

Republic of Iraq
Ministry of Higher Education & Scientific Research
Al-Mustansiriya University College of Education

**STUDY ABOUT SIMPLE AND
MULTIPLE LINEAR REGRESSION
WHEN THE RANDOM ERROR
NOT GAUSSIAN**

A thesis

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BY

Ali Latif Arif Al-Bayati

Supervised by

Dr. Akram Mohammed Al-Abood Dr. Ayad Abdul Kareem
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ABSTRACT

The regression, therefore, depend on three hypotheses, the essential of which is the third one, is concern is with the distribution of the random error which is following the normal distribution. The study is therefore concerned with the distribution of error other than the normal distribution, investigating them on line of winder distribution. The study consists of four chapters:

Chapter One deals with a general introduction handling the summary of the study itself. Chapter Two involves a theoretical aspect which commences with several item about the linear regression whether it is simple or multiple. It also includes the methods of estimating the regression and the test of hypotheses. What has been suggested here are three types in which the distribution of error is : normal, Log-normal, and exponential, without effect concentration method. A criterion (AIC) is used to show the best type. Also it tackles Poisson zero inflated ones. Chapter Three is about the application, simulation style is used along with the application method. The first one depends on the regenerating variables at random from the first type and applied to three distributions by using the criterion (AIC) so as to find the best distributions. The second application is concerned with thee regeneration of random variable Poisson, they are used in three different types in contrast with the same criterion.

As for Chapter Four , it is concerned with most important conclusion, resulting in the study, along side with the essential suggested recommendations.

