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| **Briefly, describe the approach & methodology that you opted to use:**  The given dataset was clean with no missing values. The numerical values in the dataset except for column – EmployeeNumber, have all been characterized in MS Excel and then factorized in R for further analytics. This is done as a prerequiste to apply Apriori algorithm on the dataset. And, more importantly with words and bins it is easier to decode reasons for Attrition value and at the same time, to give a clear picture to the executives. |
| **Briefly, describe the key assumptions in your approach:**  There were no assumptions made in my approach. Only, the bins created act like buckets and numerical values are put into respective bins according to the formula applied in MS Excel. Please refer the Sheet = “Revised\_HTM\_EA\_Data” which is indeed a revised version of the original sheet = “HTM\_Employee\_Attrition\_Data” without any data loss. |
| **Please describe all your major findings** **on attrition at HTM, and any other non-attrition** **observations:**   1. For observations with Attrition value equal to “No”   Most of the employees are aged between 30 to 50 years and work for “Research & Development” department. They rarely travel for work and are living within 5 miles to work. Their monthly income is around 10,000$ and have been employed in the company between 6 and 10 years. They have worked for 0 to 3 companies before joining HTM. Most of them are in job level of 2 and have highest job satisfaction with rating 4. The key factors are the employees work in R&D department, job switch to HTM has given them highest job satisfaction and they travel rarely, living less than 5 miles from workplace.   1. For observations with Attrition value equal to “Yes”   Most of the employees are aged less than 20 years or between 30 & 40 years and work for “Sales” department. They are living far from the workplace greater than 20 miles and travel frequently for business. They hold the role “Sales Representative/Executive” with Job level 1 and have least job satisfaction. Most of their monthly income is less than 5,000$. The key factors are the employees work in Sales department, travel frequently and are aged less than 20 years. |
| **Please describe your recommendations to improve HTM’s HR strategy:**  We see that employees in “Sales” department mainly in job roles - Sales Executive and Sales Representative, the attrition rate is high. HR Team should take feedback on how HTM can improve in retaining them back. Moreover, employees under the age less than 20 years are quitting their employment in the company. We should ask their strong reason for this huge churning. Sales job does come with the requirement of travelling frequently for business. One of the recommendations is that employees between the age of 30 and 40 years don’t like to travel as much as other Sales colleagues. So, the HR Team can look into this factor. In “R&D” attrition rate is low but most employees with Job role - Laboratory Technicians and some level 1 employees are quitting the company majorly because of monthly income and job satisfaction. The good aspects from “HR” and R&D” departments can be gathered and implemented in “Sales” department.  Please do see the Analytics and Visualizations included in the Excel Sheet = “Pivot Tables & Analysis” and the R Notebook attached in the submission. I have added only two visualizations here in this document. |

**Please include any charts, graphs, or visuals in the space provided below:**



