

Job Change Probability

[1. Project Motivation](#)

[2. The Dataset](#)

[3. Data Analysis](#)

[4. Data Analysis Summary](#)

1. Project Motivation

A company wants to hire data scientists among people who successfully pass the courses conducted by the company. Company wants to know which of these candidates really want to work after training, as it helps to reduce the cost and time and to improve the quality of training.

2. The Dataset

The data used in this project can be obtained from the [Kaggle Datasets Repository](#). It consists of 14 variables.

Attribute Information - Features

- enrollee_id : Unique ID for candidate
- city: City code
- city_development_index : Development index of the city (scaled)
- gender: Gender of candidate
- relevent_experience: Relevant experience of candidate
- enrolled_university: Type of University course enrolled if any
- education_level: Education level of candidate
- major_discipline :Education major discipline of candidate
- experience: Candidate total experience in years
- company_size: No of employees in current employer's company
- company_type : Type of current employer
- lastnewjob: Difference in years between previous job and current job
- training_hours: training hours completed
- target: 0 – Not looking for job change, 1 – Looking for a job change

3. Data Analysis

In the initial dataset job changing variable is boolean type. It will be better for the data visualization to make this variable categorical ('Yes' or 'No').

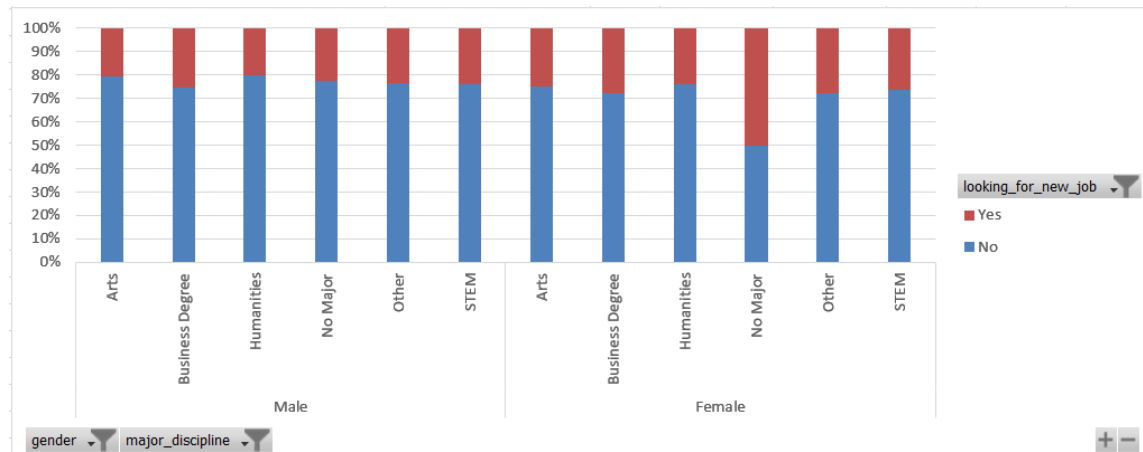
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M	N	O	P
training_hours	target	looking_for_new_job	
36	1	Yes	
47	0	No	
83	0	No	
52	1	Yes	
8	0	No	

Using formula to autocomplete the cells.

1. Percent of employees willing to change the job by **gender** and **major discipline**:

Количество по полю gender	Названия столбцов		
	No	Yes	Общий итог
Male	76,31%	23,69%	100,00%
Arts	79,38%	20,63%	100,00%
Business Degree	74,78%	25,22%	100,00%
Humanities	79,72%	20,28%	100,00%
No Major	77,30%	22,70%	100,00%
Other	76,52%	23,48%	100,00%
STEM	76,13%	23,87%	100,00%
Female	73,60%	26,40%	100,00%
Arts	75,00%	25,00%	100,00%
Business Degree	72,00%	28,00%	100,00%
Humanities	76,27%	23,73%	100,00%
No Major	50,00%	50,00%	100,00%
Other	72,22%	27,78%	100,00%
STEM	73,71%	26,29%	100,00%
Общий итог	76,06%	23,94%	100,00%

Pivot Table

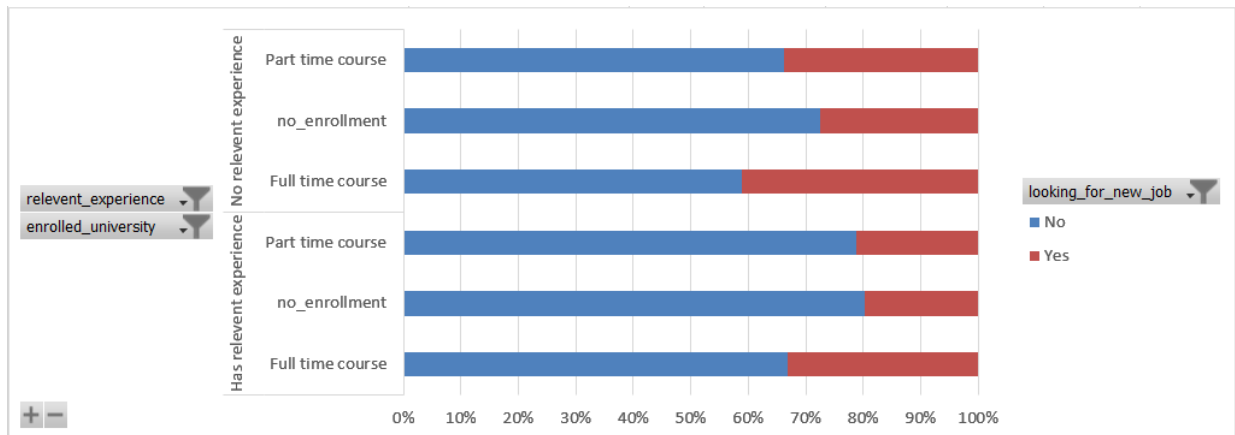


Histogram

2. Percent of employees willing to change the job by **relevant experience** and **university enrollment**:

Количество по полю looking_for_new_job	Названия столбцов		
Названия строк	No	Yes	Общий итог
Has relevent experience	78,73%	21,27%	100,00%
Full time course	66,90%	33,10%	100,00%
no_enrollment	80,23%	19,77%	100,00%
Part time course	78,82%	21,18%	100,00%
No relevent experience	65,95%	34,05%	100,00%
Full time course	58,80%	41,20%	100,00%
no_enrollment	72,59%	27,41%	100,00%
Part time course	66,14%	33,86%	100,00%
Общий итог	75,21%	24,79%	100,00%

Pivot Table

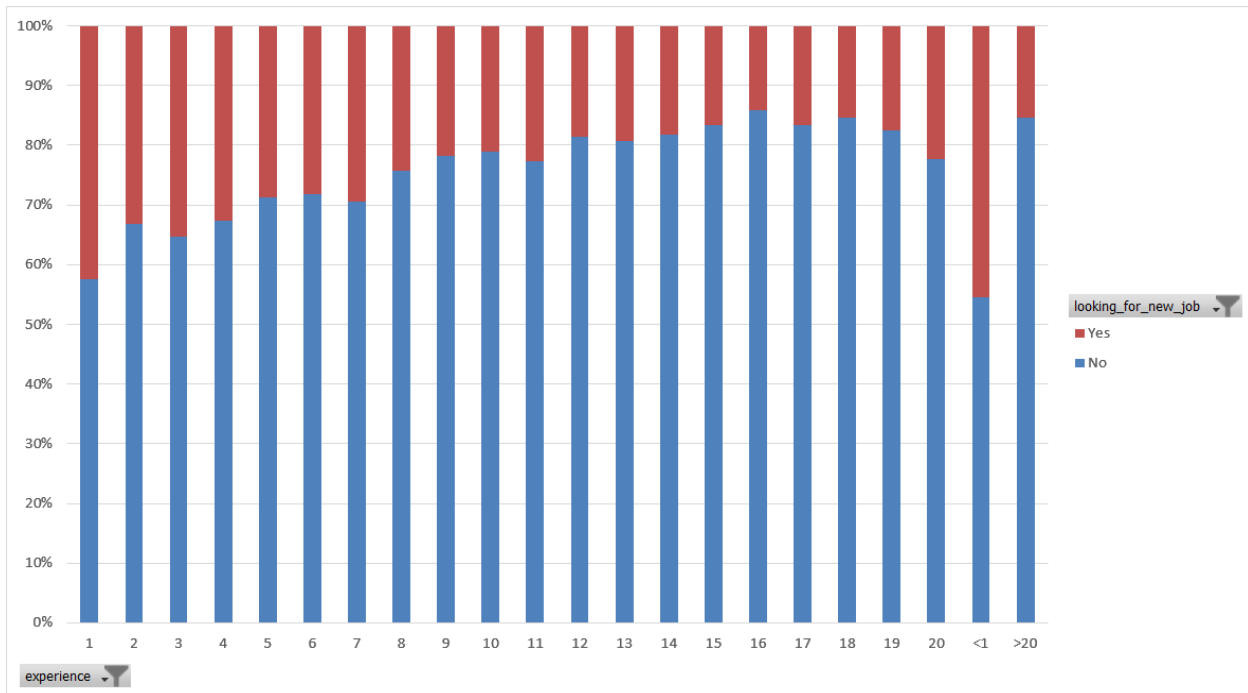


Histogram

3. Percent of employees willing to change the job by **total experience**:

Количество по полю looking_for_new_job		Названия столбцов		
Названия строк		No	Yes	Общий итог
1		57,56%	42,44%	100,00%
2		66,81%	33,19%	100,00%
3		64,70%	35,30%	100,00%
4		67,43%	32,57%	100,00%
5		71,19%	28,81%	100,00%
6		71,79%	28,21%	100,00%
7		70,53%	29,47%	100,00%
8		75,69%	24,31%	100,00%
9		78,27%	21,73%	100,00%
10		78,98%	21,02%	100,00%
11		77,26%	22,74%	100,00%
12		81,38%	18,62%	100,00%
13		80,70%	19,30%	100,00%
14		81,74%	18,26%	100,00%
15		83,38%	16,62%	100,00%
16		85,83%	14,17%	100,00%
17		83,33%	16,67%	100,00%
18		84,64%	15,36%	100,00%
19		82,57%	17,43%	100,00%
20		77,70%	22,30%	100,00%
<1		54,60%	45,40%	100,00%
>20		84,69%	15,31%	100,00%
Общий итог		75,10%	24,90%	100,00%

Pivot Table



Histogram

4. Data Analysis Summary

The analysis revealed the criteria that most affect job change:

- Relevant experience. Based on historical data, employees without any relevant experience are more likely to change their job compared to those who had. The result is 34% for workers without experience and 21% for ones with experience willing to change the job.
- Total experience. People having less work experience will probably leave the company. The probability of changing the job is 42-45% for employees having 1 year and less experience and 32-33% for those who have 2-4 years of work experience.
- University enrollment. Most students enrolled in the university left their jobs. The statistics are 41% for students without relevant experience and 33% for those with any relevant experience.
- Gender and major discipline. Although there are no significant differences between people from the two categories, companies should pay attention to the female workers with no major, as they leave their job with a 50% probability.