Determinants of Community Behaviour Towards ICT-Oriented Applications - Volunteer Smartphone Patrol (VSP) PDRM

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Abstract. This study focuses on the determinants of community behaviour towards ICT-oriented applications - Volunteer Smartphone Patrol (VSP) PDRM as a medium to submit complaints. The VSP application has spanned four years since its launch in May 2016, but the community participation as a consumer is still low and far from the target set by the government. Registered members were also found to have less use of this application in making complaints and reports to the Royal Malaysian Police (PDRM), especially in dealing with criminal issues that occur within the community. Therefore, this study was conducted to find out if there is a relationship between factors that influence the intention of the community to use the PDRM VSP application. This study uses the Unified Theory of Acceptance and Use of Technology (UTAUT) by [1] as the basis for the formation of variables and research framework. The data were obtained from questionnaires distributed to 155 respondents living in the state of Kedah. The findings show that there was a significant relationship between factors that influence the intention to use VSP. The results of this study also found that the expectations of the effort and the conditions of the facility had a great influence on the intention to use VSP applications. Therefore, the study emphasizes that with the availability of better VSP applications, the effectiveness of PDRM service delivery to the community in the state of Kedah can be improved.

Keywords: Information and Communication Technology (ICT), Intention to Use, Volunteer Smartphone Patrol (VSP), UTAUT Model

1. Introduction

The various forms and mediums of technology are actively utilized for the purpose of connecting all information around the world [2]. Dependencies and access to technology in managing life has influenced the lives of the majority of society members. With its ICT medium, all dealings that take a long time can be accelerated, summarized or shortened. Although many users are generally impressed and dependent on the internet, it is still difficult to prove how their use has helped meet their needs [3]. The revolution of the creation, processing, use, management and storage of information is shaped by the advancement in computer technology, telecommunications and software. With the Industry 4.0 that emphasizes on the aspect of smart manufacturing, the human resources that will fill it must be wise to seize opportunities, be creative and innovative in submitting suggestions and dare to take risks [4]. In Malaysia, the Royal Malaysian Police (PDRM) is also not lagging behind in the use of technology and strengthening information systems widely to deal with crime and to safeguard public order. Thus, the ICT Volunteer Smartphone Patrol (VSP) application or better known as the VSP application is a new PDRM initiative to create collaboration and strategic cooperation to prevent crime with the local communities acting as the eyes and ears of the police.

Initially, PDRM wanted more people to register as VSP application users to facilitate collaboration between them and the authorities in preventing criminal incidents in their respective areas. According to the former Director of the Crime Prevention and Community Safety Department (IPKK) Bukit Aman, Datuk Tajudin Md Isa, the application registration rate is still at an unsatisfactory level where only 649,734 users registered for this new application after it was launched on 19 May 2016 [5]. These numbers are still far below the target of 3.5 million users set by PDRM. This VSP application is a new initiative to boost crime surveillance and prevention activities among the community. Users of this application only need to share information as well as photos and videos about criminal incidents so that it is easier for PDRM to provide assistance to them [6].

According to the Police Chief of Kuala Lumpur, Datuk Seri Mazlan Lazim, the VSP application has received good response in Kuala Lumpur with about 163,000 members since its launch, but the
number of complaints was still at the low level [7] and likely most VSP members still do not understand the function of the system and do not know how to channel information using VSP applications which can be downloaded on their mobile phones. According to him, the VSP application is a new innovation by PDRM to facilitate the public to provide information or complaints that need police assistance. Among the information and complaints that can be made are such as theft cases, drugs, crime, illegal racing, smuggling, returning to the home town and other information that require action, observation and monitoring by the PDRM. However, the results of a survey through social media have found that many users express their dissatisfaction with the VSP application. Among the comments given were too limited words of complaint allowed, delayed receipt of Transaction Authorization Code (TAC) number, application failed to find coordinates and inability of VSP application to accommodate files that were multiple formats.

Although it is easy and free to report criminal activities through the VSP application, it is found that registration to be a member of VSP is still lacking and some of its own VSP members do not use the VSP application to prevent crime in their area. Sequence of these problems, then this study was produced to find out if there is a relationship between the factors that influence the intention of the community to use VSP and identify which variables influence the community to use the application.

2. Methodology

This research is a cross-sectional study which uses questionnaire for the construction on the factors that influence the intention to use VSP applications. According to [8], [9] cross-sectional survey study is quick, cheap and efficient in obtaining information on population. In addition, the survey method is also a form of data collection designed for the purpose of predicting and analysing the relationship between the study variables. Thus, this method is very suitable to use because it allows information to be obtained directly from the respondents [10], [11].

The sample of this study is based on users or VSP members in Kedah. The total number of samples is 155 people. The samples selected by researchers include individuals known as a VSP member and distributing the online questionnaire to the identified respondents through social media. A snowball approach in the selection of respondents also was applied where the potential respondents were identified based on suggestions or clues by the interviewed respondents [12]. A list of survey contains 35 questions and divided into six sections, which measured by the Likert scale. The respondent’s profile of the study is shown in Table 1.

| Item                     | Detail         | Frequency | Percentage |
|--------------------------|----------------|-----------|------------|
| Gender                   | Men            | 113       | 72.9       |
|                          | Women          | 42        | 27.1       |
| Age                      | Less than 30 years | 42    | 27.1       |
|                          | 31 - 40 years  | 79        | 51.0       |
|                          | 41 - 50 years  | 28        | 18.1       |
|                          | 51 years and above | 6      | 3.9        |
| Marital Status           | Single         | 48        | 31.0       |
|                          | Married        | 95        | 61.3       |
|                          | Divorced       | 12        | 7.7        |
| Employment Sector        | Government     | 103       | 66.5       |
|                          | Private        | 33        | 21.3       |
|                          | Self-employed  | 19        | 12.3       |
| Membership Period        | Less than 5 months | 28    | 18.1       |
|                          | One year       | 63        | 40.6       |
|                          | Two years      | 45        | 29.0       |
|                          | Three years    | 19        | 12.3       |
| Level of Volunteerism    | Yes            | 140       | 90.3       |
|                          | No             | 15        | 9.7        |
| Level of Education       | SPM            | 53        | 34.2       |
|                          | STPM / Diploma | 26        | 16.8       |
3. Theoretical Framework

This study will examine the Unified Theory of Acceptance and Use of Technology (UTAUT) model from [1], [13]. [1] have introduced the UTAUT model based on eight models of technology adoption that have been made by previous researchers. Study through the UTAUT model will focus on four direct determinants, i.e. (i) Performance Expectancy (PE), (ii) Effort Expectancy (EE), (iii) Social Influence (SI), (iv) Facilitating Condition (FC) and demographic factors in influencing intention to use VSP applications (usage). Diagram 1 below detailing the UTAUT based on the original construct and source of the model.

Diagram 1: Research framework

4. Findings and Discussion

Pearson correlation analysis was used to assess the strength and correlation between two variables namely independent variable and dependent variable. This analysis was performed to test the hypotheses used to assess the strength of the relationship between an independent variables and dependent variables [14]. In addition, the Pearson correlation can help the researcher to know whether the variables surveyed have a significant relationship or otherwise.

Referring to Table 2, there is a relationship between performance expectations and intention to use of VSP which is r = 0.494; p <0.01. This means that there is a moderate and significant positive relationship (p = 0.000 <0.01) between performance expectations and intention to use VSP. The value of correlation coefficient 0.494 indicates that the two variables have a moderate positive relationship. This means that when the performance expectations of the VSP application is high then the possibility for the respondent to use the VSP application is also very strong. Furthermore, the correlation coefficient value shows that there was a relationship between effort expectancy and the use of VSP which is r = 0.626; p

| Degree            | Masters | Doctorate Degree |
|-------------------|---------|------------------|
| 36.8              | 11.0    | 1.3              |
ome previous studies such as [15], [16] show that performance expectations affect an individual’s intention to use an information system. Thus, it can be interpreted that the higher confidence of individuals that by using information systems can improve their performance, thus increasing their intention to use information systems in work. Furthermore, effort expectations are defined as the level of individual accessibility of using information systems [17]. The results of previous studies explain that easy-to-use information systems can increase an individual's interest in order to apply and performing work [15], [18]–[22]. Based on the relevant findings, it founda that there is a relationship between effort expectancy with the intention to use VSP.

Social influence refers to the extent of an individual’s perception in believing that others people influence him or her using a new system [18], [23]. Empirical evidence on a past studies explains that social influence affects individuals ‘intention to use information systems [24], [25]. This can be interpreted that social influence can increase an individual’s interest in using information systems. The study agreed with the previous studies where there is a strong relationship between social influence with the intention to use VSP application. Finally, the facilitating conditions is the level of confidence that the infrastructure, organization and technical environment can encourage the use of information systems [16]. The study by [16], [17] proved that the conditions of the facility influences the intention to use information systems. This study also was in line with previous studies by [26], [27] reported the infrastructure facilities are significant predictors of behavioral intentions.

Hence, the results of the study show, the higher in the performance expectations, efforts expectation, social influence and facilitating conditions, would be stronger in its relationship with the intent to use the Volunteer Smartphone Patrol (VSP) and consequently will lead to actual use. The results of this study also show that the UTAUT model was able to be used as the basis to measure the level of user acceptance of VSP applications among the community.

**5. Conclusion**

The analysis using the UTAUT model shows that the technology known as VSP application will be more acceptable within the community if it is easier to use and supported by the facilities accessible by the people. This study can verify previous studies on technology acceptance that the UTAUT model can be used to measure the level of technology acceptance. The results of the study on the influence of independent variables that influence the intention to use VSP also show that two constructs in the UTAUT model, which are effort expectation and facilitating conditions, have brought great influence in

### Table 2: Pearson Correlation Between Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Condition With Intentions Using VSP Performance Expectancy

| Variables               | Intention to use VSP (Correlation Coefficient) | Significant |
|-------------------------|-----------------------------------------------|-------------|
| Performance Expectancy  | 0.494**                                       | 0.00        |
| Effort Expectancy       | 0.626**                                       | 0.00        |
| Social Influence        | 0.504**                                       | 0.00        |
| Facilitating Condition  | 0.621**                                       | 0.00        |

** Pearson correlation was significant at p <0.01
this. In other words, the ease of use of the application affects one’s intention to try a VSP application. Although there is a sense of dissatisfaction with this application, the findings show that people still consider that VSP application is user-friendly and not complicated to use. The study found that if the government places more emphasis on improving the problems, it will be able to influence more people to become users and members of the VSP. Therefore, the relevant parties need to improve the VSP application system, especially in receiving TAC numbers, tracking the coordinates or location of the sender and improving the data and record system of various formats.

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