

## THE RELATIONSHIP BETWEEN INTERNET USAGE AND DIGITAL INCLUSION OF WOMEN ENTREPRENEURS IN MALAYSIA

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### ABSTRACT

*The information and communication technology (ICT) revolution has had tremendous effects on various aspects of life and the communication system. The ICT revolution has affected Internet usage not only in terms of opening up channels of communication and sources of information but also in making it a business strategy tool. The purpose of this study was to determine to the extent to which Internet usage affects the digital inclusion of women entrepreneurs in Malaysia. Further, the objective of the study was to identify the relationship between the factors of Internet usage and the digital inclusion of women entrepreneurs. The study participants included 402 women entrepreneurs between the ages of 18 and 50 years, who were conducting an online business. There were two data collection methods—namely, face-to-face interviews and an online survey. Using the Statistical Package for Social Sciences (SPSS) to analyze the data, the results revealed that 46% of the study participants had used the Internet for more than 10 years and 32% spent more than 29 hours per week on the Internet. Furthermore, the multiple regression analysis uncovered that Internet usage skills were the number one contributor to the digital inclusion of women entrepreneurs. However, the results also revealed that the motivation for using the Internet and the frequency of accessing Internet applications were significant contributors to digital inclusion. The results of this study show that women entrepreneurs' Internet skills certainly spur their digital inclusion and enable them to retrieve information and communicate online and conduct e-transactions.*

Keywords: Internet usage, digital inclusion, Internet skill, motivation, access.

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### Introduction

The introduction of the Internet in Malaysia happened over 20 years ago, around 1992. Initially, its use was limited due to the lack of access both to the Internet itself and to computers, low incomes, and the lack of computer and Internet usage skills, thus causing a gap in the use of Internet technology (Van Dijk, 2005; Hazura et al., 2012). After a few years, the pace of Internet usage began accelerating. As the public's awareness of the Internet increased, so did the number of courses aimed at equipping individuals with the knowledge and skills to use it. According to the Internet World Stats Report (2014), as of June 2014, there were more than 20 million Internet users in Malaysia, making its penetration rate 70% of the population.

The Internet is an information and communication technology (ICT) product with a diversity of functions that have attracted three billion Internet users worldwide as of 2015 (Global Internet Report, 2014). The increased access to the Internet creates opportunities for entrepreneurs to start an online business as part of their marketing strategy. Online businesses that use various Internet applications or new social media are becoming increasingly popular among women entrepreneurs. Thus, Internet use has become a basic necessity for women entrepreneurs who wish to start and pursue their entrepreneurial activities.

Undeniably, entrepreneurs are catalysts in the process of a country's economic development. They have the image of being willing to take risks and always seeking to innovate (Nor Aini, 2003). In this article, the term entrepreneurs refer to women entrepreneurs who are likely to be competitive in line with the developments in ICT. Further, women have the task of balancing their profession and their role as homemaker. Therefore, women must also deal with the advent of new technology, and it provides them with opportunities to develop in various fields, especially in entrepreneurship. In general, studies are beginning to examine the purpose of individual participation on the Internet and the benefits thereof (Hazura et al., 2012). Therefore, in relation to Internet usage in this study, the focus was on accessibility, the users' skills, and the motivation to use the Internet. Meanwhile, the concept of digital inclusion involved regarding the Internet as a source of information and a medium for communication and e-transaction activities.

This article will discuss Internet usage among women entrepreneurs in Malaysia and to what extent their skill in using information technology applications is affecting their digital inclusion. In particular, the article will discuss the influence of

Internet usage on the entrepreneurs' digital inclusion, as measured by their use of the Internet as a source of information, means of communication, and means of conducting e-transaction activities. This will culminate in a discussion of the factors of Internet use that contribute to the digital inclusion of women entrepreneurs in Malaysia.

### Internet Usage and Digital Inclusion

Internet usage has affected people's lives dramatically. The rapid development of Internet applications on smartphones and new social media have shaped today's communication systems. The aim of this technology is to accelerate and facilitate communication in the social, economic, and political domains. In fact, the use of the Internet depends on several factors, as Van Dijk (2005) described, which depend on access. Indeed, access has been the cause of the digital divide. Moreover, while the rapid development of the Internet has allowed users to access the Internet easily, this also depends on their motivation and skills for using it. In discussing the use of the Internet in an information society, Warschauer (2003) introduced digital resources as among the necessary resources for creating such an information society. These digital resources are important for determining the extent of people's digital inclusion and understanding the content of the Internet itself and the benefits thereof.

The increasing number of Internet users is also affecting the diversity of the content on the Internet, as the users themselves choose what kinds of content and information they need. Besides the topics of science, health, education, and politics, the content on the Internet contains a wealth of information about entrepreneurship (Tan et al., 2008; Wanyoike et al., 2012; Rodnik, 2014). Women are active agents of change in a society, and the increasingly sophisticated online world should be the best platform for women to seize the opportunities that the government, private businesses, and non-governmental organizations (NGOs) provide. According to Choudhury (2009), previous researchers have suggested that online communities and networking will deliver a better quality of life. Further, the opportunities that these communities and networks tend to provide to women are often highly advanced, since women are now the driving force for national development in the technology-based economy (Mazmalek, 2010).

The results of Ismail's (2006) study revealed three significant factors that determined women entrepreneurs' computer usage—namely, their level of education, firm size, and the time since the firm's establishment. Moreover, the study found that the use of ICT had a positive relationship with firm performance. Thus, the study showed that ICT usage including the Internet has a huge impact on the rest of the entrepreneurial operation. However, the study also indicated that some of the respondents had purchased computers, but did not use them, perhaps because they lacked the skills to operate them. According to van Deursan and van Dijk (2010), Internet skills are a vital resource due to the growing amount of information on the Internet as well as the fact that people are becoming increasingly dependent on the variety of information they obtain from the Internet.

The discussion about the issue of inclusion includes the digital inclusion that affects the involvement of the individual and community in ICT. It is evident that the potential of ICT has brought societies a step forward in terms of communication, increasing productivity, generating economic wealth, conducting searches with minimal corresponding information, developing skills, empowering women and youth, and encouraging participation at various levels (Seo et al., 2009). According to the United Kingdom's Minister of Digital Inclusion, the Rt Hon Paul Murphy (HM Government, 2008), digital inclusion is twofold; first, it means ensuring that all communities have the opportunity to enjoy the direct benefits (of who was absent) that the digital technology offers through access and technological skills, motivation, and the confidence to enhance one's quality of life; and second, ensuring that the indirect benefits (of opportunity) that the technology offers improve all aspects of the planning and deployment of services that the society will be able to fully utilize.

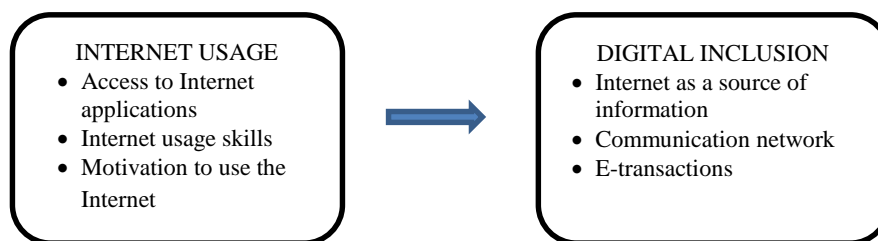
Furthermore, Faradillah Iqmar and Samsudin (2015) identified a relationship between digital inclusion and women entrepreneurship. In its entirety, the Internet as a communication network was the main contributor in terms of empowering the women entrepreneurs. Thus, more interaction and communication relating to business, such as advertising, updating the company profile, updating products and services, and launching new products via the Internet are very important for empowering women entrepreneurs. Today, computer technology, multimedia, and the Internet are the main support tools that contribute to the success of businesses within the digital economy. Internet usage, for example, provides a large amount of useful information regarding products, the market, and technology itself that might contribute to the digital inclusion of women entrepreneurs.

Malek et al. (2012) studied the creation of a digital inclusion society in Malaysia's Felda Agricultural area. They stated the following:

From information society, digital inclusion society is committed to building a people-centered, inclusive and development-oriented information society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and people to achieve their full potential. However there are several issues such as access, skills and confidence that act as drawback. (Malek et al., 2012, p. 115)

The above statement clearly shows that digital inclusion requires the aspect of access, and one develops the skills as a consequence of the motivation to use the Internet. Figure 1 presents the factors that contribute to the digital inclusion of women entrepreneurs in Malaysia.

Figure 1. Relationship between Internet usage and the digital inclusion of women entrepreneurs



## Methodology

This study employed a quantitative method approach for collecting the data, in the forms of face-to-face interviews and an online survey, respectively. According to Babbie (2013), the survey method is the best method for collecting data in social science research because this method can yield a proper representation of a large population. The study population consisted of 402 women entrepreneurs who run an online business in Malaysia. The researchers identified several entrepreneur carnivals in Malaysia that brought together various online entrepreneurs, and conducted face-to-face interviews with the women entrepreneurs at these carnivals in Kuala Lumpur, Putrajaya, Bangi, and Shah Alam. Due to the clearly defined study site and sample, the data collection did not take a long period of time to complete, as these various carnivals occur in December.

The researchers distributed the online survey using Google Drive, providing specific terms automatically and ensuring that each respondent could only answer once, to avoid repeated data. This data collection method required more time; since the sample was online, the data collection depended on the participants' willingness to answer the survey questions. The researchers identified the sample by referring to the list of entrepreneurs who were members of a group on Facebook. To analyze the data, the researchers used descriptive statistics, percentage, frequency, and multiple regression tests. Further, they used several constructs, measured as follows.

### Internet Usage

In this study, the researchers measured Internet usage according to three dimensions: (a) access, measuring the frequency of Internet access for social applications; (b) Internet skills, measuring the study participants' skill level in using the Internet; and (c) motivation, measuring the extent of the study participants' motivation to use the Internet. The researchers measured the social dimension according to the frequency of application usage via a closed question using a Likert scale ranging from (1) "very infrequently" to (5) "very often." To measure the Internet skills dimension, the researchers used a Likert scale ranging from (1) "very unskilled" to (5) "highly skilled." Finally, to measure the motivation to use the Internet dimension, the researchers used a Likert scale ranging from (1) "strongly disagree" to (5) "strongly agree." The reliability test results for all 3 of these dimensions with 17 items yielded a Cronbach's alpha value for the variable of digital inclusion of .73.

### Digital Inclusion

In this study, the researchers measured digital inclusion using three dimensions: (a) the Internet as a source of information, referring to the type of information that the participant sought via the Internet; (b) the Internet as a medium of communication, referring to the frequency of responding to customer feedback and advertising products on the firm's website; and (c) the Internet as a medium for conducting e-transaction activities, referring to the frequency of financial transactions either in the form of receiving payments or making payments via Internet banking. All 3 of these dimensions comprised 15 items that the researchers measured using a Likert scale ranging from (1) "very infrequently" to (5) "very often." The reliability test yielded a Cronbach's alpha for the variable digital inclusion of .90.

## Results

This section presents the results of the study in two parts: descriptive and inferential data. The descriptive data comprise the study participants' demographic information and the percentage of their Internet use, whereas the inferential data consist of the reliability test and multiple regression analysis results. The multiple regression analysis was the main test of this study for determining the relationships between the variables.

### I. Descriptive Statistic

#### Demographic Background

Table 1 show that the majority of the study participants were women entrepreneurs between the ages of 27 and 33 years (46%), while the smallest group was between the ages of 18 and 21 years (5%). In terms of marital status, the majority of the participants were married women entrepreneurs (63%). The study also revealed that 62% of the participants were doing business individually, and 24% shared the business with a friend or were running a family business with a small number of partners. Furthermore, 11% of the participants were operating a private limited company, and only a small minority of 2% ran other types of businesses, such as being dropship agents.

Table 1: Demographic Profile of the Study Participants (N = 402)

Demographic Information	Frequency	Percentage
<b>Age</b>		
18 - 21	20	5
22 - 26	119	30
27 - 33	185	46
34 - 39	52	13
40 and above	26	7
<b>Marital Status</b>		
Single	142	35
Married	254	63
Single mother	6	2
<b>Status of Organization</b>		
Individual	250	62
Enterprise	98	24
Company	45	11
Others	9	2
<b>Types of Business</b>		
Apparel and accessories	223	56
Headscarf and hijab	32	8
Children's items	19	5
Cosmetics	17	4
Health and beauty products	38	10
Gadget	4	1
Services	8	2
Food and drinks	41	10
Others	20	5
<b>Trading Period</b>		
Less than 1 year	108	27
1 – 3 years	228	57
4 – 6 years	49	12
7 – 9 years	10	3
More than 9 years	7	2

In terms the type of business, apparel and accessories (shoes, perfume, and pins) constituted the largest share at 52%. This shows a high interest in the apparel and accessories business. Accordingly, it seems reasonable to assume that the demand for clothing and accessories is also high in the market. Health and beauty products and food and beverages each represented 10 percent of the business types. Furthermore, 8% of the study participants had a headscarf and hijab business, and 5% had a business selling items for babies and children, including clothes, shoes, toys, books, daily baby necessities, and the like. Four percent of the participants were in the cosmetics business. Two percent were involved in services, such as driver's licensing agent and wedding planner. In addition, a small number of participants—1%—sold gadgets. The remaining 5% ran businesses as diverse as decorations and crafts. Therefore, the findings show that the participants engage in a variety of business categories on the basis of their interests and abilities.

Regarding the period of doing business, the results indicate that the majority of the study participants (57%) had been involved in the business for one to three years. Twenty-seven percent had just become familiar with the business world, with less than one year of experience running their business. Additionally, 12% of the participants had been in business for about 4 to 6 years, and 3% had been in business for between 7 and 9 years. Only two percent of the participants had been in business for over nine years.

### Internet Usage

In terms of Internet usage, the study found that 46% of the participants had been using the Internet for more than 10 years. This finding is in contrast to that of Hamisah (2007), whose study results showed that only about 15% had used the Internet for more than 10 years. This evinces the growth of the Internet revolution and how this has attracted more Internet users. Within a week, 32% of the participants in the present study spent more than 29 hours on the Internet, indicating that they had a high frequency of Internet use. Further, 29% spent 8 to 14 hours per week on the Internet; 14% spent 15 to 21 hours per week; and 8%, 22 to 28 hours per week. However, 17% of the participants spent less than 7 hours per week on the Internet, with an average of 1 hour per day. Moreover, the study investigated how the participants accessed the Internet. Fifty-two percent used a pay-line (post-paid),

such as Maxis, Celcom, Digi, and TM Streamyx. Thirty-one percent accessed the Internet through Wi-Fi, and 17% via a pre-paid connection. Table 2 provides the details regarding Internet access.

Table 2: Internet Usage (N=402)

Internet Usage	Frequency	Percentage
<b>Period</b>		
Less than 3 years	42	10
4 - 5 years	67	17
6 - 7 years	61	15
8 - 9 years	48	12
More than 10 years	184	46
<b>Usage per Week</b>		
Less than 7 hours	70	17
8 - 14 hours	117	29
15 - 21 hours	57	14
22 - 28 hours	30	8
More than 29 hours	128	32
<b>Internet Access</b>		
Wifi	124	31
Post-paid	210	52
Pre-paid	67	17
Other	1	1

## II. Inferential Statistic

### Reliability

Table 3 presents the reliability index of the variables for the 402 participants. The reliability index—that is, Cronbach's alpha—is satisfactory for all Internet usage variables except access to Internet applications and motivation to use the Internet; these are quite low at .50 and .57, respectively. The highest Cronbach's alpha is .91 for Internet usage skills. For the digital inclusion variables, Cronbach's alpha is also satisfactory, with a .90 overall index.

Table 3: Reliability Index of Variables

Variables	Cronbach Alpha (n=402)	No. of Items
<b>Internet Usage (All)</b>	0.73	17
Access to Internet applications	0.50	7
Internet usage skills	0.91	5
Motivation to use the Internet	0.57	5
<b>Digital Inclusion (All)</b>	0.90	15
Internet as a source of information	0.81	6
Communication network	0.81	5
E-transactions	0.79	4

### Relationship between Internet usage and digital inclusion

The multiple regression test results using the step-wise method show a significant relationship between the Internet usage variables and digital inclusion ( $F = 59.5$ ,  $p < 0.05$ ). The dimensions of Internet usage including access to Internet applications, Internet usage skills, and motivation to use the Internet represent 30% of the variance of digital inclusion ( $R^2$  adjusted = .30). Table 4 shows that of the three dimensions, Internet skills is the largest contributor (22%) to the variance of digital inclusion ( $R^2$  adjusted = .22). Meanwhile, the inclusion of the motivation to use the Internet in the model only accounts for 5% of the variance of digital inclusion ( $R^2$  change = .05), while access to Internet applications accounts for about 3% of the variance of digital inclusion ( $R^2$  change = .03). The results indicate that Internet skills represent the major contributor to digital inclusion as compared to the motivation to use the Internet and access to Internet applications.

Table 4: Relationship between the Dimensions of Internet Usage (Access to Internet Applications, Internet Usage Skills, and Motivation to Use the Internet) and Digital Inclusion (N = 402)

Variable (Dimension)	R <sup>2</sup> Adjusted	R <sup>2</sup> Change	Beta	t	Sig.
Internet usage skill	.22		.34	7.371	.000*
Motivation to use the Internet	.27	.05	.21	4.715	.000*
Access to Internet applications	.30	.03	.20	4.527	.000*

\* At the significance level 0.05 ( $F = 59.5$ ,  $p < 0.05$ ;  $R^2$  adjusted = .30)

In addition, the results clarify that each unit increase in skills results in a .34 unit increase in digital inclusion ( $\beta = .34$ ,  $p < 0.05$ ). Each unit increase in the motivation to use the Internet ( $\beta = .21$ ,  $p < 0.05$ ) leads to a .21 increase in digital inclusion. Meanwhile, access to Internet applications ( $\beta = .20$ ,  $p < 0.05$ ) results in a .20 increase in digital inclusion. Therefore, the regression coefficient of the three dimensions of Internet usage skills ( $\beta = .34$ ), motivation to use the Internet ( $\beta = .21$ ), and access to Internet applications ( $\beta = .20$ ) contribute significantly to digital inclusion. These results explain that the participants who have the skills and motivation to use the Internet as well as frequent access to Internet applications have high levels of digital inclusion.

Furthermore, the results show that Internet usage skills play an important role in influencing the participants' digital inclusion. It is essential to make efforts to strengthen women entrepreneurs' Internet usage skills to open up opportunities for digital inclusion. They can strengthen these skills by attending various courses aimed at increasing their use of technology. The results of this study also indicate that the frequency of accessing Internet applications alone is insufficient for enhancing the digital inclusion of women entrepreneurs; they must also have the necessary skills to use the Internet itself. Obviously, such skills will enable women entrepreneurs to learn how to use the Internet as a source of information, communication, and carrying out e-financial transactions. Nevertheless, the aforementioned variables of Internet use are significantly related to digital inclusion.

## Conclusion

In conclusion, the digital divide is becoming increasingly narrow, thus allowing for greater digital inclusion. This means that the existing Internet facilities enable individuals and communities to get involved in its use and derive the benefits thereof. Digital inclusion not only demands physical access to a computer and Internet connection but also the skills and motivation to use the Internet to make the experience meaningful. To encourage women entrepreneurs to benefit from their digital inclusion, they need to enhance their Internet usage skills, followed by the motivation to use the Internet and frequent access to Internet applications. However, the frequency of access is the sole criterion for influencing digital inclusion. Women entrepreneurs must have the skills to retrieve information relevant to their business, communicate with customers and suppliers, and conduct e-business transactions. Therefore, high skills are crucial skills for ensuring a high level of digital inclusion of women entrepreneurs.

Researchers should conduct detailed studies to understand the factors of Internet use that influence the digital inclusion of women entrepreneurs. Such research can expand the Internet usage patterns and digital inclusion by investigating the types of Internet applications, types of business information, and the networking among entrepreneurs. Furthermore, future studies can compare men and woman who operate an online business. In addition, further studies can expand the scope of this research to the entrepreneurial factors that impact an online business.

## References

- Choudhury, N. (2009). The question of empowerment: women's perspective on their Internet use. *Gender, Technology and Development*, 13 (3), 341-363.
- Faradillah Iqmar Omar & Samsudin A.Rahim. (2015). Penyertaan digital dan ciri keusahawanan dalam pemeraksanaan usahawan wanita di Malaysia. *Jurnal Komunikasi*, 31 (1), 241-256.
- Global Internet Report. (2014). <http://www.Internetsociety.org/doc/global-Internet-report>. [20 Mac 2015].
- Hazura Mohamed, Hairulliza Mohamad Judi, Siti Fadzilah M. Noor dan Zawiyah M. Yusof. (2012). Jurang digital dan pendidikan di luar bandar: tahap literasi teknologi maklumat dan komunikasi pelajar. *Jurnal Teknologi Maklumat dan Multimedia Asia-Pasifik*, 1 (2).
- HM Government. (2008). *Delivering Digital Inclusion: An Action Plan for Consultation*.

- Internet World Stats. (2014). [http://www.Internetsociety.org/doc/global-Internet-report?gclid=CK2h\\_OvS8MUCFVcUjgoddDcA9w](http://www.Internetsociety.org/doc/global-Internet-report?gclid=CK2h_OvS8MUCFVcUjgoddDcA9w) [20 Mac 2014].
- Jalaluddin Abdul Malek, Norizan Abdul Razak, Ali Salman, Fariza Mohd Nor & Mohd Yusoff Abdullah. (2012). Digital inclusion society in Malaysia Felda Agricultural area. *Wseas Transactions on Information Science and Applications*, 9 (4), 115 – 124.
- Mazmalek Mohamad. (2009). Web 2.0 Mudahkan Komunikasi Manusia. Aspirasi Digital.
- Nor Aini Idris. (2003). Daya saing usahawan wanita Melayu menghadapi cabaran globalisasi. *Prosiding Persidangan Kebangsaan Pusat Pembangunan Sosial dan Persekitaran*, hlm. 7 – 16.
- Prodnik, J.A. (2014). Digital inclusion and user (dis)empowerment: a critical perspective. *Info*, 16 (6).
- Van Dijk, Jan A.G.M. (2005). *The Deepening Divide Inequality in the Information Society*. London: Sage Publication, Inc.
- Rahmah Ismail & Nor Aini Idris. 2006. The impact of information and communication technology utilization on firm performance: a case study of women entrepreneurs. *Malaysian Management Journal*, 10 (1&2), 19-32.
- Seo, H.-J., Lee, Y. S., Hur, J.-J., & Kim, J. K. (2010). The impact of information and communication technology on skilled labor and organization types. *Information Systems Frontiers*, (Oecd 2004). doi:10.1007/s10796-010-9276-7
- Tan, K.S. & Eze, U.C. (2008). An empirical study of Internet-sased ICT adoption among MalaysianSMEs. *Communication of the IBIMA*, 1: 1-12.
- Tan, K.S., Chong, S.C., Lin, B. & Eze, U.C. (2010). Internet-based ICT adoption among SMEs demographic versus benefits, barriers, and adoption intention. *Journal of Enterprise Information Management*, 23 (1), 27-55.
- Wanyoike, D.M., Mukulu, E. & Waititu, A.G. (2012). ICT attributes as determinants of e-commerce adoption by formal small enterprises in Urban Kenya. *International Journal of Business and Social Science*, 3 (23), 65-74.
- Warschauer, M. (2003). *Technology and Social Inclusion: Rethinking the Digital Divide*. The MIT Press.