Project Report

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| Product Name | Implement Data Visualisation techniques using MS Power BI |
| Qualification Name (NICF) | NICF Diploma in Info comm Technology (Data) |
| Product Name | NICF-Data Queries and Visualization Basics(SF) |
| Module Name (NICF) | **NICF-**Data Queries and Visualization Basics**(SF)** |

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| Project title | HR Attrition Project | | |

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| Learner declaration |
| I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.  Student signature: Date: 20/12/20 |

Content

1. Project background 3
2. Project Objectives 3
3. Project Specifications 3,4
4. Activity 1 4,5,6
5. Activity 2 6,7
6. Activity 3 7,8,9
7. Activity 4 9,18
8. Annexure (Excel Workbook) 18,19
9. **Project Background**

Attrition is a problem that impacts all businesses, irrespective of geography, industry and size of the company. Employee attrition leads to significant costs for a business, including the cost of business disruption, hiring new staff and training new staff. As such, there is great business interest in understanding the drivers of and minimizing staff attrition.

Attrition rate is defined as the number of employees who leave a company during a specified time period divided by the average total number of employees over that same time period. It’s expensive, non-productive and frustrating.

For the purpose of this analysis, we used twelve months staff data as the data population, indicating if there is attrition or not. The data set contains approximately 1473 entries. While some level of attrition in a company is inevitable, minimizing it and being prepared for the cases that cannot be helped will significantly help improve the operations of most businesses.

As a future development, with a sufficiently large data set, it would be used to run a segmentation on employees, to develop certain scenarios that can cause Attrition of employees. This could generate new insights for the business on what drives attrition, insights that cannot be generated by merely informational interviews with employees.

* Attrition brings decreased productivity.
* People leave causing others to work harder.
* This contributes to more attrition, which contributes to increased costs and lower revenue.
* This forces additional cost reduction and austerity measures.
* This in turn makes working more difficult, causing the best performers with
* the most external opportunities to leave.

1. **Project Objective**

The main objective of this project is to

* + Assess the various root causes for Staff attrition by analyzing the employee data collected from the past 12 months.
  + Predict the high number of staff attrition.
  + Help Human Resources to develop the appropriate corrective action plans to remediate the staff high turnover or attrition.
  + To verify the satisfaction level of employee in the organization.

1. **Project Specifications**

The main tools used for this Project include I. MS Excel and II. MS Power BI Service.

* MS Excel Files: The source data used as part of this project is stored in MS Excel including both staff attrition information obtained from HR and Data definitions. Please refer to below explanation on data sets used in these two MS Excel files.
  1. HR Attrition, Excel file #1, file containing datasets to attrition status of employees collected over the period of 12 months
  2. Data Definition, Excel file #2, file containing detail on data format, interpretation and definition where numerical ratings are assigned
  3. Attrition rate, Excel file used to calculate attrition rate and displayed the attrition rate report on the dashboard.
* MS Power BI service is used to generate the reports to analyze the attrition trend.
  1. Report for data analysing
  2. Dashboard for data visualization and recommendation
* The input dataset is an Excel file with information about 1470 employees. For each employee, in addition to whether the employee left or not (attrition), there are attributes / features such as age, employee role, daily rate, job satisfaction, years at the company, years in current role, work overtime, gender etc.

The steps we will go through are:

* Data pre-processing
* Data analysis
* Data Modification
* Model predictions
* Visualization of result

1. **Project Task List**

This activity helps us identify the factors influencing the Data Visualization

**a) Task 1:Extract data from HR Attrition excel**

Excel file #1, HR Attrition

* Attrition
* Age Category
* Over time
* Percentage of Salary Hike
* Job Role
* Education background
* Total Working Years
* Years at Company
* Years Since Last Promotion
* Years with Current Manager
* Gender
* Job involvement
* Relationship Satisfaction
* Work life balance
* Job Satisfaction
* Distance from Home
* Business travel

Excel file # 2 represents the Data Definitions. This file consists of two tabs ( with title Sheet 1 and Sheet 2) and for the purpose of this project. We utilized the data attributes defined in Sheet 1. Each data attribute has been allocated a numerical value to define the data set. For example, Attrition has been allocated with values 0 or 1 where 1 represents ‘Yes’ (i.e., Attrition took place) and 0 represents ‘No’ (i.e., No Attrition). Similar approach has been taken for the remaining data attributes such as Gender, Business Travel, Job Satisfaction, Overtime etc.,

By using Second excel Data definition file changed the below values in the Data Set to make the reports easily understandable.

* Business Travel: 0 'Nontravel’,1 'Travel Rarely’,2 'Travel Frequently'
* Marital Status: 1 'Single’, 2 'Married',3 'Divorced'
* Environment Satisfaction: 1 'Low',2 'Medium',3 'High,4 'Very High'
* Job Satisfaction: 1 'Low',2 'Medium',3 'High', 4 'Very High'
* Performance Rating: 3 'Excellent’, 4 'Outstanding'
* Relationship Satisfaction: 1 'Low',2 'Medium',3 'High',4 'Very High'
* Work Life Balance: 1 'Bad,'2 'Good',3 'Better,'4 'Best'

At the time of analysing data found that for department attribute given values are wrong. As per the sheet Department is HR it is pointing to Sales job role and Sales Department pointing to HR department. So we changed the both values like Dept HR changed to Sales and vice versa.

By using third excel file I used employee count, attrition count, attrition rate field to display on the card. And that report we pin to the dashboard.

We calculated attrition rate as attrition count ÷ employee count\*100

**b) Identify which of the visualizations – static or interactive is required**

* Both static and interactive visualizations have been used in this project.
* Static text box visualizations are used for headings and to describe the trends noted in each report.
* Interactive visualizations are used for users to select different data conditions to build the reports.

**c) Identify the audience of data visualization and their size**

The audience would be HR department and Senior Leadership Team.

**d) Determine the frequency of data visualization**

Attrition is not an activity that happen quite frequently. Therefore, it is recommended to run this data visualization either on semi-annual or annual basis.

**e) Identify the level of details required for data visualization**

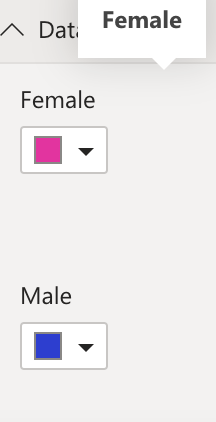
There are several instances where drilldown charts have been used so that the

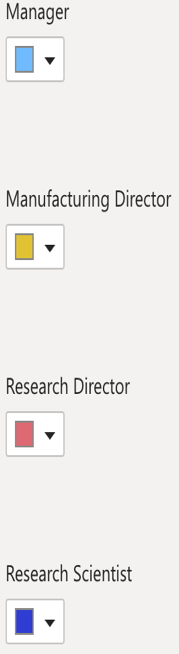
users can interact with it to gain better understanding per their needs.

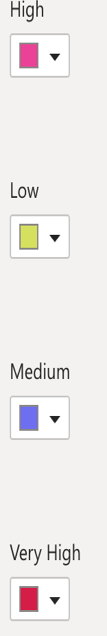
* For example, we used a drill down chart to display attrition by Business travel and Percentage salary hike, and in one more chart I used drill down to display attrition by education field and job role. The other chart also contain drill down for attrition by Years Since Last Promotion, Years At Company and Years With Current Manager. Depending on the level of information you need, you can just use the drill down options to display the required data.
* Apart from drill down options in the visuals themselves, I also provided chicklet slicer and slicer, that will allow the users to select the information from the slicer based on that the report gets generate. It works like a filter.

**f) Decide the colors required for visualization**

For keeping the better understanding of visuals, we used the same colors in all reports for gender attribute. Below are some colors we used in the reports.

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**g) Decide the layout of the visualization**

The data was grouped into five categories, and related visuals have been presented in five different pages:

* + Attrition trend by personal information
  + Attrition by Over Time
  + Attrition by Salary and job involvement
  + Attrition trend by Promotion
  + Attrition trend by Feedback

This categorization of visuals into the above pages will allow the user to go through the analysis in a logical flow and will enhance the user understanding.

1. **Activity 2: Review the project dataset:**

**a) Identify the total volume of data**

The attrition data file size is 275 KB. It contains 1470 rows and 34 columns.

**b) Determine at what rate the data grows**

The current data is for the past 12 months. So, it can be updated either semi-annually or annually to include new attrition data and remove data about retired employees.

**c) Analyze how diverse the data is**

* The data has personal profile information about the employee such as gender, marital status, distance from home, overall work experience and so on.
* The data provides information about employee’s personal details, Marital status, Job Role.
* The data also has fields like the current position, Standard hours and working hours.
* The data has fields describing the employee’s ratings for job satisfaction, environment satisfaction, relationship satisfaction and work-life balance.
* There are also fields describing the manager’s assessment of the employee’s performance and the resultant hike percentage, Monthly income.

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| **Attribute** | **Trend Analysis** |
| Attrition | 237 employees left the job out of a total of 1170 employees |
| Age group | 48.95%(116) employees left the job are of 26-35 age group. Majority of employees who left the job are from 26-35 age group. |
| Gender | Overall the highest number of employees who left the job are male employees. However, in Human Resources and Sales Representative fields, highest number of employees who left the job are female than male from the age group of 26-35. |
| Job role | Majority of the Employees with Laboratory Technicians job role had left the job. |
| Department | Majority of the employees who left the job are from R&D department those are male. |
| Overtime | Employees who are single, working overtime hours tend to leave in a higher rate than those who work regular hours and are married or divorced |
| Business travel | The employees who travel for a business trip and still they got less percentage salary hike left the job. |
| Job Satisfaction | 1. Majority of the employees who have job satisfaction but due to long working hours left the job 2.Majority of the employees who are satisfied with the job but they are not happy with the work environment left the job. |
| Job level | Major of the employees leaving the job whose job level1 and work over time compared to employees who do not work overtime. |
| Percentage of salary hike | This is the main factor causing the attrition. Employees who got low salary hike(11,12 and 13 percentage) had left the job. These employees job involvement is high but the percentage of salary hike is less. |
| Job involvement | The employees who have high job involvement they are leaving the job. Most of the female employees within an age group 26-35 in Sales Representative job role had left the job because of low job involvement. |
| Average of monthly income | The employees whose job involvement is high but they are getting less monthly salary left the job. Most of them are from Laboratory technician job role |
| Years since Last promotion | Most of the Employees who did not get promoted since many years left the job . |
| Years at company | 1.Majority of the employees who joined the company recently or one year back they left the company. 2.Many employees who is working with company since many years but did not promoted left the job. |
| Years with current manager | From Sales Representatives job role, most of the employees who had left the job are with less than 1 year working experience with the current manager. |
| Relationship satisfaction | 1.Employees within Healthcare Representative and Manufacturing Director job roles had left the job due to low Relationship satisfaction. 2.Employees who stay in the company for more than one year and their relationship satisfaction is low like they are not happy with the manager left the job. |
| Marital status | 1.Majority of the employees who left the job are singles than married and divorced and their work life balance is better. |
| Work life balance | Most of the employees from age groups '46-55' and '56 and above' left the job due to low work life balance |
| Environment satisfaction | Majority of employees who left the job are not satisfied with the environment from all age groups |
| Distance from home | 1.Employees whose distance from home is more and they have to work for long hours left the job. |

1. Project task list: Activity 3
2. **a)  Select one or more data visualization techniques among the following - Line Charts, Word Clouds, Network Diagram, Bar Chart, Scatter Plot, Pie Chart used in the Project**

We are using the below listed visualizations for this project

* Stacked bar chart
* Clustered Column chart
* Tree map
* Donut chart
* Pie Chart
* Card
* Line Chart
* Slicer
* Text box
* Funnel
* Ribbon chart
* Line and clustered column chart
* Decomposition tree

1. **Justify why you are using the techniques and why you have ruled out other techniques**

We are using mostly stacked bar chart, Tree map, Clustered Column chart . Other visualization will be used to compliment report by provided adequate information for analysing.

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| **Chart name** | **Rationale** |
| Stacked Bar Chart | Stacked bar chart, uses the bars to comparison between categories of data. Each bar in the chart represents a whole, and segments in the bar represent different parts or categories of that whole. In this project we are checking the attrition count based on department and gender. Here the whole represents attrition count and part represents gender count from each department. |
| Tree Map | Tree map used to display data that is grouped and nested in a hierarchical (or tree-based) structure. We have different groups of data, by using tree map we are displaying data as hierarchical structure. By using this map, we are showing how attrition trend changing based on percentage salary hike and job involvement. Also checking how attrition changing based on Years since last promotion and Relationship satisfaction. |
| Clustered Column Chart | Clustered column chart allows the direct comparison of multiple series.  Each data series shares the same axis labels, so vertical bars are grouped by category. In this project we are checking how attrition trend changing for different education fields by gender. And also checking Percentage of attrition by Overtime and marital status. How percentage of attrition changing based on environment satisfaction using job satisfaction and relationship satisfaction. |
| Card | Card gives the total value of the attribute. Here we are using to display the value of attrition count. |
| Text Box | Text box, present high-level information in general |
| Pie Chart | Pie charts are good for displaying data for around 6 categories or fewer. In this project we are using pie chart to display how attrition value changing when distance from home is changing by work overtime. We have more values for this attribute, so we used pie chart to display the change for easy identification. |
| Donut Chart | Donut Chart is also used for data that have more than 6 categories. Here we are checking how the attrition varying based work overtime and job satisfaction. And also checking how attrition changing based on years since last promotion, years at company and years with current manager using drill down approach. Checking the Attrition change based on environment satisfaction and job level using drill down. |
| Line Chart | Line chart are used to track changes over short and long periods of time. Here we are checking to identify attrition varying based on environment satisfaction for each gender. And also checking the attrition percentage varying based on job role for different genders. |
| Slicer | Slicer is used to easily access important and frequently used filters by putting them on the report canvas. Based on slicer selection the reports get generated in that page. |
| Chicklet Slicer | Chiclet are a slicers made of buttons, that can also be arranged horizontally for a very efficient real estate use, or arranged as a matrix for a super compact form |
| Funnel | Funnel is used when the data is sequential and moves through at least 4 stages and when the number of "items" in the first stage is expected to be greater than the number in the final stage we use Funnel. In this project we are checking how attrition rate changed based on years since promotion. |
| Ribbon Chart | Ribbon chart is used to create and visualize data, and quickly discover which data category has the highest rank (largest value). Ribbon charts are effective at showing rank change, with the highest range (value) always displayed on top for each time period. Here checking how the employee’s attrition changing for each department based on job involvement. And also checked how attrition trend changed for each age group based on gender. |
| Line and Clustered Chart | The Line and Clustered Column Chart is a combo charts that combines the Line chart and Column chart together in one visual. By combining these two visuals together, you can make a very quick comparison between two sets of measures. The main benefit of this type of chart is that you can have one or two Y axis. In this project how job involvement and average monthly income effecting attrition is checked using line and clustered column chart. |
| Decomposed tree | The decomposed tree visual allows you to decompose or divide a group in order to see each individual category and see how they can be sorted according to a selected measure, such as the attrition is decomposed by overtime and business travel attributes. With this graph we can easily carry out simulations and predictions that support decision making. |

1. **Activity 4: Develop the Data Visualizations**

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| Visual | Outcome | Justification |
| Card(Attrition count, employee count | Attrition count-237  Employee Count-1470 | Card gives the total count of the given value. Here we used two cards. One card represents Attrition value whilst the other card represents Employee count. |
| Donut Chart(Attrition by education background and job role) | 1)Most of the employees 13.92% are from the Life sciences education background and from laboratory technicians job role. | Donut Chart is also used for data that have more than 6 categories. It is very easy to identify the data have more categories. Easily understandable to everyone. |
| Line chart(Attrition by job role and gender) | 1)Majority of the female employees left the job are from Sales executive job role and male employees are from Laboratory technicians. 2)19.41% male and 6.75% female from laboratory technicians left the job. | Line chart are used to track changes over short and long periods of time. By using this chart we can easily find how attrition is changing for each job role by gender. |
| Text box | Static box | Entered the description of the page |
| Ribbon chart(Attrition based on age group and gender) | Highest number of employees (116 ) from 26-35 age group left the job. Most of them are male | Ribbon chart is used to create and visualize data, and quickly discover which data category has the highest rank (largest value). Ribbon charts are effective at showing rank change, with the highest range (value) always displayed on top for each time period. Here checking how the employee’s attrition changing for each department based on job involvement. And also checked how attrition trend changed for each age group based on gender. |
| Stacked bar chart(Attrition by Department and job role) | Majority of the employees (133) are from R&D department | Stacked bar chart, uses the bars to comparison between categories of data. Each bar in the chart represents a whole, and segments in the bar represent different parts or categories of that whole. In this project I am checking the attrition count based on department and gender. Here the whole represents Attrition count and part represents gender count from each department. |

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| Visual | Outcome | Justification |
| 1)Slicer for Gender. 2)Slicer for Age group. 3)Slicer for job role | When I select different age groups and gender, I am able to see how many male and female employees left the job in that age group based on work overtime and business travel. Same for job role also. | Slicer is used to easily access important and frequently used filters by putting them on the report canvas. Based on slicer selection the reports get generated in that page. Here I am using chicklet slicer. |
| Clustered Column Chart(Attrition by overtime and marital status) | 1)Most of the employees who work overtime from Laboratory Technicians, Sales executives, and Research Scientists left the job. Most of the female employees left the job because of overtime work. 2)Majority of the employees from 46 and above age group who are married left the job due to overtime.  3) Majority of the employees (27.43%) who are singles left the job. | Clustered column chart allows the direct comparison of multiple series. Each data series shares the same axis labels, so vertical bars are grouped by category. In this project I am checking how attrition trend changing in each job role for overtime data values. The chart displays two bars(one for overtime true other for over time false)for each job role attrition with marriage status. |
| Donut chart(Attrition by overtime and job satisfaction) | 12.66 % of employees left the job with low job satisfaction and work for overtime. | Donut charts are good for displaying data for around 6 categories or fewer. In this project we are using donut chart to display how attrition value changing when the employee job satisfaction is low and work overtime. so we used donut chart to display the change for easy identification. |
| Text box | Static box | Entered the description of the page |
| Card | Attrition count-237 | Card gives the total count of the given value. Here we used a card. Card represents Attrition value. |
| Tree map (Attrition By Distance From Home and Over Time) | Employees whose distance from home is more they left the job. | Tree map used to display data that is grouped and nested in a hierarchical (or tree-based) structure. We have different groups of data like employees distance from home. By using tree map we are displaying data as hierarchical structure of attrition. |
| Decomposition tree (Attrition based on work life balance and overtime) | Most of the employees (73) who work for over time and their work life balance is better left the job. | The decomposition tree visual allows you to decompose or divide a group in order to see each individual category and see how they can be sorted according to a selected measure, such as the attrition is decomposed by overtime and business travel attributes. With this graph we can easily carry out simulations and predictions that support decision making |

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| Visual | Outcome | Justification |
| Card | Attrition count-237 | Card gives the total count of the given value. Here we used a card. Card represents Attrition value. |
| 1.Slicer for Gender. 2.Slicer for Age group | When I select different age groups and gender, I am able to see how many male and female employees left the job in that age group based on Percentage of Salary hike and performance rating | Slicer is used to easily access important and frequently used filters by putting them on the report canvas. Based on slicer selection the reports get generated in that page |
| Tree Map(attrition by percentage salary hike) | 1.The employees who got less percentage salary hike 11,12,13 percent left the job. 2.Most of the employees who got less percentage salary hike 11 percent left the job from Sales executive department. | Tree map used to display data that is grouped and nested in a hierarchical (or tree-based) structure. We have different groups of data like percentage salary hike , by using tree map we are displaying data as hierarchical structure of attrition based on percentage salary hike. |
| Line Chart(Attrition and average of monthly income by job role and job involvement | 1)Most of the employees who left the job have high job involvement but average monthly salary is less. 2)Highest number of Employees (14.77%) who left job due to less salary (3,237.17) , and are from laboratory technicians with high job involvement. | Line chart are used to track changes over short and long periods of time. The main benefit of this type of chart is that you can have one or two Y axis. In this project how job involvement and average monthly income effecting attrition is checked using line and clustered column chart |
| Ribbon chart(Attrition by job involvement and job role) | Majority of employees (14.77%) who have high job involvement are lab technicians left the job. It can affect the employees in the company . | Ribbon chart is used to create and visualize data, and quickly discover which data category has the highest rank (largest value). Ribbon charts are effective at showing rank change, with the highest range (value) always displayed on top for each time period. |
| Pie Chart(Attrition by business travel and percentage salary hike) | Most of the employees(20.51%) who go for business trips but got less percentage salary hike (13) left the job. | Pie charts are good for displaying data for around 6 categories or fewer. |

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| Visual | Outcome | Justification |
| 1.Slicer for Job Role. 2.Slicer for Age group | When I select different age groups and Job Role, I am able to see how many employees left the job in the selected age group and based on Years Since Last Promotion, Years at Company and Relationship satisfaction | Slicer is used to easily access important and frequently used filters by putting them on the report canvas. Based on slicer selection the reports get generated in that page |
| Funnel(attrition by years since last promotion) | 1.Reserch directors and laboratory technicians who did not get promoted for many years left the job.  2.Most of the employees left the job who did not get promoted for many years. | The data is sequential and moves through at least 4 stages and when the number of "items" in the first stage is expected to be greater than the number in the final stage we use Funnel. Here we are checking attrition rate is depending on the promotion. |
| Donut chart(Attrition by years since last promotion ,years at company and years with current manager) | Employees (48) who recently joined the company and who work with the current manager less than one year left the job. | Donut Chart is also used for data that have more than 6 categories |
| Text box | Static box | Entered the description of the page |
| Card | Attrition count-237 | Card gives the total count of the given value. Here we used a card. Card represents Attrition value. |
| Tree Map(attrition by years since last promotion and relationship satisfaction) | Employees whose relationship satisfaction is low and did not promoted for years left the job | Tree map used to display data that is grouped and nested in a hierarchical (or tree-based) structure. The values for years since last promotion are more so used tree map for better visualization |

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| Visual | Outcome | Justification |
| 1.Slicer for Job Role. 2.Slicer for Age group | When I select different age groups and Job Role, I am able to see how many employees left the job in the selected age group and based on Years Since Last Promotion, Years at Company and Relationship satisfaction | Slicer is used to easily access important and frequently used filters by putting them on the report canvas. Based on slicer selection the reports get generated in that page |
| Clustered Column Chart(%Attrition by environment satisfaction and job satisfaction | Majority of employees (9.28%) are satisfied with the job but they are not satisfied with the environment left the job | Clustered column chart allows the direct comparison of multiple series. Each data series shares the same axis labels, so vertical bars are grouped by category. |
| Ribbon chart(attrition by work life balance and marital status) | Most of the employees who are singles and the work life balance is better left the job than married and divorced. | Ribbon chart is used to create and visualize data, and quickly discover which data category has the highest rank (largest value). Ribbon charts are effective at showing rank change, with the highest range (value) always displayed on top for each time period. |
| Line chart(Attrition by environment satisfaction and gender) | 1) Majority of the employees who have less environment satisfaction left the job.  2) 28 Female and 44 male employees left the job due to low job satisfaction. | Line chart are used to track changes over short and long periods of time. By using this chart we can easily find how attrition is changing for each job role by gender. |
| Stacked bar Chart(%Attrition by relationship satisfaction and gender) | 1)Highest(13.33) percentage of female employees who have relationship satisfaction low with the team or manager left the job | Stacked bar chart, uses the bars to comparison between categories of data. Each bar in the chart represents a whole, and segments in the bar represent different parts or categories of that whole |
| Text box | Static box | Entered the description of the page |
| Card | Attrition count-237 | Card gives the total count of the given value. Here we used a card. Card represents Attrition value. |

**Study Conclusion:**

Overall, the analysis suggests the top 4 reasons for attrition as:

* + - Percentage Hike is also showing major attrition
    - Low environment satisfaction
    - Monthly salary is also showing major attrition. The employees who have highest job involvement but the salary is less showing major attrition.
    - Working hours effecting majorly the attrition count
    - Major attrition observed is employees who joined the company recently left the job. It could be they got better opportunity or they did not satisfy with the work environment.
    - Job involvement is also affecting the attrition. Employees who have high job involvement but they receive less salary or received less percentage salary hike left the job.
    - Years since last promotion is also showing the attrition change. It is not showing major change but somehow it is showing effect.

1. Attrition trend by personal information

* From this report, 237 people left the job from 1470 employees.
* Majority of the female employees left the job are from Sales executive job role and male employees are from Laboratory technicians.
* Most of the employees are from the Laboratory Technicians job role
* Highest number of Employees who left the job is from the R and D department.
* The employees who are from the Life Sciences education field have major attrition.

Most of the employees who left the job are from 25-35 age group.

1. Attrition by Over Time

* Employees who are single, working overtime hours tend to leave at a higher rate than those who work regular hours and are married or divorced.
* 12.66% of the employees who work overtime and job satisfaction is less left the job.
* Many employees who work overtime and distance from home is more left the job.
* The employees who have work life balance better and work extra hours other than office timing left the job. So work life balance is not effecting attrition completely.

1. Attrition By Salary and job involvement

* 1.The employees who got less percentage salary hike but their job involvement is high left the job.
* 2.14.77 % of employees from Laboratory Technicians whose average monthly income is less but the job involvement is high left the job.

1. Attrition trend by Promotion

* 20.25% of the employees who recently joined the company and who work with the current manager left the job.
* Research directors and laboratory technicians who did not get promoted for many years left the job.
* some of the employees left the job who did not get promoted for many years.

1. **Attrition trend by Feedback**

* Environment Satisfaction is the major thing that is affecting the attrition trend
* Most of the employees left the job due to low environmental satisfaction.8.44% of employees who have less job satisfaction and environmental satisfaction left the job.
* 7.17% of Employees who have very high environment satisfaction but the relationship satisfaction is not good due to team and manager issues left the job.
* 15.61 % of employees who are single due to less job satisfaction left the job.

**Recommendations**

* Offer equitable and modest salaries. If the employees gets nice salaries they will not leave the job and look for new opportunity.
* Improve work conditions: If the employees work for long hours they do not have time for personal life. So it’s good to reduce working hours by recruiting more staff or divided the work among the employees equally.
* Create a pleasant workspace: If the work space is pleasant employees work productively and they will love to come to work enjoy the work.
* Employee engagement :Employees have more trainings and learn new stuff they will love their job.

**7. Further Suggestions**

* Continue collecting attrition data for the upcoming years for further analysis required for finetuning the recruitment and compensation policies.
* Find a way to differentiate retired employees from those who had resigned in the 56 and Above age group.
* The attrition analysis does not account for non-measurable aspects, such as personal issues and family commitment, that may have triggered turnover. Observations from various exit interviews should be included in this study to add more value.
* Look into the causes of high attrition among employees staying closer to office. This study should be done in the context of the city/country pertaining to the data.
* Business Travel could be an employment perk in some contexts. Dig deeper within the context to find causes of high attrition among employees who rarely travel for business.
* Analysis should be conducted to find out why Overtime is causing high attrition among employees.

1. **Annexure (Excel Workbook)**

1. Dataset HR attrition excel and attrition data definition files







1. App Creation

App Name: HR Attrition

Path:

<https://app.powerbi.com/groups/me/apps/12f20860-8e1b-49c0-8a37-de21f61442bc/dashboards/efba7211-8ef6-47cc-b1fd-8d53dace59ec>

1. Dashboard Creation

Dashboard Name: Attrition\_DQV-1120A-SyedShabana\_Project

Path:

<https://app.powerbi.com/groups/c767e47a-ebeb-48c0-ad4a-3698ba39acfe/dashboards/efba7211-8ef6-47cc-b1fd-8d53dace59ec>

1. Reports for HR attrition

Report Name: Final HR Attrition Project

Path:

<https://app.powerbi.com/groups/c767e47a-ebeb-48c0-ad4a-3698ba39acfe/reports/02b1aba1-6b38-4da5-9ab6-0bb1687ce843/ReportSection>