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**Statistical Analysis to Determine the Most Important Factors Affecting
the Student's Choice of University**

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Abstract: This study aims to identify the most important motives and factors that drive students to choose a university. What are the factors that influence students in choosing a university, what are the opinions of students in determining the order of the most important factors in choosing a university, and does the gender of students have a relationship and influence on the reasons for choosing a university. Furthermore, to determine the most important factors for choosing a university in terms of gender. For this purpose, I used a questionnaire form to collect a data from 425 students at Erbil Polytechnic University in 2023 using a simple random sampling method. SPSS version 24 was analyzed using descriptive statistics to analyze the data and (chi-square) to determine the difference between the male and female students' attitudes. In this regard, factor analysis was used to order the most important factors. Accordingly, it is revealed that the most important factors for choosing a university are the university reputation, the relationship between the department and university with labour market, Advice and suggestions of others, and Treatment of employees and faculty members. It is uncovered that females are more influenced than males by the prosperity of the cities around the university and doing cultural activities at the university.

التحليل الإحصائي لتحديد أهم العوامل المؤثرة في اختيار الطالب للجامعة

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معهد جومان التقني، جامعة أربيل التقنية، أربيل، إقليم كردستان، العراق

المستخلص

تهدف هذه الدراسة إلى التعرف على أهم الدوافع والعوامل التي تدفع الطلاب إلى اختيار الجامعة، ما هي العوامل التي تؤثر على الطلاب في اختيار الجامعة، ما هي آراء الطلاب في تحديد ترتيب أهم العوامل في اختيار الجامعة، وهل لجنس الطلاب علاقة وتأثير على أسباب اختيار الجامعة؟ بالإضافة إلى التعرف على أهم عوامل اختيار الجامعة من حيث الجنس. ولهذا الغرض استخدمنا استبانة لجمع البيانات من 425 طالباً في جامعة أربيل التقنية لعام 2023 باستخدام طريقة العينات العشوائية البسيطة. وتم تحليل برنامج SPSS الإصدار 24 باستخدام الإحصاء الوصفي لتحليل البيانات و(مربع كاي) لتحديد الفرق بين اتجاهات الطلاب والطالبات. وفي هذا الصدد، تم استخدام التحليل العاملي لتصنيف أهم العوامل. ولذلك يتبين أن أهم العوامل في اختيار الجامعة هي سمعة الجامعة، ونصائح الآخرين، وعلاقة القسم والجامعة بسوق العمل، ومدى ازدهار المدن المحيطة بالجامعة. وتبين أن الإناث يتأثرن أكثر من الذكور بازدهار المدن المحيطة بالجامعة والأنشطة الثقافية في الجامعة.

الكلمات المفتاحية: اختيار الجامعة، التحليل العاملي، تحليل البيانات، اختبار كاي سكوير.

Introduction

In recent years, there have been many changes in the management, structure, and conditions of higher education institutions around the world. These changes have led to increased competition at the university level, especially international universities, in order to attract as many people as possible. In this respect, they have continuously tried to develop the education process in the direction that plays an important, influential, and strong role in societal issues, innovation and connection with labour market (Nicolescu, 2009). Many universities and institutions on countries' level are constantly trying to be based on the needs and requirements of society and students. To this purpose, through research, changes in curricula and doing academic activities, enhance the university reputation and academic levels to promote the ranking of universities. For example, Ming (2010) points out that strong competition in higher education sector in Malaysia has caused many universities to consider the factors and motives that influence students' decision in choosing colleges and universities. Therefore, they planned to attract students at the national and international levels according to a number

of criteria such as the university's location, university reputation, curriculum, and tuition fees. Hence, the interests and motives of students should be taken into account when they choose a university, and they are linked to a number of factors such as the reputation of the location or university, the security of the city or university, tuition fee, student transportation, facilities of the institution, and sporting and cultural activities. Moreover, with regard to the university's brand (Valitov, 2014) having competition among universities in trying to do various cultural and sporting activities, facilitating the admission of students, how to welcome students and provide medical services, and provide with accommodation. Other factors such as extracurricular activities; for instance, cultural and scientific activities also influence student attraction. We can say that the choice of university by students has many dimensions and reasons. When a student chooses a university, factors such as tuition fees, accommodation, and reputation of the university, as well as the response of employees and university staff, facilities and innovation in using technology play a role to student's attraction and retention. As Joseph and his colleagues show in their study, the comparison of the criteria used by students of public and private universities while selecting the colleges/universities applied for. The importance of university selection criteria differs between those enrolled in public and private institutions. Private university students take reputation, facilities, tuition fees, and personal interests into consideration; while public university students evaluate curricula, sporting activities, reputation, tuition fees, and accommodation. Public and private university students are currently looking for a university that is equipped with the latest technology and includes an attractive campus environment (Joseph et al., 2012).

Students choose universities, departments and colleges for different reasons, which can vary according to personal preferences and circumstances, such as social and economic circumstances, tuition fees, and location of the university or college can play an important role in students' decisions. Students take factors into consideration such as the proximity of the university in the same city, they also consider the attractiveness of the location, the campus climate, financial considerations, and financial ability

are important factors for many students. Choosing universities that are close to students' workplace or being able to waive college tuition fees which is often a reason for choosing a university and helps students reduce their financial burden. In addition, students' personal relationships, as well as recommendations of family, friends and teachers, can also influence students' decisions, and it is important to note that students may have different views on choosing universities and colleges based on their circumstances and preferences. Therefore, this study aims to identify the most important factors in choosing a university by students, as well as knowing the differences and effects of gender on choosing a university and determining the order of the most important factors in choosing a university from the viewpoint of the gender of the students.

Research Objectives: This study attempts to reach the following results:

1. Identify the most important factors that drive students to choose a university.
2. Determine the influence of participants' gender in determining the factors for choosing a university
3. Determine the order of the most important factors for choosing a university from the point of view of males and females.

The Problem of Study: When it comes to the process of choosing universities, colleges and fields of study, there are different perspectives among students in their interests and desires in choosing different universities and colleges, even between men and women. These differences can be influenced by several factors, such as the reputation and location of the university, family and community, traditions, personal and individual expectations, interests, and many other factors. In attracting international students, Australia has become the third largest country admitted international students. Compared to the United States and the United Kingdom, Australia has managed to maintain hosting a high number of learners. For Australia, attracting international students will be an important part of the commercial and cultural diversity of Australian universities. The factors that have been most influential in attracting students from other countries to Australia in the need and acquiring of academic qualifications, employment opportunities, getting a job, university environment, culture and

tradition, and the opportunity to learn a profession (Zhai et al., 2019: 3). Ghanaian universities have used various commercial motives to stimulate demand for universities. The factors that had the greatest impact on local and international students included the influence of family and friends, proximity to accommodation, university ranking and reputation, tuition fees, and teaching methods. In light of the research objectives, the research problems are to identify the most important factors of choosing a university by the students, the differences and the influence of the gender of participants in determining the factors for choosing a university, and order of the most important factors in the viewpoint of gender. (Ghansah et. al., 2016: 147-157).

Data collection and research methodology: This research is considered descriptive research, and it is suitable for such research using a survey form to collect data. The form contains 16 questions in paper form, to express the participants' opinion about the factors influencing students' choice of Erbil Polytechnic University. 425 participants were randomly selected and survey forms were distributed. To ensure the stability of the data, a small selection of 20 students was assigned to ensure the validity and design of the questions, and Cronbach's alpha was used to determine the suitability of the data to the sequence questions of the survey form (Faraj et al., 2022: 4), (Blbas et al., 2017: 48). According to Cronbach's equation, the value was found to be (0.810), which indicates the high degree of reliability of the sequence questions of the survey model. Data analysis presented the use of these rules and tools to achieve the objectives of the study, which are: Mean, Standard deviation, Chi-Square, and Factor analysis. Chi-square is used to find the association between two categorical variables (Aziz et al., 2023: 5) (Saadi et al. 2023: 43), (Aroian et al., 2017: 113), (Blbas; 2019.210). Factor Analysis is used to select the strong significant reason for students to choose university which was divided all factors into three component using factor analysis (Blbas, and Kadir, 2017: 260).

Results:**Table (1): Percentage frequency with regard to the factors for choosing a university**

Variables	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		mean	SD
	N	%	N	%	N	%	N	%	N	%		
University reputation	25	5.9%	43	10.1%	40	9.4%	190	44.7%	127	29.9%	3.86	1.110
Academic reputation of teachers	57	13.4%	133	31.3%	92	21.6%	102	24.0%	41	9.6%	2.85	1.213
Treatment of employees and faculty members	56	13.2%	59	13.9%	79	18.6%	159	37.4%	72	16.9%	3.31	1.281
Quality of education	85	20.0%	138	32.5%	107	25.2%	79	18.6%	16	3.8%	2.48	1.047
The prosperity of the cities around the university	61	14.4%	35	8.2%	26	6.1%	146	34.4%	157	36.9%	3.44	1.530
University library and laboratory	99	23.3%	136	32.0%	103	24.2%	67	15.8%	20	4.7%	2.40	1.116
Providing facilities for learners	64	15.1%	81	19.1%	73	17.2%	107	25.2%	100	23.5%	3.27	1.397
How peaceful and secure is the city in which the university is located	55	12.9%	64	15.1%	55	12.9%	140	32.9%	111	26.1%	3.49	1.383
Proximity of the university to accommodation	78	18.4%	74	17.4%	43	10.1%	127	29.9%	103	24.2%	3.33	1.449
Advice and suggestions of others	21	4.9%	39	9.2%	37	8.7%	142	33.4%	186	43.8%	4.06	1.097
The relationship of the departments and universities with labour market	33	7.8%	39	9.2%	28	6.6%	152	35.8%	173	40.7%	3.91	1.234
Introducing students to the educational environment	103	24.2%	138	32.5%	93	21.9%	72	16.9%	19	4.5%	2.45	1.165
Doing cultural activities at university	106	24.9%	81	19.1%	50	11.8%	144	33.9%	44	10.4%	2.75	1.388
Level of building and road services	47	11.1%	87	20.5%	55	12.9%	172	40.5%	64	15.1%	3.37	1.183
Other academic activities include conferences and workshops	68	16.0%	114	26.8%	76	17.9%	123	28.9%	44	10.4%	2.93	1.243
The university's relations with other foreign universities	80	18.8%	147	34.6%	81	19.1%	85	20.0%	32	7.5%	2.64	1.189

The source: Was prepared by the researcher based on the statistical program

Table (1) shows the frequency percentage that the factors have most influence on students in choosing a university are advice and suggestions of others (77.2%). The relationship of department and university with labor market (76.5%). %), the prosperity of the cities around the university (71.3%), the peace and security of the city in which the university is located (59%), the level of building and road services (55.6%), and the treatment of employees and faculty members (54.3%)

Table (2): Association between gender and factors influencing students to choose a university

Variables	Gender	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Chi-square	p-value
University reputation	Male	11	21	20	98	64	0.559	0.967
	Female	14	22	20	92	63		
Academic reputation of teachers	Male	27	71	46	47	23	1.983	0.739
	Female	30	62	46	55	18		
Treatment of employees and faculty members	Male	28	31	39	79	37	0.208	0.995
	Female	28	28	40	80	35		
Quality of education	Male	41	75	55	40	3	7.415	0.113
	Female	44	63	52	39	13		
The prosperity of the cities around the university	Male	42	24	19	56	73	27.71	0.000
	Female	19	11	7	90	84		
University library and laboratory	Male	53	71	48	36	6	4.788	0.310
	Female	46	65	55	31	14		
Providing facilities for learners	Male	31	41	35	54	53	0.546	0.967
	Female	33	40	38	53	47		
How peaceful and secure is the city in which the university is located	Male	26	34	28	61	65	5.977	0.201
	Female	29	30	27	79	46		
Proximity of the university to accommodation	Male	37	32	26	62	57	4.693	0.332
	Female	41	42	17	65	46		
Advice and suggestions of others	Male	9	15	23	74	93	4.927	0.295
	Female	12	24	14	68	93		
The relationship of the departments and universities labour market	Male	17	19	14	81	83	0.978	0.913
	Female	16	20	14	71	90		
Introducing students to the educational environment	Male	54	65	49	37	9	1.083	0.900
	Female	49	73	44	35	10		
Doing cultural activities at university	Male	59	40	33	60	22	10.417	0.033
	Female	47	41	17	84	22		
Level of building and road services	Male	17	42	30	94	31	6.846	0.224
	Female	30	45	25	78	33		
Other academic activities include conferences and workshops	Male	30	60	40	62	22	1.425	0.835
	Female	38	54	36	61	22		
The university's relations with other foreign universities	Male	38	72	50	37	17	6.246	0.182
	Female	42	75	31	48	15		

The source was prepared by the researcher based on the statistical program

Table (2) shows the result of chi-square test to know the association between gender and factors influencing students to choose a university. There was no statistically significant difference and impact on gender of the students, but the availability of prosperity of the cities around the university has a correlation and impact on the gender of students with a value of ($P=0.0000$). This effect is more on females, as they stayed at home more in the pre-university stage, and are more inclined to go to universities which were built in cities that are more open in terms of living, and with regard to cultural activities ($P = 0.033$); Thus, there is a relationship and impact between the gender of learners, and this impact have more on the females. This difference may be due to the fact that the female in this type of activity shows their talents more and has greater opportunities to express their abilities. There is no statistically significant difference between men and women on the availability of other scientific activities, the availability of university libraries and laboratories, the proximity of the university to the accommodation, and the university's relationship with foreign universities.

Table (3) Rotated Factor Matrix and Communities for the factors influencing students to choose a university

	Component			Communalities
	1	2	3	
University reputation	0.826			0.771
The relationship of departments and universities with the labor market	0.793			0.636
Advice and suggestions of others	0.668			0.500
Treatment of employees and faculty members	0.629			0.512
University library and laboratory		0.831		0.701
Quality of education which university provides for students		0.761		0.591
The ability of the university to introduce students to the work environment		0.710		0.556

	Component			Communalities
	1	2	3	
Ability of the university to provide facilities for learners		0.590		0.503
The impact of peace and security of the city in which the university is located			0.873	0.810
Proximity of the university to accommodation			0.855	0.824
Total Variance Explained (Rotation)	24.467	22.501	16.971	63.938
KMO = 0.783				
Bartlett's Test	Chi-Square = 1317.016		p-value = 0.000	

The source: Was prepared by the researcher based on the statistical program

Table (3) shows the factor analysis used to select the strong factors that influence students' decision to choose a university, which are the 10 influential variables identified in Table (3): These factors are classified into three factors that have an influence rate of (63.938) on choosing a university. The first factor, which is extremely important, includes the order of variables that have an influence rate of (24.467) (university reputation, the relationship of departments and universities with the labor market, advice and suggestions of others, and treatment of employees and faculty members).

The second factor which is very important in choosing a university (the total variance) is equal to 22.501. The order of the factors is as follows (the university library and laboratory, the quality of education that the university provides with students, the university's ability to introduce students to the work environment, and the university's ability to provide facilities to learners). The third factor, which is very important (the total variance) and equals 16.971, is (the effect of peace and security of the city in which the university is located, and the proximity of the university to accommodation).

Conclusions: In this study, with regard to the most important factors that influence students in choosing a university, the advice and suggestions of others and the relationship between the departments and universities with labour market are considered factors affecting students. To what extent do the departments, colleges and universities consider labour market to open departments and colleges. The reputation of the university has its own impact

on students, the prosperity of the cities around the university is also important to attract students from other cities. As are the factors of peace and security in the city in which the university is located, the level of building and road services, and the treatment of employees and faculty members, they have varying degrees of effectiveness in retention and attraction. Regarding the impact of university reputation and the difference in reasons for choosing a university between men and women. The treatment of employees and faculty members on university choice did not have impact and difference on the gender of students, but the availability of prosperity of the cities around the university has a correlation and effect on the gender of the learners that the value ($p= 0.000014$). This effect is greater on females, and with regard to the performance of cultural activities ($P = 0.033210$). Thus, there is a correlation and effect on the gender of students that the effect is greater on females. While there is no statistically significant difference between males and females in choosing a university with regard to the reasons of availability of other scientific activities, university libraries and laboratories, as well as the proximity of the university to accommodation and the university's relationship with foreign universities.

Using factor analysis to select the strongest factors that affect students' decision to choose a university, the factors were classified into three factors that affect students in choosing a university by (63.938) as a total variance explained.

The first factor is the most important factors with total variance of 24.467 that influenced students to select the university which included the following reasons like university reputation, the relationship of the department and the university with labour market, prosperity of the cities around the university, treatment of employees and faculty members, advice and suggestions of others

The second very important factor in choosing a university with total variance of 22.501 including university library and laboratory, quality of education which university provides for students, the ability of the university to introduce students to the work environment, and ability of the university to provide facilities for learners respectively.

The third factor that is very important with total variance of 16.971 includes the impact of peace and security of the city in which the university is located and Proximity of the university to accommodation

Suggestion:

1. The universities should focus on efforts of the specializations that provide with labour market for students.
2. The university should provide environment in terms of green services for students and learning process.
3. The universities should pay more attention to accommodation for students and ensure their families in terms of security, peace and services.
4. The University should be opening projects and training courses in order to improve the ability and behavior of teachers to use new teaching methods in a way that enhances the passion for learning and confidence among students.
5. Universities can continuously try to work on building a strong electronic infrastructure with technological advancement, and record all their activities electronically, which will be beneficial to faculty members and students.
6. The universities have to try to have more number of the international teachers and working to adapt the education system to the systems used in developed countries.

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