

Culture Matters: The key factors Amazon employees value

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I. Executive Summary

In a report in 2022, Amazon was reported to have high attrition rate that could cost the company \$8 Billion per year, which is a significant amount of money. In order for Amazon to lower the attrition rates, identifying and satisfying employees needs play a critical part. Therefore, the goal of this project is to help Amazon identify key areas and details to work on by utilizing Linear Regression and Text Analysis in R.

In this project, I used 2020 data of the “Amazon Job Reviews (USA & India) 2008-2020” dataset from Kaggle. The dataset consists of individual employee’s working-related data, job ratings and comments.

I started off by performing Linear Regression Analysis to discover the relationship between Overall Job Ratings and 6 sub-ratings that correspond to different aspect of the individual employee’s job. Under the 0.05 significance level, all of the sub-ratings have significant effect on overall job ratings. Moreover, by comparing sizes of the coefficients, I was able to detect that Culture & Values aspect of the job is what Amazon employees really care about.

Subsequently, I conducted Text Analysis within both reviews that rate the Culture & Values aspect highly and poorly. I extracted that within positive reviews, there are keywords like “motivate”, “diverse” and “innovate”, suggesting Amazon is an innovative environment that motivates and supports its employees. However, in negative reviews, “favoritism”, “overwork” “rude” and “lie” popped up, indicating the work environment is lack of equity, organization and also toxic.

Therefore, I would recommend that Amazon should maintain their environment to be diverse and innovative. However, it need to provide DEI program, change advancement practices or even conduct leadership training. By doing so, I believe Amazon can improve the environment and keep their employees.

II. Introduction

According to a Forbes report in October 2022, Amazon has an astonishing turnover rate and attrition rate, indicating that a significant number of employees were leaving the company. And these rates could cost Amazon around \$8 Billion per year. Comparing to Amazon's net loss in 2022, which was \$2.72 Billion, the cost was enormous. Therefore, it is critical for Amazon to cut down on unnecessary costs while keeping its talents around. To do that, Amazon needs to lower its attrition rate by identifying employees' needs and addressing to them. Therefore, the problem lies in what areas should Amazon improve in order to retain its talents?

This project utilized Linear Regression Analysis combined with Text Analysis to help Amazon extract employees concerns and discover key factors the company should work on.

III. Methods

My dataset is the “Amazon Job Reviews (USA & India) 2008-2020” dataset from Kaggle. The dataset includes 29,494 observations and 23 variables, with one index column. The dataset comprises information on employees' working-related data, ratings, and text reviews. For simplicity, the data columns that were actually used in the analysis are:

- ID Number: Unique identifier for each review.
- Year: Year the review was provided.
- Country: Transformed from the office location of the employee
- Overall Rating: Overall score (out of 5) for the company.
- Work/Life Balance
- Culture & Values
- Diversity & Inclusion
- Career Opportunities
- Compensation and Benefits
- Senior Management: Specific ratings (out of 5).
- Pros: Advantages of the job (text data).
- Cons: Disadvantages of the job (text data).

I approached the dataset with Linear Regression Analysis at first by setting overall ratings as dependent variable and the other 6 sub-ratings as independent variables. By utilizing variable significance and sizes, I detected the most important aspect of jobs that employees care about and Amazon should look deep into it.

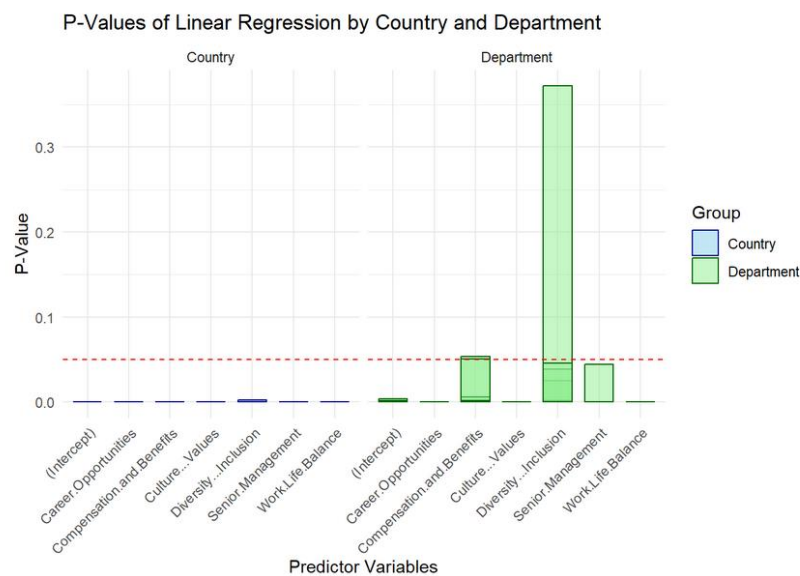
Based on the result of Linear Regression Analysis, I conducted Text Analysis within the key area. I extracted the Positive and Negative sentiment of reviews based on how the employee rated highly or poorly on the key area. For each sentiment, I calculated TF-IDF scores to identify keywords in both Positive and Negative reviews.

IV. Results

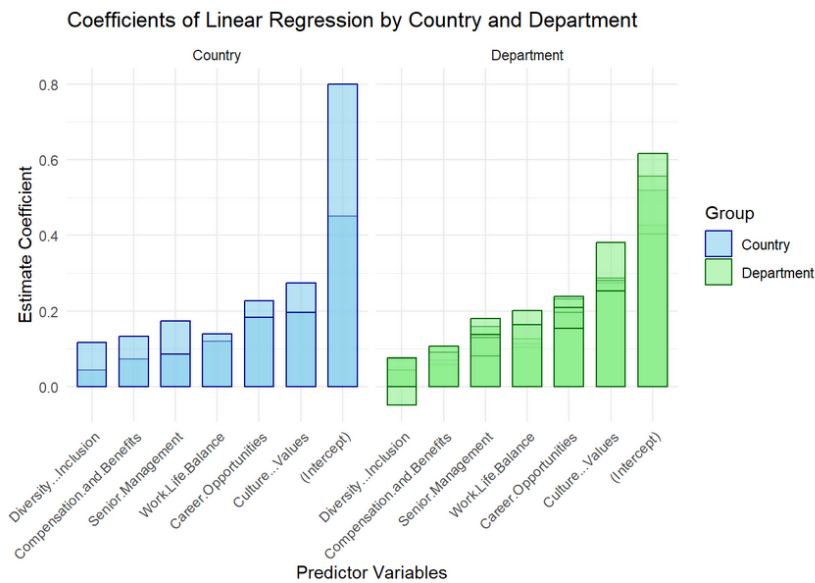
First, I conducted Linear Regression based on the below formula:

$$\text{Overall Ratings} = \text{Work-Life Balance} + \text{Culture \& Values} + \text{Diversity \& Inclusion} + \\ \text{Career Opp.} + \text{Compensation \& Benefits} + \text{Senior Management}$$

The result is in the following 2 charts

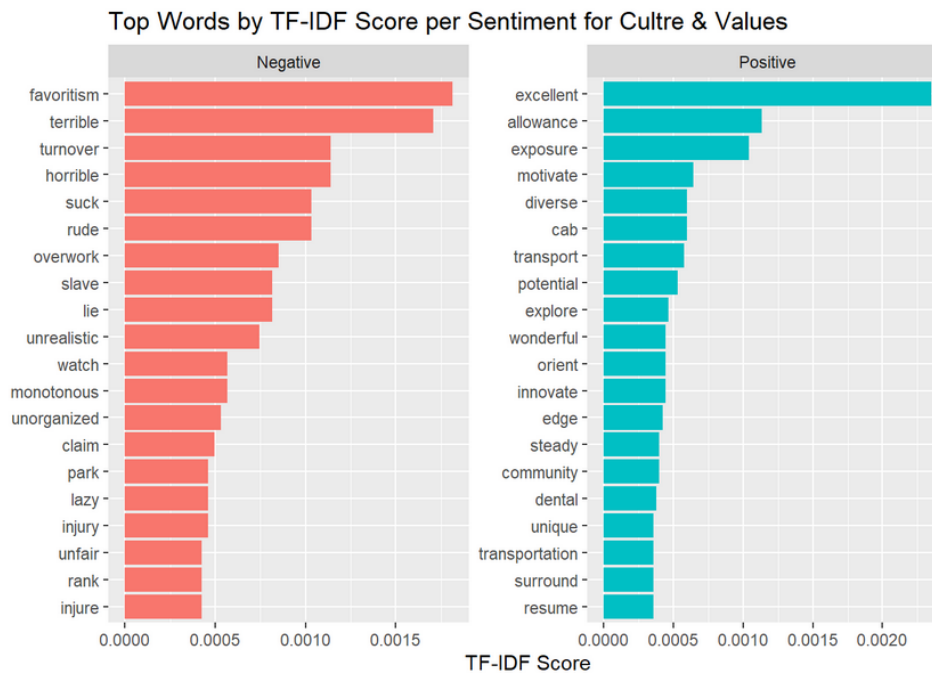


As we can see, under 0.05 significance level, no matter I conducted the Linear Regression Analysis by the country employee works or the department the employee works, almost all the variables have a significant impact on the overall ratings. Therefore, I compare the coefficient size to identify which of the variables is the most important.



According to this graph, we can see regardless of the analysis conducted from country or department aspect, **Culture & Values** has the biggest coefficient. Therefore, I concluded that Culture & Values is what the employees care about the most. And I conducted Text Analysis within the area of **Culture & Values**.

After extracting Positive and Negative reviews regarding the Culture & Values, I calculated TF-IDF score for each of the sentiment and get the below graph:



With this graph, I was able to see that within **negative sentiment**, keywords such as **“favoritism”, “turnover”, “rude”, “overwork”, “slave”, “lie” and “unorganized”** popped up, suggesting that the work environment is **lack of equity, workload management, organized and toxic**. On the other hand, in **positive sentiment**, **“motivate”, “explore”, “potential” and “innovate”** are one of the keywords, indicating that Amazon boasts an **innovative environment that motivates and support its employees’ personal growth**.

V. Discussion

By far, based on Linear Regression Analysis and Text Analysis results, I found out some implications for Amazon:

1. It is crucial to dive deep into Culture & Values aspect:

The Linear Regression Analysis result indicated that **Culture & Values** is the key factor that drives employees' overall rating about their jobs, which also reflects their satisfaction on the job and the company. Employees' satisfaction is the focus of affecting attrition rates. In order to make improvements and lower the attrition rate, Amazon should dive deep into working on its **Culture & Values**.

2. Being innovative and encouraging is an advantage:

The text analysis on positive reviews reflects that Amazon is an innovative company that supports its employees' growth. This is a huge advantage that can **not only attract job applicants but also retain the employees**.

3. Need to improve its equity, workload management and leadership:

Within the negative reviews, the equity, workload management and toxicity is the details that Amazon should improve. Since not being inclusive enough and toxicity can drastically **affect employees' morale and subsequently lower their productivity**. If the status does not change, employees may even have the thought of quitting, causing high attrition rates. For workload management, if the team is unorganized, it may lead to certain employees do most of the jobs while others do not, which will cause those hard-working employees to **burn out**. This will also contribute to the attrition rate. Therefore, addressing the issues above is the top priority for Amazon since lowering attrition rate can help keeping talents while saving costs.

VI. Recommendations

My recommendation for Amazon will be in 2 parts:

1. Maintaining the environment to be innovative and supportive

Since being innovative and supportive are advantages for Amazon, they should maintain it. In the meantime, I would recommend the company to **hold inter-team meetings regularly**. This will keep teams exchanged different innovative ideas to allow employees be aware of the innovative environment they are being and also stimulate ideas. Moreover, Amazon can develop an **employees' goals tracking system**, which can keep track of the progress an individual employee on his or her personal career goals. Based on the tracking, the system can **recommend training programs or skill courses** to the employee. This way, it can help employees grow and show that Amazon really do care about their career.

2. Providing leadership training program and optimizing work processes

Since toxic environment and not being equal enough is the issue. I suggest Amazon to **provide leadership training program** to all the teams or functions leaders. The program should involve **conflict resolution** that can help create harmony within groups. **Communication course** will definitely be effective since it can help creating an inclusive discussion platform. Moreover, **changing the policy of advancement to be more diverse** will also let the employees feel like their career path will not be affected by biased promotions. As for working processes, Amazon should **make use of work management tools** such as Monday.com to track the workload and divide works more efficient.

VII. Conclusion

In this project, we want to solve the problem and **help Amazon identify rooms for improvement in order to retain their employees**. To do that, we conducted **Linear Regression analysis** to identify that **Culture & Values** is the category that Amazon should prioritize in improving.

And within Culture & Values, we were able to **extract keywords** and found out that although Amazon is **an innovative company that supports employees' growth**, but the environment is **somewhat toxic, unorganized and even lack of equity**.

Thus, I suggest that Amazon should **maintain the work environment to be innovative and diverse while supporting the employees to make progress**. Amazon can do this by **holding cross-team meetings** and **implementing goals tracking system**.

However, Amazon should **improve their environment to boast fairness and inclusivity** by introducing **leadership training program** that specifies on **conflict resolution and communication**. Also, changing the **career advancement policy** will also help. As for **workload management**, utilizing **work management tools** will be effective on allocating and tracking workloads.

By doing so, I think Amazon will be able to lower their attrition rate and cut down on costs, which in the end, will be able to get back to being profitable.