

THE LEVEL OF TECHNOLOGY ACCEPTANCE OF FOREIGN WORKER TOWARDS POWERPOINT (PPT) IN SAFETY AND HEALTH INDUCTION COURSE (SHIC)

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Abstract

Attending Safety and Health Induction Course (SHIC) is compulsory for construction workers before they can enter and work in this site. After attending this training, they will get the Green Card which allows them to start working on the sites. However, the PowerPoint (PPT) still be used as an existing medium which has been used to disseminate the safety information in SHIC using the Malay language and English as a mediator. Thus, this study examines the level of technology acceptance of foreign worker towards PPT after attending the training, which assessed using the Technology Acceptance Model (TAM) in order to seek their response. It is important to seek the foreign workers' response towards PPT which providing empirical evidence to the CIDB, trainer and employers' management for future improvement. So, TAM has been used to study the factors which impact the foreign workers' acceptance level towards PPT. The factors contained perceive usefulness (PU), perceive ease of use (PEOU), attitudes towards using (A) and behavioural intention to use (BI). Thereby to seek the foreign workers acceptance level towards PPT in SHIC, convenient sampling has been chosen in this study. The area covered in this study was Kedah and Perlis and it is limited to 64 foreign workers due to the constraint and limitation. The analyzed results reveal that the foreign workers perceived usefulness and perceived ease of use shows the moderate positive relationship towards the PPT. While, foreign workers attitude and behaviour intention to use shows low correlation with no significant impact towards the PPT. The finding suggests that PPT still useful to be used as a learning medium, but needs to be upgraded and improve regarding the content, text, video, language usage, functions, interfaces and others. As a future result for this improvement, it will lead to a better learning medium, encourages them to stay motivated and focus while increasing the construction performance and decreasing the accidents.

Keywords: *power point, technology acceptance level, foreign worker, safety and health induction course, construction industry*

INTRODUCTION

The construction industry is one of the critical sectors which plays an important role in the national economy and social development (Ofori, 2015). It plays a crucial part to fulfill the global community's desires in the form of physical development, such as infrastructure development, housing, business, education centers and so on (Salleh, 2014). In most developing and Industrialised countries, the construction industry becomes one of the significant industries that represents a large contribution towards the Gross Domestic Product (GDP). Rapid growth and development in the construction industry increases the yearly labour force demand, attracting more local and foreign workers to work in the construction sector (Hamid et al., 2013). However, there exists a labour force deficiency phenomenon in this industry, which causes Malaysia to rely on foreign workers.

The recruitment of foreign workers is not a new issue in Malaysia (Shafii et al., 2009; Rahman et al., 2012). The first wave of recruitment occurs illegally in the 1970's and started to receive attention in the mid 1980's (Kanapathy, 2001) when the Malaysian government started to use foreign workers legally in various sectors (Rahman et al., 2012) including the

construction sector. Most of the foreign workers in Malaysia came from various countries such as Indonesia, Bangladesh, Myanmar, Pakistan and Nepal. However, the numbers of foreign workers entry in Malaysia have created an influx of foreign workers in the Malaysian employment sectors, including the construction sector which created a language diversity effect.

As such, there exists a communication problem among the foreign workers. Valithern (2014), states that communication problems, also known as language barriers in the Malaysian construction industry are the greatest concern for supervisors or contractors when giving instructions to foreign workers who are unable to understand or speak in the local language which creates a safety issue, delays, accidents. Most of the cause of an accident at construction sites is the worker's attitude while working (Ghani et al., 2008). Most of the workers did not properly wear the personal protective equipment (PPE) because of negligence, ignorance, over-confidence (Krishnamurthy, 2006) and having a low level of safety awareness on-site (Mahalingam and Levitt, 2007).

Malaysian Construction Industry Development Board (CIDB) realized the important role of safety awareness among construction workers and have issued the Green Card Program which require all the construction workers to attend Safety and Health Induction Course (Bakri et al., 2006). All the participant will be registered with the CIDB and the Green Card, which act as personnel identified areas card to enter the construction sites. Without the card, they are not allowed to enter the site. Referring to the existing information delivery medium in SHIC, there are several weaknesses found when it was used for foreign workers (Salleh et al., 2014) such as the language, contents and the medium itself. A preliminary study by Salleh et al. (2012) found that PPT used in SHIC is less interactive for disseminating the information to the foreign workers due to most of the text was written in the Malay language.

Previous studies have proven that this problem exists. A study of 102 Myanmar construction workers who attended a safety course that used PPT found that for verbally conveyed information, only 13.7% (14) understood the content while 43.1% (44) were unable to understand it at all (Salleh, 2014). Meanwhile, for written information, only 6.9% (7) understood it while 55.88% (57) did not. Another preliminary study was on 96 instructors, showed that 43.75% (42) of them, agreed that a verbal language problem exists and 77.1% (74) agreed that a writing problem occurs among Myanmar workers in a safety course (Salleh, 2014). Around 85.4% (82) of the instructor believed that the problem arises when the instructors or trainers exclusively used the written Malay language for conveying information in the safety courses.

Therefore, the purpose of this study was to conduct a reassessment on the existing medium in terms of foreign worker acceptance levels towards PPT and to seek their response of the PPT in SHIC. For the PPT reassessment, Technology Acceptance Model (TAM) has been used in this study. According to Hsu and Chang (2013), TAM specifically used to examine the impact of technology on user behaviour, perceived usefulness and perceived ease of use as a key factor which affects individual attitudes when they use specific technology. In simpler words, TAM has been used to explain the user or individual's acceptance behaviour towards the technology (Surendran, 2012).

TAM became one of the most popular models linked to technology acceptance and prediction of user acceptance of technology (Davis, 1989). According to Ducey (2013), TAM is linked from attitude toward using (A) to behavioral intention to use (BI) and to actual system use based on the Theory Reasoned Action (TRA). For example, a user who has more positive attitude towards using (A) the actual system, will cause the system to develop stronger behavioral intention to use (BI) the actual system and vice versa. In other words, when users start to believe that specific technology make their work performance better than before, they will develop stronger behavior intention to use (BI) the system.

While, Hamid and Ismail (2014), explained that two variables in TAM which are the usefulness and ease of use, are supported by external variables, attitude towards using, behavioral intention to use and actual system use in order to seek the technology acceptance by users. Moreover, it is important to seek the foreign workers acceptance level towards the PPT which can provide empirical evidence for the future improvement in the SHIC.

MATERIALS AND METHODS

Questionnaire

The questionnaires were adopted from Lorenzo-Romero et al., (2014) and modified for the purposes of this study where they were used to evaluate the level of technology acceptance of foreign workers towards PPT in SHIC. Furthermore, the questionnaires can collect certain or specific data, easy to manage and coordinate while being cost-effective (Dyer, 2006). Data and statistics are raw data that have been analyzed before they were used to test the theory and the research results, and it was important in supporting the objectives set. This is known as primary data. The questionnaires in this study consist of five components, such as perceived usefulness (PU), perceived ease of use (PEOU), attitude towards using (A), behavioural intention to use (BI) and acceptance level (AL).

In this study, self-administered questionnaires were used because they have high response rates and allows data to be collected quickly. Self-administered questionnaires means the respondents need to read and answer the questions by themselves (Zikmund et al., 2010). In the present study, the questionnaires were written in English and Malay. It was designed carefully and orderly to help respondents answer the question easily. The questionnaires are divided into two parts:

i) Section A

Containing demographic questions on the respondent, namely age, gender, work experience, daily income and education level.

ii) Section B

This section consists of technology acceptance element which consist of perceived usefulness (PU), perceived ease of use (PEOU), attitudes towards using (A), behavioural intention to use (BI) and acceptance level (AL). For assessment, the Likert scale was used in the questionnaire because respondents can express their responses from value 1 (strongly

disagree) until 5 (strongly agree) based on a specific range of statements that has been chosen by the researcher (Likert, 1932) as shown in Table 1.

Table 1. Likert Scale to Identify the Level of Technology Acceptance of Foreign Workers towards PPT in SHIC.

Scale	Score
Strongly Agree	5
Agree	4
Moderately Agree	3
Not agree	2
Strongly Not Agree	1

(Source: Likert, 1932)

Participant

In this study, the total of the sample size is 64. Roscoe (1975) stated that sample sizes that are larger than 30 and less than 500 are appropriate for most researchers. Thus, 64 sample size in this study was sufficient to get a good result. The sampling method chosen for this study was convenient sampling. Convenient sampling were useful because samples can be easily obtained and accessed from an expected place to provide the information (Saunders et al., 2012) without knowing the exact amount of the population. Moreover, it is the most basic and non-probabilistic sampling type based on existing subject or any location with the characteristic of the sample that need to be studied. The characteristic of the sample that often change following the location of the construction site, making it difficult to track the status of their position for the purpose of data acquisition. Thus, every foreign worker that has been found will be counted as a sample of the study.

The sample selection is intended to provide more relevant information and data (Ramsay and Silverman, 2002). For this selection method, the researcher used the time available, opportunity, knowledge, common sense, research objective and research question as a benchmark to select the respondents. There are several criteria that have been taken into consideration to select the suitable respondents. Firstly, the respondent must be a foreign worker who works on construction sites. Secondly, these foreign workers must have completed the SHIC and have a Green Card from CIDB. It is important to ensure the respondent have gone through the SHIC learning process that used PPT containing words, images, audio, video and oral explanation from the trainer.

Based on the Ministry of Human Resource (2015) list, Table 2 shows the number of foreign worker statistics based on nationality in the Malaysian construction industry in 2014.

Table 1. List of Foreign Workers based on Nationality in Malaysian Construction Industry (2014)

Nationality	Construction
Bangladesh	111, 262
Cambodia	280
China	4, 204
India	6, 136
Indonesia	222, 501

Nationality	Construction
Laos	3
Myanmar	21, 430
Nepal	16, 263
Pakistan	18, 693
Philippines	3, 993
Sri Lanka	179
Thailand	535
Vietnam	5, 427
Others	913
Total	411, 819

(Source: Ministry of Human Resource, 2015)

Data Collection

Data were collected for three months, using a questionnaire on the foreign workers, which have finished their SHIC training and obtained Green Card. The surveys were self-administered means the respondents need to read and answer the questions by themselves (Zikmund et al., 2010). The questionnaires were written in English and Malay. It was designed carefully and orderly to help respondents answer the question easily. The questionnaires are divided into two parts which are section A and section B. For section A, it contains demographic questions on the respondent, namely age, gender, work experience, daily income and education level. While, section B consists of technology acceptance element which consist of perceived usefulness (PU), perceived ease of use (PEOU), attitudes towards using (A), behavioural intention to use (BI) and acceptance level (AL). For assessment, the Likert scale was used in the questionnaire because respondents can express their responses from value 1 (strongly disagree) until 5 (strongly agree) based on a specific range of statements that has been chosen by the researcher (Likert, 1932). It took about 30 minutes for the respondent to complete the questionnaire with 32 questions in total. To examine the reliability of the questions for each independent variable, Cronbach α coefficients was calculated. The Cronbach α coefficients for the variables of this study is more than 0.60, which means the questions were good and the respondents understood the meaning of the questions (Konting, 1993).

Data Screening

Before starting to perform the statistical analysis, the data were screened in order to confirm the validity and completeness (Hair et al., 2006) and to detect any outliers. It is important to screen the data in this stage because the results in this initial step can influence the next steps in the study.

Detecting Outliers

After the data screening process, the process of detecting outliers is important in order to identify the patterns or abnormality in the data which do not comply with the expected pattern (Singh and Upadhyay, 2012). Outliers data that need to be disposed involve data entry error, which are unusable in the study (Tabachnick and Fidell, 2007). However, there are no outliers discovered in the data of the present study.

Normality Test

After data screening have been conducted, normality tests were carried out by examining the skewness, kurtosis and Kolmogorov-Smirnov values of the survey data. The value of skewness can be determined as positive normal graph (skewness to the right) or negative normal (skewness to the left) within the range +2 to -2. Kurtosis values refer to low or high for data distribution; high peak (negative) and flattened or horizontal graph (positive) (Darussalam and Hussin, 2016). Another previous study also suggests that data distribution is normal for skewness and kurtosis values if the values are around +/- 1.7 or +/-2 (Darussalam and Hussin, 2016). Table 3 shows the values of skewness and kurtosis for this study.

Table 3. Normality Test: Skewness and Kurtosis Statistics (n=64)

Variable	Skewness	Kurtosis	Description of Distribution
Perceived Usefulness	-0.564	10.644	Non Normal Distribution
Perceived Ease of Use	0.097	-0.748	Normal Distribution
Attitude	-0.093	-0.479	Normal Distribution
Behavioral Intention	-0.040	-0.804	Normal Distribution
Acceptance Level	-0.215	0.317	Normal Distribution

(Source: Darussalam and Hussin, 2016)

From the Table 3, the values of the skewness and kurtosis more than +/-2, means the data distribution is non-normal. After the skewness and kurtosis tests, the Kolmogorov-Smirnov test was used to calculate the level of significance of the differences from a non-normal distribution (Hair et al., 2010) due to the sample of the study having more than 50 samples of study (n = 64). Data distribution is considered normal if the significant value is more than 0.05 (sig>0.05) (Pallant, 2011). However, in this study, the variable data showed the violation of the assumption of normality since the values of Kolmogorov-Smirnov were less than 0.05 (p<0.05) as presented in Table 4.

Table 3. Kolmogorov-Smirnov values

Variable	Kolmogorov-Smirnov		Result
	Z	sig.	
Perceived Usefulness	0.475	0.000	Not Normal
Perceived Ease Of Use	0.370	0.000	Not Normal
Attitude	0.343	0.000	Not Normal
Behavioural Intention	0.362	0.000	Not Normal
Acceptance Level	0.395	0.000	Not Normal

(Source: Hair et al., 2010)

Based on Table 4, the perceived usefulness, perceived ease of use, attitude, behavioural intention and acceptance level has significant values lower than 0.05 (p<0.05), implying that the distribution of the data was not normal. Since the data is not normal, non-parametric test have been used for further analysis.

Data Analysis

Correlation analysis were used to describe the strength, direction, (Pallant, 2005) and significance of the relationship among variables (Sekaran and Bougie, 2009). In this study, the objectives of this study were to identify the level of technology acceptance of foreign

worker towards PowerPoint (PPT) in Safety and Health Induction Course (SHIC). According to the objectives and the research question, the researcher used Spearman's Rank Order Correlation (ρ) which is the most frequently used correlation coefficient (Udovicic et al., 2007) in order to test the hypothesis and to accomplish the research objectives. Data analysis were conducted using Statistical Packages for Social Science (SPSS) version 22 software program.

RESULTS AND DISCUSSIONS

To investigate the impact of perceived usefulness towards acceptance level of using PPT among foreign workers.

Perceived usefulness is an individual perception while using a specific technology, which can improve their job performance (Davis, 1989). Based on the first finding in this study, in response towards the first objective which is to investigate the impact of perceived usefulness towards the acceptance level of using PPT among the foreign workers. It referred to how the respondents perceive the learning medium and their acceptance level towards the PPT which can improve their performance on daily tasks.

The finding showed that there is a significant impact on the technology acceptance level of foreign workers towards PPT. The significant value showed that $r = 0.001$ is less than $p < 0.05$ and ρ value stated 0.441 that indicate a moderate relationship. It showed that respondent getting better control on the job performance, work quality, productivity and job efficiency after attending the SHIC. They become knowledgeable about their works need such as using a safety equipment such as safety helmet, safety boot, safety jacket and etc., know how to work accordingly and organized, which led to a safe working environment.

Moreover, the respondents also acknowledged PPT as an interested and useful technology, which improving their job performance and safety awareness while working on the construction sites. This is consistent with the previous study by Fathema et al. (2015) which stated that the useful technology can develop a positive attitude and intention to use the technology which influencing their motivation and focus point. While, Park (2009) also highlighted that the management must take a necessary action to help the users increasing their perception positively through information technology which can bring out more satisfaction to the users. While, Aypay et al. (2012) shows that users tend to utilize the technology when the technological product or medium becomes simpler to use and operates. The result of this study has signified that trainers and CIDB need to come out with the new method or creating suitable training method, which can increase the respondent understanding of the safety information in order to decrease the accident in the construction industry.

To investigate the impact of perceive ease of use towards acceptance level of using PPT among foreign workers.

Perceived ease of use referred to a degree of users' beliefs that using specific technology would be free of effort (Davis, 1989). On the other hand, the results of the study showed that there is a positive relationship of perceive ease of use towards PPT acceptance level, which was moderate ($r=0.331$) and significant (0.008), $p > 0.05$). It is showing a moderate positive relationship towards user acceptance level towards the PPT. In this study, the respondents considered the PPT was an easy way to understand, learning, become skillful, remember how

to perform tasks safely and makes learning platform becomes better and simpler. Moreover, the respondent attracted to the media content such as the video and the pictures which is easy to understand and giving them a virtual experience. Unfortunately, they are less interested during the speech and talk by the trainer due to their preferred native language was not English and Malay.

The findings of this study were supported by Thompson et al. (2006), user involvement or exposure to a specific system can make users to experience virtually and accumulate the users' skill knowledge after using the system. It has been proven that when the users perceived ease of use towards the technology increases, users developed a positive attitude towards the technology utilization (Alharbi and Drew, 2014). The results indicated that this study should be further investigated for better understanding on the PPT usage in SHIC. The findings of this study suggested that the study between two groups of age (older and younger) in order to seek the significant differences on the PPT technology acceptance between groups. Moreover, there are differences understanding between old and young users when they use an information system (Wallen and Mulloy, 2006).

To investigate the impact of attitude towards acceptance level of using PPT among foreign workers.

Attitude can be referred as an individual positive and negative evaluation about to perform a specific behaviour (Ajzen, 1991). In this study, based on the third research objective which focused on the impact of attitude towards foreign workers' acceptance level towards the PPT. The results showed that there is no significant impact with low correlation between attitude with the foreign workers' acceptance level, as $r=0.838$ ($p>0.05$). The researcher found out that respondent has no intention to use the PPT in the future. Respondent explained that the language used that has been used by the trainer using text in Malay and English make it difficult to be understood, become unattractive, and teacher-centered learning generates low on focus and motivation to learn. This result has been supported by Salleh et al. (2012) study, which shows that PPT is less interactive due to the text was written in Malay language. However, the result of this study is not in line with Susskind (2005) study, which is there is a positive effect on the users' attitude towards the training when the college instructor and lecturers using a computer-mediated PPT presentation or PPT as a teaching tool.

Ajzen (1991) highlighted that an individual with positive and negative attitudes probably will develop an intention to perform the behaviour while using the technology or system. This statement supported this result of the study, that foreign workers negative attitude are not developing any intention to perform the behaviour and no motivation to learn more using the PPT. Meanwhile, Davies, Lavin and Korte (2009) mentioned that the respondents may have reached the point where they view the specific technology use is expected, common and no longer seen as a medium which promote the learning. This result suggests that the PPT has a negative impact which it is not appropriate for the respondents use in this study. Nevertheless, further study need to be conduct to consider, whether certain demographic of the respondents such as age, academic background, class type (lecture oriented, quantitative, etc.) or other differences perceive the technology use differently in SHIC.

To investigate the impact of behavior intention towards acceptance level of using PPT among foreign workers.

Behavioural intention to use referred as a manifestation of people's effort which are willing and planning to give a try in order to perform the behaviour (Ajzen, 1991). The correlation Spearman's rho results showed that behaviour intention toward foreign worker acceptance level has low relationship with no significant value. The significant value shows value of 0.761 ($p > 0.05$) and $r = 0.039$. The results of this study also found out that the foreign workers do not show any behavioural intention to use the PPT, which they does not want to continually use and learn using the PPT in the future. It explained that attitude towards use and behavioural intention to use the PPT is significantly related to each other, which is the respondent have no positive behavior intention to use the PPT. This result contradicts with the study performed by Davis (1989), it stated that positive perceived usefulness and positive perceived ease of use have a positive impacts on behaviour intention to use the technology. Eventhough, the perceived usefulness and perceived ease of use have a positive impact on the PPT acceptance level, but there is no positive behaviour intention to use in this study.

Likewise, a previous study also found out that the behavior intention positively impacted intention to use the system or technology (Harrison et al., 1997; Nor and Pearson, 2008; Lu and Ling, 2009). While, Bhatti (1970) also supported that behavior intention has a significant relationship with intention to use the system or technology. This result suggests that CIDB and trainer must realize that the PPT should be designed, programmed and carefully selected according to respondent demographics and abilities.

CONCLUSION

The study has contributed towards the body of knowledge by providing empirical evidence on the impact of technology acceptance between PPT and foreign workers in SHIC. Without being affected by limitation, this study has successfully examined the hypothesis, objectives and revealed how PPT affecting the foreign worker acceptance.

The purpose of this study was to examine the level of technology acceptance of foreign workers towards PPT in SHIC in construction sites at northern region which are Kedah and Perlis. It focused on foreign workers who was finished their SHIC and get their Green Card which automatically selected as a respondent. In addition, there are four main independent variable that have been used in this study, which is perceived usefulness, perceived ease of use, attitude and behavioural intention. According to the result which explained in the result and discussion, perceive usefulness has become an important factor which giving an impact towards the use of PPT. The study found out that PPT is useful, simple and understandable for the respondents, which has a positive relationship between foreign workers and PPT. By using this learning medium, they can easily understand the safety information, objectives and improves their work performance.

While, perceived ease of use also showed a positive relationship in this study. The respondent mentioned that PPT is easy to use, easy to understand and simple to be use. Furthermore, the PPT was good to them and still can be improved such as the contents and the language usage. Thus, it can be stated that users factor and technology factor played a crucial role on foreign workers towards perceived usefulness and perceived ease of use of the

PPT which makes them interested and becomes productive in their works. While, attitudes towards using and behavioural intention to use showed no relationship with the foreign workers' acceptance level towards PPT.

Based on the findings, it is clear that the safety training in the Malaysian construction industry needs to transform from maintaining the existing content of PPT into a new, suitable or an improvement, which are being designed, programmed and selected based on the ability of the respondent. Utilizing a combination of pictures, videos and audio narration may facilitate this transform and enhance the whole industry's performance. In addition, CIDB can identify the weaknesses of the PPT based on the feedback from foreign workers and try to come out with new or alternative approaches to improve the training and workplace operation. Furthermore, it provides valuable input or data for the trainer to improve their teaching method and the training operation. Also, it can help the trainer to identify the weaknesses in the existing delivery medium to construct a better and more suitable medium. Not only that, it can help the employer to plan systematically, organize activities or use a medium that is suitable for foreign workers and controlling the activities carefully in SHIC. This three aspect can influence the workers' attitude in their work and improve their performance while conducting the site operation as well as reducing the accident rates.

As a conclusion, it is hoped that this study will be a route for future PPT researches, especially related to limited studies on PPT in SHIC and technology acceptance of foreign workers. Realizing the importance of the construction industry for Malaysian development, it is hoped that this research has contributed to the understanding of current knowledge of PPT and foreign workers acceptance.

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