FIDELITY INVESTMENTS: RESEARCH AND DEVELOPMENT PROJECT

A project report submitted to Prof. Sanjit Sengupta of
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## 1. Introduction

Fidelity Investments is a top competitor and when it comes to the individual and corporate finance/investments market. It is now looking to further expand its customer base into the millennials and other under-represented communities' demographic.

Considering this aim, Fidelity has given a chance to a number of student-teams from various universities across the United States, to work from outside the confines of the company on various self-decided projects to further Fidelity's progress regarding this aim.

With this in mind, our team at San Francisco State University, sought to focus our attention on the Fidelity Investments website.

A company's website is an important medium of interaction between the company and user. To approach this objective, we carried research initially on the kind of knowledge and answers relating to investment that millennials seek. We agreed upon the task of designing three options of landing pages which would incorporate features and aesthetics that we would narrow down on after analyzing the websites of Fidelity's competitors that seem to be performing well with the millennial demographic. These landing pages would then be tested on a primarily millennial crowd to see the level of engagement they garner, based on which we would make recommendations to Fidelity Investments for changes that could be incorporated to their website to improve their millennial outreach.

## 2. Problem Statement

Our initial analysis showed that, when it came to this targeted demographic, millennials, especially women, were looking towards Fidelity's competitors when searching for answers for their investment-related queries and troubles.

In today's day and age, the company's website is an essential primary platform for the customer to begin their relationship with the company. With this in mind, our objective is to recommend design and feature improvements for the Fidelity Investments website that would enable it to perform better on search engines, make it more interactive for the user; and to generally improve its attractiveness and relevancy in the eye of the millennial.

### 3. Objective and Scope of Work

Our primary objective was to redesign Fidelity's website homepage and narrow down on what kind of features on websites in this field would attract millennials the most and recommend the addition of such features to Fidelity's website. We divided this task into three separate phases.

### 3.1 Phase 1

- Perform secondary research on the past projects done by student-teams for Fidelity on the same subject, to find out about Fidelity's top competitors, their product and service offerings, and the website traffic they garner.
- Do research on topics of interest for millennials regarding investing one's finances. It involved:
    - Social media analytics from YouTube, Reddit, and Twitter.
    - Search engine analytics to analyze the search queries executed for these topics on Google.
    - Perform visual inspection of all the competitor websites to gauge their standout features.

### 3.2 Phase 2

- Develop three landing pages with different visual and technical features.
- These landing pages would then be sent out along with a survey to a group of millennials, and an analysis of the landing pages would then be carried out - what topics were millennials most interested in, what parts of the page received the most clicks/engagement, which pages received the most views, and other such metrics would be tested.

### 3.3 Phase 3

- Perform primary research related to:
    - Gathering quantitative data from the engagement on our landing pages.
    - Testing results of these A/B/n tests on our landing pages.

### 4. Research

The first phase of our project consisted of research. At the beginning, we employed secondary research tools - using the past student-teams' projects with Fidelity - to gather information on Fidelity Investments and its top competitors in terms of products/services and website traffic.

Progressively, we continued with primary research wherein we conducted search engine and social media analytics to gather data on topics of interest, common search queries, common articles and videos that millennials are viewing the most to find answers to their investment-oriented problems.

**4.1 Search Engine Analysis**

We analyzed the most common search topics and queries related to investment in Google search by utilizing a built-in tool within Google search that enables the users to look up the top topics of interest and the top search queries for a particular keyword. Using various investment topic related keywords, we were able to determine the top rising trends and search queries for the two platforms Google and YouTube for the last five years (May 2015 - April 2020). Here, the top "rising trends" imply the new topics that have been trending in user searches, whereas the top "search queries" imply the actual words/keywords that the users have been typing in Google/YouTube as part of their search queries.
The functional purpose served by the above analysis are:
- The top "rising trends" helps an organization address what the millennials are looking for and continuously improve their products by adding relevant content/tutorials to their website, adding/improving services offered relating to that topic, using the information to start an advertising campaign focusing on that topic of interest to attract maximum attention and other such strategic measures.
- The top "search queries" help an organization focus on optimizing its website/channel for the search engine to show up at the top of the search results when a user carries out a Google/YouTube search using those particular keywords. A strong SEO-score helps with website ranking and get more visitors.

For our analysis, we had two distinct time durations in mind due to the upsurge of the COVID-19 global pandemic. As the number of confirmed cases of the virus grew exponentially, and countries everywhere began to impose lockdown and shelter-in-place measures, we witnessed a stock market plunge, a drop in oil prices, and similar economic crashes. Many who live paycheck-to-paycheck lost out on their jobs and modes of earning. It is safe to assume that there would be a substantial increase in Google and YouTube searches about users looking for new ways to make money from home at such a point in time, and investing one's finances has been one of the top options for doing so.

We expected that the last six to eight months of Google and YouTube searches would skew our results towards investing in specific commodities/stocks/fields that are projected to perform well or are experiencing colossal price drops.

Due to this, we considered the period of the last five years as well as the past year to obtain a set of aggregated results over a slightly longer term and obtain a set of results that cater more specifically to the ongoing circumstances.

We also carried out an analysis of the top trending YouTube videos for various search queries. A video achieves "Trending" status on YouTube through an algorithm that factors in the combined growth of the channel (rate of increase of subscribers), the number of views on the video, the engagement on the video whether positive or negative (likes, dislikes, and comments), relevancy to user searches, and other such factors. Hence, a trending video is a good indicator of what the general user likes to see.

Using the YouTube Data API, we extracted the top hundred comments on each of the top twenty trending videos for a search query. The top comment is a comment with the most engagement - likes, dislikes, further comment replies/comment threads. These search queries were chosen such that there was a balance amongst the queries asking for direct information and queries asking for learning/tutorial information related to the different fields of investing. The following are the search queries in their exact form, which we used for our analysis:

- basics of investing
- basics of stock market investing
- best investment options
- best investment strategies
- best long-term investments
- best short-term investments
- best ways to invest money
- how to invest extra money
- how to invest in your 20s
- how to invest money
- how to invest savings
- how to manage your money
- investing for beginners

- learn investing

- learn trading

- retirement investing

- retirement planning

- stock market basics

- trading for beginners

- wealth management

Below mentioned are the results of our search engine analysis.

- On Google, the standard topics in which the users have shown interest over the past five years are investment banking, real estate investing, and stocks.

- In the past year specifically, a small fraction of users has searched for "investors," which is indicative of the recent growth of the "influencer" market.

- Users show a consistent interest in investing in stocks, with consistent searches of the order of "the best stocks to invest in," which is the most standard piece of direct information in the user search.

- As far as trends are concerned, cryptocurrency has been trending over the past five years. There were numerous searches related to cryptocurrency, especially related to bitcoin.

- Due to the COVID-19 global pandemic, in 2019, there has been a noticeable trend in users searching for the best investment options at the moment, while also a standout increases in searches for users looking to invest in oil due to the recent oil price drops.
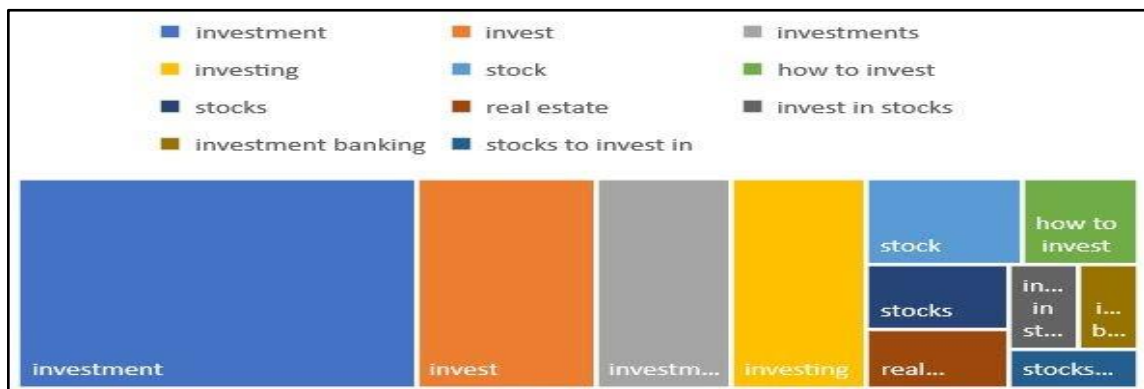


*Figure 1: Top search queries on Google*

*Figure 2: Top rising trends on Google(May 2015- April 2020)*



*Figure 3: Top search queries on Google (2019)*



*Figure 4: Top rising trends on Google (2019)*

- YouTube demonstrated a more tutorial/learning-oriented nature of searches - how to invest, invest in stocks, and invest for beginners over the past five years. Search queries on YouTube have also been consistent with Google search queries for real estate investing and stocks in these years.

- Cryptocurrency and Bitcoin trended on YouTube as well. The top rising trends in 2019 are also consistent with Google in terms of users wanting direct information/opinion on the "best places to invest in" and the "best stocks to invest in."

- There was some interesting information in terms of users searching for topics like "DIY investing," "investing joy," and "sneaker invest," which is indicative of the rise of the feeling of seeking satisfaction and joy over profit, in millennials. Especially with the more hobby-oriented search of "sneaker invest," which has turned into a massive industry in a short period - luxury and "hype" fashion, particularly footwear, that are bought in retail and re-sold at higher prices, effectively making them an asset.
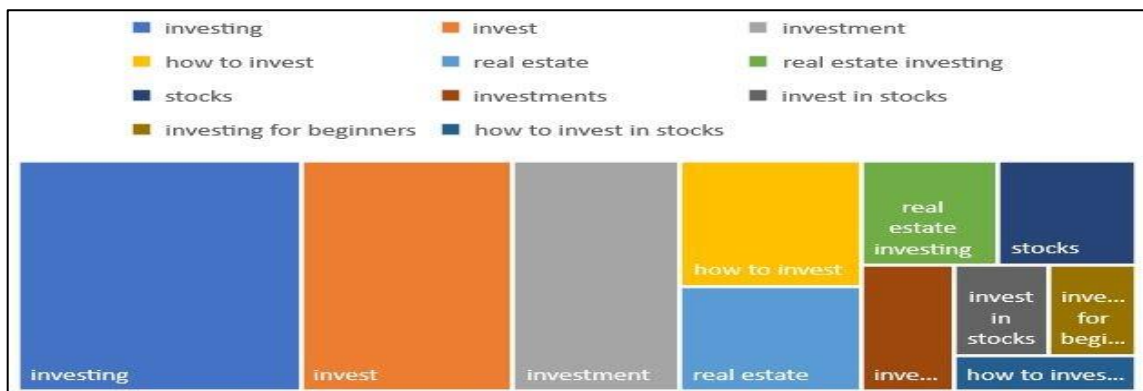


*Figure 5: Top search queries on YouTube (May 2015 – April 2020)*



*Figure 6: Top rising trends on YouTube (May 2015 – April 2020)*

*Figure 7: Top search queries on YouTube (2019)*



*Figure 8: Top rising trends on YouTube (2019)*

- We also analyzed the results of the top comments using a word cloud, and simple word counting, aiming to determine specific topics of investing that people might be seeking information which was not helpful as most of the comments were opinionated about the

video, as well as in a few different languages along with the occasional spam bots, and paid subscriber comments.

- Upon further analysis of the trending video results we found some interesting results.
  - We saw a noticeable inclination in users towards wanting to watch videos of strong personalities in the field of investment, such as Warren Buffett.
  - YouTube is one of the most prominent platforms when it comes to users wanting to learn about different topics, and a vast majority of trending videos are of that 'teaching' nature, as well as the fact that they are mostly from the same few channels. A standout channel with repeated trending videos of the 'teaching' nature is one of Fidelity's competitors - TD Ameritrade.
  - One particular kind of video that stood out was live podcasts, which are popular due to a higher level of interactivity than a standard YouTube video. In a live podcast, the viewers can comment live while the podcast discussion takes place, and the podcasters regularly read such comments and answer user questions leading to a more discussion-oriented environment. Their recent popularity could be a result of the COVID-19 situation that has forced people to stay home. Hence, people are not only making more of these podcasts and viewing more of them as well.

## 4.2 Keyword analysis- Twitter and Reddit

A keyword analysis was performed on Twitter and Reddit to obtain the popular articles based on the keyword- "Investment". Figure 9 displays the top 10 articles ordered based on total engagement .Total engagement is the number of times that people engaged with tweets or Reddit posts that mention this article. (Twitter retweets + replies + likes) + (Reddit comments + voting activity)

| Title | Total Engagement |
|---|---|
| The Faustian Bargain \| Guggenheim Investments | 4540 |
| How the 0.001% invest | 2154 |
| The Laws of Investing | 1417 |
| Pynk – Social Investing | 1342 |
| GeorgeU – Learn how to invest | 1332 |
| Investment Frequency Calculator | 1242 |

| | |
|---|---|
| Treasurer's plea to business: Invest | 1084 |
| The Merits of Bottoms Up Investing | 1021 |
| The Social Subsidy of Angel Investing | 971 |
| Webcasts: Investment Philosophies | 776 |

*Figure 2: Top "investment" articles*

The top articles help us understand the interests of people in terms of hot topics and the topics that interests people. The Commonality between these top articles is that most of them are investment basics.

**4.3 Competitor analysis**

The first stage of competitor analysis was building a laundry list of competitors based on various factors. Compiling three sources The Balance (Lemke, 2020), Investopedia (Jonas, 2020), Clark (Thimou, 2019) , a total of 24 investment companies were picked. The twenty-four Investment companies' websites were further analyzed solely based on website traffic. Figure 10 displays the rank of the 24 companies based on website traffic. Higher rank (smaller number) indicates higher website traffic and lower rank (higher number) indicates lower website traffic.  A key trend can be identified with a deeper analysis of the graph. The top two companies - Chase and Bank of America serve a common purpose of general banking. Hence, we can conclude that the majority of the website traffic can be due to general banking.

Nine competitors were chosen based on the products/services offered and website traffic. Competitors include:

- Vanguard
- E*trade
- Morgan Stanley
- Acorn
- Blackrock
- Robinhood
- Ellevest
- Schwab
- Ameritrade

Although, E*trade is owned by Morgan Stanley and Ameritrade is owned by Charles Schwab, they would be treated as separate entities as they have their own websites.
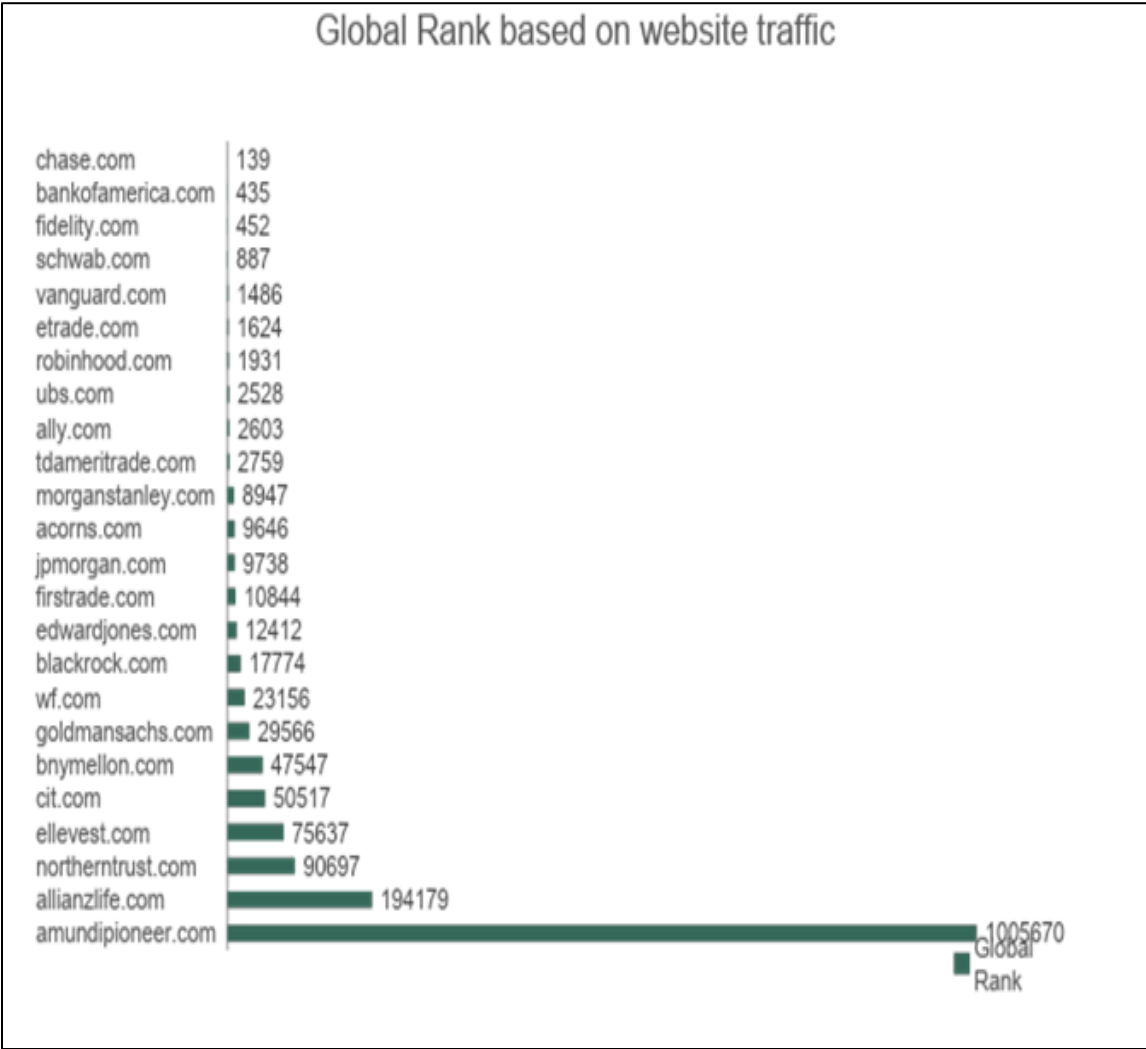


*Figure 3: Global rank based on website traffic*

### 4.3.1 Popular keywords

The bubble chart displays the top keywords for which the nine websites get traffic. The score represents how frequently users search for these keywords on a scale of 0 to 100. Higher numbers and size indicate higher popularity. Popular keywords help in identifying customer's preferences and make the content that they need easily available to them. Additionally, the knowledge in popular keywords help in optimizing the search engine.

Some of the most popular topics from the chart include mutual funds, 529 college savings plans and 401k. Other popular topics like Google, Investment are general and redundant.
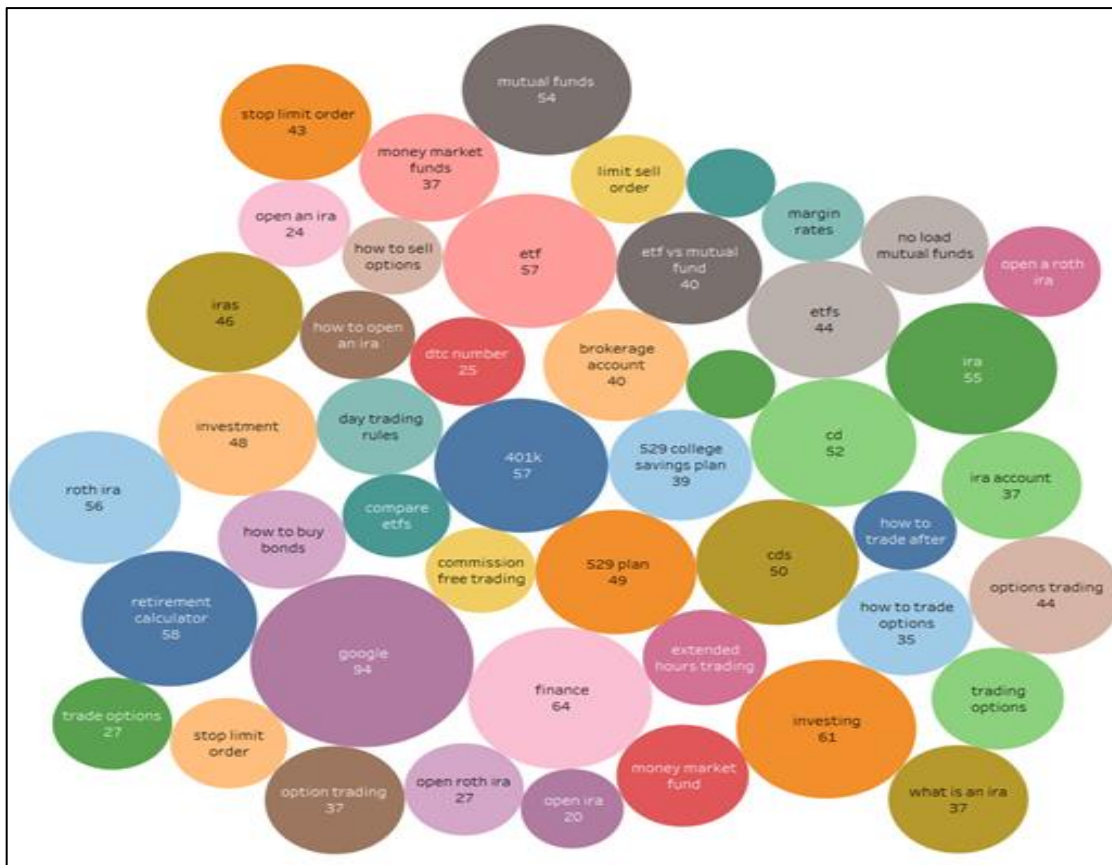


*Figure 4: Audit results*

### 4.3.2 Standout features

The nine competitor websites have unique and interesting features. Some of them are listed below :

- Morgan Stanley, E*trade, Schwab - Different primary color theme - Blue/Cyan
- Ellevest - Rudimentary FAQ repository
- All websites - Tools & Calculators
- Ameritrade, Schwab – Live stock prices tracker
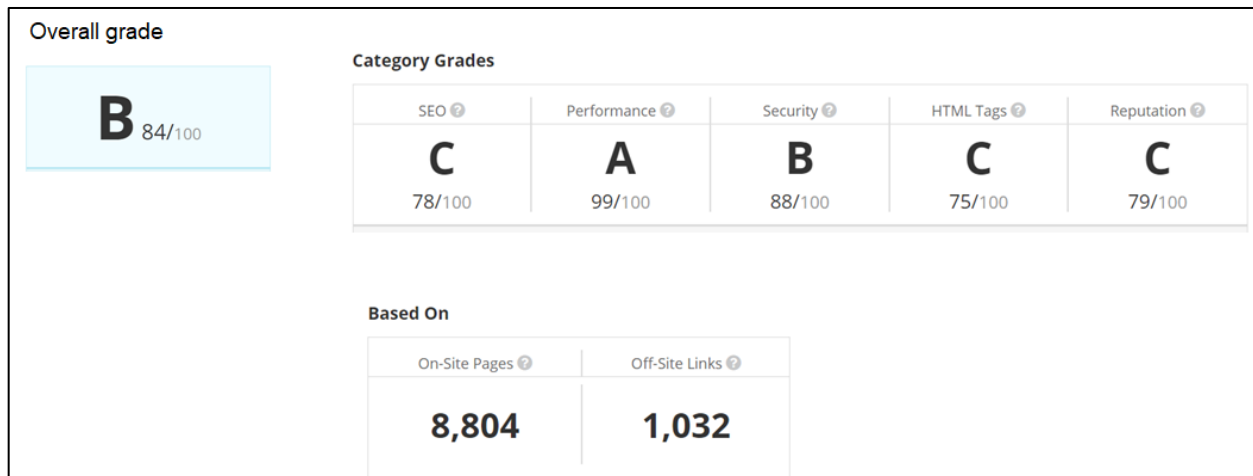
### 4.3.3 Fidelity website audit



*Figure 12: Audit results*

A detailed, page-level assessment of Fidelity website's SEO, performance, usability and more was performed. The analysis was done with the help of Alexa analytics. The report is based on 8804 pages on Fidelity's website .Out of which, 1,032 pages were not accessible.

The overall grade of the website was B and the score was 84/100. The score was evaluated according to industry best practices in five critical categories- SEO, Performance, Security, HTML tags and reputation. Website does really well in terms of Performance i.e. the measure of  the website's speed. The HTML tags are based on how well the site is being measured and how easily the content can be shared. This is usually done through various web analytics. Fidelity website's analytics was partial, hence received a score of 75.Security measures the safety of the customers. SEO score is based on the website's uniqueness and value. There is a total of 24 recommendations, the report is attached in appendix 2. Some of the top recommendations obtained to improve Fidelity website's SEO are as below:

- *Give important pages unique titles*

   Out of the crawled 8,804 HTML pages, 6025 pages had duplicate titles and 2779 pages had unique titles. A recommended action to resolve this issue by giving an important page a unique title that reflects the page content. Pages with unique, descriptive titles are favored by search engines. When a search engine displays multiple search results, a good

title helps the visitor know that your link is the best result to click on. Examples of duplicated titles include : Fixed Income News, Fidelity Institutional Asset Management.

- ***Shorten page titles to 65 characters or fewer***
  Out of the crawled 8,804 HTML pages, 1079 pages had long titles and 7725 pages had good titles. It is important to review the list of pages with overly long titles. Where possible, shorten titles to 65 characters or fewer. When a search engine displays multiple search results, a fully visible title helps the visitor know that your link is the best result to click on. Examples of long titles include: Boundless | How to Score an Internship, and then Crush it - FMR LLC, NFS Statement of Financial Condition as of December 31, 2019 (audited) Doc.

- ***Reachability***
  Reachability is the ability to get to the most important pages in the  website in a small number of clicks. Out of 8804 HTML pages, the number of easy to find pages are 3683 pages and the number of hard to find pages are 5121 pages.  Sites with good reachability are more visible in search engine results because the search engine crawler is able to find more pages. Reachability also makes it easy for your visitors to find what they are looking for, providing them with a better experience. Number of links a crawler must follow to reach the page is listed below:

| 0 | 1 | 2 | 3 | 4 | 5 | 6+ |
|---|---|---|---|---|---|---|
| 1 page | 69 pages | 354 pages | 1878 pages | 1381 pages | 534 pages | 4587 pages |

*Figure 13: Number of links a crawler must follow to reach the page*

A well-structured, well linked site helps search engine crawlers cover the website more completely. Search engine crawlers tend to start by visiting the most popular pages on the web, then following the links on those pages to discover other pages. They may not find those that are deeply nested, have no links at all, or are reached through multiple redirects.

- ***Reduce the number of links on designated pages***
  Broken links are links that generate an error instead of going to the expected page, file, or image. The number of broken links are in  5,472 pages. Broken links on the website wastes the resources of search engine crawlers, which may lead to less website coverage.

That can affect the website's placement in search engines. Some examples of broken links are:

- https://fixedincome.fidelity.com/ftgw/fi/FILanding

- https://fixedincome.fidelity.com/ftgw/fi/FILanding?bar=p

## 5. Development

Based on the market research and the competitor analysis done, we were able to gather some valuable insights and transformed them into the *grokinvestments.com* website. Using the minimalistic approach, we incorporated a clean layout and easy navigation within our website. The content on our website is well-curated to satisfy our site visitor's inquisitiveness, and it resonates well with our motto of intuitive learning. For the product development, we utilized React for frontend development, Google Firebase as our back-end database, and utilized shared web-hosting to host our website. We also performed A/B/n testing and used Google Optimize for it. Some of the prominent features of our website are:

- *Curated Product List*: We incorporated the most sought-after products in the product list, which we identified in our market research.
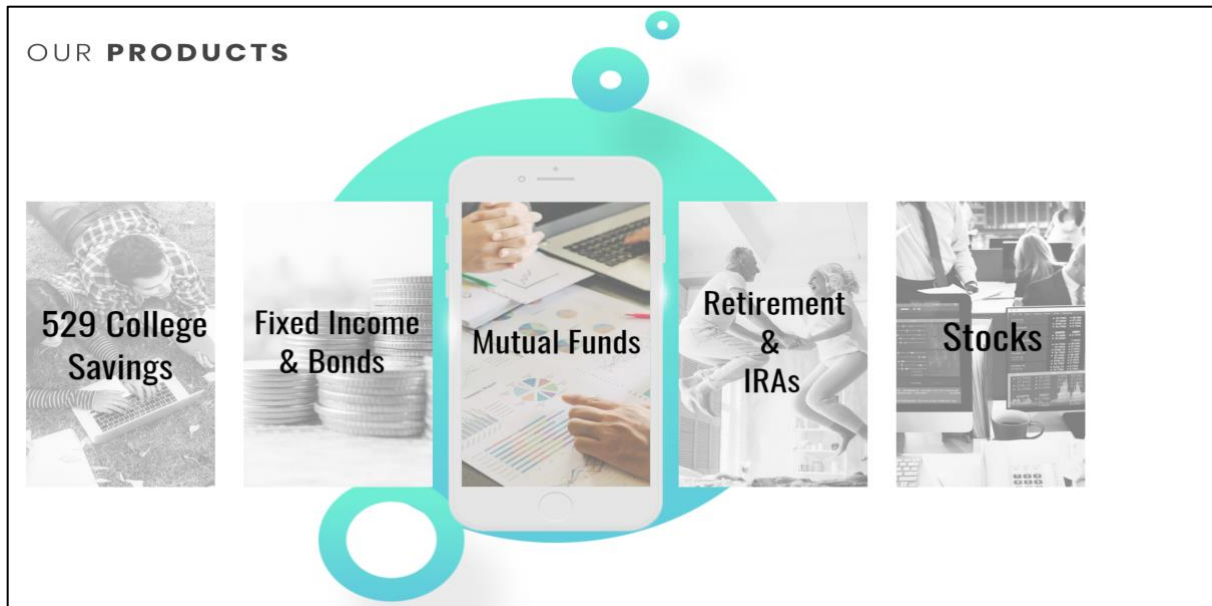


*Figure 14: Product List*

- **_Immigrant Success Stories_**: As part of our customer outreach and to attract more users, we shared the success stories of the underrepresented sections of the society on our platform.
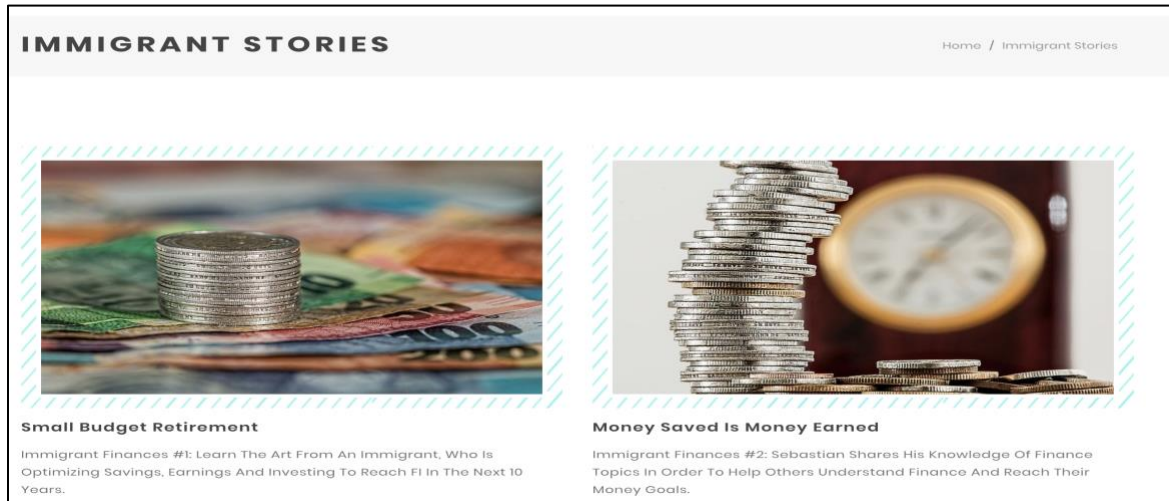


*Figure 15: Immigrant Stories*

- **_Chatbot_**: As technology advanced, automation of business processes to save time led to an increase in virtual interactions. Keeping this in mind, we provide *Grokkie*, an interactive chatbot on our platform that is capable of answering numerous investment-related FAQs and thus save users time.
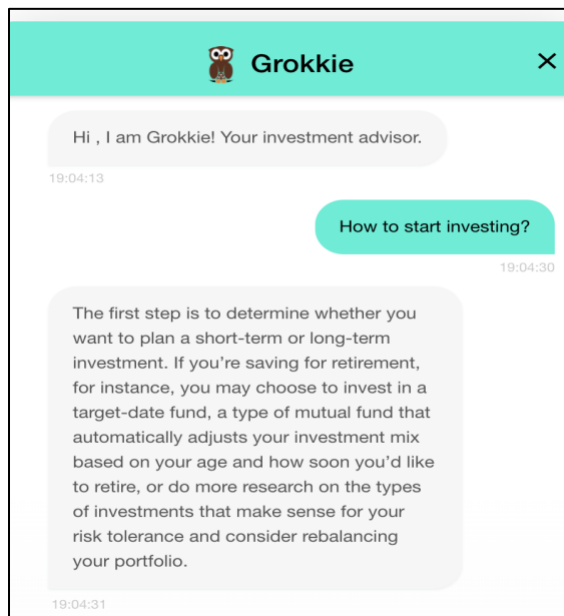


*Figure 16: Chatbot*

- *Quiz:* We also added a few finance-related quizzes, with difficulty ranging from easy to moderate. These were available within the learning section of the website and acted as a tool to gauge visitor's knowledge of finance-related topics.
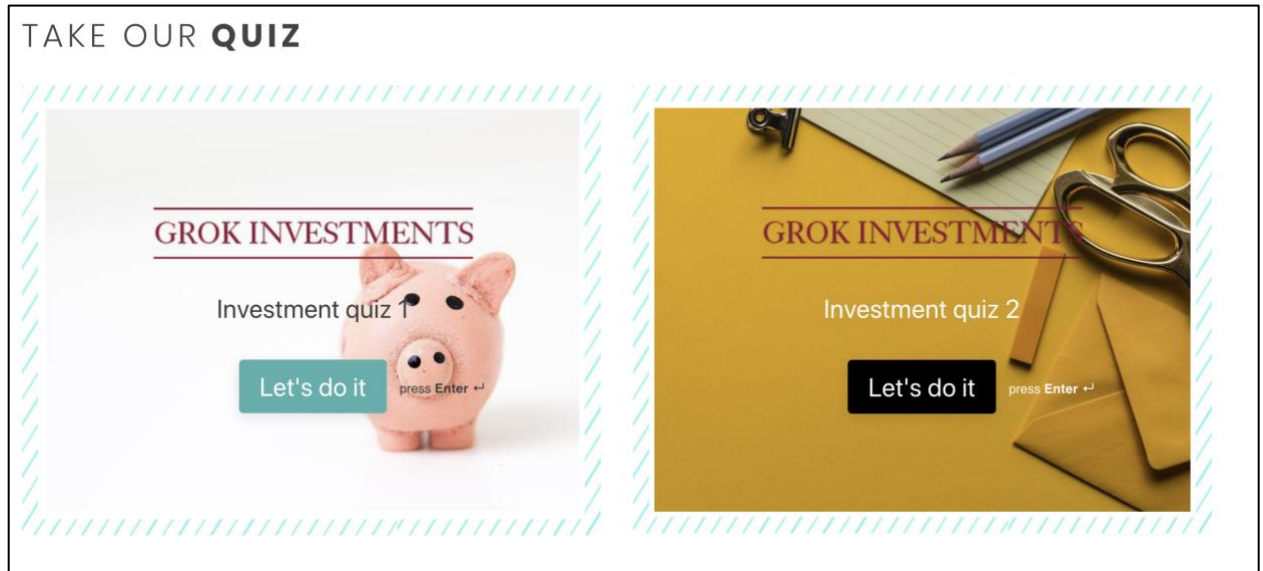


*Figure 17: Investment Quiz*

- *Featured Content (Buzzworthy)*: On our website homepage, we display the most viewed articles and videos as a means of easy access to learning materials available on our website.
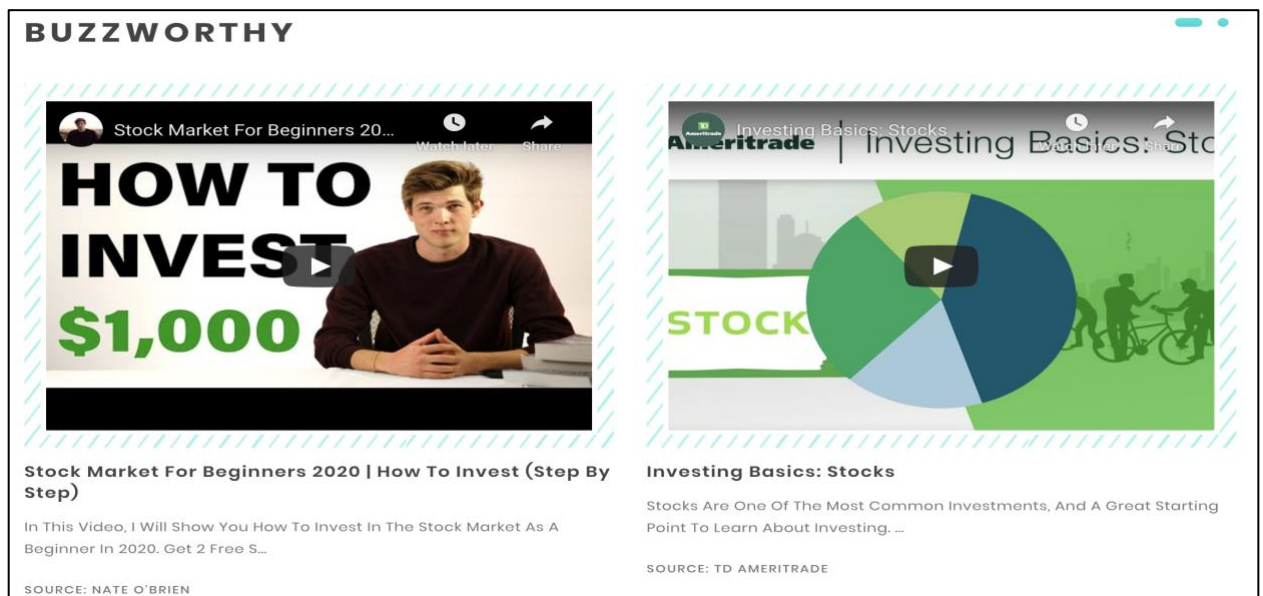


*Figure 18: Featured Content*

- ***Learning Portal***: Our learning portal comprises the most viewed investment-related articles and videos across different platforms like YouTube and other online blogs. We also provided an option to the users to subscribe to our newsletter, through which we will be sharing the top recent videos and articles related to investment.
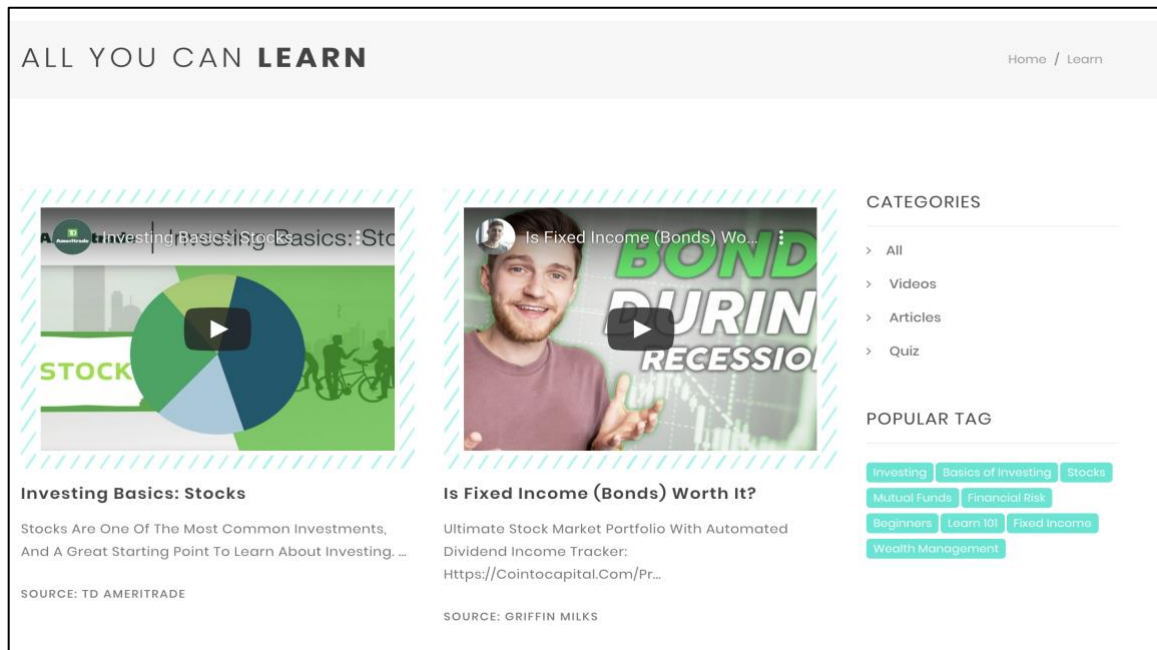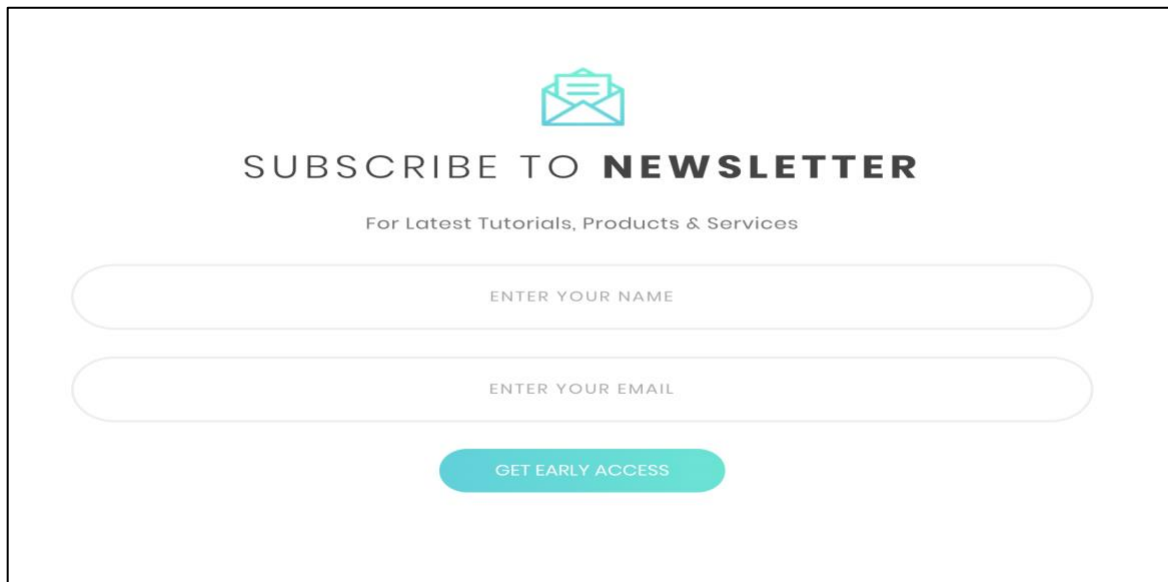


*Figure 19: Learning Portal*



*Figure 20: Subscription Option*

- *User Survey:* Feedback plays a vital role in product improvement. We included a user survey on our website to seek suggestions and collect demographic, ethnic, and income-related information for further analysis.



*Figure 21: Feedback Survey*

6. **Product Wishlist**

Though we were able to develop various vital features of our prototype website, there were additional features that we planned to add to our website but were not able to include them due to the time and resource constraints. They were:

- *Personalized Dashboard*: This dashboard upon sign-in would have provided the users with a holistic view of the current status of their products and other information based on their interest. One such feature of our dashboard would have been a stock price ticker.

- *Enable Interactivity on Website*: This consists of two parts.
    - Allow users to react or (like/dislike) to the learning materials and display the most liked top three items as featured items on the landing page.

- Enable comments/reviews: Use the comments and reviews to perform sentiment analysis to garner insights and also prevent any objectionable items from getting displayed on our platform.

- *Recommendations*: Display only the relevant learning materials for each user on the website. Users can alter their preferences anytime.

- *Advanced Chatbot*: Develop meaningful conversation paths for the chatbot to make it more engaging and also add functionalities such as auto pop-up on site visit.

## 7. Analysis

We went live on May 3, 2020, and collected data until May 10, 2020, for our analysis. Since May 3, on our website, there were around 180 visitors per day, out of which 84% have been new users. We focused primarily on the San Francisco Bay Area users; our users are scattered across different geographies, but the United States dominated our user base.
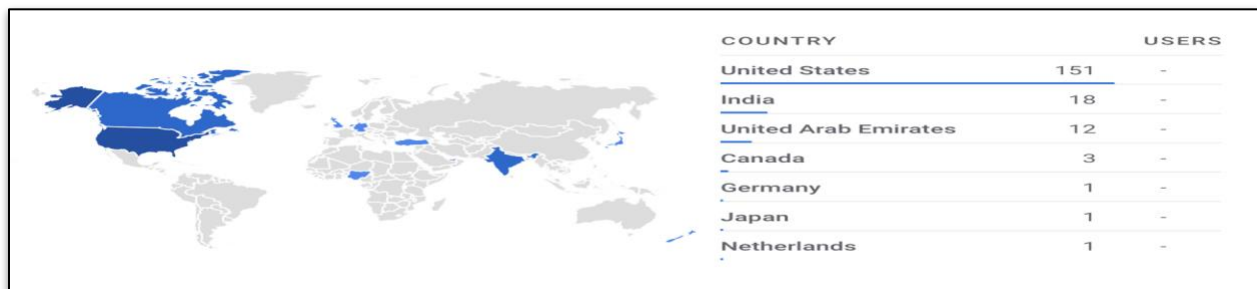


*Figure 22: Users across different geographies*



*Figure 23: New vs. Returning users*

People have been visiting us throughout the day. Here, we can see that the majority of users are accessing our website through mobile devices, and 54% of users are mobile users.
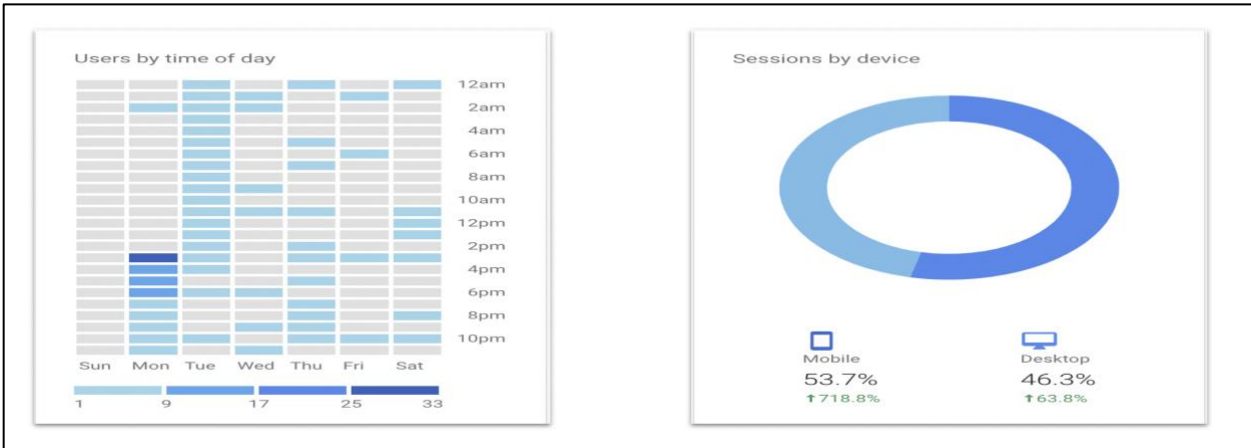


*Figure 24: . User Visits*

We tried to incorporate the Fidelity website audit recommendations in our prototype and made a performance comparison using the Google Chrome Lighthouse Audit tool. The pie charts below show that in terms of accessibility and SEO, we fared better.
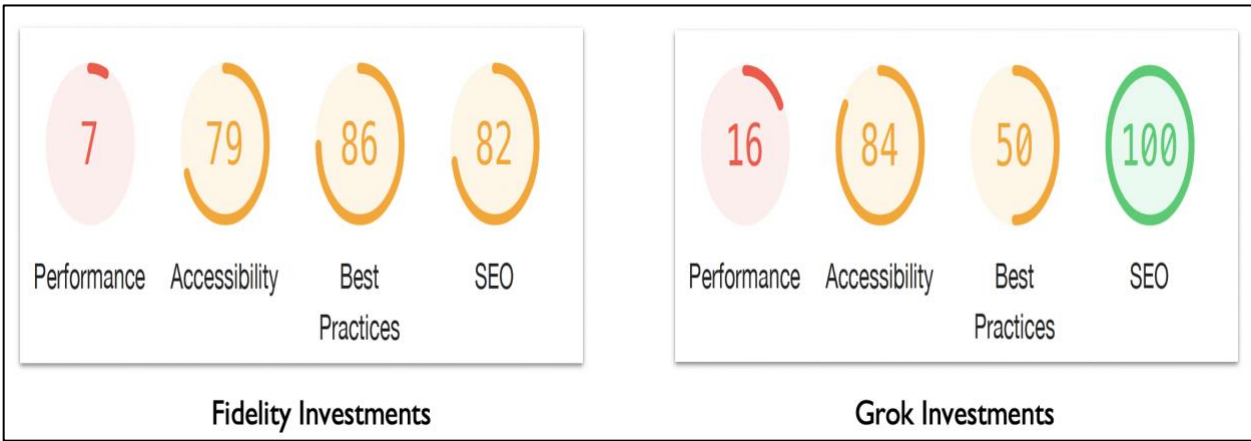


*Figure 25: Google Chrome Lighthouse Audit Report*

Adding descriptive text to the links and alternate text to the images helped us achieve an SEO score of 100. Also, improved usage of ARIA on our website boosted our accessibility score.

In the audit report, we are heavily penalized in terms of best practices, which is primarily due to the missing https security certificate. The performance of both the websites in terms of unused content such as images, styles, scripts, and CPU were poor, suggesting that additional optimization work is needed to improve performance.

We also gathered more insights about the most visited pages, user activity on our website and used Google Analytics to capture the required metrics. The chart below shows the top-most visited pages of our website. Here, we can see that the learning section is the most accessed page after the homepage indicating the interest of users in learning about investment topics. Also, information about immigrant finances and stocks was the most sought-after learning videos and articles. A significant proportion of people also took the investment quiz to assess their understanding of investment topics.
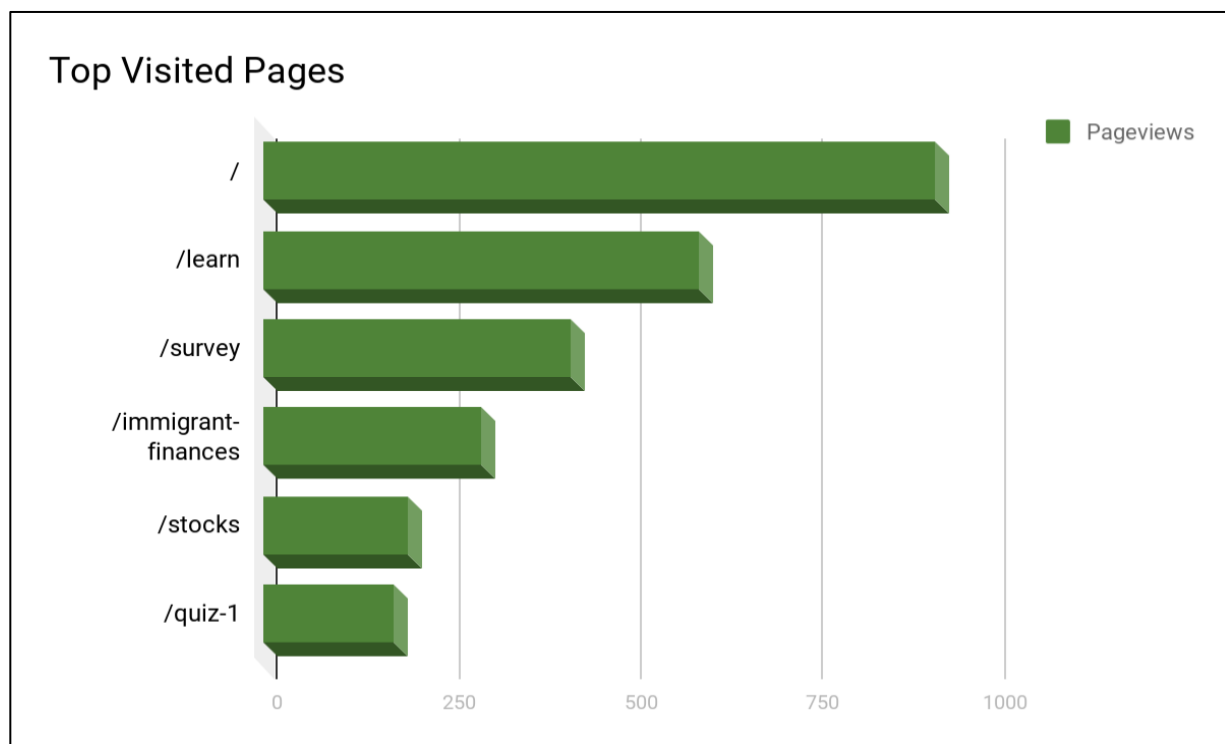


*Figure 26: Top Visited Pages*

We also analyzed the user activity flow to understand as to how the users navigate through our website. Upon analyzing the user activity of SF Bay Area users, we saw that the survey, immigration finances, stocks, and learning pages comprised the first four interactions with our website. This is evident from the chart below. The bottom section of the chart shown as more

pages had page views for the quiz and immigrant finances. The user activity pattern coincides with the top page views and seeing the interest in the immigrant finances; we may infer that the significant chunk of SF Bay Area residents comprises of immigrants.



*Figure 27: User Activity Flow*

As part of our analysis, we also tried to measure if the website graphics play a significant role in user engagement through A/B/n testing. Below mentioned are the three variants of our landing page.
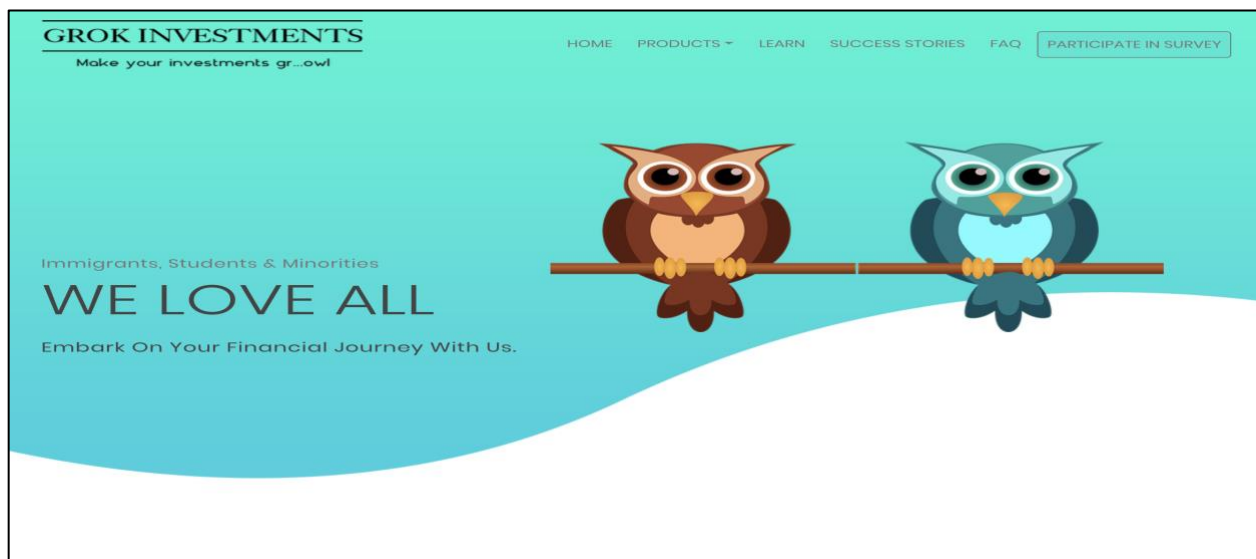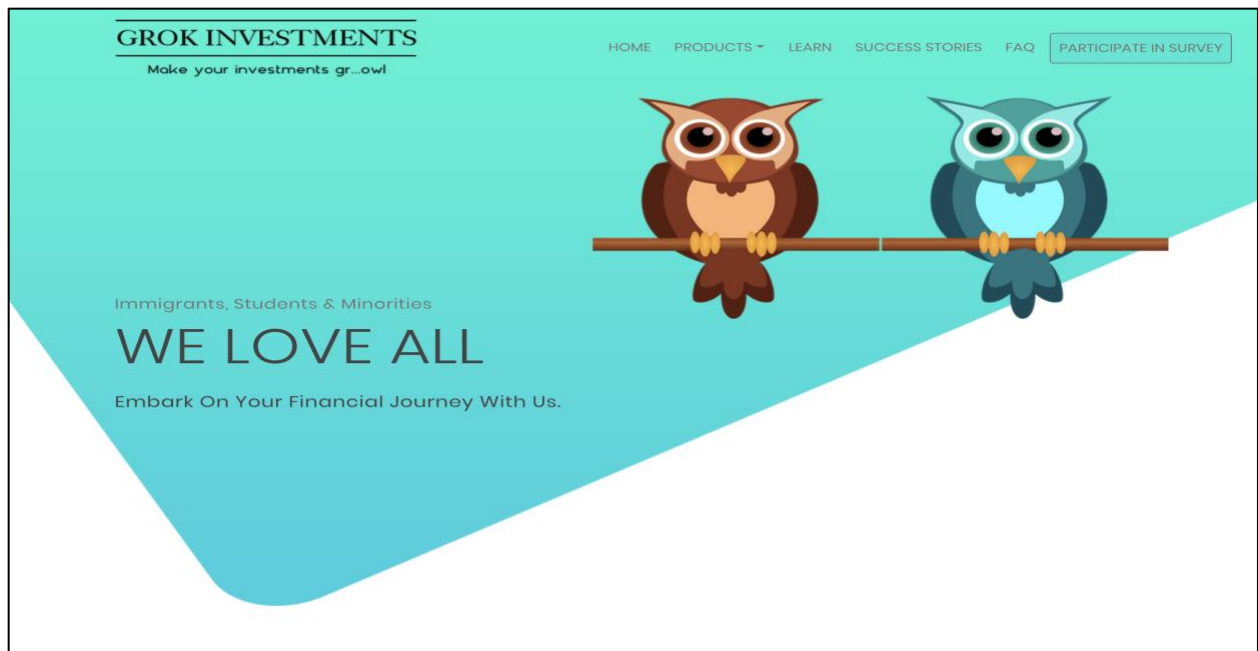


*Figure 28: . Landing Page #1*
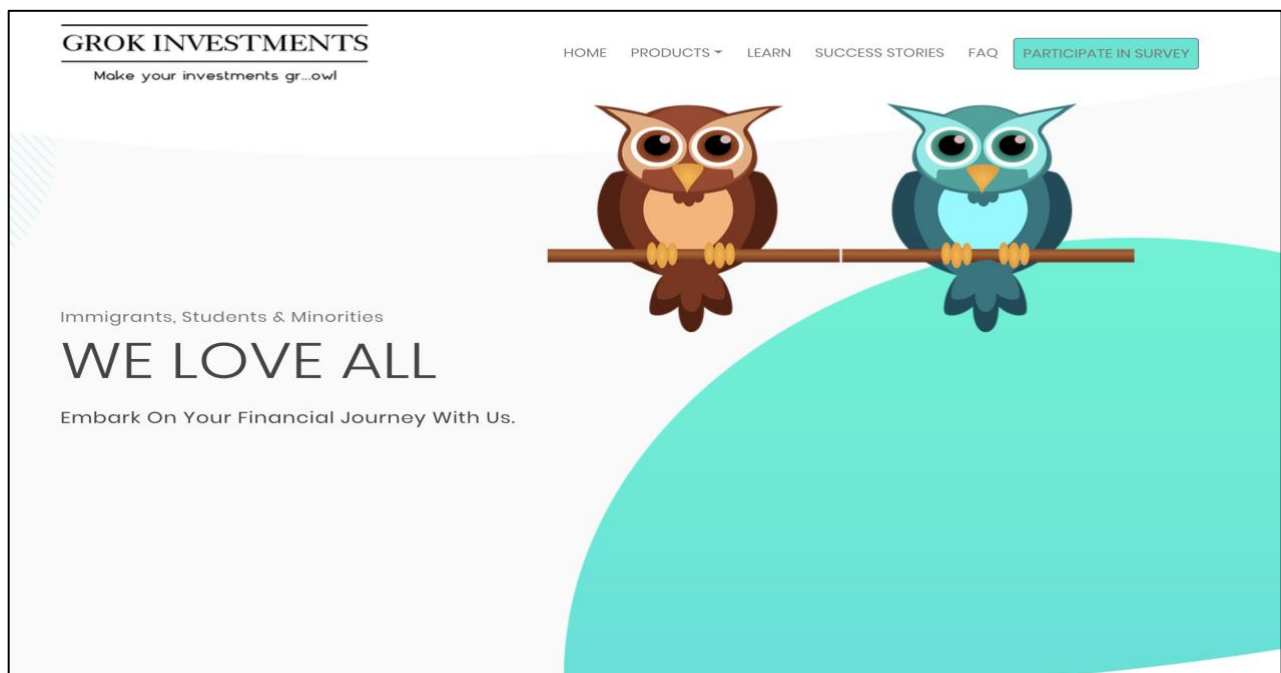
*Figure 29: Landing Page #2*



*Figure 30: Landing Page #3*

The daily results mentioned below indicated that the page views per session varied based on the homepage, but, eventually, they averaged out over the week. The test setup done was very basic and it suggests that we need to setup a robust A/B/n testing to gather more meaningful insights through this medium.
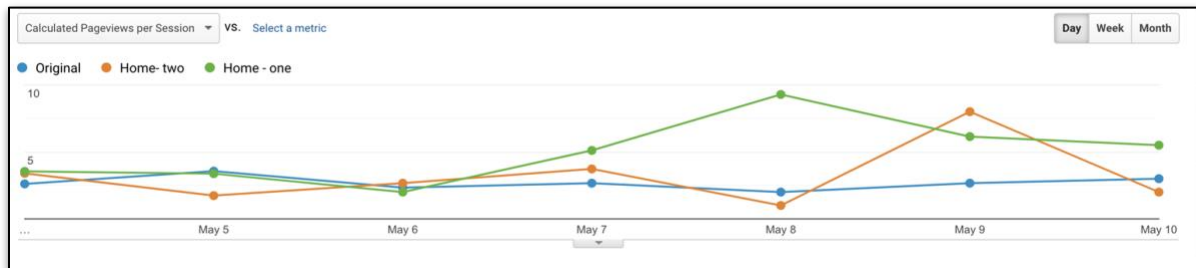


*Figure 31: Daily A/B/n Testing Results*
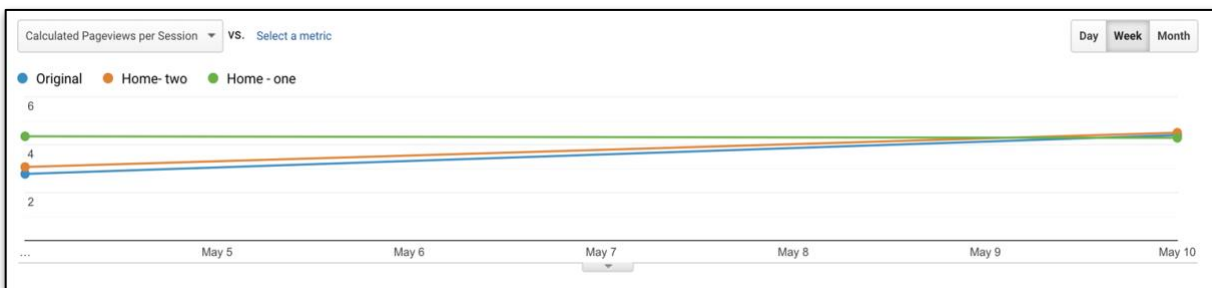


*Figure 32: Weekly A/B/n Testing Results*

Lastly, we analyzed the information which we gathered through an online survey present on our website, which helped us gather valuable insights. Below mentioned are the details.

- The Figure 33 below indicates that 60 percent of our respondents were female, and most of them were non-immigrants. In terms of ethnicity, we can see that majority of responses came from the Asian community in the SF Bay Area.
- The majority of our respondents were less than 35 years, as shown in the chart on the right. We found that most of our respondents were new to investing, and the percentage of the female respondents was almost double compared to men.

*Figure 33: User Statistics*

- When it comes to advising sources (Figure 34), most of our respondents relied upon YouTube, online blogs, and family as compared to professional financial advice. The over-reliance on the free material makes us think of making professional advice available in the form of these widely used mediums.
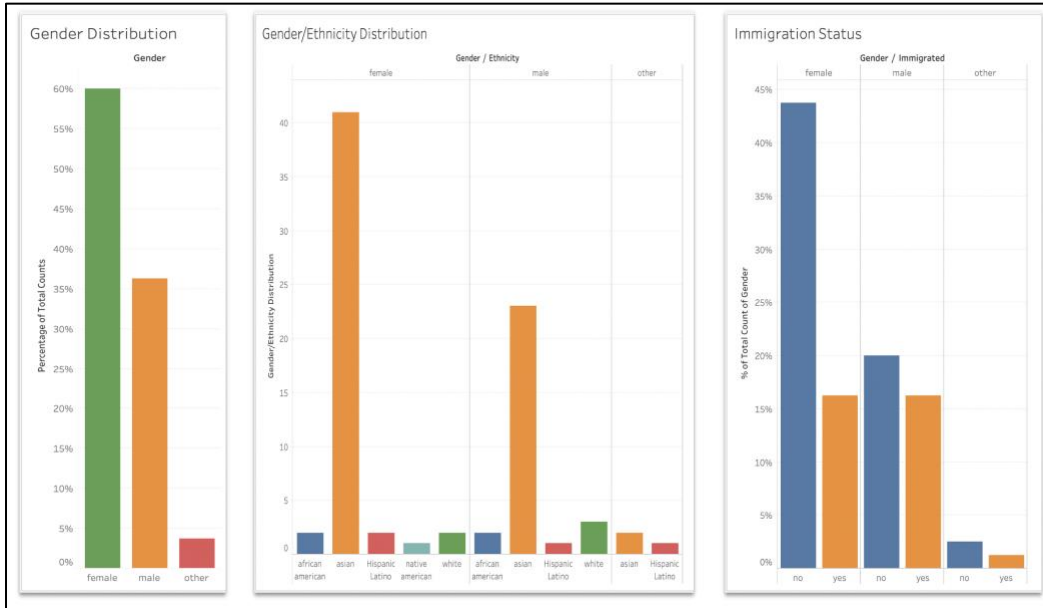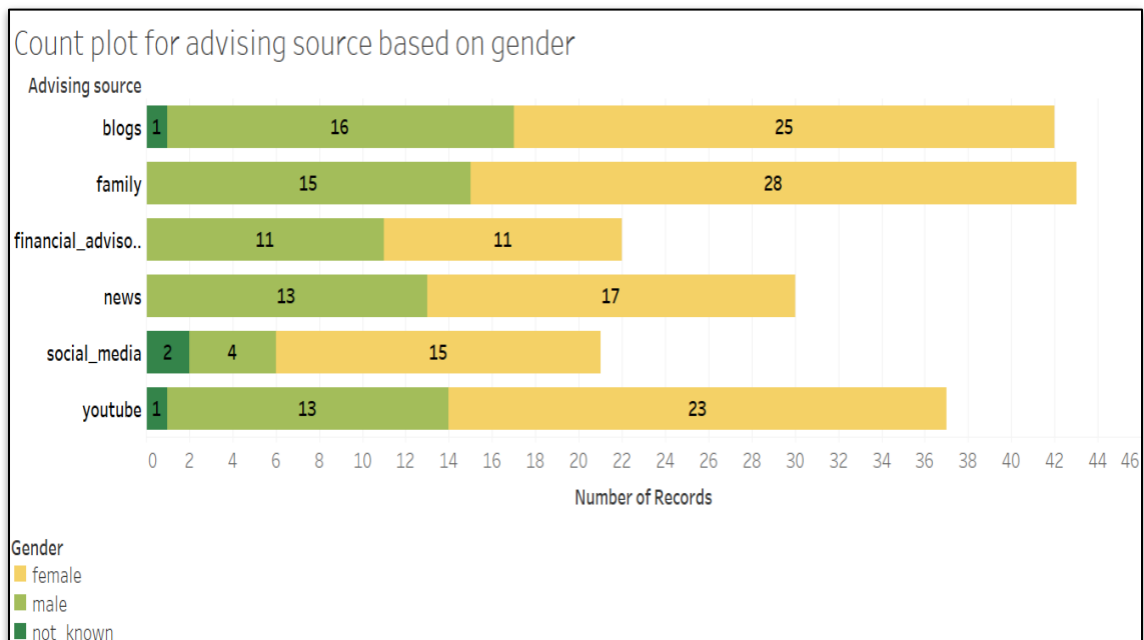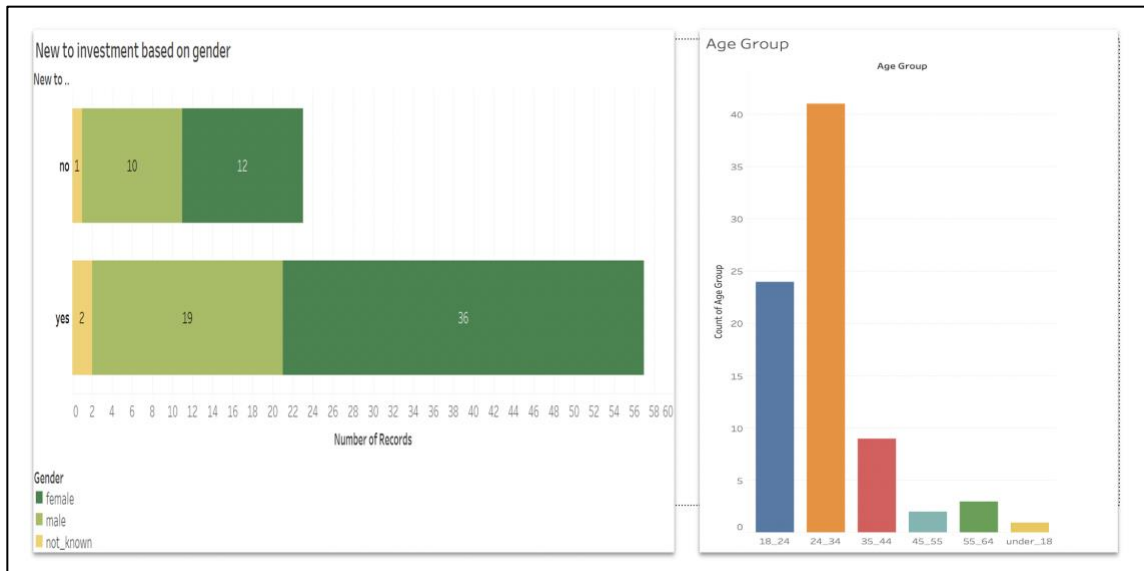


*Figure 34: Advising sources*

*Figure 35: Investment Experience*

- We also tried to find the correlations between the different aspects of our data. We saw a positive correlation between investment account ownership and investment experience. Most of the people who were new to investment did not own an investment account. This can be due to the fact the vast majority of people are immigrants and to open new account a lot of additional paperwork is required which is not present when a person migrates to a new country.

| | age group | employment status | ethnicity | gender | immigrated | income | investment account | invesetment preference | new to investing | withdraw investment |
|---|---|---|---|---|---|---|---|---|---|---|
| age group | 1.000000 | 0.033581 | 0.103344 | 0.069005 | -0.155369 | -0.145221 | 0.220923 | 0.164098 | 0.258697 | -0.036332 |
| employment status | 0.033581 | 1.000000 | -0.084747 | 0.053081 | 0.051919 | 0.147591 | 0.270385 | 0.121752 | 0.065020 | -0.110411 |
| ethnicity | 0.103344 | -0.084747 | 1.000000 | 0.105402 | 0.034448 | 0.023471 | 0.142287 | 0.008560 | 0.203943 | 0.000000 |
| gender | 0.069005 | 0.053081 | 0.105402 | 1.000000 | -0.148701 | 0.077478 | 0.119507 | 0.402112 | 0.094433 | -0.005350 |
| immigrated | -0.155369 | 0.051919 | 0.034448 | -0.148701 | 1.000000 | -0.049994 | -0.116568 | -0.377685 | -0.013872 | -0.044880 |
| income | -0.145221 | 0.147591 | 0.023471 | 0.077478 | -0.049994 | 1.000000 | -0.156577 | -0.111807 | -0.171619 | 0.399710 |
| investment account | 0.220923 | 0.270385 | 0.142287 | 0.119507 | -0.116568 | -0.156577 | 1.000000 | 0.419593 | 0.553255 | 0.067225 |
| invesetment preference | 0.164098 | 0.121752 | 0.008560 | 0.402112 | -0.377685 | -0.111807 | 0.419593 | 1.000000 | 0.231312 | -0.129048 |
| new to investing | 0.258697 | 0.065020 | 0.203943 | 0.094433 | -0.013872 | -0.171619 | 0.553255 | 0.231312 | 1.000000 | 0.020095 |
| withdraw investment | -0.036332 | -0.110411 | 0.000000 | -0.005350 | -0.044880 | 0.399710 | 0.067225 | -0.129048 | 0.020095 | 1.000000 |

*Figure 36: Correlation Between Variables*

- We also explored the relationship between age and investment risk tolerance and also the relation between age and investment period. In the Figure 37, we can see that most of the

29

users preferred low to moderate risk, and most of them favored short term investments. The significant interest in short term investment (Figure 37) stems from the fact that most people are here on work visas, and the current immigration rules prevent them from thinking about long term investments.
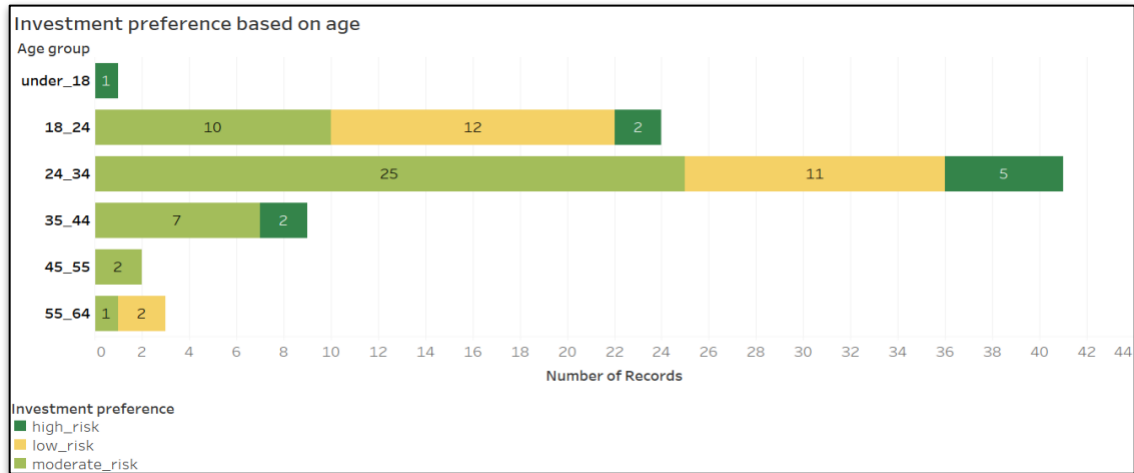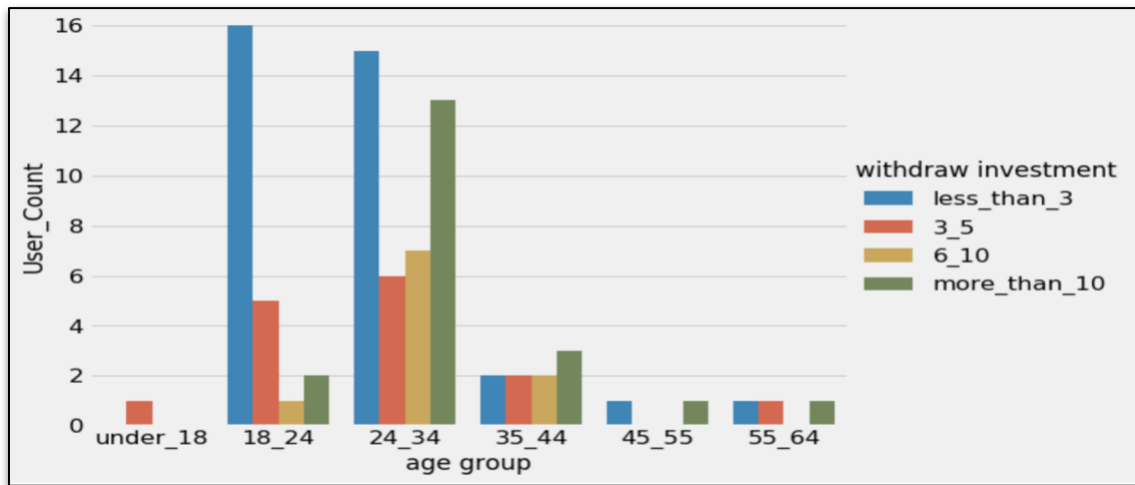


*Figure 37:  Age vs. Investment Preference*



*Figure 38: Age Group vs. Investment Period*

- Upon comparing the income with investment risk tolerance (Figure 39), we saw a correlation between low income and low risk. However, there was no direct correlation between income and investment period.
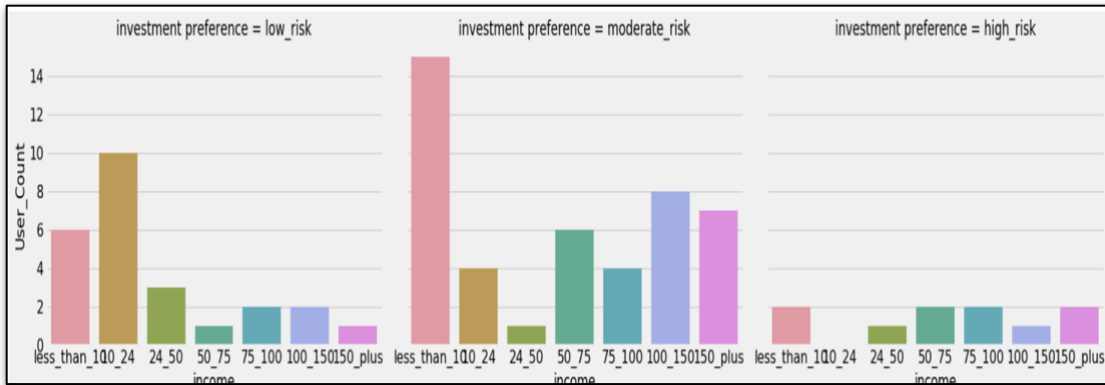
*Figure 39: Income vs Investment Preference*

- Lastly, we also performed topic modeling on the user comments provided about the website. The majority of the feedback comprised of website layout, clean design, quiz, and information request about the products. The ratings given by the users show that they liked our prototype. Our average rating as shown in Figure 40 was 9/10.



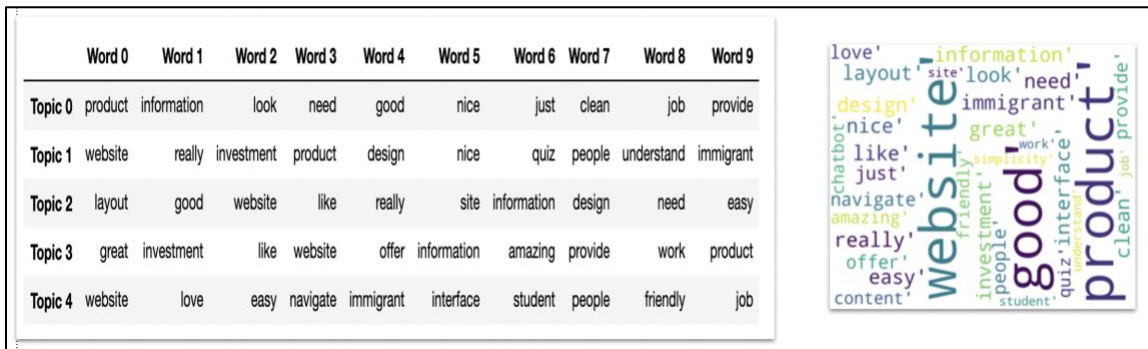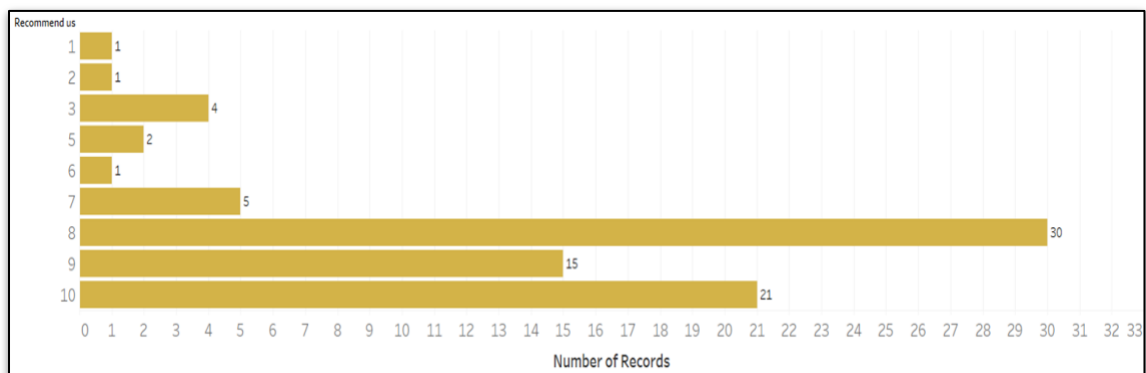| | Word 0 | Word 1 | Word 2 | Word 3 | Word 4 | Word 5 | Word 6 | Word 7 | Word 8 | Word 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Topic 0 | product | information | look | need | good | nice | just | clean | job | provide |
| Topic 1 | website | really | investment | product | design | nice | quiz | people | understand | immigrant |
| Topic 2 | layout | good | website | like | really | site | information | design | need | easy |
| Topic 3 | great | investment | like | website | offer | information | amazing | provide | work | product |
| Topic 4 | website | love | easy | navigate | immigrant | interface | student | people | friendly | job |

*Figure 40: Topic Modeling*



*Figure 41: Our Ratings*

## 8. Results

This section summarizes survey analysis and analytics obtained using Google Analytics. The results are as below:

- **60%** of the respondents were **female,** and **40%** of them were **non-immigrants**. In terms of ethnicity, **80%** of responses came from the Asian community in the SF Bay Area.
- The majority of our respondents were less than **35** years or less. **55%** of the respondents were **new to investing**, and the percentage of the female respondents saying yes was almost double as compared to men.
- For advising sources, **63%** of the respondents relied on YouTube, online blogs, and family as compared to professional financial advice. The over-reliance on the free material makes us think of making professional advice available in the form of these widely used mediums.
- There is a positive correlation between investment account ownership and investment experience. Most of the people who were new to investment did not own an investment account.
- On exploring the relationship between age and investment risk tolerance and the relation between age and investment period, we can see that most of the users preferred low to moderate risk, and the majority of them favored short term investments. The significant interest in short term investment stems from the fact that most people are here on work visas, and the current immigration rules prevent them from thinking about long term investments.
- On comparing the income with investment risk tolerance, there is a correlation between low income and low risk. However, there was no direct correlation between income and investment period.
- Through performing topic modeling on the user comments provided about the website. The majority of the feedback comprised of website layout, clean design, quiz, and information request about the products.
- The ratings given by the users show that they liked the prototype. The average rating was **9/10**.

## 9. Recommendations

Based on the above results and analysis we recommend the following actions:

- Website improvements in terms of accessibility and performance. SEO score also needs to be improved to do well on search engine page rankings.
- The "Learning Center" on Fidelity Investments website should be transformed into a more prominent/direct feature on the Fidelity homepage, to engage visitors for longer durations, instead of being in the "News & Research" website drop-down menu.
- Add products keeping in mind the requirements of immigrants on work visas.
- Further exploration of the idea of starting a podcast to be uploaded on YouTube or held live on YouTube, embedded in the blogs/news & research/insights part of their website to attract more visitors to the website.
- Fidelity does have its fair share of tutorial-oriented videos that receive considerable viewership. However, the Fidelity Investments YouTube channel has consistently kept the comments feature turned off for all its videos, which is an obstacle to engagement.

## 10. Conclusion

The internet, in general, and specific platforms online – social media, YouTube, Google – are the most commonly used methods of communication, networking and seeking information among millennials and under-represented communities. In today's day and age, the company's website is an essential primary platform for the customer to begin their relationship with the company. With this in mind, our objective was to recommend design and feature improvements for the Fidelity Investments website that would enable it to perform better on search engines, make it more interactive for the user, and improve its attractiveness and relevancy in the eye of the millennial.

Based on the market research and competitor analysis performed, we were able to gather some valuable insights and used them to create **grokinvestments.com**. Using the minimalistic approach, we incorporated a clean layout and easy navigation on the website. Some of the prominent features of our website include investment quizzes, an interactive chatbot, immigrant success stories, and a full-fledged learning portal. The content on our website is well-curated to satisfy our site visitor's inquisitiveness, and it resonates well with the product motto of intuitive

learning. Feedback plays a vital role in product improvement. We included a user survey on our website to seek suggestions and collect demographic, ethnic, and income-related information for further analysis.

We adopted a holistic approach for this project by applying business analytics to identify complex business problems and their possible solutions. We were able to identify key pain areas such as accessibility, website performance, and SEO that aligned with Fidelity's future goals. We hope to have provided quality research and analysis that would help Fidelity Investments further its outreach towards millennials and provide them with mutually beneficial investment services and opportunities.

## 11. References

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**Appendix 1: Feedback survey questions**

Q1. What is your gender?

○ Male

○ Female

○ Decline to answer

Q2. What age group do you belong to?

○ Under 18

○ 18-24

○ 25-34

○ 35-44

○ 45-55

○ 55-64

○ 65+

Q3. What is your ethnicity?

○ American Indian or Alaskan Native

○ Asian

○ Black or African American

○ Hispanic or Latino

○ Native Hawaiian or Pacific Islander

○ White

Q4. Did you or your parents immigrate to the United States?

○ Yes

○ No

Q5. Which statement best describes your current employment status?

○ Employed, Full Time

○ Employed, Part Time

○ Self Employed

○ Unemployed

○ Student

○ Prefer not to answer

Q6. What is your combined household monthly income (before taxes)?

○ Less than $10k

○ $10k to $24k

○ $24K to $50k

○ $50k to $75k

○ $75k to $100k

○ $100k to $150k

○ More than $150k

Q7. Are you new to investing?

○ Yes

○ No

Q8. Where do you look for financial advising?

☐ Financial News

☐ Financial Advisors

☐ YouTube

☐ Social Media (Facebook, Instagram)

☐ Investment Blogs

☐ Friends and Family

Q9. Do you currently own any investment account(s)?

○ Yes

○ No

Q10. I plan to begin withdrawing money from my investments in?

○ Less than 3 years

○ 3 to 5 years

○ 6 to 10 years

○ 11 years or more

Q11. Which of the following would you prefer?

○ Potential low return with low risk

○ Potential moderate return with moderate risk

○ Potential high return with high risk

Q12. Which feature of our website did you like the most?

○ Tutorials

○ Chatbot

○ Quiz

○ Website Interface

○ All of them

Q13. Which investment, budgeting applications (if any) do you use?

Q14. If you would like to share any additional comments about your most recent interaction with our company's website, please enter them below

Q15. On a scale from 0-10, based on your interactions with our website, how likely are you to recommend us to a friend or a colleague?

○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
○ 8
○ 9
○ 10