

# Unit 5 db - regression analysis

Law



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Regression Analysis Regression Analysis Among other efficient models of statistics, regression is one tool which can be applied in order to understand the relationship of variables. When relationship is complicated like correlations, regression analysis determines the understanding of how correlations are settled between the variables. In the condition when one variable is dependent on another, regression identifies the level of correlation by determining the significance. This sets the ground of prediction and a basis to analyze an event or a situation. Regression applies the cause and effect concept, where causes are taken as independent variables while effects are taken as dependent variables in the regression equation (Potts, 2007).

### Linear Regression

Linear regression is the type of regression which identifies the relationship of two significant variables (dependent and independent) (Seber & Lee, 2012). For example the analyst would try to relate the haziness of aircraft's glass (dependent variable) with ice deposits (independent variable). Linear regression signifies the direct relationship between two such variables (Weisberg, 2005).

The following equation represents the regression equation, where Y is the dependent variable which is dependent on X independent variables, a is the intercept while b denotes slope of the line X (Hoffmann, 2005).

$$Y = a + b * X$$

### Application of Regression in Criminology

In the section of criminal justice, the analysts often use multiple analytical tools to make better judgments and decisions on the field. Regression is one tool which criminologists often apply to identify relationships between two

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adjacent variables like crime conviction or criminal's behaviors. Analysts use regression coefficients to identify which strategy is more effective than the other on crime control section. According to one report of Federal government, a number of researchers came out from University of Nebraska in the year 1990, who utilized regression analysis tool to assess the influence of investment on crime rates. The analysis identified the relationship between two variables by identification of correlations and linear equation, which are fundamentally deterministic by linear regression analysis tool. This came out to be a sufficient tool of correlation analysis which later on got applied in the criminal justice section. Still today several criminologists use linear regression model to identify the relationship of two significant variables (Weisburd & Britt, 2007, p. 423).

#### Reference List

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