

Visual analysis of behavioral differences in online dating by age and gender

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Abstract. With the development of science and technology, people's dependence on the Internet and spiritual needs have increased simultaneously, so online dating has gradually become popular. Because high-quality online dating can increase people's happiness and benefit people's physical and mental health, and people's multifaceted preferences will affect the choice of dating partners and the success rate of online dating, so the research on users' behavior preferences in online dating is of great importance. This paper uses the method of data visualization to conduct research, focusing on the comparative study of behavioral preferences in online dating among different ages and genders. The analysis shows that the elderly and women in the dating market are relatively passive. At the same time, people still have certain prejudices against online dating, and there may be some people who do not aim to obtain a romantic relationship.

Keywords: Online Dating; Behavioral Preferences; Data Visualization.

1. Introduction

With the development of science and technology, people's pursuit of interpersonal communication has transitioned from the more traditional face-to-face contact to the stage of online contact. In the past, these offers were often viewed as a last resort for finding a date, a last-ditch attempt to find a date online after other methods of finding a date failed in reality. In recent years, due to the change of people's ideas and the advancement of technology, plus some advanced algorithms and technologies to support the process of online dating, online dating has become one of the mainstream ways for people to find dating partners. More than one-third of Americans have used an online dating service, and more than a quarter of them have met in person [1].

As all major shifts, online dating comes with its own set of challenges and problems. It is undeniable that many algorithms have improved the process of online dating, such as natural language processing algorithms, which can allow users to better understand their favorite types and dig out preferences that users have not discovered [2]. There is also Gale-Shipley algorithm, which is mainly used for Narrow the range of choices according to user preferences, allowing users to reduce unnecessary choices to improve matching efficiency [3]. However, the avenue of online dating, as a way to connect beyond geographic and social boundaries, is also an option fraught with uncertainty. There are still many problems in online dating at present, such as users often lie about their personal data in order to interfere with the matching process of online dating [4]. Some of the current algorithms cannot meet the requirements of data analysis and precise matching. At the same time, people have different preferences for choosing a mate, and the degree of preference of different preferences will also complicate the matching process [5]. The complexity of the process and the diversity of preferences will lead to an increase in the inaccuracy of the online dating matching process, inaccurate matching will lead to the inefficiency of successful matching, and the inefficiency will feed back to users and lead to the decrease of users' satisfaction with dating software [5].

At the same time, successful matching can improve people's well-being, and online dating also has a certain market economic share. At the same time, successful dating matching can improve people's well-being, and online dating also has a certain market economic share that can be used to promote economic development and social stability. Therefore, regardless for individuals, enterprises or society, it is very necessary to improve the success rate of online dating by studying the online dating behavior of users.

The Pew research center's partial visual analysis of dating trends, with comparative studies on age, race, income, education and other factors, provides valuable insights into the development of online dating. This article focuses on the comparative analysis of users' behavior in online dating from two perspectives: age and gender. Through research, the general preferences of users can be summarized, to propose feasible options for the improvement of online dating in the future.

2. Data

Using data from a survey conducted by the Pew Research Center from October 16 to 28, 2019. The data collected 4,860 sets of data through questionnaires, including variables such as gender, age, race, and preferences of online dating users. All data is directly downloaded from the Internet and collected as a data set for use.

3. Result and discussion

In this analysis, based on data presented by the Pierrot Centre, there were a total of 4,860 people, of whom 48.37% were male and 51.52% were female. Among the people who have used or are currently using online dating websites or software. The proportion of the elderly is only 11.01%, which is the group with the lowest proportion among the four age groups, while the proportion of 18-29 years old is 40.67%, which is the largest group.

3.1. Age and Online Dating

As society ages, people need to pay attention to the proportion of older people in the dating market [6]. At the same time, with the increasing dependence of young people on the Internet, young people also play an important role in online dating, and all age groups account for a certain proportion of online dating. Therefore, it is very important to conduct a comparative analysis of their behavioral preferences in different age groups.

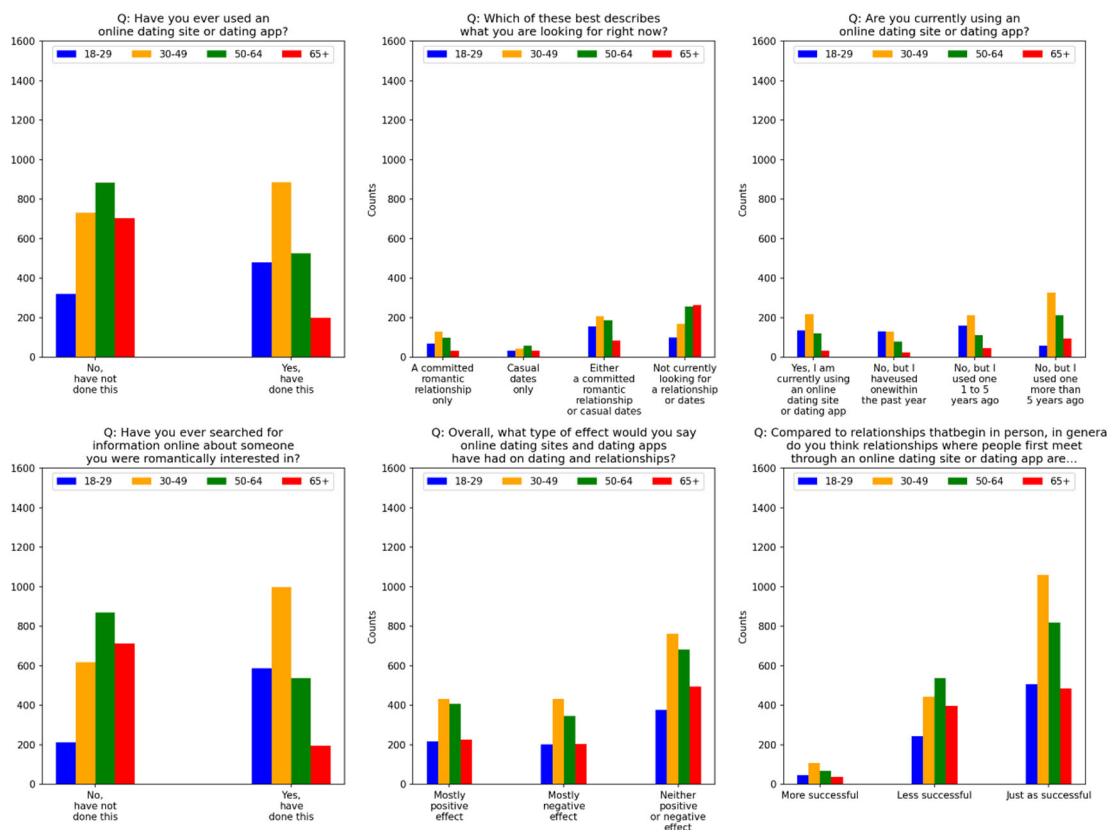


Fig. 1 Answer Distribution According Age

As shown in Fig.1, according to the question of whether they have used online dating websites or software, among the group of people who have not used online dating websites or software, the proportion of the age group of 18-29 is much lower than that of other age groups, and the most is 50-64 age. The proportions of the two age groups of 30-49 and those over 65 years old are not much different, and both are about twice the proportion of 18-29 years old. For the group who have used online dating software or websites, the largest proportion is 30-49 years old, and the least is people over 65 years old, which is about 1/4 of 30-49 years old. The proportions of the two age groups of 28-29 and 50-64 are not much different, and both are about twice the proportion of the group over 65 years old. From the perspective of their respective age groups, about 3/5 people in the age group of 18-29 have used online dating. For people aged 30-49, about 6/11 people have used online dating, for people aged 50-64, about 2/5 people have used online dating, for people over 65 years old, 1 in 5 people have engaged in online dating. Therefore, despite from the perspective of their respective age groups or comprehensively, the relative proportion of people over 65 years old who use dating software is always the least, and the relative proportion of adults aged 30-49 who use online dating is the highest of. The low proportion of the elderly is most likely due to the fact that the elderly are not familiar with online services. Age is one of the major barriers to using online services. Even though older people are becoming more familiar with the Internet and technology, it is still insufficient compared to younger people [7].

Regarding the goals of different age groups seeking the ultimate relationship during the online meeting, from the perspective of their respective age groups, what the 18–29-year-old and the 30–49-year-old most want to seek is a stable romantic relationship, or a casual relationship Dating. People aged 50-64 and over 65 are the most people who are not very eager for both relationships, but relatively speaking, people aged 65 are more desireless about relationships, while people aged 50-64 tend to desire more A steady romantic relationship or a casual date. Taken together, people's views on the ultimate goal in online dating are relatively polarized, and the two largest proportions desire romantic relationships and casual dating at the same time, and they do not insist on romantic relationships or dating. The reason for the lack of purpose in appreciating dating may be that some people use online sports games as a way of entertainment. At the same time, according to existing academic research and some original qualitative data, some online dating will become an unromantic form of socializing, so the need for romantic targets is not strong [8].

As for the duration of using online dating service, the number of people aged 18-29 who have used it for more than 5 years is the least, the number of people who have used it for 1-5 years is the largest, and the number of people who have used it for one year or less is relatively flat. The number of people aged 30 to 65 and above who have used it for more than 5 years is relatively the largest, and the number of people who have used it for only one year is relatively the least. The relative number of people who have used it for more than 5 years shows the same trend for the 4 answers. According to the picture, it can be judged that relatively speaking, the number of online dating users is increasing slowly. Among them, the trend of 18-29 years old is different from other age groups. It may be because of age restriction, some people were not underage and could not use online dating 5 years ago on dating apps.

About 75% of people aged 18-29 have searched online for someone they have a crush on, while only 20% of people over the age of 65 have done so, about 60% of people aged 30-49, and 50-64 The age is about 40%. From this, it can be roughly concluded that for people who have a crush on them, teenagers and middle-aged people are more likely to actively search on the Internet, so as to achieve the purpose of finding the person they have a crush on. For the middle-aged and elderly people over 50 years old, they seem to be relatively passive when they do not actively search for people they feel romantic.

Regardless of age group, most people have neither negative nor positive attitudes towards online dating in dating and relationship feedback. According to the chart analysis, relatively speaking, the evaluations given by people aged 50 to 64 are more positive, and the evaluations of the other three

age groups are generally in the middle. However, judging from the overall number of people, online dating users' feedback on dating and relationships is generally positive.

Although the vast majority of people think that meeting through online dating is better than other ways. It is just as successful. However, in comparison, no matter what age group it is, they are more inclined to be less successful in this way, and the number of people who support less successful is almost 4 times more than more successful. Compared with other age groups, the 18-29 and 30-49 age groups have more people who choose more successful, but the overall preference is still less successful. Therefore, it can be seen that people still have certain prejudices against online dating. Although young people have less prejudice, most people still think that meeting in person is a more decent and popular choice.

3.2. Sex and Online Dating

More men and women had never used an online dating site or apps. When the total number of men is more than that of women, the number of men who have used online dating sites or software is less than that of women. It can be found that relatively speaking, the proportion of women who have used online dating is larger.

As for the goals of different genders seeking the ultimate relationship in the process of online dating, the number of people who only want to date is the least in general. In comparison, the number of people who choose a stable relationship also accounts for a certain proportion. The proportion of men who choose to seek a relationship or date is the highest among men, and the number of people who choose a definite relationship or date is the highest among women. From the comparison in the figure, it seems that women tend to have a clear goal, while men are not so purposeful. For these aimless people, there is an explanation that some people date online merely out of curiosity or to make friends. Although this is different from the original intention of online dating, satisfying curiosity and making friends These results can also attract some users to expand the market [9].

Regarding the use of online dating websites and software, from the point of view of men alone, the number of people who have used it for more than 5 years is the most, and the number of people who have purely started using it is the least. For women, the number of people who have merely started dating online is the most, and the rest of the trend is the same as that of men. It may be that the publicity or quality of online dating has attracted female users in recent years, thereby increasing the number of female users.

From Fig. 2, it can be clearly seen that men seem to be more willing to take the initiative to find someone they feel romantic online, while women's willingness to take the initiative is not as strong as that of men. However, there is not much difference between the number of people who are willing and those who are not, and there is no tendency to take the initiative or not. There are usually some inactive users in online dating, and increasing the initiative of users may improve the efficiency and success rate of online dating [10].

Regarding the impact of online dating on dating and relationships, in general, the number of people who choose the most is neither positive nor negative, and the difference between the number of people who choose positive and the number of people who choose school is not large. However, from the perspective of gender alone, men's choices are more biased toward negative effects, while women's choices are biased towards positive effects.

Most people think that getting acquainted through online dating is a just as successful way than other ways, only a small number of people think it is a more successful way, almost 1/9 of just as successful. Regardless of whether they are men or women, they are more inclined to the less successful option. It can be seen that both men and women still have certain prejudices against online dating.

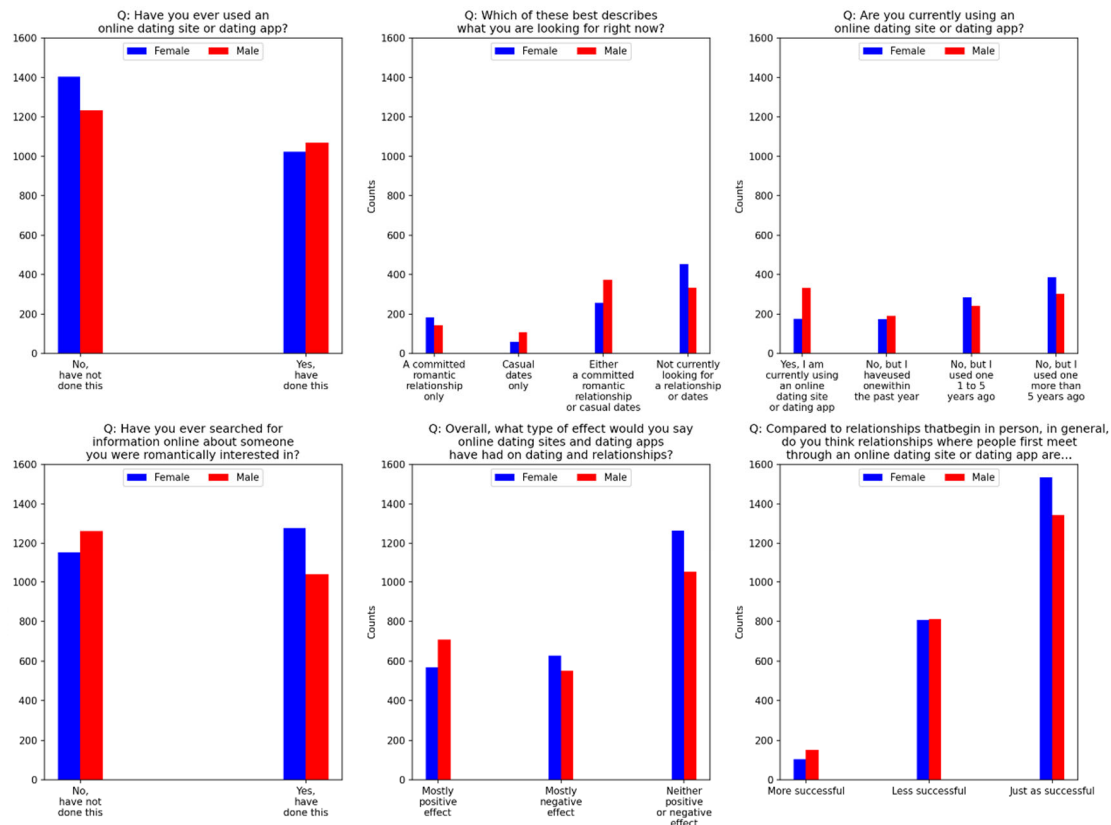


Fig. 2 Answer Distribution According Sex

4. Conclusion

This study analyzes the age, gender and other data of online dating, and finally obtains the analysis of factors such as age, gender and corresponding preferences, as well as some development opinions on online dating. Through this research, some points of view can be found that:

- 1) The elderly and women in the dating market are relatively passive. It is possible to check the preferences of elderly users and female users by strengthening the characteristics of dating objects, so that the matching objects are more in line with the preferences of elderly users and female users and stimulate market demand.
- 2) People still have a certain prejudice against online dating, and it should be properly publicized through advertisements and other means to increase people's recognition.
- 3) Some people do not insist on whether online dating will produce results, and there may be users for the purpose of socializing and satisfying curiosity. Appropriately attracting these people who are not looking for a romantic relationship may expand and diversify the dating market.

References

- [1] Anderson, M., Vogels, E. A., & Turner, E. The virtues and downsides of online dating. Pew Research Center, 2020.
- [2] Sutarwala, A. How is Data Affecting Your Dating Life. Dataconomy, 2022.
- [3] Sharabi, L. Finding Love on a First Date: Matching Algorithms in Online Dating. Harvard Data Science Review, 2022.
- [4] Delgado, R. Data and Dating: How Agencies are Using Big Data to Find the Perfect Match. Smart Data Collective, 2020.
- [5] Dinh, R., Gildersleve, P., Blex, C., & Yasseri, T. Computational courtship understanding the evolution of online dating through large-scale data analysis. *Computation Social Science*, 2022, 5(2): 401–426.

- [6] Gu, D., Andreev, K., & Dupre, M. E. Major trends in population growth around the world. *China CDC Weekly*, 2021, 3(28): 604.
- [7] Heponiemi, T., Kaihlanen, A-M., Kouvonen, A., Leemann, L., Taipale, S., & Gluschkoff, K. The role of age and digital competence on the use of online health and social care services. *DIGITAL HEALTH*, 2022, 8.
- [8] Bandinelli, C., & Cossu, A. Bye bye romance, welcome reputation: An analysis of the digital enclosure of dating. *Sexualities*, 2023, 0(0). Available at: <https://doi.org/10.1177/13634607231152427> [Accessed 13 August 2023].
- [9] Oktawirawan, D. H., & Pamungkas, Z. Y. Bringing the Far Ones Closer: The Opportunities and Challenges of Online Dating. *PROPAGANDA*, 2023, 3(1): 1–7.
- [10] Chen, Q., Yun, G., Lu, J., & Wang, X. Understanding active participation of online dating services: A mixed methods study. *Decision Support Systems*, 2023, 170: 113960.