

Males and Females the Internet Access Usage Patterns at Public Access Venues In a Developing Country:

Lessons from Yogyakarta, Indonesia

ABSTRACT

This paper aims to present differences between males and females the Internet usage patterns in terms of their Internet access, including the information they seek, their ICT uses, its frequency and the obstacles they face. Data was collected from 400 Internet café users in urban and non-urban areas in Yogyakarta, Indonesia in 2009. The research results have reflected that there were obviously different patterns between the male and female users in urban and non-urban areas. The number of male users who visited the Internet cafés was slightly higher than female users. In regard to the type of information the users seek, the female users in urban areas were more interested in accessing education and health related contents than male users, whereas in non-urban areas female users were more interested in educational contents and agricultural contents. In terms of the ICT uses, male users in urban areas tended to have more interest in using ICT for e-commerce and business than female users. On the other hand, in non-urban areas, female users tended to have a higher interest in blogging / social networking than male users do. As far as the frequency of use, in both urban and non-urban areas male users visited the Internet cafés more often than female users. Futhermore, distance, cost, availability of needed content and services are found to be the most serious barriers both in urban and non-urban areas.

Keywords: male vs. female users, Internet access, Internet café, Mann-Whitney test, developing country.

1. INTRODUCTION

It is believed that providing access to information through the Internet will empower people particularly for the marginalized communities in developing countries (R. Gomez, 2012). People can access the Internet through various ways including their own gadget and public venues. Although gadget is affordable for many low income people in developing countries, but public access to information venues are still playing important roles, particularly internet cafes (Kristiansen, Furuholt, & Wahid, 2003). People can access the Internet through government-backed public venues, for example, public libraries, and privately owned public venues like Internet cafés (Gomez, 2013). The sharp increase in number and usage of these venues demonstrates that they play a important role for providing equal access to ICT and Internet in developing countries (Gomez, 2013).

Likewise in Indonesia, internet cafes serve as important public access to information venues as they are spread both in urban and rural areas. In addition, the number of internet cafes in Indonesia is so huge. Internet cafes in Indonesia are mostly located in urban areas in Java Island and other big cities, however as an impact of infrastructures enhancement across the country, internet cafes are found in many rural areas such as in many sub-districts within Gunung Kidul and Bantul. The widespread Internet cafes in both rural and urban areas in Indonesia make it convenient for many Indonesians to access information.

The important roles of Internet cafes in developing countries attracts many scholars to explore the pattern of use of these venues particularly related with gender issues. In terms of gender issues, males and females have different usage pattern including what information they seek and their frequency of use (Furuholt, Kristiansen, & Wahid, 2005; R. C. Gomez, Kemly, 2012; Heller & McKeeby, 1993; Hsu & Chuang, 2008; Kristiansen, et al., 2003). In addition, male and female also have different perceptions of ICT usefulness and easy of use (R. C. Gomez, Kemly, 2012; Wahid, 2007). It can be seen that male and female have different usage pattern in accessing information through Internet cafes.

This paper presents the differences between male and female Internet users' attitudes in accessing the ICT, the frequency of use, the type of information they seek, and the challenges they have. It also aims to discover empirical realities related to gender issues in ICT application from a developing country in order to provide a new insight for policy makers and professionals who work in this sector. This paper theoretically contribute to a better understanding about internet usage pattern amongst males and females through public access venues to information in developing countries.

This case study was conducted in Yogyakarta Special Province. Yogyakarta was selected as a study site because of its large number of Internet cafés and their diverse users (Furuholt et al., 2005). There were more than 400 Internet cafés spread in rural and urban areas throughout the province in 2009. We analyzed data obtained from a survey on the Internet access and ICT usage patterns in 20 Internet cafés in rural and urban areas in the Province. The data was analyzed using the Mann–Whitney test to check the significant differences between male and female users.

This paper is organized in the following order:

The first section is the introduction of the study. The second section presents the context of the study: the spread of Internet cafés and Internet access Indonesia and especially in Yogyakarta Special Province. The third section presents the relevant literature on the relationship between gender and ICT. The fourth section contains the outline of the research methodology and data collection techniques. Our empirical findings and discussion are presented in the fifth section, and the last section of this

article presents the conclusion, the limitations of the study, and the recommendations for further research.

2. BRIEF LITERATURE REVIEW

Public Access to Information Venues.

Public access computing refers to efforts to provide ICT and the Internet access in public spaces (Heller & McKeeby, 1993). The terms of public spaces can be described as libraries, hospital waiting rooms, malls, airport terminals and other spaces where people can meet and interact. Public spaces can be equipped with ICT and the Internet access. Mostly public spaces are run by government which provide free access to ICT and the Internet. Due to the increasing demands and some economic reasons, there are a increasing number of public spaces run by private organization which also provide free access to ICT and the Internet. Public access to information venues potentially help people access to information equally as anyone can afford to access the information through these venues.

In developing countries, public access to information venues plays important roles for providing access to information for underserved communities, as mostly their home are not equipped with ICT and access to the Internet (Gomez, 2013; Haseloff, 2005). Likewise in Indonesia, public access venues plays important roles as home internet are not spread evenly across the country. Mostly public access to information venues funded the Government provide free access or only charges membership fee at very low rates to the community (Kushchu, 2012). Public access to information venues are spread both in urban and rural areas in developing countries. Although the public access venues are owned by small private enterprises, these venues can provide affordable prices for the consumers (R. Gomez, 2012; Kushchu, 2012).

In general public access venues in developing countries can be grouped as government backed or non-government backed. Internet cafe is an example of successfully private owned public access to information venues. Internet cafes started in 1990 in the US, and internet cafe booms occurred in the late 1990s (Haseloff, 2005). In Indonesia, the first internet cafe started in the latter part of 1990 leading to the association of internet cafes in Indonesia being established in 2000. Although internet cafes are privately owned, they play significant roles in providing access to information due to the proliferation of these venues both in urban and rural areas (Gomez, 2013; Haseloff, 2005).

Public access to information venues have varied audiences, including the high skilled users and low skilled users, gender and educational background (Heller & McKeeby, 1993). In particular, males and females have different internet usage pattern when accessing the technologies through public access to information venues (Terry, 2012; Wahid, 2007). Although researches revealed that there are differences in the Internet

usages pattern between males and females users, we think that the differences are need to be further explored.

Gender and ICT.

In general, gender refers to socially constructed aspects which relate to behaviors, activities and attributes of males and females. Traditionally, there are several roles in which males are more dominant than females, for example, males decide how the family income is spent. Additionally, some of the governing bodies are also dominated by males (Thas, 2007). Males traditionally play bigger roles in the public and the community systems than females (Obayelu & Ogunlade, 2006).

There have been a considerable number of researches conducted to explain the relationship between gender and ICT. In this paper, we reviewed findings from several researches to show the underlying issues on gender and IT use in developing countries. According to Geldof (2011), males and females are differences in terms of access and use of ICT in developing countries. Geldof(2011) emphasizes that males access ICT more frequently than females as they have better ICT skills. In Indonesia, Wahid (2007) revealed that more males accessed the Internet than females. In addition, Furuholt et al. (2005) assume that gender serves as a moderator variable between independent variables (such as individual capability, occupation, financial capacity, media exposure) and its dependent variable (such as frequency of visits to Internet cafés).In general, there is a gender digital divide specifically that fewer females access ICT than males in developing countries (Green, 2003; Hilbert, 2011).

In the context of educational information access, disparities exist amongst males and females regarding ICT in the education sector including their behavior upon accessing information through the Internet. Females tend to be more serious than males in accessing educational materials (Green, 2003; Wahid, 2007). In addition, female students have a more highly positive attitude in using ICT than male students (Hou et al., 2006; Mahmood, 2009). Male teachers also have different behaviors when adopting ICT comparing with female teachers, for example, male teacher trainees spent more hours per week on the computer than female teacher trainees. Male teacher trainees also had more skills in using the computer than the female ones (Markauskaite & Markauskaite, 2005). It can be seen that in the education sector in which males and females get equal opportunity to enhance their IT skills, males and females still have different pattern of ICT usage.

There are also differences between males and females accessing public venues in developing countries(R. C. Gomez, Kemly, 2012; Terry, 2012). In terms of frequency of use, males and females do not participate equally in public venues, such as Internet cafes. Males visit internet cafes significantly more often than females (R. C. Gomez, Kemly, 2012). Additionally, in terms of the behavior upon accessing information through the Internet in Internet cafes, more males visited pornographic sites than women (Wahid, 2007). Accessing pornographic site in public venues make females feel uncomfortable to access the venues (Thas, 2007). Therefore, It can be seen that there

is a direct link between convenient use of public venues and gender(Hilbert, 2011; Hsu & Chuang, 2008).

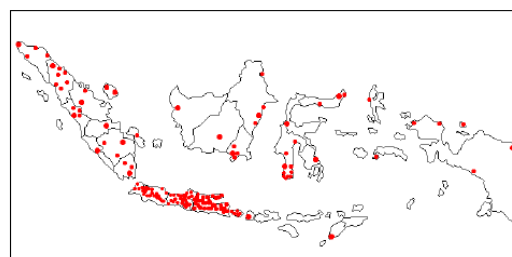
This paper has greatly been inspired by Hafkin & Huyer (2008) who state that there is a need to refine data on gender and ICT in developing countries. One's gender always comes into account where access, use, contents, and impact of ICT are concerned. Although there have been many research reports describing the issues, data from developing countries are very limited (Hafkin & Huyer, 2008)

3. THE CONTEXT OF STUDY

3.1. The Widely Spread Internet Cafés and Internet Access in Indonesia

Indonesia is located on the equator between two continents Asia and Australia, as well as two oceans, the Indian and the Pacific Oceans. It is the world's largest archipelago with approximately 17,508 islands covering an area of 5,193,250 square kilometers, of which 2,027,087 square kilometers are land and the remaining area consists of water. With an estimated population of 250 million, it is the fourth most populous country in the world. Indonesia gained its independence on 17 August 1945 after the Japanese occupation from 1942 to 1945, which was preceded by its being a Dutch colony for 350 years. This republic consists of 33 provinces, 445 regencies, and around 69.929 villages.

Computer education and use in Indonesia started in the early 1980s. The use of Internet first started around 1995. Following this, individuals used computers at Internet cafés and then some managed to buy their own computers. In 2008, the number of Internet cafés increased to more than 12,000, and they were widely spread throughout Indonesia. Internet use and Internet cafes are spread mainly in the large cities and mostly found in Java (see figure-1). The spread to smaller towns and villages has been slow, partly due to the lack of awareness and demand among rural people, and partly due to limited infrastructure.



Source: CastleAsia

**Figure-1. Internet access availability throughout Indonesia
(Adapted from Castle Asia, 2002)**

The government has prioritized using ICT for education purposes in all parts of the country since 2000. The government and businesses have started using ICT at their maximum capacities. As a result, there has been an increased number of government-backed public information access venues, such as *Warintek* (Information Technology Café) and *Warmasif* (Information Society Café, which began in 2005). Up to now, there have been 87 *Warintek* venues and 63 *Warmasif* venues established in Indonesia. However, the number of government-backed public access venues is quite low compared to the number of those belonging to commercial businesses or privately-owned Internet cafés (Kushchu, 2008)

During 1999 to 2007 the number of Internet users increased by 2,500%, from 1 million users to 25 million (APJII, 2007). Considering the country's population of 231 million, the density of Internet users is still low (only 25 million or around 10%) when compared with that of mobile phone users (146 million or 63%). Two thirds of Internet users in Indonesia today gain their Internet access through Internet cafés.

3.2. Internet Cafés in Yogyakarta

Yogyakarta is a province located in Java (one of the five big islands in Indonesia – see the map below.) This province consists of 4 regencies (Bantul, Sleman, Kulon Progo, and Gunung Kidul) and one municipality (Yogyakarta).

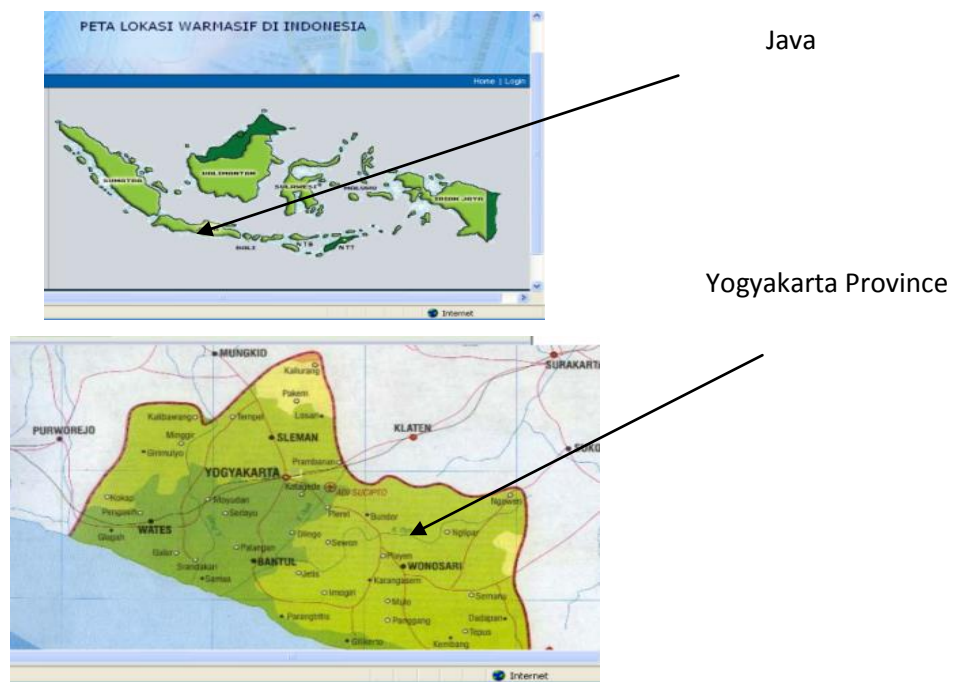


Figure 2. The maps of Indonesia and Yogyakarta

The province of Yogyakarta has been selected as our research region. Its population was 3,434,534 in 2007. The population density in the city of Yogyakarta is 13,881 persons per km² (*Yogyakarta dalam Angka*, 2008). Yogyakarta is known as a city of education and a cultural center in Indonesia. There are around 120 tertiary-education institutions and many arts and cultural centers. As a cultural center and a city of education, many artists, culture enthusiasts, and students from many parts of Indonesia with different cultural and religious backgrounds have come to live in this city. There are also many small and medium handcraft enterprises, which contribute to the economic growth of Yogyakarta. The economic growth of Yogyakarta has also been supported by its educational activities and tourism (*Yogyakarta Economics Report*, 2008).

In line with the increasing demand for Internet access in Indonesia, Internet cafés have been increasing in Yogyakarta, with the highest number of new players in this business in 2000. There were around 400 Internet cafés in Yogyakarta Special Province in 2009. At the time of this empirical study, September 2009, the number of Internet café users was quite high. Internet cafés in Yogyakarta are typically found in simple, relatively low cost premises, with service being limited to cyber activities. The number of computers operated by one Internet café in this city ranges from 1 to 20 computers. Typically, they have 6-9 staff divided into 3 work-shifts (08.00 a.m.-4.00 p.m.; 4.00 p.m. to 12 midnight; and 00.00 – 08.00 a.m.). Each shift has 2 or 3 staff serving the customers. They assign a computer per customer to use and collect the money after a customer ends their operation. Most Internet cafés in urban and non-urban areas open 24 hours a day. Some Internet cafés offer more facilities/services to make users more comfortable, such as air conditioning, separate non-smoking areas, soft drinks, and some snacks. The cost of the access is also reasonable, generally around 2,500 – 3,000 rupiahs (0.26 – 0.31 US\$) per hour from 08.00 a.m. to 8.00 p.m., and the rate is cheaper, at around 2,000-2,500 from 06.00 a.m. to 08.00 a.m., and is the cheapest, 1,500 – 2,000 rupiahs from 03.00 a.m. to 06.00 a.m.

4. DATA COLLECTION AND METHODOLOGY

This paper is based on a survey of users of Internet cafés in Yogyakarta Special Province, both in the urban and non-urban areas in 2009. The survey used a questionnaire developed as part of the project on public access to information and ICT venues, which was funded by the Mobile Government Consortium International and Centre for Information and Society, University of Washington. The questionnaire was the main research instrument for this study. However, we also conducted interviews with Internet café users to help interpret the findings. A statistical analysis has been conducted to check the Internet-access behavior differences between male and female users. We applied the Mann-Whitney Test to check the significances of the Internet access differences between male and female users, both in urban and non-urban areas of Yogyakarta.

The respondents of this survey were Internet café users in 20 Internet cafés in Yogyakarta Special Province. In this research, we define urban or non-urban areas based on the population density of the Internet café locations. Based on our simple city-

tour observation, we decided that the urban areas in Yogyakarta are the areas bound by the ring roads surrounding the City of Yogyakarta. We divided the City of Yogyakarta into 5 parts: north, east, south, west, and central. We chose 2 Internet cafes in each part, totaling 10. For the non-urban areas, we selected 4 Internet cafés in Bantul, 1 Internet café in Kulon Progo, 1 Internet café in Gunung Kidul, and 4 Internet cafés in Sleman. We selected more Internet cafés in Bantul and Sleman because the numbers of Internet cafés in both regencies are higher than in the other two regencies.

The population density in Bantul is 1,641 persons per km² (Bantul Statistical Bureau, 2008), for Sleman it is 1,813 persons per km² (Sleman Statistical Bureau, 2008), for Gunung Kidul it is 461 persons per km² (*Yogyakarta dalam Angka*, 2008) while for Kulon Progo it is 786 persons per km² (*Kulon progo dalam angka*, 2008).

The number of Internet cafés in non-urban areas is smaller than the numbers in urban areas, but Internet cafés can be found in each sub-district of the non-urban areas. The researchers visited each selected Internet café to conduct a short interview with the operator and several users. We also distributed 20 questionnaires in each Internet café. Finally, we obtained 200 respondents to the questionnaires.

The questionnaires were distributed August through October 2009. For analyzing the survey data, we applied the Mann-Whitney Test using the SPSS software program to check the significance of the difference between male and female users in their information-seeking behavior, purposes of their ICT uses, and frequency of their uses.

5. FINDINGS AND DISCUSSION

5.1. URBAN RESPONDENT PROFILE

The respondents' profiles in urban areas are described based on their gender, age, educational background, income bracket, and social status. In terms of gender, 53% of the respondents were male and 47% of them were female. The percentage of respondent indicates that more males used ICT than females in public venues. This finding is similar with the pattern of ICT usage in developing countries presented by several scholars (R. C. Gomez, Kemly, 2012; Terry, 2012; Wahid, 2007). In terms of age, most of the respondents' ages ranged from 15 to 35. In the other words, most of them were productive young people. We also found that most of the Internet cafes users were educated people because only few users (1%) did not have any formal education and around only 8% were with an elementary education background. In urban areas, most users (68%) had a college or university education background. Similar research conducted by Furuholt, et al., (2005) shows that most of Internet café users in Yogyakarta is youngsters and educated people. It indicates that there has been no change in terms of the users' background since 2004 to date.

We also found that 37% came from the low-income bracket because most of them were students with limited pocket money. In terms of their social status, 82 % of the users

had medium social status. In Yogyakarta, people who have the opportunity to pursue their education up to high school or university usually come from the medium social class. Table 1 below describes the urban-area respondents' profiles.

Table 1. Profiles of Respondents in Urban Areas

Number of respondents		URBAN
		200
		(%)
Gender	Male	53
	Female	47
Age	14 and under	7
	15-35	92
	36-60	1
	61 and over	0
Education level	No formal education	1
	Only elementary	8
	High school	23
	College or university	68
Income bracket	High	18
	Medium	44
	Low	37
Social status	High	6
	Medium	82
	Low	12
- Regular (about 2-3 times per month)		15
- Frequent (about once a week)		39
- Daily (almost every day)		28

5.2. INTERNET ACCESS FOR MALES AND FEMALES

In this paper, we discuss the the relation between gender and Internet use in public venues in terms of individual's information seeking behavior, purpose of the ICT use, frequency of use, and barriers in using ICT in Internet cafés.

- **Information-Seeking Behavior**

In this paper, the information-seeking behaviors were examined based on the types of content accessed by the ICT users. Respondents marked the option that best described their interests in accessing information through the Internet The content accessed by the users was categorized into the following eight categories: education, health,

agriculture, government services, entertainment, news, personal needs, and others. The users filled in a percentage value in the questionnaire related to the content that they accessed while visiting an Internet café.

Regarding educational content, our empirical data shows that there was a significant difference between male and female users in accessing educational content ($p < 0.05$). The number of male users accessing educational content was higher than that of female users (72 and 54), but the mean rank of female users was higher than that of male users (74.5 and 54.53). Female users' tendency to visit an Internet café for accessing educational contents related to their education, such as educational digital materials, was higher than male users'.

This finding is similar to what are revealed by Wahid (2007) and Green (2003), who find that female users in Indonesia and in the Asia Pacific tend to be more serious than male users in accessing educational contents and using ICT for education-related activities. This finding also indicates that most female users are educated people as revealed by Hou et al., (2006),

In accessing health information, female and male users also showed a significant difference ($p < 0.05$). The absolute numbers of male and female users accessing health information were equal, but the mean rank of female users was higher than male users (35.62 and 25.38). In particular, there were 6 female respondents which stated that mostly they were accessing health information through internet cafes. It can be seen that the Internet has a role as a health information source when users need information about health, diseases, and medicine.

This finding is align with Bakar & Alhadiri (2009) which present that female users are the primary seekers of information related to health for themselves and their families. Additionally, one reason is because females are dissatisfied by the health information already available to them or they want to explore more (Warner & Procaccino, 2004). In other words, women are more active in managing health care for themselves or their families by seeking health information via an accessible medium like the Internet (Wathen & Roma, 2005).

Our empirical data shows that there was no significant difference in interest between male and female users in accessing agricultural, government services, entertainment, news, personal needs and other information ($p > 0.05$). Only 18 respondents sought agricultural contents when accessing the Internet which comprised of 13 males and 5 females.

The mean rank of for male users was 10.64 and the mean rank for female users was 8.10 as for the government services, the analysis shows that the mean rank for the 24 male users was higher than that of the 12 female users, but the p value was higher than 0.05. That means that there was no significant difference between male and female users in accessing government service contents. The low number of respondents in

accessing government services is in accordance with the lack of governmental digital services in Yogyakarta.

For entertainment contents, the number of male users (92) accessing entertainment contents and their mean rank (82.18) were higher than the female users' absolute number (67) and their mean rank (77.67). However, the p value was still higher than 0.05, which indicates that there was no significant difference between male and female users in accessing entertainment contents on the Internet.

Male and females users did not show any significant difference either when accessing news contents. The total number of our respondents who accessed news contents was 132. 73 of them were males; the others (59) were females. The mean ranks were almost the same: 67 for male users and 65.88 for female users. The p value was higher than 0.05, which means that there was no significant difference between male and female users in accessing news contents through the Internet.

Male and female users did not show any significant difference in accessing contents related to their personal needs. The p value was higher than 0.05, but the absolute number of male users accessing the Internet for seeking information related to their personal needs was higher than that of female users, namely 64 for male users and 48 for female users. The male users' mean rank was higher too (60.04 for male users and 51.78 for female users).

When seeking other information through the Internet, male and female users did not show any significant difference ($p > 0.05$). The absolute number of male users accessing other contents was higher than that of female users, but the mean ranks were almost the same (23.25 for male users and 23.89 for female users).

Table 2 below summarizes the information-seeking behavior of male and female users in Yogyakarta.

Table 2. Information-Seeking Behavior of Male and Female Users in Urban Areas

	Gender	N	Mean Rank	Asym p. Sig. (2-tailed)	Significant Difference
Education	Male	72	54.53	.002	YES
	Female	53	74.50		
	Total	125			
Health	Male	30	25.38	.021	YES
	Female	30	35.62		
	Total	60			
Agriculture	Male	13	10.04	.460	NO
	Female	5	8.10		
	Total	18			

Government services	Male	24	20.38	.111	NO
	Female	12	14.75		
	Total	36			
Entertainment	Male	92	82.18	.479	NO
	Female	67	77.00		
	Total	159			
News	Male	73	67.00	.866	NO
	Female	59	65.88		
	Total	132			
Personal Needs	Male	64	60.04	.180	NO
	Female	48	51.78		
	Total	112			
Others	Male	28	23.25	.874	NO
	Female	18	23.89		
	Total	46			

- **ICT Services**

Our empirical data shows some difference between male and female users in terms of their purposes when using ICT. The results of our Mann-Whitney Test show that male and female users had a significant difference in terms of their use of ICT for e-commerce and business ($p < 0.05$). Only 37 of our respondents used ICT for commerce and business purposes. Most of them were males (27). The mean rank of male users was 21.94 whereas female users' mean rank was 11.05.

Using the Mann and Whitney Test to compare their use of ICT for emails, chatting, web-browsing, blogging and social networking, phone calls and webcam connections, games and others, we did not find any significant differences ($p > 0.05$). The p-values were 0.438 for emails, 0.379 for chats, 0.655 for web-browsing, 0.486 for blogging and social networking, 0.882 for phone calls and webcam connections, 0.272 for games, and 0.650 for others.

The number of the respondents who used ICT for accessing emails was 138. Of them, 73 were males and 65 were female. The males' mean rank was 67.05 and the females' was 72.25. The numbers of the respondents who used ICT for chatting was 61 for males and 45 for females. The males' mean rank was 51.28, whereas the females' mean rank was 56.51.

The number of the respondents who used ICT for web-browsing and blogging/social networking was 144: 85 males and 59 females. The males' mean rank was 73.78 and the females' was 70.65. The numbers of males and females who used ICT for blogging and social networking were 79 and 65 respectively, while their mean ranks were 74.68 for males and 69.85 for females. Only a few respondents (14) used phone-calls and webcam connections, most of whom (9) were men.. The number of the respondents

who used ICT for games while visiting an Internet café was 57, of whom 32 were male and 25 were female. For other purposes, the number of respondents was 19, of whom 10 were male, and 9 were female.

This survey also shows that the number of male users who visited Internet cafés was higher than that of female users. The details can be seen in Table 3, which summarizes the differences between male and female users' purposes in using ICT services.

Table 3. ICT Use Differences between male and Female Users in Urban Areas

	Gender	N	Mean Rank	Asymp. Sig. (2-tailed)	Significant Difference
Emails	Male	73	67.05	.438	NO
	Female	65	72.25		
	Total	138			
Chatting	Male	61	51.28	.379	NO
	Female	45	56.51		
	Total	106			
Web-browsing	Male	85	73.78	.655	NO
	Female	59	70.65		
	Total	144			
Blogging/ social networking	Male	79	74.68	.486	NO
	Female	65	69.85		
	Total	144			
Commerce and business	Male	27	21.94	.006	YES
	Female	10	11.05		
	Total	37			
Phone calls/ Webcam connections	Male	9	7.39	.882	NO
	Female	5	7.70		
	Total	14			
Games	Male	32	26.89	.272	NO
	Female	25	31.70		
	Total	57			
Others	Male	10	10.55	.650	NO
	Female	9	9.39		
	Total	19			

- **Frequency of use.**

The analysis results show that the number of male users who visited an Internet café was higher than that of female users. Of our respondents, 30 males visited an Internet café daily, while 38 did it weekly and 17 males visited an Internet café occasionally, approximately 2-3 times per month. As for females, 24 of them visited an Internet café daily, 35 did it weekly, 13 did it 2-3 times per month, and 7 did it once a month. The interesting point is that no respondent stated, “This is my first visit to an Internet café”. The details of visit frequencies can be seen in Figure 3 below.

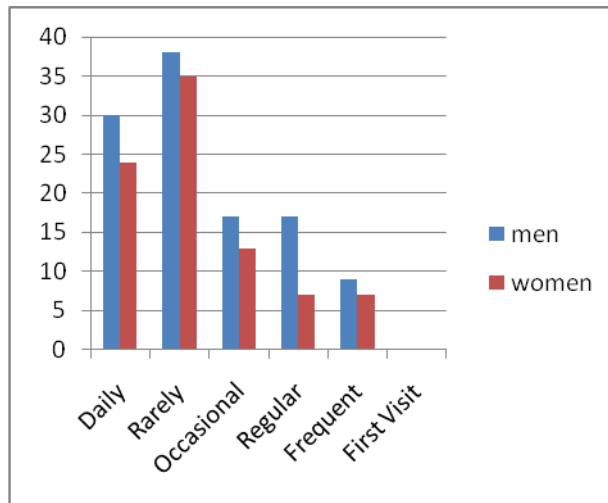


Figure 3. Frequency of visits to an Internet café by male and female users in urban areas

- **Barriers in using ICT in Internet cafes for male and female users in urban areas.**

This section describes the barriers to accessing the Internet by male and female users in urban areas. In this section, we compare the numbers of male and female users who indicated a barrier when accessing the Internet, such as distance, hours of operation, cost, lack of skills, inadequate services, language, insufficient contents and others.

The data shows that the number of males choosing location or distance as a barrier was higher than that of female users, which were respectively 35 and 20. We concluded that it was because most female users visited a nearby Internet café, whereas male users did not always do so. Most Internet café users were students who lived in a boarding house during their study. Most Internet cafés are located near their campuses. Female

users usually choose a boarding house near their respective campus but male users sometimes stay further from their campus.

Hours of operation were not a significant barrier for both male and female users. Only few males considered hours of operation as a barrier, and no female users did. The actual cause was that all of the Internet cafés were open 24 hours a day so they could visit an Internet café any time they wished to.

As for the lack of skills as a barrier, fewer male users than female users claimed the lack of skill as a barrier in accessing the Internet. According to Green (2003) in many developing countries, women are behind men in terms of mastery of technology. Wahid (2007) also describes that Internet adoption by female users is affected by the perceived ease of use. Women tend to use ICT when it is easy to use, but men tend to explore technology.

5.3. RESPONDENT PROFILES IN NON URBAN AREA

The respondent profiles in non-urban areas are described based on their gender, age, educational level, income bracket, and social status. In non-urban areas, more male users visited an Internet café than female users. 60% of Internet café visitors were males, while only 40% of them were females. In terms of their education and age, we found similar characteristics to those of users in urban areas. Most Internet café visitors were youngsters. Ninety percent of them were at the ages of 15 to 35, 49% of the users had a college or university education level, and 43% of users had a high-school education level. Of the users, 29% had a low social status and 43% were with low incomes. Table 4 below describes the profile of Internet café users in non-urban areas.

Table 4. Respondent profiles in non-urban areas

		NON URBAN
Number of respondents		200
		(%)
Gender	Male	60
	Female	40
Age	14 and under	5
	15-35	94
	36-60	1
	61 and over	0
Education level	No formal education	0

	Only elementary	9
	Up to high school	43
	College or university	49
Income bracket	High	6
	Medium	52
	Low	43
Social status	High	4
	Medium	67
	Low	29
Distance	Far	11
	Medium	27
	Near	63
Frequency of Use		
	- First visit	0
	- Rare (less than once a month)	3
	- Occasional (about once a month)	10
	- Regular (about 2-3 times per week)	16
	- Frequent (about once a week)	37
	- Daily (about every day)	34

5.4. INTERNET ACCESS DIFFERENCES BETWEEN MALE AND FEMALE USERS IN NON-URBAN AREAS

* Information Seeking Behavior

In this section, we compare the information-seeking behavior of male and female users when they accessed the Internet at an Internet café in non-urban areas. Each respondent filled a percentage related to the information they accessed when visiting an Internet cafe. Then, we analyzed the data using the Mann–Whitney Test to check the differences of ranks between male and female users. We found a significant difference between the two groups ($p < 0.05$) at least in one type of content. Similar to those in urban areas, the contents accessed by the users were grouped into 8 categories: education, health, agriculture, government services, entertainment, news, personal needs, and others.

The research results show that male and female users in non-urban area were significantly different when accessing educational content ($p < 0.05$). Female users showed a higher interest in accessing educational content than male users ($p = 0.000$).

64 female users accessed educational content with a mean rank of 89.76. For male users, the number was 84 with a mean rank of 62.88. This result is similar to that of the urban areas. Green (2003) and Wahid (2007) also found a similar result when they investigated the information-seeking pattern among men and women.

Additionally, there was a significant difference between male and female users in accessing agricultural contents. Table 5 shows that for agricultural contents, the number for males was 31, with a mean rank of 19.05, whereas the number for female users was 10, with a mean rank of 27.95. We can infer from this that female users were more interested in accessing agricultural content than male users.

Based on Mann-Whitney Test, we did not find a significant difference between male and female users in their interest in accessing information such as health, government services, entertainment, news, personal and others. Of the respondents, 46 male users accessed health information and their mean rank was 35.22, whereas only 27 female users did, with a mean rank of 40.44. The number of male users who accessed government information services was 35, with a mean rank of 22.36, while the number of female users was 13, with a mean rank of 30.27.

The number of respondents who used the Internet to access entertainment sites was very high. There were 171 respondents, of which 103 were male users with a mean rank of 85.49, and 68 were female users, with a mean rank of 85.49. Moreover, one of the respondents always accessed entertainment when visiting an Internet café. The data shows that the number of respondents who accessed entertainment was the highest amongst all the other contents provided.

The non-urban respondents also visited an Internet café for accessing news. In all, there were 123, which consisted of 84 male users and 39 female users. The mean ranks were respectively 64.33 for male users and 56.97 for female users.

The number of male and female users who accessed information related to their personal need was 110, of which 72 were male users, with a mean rank of 55.88, and 38 were female users, with a mean rank of 54.78.

For seeking other information, there were 32 male users, with a mean rank of 22.53, and 12 women, with a mean rank of 22.42. The details can be seen in table 5 below.

Table 5. Information Seeking Behavior of Male and Female Users in Non-Urban Areas

Gender	N	Mean Rank	Asymp. Sig. (2-	Differences
.				

				tailed)	
Education	Male	84	62.88	.000	YES
	Female	64	89.76		
	Total	148			
Health	Male	46	35.22	.335	NO
	Female	27	40.04		
	Total	73			
Agriculture	Male	31	19.05	.057	YES
	Female	10	27.05		
	Total	41			
Government Services	Male	35	22.36	.070	NO
	Female	13	30.27		
	Total	48			
Entertainment	Male	103	86.34	.911	NO
	Female	68	85.49		
	Total	171			
News	Male	84	64.33	.284	NO
	Female	39	56.97		
	Total	123			
Personal Information	Male	72	55.88	.860	NO
	Female	38	54.78		
	Total	110			
Other	Male	32	22.53	.979	NO
	Female	12	22.42		
	Total	44			

- **ICT services**

The result of the Mann-Whitney Test shows that male and female users had a significant difference in terms of the ICT adoption for blogging and social networking. The p value was lower than 0.05. The number of respondents who used ICT for blogging and social networking was 135, consisting of 79 males and 56 females. The mean rank for male users was 59.89; and for female users, it was 79.44. Female users had a higher tendency to use ICT for accessing their blog and conducted social networking more than male users. The empirical data shows that there were 3 female users who always used ICT for blogging and social networking when visiting an Internet café. They filled up 100 % of the questionnaire.

There was no significant difference between male and female users in terms of the adoption of ICT for purposes such as emails, chatting, web-browsing, commerce and business, phone calls and webcam connections, games and others. The p values for ICT use for the purposes above was higher than 0.05. The number of respondents

using ICT for accessing their email was 132, consisting of 83 male users, with a mean rank of 66.4, and 49 female users, with a mean rank of 66.66. The number of respondents who used ICT for chatting was 101, consisting of 63 male users, with a mean rank of 51.5, and 38 female users, with a mean rank of 50.17. The number of respondents who used ICT for web browsing was 155, consisting of 92 male users, with a mean rank of 74.8, and 63 female users, with a mean rank of 82.67. The number of respondents who used ICT for commerce and business was 35, with 31 male users having a mean rank of 17.23 and 4 female users having a mean rank of 24. In non-urban areas, we concluded that there were fewer female users and most users were male. However, the mean rank of female users was higher than that of male users.

Let us take a look at the number of respondents who made phone calls and webcam connections when visiting an Internet café. This study revealed that 14 of the respondents made phone calls and webcam connections and most of them were male users (12). The mean rank of male users was 7.67 and the mean rank of female users was 6.5. The number of respondents who used ICT for accessing games was 73, consisting of 51 male users and 22 female users. The mean rank of male users was 39.9 and the mean rank of female users was 30.27. The number of respondents who used ICT for other purposes was 34, consisting of 23 male users with a mean rank of 16.37 and 11 female users, with a mean rank of 19.86. The details can be seen in table 6 below.

Table 6 Differences in Information-Seeking Behavior between Male and Female Users in Non-Urban Areas.

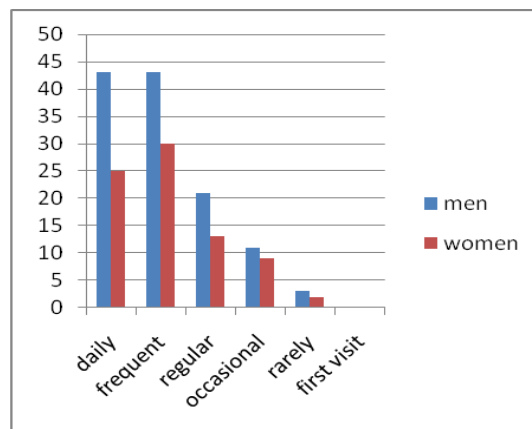
	Gender	N	Mean Rank	Asymp. Sig. (2-tailed)	Differences
Email	Male	83	66.40	.970	NO
	Female	49	66.66		
	Total	132			
Chatting	Male	63	51.50	.822	NO
	Female	38	50.17		
	Total	101			
Web-Browsing	Male	92	74.80	.281	NO
	Female	63	82.67		
	Total	155			
Blogging/ Social Networking	Male	79	59.89	.004	YES
	Female	56	79.44		
	Total	135			
Commerce and business	Male	31	17.23	.209	NO

Phone calls & Webcam connections	Female	4	24.00	.704	NO
	Total	35			
	Male	12	7.67		
Games	Female	2	6.50	.071	NO
	Total	14			
	Male	51	39.90		
Others	Female	22	30.27	.325	NO
	Total	73			
	Male	23	16.37		
	Female	11	19.86		
	Total	34			

- **Frequency of uses**

Our empirical data show that more male users visited an Internet café than female users. Daily male visitors reached 43, while only 25 females were daily visitors of an Internet café. Thirty female users visited an Internet café weekly, which was higher than the number of daily female visitors to an Internet café. There were 21 male users who visited an Internet café 2-3 times a month, for female users the number was only 13. Only 3 male users and 2 female users visited an Internet café about once in a month. Similar with users in urban areas, there were neither male nor female users who stated that it was their first visit to an Internet café. The details can be seen in Figure 4 below.

Figure 4. Frequency of use for male and female users in non-urban areas



- **Barriers in using ICT in Internet cafes for male and female users in non-urban areas**

This section describes the barriers for male and female users in accessing an Internet café in non-urban areas. Similar to users in urban areas, male and female users were compared in terms of their barriers, such as location, hours of operation, cost, lack of skills, inadequate services, language, inadequate contents and others.

As for location or the distance to an Internet café from the respondents' residence, 26 male users and 10 female users considered it a barrier. A similar proportion was observed for the second barrier: hours of operation, where 11 male users and 5 female users considered it as a barrier. In non-urban areas, some Internet cafés were not open 24 hours, so they could not access the Internet any time they wished.

More female users than male users chose lack of skills as a barrier which indicates that male users were more skilled than female users in using ICT. However, more male users than female users chose "inadequate services" as a barrier. We also found that more male users chose "not enough content" than female users. We, therefore, conclude that male users tended to need a higher variety of services and contents than female users did.

More male users than female users chose language as a barrier. We conclude that female users were more familiar with English than male users. Finally, more male users chose "others" as a barrier than female users.

The barrier most indicated by the respondents was the cost, which was marked by 34 males and 27 males. This must be related to their incomes because most users were youngsters and they were wage earners, so they relied on pocket money from their parents.

6. CONCLUSION

The article has raised a simple question: What are the differences between male and female users in accessing the Internet at an Internet café in a developing country?

First, based on the respondents' profiles, we conclude that the number of male users who visited Internet cafes was slightly higher than female users both in urban and non-urban areas. Most of them were youngsters, educated people, and had a middle class social status.

Second, in terms of information the users seek, there were some considerable differences between male and female users. Female users were more interested in accessing educational contents than male users both in urban and non-urban areas.

Additionally, female users in urban areas were more interested in accessing health contents than male users, whereas in non-urban areas female users were more interested in accessing agricultural contents. However, there was no significant difference between male and female users in accessing certain content, such as government services, entertainment, news, and personal needs.

Third, in terms of the use of ICT, there was a significant difference between males and females. In urban areas, male users tended to have more interest than female users in using ICT for e-commerce and business, as indicated by the male users' higher mean rank. On the other hand, in non-urban areas, female users tended to have a higher interest than male users in using ICT for blogging/social networking. However, there was no significant difference between male and female users in using ICT in such purposes as emails, chatting, web browsing, phone calls and webcam connections, games and others both in urban and non-urban areas.

Next, regarding the frequency of use, there was also a significant difference between male and female users. Male users visited an Internet café more often than female users both in urban and non-urban areas. Daily to weekly average, male users reached 70%, while among female users around 50% visited Internet café daily to weekly.

Finally, in terms of barriers in using ICT, we conclude that distance, cost, contents and services were considered as the most serious barriers both in urban and non-urban areas. Also, some female users in both urban and non-urban areas considered lack of skill as a barrier in accessing ICT.

In general, these findings emphasize that there are differences about the Internet usage patterns at public access venues amongst males and females in developing countries. In detail, some aspects look significantly different such as the frequency of uses, contents accessed, uses of ICT and the number of males and females who visited the venue. These findings confirm some existing studies by Gomez & Kemly(2012) ; Terry & Gomez (2012)and Wahid (2007) about gender and ICT. Specifically, these findings emphasize that gender still influences how males and females access ICT in developing countries. Additionally, we think that the social changes in a developing country, such as Indonesia, in which equality amongst males and females are more and more accepted in society will influence the way males and females access to the Internet in the future.

These results can be used for strengthening the development of ICT public access venues in developing countries, especially Indonesia. Most public access venues were not aware of the roles of gender in accessing ICT. The results can be used by the policy makers to develop public access venues that better address the gender issues. As an

example, in developing public access to health information, policy makers must be aware that women were more interested in health information than men. Policy makers need to develop “woman friendly” health information systems to increase the effectiveness of the program.

In order to confirm the findings, further research is needed to thoroughly explore the differences between male users and female users in accessing educational and health information and the use of Internet services for e-commerce and business purposes. Research to explore the impact of the Internet on women and men is also very much needed.

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