

Linear regression and regression analysis

Law



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Linear Regression and Regression Analysis Regression is a technique in statistics that enables estimation of the relation existing among variables. The technique seeks to estimate the strength of the relationship between one variable with another or a set of variables. However, when applying this technique, the statistician makes assumptions with regard to the variables and their relationship. Regression is based on the assumptions that there exists a linear relationship between the involved variables and that they have an additive relationship. There are many regression techniques one of them being linear regression. Linear regression refers to an approach that involves modeling the relationship that exists between a dependent variable Y and explanatory variable(s) X . The model for linear regression requires that the variables take up the relationship illustrated below:

Therefore, regression analysis is the process of determining the parameters that make up the equation defining that defines the relationship between the variables. This forms the basis for further evaluation of the variables through an in-depth analysis of the basic components of the equation that would result into a line of best fit. Regression analysis is defined on basis of the goal of conducting regression, which is to develop a line of best fit for the variables under investigation (Kahane, 2001).

1.

The goal of using the technique is to establish the relationship and strength of the relationship between two or more variables. This technique is applicable in criminal justice in a number of ways. Regression analysis is useful in evaluating the relationship existing between various aspects of criminal justice. By acknowledging that there are events that take up the position of being determinants of the outcomes of other variables, this <https://assignbuster.com/linear-regression-and-regression-analysis/>

technique can be applied in Criminal justice. The regression analysis is pertinent in determining the relationship among variables as a basis for evaluation of the best practices and structures to adopt with regards to the criminal justice system. For instance, upon establishing the nature and strength of the relationship among variables, it is possible to evaluate the impact of specific changes on one to the other. This analysis is important in developing an understanding of the different ways in which improvements can be made to one of the variable in order to change the other (Williams, 2009).

2.

There are many ways in which regression analysis is applicable to criminal justice. For instance, when conducting a study on the relationship between criminal activities and age of the criminals, it is useful to establish their relationship. One of the ways in which the technique has previously been applied is in evaluating the effectiveness of introducing new restrictive laws. For example, when an agency introduces gun-restrictive laws, it is of paramount significance to conduct an analysis of the level of crimes in the different places where the laws are in force. Additionally, regression analysis can be used in evaluation of the best option when developing policies (Walker & Maddan, 2005). For instance, when evaluating expansion needs of the correctional facilities in the country or a specific demographic unit, regression analysis can effectively guide in decision making. This would involve taking the crime rate, arrests and the average number of people jailed every day in an effort to evaluate the future needs of the correctional facilities. This forms the basis for evaluation of the number of inmates that the facilities can accommodate in future. Therefore, the outcomes of the <https://assignbuster.com/linear-regression-and-regression-analysis/>

analysis would positively contribute towards determining the feasible changes to make.

References

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