**Problem :** Amazon is interested in knowing whether the satisfaction with their reward program differs by the gender and household income.

**Solution:** In this problem, Satisfaction with their reward program is the **dependent variable** and Gender (S1) and Household income (S8) is the **independent variables.**

Since we have two independent and one dependent variables, we will be doing the **Two-way ANOVA test,**

A screenshot of a computer

Description automatically generated

From the results of ANOVA test, we can see that the **interaction effect (S1\*S8) is not significant** with since p = 0.200 (i.e p > 0.01) and hence we consider only the overall effect with p = 0.044 (i.e p<0.05) which is significant.

Furthermore, we can see that **S1 (Gender) is significant** since p = 0.031 (i.e p<0.05) whereas **S8 (Household income) is not significant** since p = 0.194 (p>0.05)

We can say that independent variables have no interaction between them, but they affect the dependent variable separately, and the amongst the independent variables, Gender significantly affects the dependent variable and Household income has no significant effect on the dependent variable.

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When analysed the trend of Household income vs satisfaction for Male and Female population, and we found the **Female population is generally more satisfied than the Male population.** Since, Labels in satisfaction level for Amazon price (q21a\_3) label 1 is very satisfied and label 5 is very dissatisfied.