MEASUREMENT OF ELECTRONIC LEARNING PERFORMANCE USING THE TECHNOLOGY ACCEPTANCE MODEL (TAM) METHOD AT THE VOCATIONAL SCHOOL OF PATRIA GADINGREJO

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Abstract
The application of electronic learning is carried out in the learning process at Patria Gadingrejo Vocational School to determine the factors that are still weak or require improvement and the factors that are considered successful or strong in assisting the application of electronic learning in the learning process. This study results in Aydin and Tasci's ELR model questionnaire consisting of 37 statements grouped into four factors. These factors are human, self-development, technology, and innovation as well as six questions for the perception of the usefulness of electronic learning. The location of this research is at Patria Gadingrejo Vocational School. Respondents in this study were the principal, vice principal of the curriculum section, the school treasurer, the person in charge of the school computer laboratory, and teachers who are experts in e-learning. Data processing is carried out to examine the factors that influence the perceived usefulness of e-learning by using regression analysis and also the level of readiness for the application of electronic learning at Patria Gadingrejo Vocational School with Aydin and Tasci's ELR model. Aydin & Tasci's electronic learning readiness (ELR) model applied to Patria Gadingrejo Vocational School gives results that are not ready for the application of electronic learning and requires a slight improvement.

I. INTRODUCTION

The development of information technology has had a great impact on all aspects of human life. One of them is the education aspect. The rapid advancement of information technology offers convenience in the learning process. Learning that initially only occurred in the classroom at a certain time has shifted to learning that can be done anytime and anywhere. One of the uses of information technology in learning is known as e-learning. Ade Kusmana (2011) says that the term e-learning consists of two parts, "e" which stands for electronic, and learning. E-learning can also be interpreted as learning using the help of electronic devices.

Utilization of e-learning in the learning process provides benefits such as changing the role of students who are usually passive to active and students can also look for additional information on learning materials on the internet. However, e-learning also has drawbacks such as a lack of interaction between teachers and students, which slows down the cultivation of moral values and character in the teaching and learning process. Utilization of e-learning also requires adequate facilities such as computers, computer networks, internet connections and other electronic media that support learning with e-learning.

The different facilities and human resources of each school make the level of readiness for the application of e-learning also different. Research on the level of readiness to implement e-learning needs to be done so that the results of the research can be considered for schools that implement e-learning. These considerations are intended so that the use of e-learning can be carefully designed. If it is not designed carefully, the use of e-learning can harm schools, teachers and students who use it. Several factors that can be used as benchmarks on the readiness to implement e-learning are human factors, self-development factors, technological factors and innovation factors from the research model of Aydin & Tasci (2005).

The use of e-learning in Indonesia has been widely applied to public and private schools. E-learning as a learning medium is still relatively new

because e-learning is mostly used by universities. There is still very little research on the application of e-learning at the Senior High School level. One method of e-learning learning system, especially in secondary schools that is still widely used is the school's website-based e-learning learning system.

One of the schools in Pringsewu that has used the school's website e-learning learning system is the Vocational School of Patria Gading Rejo whose implementation has been started since 2012. However, until now there has been no evaluation of e-learning performance.

The concept in this study is the Technology Acceptance Model (TAM). This model states that system users tend to use the system if the system is easy to use and useful for them. The TAM concept is based on the Theory of Reasoned Action (TRA) developed by Ajzen and Fishbein in 1975. In TAM, the acceptance of SI users is determined by two key factors, perceived usefulness and perceived easy of use.

The TAM concept offers a theory as a basis for studying and understanding user behavior in receiving and using information systems (Handayani, 2007). This model aims to explain the key factors of information technology user behavior towards the acceptance of information technology adoption (Ferda, 2011; Seeman, 2009). The expansion of the TAM concept is expected to help predict a person's attitude and acceptance of technology and can provide the basic information needed about the factors that drive the individual's attitude (Rose, 2006; Lee, 2010).

TAM theorizes that a person's intention to use a system or technology is determined by two factors. Perceived usefulness is the level of individual belief that the use of technology will improve their performance, and perceived ease of use is the level of individual belief that using technology makes it easier to complete work (Venkatesh and Davis, 2000).

This research is conducted to determine the external factors regarding the readiness to implement e-learning. These external factors are human factors, self-development factors, technological factors and innovation factors as in the theory proposed by Aydin & Tasci (2012) on perceived usefulness and perceived ease of use e-learning by using Technology Acceptance Model (TAM) at Patria Gading Rejo Vocational School. By knowing the relationship between these factors, it can be seen external factors that can be used for evaluation in increasing acceptance of the use of e-learning in Patria Gading Rejo Vocational School.

II.   LITERATURE REVIEW
2.1 Definition of Performance Appraisal
In Hamzah, et al. (2010), in principle, performance appraisal is a way of measuring the contributions of individuals within the agency to the organization. The important value of performance appraisal is related to determining the level of individual contribution or performance expressed in completing the tasks for which they are responsible.

The performance appraisal information by the leadership can be used to manage the performance of their employees, and reveal weaknesses in employee performance so that the head of human resource development can determine goals and target ratings that must be improved. The availability of employee performance information greatly assists the leadership in taking steps to improve the personnel programs that have been made, as well as the overall organizational programs.

2.2 Learning
According to Cepi Riyana (2008) learning is an activity that involves a person in an effort to acquire knowledge, skills and positive values by utilizing various sources for learning. According to Robert M Gagne in Ahmad Johari Sihes (2010) Learning is a change or a person's ability that can be sustained but is not caused by growth. Morgan and King in Ahmad Johari Sihes (2010) also argue that learning is a rather permanent change in behavior due to the experience gained by a person and the training he undergoes. Based on these opinions, it can be concluded that learning is an activity that involves a person in an effort to acquire skills and knowledge from undergoing training and the experience he gets.

2.2.1.   Learning strategy
Learning strategy is a way and art to use all learning resources in an effort to teach students (Made Wena, 2009). Learning strategies are needed in order to facilitate the learning process so as to achieve optimal results. According to Degeng in Made Wena (200) in full there are three components that need to be considered in describing learning delivery strategies, as follows:
1. Learning media is a component of learning delivery strategies that can be loaded with messages to be conveyed to students, either in the form of people, tools, or materials.
2. Student interaction with the media is a component of learning delivery strategy which refers to what activities are carried out by students and how the role of the media in stimulating learning activities is.
3. The form (structure) of teaching and learning is a component of a learning delivery strategy that refers to whether students study in large groups, small groups, individuals, or independent learning.

2.2.2.   Internet

One of the learning media for learning delivery strategies is the internet. The internet which stands for interconnection and networking is a global information network that can connect everyone in the world to be able to connect with each other. According to Cobine (Rusman, 2012) through independent study, students become doers, as well thinkers. This means that the use of the internet as a learning medium conditions students to study independently. Students can also access online from various online libraries and other sources so that they get primary sources such as reports, historical events, biographies or statistical data. Students can also learn to work together by using e-mail to discuss subject matter or to work on learning assignments.

Utilization of the internet as a learning medium has several advantages as follows (Rusman, 2012)

1. There is a distribution of education to all corners of the country and an unlimited capacity because it does not require classrooms.
2. The learning process is not limited by time as usual face-to-face.
3. Learning can choose topics or teaching materials according to the wishes and needs of each.
4. The length of time to study also depends on the ability of each student.
5. There is accuracy and up-to-date learning material.
6. Learning can be done interactively, so that it attracts students and allows interested parties (parents and teachers) to participate in the success of the learning process, by checking the tasks that students are doing online.

2.2.3. Computer network

Andi Kristanto (2003) states that a computer network is an autonomous group that is interconnected with one another using communication protocols through communication media so that they can share information, programs, share hardware such as printers, hard drives, and so on. According to Bakardjieva (2011) a computer network consists of a collection of computers, printers and other equipment that are connected together so that they can be used by each other. Andi Kristanto also stated (2003) that the purpose of a computer network is to carry information correctly without any errors from the sender side to the receiving side through communication media.

Computer networks can be in the form of a Local Area Network (LAN) and a wireless network. LAN according to Andi Kristanto (2003) is a privately owned network in a building or campus measuring up to several kilometers. LANs are often used to connect personal computers and workstations in corporate offices or factories to share resources (eg printers, scanners) and exchange information. LAN uses cables to form a computer network. Wireless network according to Andi Kristanto (2003) uses a radio wave and microwave transmission system. Based on these opinions, it can be concluded that a computer network is a collection of computers that are connected using an intermediary cable or not using a cable to exchange information and share programs, share hardware such as printers, hard drives, and so on.

2.2.4. *E-learning*

One of the publications on *about-elearning.com* in Rusman (2012) suggests that the definition of e-learning is the process and activity of implementing web-based learning, computer-based learning, virtual classrooms, and/or digital classroom. The materials in these electronic learning activities are mostly delivered through internet media, video or audio tapes, broadcasting via satellite, interactive television and CD-ROMs. According to Cisco Systems on the site learnframe.com, e-learning is learning that is connected to the internet. Components may include delivery of content in multiple formats, management of learning experiences, and community networks of students, content developers and experts. E-learning provides fast learning at reduced costs as well as increased access to learning, and clear accountability for all participants in the learning process. In today's fast-paced culture, organizations implementing e-learning provide their workforce with the ability to turn a change into an advantage.

According to Som Naidu (2006), e-learning is often referred to as the use of information networks and communication technology in learning. A number of other terms are also used to describe this learning method. The terms are online learning, virtual learning, distributed learning, network learning and web-based. According to Rosenberg (2001), e-learning is the use of internet technology to provide a solution of high knowledge and skills. Schank (2002) states that e-learning is how to provide learning products in the form of CD-ROM or web or both.

E-learning has the following characteristics (Rusman, 2012).

1. Interactivity
There are more available communication channels, either direct (synchronous), such as chat or messenger or indirectly (asynchronous), such as forums, mailing lists or guest books.
2. Independence
There is flexibility in terms of providing time, place, teachers and teaching materials. This causes learning to be more student-centered (student-centered learning).
3. Accessibility

Learning resources become more accessible through distribution on the internet network with wider access than the distribution of learning resources in conventional learning.

4. Enrichment

Learning activities, presentations of lecture materials and training materials as enrichment, allow the use of information technology tools such as video streaming, simulations and animations.

2.2.5. E-readiness, dan E-learning readiness (ELR)

According to David Little (2004) E-readiness is the degree to which a community is prepared to participate in a global network. In line with this view, according to Kirkman, Osorio & Sachs in Steve Vosloo (2009) e-readiness is defined as the extent to which a society is ready, and has the potential to participate in global networks. E-readiness is also defined (Budhiraja, 2002: 5) as the level at which people are eligible to participate in the world network. This is measured by assessing the relative progress of an area in adopting information technology and its application.

According to the information technology division of the Bhutan Ministry of Communications (2003) e-readiness is generally defined as the level of readiness to access network infrastructure and technology. From these opinions e-readiness can be defined as the level of readiness of a community or organization to access networks and technology. E-readiness is formed by two elements, ability in information technology and attitude towards digitization (Katrine Bauer, 2006).

EIU and IBM (2008) define e-learning readiness as the ability of a country to generate, disseminate and use digital information for its citizens in order to improve the country's economic activities. According to Borotis & Poolymenakou in Schubert (2006) e-learning readiness is the physical or mental readiness of an organization for an e-learning experience and action. From the two opinions above, it can be said that e-learning readiness (ELR) is the physical or mental readiness of an organization in the form of a school or company to implement e-learning in schools and training in companies. The models to measure e-learning readiness are Haney's ELR model, Chapnick's ELR model and Aydin & Tasci's ELR model.

The Haney (2002) model is one of the e-learning readiness models. Haney uses seven categories in his questionnaire instrument that evaluates e-learning readiness. The categories are human resources, learning management systems, students, content, information technology, costs and vendors. In addition, there is also the Chapnick (2000) model which has developed an e-learning

readiness model. Chapnick's model uses psychological, sociological, environmental, human resources, financial, technological skills, equipment, content categories.

One of the e-learning readiness evaluation models for developing countries is the Aydin & Tasci (2005) model. Aydin & Tasci develop an ELR model with four factors that can measure e-learning readiness. These factors are:

1. Technological factor

This factor considers ways to make effective adaptation of technological innovations, e-learning in a school or organization.

2. Innovation factor

This factor considers the experience of human resources in schools and organizations in adopting a new innovation, e-learning.

3. Human factor

This factor considers the characteristics of human resources in schools and organizations.

4. Self-development factor

This factor considers the trust of schools and organizations on self-development in the application of e-learning.

Each of the above factors must be formed from three sides. The sides are resources, skills and attitudes as shown in table 1. Aydin & Tasci's ELR model uses thirty questions formed from these factors and sides.

2.3   Technology Acceptance Model
2.3.1   The definition of Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is one model that is generally used to explain user acceptance of the use of information technology systems (Jogiyanto, 2007). TAM is a theory development from Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1980). This model was first introduced by Davis (1986).

The TAM developed by Davis has added two main constructs to the TRA model. Perceived ease of use and perceived usefulness are the two main constructs added. TAM explains that the two main constructs determine user acceptance of information technology systems (Davis et al., 1989).

2.3.2   Perceived Ease of Use

Davis's definition of perceived ease of use is "*The degree to which a person believes that using a particular system would be free of physical and mental efforts*" (Davis, 1989).

It can be interpreted as a degree to which a person believes that the use of a particular system can reduce a person's effort in doing something. Ease means without difficulty or without the need for hard work. This perceived ease of use refers to

the user's belief that the technology system used does not require great effort when used.

2.3.3   Perceived Usefulness

Davis defines perceived usefulness *"The degree to which a person believes that using particular system would enhance his or her job performance"* (Davis, 1989). Thus, perceived usefulness can be interpreted as a level where a person believes that a certain system can improve work performance or the performance of users of the system.

2.4 Regression Analysis

According to Sembiring (1995), regression analysis is a statistical technique to form a model in determining the causal relationship between two or more variables. This model is a function of these variables which are then used to understand, explain and predict the behavior of the observed system. The simple linear regression model for the population is:

$y_i = \alpha + \beta x_i + \epsilon_i$

where: $i = 1,2,...,N$

y_i = the observed value of the individual response variable to -i

x_i = the observed value of the individual explanatory variable to -i

α = the point where the regression line intersects the Y axis (intercept)

β = regression coefficient (slope)

ϵ_i = individual error to -i

N = population size

III.   RESEARCH METHODS
3.1 Research Design/ Research Model

This research is quantitative to get a clear picture in measuring the readiness of e-learning implementation and to know the effect of e-learning implementation readiness. There are human factors, self-development, technology and innovation on perceived usefulness and perceived ease of use of e-learning in the Technology Acceptance Model (TAM) at Patria Gading Rejo Vocational School.

The research model in this study used a questionnaire instrument. The questionnaire instrument (Cholid Narbuko, 2009) is a list containing a series of questions regarding a problem or field to be studied. To obtain data, questionnaires are distributed to respondents (those who answered), especially in survey research. The purpose of the questionnaire instrument is to obtain information that is relevant to the research objectives and to obtain information about a problem simultaneously.

To measure the readiness to implement e-learning, this study uses the Aydin & Tasci ELR model Aydin & Tasci ELR model. Aydin & Tasci's ELR model uses four readiness factors. This model will provide a score for the level of readiness to implement e-learning in a school. The Aydin & Tasci ELR model was developed for institutions in developing countries, so it is suitable for use in Indonesia. The factors of the Aydin & Tasci ELR model are shown in Table 1.

Table 1. ELR factors of the adjusted Aydin & Tasci ELR models

	Resource	Skills	Attitude
Technology	Access to computer and internet	Ability to use computer and internet	Positive attitude towards the use of e-learning technology
Innovation	Barriers/obstacles to e-learning adoption	Ability to adapt change (update/innovation)	Openness to renewal (innovation)
Human	Educated students	Ability to learn through/with e-learning	Collaboration between students in using e-learning
	Experienced teacher		Cooperation between students and teachers in the teaching and learning process with e-learning
	Supporter of e-learning (Pioneer)		Cooperation between employees and teachers in managing the e-learning system
	Service providers and external parties		
Self-development	Internal budget for e-learning	Ability to manage time	Belief in self-development

The Technology Acceptance Model (TAM) is used to measure perceived usefulness by looking at its effect based on technology readiness factors, innovation readiness factors, and self-development factors. So that later it can be used as material for

evaluating readiness and acceptance of e-learning at Patria Gadingrejo Vocational School.

3.2 Data analysis technique
3.2.1 Regression Analysis
 1.   **Partial Test**

This test is used to prove the effect of the explanatory variable on the dependent variable partially using the t-test. The T test in this study uses calculations with the SPSS 17 (Statistical Package For Social Science) program.

Hypothesis testing with t-test is to compare the value of t_{count} with the value of t_{count} at the 95% significance level and a = 0.05. The rejection area and the acceptance area are decided as follows:

a. Ho is rejected and Ha is accepted, if P (Significant/ rs) < a
b. Ho is accepted and Ha is rejected, if P (Significant/ rs) > a

2. Multiple Linear Regression Analysis

Multiple linear regression analysis is used to determine the effect of the independent variables and the dependent variable, including human readiness, self-development readiness, technology readiness, and innovation readiness on perceived usefulness of e-learning at Patria Gading Rejo Vocational School. The multiple regression equation can be written as follows:

$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4$

Information:
Y= Implementation Variable of SI
a = Constant number
b1= Regression coefficient of human readiness
b2 = Regression coefficient of self-development readiness
b3 = Regression coefficient of technology readiness
b4 = Regression coefficient of innovation readiness
(Algifari, 1997)

To determine the linear equation, the researcher used the SPSS 17 program.

3. Simultaneous Test (Test – F)

The F test is used to test the independent variables together on the dependent variable. The F test in this study uses calculations with the SPSS 17 (Statistical Package for Social Science) program.

After the value of P (rs) is known, it is consulted with a which has a 95% confidence level with the following conditions:

a. If P (Significant/ rs) < a, Ha is accepted and Ho is rejected
b. If P (Significant/ rs) > a, Ha is rejected and Ho is accepted

3.2.2   Analysis with Aydin & Tasci ELR Model
After analyzing the data using regression analysis, the next step is to analyze using the ELR model by Aydin & Tasci (2005). The analysis is as follows:

1. The scores used in the scoring sheet are 5, 4, 3, 2, and 1 for each question. After the assessment sheet is filled in by the respondent and a total score is

obtained, then the final average is calculated using the formula, $\bar{x} = \frac{\sum x}{n}$

Information:
$\bar{x}$ = final average
$\sum$ = total score
n = the number of respondents

2. The average score of each question for the same factor and the total average score of all questions will be assessed using the Aydin & Tasci ELR model rating scale. The rating scale consists of four categories. The categories are ready and the implementation of e-learning can be continued, ready but requires a little improvement, not ready and needs a little improvement, and not ready and needs a lot of improvement. The rating scale is shown in Figure 1.
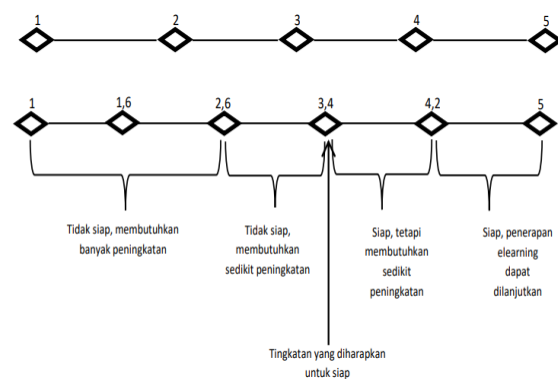

Figure 1. Aydin & Tasci. ELR model rating scale

The average score of 3.41 is the minimum score for the level of readiness to implement e-learning, so xelr = 3.41 which means the average score of each question. The average score of the questions for the same factor and the total average score of all questions must be $\bar{x} \geq \bar{x}$ elr to be considered ready for e-learning implementation. The range of values and categories can be seen in Table 2 below.

Table 2. Range of Values and Categories of Aydin & Tasci ELR models

Value range	Category
$1 \leq \bar{x} \leq 2,6$	Not ready, needs a lot of upgrades
$2,6 < \bar{x} \leq 3,4$	Not ready, needs a little upgrade
$3,4 < \bar{x} \leq 4,2$	Ready, but needs a little upgrade
$4,2 < \bar{x} \leq 5$	Ready, the implementation of e-learning can be continued

IV.   DISCUSSION
The results of data processing using SPSS 17 for multiple linear regression test results are shown in table 3 below:

Table 3. Multiple Regression Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.390	.778		3.072	.003
Readiness of Human Factor	.253	.059	.351	4.319	.000
Readiness of Self-Development Factor	.041	.063	.058	.645	.522
Readiness of Technological Factors	.181	.031	.439	5.758	.000
Readiness of Innovation Factor	.167	.082	.170	2.037	.047

Based on Table 3 above, the regression model coefficients that can be formed are: Y = 2,39 + 0,253X1 +0,041X2 + 0,181X3 +0,167X4.

The constant value is 2.39, which means that if the value of the readiness of the human factor, the readiness of the self-development factor, the readiness of the technological factor, the readiness of the innovation factor is zero, and the perceived value of the usefulness of e-learning is 2.39. The regression coefficient of the human factor readiness variable is 0.253, which means that if the human factor readiness variable increases by 1%, it will increase one unit of perceived usefulness of e-learning by 0.253% with the assumption that the other variables are equal to zero.

The regression coefficient for the self-development factor readiness variable is 0.041, which means that if the self-development factor readiness variable increases by 1%, it will increase one unit of perceived usefulness of e-learning by 0.041% with the assumption that the other variables are equal to zero. The regression coefficient of the technological factor readiness variable is 0.181, which means that if the technological factor readiness variable increases by 1%, it will increase one unit of perceived usefulness of e-learning by 0.181% with the assumption that the other variables are equal to zero. The regression coefficient of the innovation factor readiness variable is 0.167, which means that if the innovation factor readiness variable increases by 1%, it will increase one unit of perceived usefulness of e-learning by 0.167% with the assumption that the other variables are equal to zero.

The results above illustrate that the human factor readiness variable is the most influential compared to other variables on the perception of the usefulness of e-learning. The results of testing the research hypothesis stating the readiness of human factors, readiness of self-development factors, readiness of technological factors, readiness of innovation factors affect the perception of the benefits of e-learning and can be accepted. The goodness of fit test is carried out to determine the feasibility of a regression model. The feasibility can be seen from the value of R Square. The R Square value obtained from the results of data processing can be seen in Table 4 below:

Table 4. Variable Correlation Test

Model	R	R Square	Std. Error of the Estimate
1	.978[a]	.956	.631

From table 4.2 above, it can be seen that there is a close relationship between readiness of human factors, readiness of self-development factors, readiness of technological factors, readiness of innovation factors on perceptions of the benefits of e-learning at Patria Gadingrejo Vocational School. The calculation results of R = 0.978 and the coefficient of determination of $R^2 = 0.956$ or 95.6% indicate that the relationship between the five variables is very strong. Because the correlation coefficient is positive, the relationship between the four variables is positive, which means that the greater the variable readiness of human factors, readiness of self-development factors, readiness of technological factors, readiness of innovation factors, the better the perceived value of e-learning benefits On the other hand, the readiness of the human factor, the readiness of the self-development factor, the readiness of the technological factor, and the readiness of the innovation factor will result in the perceived value of e-learning benefits decreasing. While the magnitude of the coefficient of determination means that the magnitude of the change in the perceived usefulness of e-learning is 95.6% influenced by the readiness of human factors, readiness of self-development factors, readiness of technological factors, readiness of innovation factors and the remaining 4.4% is influenced by other factors. .

F-test

Multiple linear regression analysis test is conducted to determine whether the model of the influence of the variable readiness of human factors, readiness of self-development factors, readiness of technological factors, readiness of innovation factors on the perceived value of the usefulness of e-learning in the equation: Y = 2.39 + 0.253X1 +0.041X2 + 0.181X3 +0.167X4 is significant or not. The results of the F-Test can be seen in Table 5 as follows:

Table 5. F. Correlation Test

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	421.838	4	105.459	265.062	.000a
Residual	19.496	49	0.398		
Total	441.333	53			

From uj-F, the value of F_{count} is 7,839. This F_{count} value is compared with F_{table} with degrees of freedom (4.52) and at a significance level of 0.05. From the table it is known that F_{count} = 265.062 is greater than F_{table} = 2.56 and the significance value is < 0.05. It can be concluded that there is a significant influence on the readiness of the human factor, the readiness of the self-development factor, the readiness of the technology factor, the readiness of the innovation factor on the perceived value of e-learning benefits at Patria Gadingrejo Vocational School.

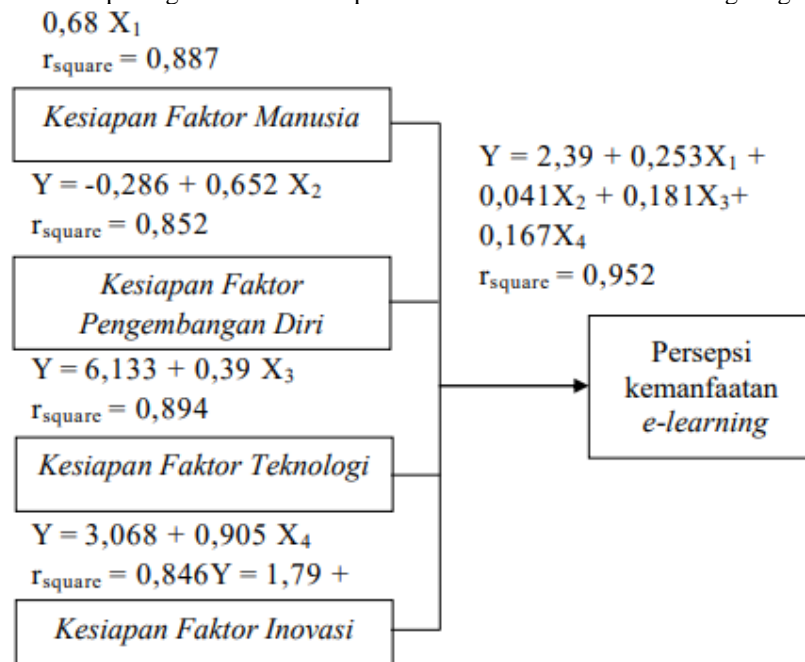Partial tests, and multiple regression tests are presented as shown in the following diagram:

Figure 2. Diagram of Analysis of Variables

Aydin & Tasci ELR Model Analysis

After knowing the factors that influence the perception of the usefulness of e-learning at Patria Gadingrejo Vocational School, the next step is to analyze the level of readiness of human factors, readiness of self-development factors, readiness of technological factors and readiness of innovation factors using the Aydin & Tasci ELR Model. These results can be seen in table 6 as follows:

Table 6. ELR Score Results at Patria Gadingrejo Vocational High School

ELR factor	Total score	ELR score	Category
Readiness of the human factor,	1454	2,992	Not ready, needs a little upgrade
Readiness of self developme nt factor	1689	3,128	Not ready, needs a little upgrade
Readiness of technolog y factor	1937	2,989	Not ready, needs a little upgrade
Readiness of innovation factor	1013	3,126	Not ready, needs a little upgrade
Total ELR	6093	3,059	

Based on the results of the ELR assessment score using the Aydin & Tasci model in table 6, Patria Gadingrejo Vocational School has an ELR score of x = 3.059 < 3.41 which means Patria Gadingrejo Vocational School is not ready to implement learning using e-learning. This result is slightly different from the research conducted by Arif Kurniawan (2014) with the title "Measuring the Level of Readiness of E-Learning Implementation of Muhammadiyah Senior High Schools in the City

of Yogyakarta" with the results of the ELR value in five Muhammadiyah high schools in Yogyakarta of x = 3.49 > 3.41 which means that they are more ready to implement e-learning but still need a little improvement. After analyzing the effect of perceived usefulness of e-learning, the next step is to evaluate these factors as an effort to improve and increase the utilization and use of e-learning optimally in the Patria Gadingrejo Vocational School.

ELR Score Improvement on Human Factors

Measurements based on human factors at Patria Gadingrejo Vocational School in table 6 have a final score of ELR x = 2.99 < 3.41. This means that in terms of human factors, they are still not ready to implement e-learning and still need a lot of improvement. Efforts that can be made to improve the human factor are as follows. Improving the quality of teachers at Patria Gadingrejo Vocational School is carried out by providing e-learning training. E-learning training is carried out so that teachers have the expertise and experience in using e-learning. Teachers who already have expertise and experience are expected to be able to take advantage of e-learning in the learning process. The increase in students at Patria Gadingrejo Vocational School is carried out by providing e-learning training. E-learning training is conducted so that students can use and make good use of e-learning.

Improvements in the quality of relationships are also carried out between students and other students, students and teachers, and teachers and employees as administrators in e-learning. The improvement in the relationship between students and other students is intended so that students can work together with other students in completing school assignments using e-learning. The improvement in student-teacher relations is intended so that teachers can work together with students during the teaching and learning process with e-learning, so that e-learning can be put to good use. Improvement in the relationship between teachers and employees as administrators is intended so that employees can cooperate with teachers so that e-learning can be managed properly.

ELR Score Improvement on Self-Development Factors

Measurements based on self-development factors at Patria Gadingrejo Vocational School in table 4.4 have a final score of ELR x = 3.12 < 3.41. This means that the self-development factor at Patria Gadingrejo Vocational School is not ready for the implementation of e-learning and requires a little improvement. Improvements in self-development are expected so that all school members at Patria Gadingrejo Vocational School can develop in implementing e-learning in the learning process. The improvement that needs to be done is an increase in self-development for students at Patria Gadingrejo Vocational School. Students are expected to take the time to learn e-learning outside of school so that e-learning can be put to good use. Teachers can give assignments using e-learning so that students can learn to access e-learning outside the school environment. Confidence in the application of e-learning at Patria Gadingrejo Vocational School is needed so that the use of e-learning can run well. If the application of e-learning is carried out without the confidence that e-learning can improve student learning outcomes, the learning process with e-learning will not run optimally. In addition, there is a need for an increase in the budget allocation of funds for the implementation of e-learning at Patria Gadingrejo Vocational School. Improvements in budget planning before implementing e-learning need to be discussed properly in school board meetings. Budget planning can show that the source of funds from the school itself is sufficient or insufficient. Careful budget planning will provide good and maximum implementation results.

ELR Score Improvement on Technological Factor

Measurements based on technological factors at Patria Gadingrejo Vocational School in table 6 have a final score of ELR x = 2.98 < 3.41. This means that the technological factor at Patria Gadingrejo Vocational School is not ready for the implementation of e-learning and still needs a lot of improvement. This shows that the technology infrastructure at Patria Gadingrejo Vocational School is not sufficient to support learning activities using e-learning. For this reason, facilities and infrastructure are needed in learning activities using the e-learning method. Those are an adequate number of computers, good internet access, and digital equipment in the classroom. outside the school environment. There also need government supports in efforts to provide adequate access to information.

ELR Score Improvement on Innovation Factor

The measurement based on the innovation factor at Patria Gadingrejo Vocational School in table 6 has a final score of ELR x = 3.12 < 3.41. This means that the innovation factor at Patria Gadingrejo Vocational School is not ready for the implementation of e-learning and needs a little improvement. This shows that the problems that can hinder the adoption of e-learning at Patria Gadingrejo Vocational School are still not fully resolved. Priyanto (2008) said that the provision of technology infrastructure and HR training does not

at all guarantee the success of e-learning, organizational culture and leadership factors have a considerable influence on the success of e-learning.

Aydin & Tasci's ELR Model as a Continuous Evaluation Instrument

Priyanto (2008) said that the ELR model is not only used during the development process, or during the grant period (eg two years) but also used continuously to maintain the sustainability of the e-learning adoption program. The Aydin & Tasci ELR model can be a continuous evaluation instrument for Patria Gadingrejo Vocational School. Continuous evaluation can provide a reference to schools in implementing e-learning. The evaluation can show whether the application of e-learning at Patria Gadingrejo Vocational School is developing for the better or not developing so that it becomes a burden on the school itself.

V.   CONCLUSION

From the results of the study by obtaining questionnaire data involving 105 respondents, the researcher proves that there is a positive and significant influence between the readiness of human factors, readiness of self-development factors, readiness of technological factors, and readiness of innovation factors with perceptions of the usefulness of e-learning (Y). Each correlation value is 0.94, 0.924, 0.924 and 0.947 with a positive and significant influence between the variables of readiness of human factors, readiness of self-development factors, readiness of technological factors, and readiness of innovation factors and together with perceptions of the benefits of e-learning (Y) which is indicated by the correlation value rx,y and the regression equation Y = Y = 2.39 + 0.253X1 +0.041X2 + 0.181X3 +0.167X4. The calculation result of R = 0.978 produces a coefficient of determination of R2 = 0.956 or 95.6%, which means that the change in perceived usefulness of e-learning is 95.6% is influenced by the variables of readiness of human factors, readiness of self-development factors, readiness of technological factors, and readiness of the innovation factor, while the remaining 4.4% is influenced by other factors. Aydin & Tasci's e-learning readiness (ELR) model applied to Patria Gadingrejo Vocational School gives the result that it is not ready to implement e-learning and requires a slight improvement.

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