

Comparison and Evaluation of Mobile and Web Applications

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Abstract - Web and mobile applications are the most used and interactive method of online communication. Every day, we come across multiple applications which differ in complexity, responsiveness, user interface etc. This research deals with the understanding of differences between mobile and web applications and discusses their appeal in the generic audience based on the surveys conducted on a web application and mobile application containing the same content and general layout structure. This research paper also expands its own derived difference based on the surveys carried for the same.

Key Words: Mobile Applications, Websites, Webapps, Comparison, Evaluation

1. INTRODUCTION

Native mobile apps are designed specifically for a particular platform, such as iOS for the Apple iPhone or Android for the Samsung Galaxy. They may be downloaded and installed from an app store and have access to system resources like GPS and the camera. Mobile applications are installed on the device and run on it. Popular smartphone applications include Snapchat, Instagram, Google Maps, and Facebook Messenger, to name a few.

Web applications, on the other hand, are accessed through a web browser and adapt to the device you're operating to see them. They don't need to be downloaded or installed because they aren't native to a particular operating system. Because of their responsive nature, they resemble mobile applications in appearance and functionality.

a.) WEB APPLICATIONS: Web applications or web apps are hosted on web servers and they are accessible from any device that has an active internet connection. Online forms, email sites, social media etc. are available as web applications over desktops and mobiles. Web applications are not device specific and can run on any device that can support a browser. Updates are applied to every website instance; this eliminates compatibility issues. Since it does not require much from the end term users, it is very easy to use. They also do not take up any space in the hard drives and have low requirements.

b.) MOBILE APPLICATIONS: Mobile apps are more expensive to develop than web apps, and because they are platform-specific, launching an app across different platforms pretty much means starting from scratch in terms of design and development. However, they are much faster, and tend to be more advanced in terms of features and functionality.

2. THEORY

Comparison between mobile apps and web apps is compulsory because of their versatility and various applications and thus we need to understand how and in which areas they perform well. Mobile applications are faster than web applications they offer great functionality as they have access to system resources they can also work without the need of internet and does can work in remote areas with no internet connections they have better functionality they are safe and secure to use because these native apps must be first approved by the app store act as a medium between the vendor and the consumer mobile applications are easy to build because of the availability of developer tools interface elements and SDKs. The other hand web applications are software independent as they do not need to be downloaded or installed all the required is a web browser that works in the system they are easier to maintain as they have a common code base regardless of the mobile application on which they act the updates on a website are reflected everywhere the instances of the websites are available that there is no requirement to constantly look for updates they are easier to assess and are more critical than mobile applications as there is no code in the background to fetch they also does not require any approval from app Store or any other vendors so they can also be launched quickly without other permissions to be granted. Mobile applications are more expensive to build a web application and cannot run on every kind of device of their native approach. Therefore, different platforms like iOS and Android require designing and building differently and the developer would have to develop everything from scratch. Mobile applications are expensive to maintain and update and would constantly need to require to go to the vendor for updates it has been proven that native applications may or may not get approved by app. Factors by web applications are

not preferred in remote areas is that because they do not work offline these web applications constantly need an internet connection to function otherwise they would not work at all they are quite slow than mobile applications and less advance the terms of features and efficiency there is no particular way to find a website other than looking for it since they are not available on a specific database such as an app Store the quality and security is not always guaranteed as web application does not need any approval from any other hosting services and can host almost everything that is possible. According to the 2019 Mary Meeker report, the number of hours spent on the internet continues to increase every year, but the split between desktop and mobile is becoming more and more pronounced. In 2018, Americans were spending 3.6 hours per day on mobile (12 times more than a decade prior) and just 2 hours per day on a desktop or laptop (which has stayed pretty consistent since 2008). Among millennials in particular, the number who list social media apps as their most frequently used category is at 69%. In second place, at 55%, is messaging apps—because again, the most popular use of apps is connecting and communicating with others. If you're targeting this generation, consider incorporating features in your app that allow users to connect with their peers and be part of a community.

3. SURVEY ANALYSIS

A survey conducted on 30th may 2021 through google forms by us amidst lockdown in India in which 45 people participated spread across the age group of 18 to 24. The results state that 77.8% of people prefer mobile apps over websites or web apps (Fig 1). 51.1% of people spend 1-4 hours of their time using a mobile application, 40% spend 5-8 hours, and 8.9% spend more than that (Fig 2). 80% of people spend 1-4 hours of their time using a desktop website or web app, 17.8% spend 5-8 hours, and rest more than that (Fig 3). Social media applications are the highest to be used with 88.9% using it. Entertainment apps comes next with 75.6% people using it. Education apps are used by 60% of people. The least used application is the utility apps (Fig 4). Whereas when it comes to websites or web apps; Educational websites are used by 77.8% of people. Search engines are used by 71.1% of people. E-commerce websites are used by 55.6% of people. The least used is social media websites or web apps (Fig 5). Another result was based on how many websites/webapps vs how many apps an individual open. 48.9% of people open 5-8 apps whereas 40% of people open 5-8 websites/webapps (Fig 6).

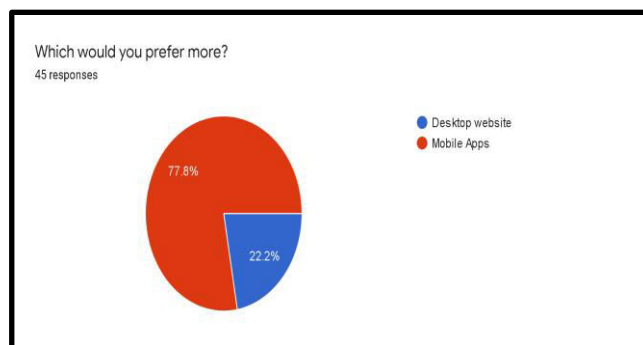


Fig -1: comparison between preference

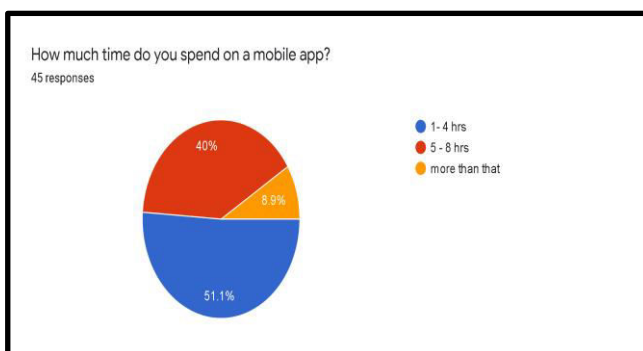


Fig-2: time spent on mobile applications

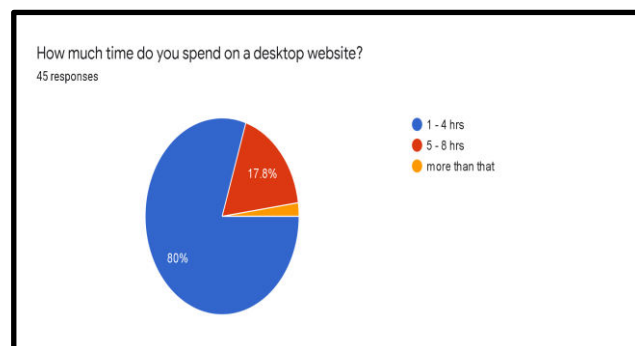


Fig-3: Time spent on desktop websites/ webapps

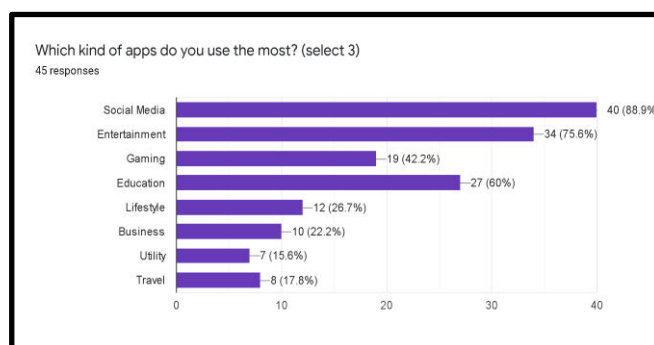


Fig-4: Which kind of apps are used the most

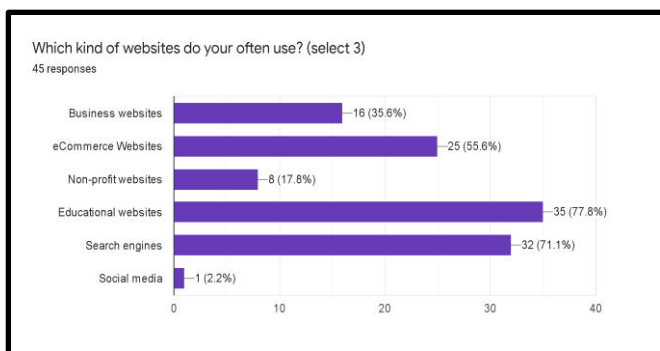


Fig-5: which kind of websites are used the most

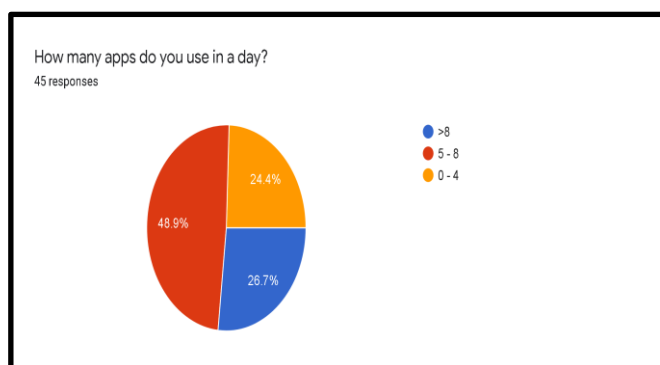


Fig-6: Apps used in a day

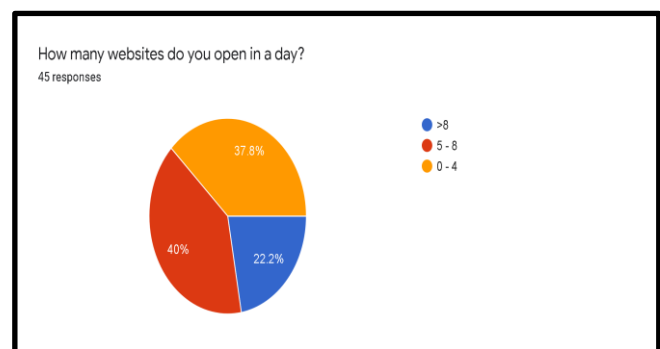


Fig-7: websites/webapps used in a day

4. DISCUSSION

The following results show that more people from the considered age group use mobile apps over websites or web apps. The next point to be considered is that social media in the form of apps are preferred more than in the form of websites/ webapps. Entertainment apps or website/webapps are used equally. E-commerce websites/webapps are considered over utility apps. More people open apps over websites/web apps. As a result, businesses have grasped the importance of attracting clients through mobile media. That is, however, insufficient. To make the most of this channel, they must also optimize their mobile apps and websites to increase user experience and conversion rates.

5. CONCLUSION

Is clearly observable that when it comes to usability and easiest to use mobile applications have been given preferences over web applications and are found more popular than web apps because of their advanced features and efficiency.

However, in some areas like education E-Commerce business and research people prefer to use websites instead of web applications as the sources are more trusted and easier to access and information available on this website are far more detailed and diverse than the web applications.

In conclusion there are certain parameters to differentiate web application and web application but with the advancement of technologies both web and mobile application can interchangeably do each other's work and with the development of these technologies these applications might be able to inherit each other's benefits.

As of now there is clear distinction between mobile and web application and both have their own purposes to be utilized for since there are instances where mobile application and web application cannot be used altogether there are certain businesses and forms that are using the app that are using both mobile and web application accordingly.

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