

## Determinants of Unemployment Status. Indicating College Majors that Reduces the Unemployment Status in Lebanon

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### Abstract:

Unemployment status is considered one of the divisive economic issues. This paper aims to examine the factors such as age, gender, geographical area, educational level, college major and work experience that affect unemployment status in Lebanon. As well as predicting college majors that reduce unemployment in Lebanon. Using the survey method to collect data.

This study found that individuals with higher educational levels and higher work experience are set to have higher chances to be employed. Another finding is that males have more opportunities to get hired. With respect to the geographical area, citizens that live in the capital Beirut, have more chances to enter the labor market. Individuals between the age of 24 and 37 have higher chances to get recruited. By studying the college majors, this study found that individuals that have business management, computer science, art, health, nursing, nutrition and psychology as a college major could guarantee a job opportunity more than individuals with other majors. The findings would help students in choosing a college major that helps them find a job opportunity after graduating.

**Keywords:** unemployment status; education level; college major; work experience; demographic factors; Lebanon.

**JEL Classification:** E0; E24; I2; J1; J2; J6; J64; R23.

### Introduction

One of the most persistent and divisive economic issues is unemployment, it is often seen as a major problem in several countries (Meyer and Meyer 2019, Nickell *et al.* 2019). Unemployment is considered a social, personal and a global economic issue, not to mention that it is as a continual negative effect on the economic system (Akyurt, 2020). Especially in families, unemployment is defined as a change in social position, and mostly it is recognized as a stressful life matter (Gallagher, *et al.*, 2016), and it also has a negative effect on health (La Torre *et al.* 2018). Loss of income and an increased risk of poverty are other consequences of unemployment (Karanikolos *et al.* 2013). In this regard, countries have made efforts to understand which factors are increasing or affecting unemployment status especially in developing countries.

The variables that contribute to unemployment are not new, but they have evolved into important concerns that must be addressed. Filling job opportunities and achieving professional success require a high degree of education (Archer and Chetty 2013), also education is considered one of the necessities in fighting unemployment (Klein 2015). Another factor that is considered to have a great impact on unemployment status is college major, Freeman and Hirsch (2008) show that college major selection is affected by changes in the knowledge mix of occupations. An additional determinant of unemployment status is work experience, according to (Stuth and Jahn 2020), one of the primary barriers preventing young people from acquiring a job is a lack of work experience. In addition to some demographic factors that have an impact on unemployment such as age, gender and geographic area.

In developing countries and especially in Lebanon. The situation of unemployment in Lebanon is significantly worse among young people, endangering not only social stability but also Lebanon's long-term economic growth prospects, and it varies based on to their level of education, and gender, for instance (The Lebanon National Youth Policy Document in 2017) shows that youth unemployment rate is 35% and unemployment among the higher-

educated youth is greater; 21.8% for secondary graduates and 36.1% among university graduates. A World Bank study in 2016 found that 76% of those employed between 15 and 64 years of age were males while 24% were females. In addition to the political instability not only regionally but also nationally, Lebanon is now facing a crucial unemployment situation.

This study aims to investigate the factors that have an impact on unemployment status such as age, gender, geographic location, education level, College major, and work experience. As well as to predict which are the college majors that reduces the unemployment status in Lebanon.

#### Objective of this study

- (1) Analyze the relationship between Demographic factors (gender, age and geographic location) and unemployment status in Lebanon.
- (2) Examine the impact of education levels (primary education, secondary education, and higher education) on unemployment status in Lebanon.
- (3) Identify the impact of college majors on unemployment status in Lebanon.
- (4) Clarify the association between work experience and unemployment status in Lebanon.
- (5) Predict what the main college majors that affects unemployment status in Lebanon.

The plan of the paper is organized as follows. Section 1 presents the literature review and theoretical background. In Section 2 discusses and explains the data and methodology, and Section 3 results and output are presented; in the final section discussion and conclusion.

### 1. Literature and Theoretical Background

Examining the impact of, education level, college major, work experience and demographic characteristics are the most factors that affect unemployment status.

#### Education Level

Education has a critical role in the country's economic and social growth, as well as in the development of human capital. Educated persons contribute more to the country's socioeconomic progress according to According to (Kromydas 2017). Higher education increases professional prospects, enhances quality of life, confers high social standing, fosters knowledge and wisdom, and reduces unemployment (Bruner 2012). The level of education is the phases of education determined by the degree of development of learners, the aim to be accomplished, and the ability developed.

#### Education Level and Unemployment Status

Education level is considered the main variable that have an impact on unemployment status, when compared to their low-education peers, better educated employees are two to three times less likely to be jobless (Quintini and Martin 2006). This phenomenon is identified by the human capital theory and other literature, therefore investigating the impact of education level on employment status is essential issue.

The view that education enhances adaptability to change has a long history. Higher educational attainment is expected to lead to improved labor market outcomes, according to early contributors to human capital theory (Mincer 1958, Becker 1964) or human capital effects (Le and Miller 2000). Based on the Human Capital Theory and other literature, several studies pointed out that there is relation between education level and unemployment, (Livanos and Nunez 2009, Lam *et al.* 2008, Riddell and Song 2011, Cutler *et al.* 2015 and Quintini and Martin, 2006). Higher education, on the other hand, considerably decreases unemployment status in studies that identified a statistically significant association between years of schooling and unemployment. According to Cutler *et al.* (2015), education level has a proactive role in minimizing large percentages of unemployment induced by the aforementioned consequences.

In furthermore, Livanos and Nunez (2009) showed in a study in Europe that individuals holding a higher educational level have a much higher chance of employment (0.89) than those who have a medium one, graduates are also less likely than non-graduates to be unemployed for lengthy periods of time, according to the findings, this indicates that higher education enhances graduates' chances of finding work in Europe by lowering the frequency and length of unemployment. Similarly, to Lam *et al.* (2008), a strong relation between educational achievement of an individual and the occurrence of unemployment was found, therefore when the educational level increases, the possibility of unemployment decreases. Moreover, prior research has found links between education and the occurrence and duration of unemployment; disparities in unemployment rates between more and less educated individuals might be explained by the frequency of re-employment after a layoff or leaving. This indicates that there

is a positive association between re-employment rates and education attainment (Kettunen 1997, Riddell and Song 2011). Riddell and Song (2011) go on to say that this is truer for tertiary educated professionals than for high school graduates. This discovery is especially relevant in light of the fact that in today's labor market, roughly 10% of all workers leave their employers during the first year of employment, and about 10% of workers are employed on an annual basis on average (Riddell and Song 2011). To sum up, a high significant correlation between education level and unemployment status can be confirmed.

On the other hand, Applegate, Chiem and Sanders (2014) study in different US states revealed a significant negative correlation between adults' education levels and unemployment. In addition, Applegate *et al.* (2014) showed that both a high school diploma and a university degree can both decrease unemployment rate. Based on the abovementioned arguments, this research aims to investigate the following hypothesis in Lebanon:

H1. There is a negative association between education level and unemployment status in Lebanon.

### College major

A student's major is the main subject that they are studying in a university or college. For a long time, the topic of college major selection has piqued researchers' curiosity (Bartolj and Polanec 2012). It's also been described as a difficult decision impacted by a variety of circumstances (Al Khateeb 2012, Bayomi 2011, Simoes and Soares 2010). According to Nauta (2007), individuals, select college majors that tap into their abilities and interests, reflect their self-concepts, or provide desired reinforces, similar to how they choose professions.

### College major and unemployment status

College major plays a crucial role in determining unemployment status. From their research, Fougere and Maurel (2012) discovered that students choose their majors based on predicted future wages. Wiswall and Zafar (2011) discovered that incomes were a key factor of major choice in their research. As a result, completing college majors is an important stage in the professional development process (Montmarquette, Cannings, & Mahseredjian, 2002). According to Robst and VanGilder (2016) economics majors earn greater pay than business majors, and mismatch has a lesser influence on wages for economics majors than for business majors.

Furthermore, a study done in USA by Abel, *et al.* (2014) shows that Liberal arts and social science majors not only are less likely to find a job but also have worse employment conditions than those of engineering graduates. Moreover, Hwang and Baek (2008) find that multiple majors (*e.g.*, double majors, minor majors, interdepartmental majors) do not help young people find a job. In order to understand more this relation, this research aim to investigate the following hypothesis:

H2. There is significant association between college major and unemployment status in Lebanon.

### Experience

In today's competitive business environment, improving and understanding employee experience is critical for firms since it influences workers' connection to the organizations. Despite the fact that economists take job experience into account when forecasting incomes, there is no precise economic definition of work experience. Employee experience is described as workers' views of their companies based on all of the activities, behaviors, and processes they encounter while at work (Yildiz, Temur, Beskese, Bozbura, and Kahraman 2020).

Furthermore, the majority of economic studies consider job experience to be a type of talent (Rosen 1972, Mincer 1974 and Yamaguchi 2010). Experience, according to Raelin (1997), is the capacity to make judgments in unexpected and difficult situations. Work experience is valued by both people and the job market. Individuals with work experience can set themselves apart from other job hopefuls with equivalent qualifications (Tomlinson 2008).

### Work experience and unemployment status

With respect to work experience, workers with experience are in high demand in the labor market. Young people are more susceptible and face stiff competition from those with work experience who are seeking for jobs. When an employer is given the choice between a job seeker with work experience and a job seeker who is jobless, the employer will choose the job seeker with work experience (Eriksson and Gottfries 2005). In addition, because of their high productivity and cheap training costs, experienced worked are preferred to be selected (Oswald-egg and Renold 2021). According to Stuth and Jahn (2020), young people are not being employed because they don't have work experience. Similarly, Level M., Van der Velden and Di Stasio (2014) consider employers are not having enough information about the graduate's qualifications and productivity since they do not have enough work experience.

Likewise, Gontkovicova, Mihalcova and Pruzinsky (2015) show that work experience is a significant factor and advantage in having a job, young people are struggling to obtain work experience while employers aren't hiring them because of their lack in experience. Furthermore, young people are facing a huge disadvantage since current employers are not obtaining enough information about their skills, knowledge and abilities since there is no reference from an old one (Brzinsky-Fay 2017). Employers are hesitant to hire young individuals since their productivity is uncertain and they don't have a track record of previous work success (Skans, Edin and Holmlund 2009). Thus, the following hypothesis is presented:

H3. There is a negative relationship between work experience and unemployment status in Lebanon.

#### Demographic factors

Changes in the structure and number of the population is broadly described as demography. Demography has traditionally focused on gender and age patterns, but there are other key dimensions studied in demographic studies including ethnicity/ race, educational attainment, marital status and ethnicity/ race (Prskawetz *et al.* 2018).

#### Demographic factors and unemployment status

Concerning demographic factors, demography traditionally concentrates on gender and age structures, another vital dimensions that demography studies are marital status, ethnicity/ race, place of residence and educational achievement. (Prskawetz *et al.* 2018). For those who quit school at an early age and start work, will absolutely acquire a great valuable experience by the age of 25 compared to those who start the same domain by the age of 23 (Haar 2018). So, when applying to the same kind of job opportunities, higher experienced individuals are recruited. Furthermore, Tählin and Westerman (2020), admitted that a job rivalry for fundamental abilities by the difference of age requires stressing on experience and job position of the applicants. On the other hand, the European Commission (EC 2013), youth are fresh entrants and have less opportunities with respect to experienced individuals when applying to a job especially when the economy is poor.

Furthermore, youth are always recruited with interim contracts and are the earliest to be fired, even if youth are recruited with an enduring contract, they are exposed to the LIFO (last-in-first-out) rule, as firms have less carried charge when dismissing workers who haven't been in the firm for a long period of time (EC 2013). Concerning older workers, they always have less chances in job vacancies due to their physical and mental potentials, they are always considered less productive workers having a decreased appetite for knowledge (Anselmann and Mulder 2020). On the flip side, there are some favorable perceptions regarding older workers and career opportunities, such as the fact that they are more trustworthy and devoted than youth workers and have superior social abilities (Harris *et al.* 2018).

With respect to Gender, Albanesi and Sahin (2013), as well as Brincikova and Darmo (2015) among others, introduce a statistical proof about the gender imbalance in the unemployment rates as a result of the business cycle, with a higher preference according to males. This is illustrated by the volatile changes in the manufacturing sector, which primarily hire males (Hutengs and Stadtmann 2014), so men are primarily recruited by more repetitive industries than are females, so their unemployment rate has a greater impact to any GDP fluctuation. In addition, researchers suggest that females accept less call backs for recruiting in male dominated job fields (which is known to be higher in salaries) (Riach and Rich 2006, Booth and Leigh 2010). In terms of marital status, women that are married are with higher probability to enter the labor market especially with increased family needs (Wulandari *et al.* 2019, Kamaruddin *et al.* 2020).

According to the theory of job search in labor economics, information asymmetry in one of the aspects of the labor market, in other words workers and job seekers have no information about the recruiter and the employers have no idea about the employee's potential. the positive side of living in large cities are that fresh graduates have more job opportunities to search for, as a result, in urban areas graduates have more chances to get engaged in the labor market (Jun 2017). Moreover, rural people face difficulties accessing the labor market due to a lack of information about employment prospects, the rare connection with job opportunities, and lower earnings. Because of their lower education levels, rural teenagers are more likely to obtain job at a younger age than urban people (Xiaoya and Tay 2016) whereas urban youngsters are more likely to chase further education in order to get better long-term work chances at professional and management levels. (Lancee 2019) characterizes youth traveling to cities as a result of rural areas' poor unemployment and cheap earnings. Thus, demographic factors in terms of age, gender, marital status and geographic area may influence unemployment. According to this discussion the following hypothesis is presented:

H4. There is significant relationship between age and unemployment status in Lebanon.

H5. There is a significant relationship between gender and unemployment status in Lebanon.

H6. There is significant relationship between geographic area and unemployment status in Lebanon.

## **2. Methodology**

### **Data selection**

To estimate the effect of education level, or the degree (Intermediate, terminal, bachelor, masters and PhD), college majors (Business, Engineering, Literature, Education, Sciences, Health and Others), work experience range between (0-1, 1-2, 3-5, 6-10 and 10+) and demographic factors age (aged between 16 and 64 years old), gender, and the Lebanese geographic area according to governorates (Beirut, Mount Lebanon, North, South, Beqaa, Nabatiyeh, Baalbek, Akkar) on the dependent variable unemployment status which characterize by (yes unemployed and no employed). This study used a survey designed. A total of 906 surveys was distributed to Lebanese people through electronic mail, of which 731 were selected and used for examination.

The population of this research includes all Lebanese people the respondents of this study involved who aged between 16 and 64 according to the Lebanese labor law. the sample was selected using random sampling method, the Lebanese who are in the labor force by justifying that they were sufficient to represent the population and to meet the scope of the study.

### **Statistical analysis**

The factors affecting unemployment status were estimated using simple and multiple Logistic Regression Analysis by using SPSS and differences in variables are calculated using Chi-square Analysis Table (1). With respect to Table (2) present Odds Ratios (OR) and 95% confidence intervals were calculated. Analyses were considered statistically significant at the alpha 0.05 level.

## **3. Results and Outputs**

The sample characteristics are described in the Table 1. From the total sample of 731 responses there were 581 females (79.5%), 275 were unemployed while 306 employed, with respect to the sample of males, the total was 150 (20.5%), 106 working while 44 were not.

The majority of the sample according to the Lebanese governorates were located in Mount Lebanon 204 responses (28%) from which 76 were not having a career and 128 were having one, from the capital Beirut there were 178 (24%) distributed between 66 who not recruited and 112 recruited. Moving to south Lebanon, 153 (21%) replies were gained, 69 were not engaged in the labor market whereas 84 were engaged. In Nabatiyeh governorates, 90 answers were deducted, 47 of them were unoccupied and 43 were occupied. North Lebanon and Bikaa shared the same percentage of responses 5%. In North Lebanon 19 were not enrolled and 17 were enrolled. In Bikaa, 16 were jobless and 21 are with jobs. From Baalbeck and Akkar the least responses were obtained, from Baalbeck 20 (3%) from which 16 were resting and 4 utilized. From Akkar 13 (2%) submitted questionnaires from which 10 are unemployed and 3 are employed.

According to the Lebanese educational system and levels, the sample was distributed 29 (4%) for intermediate level from which 17 are unwaged and 12 are waged, 133 (18%) for the terminal level classified as 87 workless and 46 are in work. With respect to the bachelor degree, the highest sample was obtained 403 (55%), 168 are out of a job and 235 are with a job. For the master's degree with sample of 161 (22%), there were 47 that are redundant and 114 are employed. For the smallest sample in the educational level which is the PhD with 5 responses that were all occupied.

The work experience was classified into 4 groups. The first group with 0-1 years of experience there was a sample of 224 (31%) from which 171 were unemployed and 53 are employed. The second group with 1-2 years of experience the sample contained 98 (13%) responses, 54 are unoccupied and 44 are occupied. The third group with 3-5 years of experience the sample contained 153 (21%) responses with 56 were not active in the labor market and 97 were active. The fourth group with 6-10 years of experience 120 (16%) observations was deducted, 22 were not in the working force and 98 were. In the last group with 10+ years of experience, 136 (19%) of which 16 were redundant and 120 are waged.

Moving to the college major with 8 categories. The first category is business with the highest sample of 221 (30%), 96 of them were out of a job and 125 were with a job. The second category is engineering with a sample of 64 (9%), 25 were workless and 39 were employed. The third major is literature with 82 (11%) of observations, 32 were resting and 50 were earning. In the major of education, a total sample of 49 (7%) observations were obtained, 16 of them were unwaged and 33 were waged. The sciences major contained 103 (14%) observations with 45

unemployed and 58 employed. In the faculty of health, 73 (10%) observations were deducted, 26 were not having a career and 47 were having a career. Finally, the other majors with 139 (19%) of observations, 79 were dismissed and 60 were hired. The total age was ranged between 22 and 36, the unemployed individuals were ranged between 20 and 34.

A statistically significance occurred between the factors and unemployment status. Gender, geographic area, education level, age and work experience the p-value was ( $p=0.00$ ), while collage major was ( $p=0.017$ ).

### Regression finding

Table 2 represent the adjusted association between the (gender, age, geographic area, college major, work experience and education level) and unemployment status. Odds Ratio (ORs) and the 95% C.I. from multiple logistic regression analyses are displayed. The analysis revealed that there is difference between gender in determining unemployment status, males have 1- 0.34 about 66% chance to be less unemployed with respect to females (OR=0.34; 95% C.I: 0.210-0.577).

With respect to Geographical area, there is no difference or impact on unemployment status between Mount Lebanon, North Lebanon, South Lebanon, Bikaa and Nabatiyeh areas, with respect to Beirut. While, Baalbeck is significant, therefore it differs in determining unemployment status, in Baalback area have 5.6 times chance more to be unemployed with respect to Beirut (OR=5.6; 95% C.I: 1.33-23.5). likewise, Akkar area, have 9.5 times chance to be unemployed with respect to Beirut, (OR=9.5; 95% C.I: 1.886-48.382).

Education level, there is no difference between Terminal, Bachelor, and PhD with respect to Intermediate on unemployment status, while master's degree has a difference from Intermediate degree in determining unemployment status, 79% chance to be less unemployed with respect to intermediate (OR=0.215; 95% C.I: 0.067-0.696).

According to Work experience, there is difference between work experience 1-2, 3-5, 6-10 and 10+ years of work experience and 0-1 experience on unemployment status, therefore, 1-2 work experience have (1-0.48) 0.52 or 52% chance to be less unemployed with respect to 0-1 experience (OR=0.48; 95% C.I: 0.282-0.840). while 3-5 years of work experience have 0.82 (82%) chance to be less unemployed with respect to 0-1 (OR=0.18; 95% C.I: 0.110-0.308). the 6-10 years of experience 0.95(95%) chance possible to be less unemployed (OR=0.05; 95% C. I: 0.026-0.097). finally, 10+ experience have 0.975(97.5%) chance possibility to be less unemployed with respect to 0-1 (OR=0.025; 95% C.I: 0.011-0.058).

College Major, all majors Engineering, Literature, Education, Sciences, Health, and Others have no difference with respect to Business major on unemployment status. (95% C.I.: 0.425-1.718; 0.626-2.340; 0.239-1.139; 0.350-1.127; 0.249-1.030; 0.826-2.670). according to age, it has an impact on unemployment status with (95% C.I: 1.001-1.078).

With respect to age, OR =1.039 -1 = 0.039 around 4 %, therefore as age increase by one year, odds increase by 4% for unemployment.

Table 1. Sample characteristics, Unemployment status, (n = 731)

	Unemployment status			P-value
	n (%) Total (n = 731)	Yes (n = 319)	No (n = 412)	
Gender				0.000
Female	581(79.5%)	275	306	
Male	150 (20.5%)	44	106	
Geographic Area				0.000
Beirut	178(24%)	66	112	
Mount Lebanon	204(28%)	76	128	
North Lebanon	36 (5%)	19	17	
South Lebanon	153(21%)	69	84	
Bikaa	37(5%)	16	21	
Nabatiyeh	90(12%)	47	43	
Baalbeck	20(3%)	16	4	
Akkar	13 (2%)	10	3	
Education level				0.000
Intermediate	29(4%)	17	12	

	Unemployment status			P-value
	n (%) Total (n = 731)	Yes (n = 319)	No (n = 412)	
Terminal	133(18%)	87	46	
Bachelor	403(55%)	168	235	
Masters	161(22%)	47	114	
PhD	5(1%)	0	5	
Work Experience				0.000
0-1	224(31%)	171	53	
1-2	98(13%)	54	44	
3-5	153(21%)	56	97	
6-10	120(16%)	22	98	
10+	136(19%)	16	120	
College Major				0.017
Business	221(30%)	96	125	
Engineering	64(9%)	25	39	
Literature	82(11%)	32	50	
Education	49(7%)	16	33	
Sciences	103(14%)	45	58	
Health	73(10%)	26	47	
Others	139(19%)	79	60	
Age	Total	Yes	No	P-value
Mean $\pm$ Sd	29.02 $\pm$ 7.176 (21.8 and 36)	27.09 $\pm$ 7.106 (19.9 and 34)	30.51 $\pm$ 6.875 (23.6 and 37)	0.000

Source: Author's calculations using SPSS software, 2022

Table 2. Adjusted association between the gender, age, geographic area, college major, work experience and education level and unemployment status

	Unemployment status (n= 731)	
	Odd Ratio OR	95% C.I. for EXP(B) Lower→Upper
Gender		
Female	Reference	
Male	0.348	0.210→0.577
Geographical area		
Beirut	Reference	
Mount Lebanon	0.972	0.577→1.634
North Lebanon	1.901	0.765→4.724
South Lebanon	1.030	0.596→1.779
Bikaa	0.785	0.315→1.954
Nabatiyeh	1.555	0.819→2.949
Baalbeck	5.600	1.332→23.539
Akkar	9.552	1.886→48.382
Education level		
Intermediate	Reference	
Terminal	0.956	0.302→3.022
Bachelor	0.404	0.133→1.231
Masters	0.215	0.067→0.696
PhD	0.000	0.000→ -
Work Experience		
0-1	Reference	
1-2	0.487	0.282→0.840
3-5	0.184	0.110→0.308
6-10	0.050	0.026→0.097
10+	0.025	0.011→0.058

	Unemployment status (n= 731)	
	Odd Ratio OR	95% C.I. for EXP(B) Lower→Upper
College Major		
Business	Reference	
Engineering	0.855	0.425→1.718
Literature	1.210	0.626→2.340
Education	0.522	0.239→1.139
Sciences	0.628	0.350→1.127
Health	0.506	0.249→1.030
Others	1.485	0.826→2.670
Age		
	1.039	1.001→1.078

Source: Author's calculations using SPSS software, 2022.

## Discussion and conclusion

Overall, the study found that the majority of Lebanese youth are unemployed and actively seeking employment. The research shows that there are differences in the factors affecting unemployment, individuals with higher educational level and higher experience set to have more chance to enter the labor market.

Also, males have more chances than females to get employed. Individuals living in Beirut also have bigger job opportunities, since most of the Lebanese companies are located in this area. By studying college major separately (table in the appendix), the results came out individuals with college majors of business management, computer science, art, health, nursing, nutrition and psychology are set to have more job opportunities than other majors. Between the age of 24 and 37 individuals have better chances to get recruited. We can conclude that, planning for entering a specific college major that guarantee job opportunities in vital to avoid being unemployed. Youths should prepare wisely for their career to avoid being jobless.

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## APPENDIX

Table 3, Model accuracy

Unemployment status * predice Crosstabulation				
Count		Prediction		Total
		.00	1.00	
Unemployment status	no	337	75	412
	yes	94	225	319
Total		431	300	731

Source: Author's calculations using SPSS software, 2022.

Table 4. Collage majors

Variables in the Equation							
Step 1a. Majors	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)
	38.661			24	0.030		Lower → Upper
Economics	-.345	.560	.379	1	.538	.708	.23 → 2.125
Engineer	1.329	.914	2.116	1	.146	3.778	.630 → 22.648
Finance	.636	.696	.834	1	.361	1.889	.482 → 7.396
Business MNGT	1.096	.470	5.432	1	.020	2.991	1.190 → 7.514
Social sciences	21.839	28,420.721	.000	1	.999	3,051,452,480	.941 → .000
Education	.482	.628	.589	1	.443	1.619	.473 → 5.545
Computer Science	1.234	.394	9.79	1	.002	3.434	1.586 → 7.437
Literature	21.839	15,191.515	.000	1	.999	3,051,452,480	.941 → .000
Accounting	1.106	.640	2.984	1	.084	3.022	.862 → 10.601
Journalism	.803	.503	2.551	1	.110	2.232	.833 → 5.980
Public-Relation	.318	.549	.335	1	.563	1.374	.469 → 4.025
Nursing	1.081	.388	7.754	1	.005	2.947	1.377 → 6.305
Sports	.636	.647	.967	1	.325	1.889	.532 → 6.710
MIS	1.041	.958	1.181	1	.277	2.833	.433 → 18.535
Science	1.224	.629	3.781	1	.052	3.400	.990 → 11.63
Physiotherapy	.817	.924	1.277	1	.259	2.519	.507 → 12.53
Marketing	.048	.490	.010	1	.922	1.049	.401 → 2.744
Arts	1.406	.379	13.779	1	.000	4.080	1.942 → 8.572
Law	.391	.429	.830	1	.362	1.478	.638 → 3.427
Psychology	1.360	.422	10.403	1	.001	3.896	1.705 → 8.902
Translation	.348	.529	.434	1	.510	1.417	.503 → 3.992
Health	1.052	.368	8.174	1	.004	2.862	1.392 → 5.885
Nutrition	1.131	.386	8.560	1	.003	3.098	1.452 → 6.607
IT	-20.567	40192.970	0.00	1	1.000	.000	.000 → -
Constant	-.636	.291	4.760	1		.029	.529

a Variable(s) entered on step 1: major.

Source: Author's calculations using SPSS software, 2022.