The Social Sciences 11 (3): 174-178, 2016
ISSN: 1818-5800

Mapping the Patterns of Wireless Village Internet Service Usage among Rural Communities

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Abstract: This study attempts to determine the patterns of Wireless Village Internet services among rural communities in Malaysia. This quantitative study used a developed questionnaire as the main data-collection instrument. A total of 400 villagers from the four districts in Malaysia were selected as the respondents. The analysis reveals that most of the respondents are new users of the service; however, most of them are considered heavy users. Understandably, the respondents use wireless village services for three main purposes, namely web surfing, seeking the latest information (politics, crime, sports, current issues) and social media. A number of discussion points are highlighted and it is hoped that this will act as a basis for strategy development among concerned parties so as to further enhance the quality of wireless village services.

Key words: Rural development, community development, technology usage, respondents, strategy

INTRODUCTION

Implementation of 1Malaysia Wireless Village: The Malaysian government has made clear its intention to digitalize rural areas in order to speed up the process of rural development. In cooperation with Universal Service Provider (USP), the Malaysian Communications and Multimedia Commission (MCMC) has succeeded in implementing 4,803 1Malaysia Wireless Villages since 2011. This has been achieved via two methods; Community Broadband Centre (CBC) to home technology infrastructure and Collective Broadband Access (CBA) phase 1 technology infrastructure (MCMC, 2014a, b). The two methods of implementation have given Information and Communication Technology (ICT) exposure to remote areas of Malaysia. In its attempt to implement a more digital-based economy, MCMC has triggered interest in internet usage among rural communities by appointing wireless Access Points (APs) of 4 Mbp within a radius of 50 m which is connected from a wired network router to the villagers' homes. The internet service providers for each villageutilize the existing phone coverage systems such as Packet 1, Telekom Malaysia™, Celcom, Digi, Maxis and Redtone.

Pattern of internet usage in Malaysia: Ever since telecentres began to be implemented in rural Malaysia, there has been growing interest in ICT usage among villagers, especially youth. In particular, interest is in cost-effective internet services and public facilities that are fully equipped with the technology required to meet villagers' social, educational and communication needs (Kwong *et al*., 2011; Gomez and Reilly, 2001).

In relation to attempts to improve rural living, the potential of ICT usage should be regarded as a tool for the process of rural development (Hudson, 1999). Several studies have indicated that proper ICT training and basic internet courses implemented in the local context have a positive impact on participants' ICT usage. Hassan claimed that ICT training hosted in the local context caused 65.2% of 1,250 villagers to become more involved in and more accepting of using the internet for web surfing, email and chatting. In addition, Zulkefli and Sulaiman (2009) found that 80% of KedaiKom telecentre users in Perak State agreed that use of the internet has improved their work-related skills, made them more alert about current issues, served as a source of entertainment and enhanced their social networks. Rozak *et al*. (2010) highlighted that the use of wireless internet has benefitted rural communities in terms of improving their knowledge base through e-Learning and information sharing and improving their community communication infrastructure.

Samah *et al*. (2013) claimed that positive use of the internet in rural areas also has the ability to make villagers

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engage in meaningful social practices, once the idea of using the internet has become fully integrated in community life. In relation to ICT courses, most studies have found that villagers who acquire knowledge on how to use the internet then use it to seek information, improve their social practices, further educate themselves and improve their socio-economic status (Gomez and Reilly, 2001; Zulkefli and Sulaiman, 2009; Razak *et al*., 2010; Samah *et al*., 2013). Therefore, this study aims to identify the level of internet use and which factors encourage internet use among wireless village communities.

MATERIALS AND METHODS

This research involved a quantitative study in which a developed questionnaire was used to collect the required data. The questionnaire originally consisted of six parts; however, in order to meet the objectives of the present study only three parts of the questionnaire are focused on here: demographic data, patterns of use of wireless village services and purposes of using wireless village services. In relation to demographic data and patterns of usage, the respondents were asked open and closed-ended questions in relation to purposes of usage, the respondents were asked a question based on a five-point Likert-type scale ranging from 1 (strongly agree) to 5 (strongly disagree).

The data collection was conducted in the districts of Ranau (representing Sabah), Marang (representing Terengganu), Kuala Selangor (representing Selangor) and Jelebu (representing Negeri Sembilan). Each of the districts were represented by 100 respondents. The areas were selected via multi-stage cluster sampling. Data collection ran for 5 months, starting from April 2014 to August 2014. The collected data was then cleaned and analyzed using descriptive statistics including frequency, percentage and mean score.

RESULTS

Table 1 demonstrates the demographic data of the respondents studied. It can be seen that the majority of the respondents are male (56.0%). The mean score recorded for age was 23.6 years with the majority of respondents falling into the age group of ≥31 years old. Nearly a quarter of the respondents (24.2%) are Dusun while the rest are Malay. The majority of respondents are educated up to PMR/SRP (PMR/SRP refers to Lower Certificate Education of Malaysia) (33.0%) and SPM/SPMV (SPM/SPMV refers to Malaysia Certificate of Education/Malaysia Vocational Certificate of Education) (39.5%) level while fewer possessed a tertiary level of education. The majority of respondents are students which makes it unsurprising that most (60.8%) are unemployed. It is encouraging that the mean score recorded for household income per month was RM1,761.50; nevertheless, it is concerning that some respondents are still earning below RM750 per month. Most of the respondents can be considered "senior" villagers as the mean score recorded for duration of living in the village inhabited was 17.3 years.

Table 1: Demographic background of the respondents

Factors	Frequency	Percentage	Mean
Gender			
Male	224	56.0	-
Female	176	44.0	-
Age			23.6
15-17	142	35.5	-
18-20	66	16.5	-
21-24	57	14.3	-
25-30	39	9.8	-
>31	96	24.0	
Race			
Malay	303	75.8	-
Dusun	97	24.2	-
Education achievement			
Never been to school	8	2.0	-
Primary school	10	2.5	-
PMR/SRP	132	33.0	-
SPM/SPMV	158	39.5	-
Skill certificate/STPM	46	11.5	-
Diploma	33	8.3	-
Undergraduate degree/master's/PhD	13	3.3	-
Employment status			
Employed	157	39.3	-
Unemployed	243	60.8	-
Household income			RM1,761.50
<RM750	67	16.8	-
RM751-RM1000	110	27.5	-
RM1001-RM1500	75	18.8	-
RM1501-RM2000	57	14.3	-
>RM2001	91	22.8	-
Duration of living in village inhabited (years)			17.3
<5	54	13.5	-
6-10	52	13.0	-
11-15	70	17.5	-
16-20	106	26.5	-
>21	118	29.5	-

Table 2 demonstrates the pattern of wireless village internet services use among the rural community. Understandably, most of the respondents can be considered new users as the mean score recorded for experience in using the service was only 2.20 years with most of them having used the service for 1-2 years (41.3%). Despite this, it can be concluded that the respondents are heavy users of the services, since the mean score recorded for usage during school/work days was 1 h and 52 min. This is also strengthened by the fact that the mean score for duration of usage increased to 2 h and 17 min during weekends and to 2 h and 27 min

Table 2: Patterns of use of wireless village internet services

Patterns	Frequency	Percentage	Mean
How long have you used 1 Malaysia Wireless Village internet services? (years)			2.20
1	117	29.5	
1-2	164	41.3	
>3	116	29.2	
On average, how many hours do you spend each time you go to a 1Malaysia Wireless Village hotspot during school/work days (h)? (n = 378)			1 h and 52 min
1	173	45.8	
1-2	135	35.7	
>3	70	18.5	
At what time do you usually use 1Malaysia Wireless Village hotspots during school/work days? (n = 378)			
7.00 a.m. to 12.00 p.m.	106	28.0	
12.01 to 7.00 p.m.	128	33.9	
7.01 p.m. to 12.00 a.m.	123	32.5	
12.01 to 7.00 a.m.	21	5.6	
On average, how many hours do you spend each time you go to a 1Malaysia Wireless Village hotspot during the weekend (h)? (n = 367)			2 h and 17 min
1	108	29.4	
1-2	142	38.7	
>3	117	31.9	
At what time do you usually use 1Malaysia Wireless Village hotspots on weekends? (n = 367)			
7.00 a.m. to 12.00 p.m.	104	28.3	
12.01 to 7.00 p.m.	127	34.6	
7.01 p.m. to 12.00 a.m.	116	31.6	
12.01 to 7.00 a.m.	20	5.4	
On average, how many hours do you spend each time you go to a 1Malaysia Wireless Village hotspot during school holidays (end of year/mid-year)/IPT semester holidays (h)? (n = 366)			2 h and 27 min
1	102	27.9	
1-2	135	37.0	
>3	128	35.1	
At what time do you usually use 1Malaysia Wireless Village hotspots during school holidays (end of year/mid-year)/IPT semester holidays (h)?			
7.00 a.m. to 12.00 p.m.	107	26.8	
12.01 to 7.00 p.m.	123	30.8	
7.01 p.m. to 12.00 a.m.	120	30.0	
12.01 to 7.00 a.m.	16	4.0	
Do you visit 1Malaysia Wireless Village hotspots...			
Alone	231	57.8	
In a group	169	42.3	
What is the main device you use to access wireless village internet services?	Yes	No	
Laptop	46.3	53.7	
Mobile/smartphone	67.3	32.7	
iPad/iPod	12.5	87.5	
Desktop computer	16.0	84.0	

during school holidays (end of year/mid-year)/higher learning institute (IPT) semester holidays. During these three periods (school/work days, weekends and school holidays (end of year/mid-year)/IPT semester holidays), the most popular time to use the wireless village services was 12.01-7.00 p.m. Further analysis confirmed that most of the respondents prefer to come to wireless spot alone and just over two thirds of the respondents (67.6%) use their mobiles/smartphones to access the services.

Table 3 demonstrates the findings related to use of wireless village internet services. Based on the analysis performed, it can be concluded that all purposes recorded a moderate mean score (between 2.34-3.67). Specifically, it can be concluded that most of the respondents use the wireless village services for Web surfing (M = 3.30) to find the latest information (politics, crime, sports, current issues) (M = 3.16) and social media (M = 3.15). In addition, few respondents use the wireless village services to make online purchases (M = 2.45).

Table 3: Purposes of using wireless village internet services

Purposes	Mean
Social media	3.15
Completing assignments	2.76
Listening to music/radio	2.89
Watching video/television	2.85
Reading newspapers	2.87
Reading novels/books/articles/magazines	2.87
Finding the latest information (politics, crime, sports, current issues)	3.16
Sending and reading email	2.94
Web surfing	3.30
Downloading videos, songs, pictures	2.99
Downloading other relevant documents (e.g., recipes, journals, articles, etc.)	2.81
Completing e-Government business (e.g., e-Filing, e-Tax, e-Licenses, examination results)	2.62
Performing banking transactions through e-Banking facilities	2.49
Making purchases online	2.45

DISCUSSION

Based on the analysis performed, although, the majority of respondents are new users, they are also

heavy users of wireless village services. Understandably, the analysis confirmed that they use wireless village services more often during holidays compared to school or work days while 12.01-7.00 p.m. the most popular time of day to use the services. Most of the respondents use the wireless village services to seek information and to fulfil their entertainment needs; this is supported by the fact that the three highest mean scores related to the purpose for using wireless village services were:

- Web surfing
- To find the latest information (politics, crime, sports and current issues)
- Social media

This finding is in line with previous findings by Kwong *et al.* (2011), Gomez and Reilly (2001), Zulkefli and Sulaiman (2009) and Rozak *et al.* (2010). Since, the majority of respondents are aged below 30 years old (76.0%), the findings can be compared to those of Hassan who found that most of young people now rely heavily on the internet for information and entertainment seeking as they consider the internet as up to date and offering more "sensational" information compared to traditional media such as television and radio. Similarly as most of the respondents are young, social media emerged as one of the main purposes for using wireless village servicess. These findings are in line with those by Mun *et al.* (2011) who confirmed that the majority of youth in Malaysia are heavy users of social networks and that most use them for communicating with colleagues and to fulfil their entertainment needs.

CONCLUSION

Based on the findings, it can be concluded that wireless village services have been accepted by rural communities and are used to a high level. Most respondents use the services to seek information and fulfill their entertainment needs. However, it can be noted that rural communities do not conduct extensive banking and online purchasing activities.

LIMITATIONS

Despite the study's success in fulfilling its objective, it has several limitations. First, it only involved 400 respondents from four districts in Malaysia and the results might be enriched if a larger sample and other areas of data collection were to be included in future. Secondly, other races such Chinese and Indian should be included as respondents of future studies. Additional research is also needed in order to obtain further evaluations of other purposes for using the internet. Furthermore, because of the nature of the topic, non-governmental organizations and academic researchers should cooperate during future research.

RECOMMENDATIONS

This study highlights a number of recommendations. First, the size GB allocated for each of the wireless village services should be upgraded. The study confirms that the majority of rural community members are heavy users of the services provided and the current size GB is not able to meet their current usage needs. Second as the services offered are used to a high level and have been accepted by the rural community, similar wireless projects can be extended to other rural and remote areas in Malaysia indeed, this is necessary to further narrow the digital divide between rural communities and their counterparts in urban areas. Thirdly, rural communities must be taught and encouraged to conduct online banking activities, make online purchase or conduct online business. Nowadays, the internet offers a safer environment for users to conduct banking and purchasing while online business offers profitable investment opportunities for users. In realizing this, concerned parties can contribute by offering courses and seminars on virtual banking, purchasing and business; the target group of this course must be the younger rural community.

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