INTERNET ACCESSIBILITY AND WILLINGNESS TO WORK AMONG EDUCATED WOMEN IN MALAYSIA

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ABSTRACT

Female with tertiary education in Malaysia contributes only 32 percent to total women participated in the labor market. It is claimed that the main reason for educated women dropping out from labor force is the difficulty to balance between career and family lives. The emergence of the internet is deemed as a partial solution to this problem. High internet accessibility would be able to help women to manage and balance between family and work. Based on information collected from 943 women with tertiary education, this paper aims at exploring how educated women could benefit from internet access at their homes. We examine how access to the internet could help to balance responsibilities of career and family life among working women. For those who are not working, the research explores the extent to which they are confident that access to the internet can help them return to work without leaving the care of the household. The findings from this study help us to understand how internet accessibility might affect the willingness to work among women with higher educational attainment.

Keywords: accessibility, internet, educated women, Malaysia, labor force.

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1.0 Introduction

Low rate of labor force participation among women has always been a focus issue in the development agenda of many countries. This is due to the "absent women" phenomenon that represents a loss of skills and *brain drain* from the workforce that affects the macro returns on education. This is especially important given the fact that there are a greater number of women enrolled in tertiary education. Low participation rate among educated women thus will affect the return on education especially among developing countries.

In Malaysia, female participation rate in the labor force remained around 44 to 48 percent within 30 years (DOSM, 2012b). Employed women are dominated by those with secondary educational attainment while those with tertiary education contributes only 32 percent to total women participated in the labor market (DOSM, 2012a). The main reason for educated women dropping out from labor force is the difficulty to balance between career and family lives and often priority is given to the family that entails loss in the number of participation of highly educated women from the labor market. Many of researches done to look at willingness of women to participate in the labor market suggest that monetary compensation alone is not an adequate incentive (Hotchkiss, Pitts, & Walker, 2010; Faridi, Chaudry, & Anwar, 2009; Widarti, 1998; Becker, 1994; Mincer, 1962; Mahoney, 1961).

The emergence of the internet is deemed as a partial solution to this problem. This study focuses on how the accessibility of the internet would be beneficial to educated women in terms of managing and balancing between family and work. With high accessibility to ICT, women would be able to manage their time better according to their time preferences without jeopardizing the quality of their work. We argue that women with higher education would benefit more from internet accessibility and flexibility of work time because they often engage with jobs that do not require physical attendance. The existence of internet is certainly beneficial to 3.2 percent of women are a manager and 14.8 percent are professionals in Malaysia (DOSM, 2012a).

2.0 Background of accessibility to the internet in Malaysia

International Telecommunication Union reported that, on average, internet usage has reached 38.8 percent of the world's population in the year 2013. Developing countries are still lagging

behind with 30.7 percent connection as compared to 76.8 percent recorded for developed countries. Europe is the regions with the highest levels of individual's internet penetration (74.7 percent) while Africa is the lowest (16.3 percent). Nonetheless, in terms of growth of penetration rate, each continent has shown a rapid increase (ITU, 2013b). In the case of Malaysia, the penetration rate for the year 2012 is 65.8 percent. Comparing to neighboring countries, Malaysia is not far behind the leading ASEAN namely Singapore that have the highest access to the internet at 74.8 percent. Malaysia and Brunei being the second and third highest, respectively 65.8 and 60.3 percent. Individual's access to ICT in Vietnam 39.5 percent, Philippines 36.2 percent, Thailand 26.5 percent while Indonesia 15.4 percent. Cambodia being the lowest with only 4.9 percent of individuals is connected to the internet (World Bank, 2012).

Since the development of ICT is preferred, Malaysians have realized the importance of information technology. In 1994, MIMOS proposed the establishment of the National IT Council. Today, the National Information Technology Council of Malaysia (NITC Malaysia) is the country's premier organization that strategically manages ICT in the interest of the nation. The Council functions as the primary advisor and consultant to the government on matters pertaining to ICT in Malaysia's national development. The National IT Agenda (NITA), launched in December 1996 by NITC provides the foundation and framework for the utilization of ICT to transform Malaysia into a developed nation in their own version consistent with Vision 2020 (Shariffadeen, 2011). One of measures to assess progress in ICT is the accessibility of households and individuals to the internet. Figure 1 shows internet user (per 100 peoples) for the last twenty years.

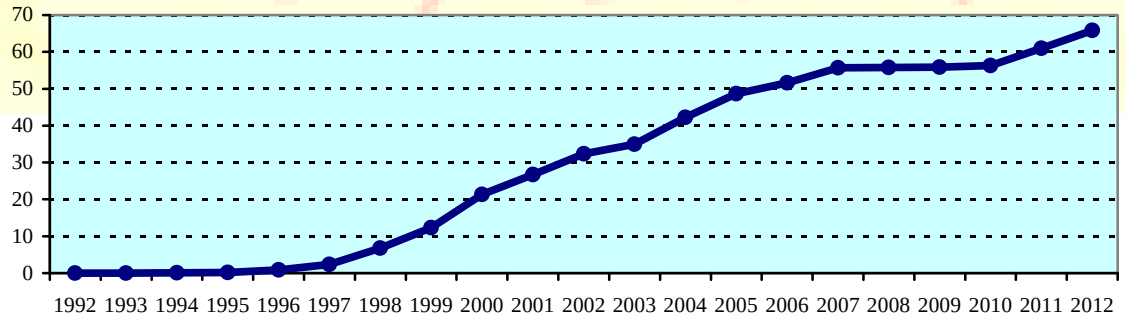

Figure 1 : Internet user (per 100 peoples) in Malaysia

Sources : World Development Indicators, World Bank

From Figure 1, it shows that almost no internet users in Malaysia in 1992. This figure begins to move in 1993, with the 0.03 of internet users per 100 peoples, or 3 percent of internet users in Malaysia. The percentage of internet users in Malaysia keeps increasing in the next 20 years, 32.3 percent in 2002 and 65.8 percent in 2012. This increase is pretty drastic for a developing country like Malaysia, and this percentage is among the best in Southeast Asia (MCMC, 2012). Among internet users in Malaysia, male accounted for 56.4 percent of all user while females 43.6 percent. Based on a percentage of the internet user compared with their percentage of the population, those with tertiary education is the highest ratio (6.3) while those from secondary education are the second highest (4.3). Among internet user with recurrent monthly incomes, the biggest group of internet users (51.6 percent) fell in the RM1,000 to RM3,000 income range with a median monthly income is RM2,229.60. However, 18.4 percent of all users were still in school and essentially had no recurrent income. Included this people who did not have income, the biggest income group is still RM1,000 to RM3,000 income ranges per month but account for only 36.6 of all user. Based on age group, internet users are highest among those aged 20-24 years, followed closely by the user who is 25 to 29 years, respectively 21.4 percent and 20.3 percent. 82.7 percent of user was from households that have an internet subscription at home. 24.2 percent of peoples have access with internet in a rural area compare with 75.8 percent in an urban area (MCMC, 2013).

At home, the highest internet usage is for social networks (84.4 percent) followed by 88.3 percent use the internet for information (but no specific information about the type of information sought). Communication using text, education, download the files record the percentage of 63 to 67 percent and to read or download newspapers, magazines and books involved 57.2 percent of the priority use of the internet at home (MCMC, 2012).

3.0 Literature review

There are many previous studies associated a reason for women choose not to work because they are unable to balance the needs a career with family life. Among the variables that often discussed as the reason why women leave labor market are *marital status* (Narayana & Shongwe, 2010; Ejaz, 2007; Mumford & Parera-Nicolau, 2003; Goldin, 1989; Ribound, 1985),

birth of children (Hotchkiss, Pitts, & Walker, 2008; Hotchkiss et al., 2010; Mahoney, 1961) and *age of children* (Yamamura & Mano, 2010; Abu Bakar & Abdullah, 2007; Ejaz, 2007; Ntuli, 2007; Sasaki, 2002; Widarti, 1998; Grossbard-Shechtman & Neuman, 1988; Tienda & Glass, 1985). According to them, marital status was significantly related to women's participation in the labor market. Not less important to relates why women opted out from labor force is *the size of the family* (Ackah, Ahiadeke, & Fenny, 2009; Ali Khan & Khan, 2009; Faridi et al., 2009; Spierings & Smits, 2007; Smith, 1981; Spencer, 1973; Mahoney, 1961) and *cost of child care* (Abdullah, Ismail, Mohd Noor, & Ahmad, 2012; Connelly, 1992; Hashim, 1979). Large family and child-care costs are relatively expensive, many women choose not to work or quit. Therefore, researchers suggested that high accessibility of the internet allowed women work from home and by that they still can generate income to the household (Suhaida, Nurulhuda, & Yap, 2013).

To date, the advancement of ICT has brought new opportunities for both knowledge sharing and information gathering for all people (Melhem & Tandon, 2009). With the availability of the internet, social networking becomes extensive. Consequently, many are convinced that the existence of ICTs has a tremendous impact on the life today. Internet as one of the main branches of ICT have played an important role in the development and provided opportunities for women's empowerment (Joseph, 2013).

Why should women be the focus? Statistic shows that more men than women use the Internet. Globally, 37.0 percent of all women are online compared with 41.0 percent of all men (ITU, 2013a). Similarly in Malaysia, male users account for 56.4 percent of all users while females account for the remaining 43.6 percent (MCMC, 2013). To bridge this gap, increasing the education and access to the ICTs may increase gender equality in employment and labor market (Chen, 2004).

High-speed internet access could increases the participation of women in the labor market (Dettling, 2012). Besides being a more productive worker at the workplace, high accessibility to ICT allows women also to work from home or any other locations. Therefore, time can be saved, costs and hassle of commuting for employees while helping employers control and often reduce

the cost of fixed office space (Talent Corp., 2013). ICT can enhance poor people's opportunities by improving their access to markets and creating new employment opportunities. They also will be able to get access to education, healthcare, government and financial services (Mehta & Kalra, 2006). In fact, internet accessibility helps enhance the job search process. Using the internet for job search raises the job finding rate and recruitment process become more efficient. Without high accessibility to the internet, the recruitment process becomes inefficient for individuals and organizations because they are forced to use traditional methods (Choi, 2011).

Sometimes, some women refused to make themselves equipped with ICT-related skills. They do not take advantage of ICT-based services that can promote economic opportunities (World Bank, 2006). Besides, poor internet infrastructure, shortage of power supply, and high cost of computer equipment and telecommunication connections, increasing difficulty in improving the accessibility of the internet (Sylla, 2002). Therefore, based on today's circumstances, researchers believe that a sufficient level of ICT infrastructure and high access to the internet expected will be a crucial factor that influencing the women participation in labor force market.

Conversely, their ability to take advantage of these opportunities is dependent on a conducive government policies and environment that allows an increase in the level of education, access to financial assistance and the availability of infrastructure support (P.N. Prasad & V. Sreedevi, 2007). The low accessibility of ICT in rural areas makes it difficult to search for information using the internet, the use of CCTVs as monitoring tools of the organization and exercising all online transactions (Melhem & Tandon, 2009). Accordingly, apart from seeing the value of accessibility of the internet to educated women in Malaysia, this study will try to find out how ICT can help them to be a part of the labor force in Malaysia.

4.0 The survey

This study focuses on educated women in Malaysia. An educated person is one who has undergone a process of learning that results in enhanced mental capability to function effectively (Mohanan, 2013). For that reason, usually people who have completed their tertiary education

are considered as educated. Tertiary education broadly refers to all post-secondary education, including but not limited to universities (World Bank, 2013).

In Malaysia, educational attainment is classified into four categories namely no formal education, primary, secondary and tertiary education level. Tertiary level covers all academic education after the national examination taken by all fifth-year secondary school students, the Malaysian Certificate of Education. Thus, tertiary education describes those who have their Certificate, Diploma, Degree, Master, Ph.D. (DOSM, 2012a). In this research, emphasis is given to those women who have completed any academic education at higher institution after Malaysian Certificate of Education.

Based on data from Labor Force Survey Report, Malaysia (DOSM, 2012a), there were 9.65 million women in the working age group in 2012. Statistics shows that 4.63 million (48.0 percent) were employed, 151 thousand (1.6 percent) were unemployed and 4.88 million (50.5 percent) are outside labor force (DOSM, 2012a). Specific to women with tertiary education, a total of 1.46 million (31.6 percent) are in the category of employed, 6.76 thousand (40.9 percent) are unemployed and 1.04 million (21.3 percent) are outside the labor force.

We gather the information on the accessibility and the use of internet among women with higher educational attainment through an online survey. The questionnaire was made through two pilot studies before it is finalized. Six experts in the field have also reviewed it. Questionnaire in English and Malay language was used to provide a choice which language they like and understand. Within three months, researcher has administered the process of data collection using an internet survey. Email sent to obtain respondent's cooperation to answer the questionnaire, also provide information about the background of the researcher and the purpose of the study. Through email, respondents were given a link to the web used to prepare a questionnaire. 1,083 women have answered the questionnaire nevertheless only 943 women has answered completely and valid to analyze. To acquire information on how the accessibility of the internet is beneficial to this educated women, the questionnaire system is set to allow respondents answered more than one answer choice. Accordingly, respondent answers were analyzed using multiple responses.

5.0 Findings

Overall, respondents in this study consisted of 848 educated women who are employed and 95 educated women who are not employed. After ignoring the number of women who have been classified as outside the labor force, the findings of the study are consistent with the Malaysian data. The data show that the labor force in Malaysia is dominated by those who are employed, aged 25-34 years, have a degree and a few are located in rural areas (DOSM, 2011).

5.1 Demographic profile

To simplify the discussion in line with the purpose of the study, to ascertain how far accessibility of the internet could benefit educated women, Table 1 divides the respondents into those who have and do not have internet access. What can we suggest is, educated women with internet access and no internet access show a comparable trend (in percentage) in employment status, age group, highest academic qualification and residential location.

Table 1 : Respondent background (total respondent = 943 educated women)

	Items	With internet access		With no internet access	
		Frequency	%	Frequency	%
1	Employment status				
	• Working	805	90.0	43	87.8
	• Not working	89	10.0	6	12.2
2	Age group				
	• 15 – 24 years	4	0.4	0	0.0
	• 25 – 34 years	790	88.4	45	91.8
	• 35 – 44 years	88	9.8	4	8.2
	• 45 – 54 years	11	1.2	0	0.0
	• 55 – 64 years	1	0.1	0	0.0
3	Highest academic qualification				
	• Certificate	9	1.0	1	2.0
	• Diploma	121	13.5	7	14.3
	• Bachelor Degree	539	60.3	33	67.3
	• Master	209	23.4	7	14.3
	• PhD	16	1.8	1	2.0
4	Residential location				
	• Urban	276	30.9	15	30.6
	• Sub-urban	454	50.8	22	44.9
	• Rural	164	18.3	12	24.5

5	Competence as an internet user				
	• Very competent	287	32.1	7	14.3
	• More competent than most	341	38.1	18	36.7
	• Satisfactory	263	29.4	24	49.0
	• Incompetent	3	0.3	0	0.0

70.2 percent of women who have internet access are competence as an internet user. However, only 51.0 percent women with no internet access at home able to use the internet efficiently. This situation most likely caused by those who have access to the internet more often surf the internet and become more competent as the norm. Efficiency of using the internet helps speed up process of finding the required information.

5.2 Benefit of internet access at home to educated women

Of all the respondents, 894 (94.8 percent) have access to the internet while the rest of 49 respondents (5.2 percent) has no internet access at home. Table 2 shows the use of the internet for women who have access to the internet at home. Besides, this data gives us information on how the internet can be used if there is an access to the internet at their homes. Table 2 show both information about purpose of the internet usage based on percent of responses (indicates the percentage of the total responses were in each category) and percent of cases (indicates the percentage of cases mentioned in each category). To analyze these findings, the value of percent of cases is more appropriate to be used.

Table 2 : Uses of the internet

	Uses of internet	Have internet: What you did when using the internet at home?			No internet: If have internet at home, what you can do?		
		N	% of the response	% of cases	N	% of the response	% of cases
1	Getting information	854	14.8	95.5	46	15.8	93.9
2	Communication by text	612	10.6	68.5	22	7.6	44.9
3	Education	450	7.8	50.3	29	10.0	59.2
4	Internet banking	699	12.1	78.2	38	13.1	77.6
5	Social networking	775	13.5	86.7	35	12.0	71.4
6	Online shopping	549	9.5	61.4	22	7.6	44.9
7	Updating homepages	122	2.1	13.6	7	2.4	14.3
8	Government services	409	7.1	45.7	29	10.0	59.2
9	Selling goods	125	2.2	14.0	9	3.1	18.4

10	File download	553	9.6	61.9	28	9.6	57.1
11	Internet telephony	150	2.6	16.8	8	2.7	16.3
12	Navigation system	206	3.6	23.0	7	2.4	14.3
13	Online game	233	4.0	26.1	9	3.1	18.4
14	Others	21	0.4	2.3	2	0.7	4.1
	Total	5,758	100.0	644.1	291	100.0	593.9

For those with internet access at home, three priorities for the use of the internet is to get information (95.5 percent), social networking (86.7 percent) and internet banking (78.2 percent) while for those with no internet access, three possibilities for the use of the internet is to getting information (93.9 percent), internet banking (77.6 percent) and social networking (71.4 percent). What can we suggest here is, the use of the internet is wide and benefit of internet usage is not much different between those who have access with those who do not have access to the internet at home. It is showed a high awareness of what educated women can do if there is access to the internet at their home.

5.3 Benefit of internet access at home to working women

In addition to questions about what is usually done by working women while using the internet at home, this study also describes what kind of information they are looking for, as detailed in Table 3. Despite having spent many hours at the office, 66.7 percent of educated women will use the internet *to complete their office work at home*. Although it appears that women cannot finish their work during office hours, but with the internet at home, they may return home earlier and continue their office work at home, and in the same time can still observe the needs of the household. Furthermore, using the internet to *get information on household needs* and *to increase their motivation* recorded the value of 60.4 and 60.0 percent. This value indicates that the use of the internet is also vital to the lives of women beyond her office duties.

Table 3 : Information often working women seek when using the internet at home

Items	N	%	% of cases
• Getting information to complete office work	596	23.7	66.7
• Getting information for household needs	540	21.5	60.4
• Getting information about jobs	434	17.3	48.5
• Getting information for doing business	277	11.0	31.0
• Getting information to boost motivation	536	21.3	60.0
	131	5.2	14.7

• Others			
Total	2,514	100.0	281.2

Table 4 : Confidence level of educated working women to balance career and family life

Scale	Able to work from home		Able to balance work and family life if the ICT accessibility is high		Current occupation allows work from home if the ICT accessibility is high	
	N	%	N	%	N	%
Strongly agree	246	29.0	290	34.2	145	17.1
Agree	382	45.0	406	47.9	252	29.7
Not sure	144	17.0	107	12.6	195	23.0
Disagree	55	6.5	32	3.8	169	19.9
Strongly disagree	21	2.5	13	1.5	87	10.3
Total	849	100.0	849	100.0	849	100.0

As a result, this study looking at to what extent of the internet could help women continue working while not neglecting their families. From Table 4, 74 percent of respondents strongly agreed and agreed that they can work from home and 82.1 percent were confident of balancing career and family life with the high accessibility of ICT. However, only 46.8 percent of respondents indicated that their current occupations are suitable for them to working from home.

5.4 Benefit of internet access at home to not working women

For women who do not work, they can use the internet for various purposes and is not bound by time. Therefore, this study tries to find out the extent of their confidence in the term of how high access to the internet can help them if they work without leaving the care of the household.

From all respondent who do not work, Table 5 showed that 24.2 percent strongly agree and 50.5 percent agree if they work, high accessibility to the ICT could help them to balance their work and family life as shown in Table 5. However, 7.0 percent of those who agree do not have access to the internet at home. If the lack of access to the Internet can be overcome, the researcher

believes that more educated women will be able to work in the labor market, either working with more flexible hours at the office or at home entirely.

Table 5 : Confidence level of educated not working women to balance career and family life

Q : If work, high accessibility to ICT help to balance work and family life	Not working women					
	Have access to the internet		No access to the internet		Total	
	N	%	N	%	N	%
Strongly agree	22	24.7	1	16.7	23	24.2
Agree	44	49.4	4	66.7	48	50.5
Not sure	18	20.2	0	0.0	18	18.9
Disagree	5	5.6	1	16.7	6	6.3
Total	89	100.0	6	100.0	95	100.0

But, how access to the internet could balance their work and family life? Answer from open-ended question highlight a role of ICT to them such as assistance to get a lot of info about family need, motivation and finding a job. With internet access at home, they also can work from home such as doing online business, meeting or conference via online.

Table 6 : If accessibility to ICT is high, interested working at home?

Q : If accessibility to ICT is high, are you interested in working from home?	Frequency	%
• Yes, I'm interested	65	68.4
• Yes, I can try	17	17.9
• I'm not sure	7	7.4
• No, I am not interested	6	6.3
Total	95	100

Table 6 highlighted that 68.4 percent of educated women interested working from home and 17.9 percent willing to try if there is a potential for them to working from home. But, what can they do? Their response through open-ended question expressed their willingness to make an online business, translating job, editing educational articles, giving lessons and tutorial through internet. However, 6.3 percent among those who are not working are certainly not interested in working from home even if they have high access to ICT as shown in Table 6. However, when examined respondent's background, they are among the respondents who did not work for continuing studies and were waiting for work calls.

6.0 Conclusion

This study found that educated women either working or not working, who have access to the internet or not, have almost the same usage patterns when using the internet. With the advent of high accessibility to the internet at home, the study found that women could balance career and family. For working women, the time in the office can be reduced as much work arrangements can be made at home. For those who do not work, the availability of access to the internet allows them also to generate income. In addition, the sophistication of ICT means that women are not bound by the need to attend at the office in a certain time.

Therefore, the researchers believe that the high accessibility to ICTs, especially to the internet, can increase women's participation in the labor force (Suhaida et al., 2013). With the addition of women who can generate income, it is believed that shortage problem of skilled workers will be reduced (Suhaida, 2013; Yussof, 2008), national income will increase (Bryant, J., Jacobsen, V., Bell, M., & Garrett, 2004) and the rate of unemployment among graduates is significantly reduced (DOSM, 2011).

However, for the internet useful to everyone especially for educated people, high accessibility is required. But, internet penetration rate in Malaysia is undoubtedly still inadequate especially in rural areas (MCMC, 2013). This is because 30.5 percent of the respondents had access to the internet in this study indicated that they have a problem of unstable network to access the internet. In addition, another 27.3 percent said the internet speed is slow in their residential area, while 14.3 percent said that having to pay the high cost of using the internet. Consistent with this high cost, to use a mobile broadband, it is still much more expensive than fixed-broadband services in developing countries (ITU, 2013a). Therefore, the researchers believe that it would be more educated women working in the labor market if they have a strong support system. The authorities should continue to give attention so that all people in Malaysia access to the internet. If it involves a cost, it is appropriate at a minimum rate.

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