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**International  
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**Factors affecting the college speciality selection of Kazakhstani students**

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### Abstract

In this talk we discuss factors that influence and impact Kazakhstani students when it comes to decide major selection. To analyse and study factors, we surveyed 314 students over 16 universities of Kazakhstan (including private, semi-government and government universities). In the previous joint work with (Assanbayeva & Kadyrov, 2020) factor analysis resulted 9 scales, namely, teacher impact, occupation salary impact, external impact, personal interest impact, personal skills impact, national test impact, university cost impact, parents impact, state grant impact. The main aim of the present work is to investigate main factors that influenced the Kazakhstani students most. The next goal is to find any differences in terms of gender when it comes to major selection factors. As most participants were among Suleyman Demirel University, we also wanted to see if there any differences between factors that influence Suleyman Demirel University students major selection to students of other local universities.

The statistical data analysis show that students found themselves to be the most influential by 6 factors out of 9, namely, influence of state grant, influence of university cost, occupation salary impact, national test impact, influence of personal interest and influence of personal skills. Findings also suggested that, there is no difference between these 6 factors depending on gender. Also, no differences were found among university and factors.

*Keywords:* Major Selection, t-test, hypothesis testing, construct, factor analyse.

### Factors affecting the college speciality selection of Kazakhstani students

The choice of profession is a rather serious issue, which should be approached deliberately. The selection of a study field is not only important for one's academic life, but also for the potential of one's personal life, as it has an effect on academic success, jobs and job prospects, financial benefits and, ultimately, social standing. A review of the general literature suggests two primary areas of focus for research in the field of major choice. First, and the most directly related to previous research, is that identifies main factors that influence the choice of major selection. Studies investigate the factor of affecting student choice of major are (Aldosary, et al., 1996), (Galotti, 1999), (Fizer, 2013), (Allen, 2008), (Pike, 2006). Second, and related to current research is that focuses on the relationship between specific individual demographic data and major choice. Research in this field is focused on a variety of sources. To date, research has found that students who select business major are influenced by parental role and socio-economic class, with the extent of this impact differing according to gender (Karen Leppel Mary, 2001). An exploratory factor study was carried out by (Sarwar, et al., 2015), the variables influencing the specialization selection of 300 business graduates resulting 6 factors: academic factors, social capital factors, future prospect factors, human capital factors, market demand factors and finally job prospect factors. They found that impact of factors is same on specialization selection among males and females. It was found that there was no relationship between the universities and the main factors. Generally, gender has been a strong factor in student choice of major. (Malgwi, 2005) found that women tended to give more importance to succeed in the subject than men. However, (Daly, 2005) found no gender difference to major in accounting in terms of advice from family and advice from friends.

In this study, we provide an in-depth study of the main factors that influenced the choice of profession for students in Kazakhstan. Within the next section, we provide a brief overview of questionnaire and the instruments that it uses in our factor analyses. We also provide detailed information on the factors used in our study. The third section consists of making statistical data analysis results. The study concludes with a discussion of our findings and outline the possible future research.

## **Methodology**

### **Participants and Questionnaire**

The questionnaire is constructed and conducted between students who enrolled in a universities. The survey closely corresponds with (Singh Swapnika), (Claudia Bobalc, 2014), (Sarwar, et al., 2015). The questionnaire was administered online. The survey is administered among students from 16 different universities. In total, 314 responses are obtained.

The questionnaire has two part, the first part of questionnaire is to grasp the demographic details of participants. The second part of questionnaires involves 27 items which may affect their choice of major. Table 1<sup>1</sup> provides information on the corresponding number of participants with different background categories. First column provide information who took the survey in Kazakh, Russian and English languages respectively. The majority of respondents, namely 134 people, are students aged between 19-21. There are only 30 people differences between male and female participants. Largest amount of respondents are students with a major in engineering

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<sup>1</sup> Table 1. Demographic data

specialization and this figure is 21.3%(67 students).This is accompanied by students who are majors in pedagogy and mathematics with 20.7%.

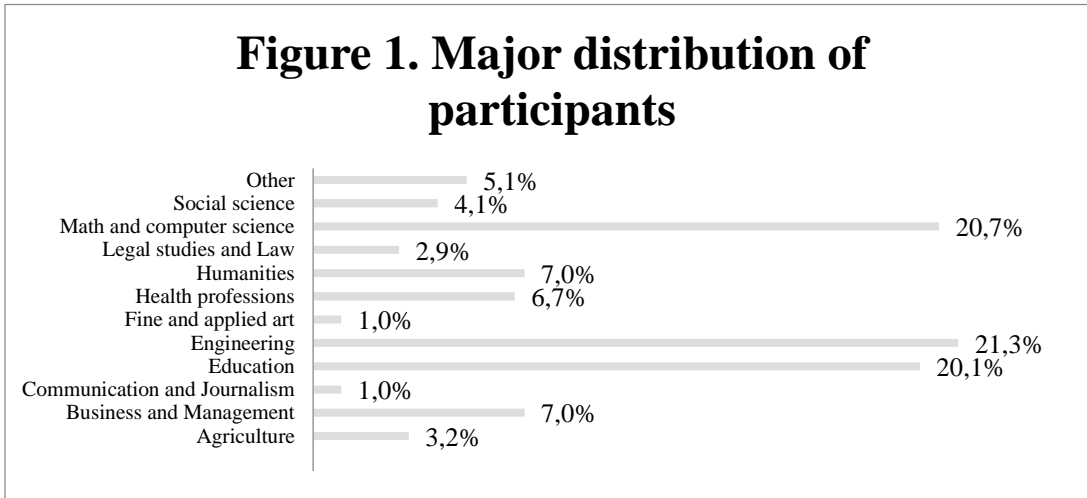
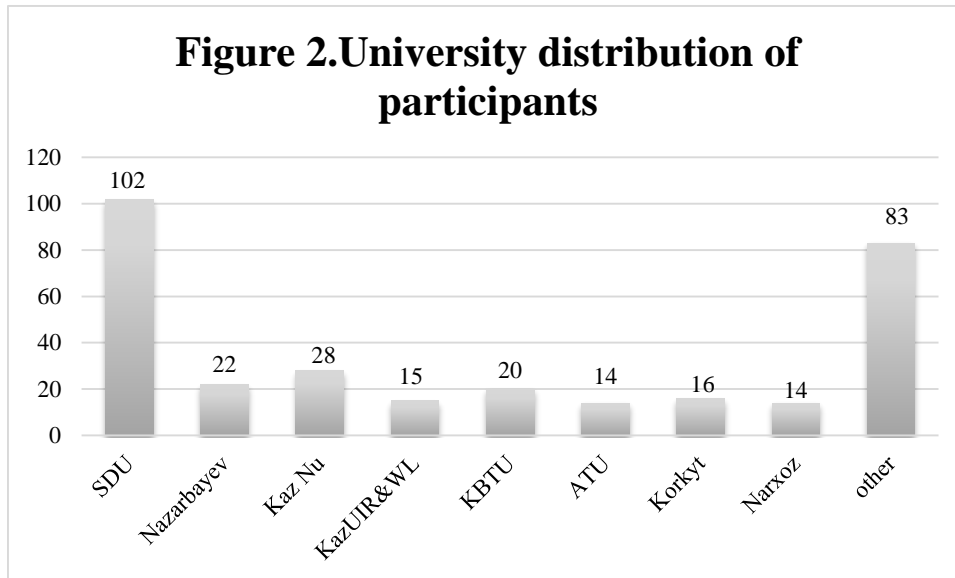


Figure 2 provides information about the number of students surveyed by more than 16 universities. The majority of respondents are students of SDU university. Universities with a less number of participants grouped together,their number is 83 and named as an other in the Figure 2.



### Instruments

The 27 items are translated into Kazakh, Russian and English languages and completed by online form. A five (5) point Likert scale is used for this research. Consequently, 1-‘strongly disagree’, 2-‘disagree’, 3-‘neutral’, 4-‘agree’, 5-‘strongly agree’. To identify main factors we performed Principal Component Analysis (PCA) with Varimax rotation out of 27 scale items on (Assanbayeva & Kadyrov, 2020) and decreased factors to 9. The result of analysis gave 9 main factors as external influence, teacher influence, occupation salary influence, personal interest, personal skills, parent’s impact, national test impact. We answered our current research questions using various tests, based on the main factors which we got from (Assanbayeva & Kadyrov, 2020). T-Test are applied to get answers for study questions by testing a number of hypotheses between different elements of demographic data and main factors on selection of study field. T-test is used when we measure difference between means of two groups. We compared factors for gender differences.

## Results

As we mentioned before the main aim was to determine the most influential factors for Kazakhstani students on the major selection. To answer this question, we compared the arithmetic mean of the 9 main factors which we found in the previous study and selected those more than 3 as our items scaled between 1-5. The 6 factors were found the most important to the Kazakhstani students and the main factors significance was found as acceptable, eventually the results are illustrated in Table 2<sup>2</sup>. If  $p\text{-value} \leq \alpha$ , null hypotheses rejected, in this case difference is highly significant. Otherwise, it was acceptable (Drebee, 2017). Table 3<sup>3</sup> presents hypothesis testing results between gender and main factors.

Hypotheses 1,2,3,4,5,6: As  $p\text{-value} > 0.05$ , so it is statistically insignificant. Thus hypotheses is accepted which means influence of all this 6 factors are not different among males and females. We also decided to see whether there were any differences that affect the selection of Suleyman Demirel University and respondents from other universities which we grouped together. Results are shown on the Table 4<sup>4</sup>. All testing results reveal that the mean score between the university groups is not significantly different.

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<sup>2</sup> Table 2. Descriptive statistics

<sup>3</sup> Table 3. T-test results for gender differences

<sup>4</sup> Table 4. T-test results for the universities

*Discussion and conclusion*

Although many researchers have examined the issue of college major selection in general, in this study we focused to determine relationship between main 9 factors which we get from (S. Kadyrov, 2020) and demographic data. In relation to the choice of major made by students, our findings are generally consistent with those of earlier research. (Asli Yazici, 2010), found that guaranteed employment, personal interest and expected earnings after graduation are the most influential factor for major choice by Turkey students. Findings of them suggested that, whereas male and female students' choices were influenced by very similar factors as our results. For both genders, (Sarwar, et al., 2015) found that high school teacher and even parents do not appear to be particularly influential in their major selection, however we got that Kazakhstani students are not so influenced by parents and teachers. (Sarwar, et al., 2015) found that there is relationship between GPA and all factors in selection of specialization, also got results that there is a link between university and factors which influence for selection of study field by Pakistan business students. Conclusion of our study is that Kazakhstani students are influenced most from the factors state grant, cost of the university, occupation salary, the national test results, personal skills and personal interest. Moreover, men and women appear to become more alike in the factors that influence their major choice in Kazakhstan. Reversely to (Sarwar, et al., 2015) results, we got no differences between the universities by the main factors. This study will not free from potential limitation which we mentioned on (Assanbayeva & Kadyrov, 2020). Further research could also involved more students from different kind of universities in Kazakhstan. Our findings can not be generalized as the study was conducted among Kazakhstan students, because system of education in our country is different from others. It should also be noted that the number of different



university students participating in our study was different. Furthermore, most of the participants in the study are from universities that allocate a lot of grants to certain specialities. It is better to include more paid students in the study on the suspicion that there were fewer paid students. More research related to gender differences on the factors in choice of major could be beneficial. In addition, researcher could follow up graduates who now working to see whether their expectation were met regarding their major choice and determine how could their demographic data influences on their choice.

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Tables

Table 1

Demographic data

**Table 1**

Language	Age group	Gender	University GPA
Kazakh 109	16-18y 58	Male 144	3.5-4.0
Russian 93	19-21y 134	Female 170	136
English 112	22-24y 79		2.5-3.4 145
	24-more 43		1.5-2.4 30
			1.0-1.4 3

Table 2

## Descriptive statistics

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	N	Minimum	Maximum	Mean
External impact	314	1,00	5,00	2,6656
Teacher impact	314	1,00	5,00	2,7428
Parent impact	314	1,00	5,00	2,9968
State grant impact	314	1,00	5,00	3,1688
Cost of the university impact	314	1,00	5,00	3,2452
Occupation salary impact	314	1,00	5,00	3,3599
The national test result impact	314	1,00	5,00	3,3694
Personal skills impact	314	1,00	5,00	3,6975
Personal interest impact	314	1,00	5,00	3,7803

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Table 3

T-test results for gender difference

Hypothesis	Grouping variable	Test applied	$p^*$	Result
$H_01$ : There is no differences between impact of national test result factor among males and females	Gender	T-test	0,572	Failed to reject
$H_02$ : There is no differences between the impact of cost of the university factor on major selection between males and females	Gender	T-test	0,156	Failed to reject
$H_03$ : There is no differences between the impact of occupation salary factor on major selection between males and females	Gender	T-test	0,767	Failed to reject
$H_04$ : There is no differences between the impact of personal interest on major selection between males and females	Gender	T-test	0,204	Failed to reject
$H_05$ : There is no differences between the impact of state grant factor on major selection between males and females	Gender	T-test	0,616	Failed to reject
$H_06$ : There is no differences between the impact of personal skills on major selection between males and females	Gender	T-test	0,174	Failed to reject

Table 4

T-test results for universities

Hypothesis	Grouping variable	Test applied	$p^*$	Result
$H_01$ : There is no differences between the SDU students and other university students by the impact of university cost factor	University	T-test	0,941	Failed to reject
$H_02$ : There is no differences between the SDU students and other university students by the impact of state grant factor	University	T-test	0,723	Failed to reject
$H_03$ : There is no differences between the SDU students and other university students by the impact of occupation salary	University	T-test	0,379	Failed to reject
$H_04$ : There is no differences between the SDU students and other university students by the impact of personal interest	University	T-test	0,157	Failed to reject
$H_05$ : There is no differences between the SDU students and other university students by the impact of personal skills	University	T-test	0,101	Failed to reject
$H_06$ : There is no differences between the SDU students and other university students by the impact of national test result factor	University	T-test	0,908	Failed to reject