Perception towards E-Learning System for Competency Training Among Non-Executive Employees in Utility Company

M K I Mohd Ali* & R Alias

Abstract

This study examined the perception of the e-learning system for competency training among non-executive employees. E-learning will help employees to appreciate technologies as a tool for learning and this study explored their attitude and intention to use a technology for enhancing self-knowledge, skills and attitude. Acceptance of the technology will be reflected as an intention to use the new technology as mentioned. A descriptive study has been applied whereby questionnaires with seven sections have been distributed to a total of 380 respondents; with 307 samples taken for an analytical study. The result showed that there was a significant relationship between perceived ease of use, subjective norms, behavioural control and organizational management support towards behavioural intention to use e-learning as a training system. Thus, it is suggested that the organizational management should consider expanding e-learning awareness campaigns among employees specially to familiarize them with the e-learning training platform. This will widen employees’ perception and confidence towards e-learning; thus resulting in positive acceptance of technology practice especially in competency training.

Keywords

E-learning, competency, employees, non-executive, utility company

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1. INTRODUCTION

Teaching and learning methodologies have evolved throughout the years. For the past decade, learning has turned out to be more tech-driven than ever before, thanks to the adaptability, efficacy and usefulness of new technologies. Awareness of high-tech application in learning has also risen to a very notable level, whereby learning in schools, colleges, universities or even workplaces have been applied and embedded with technology-related approaches. One of the most co-operative ways of applying technology in learning is through e-learning. E-learning will be one of the common ways of learning in the future.

As organizations have invested heavily in the e-learning system, this means that they expect the systems can help develop the skills and capabilities of their staff (Yahaya, 2018). This is by assuming that the employees have the comprehensive information technology abilities to accept and use the new technology introduced; i.e. e-learning.

An organization comprises employees with different background and this might affect their perception of new technology. E-learning will be a new technology for the employees and the perceived usefulness from the educators’ point of view (i.e. greater control over work, improve job performance, save time, accomplish tasks more quickly, enhance effectiveness) may influence their behavioural intention to adopt an e-learning system.

Besides, as this is the first time the employees will encounter a new system of training, they might see e-learning from different angles. It is believed that the perceived ease-of-use supports limiting the ambiguity of innovations, leading individuals to implement the technology in question (Ellis & Kuznia, 2014).

The application of the e-learning system for training will require the employees to be acquainted with digital technology practice such as the usage of the internet with mobile phones, tablets and various gadgets. The challenges will be to familiarize themselves with the new technology trend that keeps on changing day by day. Systematic training for effective use of any new technology is necessary to take users beyond their customary habits and “lock-in” to routines shaped by the older technology (Fleck, 2012). Introducing e-learning and getting people to use it is not an overnight effort. Kamal Abd in his study in 2004 noted that social barriers to the use of technology in education result in a disconnect to e-learning technologies. Thus, technology acceptance is the main concern.

The third issue raised in the implementation of e-learning for competency training is the readiness of the organizations involved. According to Nasser & Abouchedid (2000), many decision-makers consider that the implementation of e-learning programs in educational institutions may result in an abrupt change in both content and style of pedagogy which educational decision-makers cannot currently accommodate due to near absence of plans for a smooth transition from traditional education methods to e-learning. This concern might disrupt the e-learning system or any technological related methods from being applied in competency training. In one of her articles, Sambrook (2003) mentioned that one of the barriers to e-learning was the owner's/manager's attitudes and expertise in learning and development.

This study aims to explore the perception of employees from a utility company as they will be using e-learning in their training system in the near future. By having an insight into the employees, this can help the management to formulate the possible plans needed for the introduction of a new technology among its employees. The objectives of the study are suggested below:

i. To identify the relationship of Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, and Organizational Management Support towards the Behavioral Intention to use e-learning for training purposes.
ii. To recognize the influence of Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, and Organizational Management Support towards the Behavioral Intention to use e-learning for training purposes.

Therefore, we aim to answer the following research questions:

i. What is the relationship of Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, and Organizational Management Support towards the Behavioral Intention to use e-learning for training purposes?

ii. What is the influence of Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, and Organizational Management Support towards the Behavioral Intention to use e-learning for training purposes?

Following the stated objectives, this study will examine the following hypotheses:

i. There is a significant relationship between Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, Organizational Management Support and Behavioral Intention to use e-learning for training purposes.

ii. There is a significant influence of Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, Organizational Management Support and Behavioral Intention to use e-learning for training purposes.

1.1 Literature Review

By definition, the term “e-learning” refers to the learning methods which use electronic channels to deliver the instructional content (Alenezi et al., 2010). These learning methods will have technological interference in conducting the knowledge sessions.

According to Kaur & Abas (2004), trainees' (and trainers') capacity to construct knowledge through remote means is mostly reliant on the efficacy of enabling structures within a system, which in turn sanction readiness to utilize an e-learning system. However, although using technology in the educational process changes learning (Popovici & Mironov, 2015), certain factors influence behavior intention towards adopting online learning or continuance of online learning (Song, 2010). Park (2009) has suggested in his study that it is necessary to conduct research that deals more extensively with learners' perception of, attitude towards, and intention to use e-learning.

E-learning will be one of the common ways of learning in the future. This study examined the perception towards the e-learning system for competency training among non-executive employees. E-learning will help the employees to appreciate technologies as a tool of learning and this study explored their attitude and intention to use technology towards enhancing self-knowledge, skills and attitude. The theoretical framework is developed based on two main theories namely; Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). The Technology Acceptance Model (TAM) is one of the most well-known theories related to human behaviour upon determining the willingness towards accepting and using new technology. Numerous scholars have conducted studies on influencing factors related to technological acceptance.

According to Rym et al. (2013), TAM is intended to trace the impact of external factors on the beliefs, attitudes and intentions by identifying a limited number of variables suggested by previous research regarding the cognitive and emotional determinants of accepting the computer. The two main factors as mentioned by Davis (1989) regarding the TAM include perceived usefulness and perceived ease of use and these two factors determine acceptance (Figure 1). Popovici and Mironov (2015) mentioned that learners' various perception of technology is still found to relate to the acceptance of technology, together with other factors such as social influence, and the presence of facilitating conditions such as training and support.
The Theory of Planned Behavior (TPB) is a theory that studies the relationship between beliefs and behavior. Ajzen (1991) suggested that intention to perform behaviors of different kinds can be predicted through an explanatory model that covers the attitude toward the behavior, subjective norms and perceived behavioral control (Figure 2).

1.2 Theoretical Framework

This study employs the adopted research model from TAM to identify the level of acceptance and perception of the company employees towards using e-learning technology for training purposes. Also, the research model is integrated with variables from TPB, which in the end, guides the analysis on the employees’ behavioural intention to use e-learning.

It is almost equivalent to a new model called the combined TAM-TPB model as proposed by Taylor and Todd (1995). However, in developing the theoretical framework, an additional independent variable has been considered; i.e. organizational management support. Thus, the framework will be tested and analysed to understand the possible relationship between these independent variables and behavioural intention to use e-learning. The introduction of a fifth independent variable to the research frameworks is to test the validity as stated by Mahmoud (2008) that the management support activities such as devoting time to the program in proportion to its cost and potential, reviewing plans, following up on results and facilitating the management problems with the management process of the business are the indicators of the commitment given by the organization as they have invested heavily in the e-learning system. Hence, there should be a positive relationship between the organization's management support and behavioral intention to use e-learning.

The proposed research frameworks offer a concise mode to observe the perception of non-executive employees and analyse their behavioural intention to use e-learning system once it is implemented within the utility company (Figure 3). It is appropriate with the combination of TAM and TPB plus organisational management support (OMS) as the additional variable helping to build up the theoretical framework, to broaden organizational and management context that influence employees (Buttigieg et al., 2013) in using e-learning system for training purposes.
2. METHODOLOGY

The research employed the quantitative method where questionnaires and surveys were developed to gather data from non-executive employees of a utility company. Therefore, to fulfil the objective of this study, questionnaires comprising seven sections with a total of 35 items were distributed to a total of 380 respondents, and 307 samples were then taken for an analytical study (Table 1). There are approximately 20,000 non-executive employees (the majority) in the utility company comprising technical and non-technical staff. Thus, it was proposed that the number of samples was estimated to be from 380 respondents as this was determined using Krejcie and Morgan 1970 sampling table (Krejcie & Morgan, 1970). In Section A, the respondent will choose the most relevant to them and in the other sections, the respondents chose the most relevant satisfying factors that best represent their opinion.

<table>
<thead>
<tr>
<th>Section</th>
<th>Number of Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A - Demographic Profile</td>
<td>8 items</td>
</tr>
<tr>
<td>Section B - Perceived Usefulness</td>
<td>5 items</td>
</tr>
<tr>
<td>Section C - Perceived Ease of Use</td>
<td>5 items</td>
</tr>
<tr>
<td>Section D - Subjective Norms</td>
<td>5 items</td>
</tr>
<tr>
<td>Section E - Perceived Behavioral Control</td>
<td>4 items</td>
</tr>
<tr>
<td>Section F - Behavioral Intention to Use</td>
<td>4 items</td>
</tr>
<tr>
<td>Section G - Organizational Management Support</td>
<td>4 items</td>
</tr>
</tbody>
</table>

In order to examine whether the data was reliable, the reliability test was conducted. Specifically, the Cronbach’s coefficient alpha, or also known as Cronbach's alpha, was used to estimate the consistency reliability. According to George and Mallery (2003), the rule of thumb to be applied to Cronbach's Alpha is as in the following table (Table 2).
The Pearson correlation is used to measure the degree of relationship between linear variables. If the outcome of the analysis shows a high number of coefficient, it signifies that the two or more variables have a strong relationship. Whereby, if the outcome of the analysis shows a low number of coefficient, it signifies that the variables are hardly related. The coefficient ranges from -1.00 to +1.00. The value -1.00 denotes a perfect negative correlation and the value of 1.00 denotes a perfect positive correlation. Whereby the value of 0.00 shows that there is no relationship between the variables tested. The table below (Table 3) is the correlation indicator or rule of thumb for the size of a correlation coefficient to determine the level of the correlation values measured and analysed (Guildford, 1973).

**TABLE 3 - Rule of thumb for the size of a correlation coefficient**

<table>
<thead>
<tr>
<th>Size of correlation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90 – 1.00</td>
<td>Very high (positive/negative)</td>
</tr>
<tr>
<td>0.70 – 0.90</td>
<td>High (positive/negative)</td>
</tr>
<tr>
<td>0.50 – 0.70</td>
<td>Moderate (positive/negative)</td>
</tr>
<tr>
<td>0.30 – 0.50</td>
<td>Low (positive/negative)</td>
</tr>
<tr>
<td>0.00 – 0.30</td>
<td>Little if any correlation</td>
</tr>
</tbody>
</table>

Additionally, the regression analysis was applied to test the hypotheses to estimate the dependent variable of the study which was the behavioral intention to use e-learning. In the end, it will essentially examine the relationship between the independent variables and the dependent variable. Thus, the study was conducted using Multiple Linear Regression analysis to analyse the objectives of the study. All the data were analysed using Statistical Package for the Social Sciences (SPSS) programmed version 16.

### 3. RESULTS

The table below (Table 4) represents the Cronbach's Alpha coefficients for all six variables in the questionnaires. A higher score implies higher reliability in the measurement scale. A reliability score of 0.70 is accepted as a minimum value (Hair et al., 2017). Therefore, the reliability results presented in the table below are acceptable since all of the reliability coefficients are over 0.70.

The first objective of the study is to identify the relationship of Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, and Organizational Management Support towards the Behavioral Intention to use e-learning for training purpose. The Pearson Product-Moment Correlation (PPMC) analysis was applied to meet the first objective.
TABLE 4 - Reliability analysis results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's Alpha</th>
<th>Number of items in constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV (Behavioural Intention to Use)</td>
<td>0.870</td>
<td>4</td>
</tr>
<tr>
<td>IV1 (Perceived Usefulness)</td>
<td>0.920</td>
<td>5</td>
</tr>
<tr>
<td>IV2 (Perceived Ease of Use)</td>
<td>0.899</td>
<td>5</td>
</tr>
<tr>
<td>IV3 (Subjective Norm)</td>
<td>0.906</td>
<td>5</td>
</tr>
<tr>
<td>IV4 (Perceived Behavioural Control)</td>
<td>0.850</td>
<td>4</td>
</tr>
<tr>
<td>IV5 (Organizational Management Support)</td>
<td>0.936</td>
<td>4</td>
</tr>
<tr>
<td>All</td>
<td>0.977</td>
<td>27</td>
</tr>
</tbody>
</table>

In conclusion, the Pearson Correlation analysis has proved that there is a high correlation (positive) between all the stated independent variables which are Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, and Organizational Management Support towards the Behavioral Intention to use e-learning for training purpose.

As shown in the full analysis in Table 5 below, the correlations between the dependent and independent variables were tested where it showed that all of the correlation had a significant relationship. As it is shown in the table, there is a high correlation between DV and all of the IVs since the value ranges from r=0.805 until r=0.858.

The second objective of the study is to determine the influence of Perceived Usefulness, Perceived Ease of Use, Perceived Behavioral Control, Subjective Norms, and Organizational Management Support towards the Behavioral Intention to use e-learning for training purposes. Multiple Linear Regression analysis is conducted to prove the second objective. The result of the study can be observed based on the result in Table 6.

The model summary shows a high R2 value which is more than 60%. A high R2 value interprets the variation in the response variable (Dependent Variable) that can be explained by the predictor. In most situations, 0.01 is a very small R squared value, so we conclude that there is a strong linear relationship for the model. The Durbin-Watson statistic lies in the range of 0 to 4. A value of 2 or nearly 2 indicates that there is no first-order autocorrelation. An acceptable range is 1.50 – 2.50. Since the value of Durbin Watson for the model is between the ranges, it can be concluded that there is no autocorrelation. Where successive error differences are large, Durbin-Watson is high (more than 2.50); this indicates the presence of negative autocorrelation. Negative autocorrelation is not particularly common. The p-value which is less than the significant value (0.05) indicates that the model is significant.

Hence, the model the multiple linear regression equation is as below:

\[ \hat{Y} = \hat{\beta}_0 + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3 + \hat{\beta}_4 X_4 + \hat{\beta}_5 X_5 \]

Where:

\( Y = \) Behavioural Intention to Use; \( x1 = \) Perceived Usefulness; \( x2 = \) Perceived Ease of Use; \( x3 = \) Subjective Norm; \( x4 = \) Perceived Behavioural Control; \( x5 = \) Organizational Management Support
### TABLE 5 - Correlations between the variables

<table>
<thead>
<tr>
<th>DV</th>
<th>IV1</th>
<th>IV2</th>
<th>IV3</th>
<th>IV4</th>
<th>IV5</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.809**</td>
<td>.830**</td>
<td>.858**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>307</td>
<td>307</td>
<td>307</td>
<td>307</td>
</tr>
<tr>
<td>IV1</td>
<td>Pearson Correlation</td>
<td>.809**</td>
<td>1</td>
<td>.853**</td>
<td>.864**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>307</td>
<td>307</td>
<td>307</td>
<td>307</td>
</tr>
<tr>
<td>IV2</td>
<td>Pearson Correlation</td>
<td>.830**</td>
<td>.853**</td>
<td>1</td>
<td>.826**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>307</td>
<td>307</td>
<td>307</td>
<td>307</td>
</tr>
<tr>
<td>IV3</td>
<td>Pearson Correlation</td>
<td>.858**</td>
<td>.864**</td>
<td>.826**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>307</td>
<td>307</td>
<td>307</td>
<td>307</td>
</tr>
<tr>
<td>IV4</td>
<td>Pearson Correlation</td>
<td>.842**</td>
<td>.813**</td>
<td>.802**</td>
<td>.851**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>307</td>
<td>307</td>
<td>307</td>
<td>307</td>
</tr>
<tr>
<td>IV5</td>
<td>Pearson Correlation</td>
<td>.805**</td>
<td>.777**</td>
<td>.788**</td>
<td>.824**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>307</td>
<td>307</td>
<td>307</td>
<td>307</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

DV = Behavioural Intention to Use
IV1= Perceived Usefulness
IV2= Perceived Ease of Use
IV3= Subjective Norm
IV4= Perceived Behavioural Control
IV5= Organizational Management Support

### TABLE 6 - Model summary for Multiple Linear Regression

<table>
<thead>
<tr>
<th>R</th>
<th>R²</th>
<th>Adj R²</th>
<th>Durbin Watson</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.902</td>
<td>0.814</td>
<td>0.811</td>
<td>1.953</td>
<td>0.000</td>
</tr>
</tbody>
</table>

iLEARNed by ILSAS
Based on the above, all the independent variables are significant to the dependent variable since the p-values < α (0.05), except for Perceived Usefulness. Thus, we can model the equation as below:

\[
y (\text{Behavioural Intention to Use}) = 0.247 + (0.231) \text{Perceived Ease of Use} + (0.260) \text{Subjective Norm} + (0.288) \text{Perceived Behavioural Control} + (0.159) \text{Organizational Management Support}
\]

From the equation, we can conclude that:

- \( \beta_0 = 0.247 \). When all the predictor variables are held constant, the DV (Behavioural Intention to Use) will be 0.247 (between Strongly Disagree to Disagree)
- For every 1-unit increase in Perceived Ease of Use, the DV (Behavioural Intention to Use) will increase by 0.231 (scale)
- For every 1-unit increase in Subjective Norm, the DV (Behavioural Intention to Use) will increase by 0.260 (scale)
- For every 1-unit increase in Perceived Behavioural Control, the DV (Behavioural Intention to Use) will increase by 0.288 (scale)
- For every 1-unit increase in Organizational Management Support, the DV (Behavioural Intention to Use) will increase by 0.159 (scale)

Hence, the finding specifically answers the research question below:

- \( H_0 \): There is a positive significant impact of Perceived Ease of Use on DV
- \( H_0 \): There is a positive significant impact of Subjective Norm on DV
- \( H_0 \): There is a positive significant impact of Perceived Behavioural Control on DV
- \( H_0 \): There is a positive significant impact of Organizational Management Support on DV

4. DISCUSSION AND CONCLUSION

The research questionnaires were distributed to acquire responses from employees on their perception towards the e-learning system if it was going to be applied in competency training. The utility company's goal to initiate e-learning for competency training within the organization is an optimistic improvement for the organizational transformation activity whereby it is one of the approaches to move the employees closer to the digital world, given this type of system is being applied in most of the corporate sectors and university or higher learning institution.

The introduction of a new competency training system is considered as a change that will affect the employees within the utility company. And it is something that the organization has to cope with. An e-learning system for training usually comes with the introduction of the Learning Management System (LMS). The use of LMS is beneficial in terms of reducing training costs and flexibility of training courses through e-learning. The employees should be familiar with the LMS platforms. Besides, digital workplace awareness and culture will help to improvise the introduction of e-learning among the employees to create certain acceptance of new e-learning programs once they are introduced.

Nonetheless, the research analysis shows that many employees believe that it requires a lot of effort to interact with the e-learning system. This makes them oblivious to the fact that the e-learning system is easy and accessible from any place. Hence, the results of this analysis will be able to cultivate and improve awareness about the benefits of e-learning in developing and shaping their competency. Subsequently, the demographic analysis takes into account the different prominence on the perceived ease of use, subjective norms, perceived behavioural control and organizational management support towards adjustment and behavioural intention to use e-learning and therefore will represent employees' acceptance on the new system of competency training that in the end will benefit them.
E-learning is important for the adaptation of digital technology into an organization's working culture especially as this research is focusing on competency training within an organization. The introduction of e-learning will create a better cost structure for training and provide flexibility for the learners. E-learning has the potential to reduce time away from the workplace, minimizes the necessity for travel, and eliminates the need for lengthy classroom-based training. Thus, employees need to accept e-learning for training and be aware of its benefits. With proper rollout sessions, approaches and awareness of the employees, the success of e-learning implementation will be ensured.

This study has positively answered the research questions in for the e-learning system in competency training. Perceived ease of use, subjective norms, perceived behavioural control and organizational management support are significant and have affected the behavioural intention of employees in the direction of initial perception and acceptance of the e-learning system to be implemented for competency training. Among these factors, perceived behavioural control is the most prominent factor in contrast to perceived ease of use, subjective norms and organizational management support towards the introduction of e-learning. Then again, employees' perception towards the e-learning system is very much impacted by these four factors and considerably employees will be able to appreciate the benefits they will get from e-learning rather than face-to-face or classroom learning.

The utility company will have to put more attention on awareness among the employees, its ability to introduce digital and computerized workplace culture, familiarize employees with suitable e-learning platforms such as LMS and provide essential support for the employees if needed. Also, the company needs to ensure a high level of awareness and a user-friendly platform to create a new training environment and culture to improve the company in terms of developing high-competent workforce in the future.

4.1 Suggestions for Future Research

To further enhance the study, future research must seek to cover different groups of employees such as the executive groups to understand their perception towards e-learning in contrast to the non-executive groups. Hence, their perception can be compared and analysed to find the potential solution before embarking on the e-learning system thoroughly within the organization.

Future research may also want to consider exploring qualitative assessment by interviewing several related parties such as the employees, organization's management group, human resource representatives or the e-learning system developers to capture a broader perspective of e-learning. Additionally, as the e-learning implementation is launched, even at the pilot stages, the future researcher can gauge the acceptance level of the employees as they have experienced e-learning in an actual training situation. Plus, it is conceivable to measure the effectiveness in terms of knowledge, skills and attitude changes on the employees through training evaluations. In the end, the understanding and acceptance of the new technology among the employees within the utility company must also be further studied.

REFERENCES


