

## ABSTRACT

Cotton is a cash crop for Pakistan. Among large number of variables, broader categorization shows that physical, economic and social factors are main influencing variables of cotton production. Cotton production is used as response variable where seven independent variables: cropped area, fertilizer, insecticides, credit disbursed, water availability, labor force and rainfall in Pakistan are included in this research work. 32 years data was obtained from reliable Govt. sources and Regression Analysis technique is used to find the predictive model for cotton production using R-Language. OLS method suggests the model showing positive relationship with cropped area, fertilizer, credit and water availability where negative influence of insecticides, labor force and rainfall.  $R^2$  value is 0.87 which indicates that most of the variation is described by these independent variables. Diagnostic checks lead to the problem of outlier values. Huber estimation is used to find the robust estimates of the predictive model which shows that more cropped area and water availability are contributing variables where massive agricultural labor force, excessive use of insecticides and rainfall are causing reduction in cotton production.