstances attrition in the current strata was imminent.

4. CONCLUSION

In real-time conditions need for better role and need for higher compensation are always key attrition drivers in employee turnover across all sectors. However, the thorough analysis of the 'Service Tenure' variable of the EWS model and past attrition trends has now determined that

1. Service tenure is not only dependent upon the demographic features of the employee population.
2. Probability estimations of attrition under service tenure are not strictly based on the length of service in the organization.
3. In an event of lack of better role opportunities and general perception of need for better compensation the factor 'Service tenure' should be calculated in the reverse order to derive suitable results from the forecast model.
4. A suitable decrease in the weightage of 'Service Tenure' factor in the EWS model can lead to model stabilization.

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