The research question was to identify underlying training-view constructs for data modeling training. The variables are derived from a survey sent out to 225 IT professionals where there were twenty variables covering the subject of data modeling training. To achieve this objective, we have conducted an Exploratory Factor Analysis (EFA) to estimate the number of factors and how their loadings would create the constructs of interest to the researchers.

Since all the twenty variables are survey items are nominal and range from one to five. This makes it possible to satisfy EFA assumptions. One important aspect of the analysis is the correlation matrix used. In this case, we can use the Pearson correlation matrix which assumes equal intervals and some linear relationship. Another important aspect is the sample size n. In this case we have a sample size of 225 and SAS has used 207 observations. This sample size should be enough to be able to conduct the EFA.

We ran EFA using the covariance matrix, the method of Maximum Likelihood, and Varimax for rotation. In summary, after analyzing the scree plot and eigen values we found the best number of factors to be three. The cumulative proportion of variance explained by three factors was 93.26%.

We set the threshold for factor loading to be 0.5. This should only the very significant loadings associated with each factor. Then we compared the factor loading values to find the variables. Each factor can be explained best by the following variables:

Factor 1: These variables revolve around the topic of “Eagerness to learn” data modeling

|  |  |
| --- | --- |
| V6 | Training programs get me more excited about becoming a better IT professional. |
| V8 | I will exert considerable effort in learning training material. |
| V17 | I will try to learn as much as I can from this training. |
| V18 | I try to learn as much as I can from training courses. |

Factor 2: The following variables describe “Self-assessment” of data modeling skills

|  |  |
| --- | --- |
| V2 | I understand how to do data modeling. |
| V11 | I have the skills I need to do data modeling. |
| V12 | I have experience in drawing data models. |
| V14 | I am good a drawing data models. |
| V19 | I possess the knowledge I need to do data modeling. |

Factor 3: These two variables explain the “Career effects” of the training for an IT professional

|  |  |
| --- | --- |
| V6 | Training programs get me more excited about becoming a better IT professional. |
| V7 | I continue to use knowledge/skills I learn during training after the training is over. |

This file contains an excel sheet that has details on the factor loadings



**Appendix**

The graphs and tables below are from running the SAS code to analyze the data and run EFA.



