The Requirement of Fundamental Mathematics Model of Thailand National Sports University Students

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Abstract: The purposes of this research was to study requirement of fundamental mathematics model of Thailand National Sports University students. The sample samplings separate 2 groups were 200 bachelor's degree which are purposive sampling including Chaiyaphum, Chumphon, Suphan Buri and Sukhothai 50 students per campus, 3 mathematics teachers. The research tool were for student, questionnaire about requirement of fundamental mathematics of Thailand National Sports University students and for teacher, opinion interview form about requirement of fundamental mathematics of Thailand National Sports University students. The statistics used in data analysis was multiple linear regression.

Research finding indicated that: The requirement of fundamental mathematics model of Thailand National Sports University students.

$$\hat{Y} = 1.088 + 0.157X_1 + 0.199X_2 + 0.153X_3 - 0.041X_4 - 0.007X_5 + 0.094X_6 + 0.207X_7$$

Keywords: Statistic, Model, Multiple Linear Regression

Introduction and Preliminaries

Mathematics is the science that focuses on the study of abstract structures that are defined through a set of axioms, which has a definite reason using logic and math notation. Mathematics is divided into major branches as follows: algebra, analysis, and applied mathematics.

Thailand National Sports University consists of 3 faculties, namely the faculty of sports and health science, faculty of arts and the faculty of education. Students from all 3 faculties must study subjects in the general education category in mathematics, that is, mathematics and statistics in daily life, which will study about importance of mathematics and statistics math reasoning skills preliminary statistics ratio calculation percentage financial mathematics probability and application in daily life.

Since the field of mathematics, it can be seen that the scope of study is very broad. There are many things that are mathematical in everyday life. Therefore, there are many topics in teaching and learning in mathematics and statistics in daily life.

Now, the education industry has more competition. To produce quality students for the profession to society. Therefore, it is necessary to improve and develop the curriculum, including courses in accordance with the needs of that profession.

Correlation analysis is a technique used to measure the degree of correlation between variables how much they are related. How well will it be useful to describe the relationship, regardless of which variable is an independent variable or dependent variables (Chatterjee, Hadi & Price, 1999). The purpose of this research was to determine the relationship between two characteristics such as blood pressure and age, and test scores with the student's GPA. If one trait changes, how will the other be affected or we know one characteristic, How much will it help us know about another trait. Education like this It is important to know how the two traits vary in common (Draper & Smith, 1998).

Regression analysis is a statistical technique for modeling relationships between variables for describe the relationship between related variables or used to predict or predict the value of one variable from another (Dielman, 1991). The applications of regression analysis are plentiful and occur in almost all disciplines, including engineering, physical science chemical science, economics, management and life science. In other words, regression analysis may be one of the most widely used statistical techniques. For example, if the relationship between sales and advertising costs is known. It will be able to forecast future sales, to set a production plan. If you know the relationship between rice yield and the amount of fertilizer use will be able to predict the yield of rice in advance If you know the relationship between the ability to sell insurance and age and education can predict the amount of insurance sold in advance. If you know the relationship between the productivity of goods and the capital in production and labor as well as other raw materials used in the

production of products will be able to predict the production capacity of the product for the benefit of production planning as well as determine future product prices in education. You may be interested in estimating student achievement at school by relying on related variables such as home environment, the influence of peers in school or other influencing factors in schools, for example (Freund & Wilson, 1998).

The regression analysis got its name from Sir Francis Galtion's research, in the late 18th century. The study included a comparative study of child height and parental height. A child of an abnormally tall person is shorter than his father and mother, and a child of a short person is taller than his father or mother. The height of tall children will "regress" closer to the average height of the population. On the contrary, the height of short children tends to be higher to approach the average height as well (Kutner, Nachtsheim, Neter & Li, 2005).

This regression analysis is a very popular forecasting method, especially if it is business information and economic data. Because this method takes into account other variables involved. It does not take into account only the variables to be forecasted, which sometimes has a problem that What variables should be included? And how many variables are included in the regression analysis? Many factors must be considered, such as the ability to store data, storage cost and in cases, where the dependent variable is to be forecasted in advance for a period that has not yet arrived, such as next month, next year, be sure to be able to find independent variables for that period. To estimate the value of the dependent variable, for example in forecasting the sales of baby milk. Based on the number of new children born each year. In order to forecast the sales of baby milk in the future, it is necessary to find a way to predict the number of new born babies at the point in advance. It may rely on birth data from relevant sources such as the Ministry of Public Health. The movie then predicts milk sales (Kleinbaum & Kupper, 1988).

This regression analysis is one of the most popular forecasting methods. Although more complicated than time series forecasting, especially if it is business and economic data. Because this method takes into account other variables involved. It does not take into account only the variables to be forecasted alone. This makes data collection more difficult than time series forecasting (Montgomery, Peck & Vining, 2006), where the data collected for regression analysis may be observational dataor data from the experimental data or historical data.

The purposes of this research was to study requirement of fundamental mathematics model of Thailand National Sports University students.

Main results

In this research, the researcher collected data for self-assessment based on the actual conditions of students and teachers of National Sports University. From a sample of 200 students and a sample of 3 teachers using the assessment form/record form as a tool for analyze the linear multiple regression model.

The researcher analyzed the opinion evaluation data on the requirement of fundamental mathematical knowledge of Thailand National Sports University's students using descriptive statistics, namely mean, standard deviation and regression analysis.

From studying the requirement of fundamental mathematical knowledge of students and teachers in general education mathematics courses of Thailand National Sports University. The results of the study were as follows:

1. The requirement of fundamental mathematics model of Thailand National Sports University students, Chaiyaphum campus
$$\widehat{Y} = 1.089 + 0.052X_1 + 0.121X_2 + 0.031X_3 - 0.133X_4 + 0.15X_5 + 0.398X_6 + 0.14X_7$$

2. The requirement of fundamental mathematics model of Thailand National Sports University students, Chumphon campus
$$\widehat{Y} = 0.909 + 0.37X_1 + 0.186X_2 + 0.048X_3 - 0.079X_4 + 0.065X_5 + 0.017X_6 + 0.186X_7$$

3. The requirement of fundamental mathematics model of Thailand National Sports University students, Suphanburi campus
$$\widehat{Y} = 0.925 + 0.173X_1 + 0.4X_2 + 0.172X_3 - 0.07X_4 - 0.209X_5 - 0.052X_6 + 0.381X_7$$

4. The requirement of fundamental mathematics model of Thailand National Sports University students, Sukhothai campus
$$\widehat{Y} = 1.073 + 0.065X_1 + 0.165X_2 + 0.268X_3 + 0.017X_4 + 0.205X_5 + 0.024X_6 + 0.03X_7$$

5. The requirement of fundamental mathematics model of Thailand National Sports University students
$$\widehat{Y} = 1.088 + 0.157X_1 + 0.199X_2 + 0.153X_3 - 0.041X_4 - 0.007X_5 + 0.094X_6 + 0.207X_7$$

Where	$\hat{Y}$	Topic in course of mathematics and statistics in daily life
	X_1	Requirement of fundamental mathematics in quantity
	X_2	Requirement of fundamental in structural mathematics
	X_3	Requirement of fundamental mathematics in spatial relations
	X_4	Requirement of fundamental mathematics in change
	X_5	Requirement of fundamental mathematics in basics and methods
	X_6	Requirement of fundamental mathematics in arithmetic
	X_7	Requirement of fundamental mathematics in applied mathematics

From the research results of the model of basic math knowledge needs of students of the National Sports University, it was found that the content requirements in mathematics and statistics in daily life differed 0.157 when the quantity and other aspects were the same. The content in mathematics and statistics in daily life was 0.199 different when the structural aspects were different and other areas were the same. The content requirements in the mathematics and statistics course in daily life were different 0.153 when the spatial relations were different and other areas were different. The content requirements in mathematics and statistics in daily life were different 0.041 when the changes were different and other areas were the same. The content requirements in mathematics and statistics in daily life were 0.007 different when the fundamentals and methods were different. Differences and other aspects were the same. Content requirements in mathematics and statistics in daily life were different 0.094 when different areas of mathematics and other areas were the same. Content requirements in mathematics and statistics in daily life were different. 0.207 when different aspects of applied mathematics and other aspects are equal Chatterjee, Hadi & Price (1999) said that a measure of the degree of correlation between variables is how strongly they are related. and use it to explain the relationship Regardless of which variable is an independent variable or a dependent variable, it can be seen that the basic mathematical knowledge that should be increased among students of the National Sports University is quantitative, structural. spatial relations mathematical science and applied mathematics and the fundamental mathematical knowledge that should be reduced is the change and basic aspects and methods to meet the basic math knowledge needs of students of the National Sports University Which is in the same direction as Dielman (1991) mentioned. Forecast or predict the value of one variable from other variables and describe the relationship between the related variables.

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