

Project 1 Presentation Notes

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Introduction

When you read those beautiful fairy tales of princes and princesses, have you ever wondered whether getting married really leads to happily ever after?

Since the first team of last semester talked about finding a partner, we have decided to follow the thread and investigate the stories afterwards – that is the divorce rates with respect to different factors.

It's worth mentioning that in our definitions, divorce rates are $\frac{\text{\# people who have got divorced}}{\text{\# people who have got married}}$.

Map

- Show of hands when you first got your hands on the data, you didn't know what to do and just decided to manipulate the data a bit?
- It's the same for us. Looking at this map which shows divorce rates by states. The more blue the colors are, the higher the divorce rates are. For example, states like California and New York have the lowest rates, while states like Nevada and Oakland have the highest.
- Keep that in mind coz we are gonna come back to this later.

Education Level

After the map plot, we wanted to investigate what actually affects the divorce rates, so we picked 5 common factors of interests to explore the data.

Regarding the education level, in this Pyramid chart, the height of each trapezoid displays the divorce rates. It's not surprising to see that well-educated people are more stable.

Race

- In the data we used, there are totally nine race groups.
- It's not hard to see that Asians have the lowest divorce rates, which makes sense because different divorce rates are more or less affected by different cultures.

Industry

- We also discussed the divorce rates in different industries.
- Here in this histogram, people working in computer science, agriculture and military demonstrated low divorce rates, whereas people working in health and transportations are easier to get divorced.

Gender – Interactive

- Okay, we already know that occupations matter. But what if gender comes into play? Here in this interactive graph the blue rates are for men and the yellow ones are for women.
- We often hear this rumor that a software engineer seems more stable than a banker. However, according to our analysis, they display almost the same rates except that financial industries are even a bit less.
- Moreover, females generally have higher divorce rates than males!
- Specifically, women in entertainment have the highest divorce rates of almost 60%, which accords with the fact I just heard that Angelina Jolie filed for divorce with Brad Pitt.

Income

- We all know money matters but by how much? Here in this ggplot, it's clearly shown that the more you make, the less likely you are gonna get divorced.

Working Hours

- Moving on to work hours per week. The graph looks like a smiley face.
- It's kinda interesting to see that it's not true that the less you work, which means the more time you have with family, the lower divorce rates are. People who work for extremely low or high hours usually face more chances of divorced.

Heatmap

- We also combined income levels and working hours in this heatmap because they are both related to jobs to see the interaction.
- Here given the same income levels, people who work too much or too less are highly divorceable; given the same working hours per week, you kinda can see the nice flow here. The more you make the less possible you are gonna get divorced.

New York Vs Nevada

- Now let's look back and solve the question from before. What actually affects divorce rates? We picked new York which has one of the lowest rates and Nevada which has the highest to compare.
- To make it straightforward for the audience, we generated a more qualitative instead of a strict quantitative method to explain the different divorce rates.
- We also developed a special score system to better illustrate how the five factors we mentioned above impact divorce rates. Here the higher the scores are the lower the divorce rates.
- Particularly, see this [here](#), the income levels and occupations differ a lot between New York and Nevada, while working hours...not that much.
- Therefore, regarding the big differences between New York's and Nevada's divorce rates, income and occupations contributed more than other elements.

Conclusion

- In a nutshell, if you are looking for a stable marriage, it's probably better if you are well-educated, taking jobs in science, agriculture and military, working for an appropriate amount of time and making good money.
- So just study hard, work hard and don't forget to spend time with your partner!
- If you are interested in our report, please go to our Github and have a good read. All of the details including references, assumptions and future considerations are inside.
- Thank you! Questions?