

Customer survey data analysis for healthy ageing and longevity

Table of contents:

- 1) Introduction
- 2) Methodology
- 3) Results
- 4) Conclusion

Introduction

The company (veva.co) sells a brand of supplements that support healthy ageing and longevity.

This project is an analysis of 206-response SurveyMonkey questionnaire provided by the company to identify the attributes of consumers most likely to purchase our product, so that we may design an efficient marketing strategy, targeting the right channels, interest groups, and demographics with a compelling message that delivers high return on marketing spend.

The analysis is carried out using Python programming language where pandas, matplotlib and seaborn packages are used.

Using the data analysis tools mentioned above, a thorough analysis is done on the data to find the right customer for the company.

Methodology

The data is provided by veva.co company where the data is 206-response SurveyMonkey questionnaire.

No new data is collected for the analysis process.

Using the dataset to answer some of the base questions like what is average household income, what is average ratings given by people in the columns of “One day, advances in science and medicine will stop or reverse the human aging process.”, etc.

For columns that had rating from 1 to 10, all of the averages are taken by keeping the the threshold above 5. For example if the rating for “One day, advances in science and medicine will stop or reverse the human aging process.” is above 5 then it is considered that the person gave positive rating. This threshold is used for all of the columns that had ratings.

For “Household Income” column, since they were in ranges, those ranges were substituted with integer values to make the analysis easy. With the increasing ranges the substitution is also increased. For eg. \$0-\$9 is substituted as 1, \$10-\$19 is substituted as 2, \$20-\$29 is substituted as 3 and so on.

First few basic questions were answered by using the dataset then “Household Income”, “Gender”, “Region” and then “Remaining columns that had categories like Beauty, Travel, etc...” were analysed. At last the correlation between important columns is taken.

Results

- 1) Basic Questions
- 2) Analysis of Household Income
- 3) Analysis of Gender
- 4) Analysis of Region
- 5) Analysis of remaining columns
- 6) Correlation between columns

Basic Questions

One day, advances in science and medicine will stop or reverse the human aging process.

4.966 is the average rating (1-10) given by the people in the column of "One day, advances in science and medicine will stop or reverse the human aging process."

I believe vitamins, supplements, or medications available today can slow, stop or reverse the aging process.

4.970 is the average rating (1-10) given by the people in the column of "I believe vitamins, supplements, or medications available today can slow, stop or reverse the aging process."

If it were available today, the most I would spend on a supplement that slows, stops, or reverses my aging:

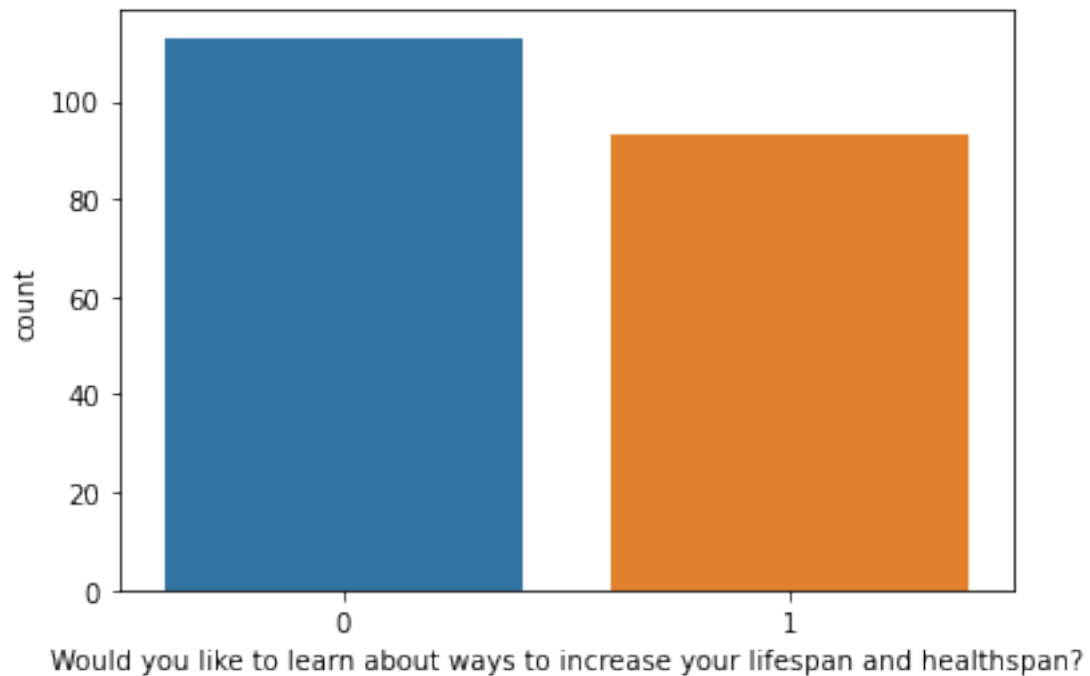
On average people are ready to spend \$74.22 if the product is available today

I tend to be among the first of my friends to try new products, services, technologies, etc.

4.936 is the average rating (1-10) given by the people in the column of "I tend to be among the first of my friends to try new products, services, technologies, etc."

Would you like to learn about ways to increase your lifespan and healthspan?

Percentage of who want to learn is 45.0%.

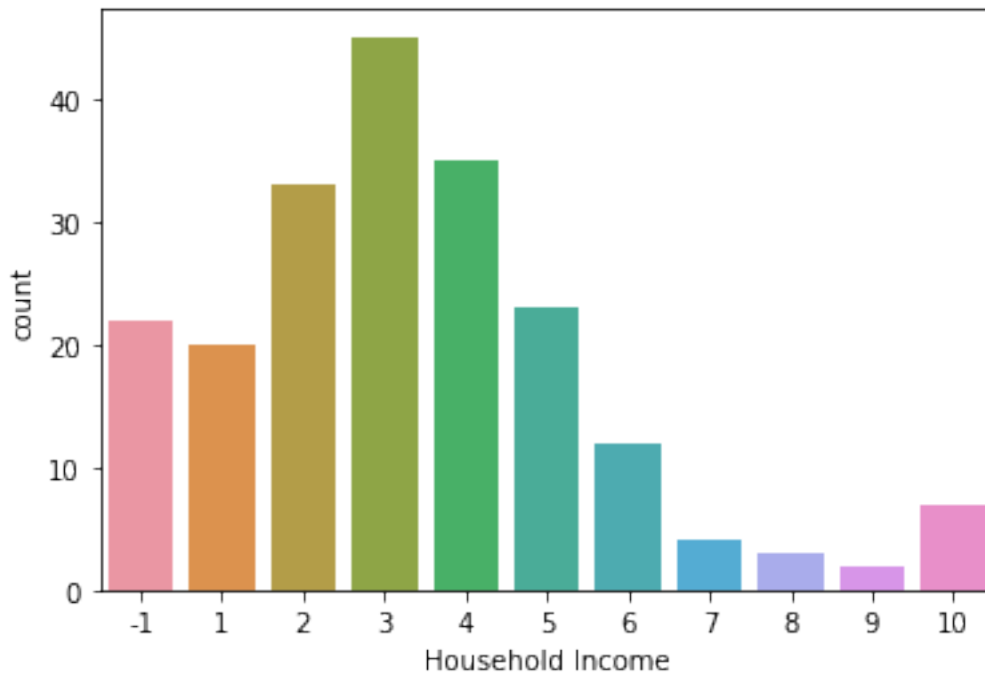


In the above figure 0 and 1 indicates No and Yes respectively.

Analysis of Household Income

The average household income is \$42499.3.

The household income range \$25,000-\$49,999 were the most the in the response.



In the above figure the numbers on x-axis represent the income range. Below is given the income ranges with their substitute values.

| Income Range | Substitutes |
|----------------------|-------------|
| Prefer not to answer | -1 |
| \$0-\$9,999 | 1 |
| \$10,000-\$24,999 | 2 |
| \$25,000-\$49,999 | 3 |
| \$50,000-\$74,999 | 4 |

| Income Range | Substitutes |
|---------------------|-------------|
| \$75,000-\$99,999 | 5 |
| \$100,000-\$124,999 | 6 |
| \$125,000-\$149,999 | 7 |
| \$150,000-\$174,999 | 8 |
| \$175,000-\$199,999 | 9 |
| \$200,000+ | 10 |

One day, advances in science and medicine will stop or reverse the human aging process.

People who believe in the future of this science/product (gave more than 5 ratings) have an average \$32,499.7 household income.

I believe vitamins, supplements, or medications available today can slow, stop or reverse the aging process.

People who believe that such product is available today (gave more than 5 ratings) have an average \$23,499.1 household income.

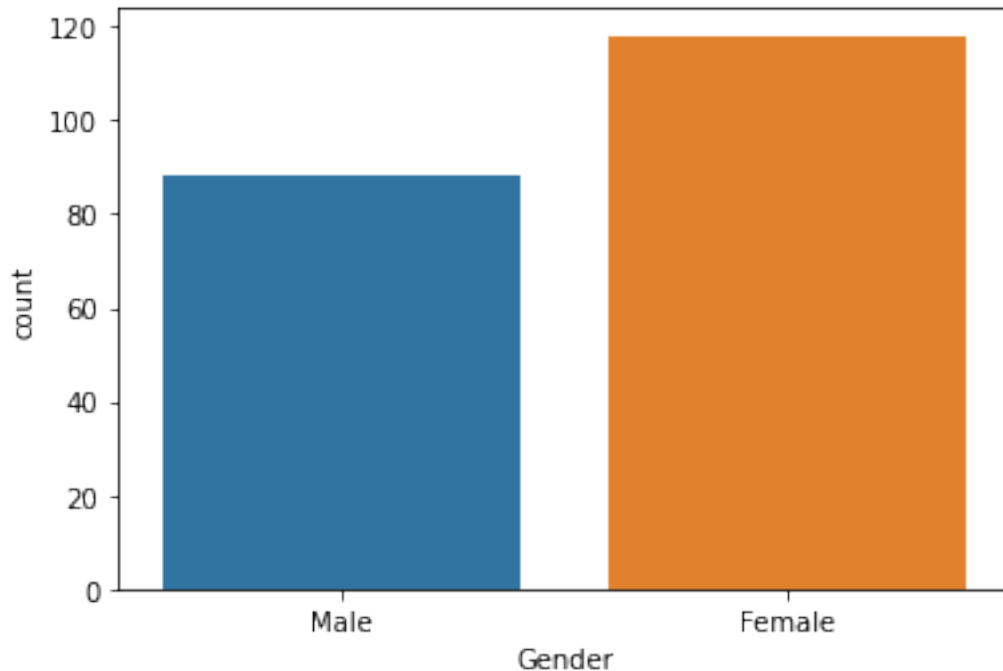
If it were available today, the most I would spend on a supplement that slows, stops, or reverses my aging:

People whose household income is more than \$75,000 are willing to spend \$98.39 on average if the product is available today.

People whose household income is less than equal to \$75,000 are willing to spend \$72.92 on average if the product is available today.

Analysis of Gender

There are 118 Females and 88 Males in the survey.



One day, advances in science and medicine will stop or reverse the human aging process.

56.0% of male believe in it.
33.0% of female believe in it.

I believe vitamins, supplements, or medications available today can slow, stop or reverse the aging process.

41.0% of male believe in it.
38.0% of female believe in it.

If it were available today, the most I would spend on a supplement that slows, stops, or reverses my aging:

On average male will spend \$73.75.

On average female will spend \$74.58.

I tend to be among the first of my friends to try new products, services, technologies, etc.

47.0% of male want's to try first.

36.0% of female want's to try first.

Would you like to learn about ways to increase your lifespan and healthspan?

43.0% of males want to learn.

47.0% of females want to learn.

Household Income

\$37,499.5 is the average household income of male

\$23,499.1 is the average household income of female

Analysis of Region

Unique Regions

Pacific

Mountain

Middle Atlantic

West North Central

South Atlantic

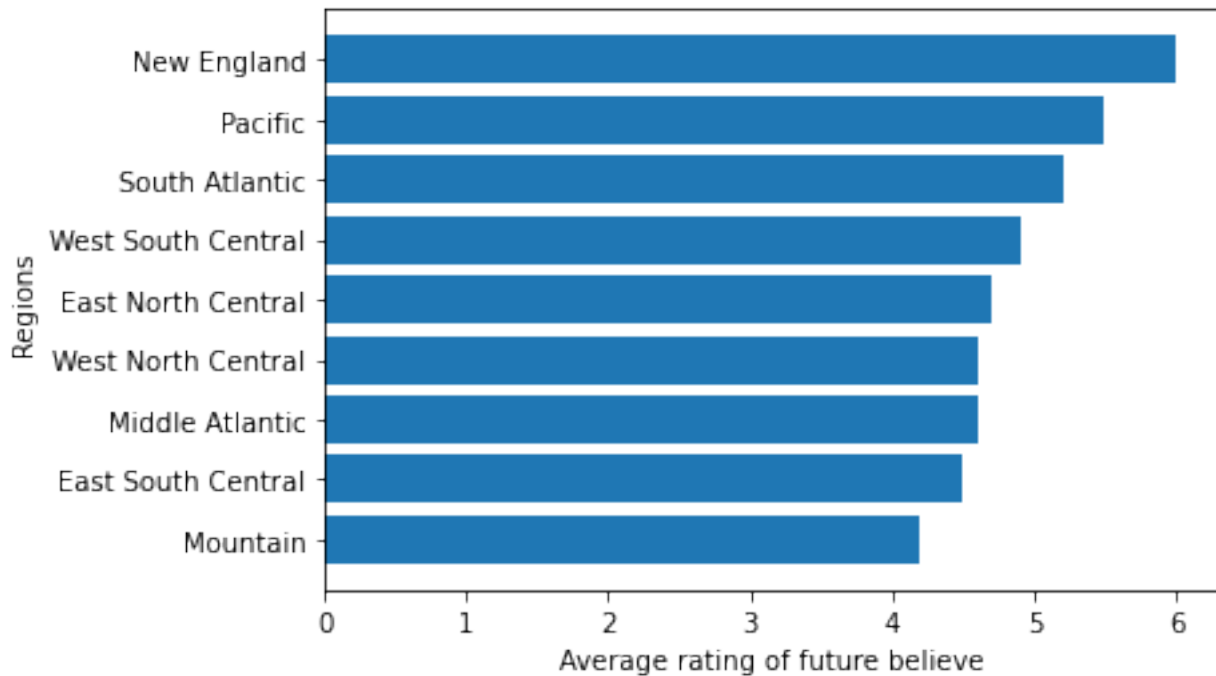
East North Central

West South Central

New England

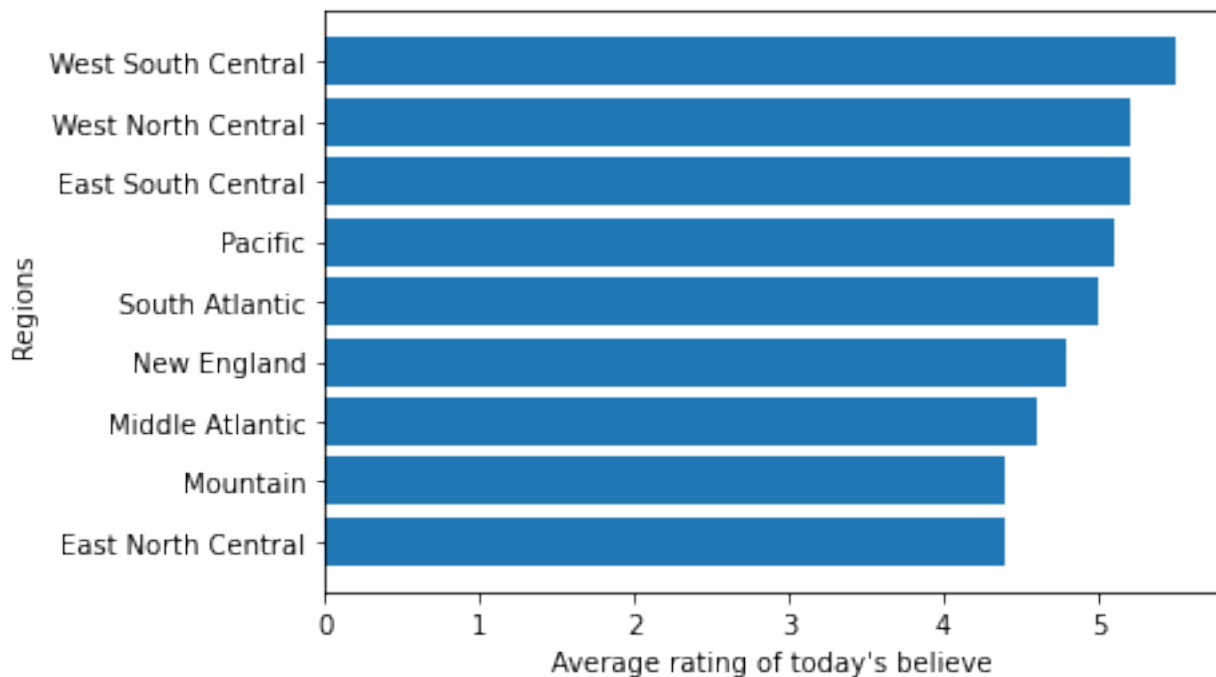
East South Central

One day, advances in science and medicine will stop or reverse the human aging process.



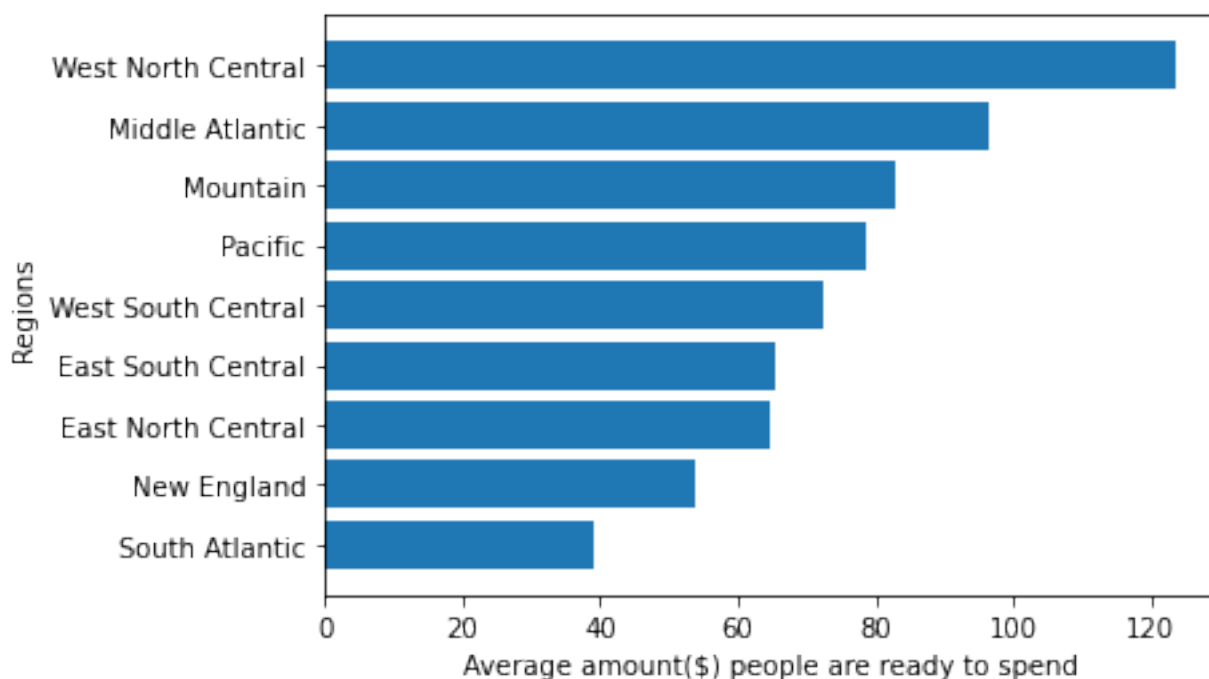
| Regions | Average Ratings |
|--------------------|-----------------|
| New England | 6.0 |
| Pacific | 5.5 |
| South Atlantic | 5.2 |
| West South Central | 4.9 |
| East North Central | 4.7 |
| West North Central | 4.6 |
| Middle Atlantic | 4.6 |
| East South Central | 4.5 |
| Mountain | 4.2 |

I believe vitamins, supplements, or medications available today can slow, stop or reverse the aging process.



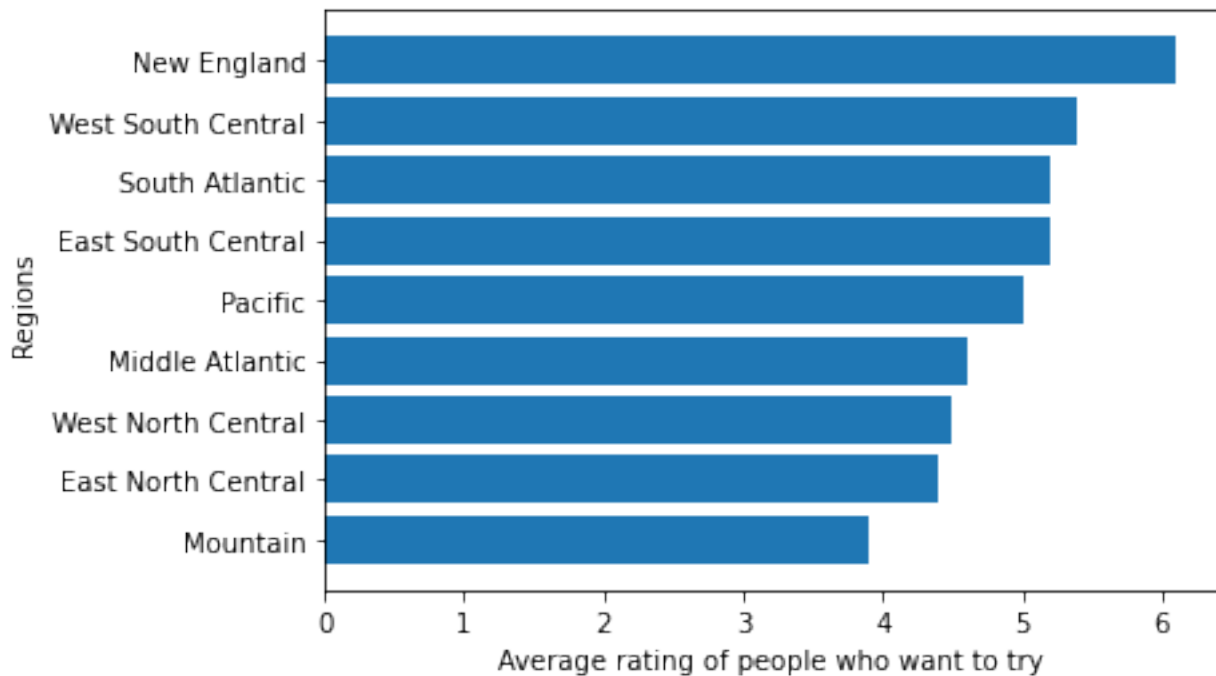
| Regions | Average Ratings |
|--------------------|-----------------|
| West South Central | 5.45 |
| West North Central | 5.18 |
| East South Central | 5.25 |
| Pacific | 5.14 |
| South Atlantic | 5.03 |
| New England | 4.75 |
| Middle Atlantic | 4.61 |
| Mountain | 4.42 |
| East North Central | 4.36 |

If it were available today, the most I would spend on a supplement that slows, stops, or reverses my aging:



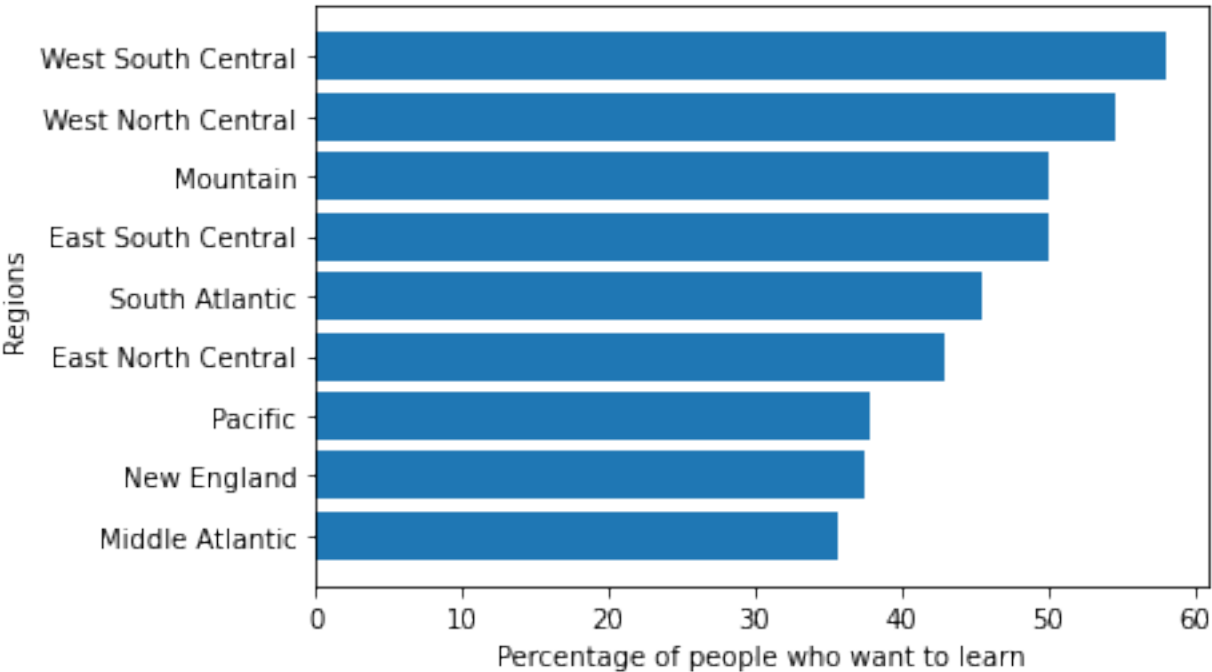
| Regions | Average amount (in \$) |
|--------------------|------------------------|
| West North Central | 123.64 |
| Middle Atlantic | 96.61 |
| Mountain | 82.92 |
| Pacific | 78.51 |
| West South Central | 72.26 |
| East South Central | 65.31 |
| East North Central | 64.82 |
| New England | 53.75 |
| South Atlantic | 38.94 |

I tend to be among the first of my friends to try new products, services, technologies, etc.



| Regions | Average Ratings |
|--------------------|-----------------|
| New England | 6.12 |
| West South Central | 5.42 |
| South Atlantic | 5.18 |
| East South Central | 5.25 |
| Pacific | 4.97 |
| Middle Atlantic | 4.57 |
| West North Central | 4.45 |
| East North Central | 4.36 |
| Mountain | 3.92 |

Would you like to learn about ways to increase your lifespan and healthspan?



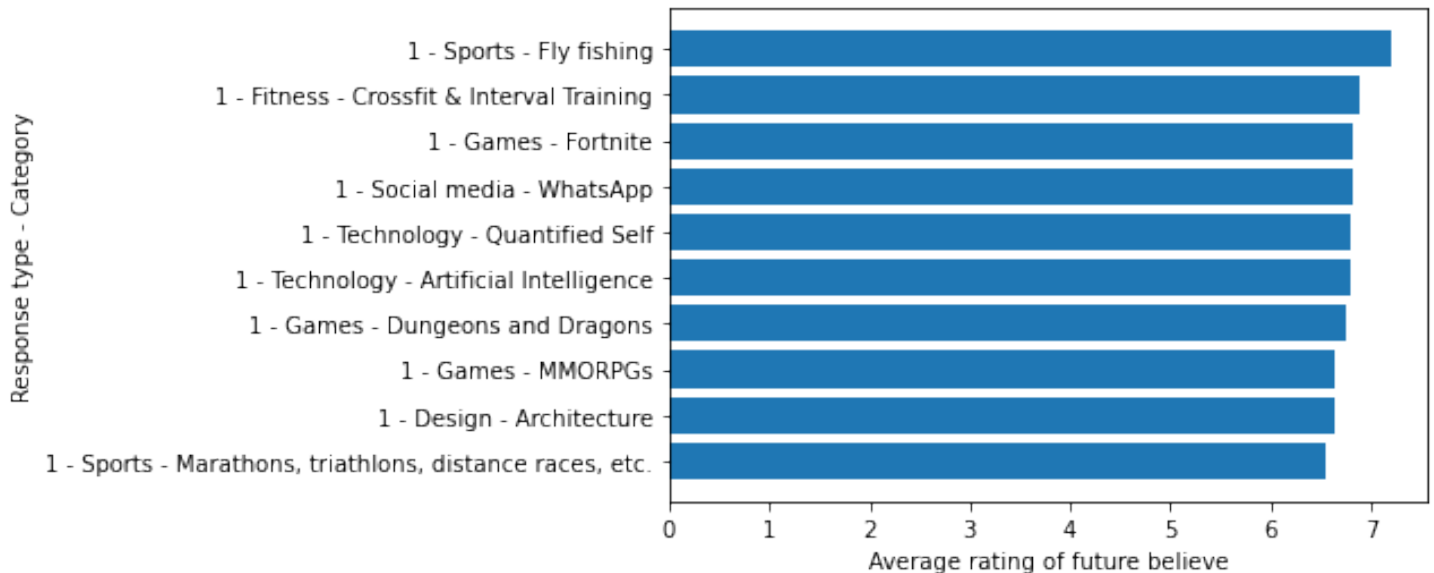
| Regions | Average Ratings (in %) |
|--------------------|------------------------|
| West South Central | 58.06 |
| West North Central | 54.55 |
| Mountain | 50.0 |
| East South Central | 50.0 |
| South Atlantic | 45.45 |
| East North Central | 42.86 |
| Pacific | 37.84 |
| New England | 37.5 |
| Middle Atlantic | 35.71 |

Analysis of Remaining Columns

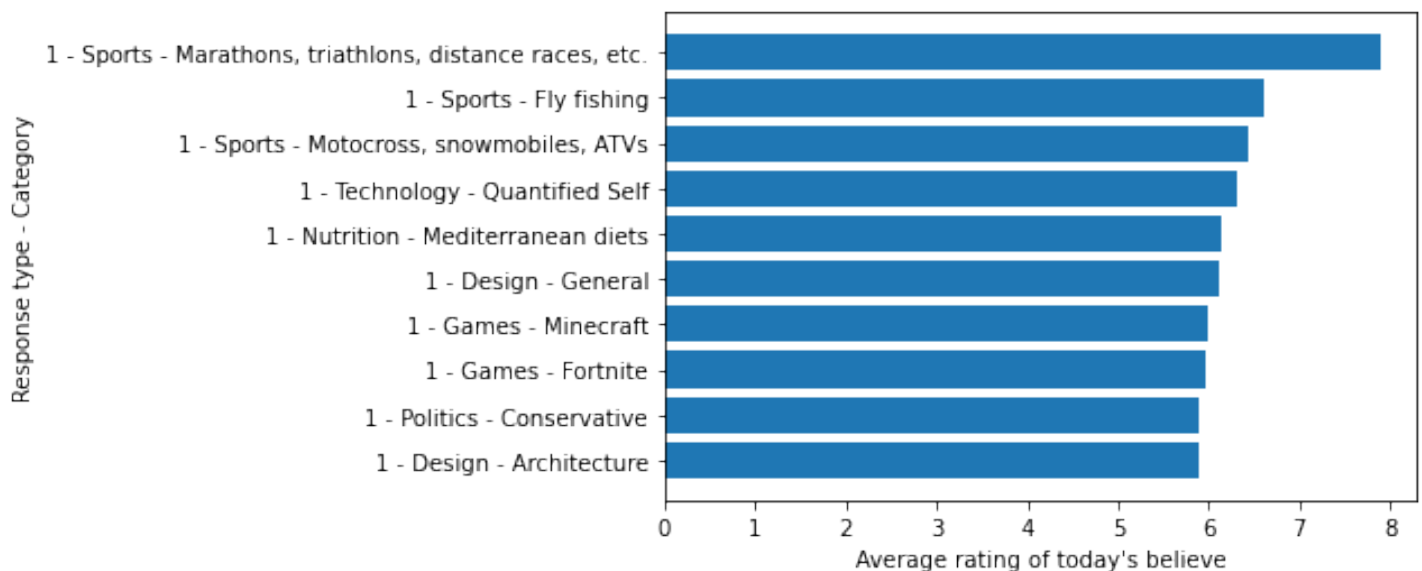
Columns remaining belongs to Beauty, Books, Design, Family, Fitness, Games, Health, News, Nutrition, Politics, Science, Social Media, Sports, Technology and Travel.

All of these columns responses are binary like (0 or 1 | Yes or No for understanding). Only top 10 sub-categories depending on question's answer are displayed since number of sub-categories is 63.

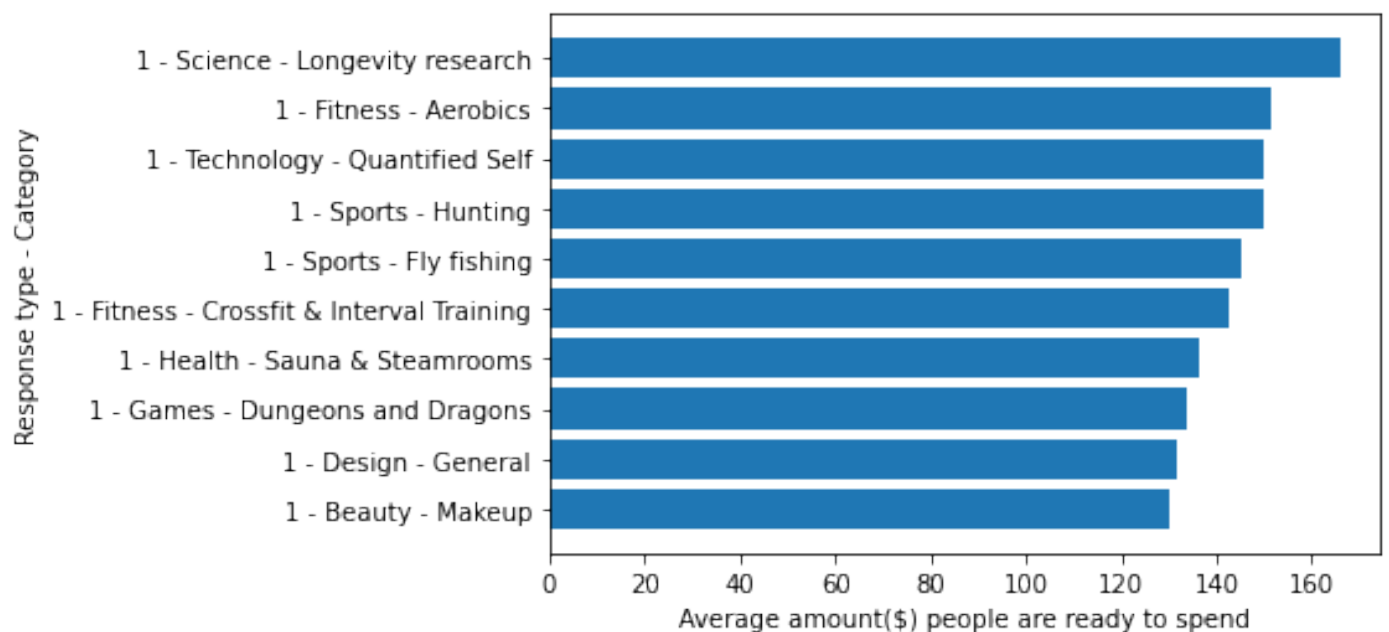
One day, advances in science and medicine will stop or reverse the human aging process.



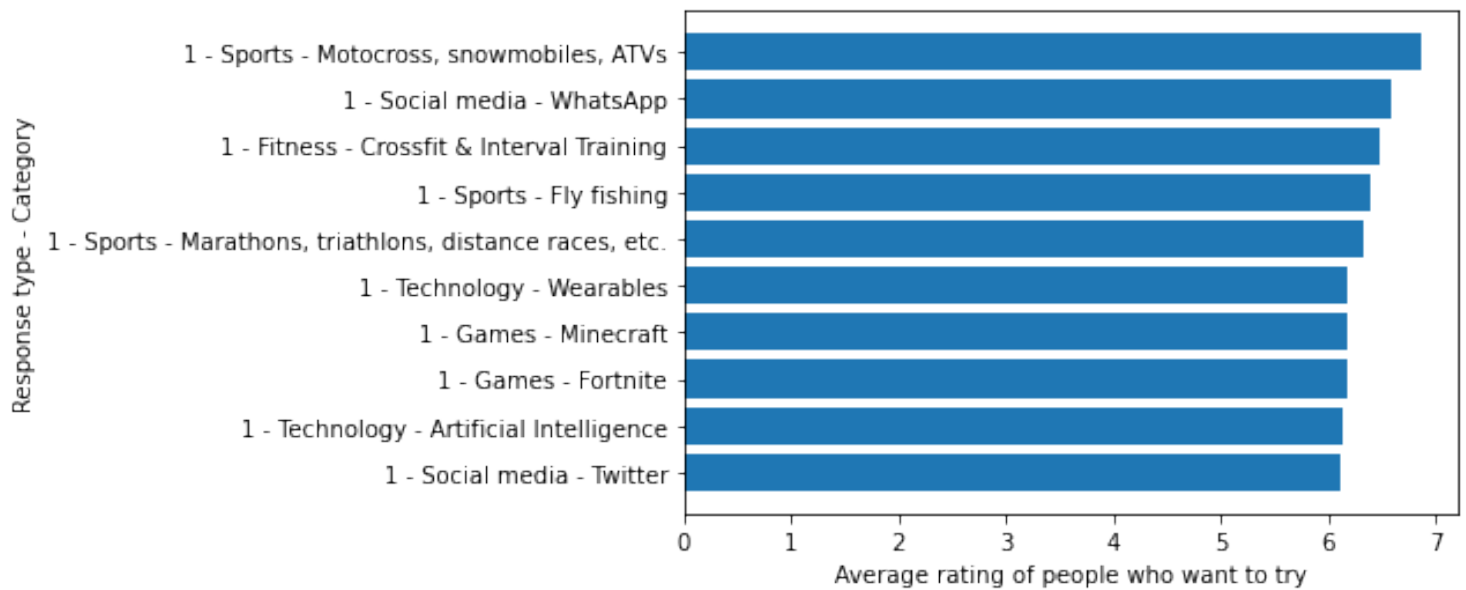
I believe vitamins, supplements, or medications available today can slow, stop or reverse the aging process.



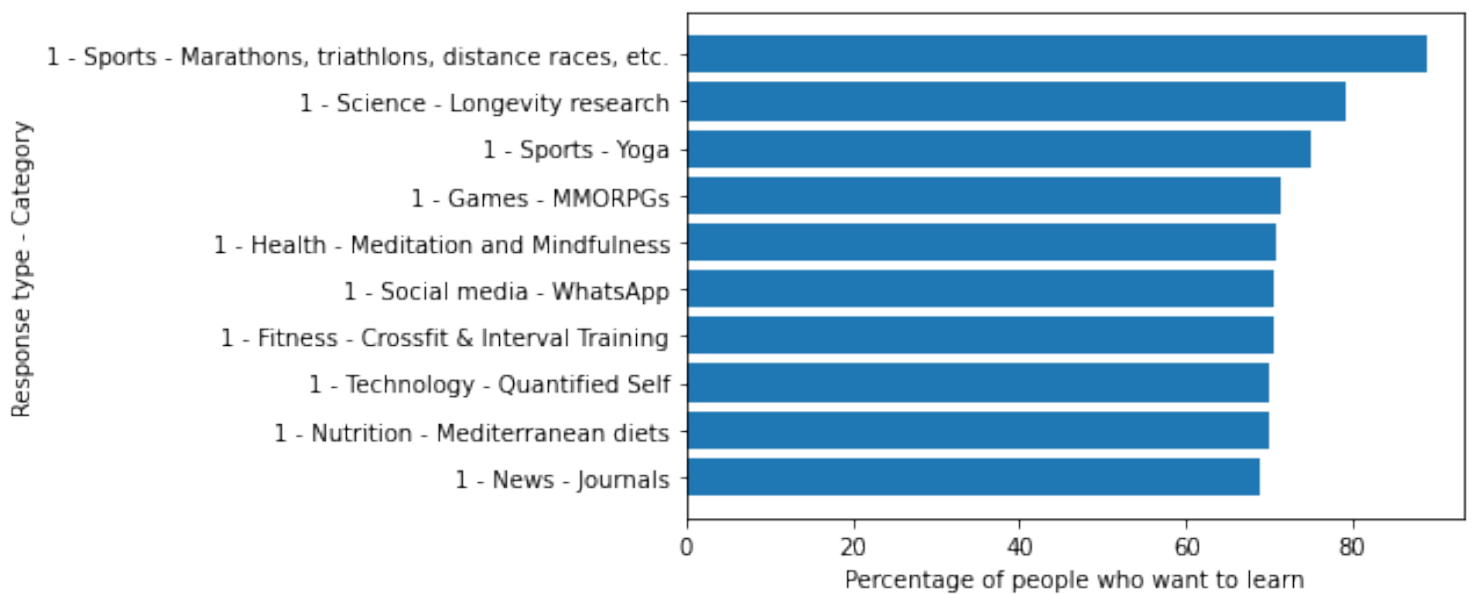
If it were available today, the most I would spend on a supplement that slows, stops, or reverses my aging:



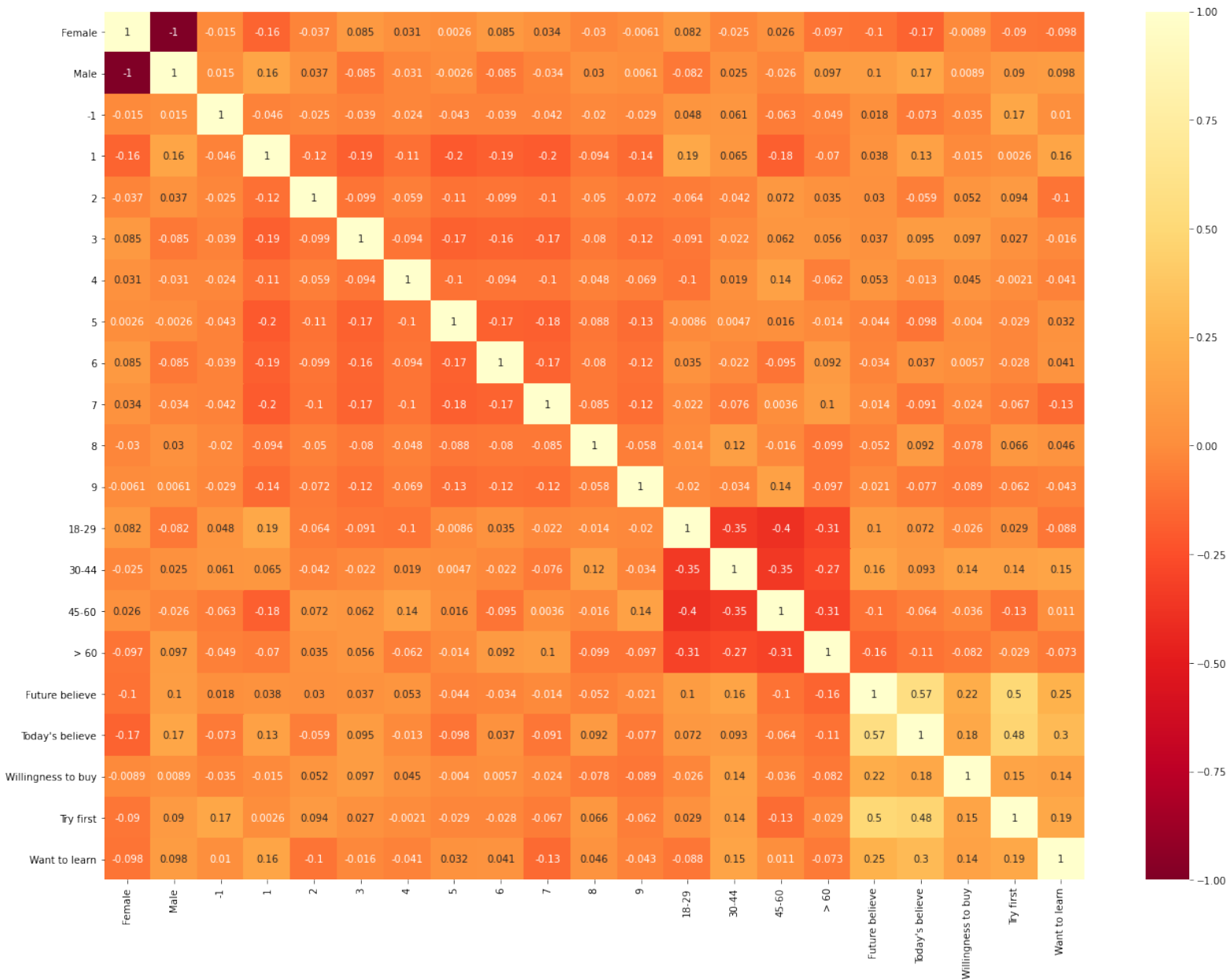
I tend to be among the first of my friends to try new products, services, technologies, etc.



Would you like to learn about ways to increase your lifespan and healthspan?



Correlation between columns



The above figure is the correlation matrix. Majority of columns correlation with others are negligible.

Positive correlation

People who believe that the technology/science/product will be available in future have **moderate correlation** with the people who believe that the technology/science/product is available today and the Pearson correlation is 0.57

People who believe that the technology/science/product will be available in future have **moderate correlation** with the people who want to try the product first and the Pearson correlation is 0.5

People who believe that the technology/science/product is available today have **low correlation** with the people who want to try the product first and the Pearson correlation is 0.48

Negative Correlation

Ages have negative **low to negligible correlation**.

Male and Female have a **very negative correlation**.

Conclusion

Gender wise the data is biased as females were more than males in the survey.

Males (58%) are more optimistic that age reversing/ stopping product will be available in future than females (33%).

When it comes to believing that such technology/ product is available today, almost equal percentage of males (41%) and females (38%) believe that.

Also when it comes to how much they can spend on average if the product is available today then that is also almost same with males (\$73.75) and females (\$74.58).

More percentage of males (47%) want to try the product first. While more percentage of females (47%) want to learn about ways to increase your lifespan and health span.

The average household income of the male is \$37,499.5 and that of female is \$23,499.1

The average household income is \$42499.3

People who believe that age reversing/stopping product will be available in future have an average household income of \$32,499.7 whereas people who believe that this available today have an average household income of \$23,499.1

People whose household income is greater than \$75,000 will pay \$98.39 if the product is available today as oppose the whose household income is less than equal to \$75,000 who will pay \$79.92

When it come's to region New England and Pacific are the top two regions which highly believe that the product will be available in future whereas West South Central and West North Central are the top two regions who believe that the product is available today.

West North Central and Middle Atlantic are the regions that are willing to pay the highest for the product if it is available today.

New England and West South Central are the most interested for trying the product. The West South and North Centrals are the most interested in learning about way to increase your lifespan and health span.

People who have responded to “Sport – Marathons, triathlons, distance race, etc...” as Yes believe that the product is available today and would want to learn about ways to increase health and life span.