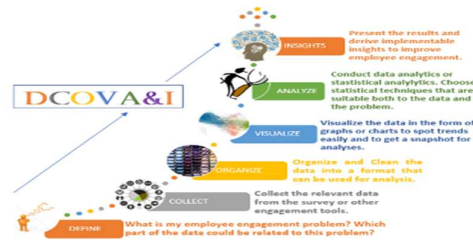**Case Study 6** – How a manager used Analytics to get insights from the data to improve process for fraud management.
Industry – Banking and Financial Services

We follow DCOVA and I methodology to solve the problem. To Understand this methodology, check this whitepaper - https://pexitics.com/download/dcova-i-whitepaper/?wpdmdl=2970

Business Problem – It has been decided to allow NBFCs, selectively, registered with the Reserve Bank of India to issue co-branded credit cards with scheduled commercial banks. The datasets contains transactions made by co branded cards of a popular NBFC in Sep 2016 by platinum cardholders. This dataset present transactions that occurred in two days with the frauds marked out. The dataset is highly unbalanced with very few fraud transactions. The manager wants to understand the probability of a certain amount band and a transaction being a fraud so that he can improve process for fraud management.

The manager approaches the analytics team with the problem and shares the data with the team. The data has the amount and the amount band and a flag to mark the fraud transactions. The analytics team **explores** the data to **treat the data for missing values and outliers.** The team comes out with visualization. One of the visualization is shown below -

 This chart shows the different "spend brands" in x-axis and the number of transactions in that spend band in y-axis.

The analytics team then does **statistical analysis to** calculate the probability of a transaction being a fraud transaction in the data set. The team then calculates the probability of occurrence of the "spend band" in the data set.

It then uses the Bayes Theorem to get the probability of the "Spend Band" being a fraud transaction using the above two probabilities and submits the report to the manager. Based on the report by the analytics team, the manager then updates the process for fraud management.

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