

A Proposed Differentiation Method Between Students Applying to Graduate Programs at Jordanian Universities

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Abstract: The study aimed to provide a proposed differentiation method between students applying to graduate programs at Jordanian universities, taking into account the overall rate and extent of variance of students applying from various universities because of privacy each university of universities, as well as the customs and traditions that control each of them. The study found that the proposed method is more equitable than the traditional method based on the raw rate at which the student gets it in his university considered in the abstract, as well as that the proposed method leads to the facility of the selection committees of applicants.

Key words: A proposed Method • Differentiation • Graduate Studies • Universities

INTRODUCTION

The higher education sector in Jordan has received a great interest from the political leadership and successive governments. This sector has witnessed a remarkable development in all its aspects. The graduate programs (Higher Diploma, Masters, PhD) is considered a very important link in raising the scientific profile of Jordan at the regional and international levels, as these programs have a basic role in using those scientific potential in the ambitious development plans. The Jordanian universities has provided all requirements of those programs in order to upgrade and develop them to better levels thoughtful scientific plans to upgrade departments in universities, as well as the development of programs in graduate studies that conform to society's need.

The Study Problem: The study problem lies in the competency between the students applying to graduate programs because of the different grades obtained in undergraduate and because of the large variation in those rates from the university from which those applicants were graduated. when the chance of acceptance for students with high rates was higher than the opportunity for students with low rates regardless the difference between universities. As the reliance on abstract rates of applicants without taking into consideration the overall

rate and extent of variance of students applying rates may lead to injustice affects a number of those applicants with low rates although they may be occupying the advanced ranks in their universities. This is due to the obvious differences in students applying rates, due to privacy enjoyed by each university and what govern each university of customs and traditions that differ other universities. It seems so obvious when comparing the first students' rates in the scientific departments at various universities in the graduation same year. This is to say, it is necessary to develop the existing acceptance policies.

Hence, the idea of research came up in order to provide the proposed differentiation method between students applying to graduate programs at Jordanian universities according to scientific bases take into account the statistical indicators in order to reach more justice in acceptance policy.

The Study Objective: The research aims to provide a proposed differentiation method between students applying to graduate programs at Jordanian universities, taking into account the homogeneity rates of students applying for graduate programs at the same specialty and the same year of graduation.

Theoretical Framework: Assuming that X_{JK} represents a student K rate at the University j for the year that has been selected randomly for a speciality and

J= 1,2,3,....., L

K= 1,2,3,.....,n_j

L: It represents the number of donor universities for a bachelor's degree in the same specialization.

n_j: It represents the number of graduates from the university for the same specialization.

Then, the average number of students in the university j for that specialization and for the year which have been selected randomly [1]:

$$\bar{X}_j = \frac{1}{n_j} \sum_{k=1}^{n_j} X_{jk} \quad (1)$$

The standard deviation as a measure of the variance of the rates of graduates from the university of j for the same specialization and for the year that have been selected randomly is[1] :

$$S = \sqrt{\frac{\sum_{j=1}^L (n_j - 1) S_j^2}{\sum_{j=1}^L n_j - L}} \quad (2)$$

And then, on the basis of the average rate of the students and the standard deviation of the rates of graduates from the university j For the same specialization and the same year that are selected randomly, the standard score that correspond to the student K at the university j as follows [2]:

$$Z_{jk} = \frac{X_{jk} - \bar{X}_j}{S_j} \quad (3)$$

As for now, it is whether the students rates in different universities and for the same specialization and the same year that are selected homogeneous completely, means that the average rates of these students must be equal. this is rare and perhaps impossible event. The heterogeneity case is the prevailing situation because of the variance between means, as well as the variation in the standard deviations.

Hence, it requires calculating the average rates as well as the pooled standard deviation randomly and the measure of the variance of one of those rates, these indicators can be measured according to[2]:

$$\bar{X} = \frac{1}{\sum_{j=1}^L n_j} \sum_{j=1}^L n_j \bar{X}_j \quad (4)$$

Table 1: For graduate students shows default rates in the pharmacy for four universities

Student Serial Number	University W	University X	University Y	University Z
1	2.36	2.16	2.12	2.20
2	2.52	2.20	2.20	2.24
3	2.56	2.36	2.36	2.32
4	2.96	2.44	2.52	2.36
5	3.04	2.56	2.52	3.64
6	3.12	2.56	2.64	2.48
7	3.16	2.72	2.68	2.56
8	3.24	2.76	2.84	2.64
9	3.32	2.80	2.96	2.76
10	3.60	2.84	2.96	2.92
11	3.68	2.96	3.00	2.96
12	3.76	2.96	3.08	3.00
13		3.16	3.12	3.00
14		3.20	3.16	3.08
15		3.20	3.20	3.12
16		3.24	3.28	3.20
17			3.28	3.28
18			3.28	3.32
19			3.28	3.36
20			3.32	3.40
21			3.36	3.68
22			3.56	
23			3.60	
24			3.64	

Table 2: Shows the mean and standard deviation for each of the university

University	Mean \bar{X}_j	The standard deviation S_j
W	3.1100	0.45643
X	2.7575	0.35432
Y	2.9983	0.43041
Z	2.9295	0.44987

\bar{X} (General Mean) =2.9440918 S(General sd) = 0.5425342

While the pooled standard deviation [2]:

$$S = \sqrt{\frac{\sum_{j=1}^L (n_j - 1) S_j^2}{\sum_{j=1}^L n_j - L}} \quad (5)$$

The standard score [2]:

$$Z_{jk} = \frac{X_{jk} - \bar{X}}{S} \quad (6)$$

Based on these two indicators it is possible to recalculate the rate of each student K At the university j according to:

$$X_{jk}^* = \bar{X} + S \cdot Z_{jk} \quad (7)$$

Table 3: Shows the crude rate and the new rate for each of the university

	w	R. w	Fw	X	RX	FX	Y	RY	FY	Z	RZ	fZ
1	w	2.36	2.05	x	2.16	2.03	Y	2.52	2.34	Z	2.20	2.06
2	w	2.52	2.24	x	2.20	2.09	Y	2.52	2.34	Z	2.24	2.11
3	w	2.56	2.29	x	2.36	2.34	Y	2.64	2.49	Z	2.32	2.21
4	w	2.96	2.77	x	2.44	2.46	Y	2.68	2.54	Z	2.36	2.26
5	w	3.04	2.86	x	2.56	2.64	Y	2.84	2.74	Z	3.64	3.80*
6	w	3.12	2.96	x	2.56	2.64	Y	2.96	2.90	Z	2.48	2.40
7	w	3.16	3.00	x	2.72	2.89	Y	2.96	2.90	Z	2.56	2.50
8	w	3.24	3.10	x	2.76	2.95	Y	3.00	2.95	Z	2.64	2.59
9	w	3.32	3.19	x	2.80	3.01	Y	3.08	3.05	Z	2.76	2.74
10	w	3.60	3.53	x	2.84	3.07	Y	3.12	3.10	Z	2.92	2.93
11	w	3.68	3.62*	x	2.96	3.25	Y	3.16	3.15	Z	2.96	2.98
12	w	3.76	3.72*	x	2.96	3.25	Y	3.20	3.20	Z	3.00	3.03
13				x	3.16	3.56	Y	3.28	3.30	Z	3.00	3.03
14				x	3.20	3.62*	Y	3.28	3.30	Z	3.08	3.13
15				x	3.20	3.62	Y	3.28	3.30	Z	3.12	3.17
16				x	3.24	3.68*	Y	3.28	3.30	Z	3.20	3.27
17							Y	3.32	3.35	Z	3.28	3.37
18							Y	3.36	3.40	Z	3.32	3.42
19							Y	3.56	3.65*	Z	3.36	3.46
20							Y	3.60	3.70*	Z	3.40	3.51
21							Y	3.64	3.75*	Z	3.68	3.85*
22							Y	2.52	2.34			
23							Y	2.52	2.34			
24							Y	2.64	2.49			

Rw: Raw Average For University

WFw: New Average For University

WRx: Raw Average For University X

Fx: New Average For University X

Ry: Raw Average For University Y

Fy: New Average For University Y

Rz: Raw Average For University Z

Fz: New Average For University Z

Table 4: Shows the top (10) rates of the four universities

Student No.	Cumulative average	University
1	3.85	Z
2	3.8	Z
3	3.75	Y
4	3.72	W
5	3.7	Y
6	3.68	x
7	3.65	y
8	3.62	w
9	3.62	X
10	3.62	x

Through the formula No (7), students rates can be re-calculation for that specialization; and for a year that has been selected randomly, the new rates (X_{jk}^*) Become homogeneous and more justice.

In spite of the new rate applicant student may be larger or smaller than the previous average, according to the small and the large degree of homogeneity rates in his graduation year. On the basis of the new rates, the differentiation between the scores of students process is made.

The Practical Side: In order to clarify the idea of research, a virtual data for students rates in pharmacy at four universities are creating (W, X, Y, Z), as the scores of students in universities characterized by secrecy and as follows:

CONCLUSIONS AND RECOMMENDATIONS

Conclusions: The study concluded the following results:

The suggested method is fairer than the traditional method based on the raw rate at which the student gets it in his university.

The admitted students rates according to the proposed method is more homogeneous.

The proposed method gives a greater opportunity for outstanding students among their peers students at a university.

In the event that there were applicants graduates of different years, so they can be calculated by the arithmetic mean and standard deviation of graduates each year alone.

The proposed method leads to the facility of choosing applicants students in the selection committees.

Recommendation: The researcher recommends the adoption of the proposed technique to differentiate between students applying to graduate programs at Jordanian universities, as a way to achieve a great deal of justice among students applying to graduate programs.

REFERENCES

1. Keller, G., 2010. Statistics For Business And Economics 2010, 11th Edition, South Western.
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