Contents :

International Journal of Business and Management Invention (IJBMI)

International Journal of Business and Management Invention (IJBMI) is an international journal intended for professionals and researchers in all fields of Business and Management. IJBMI publishes research articles and reviews within the whole field Business and Management, new teaching methods, assessment, validation and the impact of new technologies and will continue to provide information on the latest trends and developments in this ever-expanding subject. The publication of papers are selected through double peer reviewed to ensure originality, relevance, and readability. The articles published in our journal can be accessed online.

The Features of IJBMI

* Open access to all researchers
* Fast publication process
* Proper peer review process
* Electromechanical Engineering
* Suggestion to author if article need modification
* Post-publishing work like indexing of each article to different database.
* Journal publishes online as well as print version.
* Print version dispatch to author within a week of online version
* Journal provide digitally signed e-certificates to all author after the publication of paper

LIST OF JOURNALS :

International Journal of Engineering and Science Invention (IJESI)
International Journal of Pharmaceutical Science Invention (IJPSI)
International Journal of Business and Management Invention (IJBMI)
International Journal of Humanities and Social Science Invention (IJHSSI)
International Journal of Mathematics and Statistics Invention (IJMSI)

Contact US :

Web : www.ijbmi.org
Email : ijbmi@invmails.com

International Journal of Business and Management Invention

International Editorial Board

Acceptance Analysis of Logic And Algorithms Learning Application By Using Technology Acceptance Model At Business And Informatics Stikom Surabaya

Sulistiowati
Information System Department, Institut Bisnis dan Informatika Stikom Surabaya
Corresponding Author: Sulistiowati

Abstract: *Institute of Business and Informatics Stikom Surabaya (Stikom Surabaya) is one of the private universities in Surabaya which has stratum 1 in Information System Department. One of graduate's competences is able to make an application. One of the basic course supporting this competence is Logic and Algorithms, so that in order to help students understanding the course, It is made a learning application. However, in applying the application, it is needed for us performing a test to determine the user's acceptance towards the application.*

According to the data processing taken from questionnaires distributed to 107 students following Logic and Algorithms Course, it shows that any increase of subjective norm and experience will increase perceived usefulness, it shows also that any increase of subjective norm will increase image, any increase of image will increase perceived usefulness, any increase of job relevance and output quality will increase perceived usefulness, any increase of perceived ease of use will increase perceived usefulness, any increase of perceived usefulness will increase behavioral intention, any increase of behavioral intention will increase use behavior

Keywords: *perceived Usefulness, subjective norm, experience, job relevance, output quality, perceived ease of use, behavioral intention, use behavior*

Date of Submission: 03-01-2018   Date of acceptance: 17-01-2018

I.   Introduction

Institute of Business and Informatics Stikom Surabaya (Stikom Surabaya) is one of the private universities in East Java Province, Surabaya. One of departments available in Stikom Surabaya is stratum 1 in Information System Department. One of its competences is able to make an application (it is written down in academic guideline). But, based on basis data in Stikom Surabaya, it is known that 80% of freshmen in Stikom have no capability on Math Logic as it is expected. It causes more than 70% students have no ability in making application. To rectify it, a new breakthrough, especially in learning process of Logic and Algorithms. This course is chosen to be addressed specially, because it is a course providing a basic knowledge in understanding the making of Application Program (Farrell, 2011).

This new breakthrough for Logic and Algorithms course learning process is in the form of application making which is used to provide easiness for students in understanding Logic and Algorithms. The implementation of this learning application is able to improve learner's understanding (Hermawan, 2013). In implementing this application, we should perform a testing to determine user's acceptance toward this application. This research is expected to find the factors which influence users using the learning application, so that the software produced can be applied as a learning media for Logic and Algorithms course and it can accommodate students or users.

This research was using Technology Acceptance Model (TAM) which is developed to adopt and implement IT individually (Venkantesh & Bala, 2008). This theory said that the individual behavior using this IT is determined by two beliefs, such as; perceived usefulness (PU) and Perceived Ease of Use (PEU). PU is defined as the level of trust that using IT will improve the his work performance. PEU is defined as the level of trust using IT will make them free from effort.

1.The TAM 3 Model

Until today, TAM has developed into TAM 3 (Venkantesh & Bala, 2008). Variables used in measuring PU are SN (Subjective Norm), IM (image), JR (Job Relevance). OQ (Output Quality), RD (Result Demonstrability), and also PEU (Perceived Ease of Use. PU is also influenced by two moderator variables. They are EP (experience) and VO (Voluntariness). This is one of the revision of TAM 2. Variables used to measure PEU are CSE (Computer Self-efficacy), PEC (Perception of external control), CA (Computer Anxiety), CP (Computer Playfulness), PE (Perceived Enjoyment), OU (objective Usability) (Venkantesh & Bala, 2008).
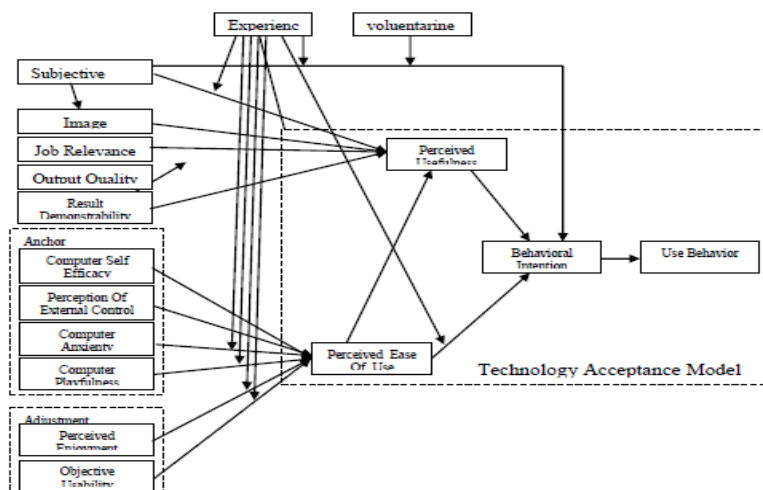
Image 1 TAM 3 (Venkatesh & Bala, 2008)

1.Definition of Variable Operational
Analysis Model used in this research was Structural Equation Model (SEM), so that the variables used were exogenous variable, indicator (measured variable/observed variable), and endogenous (Ferdinand, 2000:7). According to Ferdinand (2000:38):
a. Exogenous Variable is a source variable or independent variable which is not predicted by other variables in a model.
b. Endogenous Variable is an outcome variable or dependent variable from at least having 1 causality correlation in a model.
c. Indicator is a measured variable used to measure concept (Exogenous Variable and Endogenous Variable) which cannot be measured directly).

In this research, exogenous variable are: SN (subjective norm), RD (result demonstrability), IM (image), and JR (job relevance), whereas endogenous variables are: PU (perceived usefulness), PEU (perceived ease of use), BI (Behavioral Intention), and UB (Use Behavior).

2.Variable Measurement
Variable measurement done by using Likert Scale (Budiaji, 2013). Measuring procedure is:
a.   Respondent is asked to answer some general questions which are going to be used as the basic determining whether the respondent has fulfilled the criteria or not.
b.   Respondent is asked to state whether he agrees or not towards a statement stated by the researcher based on each respondent's perception. There are 5 choice answers ; strongly agree (SS), agree (S), no opinion (TB), Disagree (TS), and strongly disagree (STS).
c.   Scoring. Strongly agree will be scored 5, and so on decreasing and for strongly disagree will be scored 1.

3.Location and Time of Research
This research has been held on students of stratum 1 Information Sytem Depatment at Business and Informatics Stikom Surabaya Institute for 8 months starting from February 2016 until September 2016.

4.Indicator of Research Variable
Tam Indicator according to Jeffrey (2015) :
Subjective Norm
a.   My partner suggests me to use this application.
b.   This application provide easiness in doing my task

Image
a.   My friend considers me using this application.
b.   My lecturer thinks that I use this application.
c.   I consider this application supports my study

Job Relevance
a.   Usage of this application associates with my coursework.

b.   This application supports my course work

Output Quality
a.   I assume the output of this application strongly supports my study.
b.   This application has good quality in presenting the lecture material

Result Demonstrability
a.   I believe that I can easily explain to others about the usage of this application.
b.   I can easily explain how to use this application to others.

Computer Self-Efficacy
a.   I feel confidence when I learn how to operate this application.
b.   I feel confidence when I master a course material using this application

Perception Of External Control
a.   I have knowledge in using this application
b.   I have computer/laptop to use this application
c.   By using this application, I have chance to get a better score

Computer Anxiety
a.   I feel doubt on my capability in mastering this application.
b.   I think that I will not be able to use this application well.
c.   I feel afraid of starting using this application.
d.   I feel difficult in mastering this application.

Computer Playfulness
a.   I am happy using this application.
b.   I like all the features available in this application because it is easy and no error.

Perceived Enjoyment
a.   The usage of this application is interesting and enjoyable.
b.   Features in this application trigger my curiosity.

Objective Usability
a.   This application can accelerate the completion of coursework.
b.   The usage of this application can accelerate the understanding of a course.
c.   This application can produce an accurate output.

Experience
a.   I have ever used this type of learning application
b.   I have an interesting experience in using this application

Voluntariness
a.   I use this application voluntarily.
b.   Lecturer gives freedom to me whether we use this application or not.

Perceived Usefulness
a.   This application makes me able to get information fast.
b.   This application can make me faster in mastering a course material.
c.   This application can help me getting a course material easily.
d.   This application can save my time in learning a course material.

Perceived Ease Of Use
a.   This application is easily learnt
b.   I can easily find something I am looking for.
c.   The usage of this application is clear and comprehensible.
d.   I easily master the usage of this application.

Behavioral intention
a. I intend to use this application provided by lecturer.
b. I intend to urge my friends to use this application.

Use Behavior
a. I always use this application in my lecture weekly.
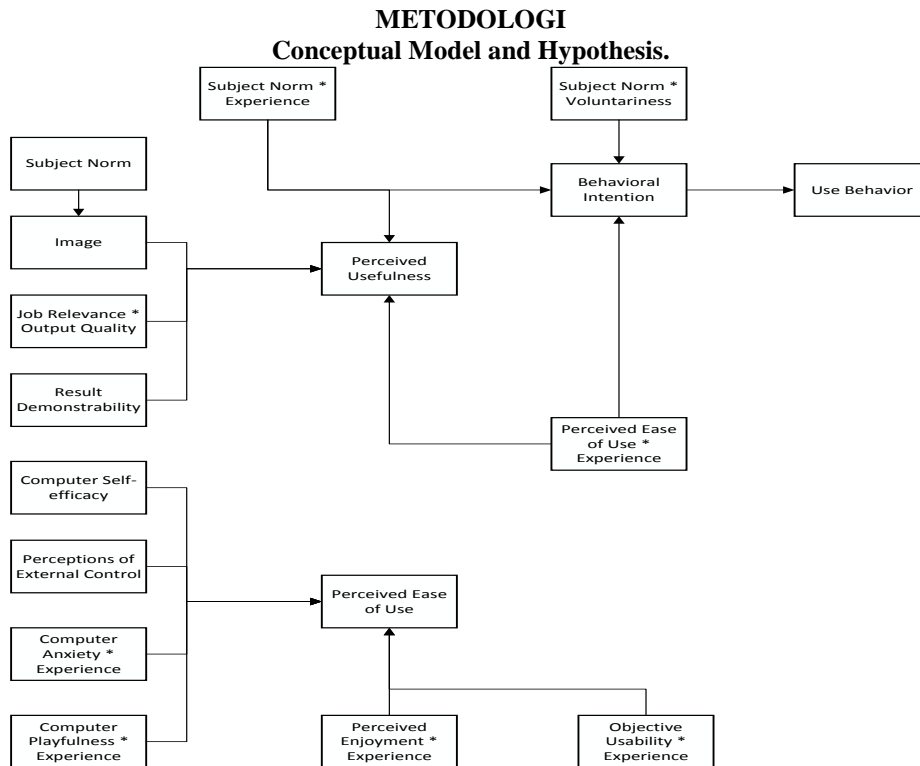b. I often use this application to help me doing my task outside of class hour.

METODOLOGI
Conceptual Model and Hypothesis.

Image 2 TAM Conceptual Model

According to conceptual model of the researcher, research hypothesis developed were:
1. Allegedly subjective norm influences image
2. Allegedly image influences Perceived Usefulness
3. Allegedly result demonstrability influences Perceived Usefulness
4. Allegedly computer self-efficacy influences perceived ease of use
5. Allegedly perception of external control influences perceived ease of use
6. Allegedly the interaction between experience and subjective norm influence Perceived Usefulness
7. Allegedly the interaction between computer anxiety and experience influence perceived ease of use
8. Allegedly the interaction between computer playfulness and experience influence perceived ease of use
9. Allegedly the interaction between perceived enjoyment and experience influence perceived ease of use
10. Allegedly the interaction between objective usability and experience influence perceived ease of use
11. Allegedly the interaction between job relevance and output quality influence perceived usefulness
12. Allegedly the interaction between subjective norm and experience influence behavioral intention
13. Allegedly the interaction between subjective norm and voluntariness influence behavioral intention
14. allegedly perceived ease of use influence perceived usefulness
15. allegedly perceived usefulness influence behavioral intention
16. allegedly the interaction between perceived ease of use and experience influence behavioral intention
17. allegedly behavioral intention influences use behavior

Validity Test and Reliability Test

The Validity test is used to know whether the questions written down in the questionnaires are representative or not.. According to the result of data processing by using SPPS, it was found that all questions on each variables are valid with sig. value <0.05. Reliability test is an index which shows to which extent the measuring instrument is reliable or trustworthy. Reliability is an internal consistency from indicators of notching variables which indicate the degree of general notching variables. In the resarch, data process counting will be in this research the realibility counted thata based on data processing by using any kind of SPP cronbach alpha at least 0,7. Based on SPPS, we can conect basedon students .

II. Result And Discussion

General Discussion.

The total respondents were 107 respondents (colleges), whereas there were 82 male respondents (77%) and 25 female respondents (23%) with the average age 20 years old.

SEM Analysis

After another assumptions such as; Normality test, singularity test and outlier test are fulfilled, it is time to continue to causality test showed In image 3.
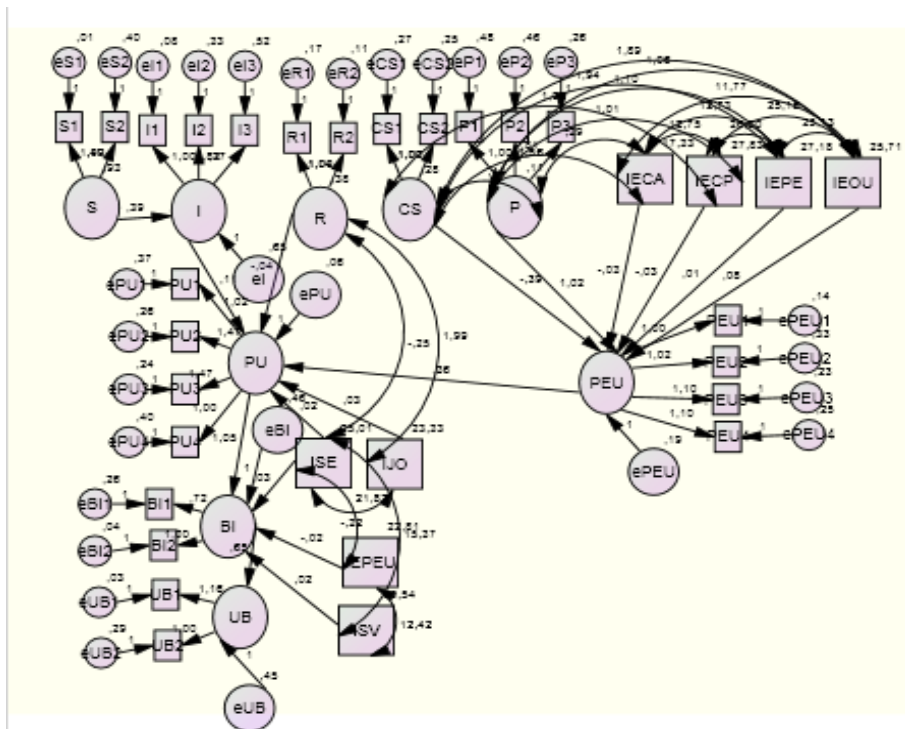

Image 3 the Correlation between Exogenous Variable and Endogenous Variable

Table 1 Result of Model Testing

Criteria	Cut – Off Scoring	Calculation result	Description
Chi – Square	It is expected low	267,548	Good enough
Prob. Sig.	≥ 0,05	0,000	Not good enough
RMSEA	≤ 0,08	0.057	Good
GFI	≥ 0,90	0,870	Close to Good
AGFI	≥ 0,90	0,865	Almost good
CMIN/DF	≤ 2,00	1.678	Good
TLI	≥ 0,95	0.912	Almost good
CFI	≥ 0,95	0.924	Almost good

Table 1 It shows that the 8 criteria used to scoring whether a model is acceptable or not reveals it good or good enough. It can be stated that the model is accepted which means there is congruence between model and data.

Table 2 Result of Coefficient Test Line Model

Variabel	Coef.	C.R.	Prob.	Description
subjective norm → image	0.392	2.686	0.007	Significant
image → Perceived Usefulness	0.204	1.225	0.022	Significant
result demonstrability → Perceived Usefulness	-0.040	-0.446	0.656	Not Significant
computer self-efficacy → perceived ease of use	-0.393	-0.958	0.338	Not Significant
perception of external control → perceived ease of use	1.015	1.637	0.102	Not Significant
Interaction between experience and subjective norm → Perceived Usefulness	0.024	2.558	0.011	Significant
Interaction between computer anxiety and experience → perceived ease of use	-0.031	-1.637	0.102	Not Significant
Interaction between computer playfulness and experience → perceived ease of use	-0.031	-0.719	0.472	Not Significant
Interaction between perceived enjoyment and experience → perceived ease of use	0.013	0.281	0.779	Not Significant
Interaction between objective usability and experience → perceived ease of use	0.078	1.916	0.055	Not Significant
Interaction between job relevance dan output quality→ perceived usefulness	0.027	2.544	0.011	Significant
Interaction between subjective norm and experience→ behavioral intention	0.030	0.749	0.454	Not Significant
Interaction between subjective norm and voluentarines→ behavioral intention	0.021	0.884	0.377	Not Significant
perceived ease of use→ perceived	0.363	3.948	0.000	Significant

Variabel	Coef.	C.R.	Prob.	Description
usefulness				
perceived usefulness→behavioral intention	1.055	3.297	0.000	Significant
Interaction between perceived ease of usei and experience →behavioral intention	-0.016	-0.386	0.699	Not Significant
behavioral intention →use behavior	0.649	6.009	0.000	Significant

According to the test result, it is known that there are positive result between
a) subjective norm and image at about 42%
b) image and Perceived Usefulness at about 30%
c) Interaction between experience and subjective norm towards Perceived Usefulness at about 32%
d) Interaction between job relevance dan output quality towards perceived usefulness at about 34%
e) perceived ease of use and perceived usefulness at about 58%
f) perceived usefulness and behavioral intention at about 48%
g) behavioral intention and use behavior at about 62%

III. Discussion

The interaction effect of factor Subjective Norm and Experience towards Perceived Usefulness
The result shows that there is a positive and significant interaction between subjective norm and experience with perceived usefulness which means the presence of experience and easiness in using the application can improve the student's perception on the advantage of this application

The effect of Image towards Perceived Usefulness
The result shows that there is a positive and sgnificant interaction between subjective norm and Perceived Usefulness which means that the availability of image in this application will improve student's perception on the usefullness of this application

The effect interaction of Job Relevance and Output Quality towards Perceived Usefulness.
The result shows that there is a positive and significant interaction between Job Relevance and Output Quality towards Perceived Usefulness, which mean that the congruence increase between task and the output quality of the application will increase the student's perception towards the usefullness of this application

The Effect of perceived ease of use towards Perceived Usefulness
The result shows that there is a positive and significant effect between perceived ease of use towards Perceived Usefulness which means that the increase of perceived ease of use will increase the udefullness of application

The effect of Perceived Usefulness towards Behavioral intention
The result shows that there is a positive and significant result between Perceived Usefulness towards Behavioral intention which means the increase of usefullness of this application wil increase the behavioral intention to use this application

The affect of behavioral intention towards Use Behavior
The result shows that there is a positive and significant effect between Behavioral intention and Use Behavior which means the increase of behavioral intention using the application will increase the use behavior of this application.

IV. Conclusion
1. Every Increase of subjective norm dan experience will increase perceived Usefulness,
2. Every Increase of subjective norm will increase image,
3. Every Increase of image will increase perceived Usefulness,

4. Every increase of job relevance and output quality will increase perceived Usefulness,
5. Every Increase of perceived ease of use will increase perceived Usefulness,
6. Every Increase of perceived usefulness will increase behavioral intention,,
7. Every Increase of behavioral intention will increase use behavior

Refferences

[1]. Djaali, dan Pudji M. 2008. Pengukuran dalam Bidang Pendidikan. Jakarta: Grasindo.
[2]. Farrell,J. 2011. Programming Logic and Design Introductory, sixth edition. Canada: Course Technology
[3]. Ferdinand, A., 2000, Structural Equation Modelling Dalam Penelitian Manajemen;Aplikasi Model-Model Rumit Dalam Penelitian Untuk Tesis S-2 dan Disertasi S-3, BP Universitas Diponegoro, Semarang
[4]. Ferdinand, A., 2000, Structural Equation Modelling Dalam Penelitian Manajemen;Aplikasi Model-Model Rumit Dalam Penelitian Untuk Tesis S-2 dan Disertasi S-3, BP Universitas Diponegoro, Semarang
[5]. Jeffrey, D.A., 2015, Testing the Technology Acceptance Model 3 (TAM 3) with the Inclusion of Change Fatigue and Overload, in the Context of Faculty from Seventhday Adventist Universities : A Revised Model, Dissertations, Andrews University.
[6]. Venkatesh, Viswanath & Bala, Hillol. 2008. Technology Acceptance Model 3 and a Research Agenda on Interventions. Decision Sciences Institute: Journal compilation, Volume 39 Number 2, 273 – 315.
[7]. Budiaji, Weksi, 2013, The Measurement Scale and The Number of Responses in Likert Scale, Jurnal Ilmu Pertanian dan Perikanan, Vol. 2 No. 2 Hal : 127-133