

# User Resistance Factor to UTM e-learning in Post-Implementation

HaniZamani (Corresponding author)

Faculty of Computing, Department of Information Systems, UniversitiTeknologi Malaysia, Johor, Malaysia

Tel: 60-173545490 E-mail: hany.zamany@gmail.com

MahadiBahari

Faculty of Computing, Department of Information Systems, UniversitiTeknologi Malaysia, Johor, Malaysia

Tel: 60-107109083 E-mailmahadi.bahari@gmail.com

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## Abstract

E-learning stands for Electronic Learning. E-Learning systems are becoming mature technologies to support study method in the university. However, there are factors frequently cited as the major reason for the failure of E-Learning system in post implementation is "User Resistance". E-Learning implementation doesn't finish after the program run, instead the real test of the system starts when a user begins using the system. The main purpose of this study is to investigate the factors that influence user resistance in E-Learning post implementation stage. To achieve this objective, the quantitative method was conducted with 400 E-Learning end users. The result shows Resistance due to change, User Age, Cultural study method, User Expectations, Previous Bad Experience, Lack of Education, Training are the factors behind user resistance. Recommendations and guideline to avoid user resistance in E-Learning post implementation is also presented. The benefits and outcomes of this study shall aid university to overcome user resistance in post E-Learning implementation.

**Keywords:** User resistance factor; E-Learning; Post Implementation; UTM E-Learning

## 1. Introduction

E-learning appeared in the late 1980s, however, the history of computing in university can be traced back to the beginnings of computer history. However, many of the current e-learning literatures dwell more on the external uses of e-learning such as a service to students, rather than on its internal use within the university [1]. Several studies have looked at the challenges faced in the acceptance and adoption of new information and communication technologies [2]. [3] Identified user resistance as a major factor that militate against the integration of information and communication technology in educational activities. The objectives of this paper is to identify the factors that influence user resistance in e-learning. This research is intended towards finding the user resistance in post E-Learning implementation. Hence, the purpose is to identify the reasons behind user resistance after implementation. Therefore, in an attempt to explore user resistance issues in post E-Learning implementation stage.

## 2. Methodology

The research reported in this paper aimed to answer the question:

"What are the factors that influence user resistance in e-learning post-implementation?"

This study aimed to identify the factors that influence user resistance in e-learning post implementation. Followed by presenting recommendations and guideline to organizations to avoid user resistance in E-Learning system. To achieve the objective of this study, a quantitative research methodology was used. This research involved surveying a respondent of 400 of E-Learning end users. The survey involved a number of predefined questions and was conducted by means of an online survey and getting the answers back in the form of online responses. Twenty closed ended questions provide quantitative data and required a participant to choose from a given set of responses. The collected data have been analyzed by using (SPSS) software.

### 2.1 Case Description

This study is focused on the e-learning in UniversitiTeknologi Malaysia (UTM) located in (Kuala Lumpur, Johor

Bahru). According to Deputy Dean of UTM School of Graduate Studies (Sarmin, 2013) the population consisted of 13,524 postgraduate students, 10,000 undergraduate students and 1200 academic staff. In this study 400 persons answered to the online questionnaire from different faculty, different gender, different level of education, different field of study with different situation (i.e., lecturer and students).

### 3. A Consideration of Factors on the User Resistance in UTM E-Learning in post-implementation

User resistance factors founded and collected from several IS publications, MIS journals and articles, as well as IT literatures are presented in the following table.

TABLE 1: User resistance factors found from IS publications and MIS journals

NO	Factors	Definitions
1	Resistance Due to Change [4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,47]	User resist, because they react to any change. One explanation is that users with bad experiences have been more resistance.
2	User Age [5,10,11,13,14,15,17,21,22,23,24,25,26,27]	According to some considerable evidence older users are eager to refuse e-learning whereas the younger users are more interested in accepting E-learning.
3	Lack of Educations [5,13,23,25,28,29,30,31,32,33]	The users who is in a higher academic level more interested in using new technology.
4	Cultural study method [11,12,13,15,34,35,36,37,38,39]	In an international university, every person has their own culture and study method and actually culture can affect the use of e-learning.
5	Previous Bad Experience [7,11,15,23,40,41,48]	There are many strong evidences that prove the fact that the notion and negative previous experiences in E-learning affect the persistence of this new system.
6	User Expectations [5,6,7,11,34,48,43,44,45]	Impact of user's high expectation from the result of future performance of E-Learning, cause users to accept or resist in UTM E-learning
7	Training [5,6,11,12,33,34,37,42,46]	Training is an important factor which diffuses a new information technology as a mechanism.

### 4. Data Collection and Finding

In order to investigate this research, questionnaire has been used to gain information from E-Learning users were conducted at (UTM) University in Kuala Lumpur and Johor Bahru city in Malaysia via online form. The copy of the questionnaire has been sent to all students and lecturers of the university in the (Kuala Lumpur, Johor Bahru), but only 400 forms have been received. UniversitiTeknologi Malaysia (UTM) is located in Kuala Lumpur (the capital city of Malaysia) and Johor Bahru (the southern city in Iskandar Malaysia) which is a vibrant economic corridor in the south of Peninsular Malaysia. There are seven factors identified in this study, which are labeled as user resistance factors in UTM E-Learning in post implementation, they are as follows:

- |                             |                            |
|-----------------------------|----------------------------|
| 1- Resistance Due to Change | 5- Previous Bad Experience |
| 2- User Age                 | 6- User Expectations       |
| 3- Lack of Education        | 7- Training                |
| 4- Cultural study method    |                            |

The reason for selecting seven factors as the main purposes of this research are resistance factors of UTM e-learning post-implementation from user perspective not technical. In discussing the findings of this study, we shall deal with each factor and questions associated with its Statistics analysis.

#### 4.1 Factor 1: Resistance Due to Change

Table 2 Shows that the percentage of the strongly agree and agree total respondents, composed of 77.6%, this indicated that the majority of respondents stand with the phrase that agree with the factor (Resistance Due to Change) and the E-Learning provided to them were not satisfied with the technical needs and actually they don't willing to cooperate with the changes in the new way of studying with the E-learning system, but those who are not agree their percentage total to 13.2% and those who have answer (neutral), their percentage out of the sample is 9.2%.

Table 2: Frequency distribution for Resistance Due to Change factor

Question	S.disagree	Disagree	Natural	Agree	S.agree
I am not satisfied with E-learning system implementation because of technology-related factors such as; the user interface, performance, security, ease of use, degree of centralization	12	37	44	244	63
I am not satisfied with the technical needs and sophisticated skills required after E-learning implementation.	8	38	47	210	97
I am not willing to cooperate with the changes in the new way of working with the E-learning system because it changes my social structure and student structure, sturdy structure.	8	55	20	219	98

#### 4.2 Factor 2: User Age

Table 3 Shows that the percentage of the strongly disagree and disagree total respondents, composed of 71.7%, this indicated that the majority of respondents stands with the phrase that agree with the factor (User Age) and the E-Learning provided to them were Disproportionate and not interesting, but those who are agree their percentage total to 21.2% and those who have answer (neutral), their percentage out of the sample is 7.1%.

Table 3: Frequency distribution for User Age factor

Question	S.disagree	Disagree	Natural	Agree	S.agree
Overall I think that E-learning is easy to use, and actually I think that the use of E-learning would increase my productivity.	2	90	39	149	120
I think that the use of E-Learning is Disproportionate with my way of study.	0	53	13	269	65
I think that E-Learning is awkward to use.	0	110	33	132	123

#### 4.3 Factor 3: Lack of Education

Table 4 Shows that the percentage of the strongly agree and agree total respondents, composed of 66.2%, this indicated that the majority of respondents stands with the phrase that agree with the factor (Lack of Education) and the E-Learning provided to them were not fits and actually they thinks that students and lecturer, who have computer faculties are more interested to use E-learning , but those who are not agree their percentage total to 13% and those who have answer (neutral), their percentage out of the sample is 20.8%.

Table 4: Frequency distribution for Lack of Education factor

Question	S.disagree	Disagree	Natural	Agree	S.agree
I think that the use of E-Learning does not fit my expertise and needs	0	58	71	231	40
I think that students and lecturer, who have computer faculties are more interested to use E-learning	31	18	89	160	102
Are you interested to use E-Learning	0	49	89	138	124

#### 4.4 Factor 4: Cultural study method

Table 5 Shows that the percentage of the strongly agree and agree total respondents, composed of 42.9%, this indicated that the majority of respondents stand with the phrase that agree with the factor (Cultural study method) and the E-Learning provided to them were opposite with own studying cultural method and actually they would prefer to study by conventional method, but those who are not agree their percentage total to 39.8% and those who have answer (neutral), their percentage out of the sample is 17.4%.

Table 5: Frequency distribution for Cultural study method factor

Question	S.disagree	Disagree	Natural	Agree	S.agree
Do you believe that E-learning is opposite to your own studying cultural method.	34	112	75	160	19
Overall I think that E-learning is not easy to use and actually I would prefer to study by conventional method.	73	124	64	72	67

#### 4.5 Factor 5: Previous Bad Experience

Table 6 Shows that the percentage of the strongest agree and agree total respondents, composed of 64%, this indicated that the majority of respondents stands with the phrase that agree with the factor (Previous Bad Experience) and they think that Previous Bad Experience one of the important reasons to resist E-Learning, but those who are not agreed their percentage total to 17% and those who have answered (neutral), their percentage out of the sample is 19%.

Table 6: Frequency distribution for Previous Bad Experience factor

Question	S.disagree	Disagree	Natural	Agree	S.agree
I think that previous bad experiences with an E-Service may lead to a preventing effect on using E-learning methods.	16	24	80	232	48
I think that the fear of the losing personal data may lead to user resistance to E-learning.	24	72	72	216	16

#### 4.6 Factor 6: User Expectations

Table 7 Shows that the percentage of the strongly agree and agree total respondents, composed of 55.4%, this indicated that the majority of respondents stands with the phrase that agree with the factor (User Expectations) and the E-Learning provided to them were opposite of own expectations in the University E-Learning system, but those who are not agreed their percentage total to 27.7% and those who have answer (neutral), their percentage out of the sample is 16.9%.

Table 7: Frequency distribution for User Expectations factor

Question	S.disagree	Disagree	Natural	Agree	S.agree
The E-learning system offered the same benefits as I expected.	65	91	54	129	61
New E-learning system does not meet my expectations regarding ease of use, User interface design and increases my study load.	21	77	93	132	77
I thought the E-learning system will reduce my study load , but it is not the case instead it proved to be a complex system.	11	102	38	200	49
I think that the use of E-learning could lead to increased excessive expectations from me.	16	60	86	190	48

#### 4.7 Factor 7: Training

Table 8 Shows that the percentage of the strongest agree and agree total respondents, composed of 52.6%, this indicated that the majority of respondents stands with the phrase that agree with the factor (Training) and the training provided to them were not enough, but those who are not agreed their percentage total to 32% and those who have answered (neutral), their percentage out of the sample is 15.4%.

Table 8: Frequency distribution for Training factor

Question	S.disagree	Disagree	Natural	Agree	S.agree
There were not insufficient training provided to me prior to the E-learning implementation (pre-implementation) regarding the changes of study processes.	2	98	61	167	72
There are not insufficient training provided to me after E-learning system goes live (post-implementation stage) regarding the system functionality and the advanced features of the software.	1	98	54	127	120
I did not get a clear idea of the nature usage and the rationale for implementing the E-learning system because of insufficient training.	2	183	70	96	49

### 5. Research Model and Hypothesis

According to the Table 10, from the E-Learning technical and user perspective, the most critical and meaningful resistance factor in UTM E-Learning in post implementation are User Age, Lack of Education, Cultural study method, Previous Bad Experience, Training, User Expectations, Resistance Due to Change.

TABLE 9: User resistance factors in post UTM E-Learning implementation ordered by their mean

Rank	Factors	Mean
1	<i>User Age</i>	<b>3.79</b>
2	<i>Training</i>	<b>3.75</b>
3	<i>Lack of Education</i>	<b>3.72</b>
4	<i>Resistance Due to Change</i>	<b>3.42</b>
5	<i>Cultural study method</i>	<b>3.41</b>
6	<i>User Expectations</i>	<b>3.41</b>
7	<i>Previous Bad Experience</i>	<b>3.41</b>

This section shows statistical analytical results to test hypothesis base with the aim of this paper. Here the authors performed interpretation for each hypothesis separately.

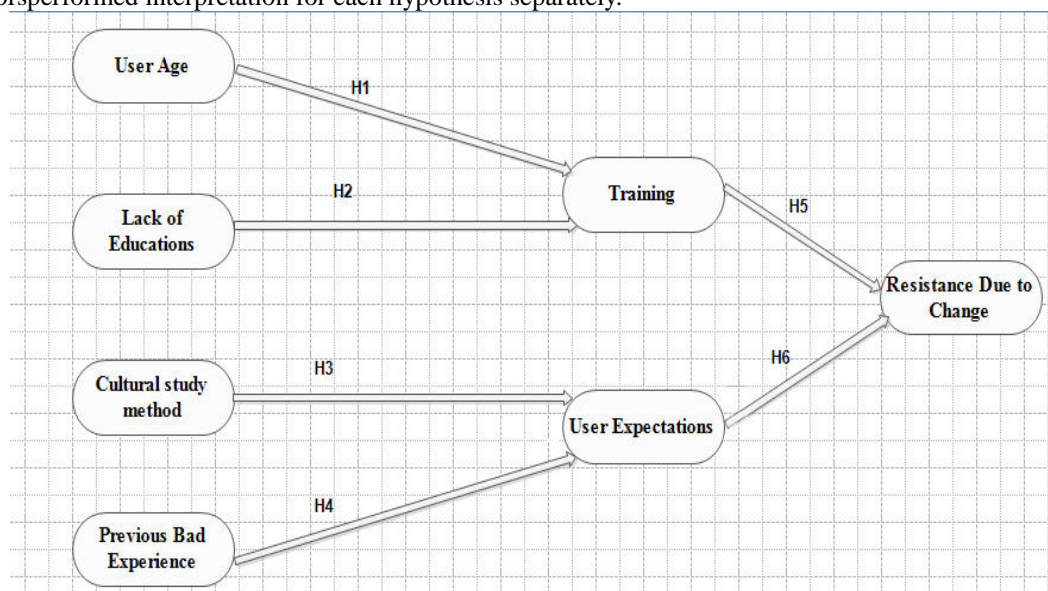


FIGURE 1: Model of user resistance in ERP Post implementation

Correlation coefficient (CC) is a statistical tool used to study correlations between a set of variables. For example, a CC is used to learn a relationship between two variables, and then the user can take a decision upon a learnt relationship. Pearson's, Kendall and Spearman's correlation coefficients are well known CC types. In this

research, the Pearson's  $r$  were used in order to assess the influence between the factors of the research model.

- **Hypotheses 1:** (user age) lead to (training) relationship analysis = 0.90 that indicates very strong correlation between User age and training. This is due to 63.8%, respondent replays were agreed with the statement that use of E-Learning is disproportionate with own way of study and 78.9% respondent replays were agreed with the statement that the training provided to them were not enough. This supporting the research hypotheses which The level of e-learning, training is influenced by the users' age. This indication has come from empirical data which show that the user was older facing difficulty with training in post implementation stage. User answers show that the training was only in pre implementation stage and there was not any kind of trainee during post implementation stage.
- **Hypotheses 2:** (lack of education) lead to (training) analysis = 0.85 that indicates very strong correlation between lack education and training. This is due to 67.6%, respondent replays were agreed with the statement that the Training provided to them were not fit and actually they think that students and lecturer, who have computer facilities are more interested to use E-learning. This supporting the research hypotheses which the level of e-learning, training is influenced by users' lack of education. This indication has come from empirical data which and User answers show that the students and lecturer, who have computer faculties are more interested to use E-learning and they do not need to any more training in post implementation stage.
- **Hypotheses 3:** (cultural study method) Lead To (user expectations) analysis =0.84 that indicates very strong correlation between cultural study method and user expectations. This is due to 65%, respondent replays were agreed with the statement that the E-Learning provided to them were opposite with own studying cultural method and actually they would prefer to study by conventional method. This supporting the research hypotheses which User expectation of e-learning is influenced by the users' cultural study method. This indication has come from empirical data which and User answers show that the E-Learning provided to them were opposite of own expectations in the University E-Learning system.
- **Hypotheses 4:**(previous bad experience) lead to (users' expectations) analysis =0.88 that indicates very strong correlation between previous bad experience and users' expectations. This is due to 85.3%, respondent replays were agreed with the statement that previous bad experiences may lead to a preventing using E-learning methods. This supporting the research hypotheses which User expectation of e-learning is influenced by users' previous bad experience. This indication has come from empirical data which and User answers show that that E-learning system does not meet own expectations.
- **Hypotheses 5:**(training) lead to (resistance due to change) analysis =0.61 that indicates natural correlation between training resistance due to change. This is due to 78.9%, respondent replays were agreed with the statement that training for E-Learning system provided to them were not enough. This supporting the research hypotheses which Resistance due to change of e-learning is influenced by Training. This indication has come from empirical data which and User answers show that the E-Learning provided to them were not satisfied with the technical needs and actually they don't willing to cooperate with the changes in the new way of studying with the E-learning system.
- **Hypotheses 6:**(users' expectations) lead to (resistance due to change) analysis =0.80 that indicates strong correlation between users' expectations and to resistance due to change. This is due to 60.4%, respondent replays were agreed with the statement that the E-Learning provided to them were opposite of own expectations in the University E-Learning system. This supporting the research hypotheses which resistance due to change of e-learning is influenced by user expectation. This indication has come from empirical data which and User answers show that they are not willing to cooperate with the changes in the new way of working with the E-learning system.

The general findings show that the strongest correlation is =0.90 between the factor (user age ) with (training), it follows with correlation (0.88) between (previous bad experience) with (users' expectations), then (0.85) for (lack of education) with (training), The correlation between(cultural study method) with (user expectations)found to be (0.84), then (0.80) for (users' expectations) with (resistance due to change), the natural



correlation between (training) with resistance due to change).

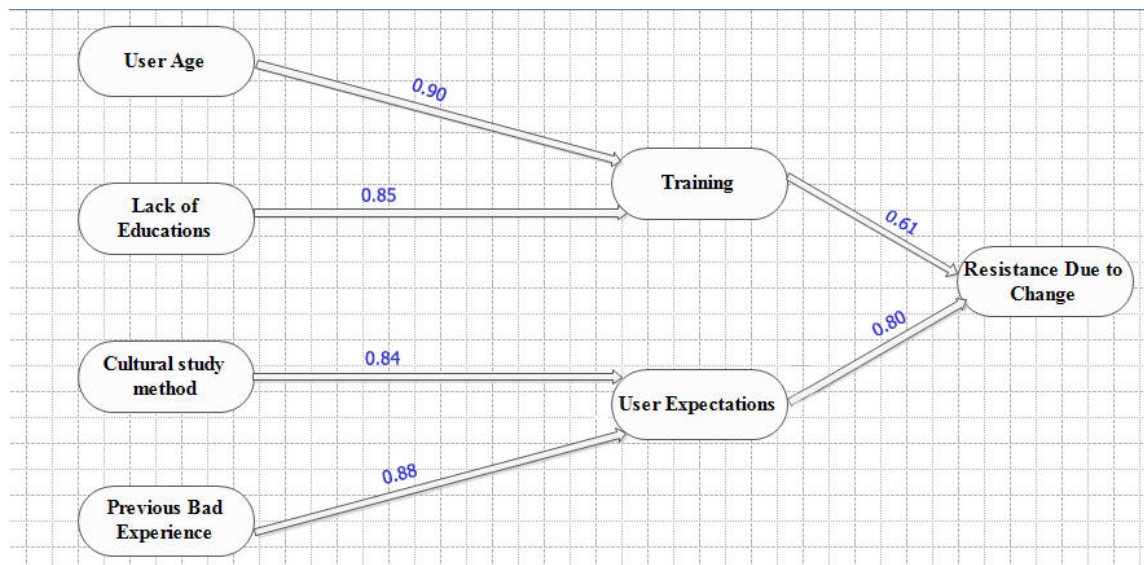


FIGURE 2: Model of user resistance in post UTM E-Learning implementation and the influence percentage between the factors.

## 6. Conclusion and Future Work

Of the users' perspectives an equally important time to come direction is a psychological understanding. For example previous research discussed attitude strength, attitude structure, and resistance to Change. The alteration, however, the attitude strength and structure have not been examined and system in post implementation stage for a user, there may be negative perceptions towards the e-learning. Users may have perceptual experiences, but resistant behaviors will not exist, it is possible that if an mental attitude is not strong enough. A strong attitude may exhibit a greater degree of opposition and on the other hand, users with negative perceptions. This study provides a foundation upon which time to come research on user resistance can be constructed. One future direction for this line of research is developing a model of user resistance based on the key drivers for user resistance; Of futurity in user resistance research would also analyze this line and the determination of opposition behaviors identify which reasons are the most important.

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