**Feature Selection**

1. Feature Selection Method

**Feature Selection**: Select a subset of input features from the dataset.

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1. Statistics for Filter Feature Selection Methods

**Supervised**: Use the target variable (remove irrelevant variables).

* Correlation
  1. Numerical Input, Numerical Output
* **Numerical Variables:** Floating Point Variables.
* The type of response variable typically indicates the type of predictive modeling problem being performed. For example, a numerical output variable indicates a regression predictive modeling problem.
* **Numerical Output**: Regression predictive modeling problem.
* This is a regression predictive modeling problem with numerical input variables.
* The most common techniques are to use a correlation coefficient, such as Pearson’s for a linear correlation.

1. Statistics for Feature Selection

* Correlation Statistics
* Pearson’s correlation coefficient (linear).

1. Regression Feature Selection

* Regression Feature Selection (Linear Multiple Regression)

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| Steps | Reaction | |
| 1. Feature Selection Methods | Filter: Select subsets of features based on their relationship with the target. | |
| 2. Statistics for Filter Feature Selection Methods | Numerical input | Numerical output |
| 3. Feature Selection based on | Correlation |  |
| 4-Regression | Linear Multiple Regression | |

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| Dependent variable | Independent variables |
| Performance\_Indicator | Control\_of\_Corruption |
|  | Rule\_of\_Law |
|  | Political\_Stability |
|  | Government\_Effectivness |
|  | Regulatory\_Quality |