

Socio-Demographic Factors Affecting Attitude towards Information and Communication Technology Usage

Musa Abu Hassan, Bahaman Abu Samah,
Hayrol Azril Mohamed Shaffril and Jeffrey Lawrence D'Silva
Laboratory of Rural Advancement and Agriculture Extension,
Institute for Social Science Studies, University Putra Malaysia, Malaysia

Abstract: Problem statement: Rural development through ICT has been the focus of the Malaysian government. ICT is an important tool nowadays and in order to be a developed community, the community especially those in the rural areas must use it wisely. Besides the numerous benefits offered by the ICT, it would be helpful to know whether the rural community especially their leaders which are the Village Development and Security Committee (JKKK) members use ICT or not. **Approach:** This is a quantitative study and the respondents were selected based on the simple random sampling. A total of 240 JKKK members from four states in Peninsular Malaysia were selected as the respondents. A questionnaire was used to gather the data needed. **Results:** Results obtained revealed that their attitude towards ICT usage was moderate. Further analyses using Independent t-test and ANOVA have indentified that the factor of position held and level of education have significant difference with attitude towards ICT usage. The Pearson Product Moment Correlation performed have confirmed that the factors of period of using a computer in a week, period of using internet in a week and income per month have a positive and significant relationship with attitude towards ICT usage. On the other hand, the factors of period of staying in the Village Vision Movement and age have a negative and significant relationship with attitude towards ICT usage. **Conclusion/Recommendation:** It is recommended that ICT seminars and courses can be conducted to expose and train the JKKK members to be more competent in using ICT. Increasing the number of ICT centers in the community would provide more opportunity for JKKK members to learn more about ICT. These recommendations should be targeted to JKKK members in the lower management level, lower education, lower income, elderly and members who do not use computer and internet.

Key words: Attitude towards ICT, ICT seminars, rural development and village administrators, Village Vision Movement (VVM), village development and security committee

INTRODUCTION

Rural community development has been the focus of the Malaysia government since Malaysia gained its independence. To develop the rural community is not the responsibility of the government alone and the rural community as the main beneficiary of the rural development programs should also play their role (Nguanthisong *et al.*, 2011; Yassin *et al.*, 2010); Meshkini *et al.* (2010) and Tolunay (2009) To gain the rural community cooperation in conducting the rural development programs, the government has established the Village Development and Security Committee or Jawatankuasa Kemajuan dan Keselamatan Kampung (JKKK) in Malay and the Village Vision Movement (VVM). JKKK has been established for more than 50

years. Among others, the JKKK plays a leading role in creating a more advanced and developed rural community. In addition, JKKK has become one of the government channels to overcome problems such as poverty, health, illiteracy and lackadaisical attitude that exist within the rural community. Improvement and adjustment have been made to ensure the roles of JKKK to meet its purposes. Programs such as Moving Forward Program, Self-Success and Innovation Movement were introduced to ensure that these changes are successful. The VVM is another government medium to create consciousness and positive attitude among the rural community in achieving success of the Second Plan on Rural Transformation. Among the purposes of VVM are to create rural community who are resilient, have high initiative, self-dependent,

Corresponding Author: Musa Abu Hassan, Laboratory of Rural Advancement and Agriculture Extension,
Institute for Social Science Studies, University Putra Malaysia

knowledgeable and highly disciplined which is in line with the demand of basic modernization. VVM is a catalyst needed by the government that will focus on the attractive and profitable rural development programs which is parrell to the Rural Development Policy.

It is without doubt that the development of rural areas is mostly related to agriculture projects (Hayrol Azril *et al.*, 2010; Jeffrey Lawrence *et al.*, 2010, Md. Salleh *et al.*, 2010a; 2010b; Jegak *et al.*, 2010; Rahman *et al.*, 2011). Similarly, ICT also has an important role to prosper development in these areas (Bahaman *et al.*, 2011; Rittidet *et al.*, 2009). There are a number of ICT development plans and programs that have been initiated and one of the main targets of these plans and programs is the rural community. Among the programs and plans initiated were the National Information Technology Agenda (NITA), Universal Services Provider (USP) and One Home One Computer campaign. The recent ICT program introduced by the government is the National Broadband Initiatives (NBI). The main objective of NBI is to ensure that 50% of the Malaysian household posses broadband by the end of 2010. To achieve this, the government has launched five initiatives to support NBI which are Community Internet Centers (Pusat Internet Rakyat), Mini Community Broadband Centers, One Million Netbook Initiative, setting up of E-Kiosks CBC to the home and expansion of cellular coverage. Nevertheless, by having these great plans and programs, do the rural community as the main beneficiary of such programs and initiatives use ICT? And more importantly, do they have a positive attitude towards ICT usage? Positive attitude is deemed important to construct positive ICT usage among the rural community especially their leaders who are the JKKK members.

Attitude is seen as an evaluative disposition based upon cognitions, affective reactions, behavioral intention and past behaviors and it provides the response of someone's like or dislike towards something (Shih, 2004; Luarn and Lin, 2004). Previous studies have tried to seek the relationship that might occur between attitude and ICT usage among the rural community. Shiro (2008) for example, through his research, has proved that rural community possess positive attitude towards ICT and they welcome any ICT project to be built in their areas. However, Shiro (2008) also found that their lack of ICT knowledge reduces their ICT usage. Dixon (2009) has concluded that ICT usage and exposure are the important things needed to form a positive attitude towards ICT. Frequent use and exposure to ICT will drive people to accept that ICT will assist them and become useful in their daily life. Thus, this is an indication of creating a positive attitude towards ICT usage. Also, Dixon

(2009) noted that frequent use and exposure to ICT will develop the strength of ICT knowledge and skills. Zhang and Aikman (2009) have another view when they claimed that attitude can be a mediator on the role of attitude towards behavioral intention.

Another important factor that can construct positive attitude towards ICT usage is the socio-demographic factors. A study done by Yuandong *et al.* (2005) concluded that age and gender will influence the attitude of rural community towards ICT usage. Gender has always been an important factor to constitute positive attitude and gender differences proved to have a significant impact on some studies (Sayan *et al.*, 2004). Olatokun (2007) has come to a specific result when he claimed that females do have a positive attitude towards ICT usage. Income is one of the important factors to constitute a positive attitude towards ICT usage and this is not surprising as it is in tandem with what have been completed by Akman and Rehan (2010) and Lenhart and Horrigan (2003). Computer usage is another significant factor that can be associated with positive attitude towards ICT usage. People who use computer more will have a positive attitude towards ICT usage (Markus and Soh, 2002). The same results also occurred for Internet usage, those who use Internet more will have a positive attitude towards ICT (Markus and Soh, 2002). Education without doubt has a direct influence on ICT usage. Studies done by Roe and Broos (2005) and Bonfadelli (2003) have claimed that low educated people possess negative attitude towards ICT usage while people with high level of education will have a positive attitude towards ICT usage. As such, it would be useful to know whether besides these findings, the situation also occurs in Malaysia especially among the JKKK members. Thus, the main objective of this study is to investigate the influence of socio-demographic factors on JKKK member's attitude towards ICT usage.

MATERIALS AND METHODS

This is a quantitative study using survey questionnaire. The result of pre test showed that the Cronbach alpha value was 0.971, thus indicating that the instrument used in this study showed a good level in term of reliability and exceeding the recommended alpha value as mentioned by Nunnally (1967) and Mohd (1998). Based on the simple random sampling employed, a total of 240 JKKK members were selected as respondents. The selected respondents were from four states of Kedah (Northern zone), Terengganu (East

coast zone), Perak (Central zone) and Johor (Southern zone) of the Peninsular Malaysia. Each of the states was represented by 60 respondents. Face to face interview was conducted to collect the data. The data gathered was analyzed using SPSS where descriptive statistics such as frequency, percentage, mean, standard deviation, independent t-test, ANOVA and Pearson product-moment correlation were employed. The independent variables for this study were gender, age, level of education, type of job, income per month, period of holding a position in JKKK, position held in JKKK, period of staying in their village, period of computer usage in a week and period of Internet usage in a week. The dependent variable for this study was JKKK members' attitude towards ICT usage.

RESULTS

Table 1 shows the socio-demography profile of the respondents. A large majority of the respondents (82.1%) were males. Comparatively, more than one third of the respondents (34.2%) were in the age group of 41-50 years old, 25.0% of the respondents were in the age group of 51-60 years old, 21.2% of the respondents were in the age group of less than 40 years and less than one fifth of the respondents (19.6%) were in the age group of ≥ 61 years. More than half of the respondents (52.5%) possessed SPM/SPMV level of education while only slightly more than one fifth of the respondents (20.4%) possessed university and pre university level of education. A total of 35.5% of the respondents were self-employed and a total of 37.1% of the respondents earned more than RM1, 501 a month. More than two fifth of the respondents have held the JKKK position for less than 5 years (42.1%) compared to those who have held the JKKK position for more than 11 years (22.5%). A total of 62.5% of the respondents have stayed in their village for more than 30 years. A total of 45.4% of the respondents have used the computer for a period of 1-9 hrs per week, while more than a quarter of them (28.8%) have used the internet for more than 8 years.

To measure the dependent variable of this study which is the attitude of JKKK members towards ICT usage, a cumulative value from eight statements was developed. Then, the cumulative value was grouped into three levels namely low (1-3.33), moderate (3.34-6.67) and high (6.68-10.0). Based on the overall mean score for attitude towards ICT usage ($M = 5.91$, from a maximum of 10.0) it can be concluded that more than half of the respondents have a low to moderate level of attitude towards ICT usage and almost half have a high level of attitude towards ICT usage (Table 2).

A total of eight statements have been included in the instrument for the purpose of measuring attitude towards ICT usage. Based on the results shown in Table 3, it can be seen that the statement of "I encourage other JKKK members and my family members to use ICT" recorded the highest mean score of 6.77.

Table 1: Socio-demography profile of the respondents

Variables	Frequency	Percentage	Mean	SD
Gender				
Male	197	82.1		
Female	43	17.9		
Age			50.0	11.0
<40 years	51	21.2		
41-50 years	82	34.2		
51-60 years	60	25.0		
>61 years	47	19.6		
Level of education				
PMR* and primary school	65	27.1		
SPM/SPMV**	126	52.5		
University and Pre University	49	20.4		
Type of Job				
Self-employed	85	35.5		
Retiree/housewives	62	25.8		
Government	56	23.3		
Private	37	15.4		
Income per month			1507.90	990.56
<RM750	70	29.1		
RM751-RM1500	81	33.8		
>RM1501				
Value in Ringgit Malaysia (RM)	89	37.1		
Period of holding a position in VDSC				
<5 years	101	42.1	8.44	1.80
6-10 years	85	35.4		
>11 years	54	22.5		
Position				
Top management	93	38.8		
Committee	147	61.2		
Period of staying in their village			38.34	16.82
<30 years	90	37.5		
31-45 years	64	26.7		
>46 years	86	35.8		
Period of computer usage a week			11.07	9.67
0 h	31	12.9		
1-9 h	109	45.4		
>10 h	100	41.7		
Period of internet usage a week			9.05	8.68
0 h	62	25.8		
1-3 h	48	20.0		
4-7 h	61	25.4		
>8 h	69	28.8		

*: PMR-Malaysia lower education certificate; **: SPM/SPMV-Malaysia higher education certificate/Malaysia vocational higher education certificate

Table 2: Overall level of attitude towards ICT usage

Level	Frequency	Percentage	Mean	SD
			5.91	2.48
Low (1-3.33)	45	18.8		
Moderate (3.34-6.67)	85	35.4		
High (6.68-10.0)	110	45.8		

Table 3: Attitude towards ICT usage

Statement	Scale										Mean	SD
	1	2	3	4	5	6	7	8	9	10		
I encourage other JKKK members and my family members to use ICT	5.0	7.1	2.1	5.4	9.2	8.3	14.2	20.8	10.8	17.1	6.77	2.64
I emphasize on attending ICT courses and seminars to enhance my ICT knowledge and skills	6.7	6.7	4.2	5.4	9.2	8.3	15.0	17.1	10.4	17.1	6.56	2.76
I feel left behind if I do not use ICT	8.8	6.7	5.8	3.3	9.6	10.4	10.8	15.8	13.8	15.0	6.40	2.87
I like to use the recent ICT tools compared to the old one.	12.9	11.2	4.2	6.7	10.0	7.5	13.8	13.8	12.1	7.9	5.64	2.95
I feel excited in using ICT for my daily tasks and village administrations	12.5	10.4	5.0	6.2	8.8	12.9	13.8	15.0	7.1	8.3	5.58	2.85
I feel comfortable to use ICT because it is user friendly	11.2	10.4	7.5	5.4	11.2	12.9	12.1	17.1	5.8	6.2	5.46	2.75
I prefer to use ICT compared to other tools	12.1	11.2	5.8	10.2	11.2	6.7	12.9	13.3	6.7	10.0	5.45	2.91
Using ICT gives me confident in my daily tasks and village administrations	12.1	10.8	5.4	8.8	10.4	11.2	11.7	15.0	8.8	5.8	5.43	2.80

1 = highly disagree to 10= highly agree

Table 4: Comparison in attitude towards ICT usage for selected independent variables using independent t-test

Variables	n	Mean	SD	t	p
Gender				1.014	0.312
Male	197	5.99	2.46		
Female	43	5.56	2.58		
Position				3.617	0.0001
Top Management	93	6.60	2.20		
Committee	147	5.48	2.56		

The second highest mean score was recorded by the statement of “I emphasize on attending ICT courses and seminars to enhance my ICT knowledge and skills” (6.56) while the statement of “I feel left behind if I do not use ICT” recorded the third highest mean score of 6.40. The statement of “Using ICT gives me confident in my daily tasks and village administrations” had the lowest mean score of 5.43 among the statements used.

The influence of socio-demographic factors on JKKK members’ attitude towards ICT usage will be explored and discussed. For this purpose, inferential analysis using independent t-test was employed.

Based on the results presented (Table 4) it can be concluded that there was no significant difference between male and female in their attitude towards ICT usage. This is based on $M = 5.99$, $SD = 2.46$ for male respondents and $M = 5.56$, $SD = 2.58$; $t(240) = 1.014$, $p = 0.312$ for female respondents. This indicates that there is a possibility that male and female respondents have an equal level of attitude towards ICT usage.

For the factor of position held in JKKK, based on the independent t-test done, it was found that there was significant difference in attitude towards ICT usage between JKKK committee members and JKKK top management members. This can be proved based on $M = 6.60$, $S.D = 2.20$ for top management members and $M = 5.48$, $S.D = 2.56$; $t(240) = 3.167$,

$p = 0.0001$ for committee members. There is a possibility that the top management members possess a better attitude towards ICT usage based on the higher mean score recorded ($M = 6.60$).

To further understand the attitude of respondents towards ICT usage, ANOVA was performed to find out any differences that might occur in the factors of level of education and types of job. Results presented in Table 5 confirmed that there was a significant difference in attitude towards ICT usage in the factor of level of education. This is based on the F value ($3, 240$) = 29.304, $p < 0.05$, that proved that there was a significant difference in attitude towards ICT usage between the three levels studied. Further analysis through post hoc test has revealed that there was a significant difference that occurred between those who possessed pre-university and university level of education with those who possessed SPM/SPMV and primary school and PMR level of education. Besides, there was also significant difference detected between those who possessed SPM/SPMV level of education and those who possessed primary school and PMR level of education. There is a possibility that those who possessed pre-university and university level of education benefited more from ICT usage based on the highest mean score recorded on their attitude towards ICT usage ($M = 7.32$).

For the factor of types of job, the highest mean score was recorded by the group of government sector ($M = 6.56$) while the lowest mean score was recorded by the group of self-employed ($M = 5.55$). Based on F value ($4, 240$) = 2.310, $p > 0.05$, it indicates that there was no significant difference in attitude towards ICT usage between the four groups studied. It can be concluded that all of the groups studied somewhat have an equal level of attitude towards ICT usage.

Table 5: Comparison in attitude towards ICT usage for selected independent variables using ANOVA

Variables	n	Mean	SD	F	P
Level of Education				29.304	0.0001
PMR and Primary school	65	4.24	2.52		
SPM/SPMV	126	6.23	2.31		
Pre university and university	69	7.32	1.51		
Type of Job				2.310	0.077
Government	56	6.56	2.09		
Private	37	6.19	2.69		
Retiree/housewife	62	5.65	2.42		
Self-employed	85	5.55	2.62		

Table 6: Relationship between attitude towards ICT usage and selected independent variables

Variables	R	P
Period of using computer in a week	0.348	0.0001
Income per month	0.326	0.0001
Period of using internet in a week	0.223	0.0001
Period staying in VVM village	-0.185	0.0040
Age	-0.208	0.0010
Experience	0.018	0.7860

In order to investigate for any relationship that might occur between attitude towards ICT usage and selected independent variables, Pearson product-moment correlation was performed. The result of the analysis is presented in Table 6.

Based on the result gained, it can be stated that there was significant and positive relationship between attitude towards ICT usage and three independent variables namely period of using computer in a week, income per month and period of using internet in a week. While two independent variables namely period of staying in their village and age indicates significant and negative relationship with attitude towards ICT usage. However, there was no significant relationship identified between attitude towards ICT usage and experience in holding a JKKK position.

Based on the Guilford rule of thumb, the magnitude of four of the independent variables which are period of using computer in a week ($r = 0.348$), income per month ($r = 0.326$), period of using internet in a week ($r = 0.223$) and age ($r = -0.208$) showed a low relationship with attitude towards ICT usage. However, one independent variable which was period of staying in the village ($r = -1.185$) indicated a negligible relationship with attitude towards ICT usage.

DISCUSSION

Results gained have proved that JKKK members in Malaysia have a moderate level of attitude towards ICT usage. This study further detected that there were significant difference and significant relationship that occurred in attitude towards ICT usage in a number of socio-demographic factors. In order to increase the level of attitude towards ICT usage to a higher level and

reduce the gap that exists within these factors, it is suggested that a number of alternatives such as conducting more courses and seminars for JKKK members. Other than that, ICT subsidy can be given to JKKK members and ICT centers can be established in the villages administered by JKKK. The target groups of such programs and initiatives must be JKKK members who are from the lower management members, lower educated, lower income, senior members, senior villagers and those who do not use computer and internet. Conducting ICT courses, seminars and house to house training are indeed important to enhance the attitude towards ICT usage. Raymond (1988) and Carey *et al.* (2002), suggested that the number of courses, seminars and training skills attended have a huge impact on the attitude towards ICT usage. The related agencies also must have a greater commitment to evaluate the success of the courses and seminars as this will reveal whether the courses and seminar have fulfilled its objectives or otherwise (Lee *et al.*, 2008). Providing ICT subsidy will enhance ICT possession among the JKKK members especially those who are in the lower income category. It is hoped that, this initiative will drive them towards a positive attitude towards ICT usage. Previously, the Malaysian government has allowed those who have savings in the KWSP to withdraw their savings for the purpose of buying computers. However, currently it has been cancelled due to several reasons. Hopefully, such subsidy can be given again especially to JKKK members with a tight monitoring from the government. Having ICT facilities such as ICT centers is also one of the important elements to construct positive attitude towards ICT usage and this is not surprising as Zainab *et al.* (2002) and Hudson (2001) have agreed with this by saying that among the factors that will contribute to the people's positive attitude towards ICT usage are a reliable and robust ICT infrastructure and a conducive info-structural environment. Previous experiences have proved that ICT centers have assisted in reducing the digital inequality by providing access to ICT and more importantly by providing necessary training to socio economically disadvantaged (Jinqiu *et al.*, 2007).

CONCLUSION

Based on the results obtained it can be concluded that JKKK members in Malaysia have a moderate level of attitude towards ICT usage. Independent t-test and ANOVA performed have indicated that the socio-demographic factors such as gender and type of position held in JKKK do have a significant difference

in attitude towards ICT usage. Further analysis using Pearson product-moment correlation has detected that the factors of period of using computer in a week, income per month and period of using internet in a week have a positive and significant relationship with attitude of using ICT. However, there was a negative and significant relationship with attitude towards ICT usage detected on the factors of age and period of staying in the Village Vision Movement.

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