ANOVA

ANOVA compares means and used to test hypothesis. In statistics, analysis of variance (ANOVA) is a collection of statistical models, and their associated procedures, in which the observed variance in a particular variable is partitioned into components attributable to different sources of variation. In its simplest form, ANOVA provides a statistical test of whether or not the means of several groups are all equal.

Some terms of ANOVA table are

Model - SPSS allows us to specify multiple models in a single regression command. This tells us the number of the model being reported.

Regression, Residual, Total - The Total variance is partitioned into the variance which can be explained by the independent variables (Regression) and the variance which is not explained by the independent variables (Residual).

Sum of Squares - These are the Sum of Squares associated with the three sources of variance, Total, Model and Residual.

df - These are the degrees of freedom associated with the sources of variance. The total variance has N-1 degrees of freedom. The Regression degrees of freedom correspond to the number of coefficients estimated minus 1.

Mean Square - These are the Mean Squares, the Sum of Squares divided by their respective df.

F and Sig. - This is the F-statistic the p-value associated with it. The F-
statistic is the Mean Square (Regression) divided by the Mean Square (Residual): The p-value is compared to some alpha level in testing the null hypothesis that all of the model coefficients are 0.

**Coefficients**

**Model** - SPSS allows us to specify multiple models in a single regression command. This tells us the number of the model being reported.

**B** - These are the values for the regression equation for predicting the dependent variable from the independent variable (Mother tongue, Gender, Educational Qualification, Resides in, Marital Status, Annual income, Respondent's Age, Occupation).

**Std. Error** - These are the standard errors associated with the coefficients.

**Beta** - These are the standardized coefficients. These are the coefficients that we would obtain if we standardized all of the variables in the regression, including the dependent and all of the independent variables, and run the regression. By standardizing the variables before running the regression, we have to put all of the variables on the same scale, and we can compare the magnitude of the coefficients to see which one has more of an effect. We will also notice that the larger betas are associated with the larger t-values and lower p-values.

**t and Sig.** - These are the t-statistics and their associated 2-tailed p-values used in testing whether a given coefficient is significantly different from zero.

Refer [http://www.ats.ucla.edu/stat/spss/output/reg_spss.htm](http://www.ats.ucla.edu/stat/spss/output/reg_spss.htm)