

ANALYSIS ON MOBILE SITE UTILIZATION: A CASE STUDY OF MOBILE SITE ADOPTION ON THE UNIVERSITY OF SURABAYA'S STUDENT REGISTRATION SITE

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Abstrak

Sebagai respon atas hasil pemetaan pengguna internet di Indonesia yang menunjukkan bahwa mayoritas pengguna internet di Indonesia menggunakan smartphone, pemilik situs web disarankan untuk menyediakan versi situs yang dapat diakses atau digunakan secara mudah dan nyaman melalui perangkat mobile dengan ukuran layar kecil seperti smartphone atau tablet. Studi kasus pada implementasi situs pendaftaran mahasiswa baru Universitas Surabaya menunjukkan bahwa mayoritas pengguna situs memilih untuk menggunakan perangkat mobile untuk melakukan aktifitas yang relatif sederhana seperti melihat status pendaftaran siswa. Namun, pentingnya keberadaan situs versi mobile tersebut tidak mengurangi pentingnya peran situs versi desktop karena tidak semua jenis aktifitas dianggap mudah untuk dilakukan dengan menggunakan perangkat mobile.

Keyword: mobile site, utilization

1. Introduction

Internet usage penetration in Indonesia is considered as remarkably fast, The Association of Indonesian Internet Providers (APJII) claim that by the end of 2013 the number of Indonesian Internet users is 71.19 million which is 13 percent higher from 63 million users in 2012 (Jakarta Post, 2014). Further, in 2012, a detailed profiling on Indonesia's internet users by APJII pointed out that 65% of all Indonesia's internet users are using smartphones to access the internet. Such facts suggest the importance of an internet site to be mobile friendly (APJII, 2013).

While the necessity to have a mobile version of a web site is real, implementing a mobile version site is challenging due to the various limitation of the mobile gadget which includes: smaller interface, lower resolution, and slower responses (Zhou, 2010). Such limitations has required a mobile site to have a relatively simple interface compared to the desktop version of the same site. Since the effort to provide dual interface is significant (i.e. for some it almost double the effort of implementing and maintaining the desktop or mobile version only), not all sites are prepared to be accessed conveniently from both desktop and mobile.

The purpose of this research is to analyze a mobile site utilization by comparing the mobile site utilization with the desktop site utilization. In this research, a mobile site is a site that is designed to be accessed using mobile gadget such as smartphones and tablets. On the other hand, a desktop is a site that is designed for access using desktop computers or notebooks/laptops.

To achieve the aim of this paper, a case study of mobile site adoption on the University of Surabaya's student registration site is used. Prior describing the case study, a review on technology acceptance model and a mobile site adoption will be discussed. The articles will then have a discussion on findings from the case and a summarized of all findings to conclude this paper.

2. Literature Review

As a foundation to understand users' acceptance towards the mobile site, literatures on technology acceptance model and mobile adoption success factor will be thoroughly discussed.

2.1 TAM (Technology Acceptance Model)

Originally proposed by Davis (1989), TAM (Technology Acceptance Model) has been widely adopted in attempt to comprehend technology usage and acceptance. In 1993, the author then published a graphical view of the model as shown in Figure 1. TAM argues that the acceptance of a technology is primarily due to both the user's perceived usefulness and user's perceived ease of use. Perceived usefulness define how much a person

believe that the technology will help him/her. Perceived ease of use measure user's perception about how easy to use the technology.

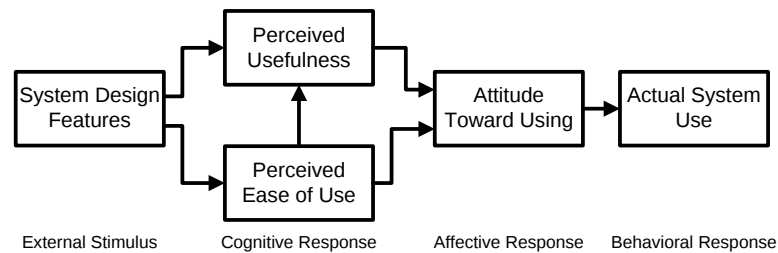


Figure 1. Technology Acceptance Model (Davis, 1993)

Currently, many researchers has further extended TAM to various directions including to the direction of measuring a mobile technology (including mobile site) acceptance. In 2007, Huang et al. proposed an extended version of TAM to better understand users' intention towards mobile technology by adding two variables: perceived mobility value and perceived enjoyment (see Figure 2). Definition of the two added variables can be considered as intersecting the original TAM's variables where the perceived mobility value intersects the perceived usefulness and the perceived enjoyment intersects the perceived ease of use.

In 2005, Wu & Wang proposed mobile commerce acceptance to predict user acceptance towards a mobile commerce technology which add three additional variables: perceived risk, cost, and compatibility (see Figure 3). This model, to some extent, can also be considered as intersecting the original variables where the cost variable intersects the perceived ease of use and the compatibility variable intersect the perceived usefulness. It is, however, also pointed out risk which can be considered as an important factor for mobile technology acceptance which did not have much attention on the original TAM.

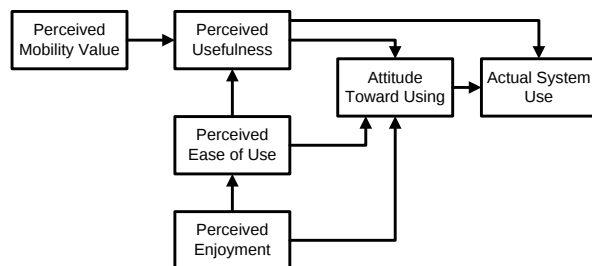


Figure 2. Extended TAM Model By Huang et al.(2007)

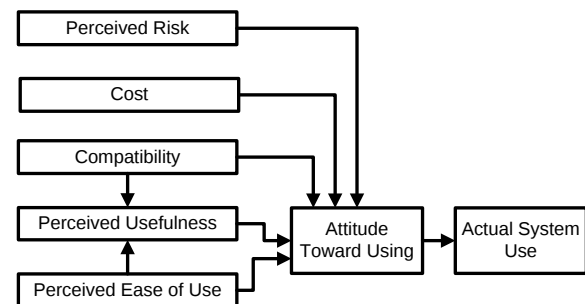


Figure 3. Mobile Commerce Acceptance Model Wu & Wang (2005)

2.2 Mobile Adoption Success Factor

Zhou (2010) argues that in order to succeed, mobile site provider should focus on delivering excellent user interface and high quality information and services to their users. The argument is positively support the TAM's model as excellent user interface is important for users to perceive a system as easy to use. Secondly, delivering high quality information and services are intended to elevate users' perception on the system's usefulness.

3. The Case Study

The University of Surabaya (Ubaya) started to use e-Commerce to reach their prospective students in 2011 by launching a new student registration site which can be accessed via <https://daftar.ubaya.ac.id>. The site was initially design only to be accessed using desktop computers with big screen. On the following year, 2012, the university decided to create the mobile version of the same site. The mobile version itself is designed to be conveniently accessed using tablets with medium screens and smartphones with small screens. Interface selection is done automatically based on the user's screen width. Figure 4 shows the site's registration page in all three media: desktop, tablets, and smartphones.

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Formulir Pendaftaran Online Universitas Surabaya Tahun Akademik 2015-2016

Terima kasih, Anda akan mendaftar sebagai calon mahasiswa Universitas Surabaya melalui Pendaftaran Online. Silahkan isi formulir pendaftaran online berikut ini. Semua isian wajib diisi dan setiap pendaftar **wajib memiliki email yang aktif**, karena seluruh informasi pendaftaran akan dikirimkan ke email Anda.

Data Korespondensi

Data korespondensi terdiri dari User ID, Password dan Email. Data User ID dan Password akan Anda gunakan untuk memeriksa status pendaftaran Anda secara online. Anda dapat memilih User ID dan Password yang ingin digunakan. Sedangkan data email Anda akan kami gunakan untuk mengirimkan seluruh informasi pendaftaran online.

Setiap pendaftar hanya memiliki 1 data korespondensi. Apabila Anda mendaftar pada beberapa Periode Pendaftaran, data korespondensi yang digunakan adalah data korespondensi yang pertama kali Anda daftarkan.

* User ID : (minimal 6 karakter)

* Password : (minimal 6 karakter)

* Konfirmasi Password :

* Alamat Email :

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Pastikan anda mendaftar dengan **email dan nomor handphone yang valid dan aktif**, karena seluruh informasi pendaftaran akan dikirim melalui email dan nomor handphone Anda.

Data Korespondensi

Data korespondensi terdiri dari User ID, Password dan Email. Data User ID dan Password akan Anda gunakan untuk memeriksa status pendaftaran Anda secara online. Anda dapat memilih User ID dan Password yang ingin digunakan. Sedangkan data email Anda akan kami gunakan untuk mengirimkan seluruh informasi pendaftaran online.

Setiap pendaftar hanya memiliki 1 data korespondensi. Apabila Anda mendaftar pada beberapa Periode Pendaftaran, data korespondensi yang digunakan adalah data korespondensi yang pertama kali Anda daftarkan.

* User ID :

* Password :

* Konfirmasi Password :

* Email :

Data Personal

Data personal berikut ini kami perlukan sebagai data pendaftaran Anda di Universitas Surabaya. Anda masih dapat mengubah biodata berikut ini pada saat Login pada Pendaftaran Online Universitas Surabaya.

* Propinsi - Kota Sekolah : Pilih Kota Sekolah...

* Nama Sekolah : Silahkan memilih Kota Sekolah lebih dahulu

* Nama Pendaftar :

* Alamat (Tanpa Kota):

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Data Korespondensi

* User ID :

* Password :

* Konfirmasi Password :

* Email :

Data Personal

* Propinsi - Kota Sekolah : Pilih Kota Sekolah...

* Nama Sekolah : Silahkan memilih Kota Sekolah lebih dahulu

* Nama Pendaftar :

* Alamat (Tanpa Kota):

Figure 4. Registration page. (Top) desktop version; (bottom left) tablet version; (bottom right) smartphone version

Prospective students as the main customer of this site are high school students from many cities in Indonesia who wants to pursue a bachelor or diploma degree in Ubaya. Mainly, prospective students are expected to do two kinds of primary activities on this site. First, prospective students is expected to create new registration by selecting the desired admission path (i.e. test or non-test admission path). Within this activity, the students were asked to fill in their profile and select study program of their interest. The system will then generate information regarding the sequencing steps to do by the student based on the selected admission path. The second kind of primary activities to do in this site is monitoring student's current admission status (see Figure 5). This activities is not only used by the prospective students but also by Ubaya's admission staffs.

In order to analyze users' preference in accessing the registration site, in 2014, the system started to log which site (i.e. mobile or desktop) is used by the prospective students when registering and monitoring their status. For analysis purpose, a snapshot of the log is made in 19 September 2014. The snapshot logged a total of 1,002 visits to the registration site made by 692 distinct users with mobile and desktop users distribution as shown in Figure 6. The distribution clearly shows how most users preferred to use desktop for registration purpose and on the contrary, most users preferred to use mobile devices to monitor their admission status.

No. Pendaftar : ██████████			
Nama : ██████████			
Periode Terima : JPMK BACTH 1			
Tahun Akademik : 2015			
Jalur : Tanpa Tes			
No	Alur Pendaftaran	Status	Keterangan
1	Mengisi Formulir Pendaftaran	✓	
2	Menentukan Ukuran Jas	✓	Anda telah memilih Jas dengan ukuran XL.
3	Melakukan Transfer Biaya Pendaftaran	✓	Pembayaran telah diterima. Tanggal terima 28-08-2014 sebesar Rp. 250.000
4	Menunggu Penetapan Kategori dan Nominal USP	✓	Jurusan Manajemen Jejaring Bisnis Diterima Kategori II Jurusan Bisnis Internasional Diterima Kategori II
5	Menentukan Jurusan	✓	Anda telah memilih Jurusan Manajemen Jejaring Bisnis
6	Melakukan Transfer Cicilan USP I	✓	Pembayaran Cicilan I diterima. Tanggal terima 05-09-2014

No. Pendaftar : ██████████		
Nama : ██████████		
Periode Terima : JPMK BACTH 1		
Tahun Akademik : 2015		
Jalur : Tanpa Tes		
No	Alur Pendaftaran	Status
1	Isi Formulir Pendaftaran	✓
2	Menentukan Ukuran Jas Anda telah memilih Jas dengan ukuran XL. Silahkan login untuk memilih ukuran jas.	✓
3	Transfer Biaya Pendaftaran Pembayaran telah diterima. Tanggal terima 28-08-2014 sebesar Rp. 250.000	✓
4	Tunggu Penetapan Kategori USP Jurusan Manajemen Jejaring Bisnis Diterima Kategori II Nominal USP IDR, 13.500.000 Jurusan Bisnis Internasional Diterima Kategori II Nominal USP IDR, 13.500.000	✓
5	Pilih Jurusan Anda telah memilih Jurusan Manajemen Jejaring Bisnis	✓
6	Melakukan Transfer Cicilan USP I Pembayaran Cicilan I sebesar 40% USP tidak dapat dikembalikan. Pembayaran Cicilan I diterima. Tanggal terima 05-09-2014	✓

Figure 5. Admission status monitoring page. (Left) desktop version; (Right) smartphone version

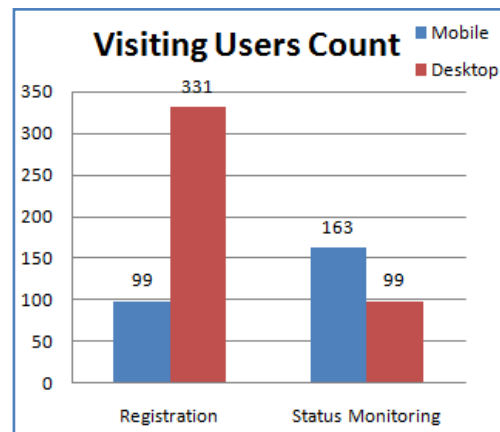
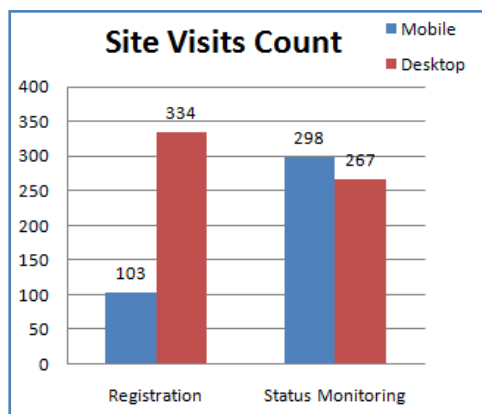


Figure 6. Site visit (left) and visiting users distribution (right)

Another point of interest that will be analyzed is the likelihood of users using only one kind of gadget (i.e. mobile only or desktop only) or using both mobile and desktop (see Figure 7). The data shows that most users (66%) preferred to use only desktop (personal computer/notebook) to access the Ubaya's registration site. The chart also point out that most mobile users also used computer to the registration site (i.e. 11% using only mobile VS 23% using both mobile and desktop).

The last attention to users' behavior is how frequent a user is visiting the registration site. Figure 8 shows on average, mobile users visit the site for 4 (four) times compared to 2.42 times by the desktop users. This suggest, that the average number of user visiting the registration site using mobile devices is significantly higher than using desktop or notebook computers.

4. Discussion

This section seeks to analyze findings as exposed on the previous section. First, regarding users' tendency to use desktop to do the registration process and their preference to use mobile to monitor their admission status. If we use the original TAM (Davis, 1993) to try understanding this fact, then there are two variables that could determine a system use: perceived usefulness and perceived ease of use. Since both the mobile and desktop site are having the same functionalities and objectives then users' perception on both sites' usefulness should be relatively similar. Hence, the only factor that could differentiate the users' preference is ease of use. It is likely that most users perceived that to fill the registration form is easier to be done using a computer with bigger screen than to use a mobile device which has smaller screen. Another possibility is that using a mobile device to

fill the registration is considered more prone for errors (e.g. typo) compared to using a desktop with big screen and a dedicated keyboard. Such possibility is aligned with Wu & Wang's (2005) Mobile Commerce Acceptance Model which considered risk an important factor that influence a system use.

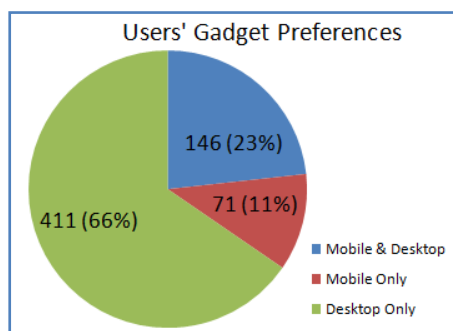


Figure 7. Distribution of users' gadget preference

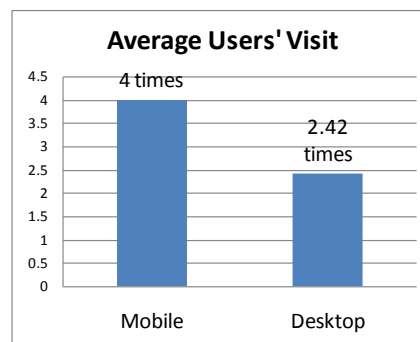


Figure 8. Average number of user visit

As for the monitoring admission status activity, it might be considered as easy to do using either desktop or mobile devices. On top of that, as pointed out in figure 8, the average number of users visiting the registration site using mobile devices is significantly higher than using desktop or notebook computers which could implicitly means that, high school students have a much easier access to a mobile device with internet access than to a desktop computer with the same internet access. Therefore, if the use of mobile site is considered easy, then they will prefer to use a mobile device than using a desktop device.

Finding regarding mobile users' tendency to also use desktop might also related to the risk factor as promoted in the Mobile Commerce Acceptance model (Wu & Wang, 2005). It is likely that most mobile users feel inconvenient to do the whole administration process only using mobile. Some users choose to do the registration process using a desktop computer and then use a mobile device monitor his/her admission progress. Some others are felling convenient enough to use a mobile device to complete the registration and to monitor the admission progress but still using a desktop just to be sure about the admission status.

5. Conclusion

Responding the fact that most internet users in Indonesia are using smartphones to surf the net, site owners are suggested to provide a mobile friendly version of the company's site for their clients. The case shows how most users preferred to use a mobile device compared to use desktop or notebook computer to do a relatively simple activities such as monitoring the student's admission status. However, regardless the abundant number of users who use smartphones for internet, the desktop version is still needed as not all kind activities are perceived to be easy to be done using a mobile device.

This study is currently limited on analyzing user preference to access a university's admission site where the site's primary clients are all high school students. Further study might be needed to further understand the user acceptance level towards a mobile site. It is likely that different clients' demography will produce different level of mobile site acceptance.

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