

Exploring the Search Behavior of Teenagers: A Comparative Study of Social Media and Browser Usage

Midori Wang¹ and Stephen Lind^{2#}

¹Asia American International Academy

²University of Southern California

#Advisor

ABSTRACT

As technology advances, the use of social media is becoming more extensive, and many businesses are adapting their marketing plans to take advantage of it. Research has shown that individuals, especially teenagers, appear to be increasingly relying on social platforms like Tiktok as their primary search engine. This study aims to determine whether there is a growing number of people who use social media as their search engine. An online survey was distributed to several high school students who were asked to search for answers to questions across six different categories. The results indicate that most teenagers still use browsers and search engines like Safari, Google, or Chrome for information gathering due to their content diversity, quality, and habit. However, there was a wide variety of social media and other platforms used throughout the research, which demonstrates the potential of social media as a search engine.

Literature Review

Extensive use of social media

Social media is a rapidly-growing tool that attracts a huge amount of users every year. From 2022 to 2023, and in just one year alone, the number of users of social media increased from 4.59 billion to 4.89 billion, which represents a 6.5% growth rate. Professionals in the field predict that, by 2027, the number of social media users is going to grow by over 5.85 billion individuals ([Dixon, 2023](#)). It is therefore undeniable that social media has become deeply rooted in our daily lives; indeed, approximately half of the children worldwide who are between the ages of eight and seventeen have a Facebook, Instagram, or Twitter account ([Vidal et al., 2020](#)). Not only this, but current research also supports the finding that nearly half (47%) of all online adults have been users of social media ([Madden, 2010](#)). With so many users, social media has been able to change people's lives in a variety of ways, including but not limited to, communication, entertainment, lifestyle, well-being, and business advertising ([BILGIN, 2018](#)).

The various effects of social media marketing that have led to the use of social media in business

The effects of social media are extensive, especially in the field of business and its advertisements. Previously, advertisements could only be produced through billboards, newspapers, and posters, and these were able to reach only a limited number of audiences. The practice was both unaffordable and inaccessible, in that not every company had either the brand recognition nor the funding with which to carry it out effectively. Nowadays, though, social media allows businesses to connect with a wider range of interested entities ([Hilong, 2023](#)), which subsequently allows these businesses to enlarge on a global basis more quickly and easily. Currently, more than 65% of major companies around

the world use social media to generate leads ([Cheung et al., 2019](#)), and social media is widely used as a communication platform or mass media tool that encourages the creation of interactions, opinions, and content-sharing between users in general ([Kim et al., 2012](#)). This provides businesses with a better way of gathering quick feedback; previously, and as mentioned, companies could only communicate in-person or through paper surveys conducted via mail. Now, businesses are able to communicate with people at any time and from any place through social media ([Nazir et al., 2020](#)). For example, individuals are able to immediately comment on an Instagram post or post their own story or response to it, whereby a given company can get feedback and reply to its target audience more efficiently ([Guckenbiehl et al., 2022](#)). Research also shows that 71% of customers who have had a positive experience with a brand through a social media service are likely to recommend it to others ([Abdulaziz, 2020](#)). Social media allows businesses to increase brand awareness by providing a better opportunity for product advertisement and brand promotion at a relatively lower cost ([Hanna et al., 2011](#)). In addition, and because of its algorithm, social media has become one of the most cost-effective advertising portals of all possible options. The algorithm makes it possible for businesses to be seen extensively by viewers at no extra cost. Thus, if effectively used, social media can have a huge impact on businesses, especially start-up companies.

Impact of social media on start-up businesses

The establishment of a start-up company includes gathering scarce resources from an external environment; these resources are most often obtained via social networking ([Dodd, et al., 2002](#)). Recently, people have been discovering that social media is not merely a marketing tool limited to product promotion and customer service; it is also a powerful platform by which to attract funding ([Clark and Melancon, 2013](#)), absorb new information ([Choi and Berger, 2010](#)), communicate brand value by facilitating open forms of communication ([Kadam and Ayarekar, 2014](#)), and maintain relationships between collaborators, which in turn helps to develop one's own social network.

Different techniques of social media marketing

A variety of techniques are often employed by businesses to maximize the use of social media. These include using celebrity and social media influencer endorsements ([Abdulaziz, 2020](#)), by highlighting the fame and trustworthiness of such individuals to bring about recognition and interest in a business ([Rasjiddin et al., 2022](#)). Social media advertisements further have the characteristics of being both flexible and accessible. For example, Instagram allows business promotions to be viewed as its audiences are scrolling through stories, posts, or videos. Researchers have found that the more interaction a business has with its audience, the more likely an individual is going to purchase something from that business. Producing interactive content has been shown to help one's business by increasing the amount of engagement with prospective buyers, and by conducting polls, Q&As, quizzes, and games to increase engagement with an audience while likewise providing a fun, memorable experience ([Sundar, 2016](#)). User-generated content is also favored by most people online, since it offers a different perspective on a given product and makes the user feel closer to the business and the product itself ([Kozinets et al., 2010](#)). This also creates stronger bonds between the customer and the brand, and thus increases brand loyalty ([Beveridge, 2022](#)). Indeed, many businesses employ this technique by reposting users' shared comments, pictures, or videos.

The necessity of a social media marketing plan

Featuring so many pros, social media platforms are usually overloaded with a wide range of content ([Abdulaziz, 2020](#)). Thus, and given this highly-competitive situation among such platforms, a well-developed marketing plan is suggested or even demanded by researchers ([Opresnik, 2018](#)).

Individuals rely increasingly now on social media as their search engines

Previously, people used Google, Safari, or Yahoo to search for the products they were interested in, but the world is changing rapidly and the trend toward using social media in search of information seems to be on the rise. Research conducted by Google's Knowledge & Information organization shows that almost 40% of younger people use TikTok or Instagram as their search engine (Perez, 2022). Not only this, another study has also found that students use Facebook to get what they believe to be useful information. But what do these people ask? A research study conducted among 624 participants by Teevan (2010) showed that the most-asked questions on social network were "Building a new playlist – any ideas for good running songs?", which falls into the recommendation category, along with "Does anyone know if WoW works on Windows 7?", which falls into the technology category. The research also shows that the question types are diverse across platforms; for example, more technological questions are posed on Twitter, while more participants asked questions about home, family, and entertainment on Facebook. The researcher also investigated the reasons behind this phenomenon, with almost a quarter of respondents stating that it was because of trust in a certain person and around another 20% stating that a search engine could answer a question but not offer an opinion (Teevan, 2010).

By knowing which search engines different people use while searching for different products or services, businesses can better optimize different social media algorithms and accordingly adjust their product labeling and platforms, so as to match potential clients' search engines and increase exposure. This said, there are no known recent studies that discuss the key factors determining which search engine audiences use. Thus, our research is going to focus on both the key factors that determine the use of different social media platforms and the traditional search platforms that are used as search engines.

Methodology

The study used both quantitative and qualitative approaches to determine whether or not there are changes in choosing a search engine among teenagers. Participants were selected by a convenience sample of teenage mobile device users ranging in age from 15 to 20 years old. Participants were asked to use their computers to answer the questions on the survey while using their phones in order to follow the instructions given on the survey. The survey was organized into two stages. The first part of the survey consisted of six open-ended questions, and participants were informed to use the apps or websites on their own personal phones to search for answers. The answers categorized come from an article published in 2004, the article found that the most popular topics were shopping (13%), entertainment (13%), pornography (10%), computing, (9%), health (5%), travel (5%), games (5%), and home (5%) (Beitzel et al., 2004). Pornography, health, and home are stated as overly personal by participants in the research done by (Teevan, 2010); thus, several changes are made for our final question category. Each question served a different purpose; for example, "What is a good restaurant around this area?" represented the necessity of a search engine to acquire a location. Other categories included technology, opinion, entertainment, current events, and purchase, the likes of which entail most aspects of online searching (Teevan, 2010).

During the entire process, a participant's screen recording function was asked to be turned on, and could not be turned off until they entered the next stage. This was done in order to ensure the correctness of the research. Also, the topic would be known as "New Phone Feature" until the second stage, to ensure any changes in decision-making throughout the experiment. The second stage consisted of questions regarding why participants chose a certain app or search engine for a certain category, which makes up for our qualitative data. The aim was to conduct the survey with 20 teenagers from an international school in Taiwan from the 4th to the 15th of April, 2023. Participants had no time limit for filling out the survey; however, they were asked to do this in a personal space where the experiment would not be interrupted by anyone else. 21 people filled out the surveys, but because of incomplete responses and pausing screen records, 17 survey results were included in the overall analysis.

Before analysis, the dataset was checked for missing data and any incorrect following of instructions. The first app or website used for each question during stage one was recorded into our quantitative data, which was then transformed into a pie chart using the statistical software Google Sheets. The answers collected from stage two of the survey became the quantitative data providing reasons for choosing a certain app or website. Based on the response, responses were generated into eight categories including features, habit, easy/clear, native access, previous interest, content quality/diversity, and newness (Kim et al., 2014).

Profiles of Respondents

The study sample who completed all questionnaires were 17 respondents who ranged from 15-20 years old. Several personal variables were collected from the respondents for the purpose of further analysis of the data in different aspects, which includes gender, age, ethnicity, and phone brand. Frequencies and percentages of the demographic data of the respondents were presented in table 1.

Table 1. Characteristics of study sample

Variable	Category	Frequency	Percent
Gender	Male	9	52.9
	Female	8	47.1
Age	15	4	23.5
	16	3	17.6
	17	5	29.4
	18	2	11.8
	19	3	17.6
Ethnicity	Asian	12	70.6
	Asian-American	3	17.6
	Latino/Hispanic	1	5.9
	Prefer not to say	1	5.9
Phone Brand	Apple	14	82.4
	Samsung	2	11.8
	Sony	1	5.9
Total		17	100%

Table 1 shows that the age and distribution of respondents for this study is extremely equal, with slightly more males and 17-year-olds (29.4%). The participants are mostly Asian (70.6%) with iPhones (82.4%), with some Asian-Americans (17.6%) and Samsung phones (11.8%).

Results

Question 1: [Location] What is a good restaurant around this area?

Table 2. App/Website used for location-related question.

Type: Question	App/ Website Used	Frequency	Percentage
Location: What is a good restaurant around this area?	Google Map	10	58.8
	Google Chrome	2	11.8
	Safari	2	11.8
	Google	2	11.8
	Instagram	1	5.9
Total		17	100%

Table 3. Factors influencing a person's choice of mobile apps on location-related question.

	Feature	Habit	Easy/Clear	Native Access	Previous Interest	Content Quality/Diversity	New
Google Map	6	1	1	0	0	2	0
Browser/Search Engine(Google Chrome/Safari/ Google)	0	3	2	1	0	0	0
Instagram	0	0	0	0	1	0	0
Total	6	4	3	1	1	2	0

Question 2: [Technology] What are the new features of iPhone and why?

Table 4. App/Website used for technology-related question.

Type: Question	App/ Website Used	Frequency	Percentage
Technology: What are the new features of the iPhone and why?	Google Chrome	2	11.7
	Safari	5	29.4
	Google	6	35.3
	ChatGPT	1	5.9
	Shortcut	1	5.9
	Tips	1	5.9
	YouTube	1	5.9
Total		17	100%

Table 5. Factors influencing a person's choice of mobile apps on technology-related question.

	Feature	Habit	Easy/ Clear	Native Access	Previous In- terest	Content Quality/Di- versity	New
Browser/Search Engine (Google Chrome/Safari/Google)	0	2	2	2	0	7	0
ChatGPT	0	0	0	0	0	0	1
Shortcut	0	0	1	0	0	0	0
Tips	0	0	0	0	1	0	0
YouTube	0	0	0	0	1	0	0
Total	0	2	3	2	2	7	1

Question 3: [Opinion] “How is your school commonly known like?”

Table 6. App/Website used for opinion-related question.

Type: Question	App/ Website Used	Frequency	Percentage
Opinion: How is your school commonly known like?	Google Map	3	17.7
	Google Chrome	2	11.8
	Safari	5	29.4
	Google	5	29.4
	Instagram	1	5.9
	Zhihu	1	5.9
	Google Map	3	17.7
Total		17	100%

Table 7. Factors influencing a person's choice of mobile apps on opinion-related question.

	Feature	Habit	Easy/ Clear	Native Access	Previous In- terest	Content Quality/Di- versity	New
Google Map	3	0	0	0	0	0	0
Browser/Search Engine(Google Chrome/Safari/ Google)	2	3	2	1	0	4	0
Instagram	0	0	0	0	1	0	0
Zhihu	0	0	0	0	0	1	0
Total	5	3	2	1	1	5	0

Question :4 [Entertainment] “What are some good things to do on the weekend?”

Table 8. App/Website used for entertainment-related question.

Type: Question	App/ Website Used	Frequency	Percentage
Entertainment: What are some good things to do on the weekend?	Google Map	2	11.8
	Google Chrome	2	11.8
	Safari	3	17.7
	Google	6	35.3
	Instagram	1	5.9
	YouTube	2	11.8
	TikTok	1	5.9
Total		17	100%

Table 9. Factors influencing a person's choice of mobile apps on entertainment-related question.

	Feature	Habit	Easy/ Clear	Native Ac- cess	Previous In- terest	Content Qual- ity/Diversity	New
Google Map	1	0	0	0	0	1	0
Browser/Searc h En- gine(Google Chrome/Safari/ Google)	0	3	3	1	0	4	0
Instagram	0	0	0	0	1	0	0
YouTube	0	0	0	0	2	0	0
TikTok	0	0	0	0	0	1	0
Total	1	3	3	1	3	6	0

Question 5: [Current Event] “How much money did the shutdown of silicon valley bank lose?”

Table 10. App/Website used for current event-related question.

Type: Question	App/ Website Used	Frequency	Percentage
Current Event: How much money did the shutdown of Silicon Valley bank lose?	Google Chrome	2	11.8
	Safari	5	29.4
	Google	8	37.0
	Shortcut	1	5.9
	YouTube	1	5.9
Total		17	100%

Table 11. Factors influencing a person's choice of mobile apps on current event-related question.

	Feature	Habit	Easy/ Clear	Native Access	Previous In- terest	Content Qual- ity/Diversity	New
Google Map	0	0	0	0	0	0	0
Browser/Searc h Engine (Google Chrome/Safari/ Google)	0	3	3	0	0	9	0
Instagram	0	0	0	0	0	0	0
ChatGPT	0	0	0	0	0	0	0
Shortcut	0	0	0	1	0	0	0
YouTube	0	0	0	0	0	1	0
Total	0	3	3	1	0	10	0

Question 6: [Purchase] “Find a pair of running shoes you would like to purchase?”

Table 12. App/Website used for purchase-related questions.

Type: Question	App/ Website Used	Frequency	Percentage
Purchase: Find a pair of running shoes you would like to purchase	Google Chrome	1	5.9
	Safari	2	11.8
	Google	5	29.4
	Instagram	3	17.6
	Nike App	1	5.9
	ABC MART	1	5.9
	Facebook	2	11.8
	Shopee	1	5.9
	mizuno	1	5.9
Total		17	100%

Table 13. Factors influencing a person's choice of mobile apps on purchase-related questions.

	Feature	Habit	Easy/ Clear	Native Access	Previous In- terest	Content Qual- ity/Diversity	New
Browser/Search Engine (Google Chrome/Safari/Google)	0	4	0	1	0	3	0
Instagram	0	0	0	0	3	0	0
Nike App	0	0	0	0	0	1	0
ABC MART	0	0	0	0	0	1	0
Facebook	2	0	0	0	0	0	0
Shopee	0	0	0	0	0	1	0
Mizuno	0	0	0	0	0	1	0
Total	2	4	0	1	3	7	0

Table 14. Total distribution of factors influencing one's choice of mobile apps/website.

Apps	Feature	Habit	Easy/ Clear	Accessible	Previous In- terest	Content Quality/Di- versity	New	Total
Total Number	14	19	14	7	10	37	1	102
Percentage	13.7	18.6	13.7	6.9	9.8	36.3	0.9	100%

Discussion

Factors Shaping Search Engine/App Choices by Topic

Through this study, we discovered the factors that determine a person's choice of search engine/apps on different topics and ranked them in order.

Content Quality and Diversity

Table 13 shows that approximately 36.3 percent of app choices are determined by content quality and diversity. This observation is best demonstrated when it comes to finding current event information, where the percentage exceeds 58. A possible reason that explains why search engines are mostly used on current event questions is that the answer to these current event questions "might have a standard answer" or "specific information", as suggested by the respondents. One of the responses stated that "search engine is a go-to website for specific info", which pushes forward

the idea that the importance of answer type determines what apps/websites a person will use. Also, because most newspaper companies published their news on these search engines, the current event is valued as having a direct relation with “news” according to the respondents; thus, the search engine is used a lot in the current event question.

According to the qualitative response, most people believe that browsers/search engines like Safari and Google have the most reliable content quality and diversity compared to other apps. A few respondents use phrases like, “got the most information” or “includes a lot of results” in their explanation.

Habit

Habits are powerful, even when it comes to making choices about which apps to use. Habitual behavior was found to be a consistent reason throughout the study. Additionally, the study found that most search engines are considered a habit for most teenagers, especially Google, which is the most commonly used search engine/app among teenagers. Even when new apps that serve a similar purpose come out, people still choose to use the same apps. In fact, on average, there are more than 2,000 new apps released on Google Play every day (2023). Several reasons are suggested for this phenomenon. First, new apps are not well-designed enough compared to the old ones. It is definitely not their fault since Safari and Google have both been around for at least 20 years, and they update their apps every week or month with tremendous databases and support, enabling them to bring a better user experience every time. Second, the new app does not have any special features that grab people's attention. App development is a highly competitive industry, especially in search engines, and it is more like an oligopoly right now. These days, only apps with new features will stand out in the market; for example, ChatGPT with new AI features, and BeReal with different styles of picture taking. Habits are definitely hard to change, given that many apps have already been around for a long time. However, by having more unique features, it is not impossible to change people's habits.

Features

Features have an extremely high vote when it comes to questions about location and shopping, especially for Google Maps and Facebook. As mentioned above, apps that develop their own unique features can become well-known and be used frequently when needed. For example, the star rating feature of Google Maps accounted for 58.8 % of the app's usage for location-related questions. Although the marketplace and group features of Facebook did not demonstrate high usage throughout the research, they were mentioned twice in the purchase questionnaire because of their special features.

Ease and Clarity

Throughout the research, there was consistency among people who chose ease and clarity as their reasons, especially regarding current events and technological information. However, when it came to purchasing, people seemed not to care about these factors. At the same time, search engines like Google and Safari are always ranked top when it comes to ease because they have well-designed user interfaces and experiences that prioritize simplicity and accessibility. As stated by the respondent, “Google provides a clear and simple answer.” However, the user might also think Google and Safari are easier to use just because of their familiarity and consistency with the apps.

Previous Interest

This reason appears most often on websites/apps other than search engines; for example, on YouTube and Instagram. This seems to be because these are virtual places where people will scroll through content without any specific purpose or question in mind because of its entertainment purpose. After that, people may use features like “save” or communication features to keep the information. According to one of the respondent's answers, he immediately turned on his

chat history with his friend and searched for the answer inside the chat. As stated by him, “I went into a post I sent to my friend before to see the shoes.” Thus, previous interest appeared often in the categories of entertainment and purchase, where people use more non-browser apps/websites like Instagram, Facebook, etc.

Native Access/ Pre-installed

All votes in this category went to web browsers developed by Apple–Safari. Since the other apps/websites were developed by technology companies rather than by phone companies, some people chose to use Safari because they did not have to download the app and its system was most compatible with iPhones. For instance, when a user opens a link on Apple, most of the time, it automatically opens it with Safari. And because most of the respondents in this study have an IOS system, this might give Safari a certain advantage due to its native access. Some people even suggested that Safari is the only search engine on their phones. Thus, they use Safari.

Newness

ChatGPT, being the most recent website/app in this research, was the only one chosen because it is new. The app gained over one million users in its first week after launch, which set a record for having the fastest-growing user base in history for a consumer application ([Robert al., 2022](#)). The discovery of such types of AI-generated content has been widely used in daily life, academia, etc. Its power is thus far unlimited. The approach of participants toward a technology-related question using ChatGPT is interesting, as stated in his response, “it is like using AI itself to answer a technological question.” However, choosing an app because of its newness is rare and does not happen in most cases.

Diverse App Use

Based on the data collected, we found that 65.7% of app choices were determined by browsers and search engines, including Google, Google Chrome, and Safari. These were ranked as the most used in all categories except for location. However, there was significant diversity among the websites used across all categories, with at least two non-search engine apps or websites used in each of the six questions and more than 15 different apps or websites used overall. This included social media platforms such as TikTok, Instagram, and Facebook, which would not be expected if the research had been conducted five to ten years ago. In the long tail of apps, there are a wide variety of apps with different purposes that represent the “tail” of the distribution, while search engines like Google, Safari, and Chrome represent the “head.”

Non-search engine apps or websites were more commonly used in categories such as location, purchase, and entertainment, primarily due to their features, related content, and content diversity. For instance, Instagram was mostly chosen for entertainment because users had previously seen related content, thus indicating that Instagram may be the platform on which most teenagers see and remember entertainment-related content. In purchase, Facebook was chosen twice because of its special features. Apps that specialize in one specific area, such as Google Maps, which are designed for finding locations and ratings, were used whenever there was a need for such information. Thus, each non-browser app serves a different purpose and is required in different scenarios.

While the browser and search engine play a slightly different role than do social media platforms, they tend to provide high-quality and diverse content, with greater accessibility, ease of use, clarity, and habitual usage among most people; thus, they are most people’s go-to platforms for information. This was especially true for questions that required solid answers or information, such as the current event and technology questions, which showed a significantly higher rate of people using a browser or search engine.

Limitations and Future Research

The data were obtained from a survey of 17 international high school students in Taiwan on their choices of apps/websites used for different topics, as well as their reasons. While this data provides valuable insight into the motivations for social searching behavior, it is important to consider the limitations of our demographic distribution on phone brand and ethnicity when interpreting these findings. The answers may differ between cultures, countries, genders, ages, etc. Future studies should build on our data with more in-depth interviews or log-based studies that feature more countries, cultures, phone brands, and age groups.

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