RESEARCH ARTICLE Adv. Sci. Lett. 21, 1367–1369, 2015

Advanced Science Letters
Vol. 21, 1367–1369,
2015

Determining Critical Success Factors for ICT Readiness in a Digital Economy: A Study from User Perspective

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Achieving high level of ICT readiness is being increasingly heralded as one of the critical success factors for achieving an inclusive digital economy. The focus for ICT readiness has been on the country or economy. This paper moves away from the traditional ICT readiness indicators and focuses on ICT readiness of individual users by gauging their level of ownership and usage of ICT tools or gadgets and the satisfaction they derive from using ICT. A nationwide survey was conducted among 2124 respondents base on the population ratio of the main ethnic groups in Malaysia. Data is analysed descriptively using SPPS 20.0. From the results, about two-thirds of the respondents own a laptop computer and half own a desktop computer. More than two-thirds own a smart phone that can access internet. Meanwhile more than two thirds of the respondents have an email and social media account. The intensity of usage of internet is somehow average among the respondents with information search, email, social communication, entertainment and work related usage as the main usage. The respondents are satisfied using ICT, especially the sophistication of technological gadgets and software, design of ICT tools, quality of digital content on the Internet and speed of the Internet. The results imply that there is an above average level of ICT readiness across the population. More needs to be done by way of awareness campaign and policies aim at increasing the level of ICT readiness among users to facilitate the digital economy.

Keywords: ICT readiness, internet, digital economy, critical success factors

1. INTRODUCTION

Achieving high level of ICT readiness is being increasingly heralded as one of the critical success factors for achieving an inclusive digital economy. The focus for ICT readiness has been on the country or economy. This is often measured base on the ICT infrastructure of the country.

As it is now a number of countries including some third world countries have an acceptable level of ICT infrastructure.

As defined by the report of the Organization for Economic Cooperation and Development (2012), the digital economy is defined as an umbrella concept

doi:10.1166/asl.2015.1261
1936-6612/2015/4/400/008

describing markets that focus on digital technologies. These typically include the trade of information services via electronic commerce.

There are several success factors in the success of digital economy that have been identified worldwide. De Fontenay (2000) revealed two factors that can determine the success of digital economy which are the access to and use of content. Barua et al. (2000) emphasized that the Internet infrastructure is one essential key in the success of digital economy since it improves the productivity of those firms whose processes depend on digitization. According to Garg et al. (2003), the enabling factors for the digital economy in India are information infrastructure and hardware and software support, ICT policy, effective economic environment, networked society, networked economy that is e-commerce, e-government and general infrastructure.

With the emergence of new ICTs and their significant role in upgrading the socio-economic aspects of societies, the concept of knowledge-based economy, an aspect of digital economy has emerged and been defined in several ways. Although there have been various definitions of such a concept, the most common components are capital, labour, knowledge, growth and innovation. Knowledge economy is defined as "a knowledge-driven economy in which the generation and exploitation of knowledge play the predominant role in the creation of wealth" (Economic Research Services Department 2000:10). In the Malaysian context, knowledge-based economy (KBE) is defined as "one where the generation and utilization of knowledge contribute to a significant part in economic growth and wealth creation" (Malaysia's Prime Minister's Office Report 2005:119).

This paper departs from the traditional e-readiness indicators and focuses on ICT readiness among individual users by gauging the level of ownership and usage of ICT tools or gadgets and the satisfaction derive from using ICT. The paper argues that these indicators of ICT readiness serve as critical success factors for a digital economy.

2. METHOD

A nationwide survey was conducted to find out the baseline data for the patterns of ICT readiness among ICT users in relation to the digital economy development in Malaysia. Respondents were selected based on stratified sampling technique. Of 3000 questionnaires distributed to identified groups, 2124 respondents returned the questionnaire voluntarily. Some 55.2% of the respondents are males and 44.8% females. Based on the population ratio of the main ethnic groups in Malaysia, 60.4% of the respondents are Malays, 28.5% Chinese, 9.0% Indians and 11% represents the Bumiputera in the peninsular, Sabah and Sarawak. For the age range, 12.2% belong to the 15-19 age group, 21.8% are in the 20-29, 24.3% fall within the 30-39, 18.6% in the 40-49% and 23.1% in the 50 years and above category. Data were descriptively analysed using SPSS 20.0. Prior to the actual data collection a pilot study was conducted to fine tune the research instrument.

3. RESULTS

The results of the study are presented both descriptively and inferentially comprising percentages, means and correlation analysis. From the results, as revealed by Table 1, about two-thirds of the respondents own a laptop computer (66.4%) and half own a desktop computer. More than two-thirds (84.8%) own a smart phone that can access internet. Meanwhile more than two thirds of the respondents have an email (81.5%) and social media account (81.2).

Table 1 Ownership of ICT Gadgets/Tools/Services*

Item	Percentages
Smartphone (with Internet access)	84.8
E-mail account (e.g. yahoo, Gmail etc.)	81.5
Social network accounts (e.g. Facebook, whattsapp, twitter etc.)	81.2
Cable TV (e.g. ASTRO, Unifi)	77.8
Mobile telephone	71.5
Laptop Computer	66.4
Debit Card	59.7
Internet banking account (e.g. maybank2u, cimbclicks)	56.3
House telephone	51.1
Desktop Computer	50
Accessories (e.g. fax machine, printer)	37.9
Tablet/iPad	37.4
Credit Card	34.3
Blog/Websites (e.g. wordpress, blogspot etc.)	23.7
Online payment accounts (PayPal, webcash, manage for me etc.)	21.8
Professional network accounts (e.g. Linked)	13.5

*N=2124

The intensity of usage of internet (Table 2) is somehow average among the respondents with information search (m=1.67), electronic mail (m=1.52) and social communication (m=1.52) as top three usage

doi:10.1166/asl.2015.1261 1936-6612/2015/4/400/008

of the Internet. This is followed by hobbies/games/entertainment (m=1.43), work related usage (m=1.42), reading newspaper (m=1.39) and teaching/learning (m=1.26). Paying bills, buying and selling goods online are the least usage of Internet among the respondents as they lingered between never and sometimes. This could be partly due to lack of awareness or less trust in the security of online transactions.

Thus almost all the usages except paying bills and buying and selling goods online fall within sometimes and often.

Table 2 Usage of Internet (*Means* and SD)

Items	***Means****	**SD**
Information search	1.67	.94
Email	1.52	.95
Social communication	1.49	.97
Hobby/games/entertainment	1.43	1.03
Work related usage	1.42	1.03
Reading newspaper	1.39	.93
Teaching and learning	1.26	.93
Downloading applications	1.13	.94
Reading blogs	1.13	.95
Religious activity	1.12	.98
Access e-government services	1.08	.91
Planning for holidays	1.04	.84
Paying bills	0.86	.90
Buying goods	0.74	.77
Selling goods	0.46	.76

* Rating = 0 (Never), 1(sometimes), 2 (Often) and 3 (very often)

The respondents are satisfied using ICT (Table 3), especially the sophistication of technological gadgets and hardware (m=5.07), design of ICT gadgets and hardware (m=4.93), quality of digital content on the Internet (m=4.82) and speed of the Internet (m=4.75). This could serve as a gauge and reflection of ICT readiness among the users.

Table 3 Satisfaction Obtained From Using ICT and Internet (*Means* & SD)

Item	***Means****	**SD**
Sophistication of technological gadget/ICT hardware	5.07	1.41
Design of ICT gadget/hardware (size, weight, colour etc.)	4.93	1.37
Quality of digital content on the Internet	4.82	1.38
Speed of Internet	4.75	1.55
Internet service quality	4.51	1.53
Price of ICT tools	4.11	1.56
Internet subscription cost	4.01	1.59

*Rating of 1 to 7 (continuous scale): 1 (Very unsatisfactory) to 7 (Very satisfactory)

4. DISCUSSION

As can be seen from the results, it may be implied that the respondents were somewhat ready and have adopted ICT in their daily activities. They are willing to engage themselves in ICT as indicated by their ownerships on ICT gadgets such as smartphones and having access to emails and social media. Even though not as many respondents indicated using ICT for banking purposes, there is a good indication that this ICT application is needed by respondents and would most probably pick up with more users in the future.

The results of this study showed that the respondents' involvements in ICT may be for specific purposes. The findings indicated that these individuals used ICT more for social and hobbies rather than for planning for holidays, e-government or business purposes. It may be deduced that these respondents find ICT as a good channel to be in contact socially. ICT makes it very convenient for them to get in touch with their families and friends that might not happen before their adoption of ICT applications such as Facebook and Twitter. Furthermore, the nature of these social media is such that the communication process is fast, interesting and very attractive. Personal updates, stories and pictures posted in these media made it very exciting, thus attracting individuals to be part of the large groups.

In line with the above argument, the respondents once again reflected the social preference in ICT adoption as they indicated finding information and emails as the two major internet activities. These 'light' aspects of ICT adoption should be probed further as to the kind of information that is actually being sought after by these respondents in the internet. It is very interesting to find that ICT applications in Malaysia are quite similar to that of other countries in the world.

The respondents also showed their overall satisfaction with the technology and design of the ICT products and services, but not with the quality of internet and the costs aspects. These findings would be of help to ICT industry players as they need to take into consideration not just the design and technology of their ICT offerings, but also to the consumers' expectation in terms of quality and costs. Many times, the technologists

doi:10.1166/asl.2015.1261 1936-6612/2015/4/400/008

are very engrossed with the design of the products and services that they over looked the actual needs and expectations of their targeted market segments.

5. CONCLUSION AND IMPLICATIONS FOR PUBLIC SECTOR POLICY

In summary, the findings of this study showed that Malaysian ICT users are ready for the digital era. Their ownership of ICT gadgets, internet usage and the satisfaction derived from using ICT is overall satisfactory. With these critical success factors being satisfactory, Malaysia is on the right track for the smooth uptake of digital economy. However, further probe has to be done as to which aspect of ICT adoptions are these respondents ready and interested in. Also, the reasons why other aspects of ICT adoption, such as business and banking not as popular among the respondents should be of concern with the industry as well as policy makers. Moreover, more needs to be done by way of awareness campaign and policies aim at increasing the level of ICT readiness to facilitate the digital economy. Furthermore, improving infrastructure facilities and digital content is very crucial. As World ICT readiness report shows, Malaysia still needs to do a lot in the area of infrastructure and digital content. A combined effort from both the public and private business initiative is timely in order to move the aspirations of the digital economy forward.

ACKNOWLEDGEMENTS

This study is sponsored under the Universiti Kebangsaan Malaysia research grant - LRGS/TD/2011/UKM/ICT/05.

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