

# Perception on the Role of Chance in Different Aspects of Life

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## **Abstract**

People think of Statistics as difficult study, while they perceive 'Chance' or 'Probability' which is a branch of Statistics in their everyday life. People often say "There is 80% chance that it will rain tomorrow" or "Today's winner of the lottery went through the competition of 1:100,000". They both involve with chance. The purpose of this study is to find out what people think of the role of chance in different aspect of their life. The data is collected via an online survey, and the sample population is mostly from California, where the experimenter attends college, and Maryland, where she resided.

## **Introduction**

The most convenient yet complicated way to get as many people as possible to respond is to do a survey. Survey consists of 20 questions, comparing one-on-one questions of different category. Different aspects of life are largely grouped into five categories: 'Career/Wealth', 'Health', 'Marriage', 'Coincidence/National Incidents',

and 'Leisure/Casual/Game'. The questions per each category are randomly picked and compared with those from a different category about eight times, such that in which situation people think the chance plays a larger role.

## **Data**

### A: Career/Wealth

- Having a successful career
- Getting a well-paid job
- Having a well-paid job (>\$100,000)
- Getting a job opportunity through connections
- Having a high fame job

### B: Health

- Having good health
- Being born with disabilities
- Catching a cold
- Being diagnosed with a genetic disorder
- Having long life-expectancy (>85 years)

### C: Marriage

- Marrying a billionaire
- Having a suitable spouse
- Falling in love by first sight

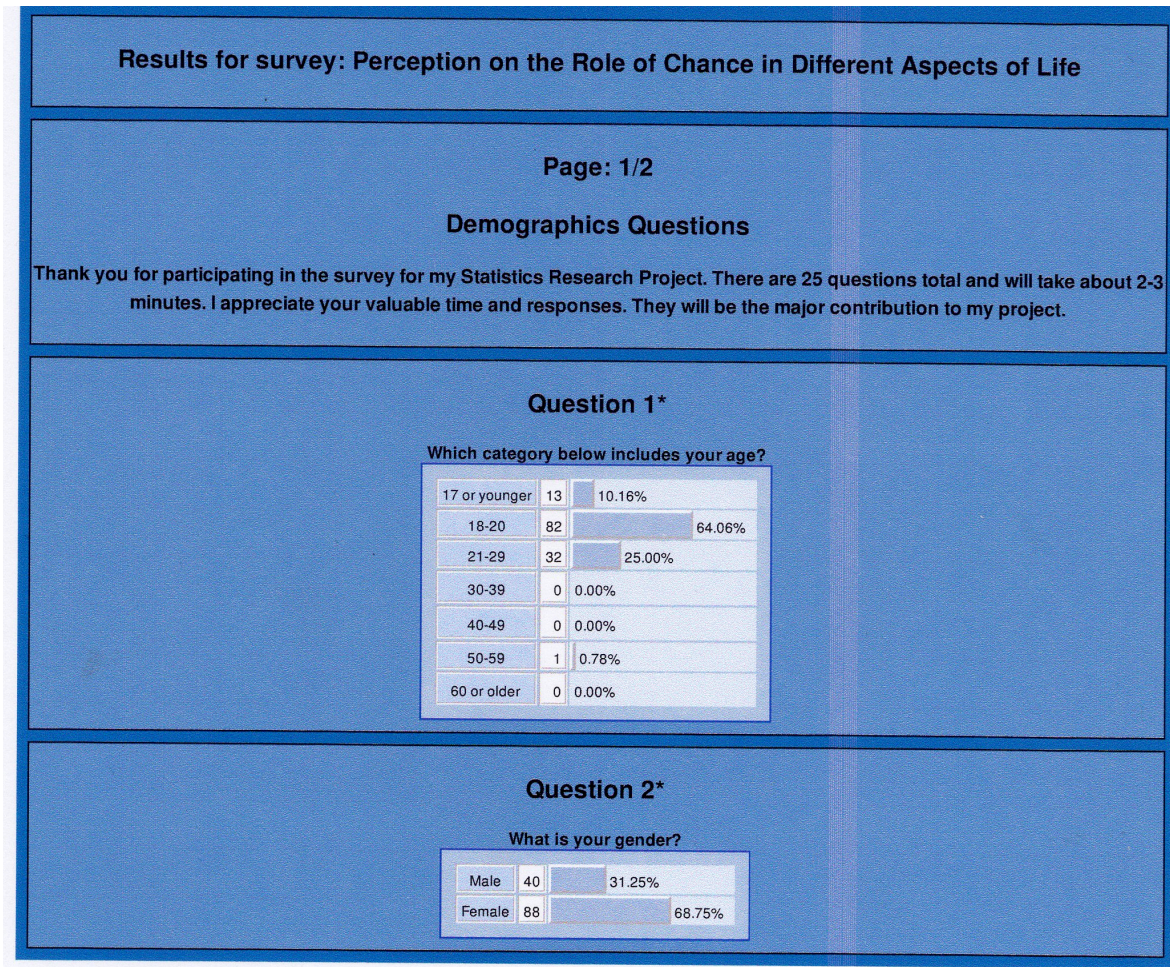
### D: Coincidence/National Incidents

- Running into an old friend in 5 years

- Getting struck by a lightning
- Raining tomorrow
- Being street-casted by a Hollywood movie director

E: Leisure/Casual/Game

- Winning a lottery
- Winning rock-paper-scissors 5 times in a row
- Winning a horse race



### Question 3

In what state or U.S. territory do you live?

Alabama	0	0.00%
Alaska	0	0.00%
American Samoa	0	0.00%
Arizona	0	0.00%
Arkansas	0	0.00%
California	60	48.00%
Colorado	0	0.00%
Connecticut	0	0.00%
Delaware	0	0.00%
District of Columbia (DC)	0	0.00%
Florida	2	1.60%
Georgia	1	0.80%
Guam	0	0.00%
Hawaii	0	0.00%
Idaho	0	0.00%
Illinois	1	0.80%
Indiana	0	0.00%
Iowa	0	0.00%
Kansas	0	0.00%
Kentucky	0	0.00%
Louisiana	0	0.00%
Maine	0	0.00%
Maryland	45	36.00%
Massachusetts	0	0.00%
Michigan	1	0.80%
Minnesota	1	0.80%
Mississippi	0	0.00%
Missouri	2	1.60%
Montana	0	0.00%
Nebraska	0	0.00%
Nevada	0	0.00%
New Hampshire	0	0.00%
New Jersey	2	1.60%
New Mexico	0	0.00%
New York	1	0.80%
North Carolina	1	0.80%
North Dakota	0	0.00%
Northern Marianas Islands	0	0.00%
Ohio	0	0.00%
Oklahoma	0	0.00%
Oregon	0	0.00%
Pennsylvania	3	2.40%
Puerto Rico	0	0.00%
Rhode Island	0	0.00%
South Carolina	0	0.00%
South Dakota	0	0.00%
Tennessee	0	0.00%
Texas	1	0.80%
Utah	0	0.00%

Vermont	0	0.00%
Virginia	4	3.20%
Virgin Islands	0	0.00%
Washington	0	0.00%
West Virginia	0	0.00%
Wisconsin	0	0.00%
Wyoming	0	0.00%

**Question 4\***

What is your major?

Text Answers (15)	
Ethnic Studies	
Undeclared	
Math	
Mechanical Engineering	
english	
Business Administration	
Linguistics and Anthropology	
Statistics	
Electrical & Computer Engineering	
Statistics and Economics	
Chemistry	
Microbial Biology	
neuro	
ME/MSE	
Nursing	

**Question 5**

Have you taken or currently taking a Statistics course?

Yes	82	64.06%
No	46	35.94%

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**Survey Questions**

**Question 6\***

In which one do you think chance plays a larger role?

Having a successful career	63	54.31%
Having good health	53	45.69%

### Question 7\*

In which one do you think chance plays a larger role?

Marrying a billionaire	43	37.07%
Being born with disabilities	73	62.93%

### Question 8\*

In which one do you think chance plays a larger role?

Having a suitable spouse	32	27.59%
Running into an old friend in 5 years	84	72.41%

### Question 9\*

In which one do you think chance plays a larger role?

Winning a lottery	85	73.28%
Getting struck by a lightning	31	26.72%

### Question 10\*

In which one do you think chance plays a larger role?

Catching a cold	60	51.72%
Raining tomorrow	56	48.28%

### Question 11\*

In which one do you think chance plays a larger role?

Getting a well-paid job	41	35.34%
Having a suitable spouse	75	64.66%

### Question 12\*

In which one do you think chance plays a larger role?

Falling in love by first sight	57	49.14%
Winning rock-paper-scissors 5 times in a row	59	50.86%

### Question 13\*

In which one do you think chance plays a larger role?

Getting a job opportunity through connections	51	43.97%
Raining tomorrow	65	56.03%

### Question 14\*

In which one do you think chance plays a larger role?

Having a high fame job	45	38.79%
Winning a horse race	71	61.21%

### Question 15\*

In which one do you think chance plays a larger role?

Winning a lottery	79	68.10%
Being diagnosed with a genetic disorder.	37	31.90%

### Question 16\*

In which one do you think chance plays a larger role?

Falling in love by first sight	57	49.14%
Running into an old friend in 5 years	59	50.86%

### Question 17\*

In which one do you think chance plays a larger role?

Having a well-paid job (>\$100 000)	57	49.14%
Having long life-expectancy (>85 years)	59	50.86%

### Question 18\*

In which one do you think chance plays a larger role?

Getting a job opportunity through connections	24	20.69%
Being street-casted by a Hollywood movie director	92	79.31%

### Question 19\*

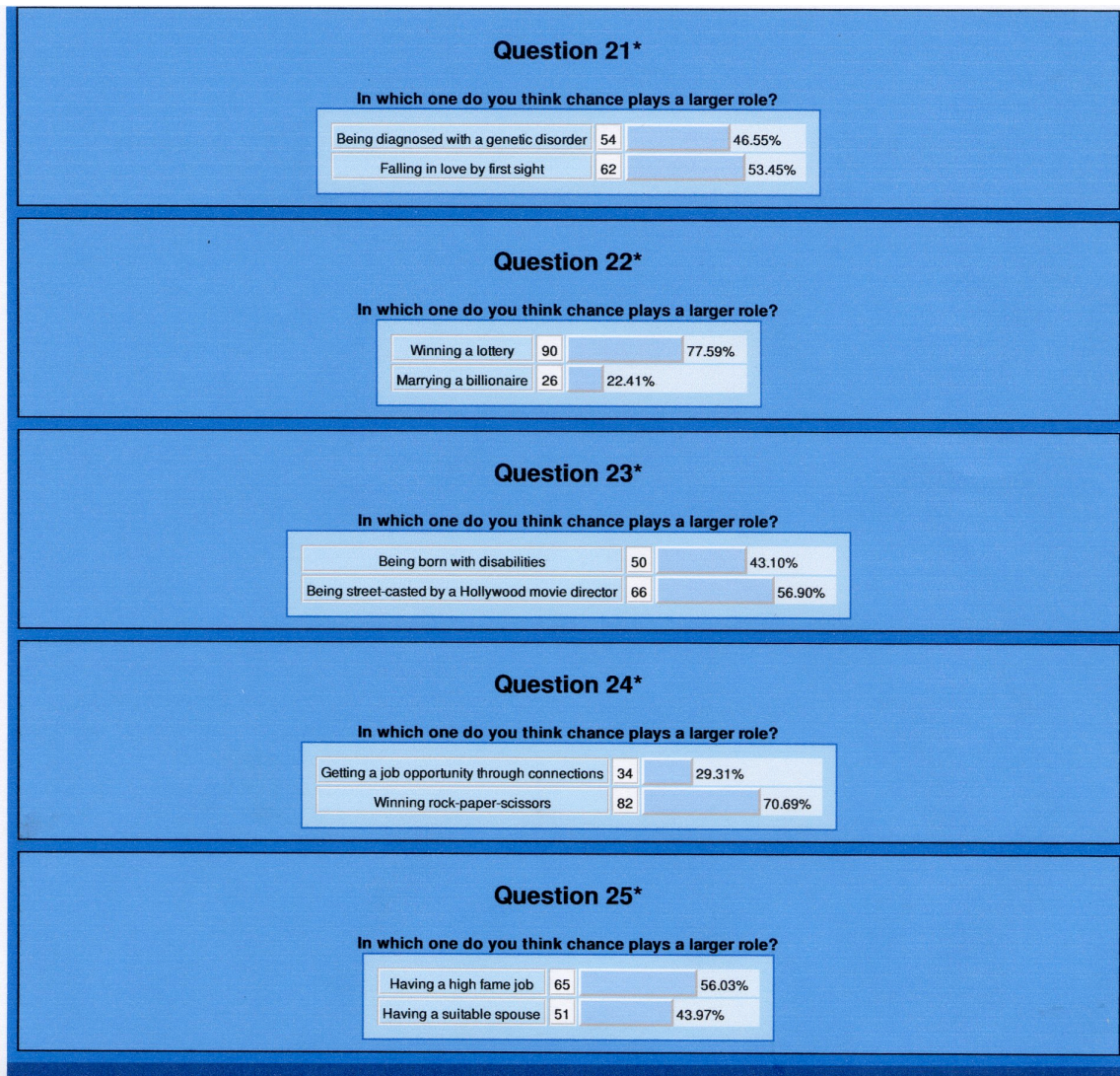
In which one do you think chance plays a larger role?

Being born with disabilities	58	50.00%
Winning a horse race	58	50.00%

### Question 20\*

In which one do you think chance plays a larger role?

Raining tomorrow	38	32.76%
Winning rock-paper-scissors	78	67.24%



## Method

Via a survey – Kwik Survey, an online free survey program

[www.kwiksurveys.com](http://www.kwiksurveys.com)

## Results

Out of 128 total results received, 116 people completed their surveys. There are some questions that the difference of percentages is huge and others that the



difference is small. One question had 50%-50%. Overall, the category E: 'Leisure/Casual/Game' won the majority's votes; it won more votes than other categories six times, when compared one-on-one. The next two categories are 'Health' and 'Coincidence/Natural Incidents'. The last two categories in which the smallest number of people thought the chance plays a role are 'Career/Wealth' and 'Marriage'.

Among the participants of the survey, people who have taken a Statistics course or are currently taking it are twice as many as those who have never taken a Statistics course. This did not seem to affect the result of the survey, however, because the survey was mostly based on their instincts; it took approximately three minutes for 90% of the participants, except few of them took it very seriously and took over ten minutes.

### **Conclusion/Discussion**

The results show most people believe that chance or luck is involved in playing games or leisure. It involves randomness, which people cannot control. On the other hand, most people believe that chance does not play a significant role in the career and marriage. The two categories are so influential in people's life that they put time and effort to get a better job and to marry the most satisfying spouse.

This study was able to reach relatively many participants because it was conducted online. However, more accurate data could have been collected under random sampling; 48% of the participants live in California and 36% live in Maryland. Also, 64% of them are in the range of age 18-20. The result might have been different if

older generations, or those with great experience and knowledge in Statistics, have answered. If more time and access allowed, asking more people to take the survey who are age 40-49 or 50-59 would be another direction. If it shows that people who study Statistics long enough are able to make clear distinction between instinct and mathematically proven chance for gambling, it would be a very interesting research.

### **Acknowledgement**

I would like to thank Professor David Aldous for giving me this great opportunity to conduct my own independent study in Statistics, and for being a supportive advisor throughout the semester. This is my first independent study at college that gave me a good introduction to the Statistical research. I would also like to thank Professor Ani Adhikari who blew the passion in Statistics into me, so that after taking the course Statistics 21, I decided to continue studying Statistics and get my hand on my first research project of Statistics.