



The Analysis of Weighted Mean Success Scores of Students in Five and Hundred Grading Systems Using Sample Methods

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Abstract

In this study five grading system and hundred mark system are applied in determining the success of students at secondary schools. It is aimed to analyze statistically whether there are differences between two systems when weighted mean score is calculated for students in order to determine their success in both systems.

Keywords: *Statistics, Success Rate, Proportional Stratified Sampling, Simple Random Sampling.*

Beşlik ve Yüzlük Not Sistemlerinde Başarı Notları Ağırlıklı Ortalamalarının Örneklemeler ile İstatistiksel Analizi

Öz

Bu çalışmada orta öğretim kurumlarında öğrencilerin başarısının belirlenmesinde beşlik ve yüzlük not sistemleri uygulanmıştır. Bu çalışmada öğrencilerin başarılarının belirlenmesi için ağırlıklı not ortalamaları hesaplandığında her iki sistem arasında farklılık olup olmadığının istatistiksel olarak ortaya konulması amaçlanmıştır.

Anahtar kelimeler: *İstatistik, Başarı Oranı, Orantılı Tabakalı Örneklemeler, Basit Rasgele Örneklemeler.*

INTRODUCTION

Five grading system and a hundred mark system are applied in determining the success of students in secondary schools. It is aimed to analyze statistically whether there are the differences between the two systems when weighted grade average is calculated for students in determining their success in both systems. Inter-school transitions of high school and equivalent schools (excluding special schools) were considered in Sinop province in the 2002-2003 academic years. All students who graduated or didn't graduate from the schools have formed our mass. By taking success rate in examinations conducted by ÖSYM in 1999 into account, the width of the sample of our study was determined.

1. The Scope and Importance of the Survey

In our study; in order to collect data from the schools in the center of Sinop province, 'the Governorship permission' has been taken. It has been gone to schools with permission of governorship. High school of science has been removed from the sampling frame due to lack of graduates in the 2002-2003 academic year.

A total of 766 students in secondary schools have created our mass. By considering the success rate in examinations conducted by ÖSYM in 1999, 175 students constituted our sample as results of calculations. According to the success rate of each

school, sample numbers that will be obtained from school are determined. 'Table of Random Numbers' was used to gain this number by taking the classes available in schools into consideration. Samples were determined according to simple random sampling method.

The weighted average of each student's success rate from the entire lessons in five grading system and a hundred mark system was found at our sample. The data were standardized to avoid exposure to scaling. Standardized weighted success average is calculated.

2. The Study

'Normality Test' has been applied to the raw data at our sample. It has been understood the data in five grading system and a hundred mark system didn't provide the assumption of normality.

Therefore, 'Parametric Statistical Methods' was not applicable.

The non-parametric statistical methods were decided. Due to the provision of assumptions, 'Marked Wilcoxon rank test' is applied.

Hypotheses have been created in order to test 'median' that is a mass parameter.

H₀: There is no difference between the median values of the marks in standardized a hundred mark system and five grading system. ($M = 0$).

H₁: There are differences between the median values of the marks in standardized a hundred mark system and five grading system. ($M \neq 0$)

According to test results, $p = 0,923$ was found. As it was $P > \alpha$, $0,923 > 0,05$ ($\alpha = 0,05$), H₀ hypothesis wasn't declined.

So; with 95% confidence, we can say that there is no difference between the median values of the marks in standardized a hundred mark system and five grading system.

3. Results and Suggestions

With 95% confidence, we can say that there is no difference between the calculated weighted mark averages in a hundred mark system and five grading system as a result of the test which was implemented.

That's why, we can say that there is no difference between weighted success averages in determining the success at both a hundred mark system and five grading system. Also, it can be said that five grading system that is still used is valid.

With 95% confidence, we can say that there is no inconvenience in using the both methods alternately.

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Appendix

Name of the School	Number of Students	Input Sample Width
Atatürk Lisesi	101	23
Anadolu Meslek Lisesi	59	13
Anadolu Güzel Sanatlar Lisesi	27	6
İmam Hatip Lisesi	25	6
Ticaret Lisesi	83	19
Anadolu Öğretmen Lisesi	178	41
Anadolu Lisesi	179	41
Anadolu Endüstri Teknik Lisesi	26	6
Endüstri ve Teknik Lise	88	20
TOPLAM	766	175

the success rate for the year 1999 for the province of Sinop: $p = 0,6534$

the number of students stack : $N = 766$

the sample will be drawn from the stack width : n

$n = \frac{no}{1+no\frac{1}{N}}$ $no = \frac{p*q}{v}$ under the assumption that $v = 0,001$, $n =$ it is calculated as 175.