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AN IMPACT STUDY OF THE MALAYSIA ICT VOLUNTEERS (MIV) PROGRAMME

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ABSTRACT

This research aims to measure, assess, and evaluate the impact of the Malaysia ICT Volunteers (MIV) Programme, which will provide a holistic understanding of the effectiveness of the MIV programme (including MIV roles and gap areas) and provide suggestions on effective ways to engage, ensure knowledge transfer and inculcate positive elements in the community. As part of this investigation, guided by the theory of planned behaviour (TPB), an online survey was employed to elicit the views of MIV volunteers and community members who have benefitted from the MIV initiatives. Two (2) questionnaires were developed for this purpose, and their face and content validity were assessed through focus group discussions with experts from MCMC. During the data collection period from August to October 2021, 329 valid cases from the MIV volunteers and 250 valid cases from the MIV community were gathered. Structural Equation Modelling (SEM) was used to determine the effectiveness of the MIV programme in terms of its impact on the community members' digital literacy and MIV volunteers' willingness to contribute to MIV initiatives. Statistical results confirmed that Attitude towards MIV and Perceived Behavioural Control exert significant influence on Intention to Volunteer, which in turn significantly influences the ICT Volunteering Behaviour of MIV volunteers. The findings related to the MIV community similarly reveal that their Attitude towards MIV and Perceived Behavioural Control have a significant impact on MIV Awareness (AW), which exerts a significant influence on their Digital Literacy Behaviour. On the other hand, Subjective Norms do not play a significant role in the participants' attitudes toward the MIV programme. Another important finding that emerged from this study is that the MIV programme is effective in promoting both ICT Volunteering Behaviour and Digital Literacy Behaviour by exerting a positive influence on the participants' willingness and attitude by increasing their confidence in the MIV programme's advantages. However, its benefits can be further enhanced by strengthening partnerships with schools, higher education institutions, private/government agencies, and non-governmental organisations (NGOs), as well as through more active social media utilisation for the promotion of ICT knowledge-sharing and engagement.



Keywords: MIV, Volunteers, Community, ICT, Theory of Planned Behaviour, Digital Literacy, Change of Behaviour, SEM

INTRODUCTION

The MCMC has undertaken many initiatives to raise awareness and educate the community. One of the initiatives is the Malaysia ICT Volunteers (MIV) programme, initiated in 2016. MIV aims to empower Malaysians to become digital citizens, besides supporting the 'Smart Digital Nation' initiative. It focuses on four (4) focus groups, namely MIV with community, MIV with school, MIV with Institutions of Higher Education (IHE), and MIV with international ICT volunteers (IIV).

The MIV community needs to impart the positive use of ICT knowledge and encourage digital adoption among themselves. In a nutshell, the MIV programme promotes and encourages digital and media literacy among citizens. Nevertheless, the effectiveness of the MIV programme in promoting positive behaviour in the usage of digital tools and media among the MIV community has yet to be assessed. It is very important to review and assess how effective it is in promoting digital literacy awareness. Thus, this study aims to measure the effectiveness of the MIV programme. This study has been carried out based on two (2) research models, ICT Volunteering Behaviour and Digital Literacy Behaviour, to gauge the effectiveness of the MIV programme based on the Theory of Planned Behaviour (TPB).

Problem Statement

There continues to be a persistent ICT Skills gap among underserved groups, exacerbated by the rising need to fall back on online interaction and practise social distancing as the numbers of those affected by the COVID-19 pandemic continue to rise. Thus, in the age of digital dependence, there is a growing need for ICT Skills among all portions of society to be able to operate within the new norms. Prior to the pandemic, MCMC had introduced a cadre of university volunteers known as the MIV to act as communications technology ambassadors. Although the activities of these volunteers have been curtailed during the pandemic, MCMC is hopeful of effective new norm workarounds and approaches to ensure the continued role of MIV as a human element in delivering awareness and ICT skills to ensure improved digital usage and adoption among identified communities. Since 2016, MIV as an empowerment platform aims at increasing the level of digital literacy, promoting digital inclusion, developing digital champions, reducing the digital divide and empowering digital citizenship.

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**Research Objectives**

The research aims to measure, assess and evaluate the impact of the MIV Programme, which will provide holistic understanding of the:

- a. Effectiveness of the MIV programme (including MIV roles and gap areas); and
- b. Provide suggestions on effective ways to engage, ensure knowledge transfer and inculcate positive elements in the community.

The following are the research objectives (ROs) which answer the specific research questions:

- 1** Evaluate the effectiveness of the MIV programme.
- 2** Conduct comparative studies (benchmark, best practices and metrics and indicators for digital literacy) with models in other countries.
- 3** Examine whether the programme has brought about a change in the population's attitudes and usage of the Internet in a safe and positive manner.
- 4** Assess and provide recommendations for enhancing the effectiveness of the MIV programme.

LITERATURE REVIEW

This section will review related work that studied the hypotheses (H1 to H8) addressing the relationship between TPB and volunteerism.

Attitude towards MIV has an influence on Intention to Volunteer

H1: Attitude towards MIV has an influence on Intention to Volunteer

According to the TPB, attitudes towards something can be operationalised using different labels depending on the context (Warburton & Terry, 2000). While Harrison (1995) failed to establish a link between attitudes and intention to volunteer, Okun and Sloane (2002) reported contrasting results. This view is supported by Maes, Leroy, and Sels (2014), who argued that, according to the TPB postulates, entrepreneurial intention and behaviour depend on three factors, one of which is attitude. Similarly, Lee, Reisinger, Kim, and Yoon (2014) and Chua, Meng, Ryu, and Han (2021) found that positive attitudes towards volunteering enhance the likelihood of working as a volunteer, even in the long term.

Subjective Norms has an influence on Intention to Volunteer

H2: Subjective Norms has an influence on Intention to Volunteer

Subjective Norms influence the Intention to Volunteer via social pressure, as individual behaviours are often guided by the opinions of significant others (Rhodes & Courneya, 2003). According to Brayley et al. (2015), Subjective Norms are essential for a person to decide whether to be a volunteer. Based on their study, one will continue to volunteer in the mentoring programme if they can feel the support of significant others towards them. Even in intention on purchasing green food, it was found that Subjective Norms have a significant correlation with the intention to purchase it (Ham, Jeger & Frajman Ivkovic, 2015). It is because people tend to consider other people's perspectives and expectations of their behaviour and are concerned about how people will behave. Thus, in making a decision, Subjective Norms have an influence on them.

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Perceived Behavioural Control has an influence on Intention to Volunteer*H3: Perceived Behavioural Control has an influence on Intention to Volunteer*

According to the TPB, human behaviour is guided by behavioural, normative, and control beliefs, which will in turn give rise to perceived behavioural control (Ajzen, 2002). Randle and Dolnicar (2009) found that Perceived Behavioural Control was among the most important influential factors on volunteering intentions. France et al. (2014) similarly noted that Perceived Behavioural Control was strongly related to one's intention to donate blood. Perceived Behavioural Control was identified as a reliable predictor of Intention to Volunteer by several authors, including Warburton and Terry (2000), Lee, Won, and Bang (2014), and Reuveni and Werner (2015).

Intention to Volunteer has an influence on ICT Volunteering Behaviour*H4: Intention to Volunteer has an influence on ICT Volunteering Behaviour*

ICT Volunteering Behaviour is a special form of prosocial behaviour geared towards helping others, often through non-profit organisations (Law & Shek, 2009). According to Ajzen (2002), stronger functional beliefs related to volunteering will lead to a stronger Intention to Volunteer and thus the actual prosocial behaviour. In an earlier study, Ajzen (1991) found that intention is a reliable predictor of behaviour and these findings were later confirmed by Hagger, Chatzisarantis, and Biddle (2002), and Sheeran (2002). Teo and Lee (2010) also found that pre-service teachers' intention to use technology was influenced by their behaviour towards computers, while Ayob, Sheau-Ting, Jalil, and Chin (2017) established that intention leads to better waste management.

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Attitude towards MIV has an influence on MIV Awareness

H5: Attitude towards MIV has an influence on MIV Awareness

According to the TPB, individuals' behaviour is directly influenced by their attitudes (Ranjbarian, Gharibpoor, & Lari, 2012). Wilkie (1994) defined attitude as "a learned predisposition to respond to an object in a consistently favourable or unfavourable way". Evidence also shows that those who use ICT systems in the volunteer programme are more likely to believe that they are of value to them in meeting the demands of their work than those who do not use ICT systems (Harrison, Murray, & MacGregor, 2004). As attitude is also affected by a person's level of familiarity with something, individuals are less likely to volunteer in unfamiliar initiatives. Consequently, millennials are more likely to participate in citizen science volunteer programmes because they have more positive attitudes towards technology, higher mobile phone use, and a great attraction to video games (Bowser et al., 2013).

Subjective Norms has an influence on MIV Awareness

H6: Subjective Norms has an influence on MIV Awareness

Subjective Norms are formed according to certain referents and motivations and are thus the key determinants of behavioural intention towards using technology (Akar, 2019). Foltz, Anderson, and Schwager (2007), as well as Wilson and Grant (2013), purport that influential groups are most relevant for the formation of subjective norms. Foltz, Anderson and Schwager (2007) explained that there are respondents who were not aware of computer usage policies because they are unconcerned with the opinions of others. Besides attitudes and Perceived Behaviour Control, Subjective Norms lead to an individual's intention to behave, including their level of awareness. According to Wilson and Grant (2013), as consumers feel pressured by certain groups, they might act according to those specific groups, thus creating awareness on the subject matter. They added that Subjective Norms are contributing factors in creating awareness for non-Muslims to purchase halal products as they consider food safety, cleanliness, etc.

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Perceived Behavioural Control has an influence on MIV Awareness

H7: Perceived Behavioural Control has an influence on MIV Awareness

As explained by Ajzen (1991), Perceived Behavioural Control refers to the person's assessment of the behaviour to be performed in terms of its difficulty, making it more likely that an individual would engage in a task perceived as easy. Consequently, as noted by Foltz et al. (2007), Rezai, Teng, Mohamed, and Shamsudin (2012), and Record, Straub, and Stump (2019), greater awareness of certain subjects and tasks are correlated with the perception of greater behavioural control. A study by Record, Straub & Stump (2019) found that users of Instagram are unaware that a self-harm reporting feature exists within the platform. However, once they were informed about the tool, it was shown that Perceived Behavioural Control influenced high intention to use the tool and increased their awareness on addressing risks of self-harm.

MIV Awareness has an influence on Digital Literacy Behaviour

H8: MIV Awareness has an influence on Digital Literacy Behaviour

Given that awareness affects behaviour in everyday life (Schwarzer et al., 2007), Adebowale and Dare (2012) were motivated to establish if this also applies to broader concepts and found that a high level of awareness of the country's educational policy on ICT increases individuals' interest in this subject. Ibrahim, Fisol, and Othman (2017) similarly noted that greater awareness of religious norms promotes adherence to religious customs, even when choosing financial products. On the other hand, Xu, Wang, and Yu (2020) reported that environmental awareness influenced consumers' intention to purchase green products.

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This section describes the steps involved to achieve the study's objectives.

Research Design

FIGURE 1: RESEARCH DESIGN

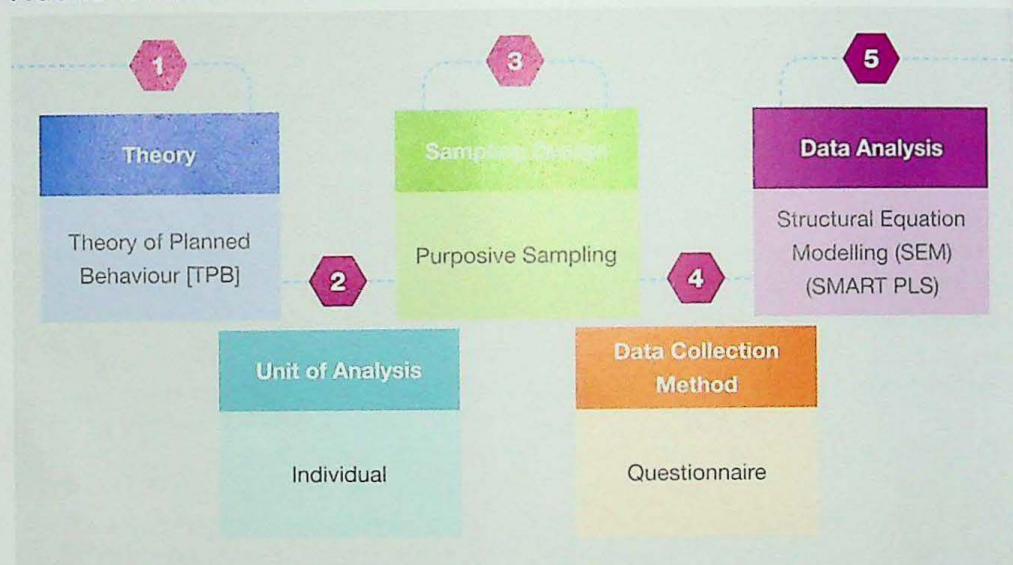


Figure 1 shows the research design used in this study. The quantitative approach was applied in this study based on the research objectives. To examine the relationships between variables, this study has proposed eight (8) hypotheses, four (4) for each research model. Thus, the use of such an approach is appropriate since quantitative studies usually investigate the relationships between variables and occasionally explain the causes of those relationships (Fraenkel & Wallen, 2009).

A survey is considered the most appropriate method because of its accuracy in gathering information and enabling researchers to generalise findings, from a sample to a population (Creswell, 2012). It is also appropriate for studies with large sample sizes, as it is expedient, cost-effective, and administratively efficient (Sekaran & Bougie, 2009). Finally, a survey is also relevant when querying respondents about their perceptions, opinions, and feelings (Shaughnessy, Zechmeister, & Zechmeister, 2012), which fits the nature of this study. The

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potential respondents were invited via email invitations, and an online survey is used to capture responses from respondents during the data collection period. This method allows this study to gain a faster and higher response rate while permitting real-time data monitoring (Cooper & Schindler, 2008).

Research Instrument

The outcome of the initial theoretical investigation was later used to develop the instruments to measure the effectiveness of the MIV programme. The instruments consist of a set of statements that were adapted from several sources and reformulated to suit the perspective of this study. Additionally, face validation, content validation, and a pilot study were employed during the instrument development stage to produce a valid and reliable instrument. The instrument comprises two (2) main parts, (i) Part A: Respondent's Demographic, and (ii) Part B: MIV programme's Evaluation.

To facilitate understanding among respondents, the items are presented in dual-language, Malay and English. The measurement scale for every construct is a seven-point numerical scale, which ranges from 1 to 7 ['1' extremely disagree to '7' extremely agree]. The scale is applied because

it provides a wider range and prevents respondents from selecting the neutral value. Thus, the chances of biasness will be decreased (Dwivedi et al., 2010).

Data Collection

Once a valid and reliable instrument had been successfully produced, the study proceeded with data collection. Primary data collection was conducted from August to October 2021. For the first category of respondents, MIV volunteers, the prospects were selected from the list of MIV volunteers given by the MCMC. The MIV volunteers answered the online survey through the URL link provided: <https://bit.ly/MIV-VOLUNTEER>, while for the MIV community, the URL link for the online survey was: <https://bit.ly/MIV-COMMUNITY>. The data collection for the second respondent category (general community) posed a challenge to the researchers because the list of participants was not available. In response to this limitation, the study employed two (2) alternative sampling procedures. First, MIV volunteers were reached through phone calls and emails and their personal connections with participants were recorded. Second, two (2) MIV programmes were conducted, and the responses were collected from among the participants at the end of the programmes.

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Data Analysis

The gathered data was analysed using statistical techniques to validate the research model that was developed based on the TPB model. Accordingly, the descriptive statistics and PLS-SEM were used to discover participants' change of behaviours prior to the MIV programme. This data analysis phase was done in two (2) stages. Both datasets first underwent data cleansing and preparation procedures, which focused on: i) outliers, ii) multicollinearity, and iii) normality. Next, the main analysis began with two (2) types of descriptive statistics, respectively, for respondents and constructs of this study. Finally, the PLS-SEM analysis was performed in two (2) stages: the Measurement Model and Structural Model. The research model based on the TPB Model was validated using PLS-SEM during the implementation phase. Finally, the results of the survey were reported and presented to the MCMC.



This study aims to investigate the behavioural changes triggered by MIV programmes for two categories of respondents, namely the MIV general community and volunteers. In order to make sense of the statistical findings produced in the prior stage, the interpretation and discussion were carefully and critically evaluated during the last stage of this study. This stage also highlighted

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the strengths and weaknesses of the current implementation of MIV programmes, along with suggestions for future improvements. These were done based on empirical findings yielded by the descriptive and inferential statistical analyses.

MIV Volunteers

At the end of the data collection period, this study managed to gather 415 responses. During the cleansing procedures, 86 deletions were made, thus producing 329 valid cases for the final PLS-SEM analysis.

Descriptive Statistics of Respondents

This section presents the summarisation of the demographic information of the respondents based on the returned questionnaires. The information obtained from the survey included the phone number, name, email, age, gender, race, highest education, and working status. From the survey, 329 respondents of MIV, aged between 18 years old and above 50 years old, have answered the questionnaires. Out of 329 respondents, 263 respondents are female volunteers (79.94 percent) and another 66 respondents are male

volunteers (20.06 percent). From the data collected, the questionnaires have been answered by most of the respondents with age range between, 31-40 years old, which is 150 respondents (45.59 percent), 96 respondents with age range between 26-30 years old (29.18 percent), 64 respondents with age range between 18-25 years old (19.45 percent), 18 respondents with age range between 40-50 years old (5.47 percent) and another one respondent with age > 50 years old (0.30 percent).

Moreover, respondents comprised different ethnicities where the majority of respondents are Malays (231 or 70.22 percent), while 97 respondents (29.48 percent) are from other races and ethnicities (Siam, Bajau, Banjar, Bidayuh, Bugis, Brunei, Cocos, Dusun, Iban, Iranun, Jawa, Kadazan, Kadazan Dusun, Kenyah, Kimaragang, Kedayan, Kayan, Kagayan, Lunbawang, Murut, Rungus, Salako, Sino, Sungai, Suluk, and Tidung) and only one (1) respondent (0.30 percent) is Chinese. In terms of education level, 183 respondents (55.62 percent) have a degree, 79 respondents (24.01 percent) have diplomas, 52 respondents (15.81 percent) have SPM//SPMV/STPM/Foundation, 12 respondents (3.65 percent) have a Masters, and one

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respondent each has a Sijil Kemahiran Malaysia, SRP and UPSR. In terms of work status, 220 respondents (66.87 percent) work full-time in the private sector. Of the remaining respondents, 26 volunteers are students (7.90 percent), followed by 25 volunteers (7.60 percent) working full-time in the government or in a government agency. In addition, 14 respondents (4.26 percent) are self-employed, 12 (3.64 percent) are housewives, 11 respondents (3.34 percent) are unemployed, two (2) respondents (0.61 percent) are self-employed and housewives, two (2) respondents (0.61 percent) are students and working in the government or in a

government agency and another two (2) respondents (0.61 percent) work part-time in government, while the remaining 15 respondents (4.56 percent) have other working status or hold two (2) jobs. Table 1 indicates a summarisation of the demographic information of the respondents.

329

respondents of MIV aged between 18 years old and above 50 years old have answered the questionnaires.



TABLE 1: SUMMARISATION OF DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

ITEM	FREQUENCY	PERCENTAGE
Gender		
Female	263	79.94
Male	66	20.06
Total	329	100
Age		
18 - 25 years old	64	19.45
26 - 30 years old	150	45.59
31 - 40 years old	96	29.18
40 - 50 years old	18	5.47
>50 years old	1	0.30
Total	329	100

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ITEM	FREQUENCY	PERCENTAGE
Race		
Malay	231	70.22
Chinese	1	0.30
Other Races	97	29.48
Total	329	100
Highest Education		
Degree	183	55.62
Diploma	79	24.01
SPM/SPMV/STPM/ Foundation	52	15.81
Masters	12	3.65
<i>Sijil Kemahiran Malaysia</i>	1	0.30
SRP/PMR	1	0.30
UPSR	1	0.30
Total	329	100
Working Status		
Full-time private	220	66.87
Student	26	7.90
Full-time government/agency	25	7.60
Self-employed	14	4.26
Housewife	12	3.64
Unemployed	11	3.34
Self-employed & Housewife	2	0.61
Student & Full-time government / agency	2	0.61
Part-time government	2	0.61
Other working status	15	4.56
Total	329	100

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Structural Equation Modelling

A. Assessment of Measurement Model

The measurement model is examined for construct reliability and validity. First, the construct reliability was assessed through Cronbach's Alpha (CA) and composite reliability (CR), with the recommended value of 0.700 (Hair et al., 2014). The result shows that Perceived Behavioural Control has the lowest construct reliability (CA=0.906, CR=0.925) while the highest belongs to Intention to Volunteer (CA=0.970, CR=0.977). Thus, the results illustrate that the indicators used to present the construct have desirable internal consistency reliability. Second, the constructs' validity was evaluated through convergent and discriminant validity. In this study, Average Variance Extracted (AVE) was tested to examine the convergent validity. The results indicate that the AVE values ranged between 0.640 to 0.894, which were all higher than the suggested value of 0.500. Given these results, the convergent validity is ascertained. This study employs the HTMT criterion for assessing the discriminant validity. The HTMT criterion is considered to be satisfied since all the values were below the accepted value of 0.900. Therefore, the discriminant validity is established.

B. Assessment of Structural Model

After the CFA that was done during the measurement model analysis, the structural model was examined. The conceptual model of this study consists of four (4) hypotheses. The R² value is 0.618 and 0.497 each for Intention to Volunteer and the ICT Volunteering Behaviour. It is suggested that 61.8 percent of the variance in MIV Awareness can be explained by Attitude towards MIV, Subjective Norms and Perceived Behavioural Control. Furthermore, 49.7 percent of the variance in Digital Literacy Behaviour can be explained by MIV Awareness. Table 2 summarises the assessment of the four (4) hypotheses in the structural model.

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TABLE 2: HYPOTHESES IN THE STRUCTURAL MODEL

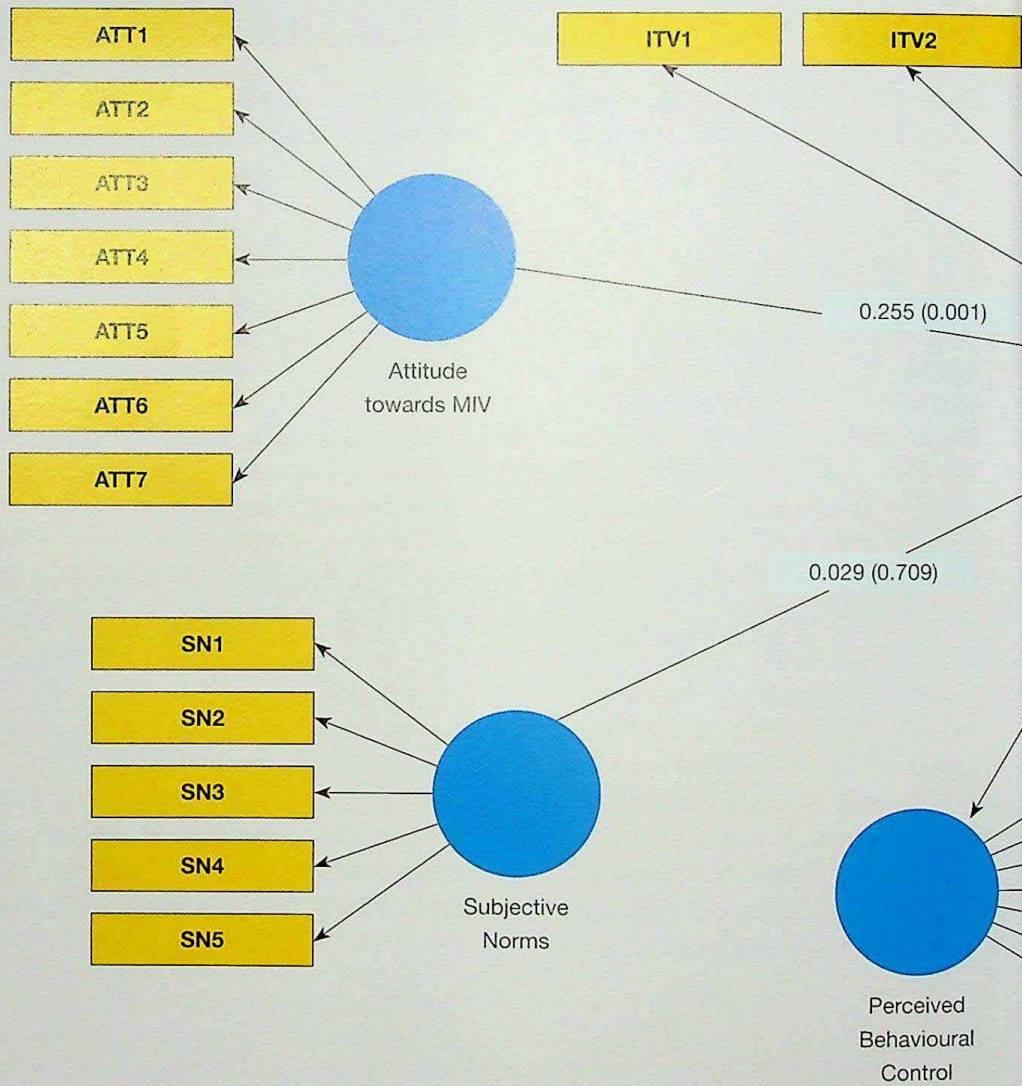
HYPOTHESIS		BETA	P VALUE	T VALUE	DECISION
H1	ATT->ITV	0.255	0.001***	4.409	Supported
H2	SN->ITV	0.029	0.709NS	1.400	Returned
H3	PBC->ITV	0.574	0.000***	7.664	Supported
H4	ITV->VB	0.732	0.000***	17.924	Supported

Note: 1.65 (* $p < 0.10$), 1.96 (** $p < 0.05$), 2.58 (** $p < 0.01$), NS=Not Significant, ATT=Attitude towards MIV, SN=Subjective Norms, PBC=Perceived Behavioural Control, ITV=Intention to Volunteer, VB=Volunteering Behaviour

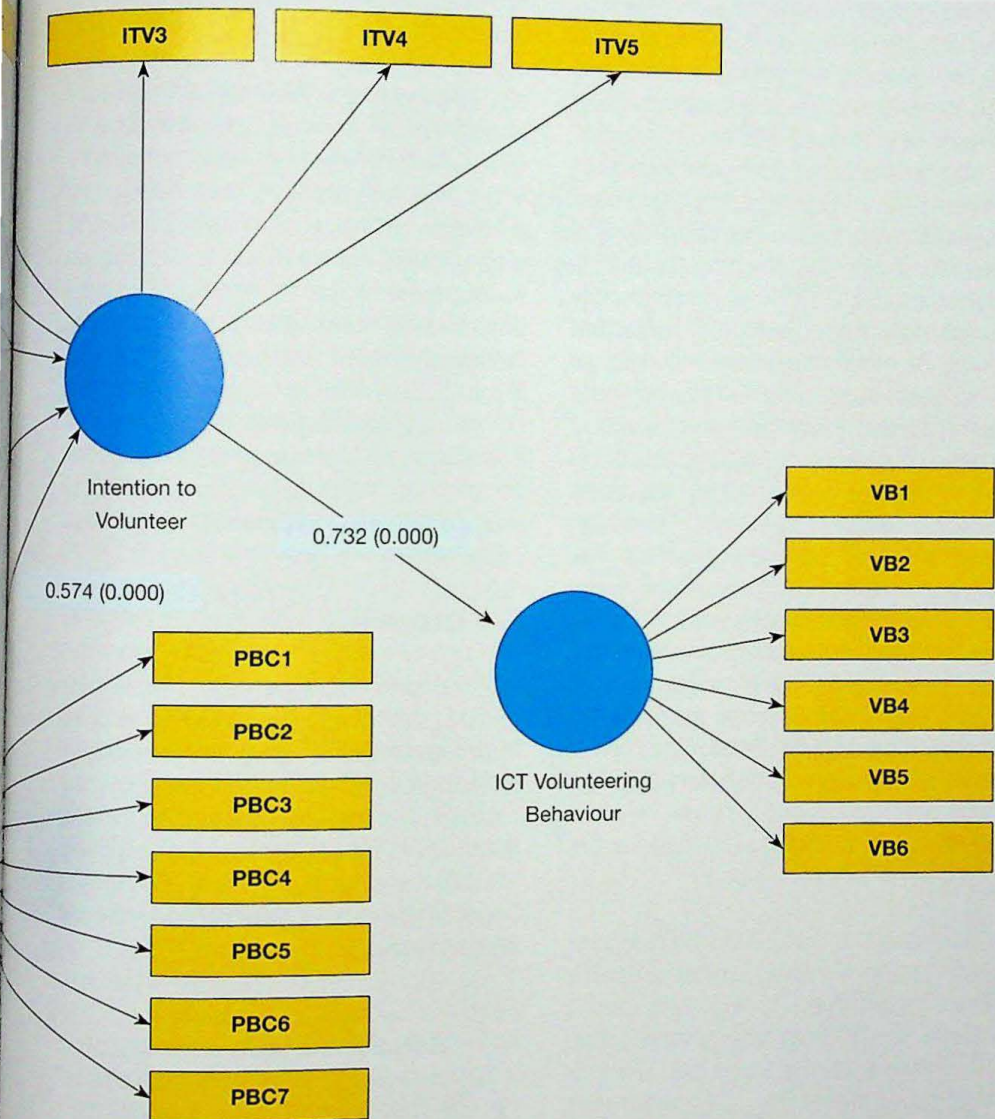
Hypothesis H1 postulated that ATT significantly influences the ITV among MIV volunteers. From the analysis, it was discovered that this relationship is significant ($\beta=0.255$, $t=4.409$, $p<0.01$). Therefore, this finding supports hypothesis H1. However, the result shows that SN did not significantly affect ITV ($\beta=0.029$, $t=1.400$, $p=0.709$), which returned the hypothesis H2. Meanwhile, hypothesis H3 posited that PBC would significantly influence the ITV. The analysis shows that this hypothesis is supported ($\beta=0.574$, $t=7.664$, $p<0.01$), thus supporting the proposed hypothesis. Similarly, hypothesis H4, which postulated a significant relationship between ITV and VB, is also supported ($\beta=0.732$, $t=17.924$, $p<0.01$) in this study. Figure 2 illustrates the bootstrapping analysis of the structural model for MIV volunteers.

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FIGURE 2: THE STRUCTURAL MODEL FOR MIV VOLUNTEERS



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TABLE 3: SUMMARISATION OF DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

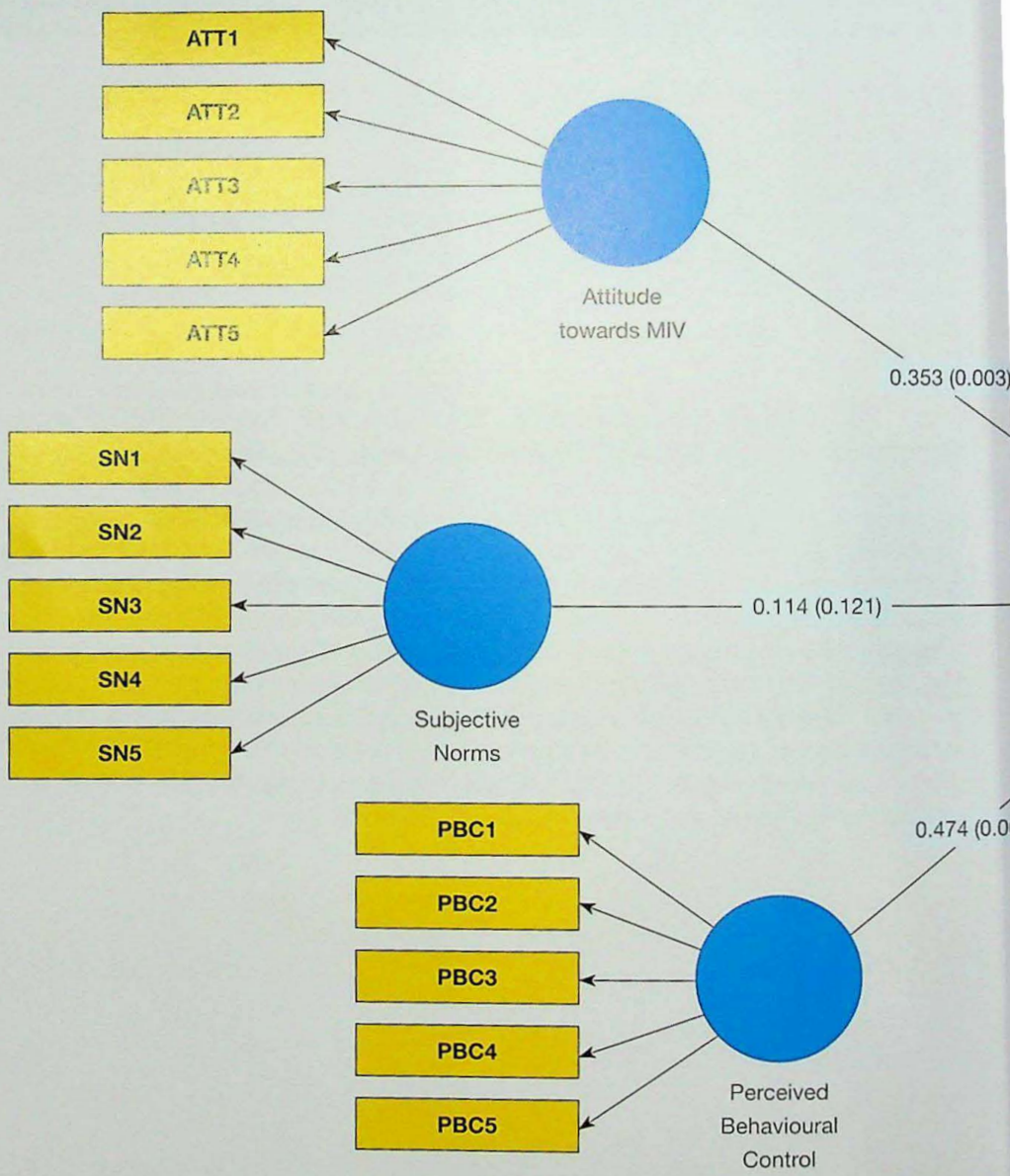
ITEM	FREQUENCY	PERCENTAGE
Gender		
Female	199	79.60
Male	51	20.40
Total	250	100
Age		
<12 years old	1	0.40
13 - 17 years old	4	1.60
18 - 25 years old	180	72.00
26 - 30 years old	19	7.60
31 - 40 years old	32	12.80
41 - 50 years old	8	3.20
>50 years old	6	2.40
Total	250	100
Race		
Malay	194	77.60
Chinese	26	10.40
Indian	5	2.00
Other Races	25	10.00
Total	250	100

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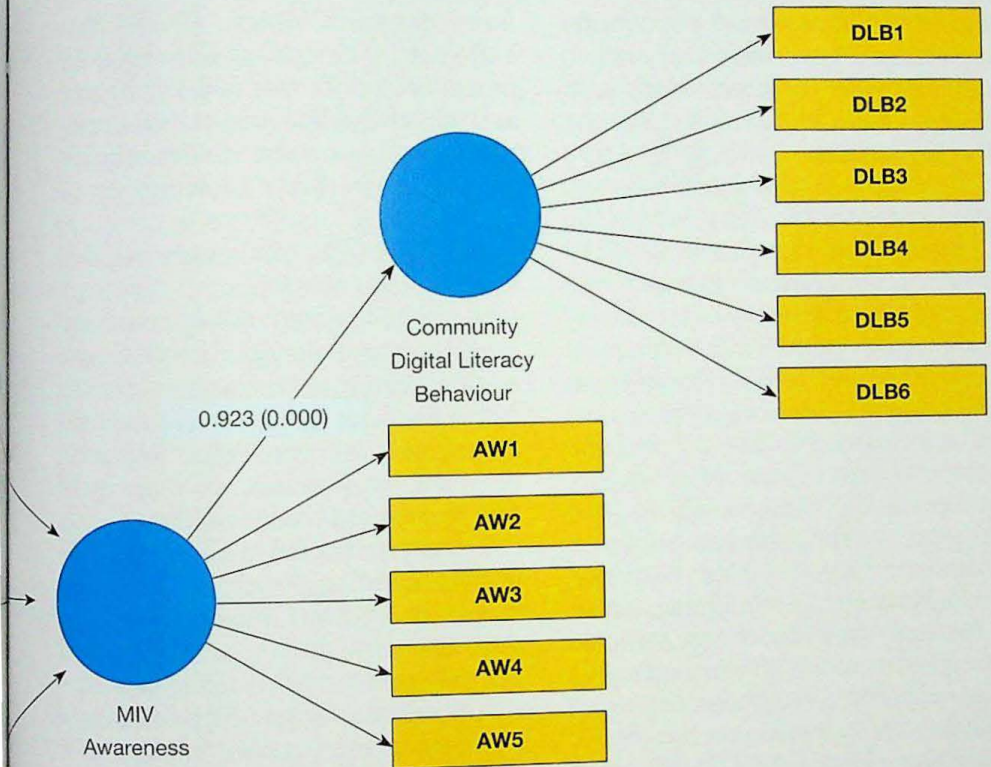
ITEM	FREQUENCY	PERCENTAGE
Highest Education		
PhD	1	0.40
Masters	5	2.00
Degree	48	19.20
Diploma	21	8.40
<i>Sijil (Kemahiran, Komuniti, etc.)</i>	6	2.40
SPM/SPMV/STPM/ Foundation	159	63.60
Secondary School	8	3.20
Primary School	2	0.80
Total	250	100
Working Status		
Student	171	68.40
Full-time private	33	13.20
Self-employed	13	5.20
Full-time government/ agency	10	4.00
Part-time government/ agency	7	2.80
Housewife	5	2.00
Others	11	4.40
Total	250	100

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FIGURE 3: THE STRUCTURAL MODEL FOR MIV COMMUNITY



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Discussion

When the data obtained through the community survey was analysed, a significant and positive relationship between attitude towards MIV and MIV awareness emerged, thus supporting H5 and findings yielded by extant studies (Chu, 2011; Tuurosang & Faisal, 2014; Wang & Sun, 2010). Therefore, to further benefit from the MIV programme, community awareness of the MIV implementation needs to be increased. However, as noted before, MIV awareness was not influenced by the participants' subjective norms, due to which H6 was rejected. This finding is also discordant with the results reported by other authors (Knabe, 2012; Kritzinger, 2017; Makaure, 2019; Zhang et al., 2018), likely due to different research settings. Therefore, different means of improving community awareness are needed to fully realise the benefits of the MIV programme.

On the other hand, perceived behavioural control was found to positively and significantly influence community members' MIV awareness, as found in previous studies (Ajzen, 2020; Dwivedi et al., 2015). This finding is not surprising given that the MIV

programme focuses on current issues related to technology use, including Love Scam, E-Waste, Check Your Label, and Oversharing. Consequently, by continuing to offer relevant training and enhancing MIV programme quality and accessibility, the community will likely continue to find it relevant.

In support of H8, MIV awareness was found to exert a positive and significant influence on the community members' digital literacy behaviour, which is also in line with published data (Ajzen, 2015; Kazaure, 2019; Makaure, 2019; Mabitle & Kritzinger, 2021; Ranga et al., 2019). In particular, the majority of MIV participants concurred with the statements that the programme has enhanced the quality of their lives and has improved their ICT usage, including their understanding of how to share the information safely and ethically. As the majority of the MIV participants concurred that, upon programme completion, they had become more cautious about online risks and threats, the programme objectives had been met. This evidence can be used to develop other programmes, focusing on children, teenagers and the elderly, or other user groups.

RECOMMENDATIONS

The study findings revealed that MIV volunteers, as well as the MIV community, have changed their behaviour after attending the MIV programme, but their subjective norms (which are influenced by the external environment, and especially by peers and family members) do not exert a significant impact on the effectiveness of the MIV programme. Therefore, additional promotions are needed to reach out to MIV volunteers and participants in order to motivate them to serve as MIV programme influencers. Changing people's behaviour is a challenging task, as it requires synergy between diverse stakeholders as well as their willingness to actively engage in this MIV programme, especially schools, higher education institutions, private and public agencies, and NGOs. A strategic collaboration of these entities would create an excellent opportunity for MIV volunteers to network, engage, and reconnect with their peers while sharing their best practices with regard to digital literacy.

In addition, the MCMC should consider customising the MIV digital literacy module to different age groups and aptitude levels, starting with children, teenagers, and the elderly, as this will increase community interest in participation as well as the benefits

derived from the programme. To sustain volunteer motivation, it is necessary to adopt a suitable reward system, while continuing to improve the quality of the ICT programme by partnering with diverse stakeholders such as schools, higher institutions, private and public agencies and NGOs.

To understand deeper in terms of the level of each construct in certain demographic groups, richer data is required for both categories of respondents, MIV volunteers and the general community (participants). Accordingly, richer data means that deeper analyses could be done, and more meaningful knowledge could be obtained. Using the same research approach (survey), some extra demographic information and required MIV topics are suggested to be collected in future research for further understanding of behaviours and characteristics of specific demographic groups. For example, a more advanced analysis like cross tabulation could be done with the availability of certain demographic data like states, races and ethnicities, as well as age groups. In addition, the availability of the data related to the required MIV topics would be useful to map the preferences with the available resources/expertise.

CONCLUSION

As MIV programmes rely on volunteers, it is essential to ensure their continued commitment, which can be achieved by a better-designed reward and recognition system, as well as opportunities to network and collaborate with ICT volunteers in other parts of the world. Moreover, even though digital literacy is important for the social growth of communities and the economic prosperity of nations, the effectiveness of such ICT programmes has not been extensively studied. This gap in extant knowledge was addressed in the present study. Its findings indicate that attitude towards MIV, subjective norms, perceived behavioural control, intention to volunteer, and ICT volunteering behaviour can potentially influence digital and media literacy at both individual and community levels. Thus, it is essential to develop new ways of promoting the MIV programme to the wider community to increase the number of potential participants as well as MIV volunteers. It is also important to forge relationships with relevant entities that can provide knowledge and resources for the MIV programmes.

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