

Conference Paper

Analysis of Academies Society Awareness for The “Green Campus” Program in UPN “Veteran” East Java

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Abstract

Green campus program is a manifestation of a university that utilizing friendly environment energy into the real act of acknowledge environment issues. Therefore through this program will encourage awareness and careless from the university society itself to keep the environment clean, beside that university also a place to gather up young intellectuals as the next generation of the nation. This program could be role model or good example for other institution to keep sustainability of the environment clean. UPN Veteran East Java as a well-known university in Surabaya is really care to the environment’s issues so therefore a green campus program. Due to that matter, this research is to know how far the social factor, learning and personally encourage academies society to apply green campus program in the UPN Veteran East Java college society. In this research, the researcher used 100 persons as the sample and the population which is all the active academies society in UPN Veteran of East Java. This research is a descriptive quantitative research by spreading questionnaire. Analysis technique for this research using SEM method based on component with data analysis PLS. The result for this research is to describe the awareness of academies society in contributing for the green campus program in UPN Veteran of East Java.

Keywords: Green campus program, society awareness

INTRODUCTION

Today people are starting to do various activities that have a positive impact on the environment around the place where they live. For example the plastic bag movement movement that invites people to be more wise in using plastic bags (dutalingkunganhidup.com). There are also Indonesian gardening activities where this activity makes unused land in urban areas as plantation or agricultural Indonesiaberkebun.org. The above activities can be referred to as the go green movement (<http://www.gogreenindonesiaku.com/>). Go green is an action or deed intended to save the earth from all the damage caused by human activities, where the way of salvation is done with programs that focus more on greening the environment. Chan (1999) suggests the concept of go green is divided into 3 (three) namely reduce, reuse, and recycle. Reduce deals with the use of energy-efficient products to reduce water and energy use. In the case of households, this can be done like using energy saving lamps or shopping using a recycled bag. Reuse means reuse. Fix or find other ways of using the goods. At home, people can repair damaged tools rather than buying new ones or using rechargeable batteries. Recycle means collecting and sorting out the rest of the waste and a process of processing it into something that has a selling point. For example, a milk box can be recycled into high-quality paper (Chan, 1999). Schwepker (1991) explain the concept

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of waste recycling or commonly called 3R (Reduce, Reuse, Recycle) is one of the solutions that can be considered. The economic value still contained in the waste can be utilized. Waste management following the 3R concept can be integrated or integrated.

Based on the discourse, then there is no harm if human awareness of environmental conservation began to be improved. To begin this can be through an environment where a person gains knowledge about environmental preservation in order to create a love for the environment. According to Polonsky & Mintu (1999), consciousness is influenced by the following factors: social factors have 4 (four) sub categories, namely family, culture, economic status, and experience. Next is the learning factor that is translated into peer relationship. Last is the factor of self. Various levels of education in Indonesia from the kindergarten to High Colleges or Universities have taught the love of the environment to the students. As a prominent university in Indonesia, UPN Veteran of East Java continues to clean up in response to environmental issues circulating in the community. A variety of ideas were initiated to shape the personality of the academic community, one of them was through the Green Campus program.

UPN Veteran of East Java started Green Campus movement by triggering itself as Cigarette Free Campus. Because at that time, the eruption as Cigarette Free Campus was felt not enough to support the Go Green movement, UPN Veteran of East Java empowered itself through a program, namely Green Campus is Campus No Smoking Program. If previously cigarette smoke is still permitted in addition to under the roof of the University environment, this time the cigarette is prohibited until thorough, both sponsorship and cigarette itself. This is done so that the academic community care for the environment and conserve the environment. The Green Campus program has the goal of streamlining paper, water and energy waste on campus so that it is sorted according to its type. Such activities can shape behavior into a culture. If the behavior has become an inner culture, then this activity can be said to have been effective. Educational institutions are the time to pioneer to bring about this positive change. Not just as a show, but able to change human behavior. In connection with the start of the garbage rack program that is placed in each faculty, the authors interviewed several people to find out how the Green this Campus program. However, it is unfortunate if initially been sorted by type, the garbage should not be mixed again into one at the time of final disposal, for now it is not too visible impact. This will be achieved gradually in line with the increasing awareness of UPN Veteran academic community of East Java

Furthermore, the researchers interviewed 13 UPN Veteran of East Java students, 9 (nine) among them agreed with the garbage shelves in the Faculty because it can increase the sense of responsibility and independent attitude of the students and inspire awareness of students to be aware in maintaining the cleanliness of the environment. The rest disagreed with the garbage shelves because they have no direct impact on students' awareness of environmental issues. The presence of garbage shelves in this faculty is considered not influential because students leave the rest of the food on the table so that the janitor who dumped it.

Based on the above phenomenon, researchers are interested to analyze more deeply about the awareness of the academic community on the Green Campus program implemented in the UPN Veteran of East Java. Formulation of the problem are to analyze the level of awareness of academies society to Green Campus program at UPN Veteran of East Java. The purpose of this research is to analyze awareness level academies society to Green Campus program at UPN Veteran of East Java. The results of this study are expected to contributed as a thought contribution to green campus program solution in UPN Veteran of East Java and provide an alternative to the Green Campus program at campus UPN Veteran of East Java.

METHODS

Variables and Operational Definition

Green Campus Program Variables (Y)

The green campus program becomes a manifestation of a campus that utilizes environmentally friendly energy and becomes a real action to address various environmental problems occurring on Earth. Thus the expected is the emergence and awareness of campus residents themselves in maintaining environmental sustainability.

Green Campus Indicator

There are several indicators or parameters that can be used as a measure of whether the campus has really reached the title of Green Campus. According to P. Nasoetion, the measure of success is determined by several factors, among others efficient use of paper as a basic need of teaching, efficiency of waste management in the provision of education and teaching, efficiency of land use as green open space and aesthetics (landscape), efficiency of electricity usage, efficiency of water use, efficient use of natural resources, efforts to contribute to the reduction of global warming.

Awareness Variable (X)

Is a condition where a student, lecturer or employee has full control of the internal stimulus and external stimulus, The dimensions of awareness and indicators are as follows: Social, which is refers to the academic community with the ability to think, act and manage itself socially and to develop harmonious relationships between individuals; Learning, which is the point is as a whole that contains emotional ties, the embodiment of attitudes and behaviors that connect students, lecturers and employees from time to time; Self that is the awareness of students, lecturers and employees in implementing green campus starting from themselves.

The research method used is descriptive quantitative research method. Moleong (1995) explains that a study was conducted to determine the value of independent variables, either one variable or more (independent) without making comparisons, or linking with other variables. According to Eshlaghy (2011), quantitative descriptive is the search for data with the correct interpretation. This study examines the problems in society, as well as the prevailing procedures in society and particular situations including the relationships, activities, attitudes, views, and processes underway and the influence of a particular phenomenon so that it is a comparative study. The purpose of this study is to find out how big social factors, learning, and self in encouraging awareness of academic community to apply Green Campus program in UPN Veteran of East Java by distributing questionnaires.

In this study, researchers used a limited population of all active academic community UPN Veteran of East Java. According to data obtained from the General Administration and Finance Agency, there are 360 permanent lecturers and permanent employees totaling 250 people per 2015/2016 gasoline semester. Furthermore, according to data obtained from the Academic and Student Affairs Board, the number of active students UPN Veteran of East Java as much as 7.573 per 2015/2016 odd semester. Thus, the number of active academic community UPN Veteran of East Java as many as 8.183 people.

The sample according to Arikunto and Suharsimi (2002) is a group of elements of the population selected to participate in the study. The author uses sampling techniques Quota Sampling. Understanding Quota Sampling Moleong (1995) is a technique for determining samples from populations that have certain characteristics. In this case, what is meant is all the active academic community UPN Veteran of East Java.

The researcher determined the number of samples based on the Slovin formula for the following known samples (Moleong, 1995):

$$n = \frac{N}{1 + Ne^2}$$

Where:

n =sample size

N =population size

E =percent laxity inaccuracy due to sampling errors that can still be tolerated

In this research:

$N = 8.183$
 $e = 10\%$
 $n = 8183 / (1 + 8183 \times 0.12)$
 $n = 98.79$ rounded to 100 respondents

Data Analysis Technique

Data analysis was done by using component-based SEM method by using PLS chosen as an analytical tool in this research. The Partial Least Square (PLS) technique is chosen because it is widely used for complicated causal - predictive analysis and is an appropriate technique for use in predictive applications and theory development as in this study.

PLS Analysis

Partial Least Square (PLS) is a family-based regression method introduced by Herman O.A World for the creation and development of models and methods for the social sciences with prediction-oriented approach. PLS has assumed free distribution of research data, meaning that research data does not pay attention to <> one particular distribution (e.g. normal distribution). PLS is an alternative method of (SEM) that can be used to overcome relationship problems between complex variables but small sample size data (30 to 100), given that SEM has a minimum sample size of 100 (Straughan, 1999). PLS is used to determine the complexity of the relationship of a coast and another, and the relationship of a cost and its indicators. PLS is defined by two equations, i.e. inner model and outer model. Inner model determines the specification of the relationship between the constants and the indicators. The extract is divided into two, namely exogenous and endogenous constants. Exogenous constants are constants of causes, constants not influenced by other constants. Exogenous constants give effect to other constants, whereas endogenous constants are constants described by exogenous constants. Endogenous constricts are the effect of exogenous constants (Dychtwald & Gable, 1990).

RESULT AND DISCUSSION

Partial Least Square Analysis (PLS)

Outer Model (Model of measurement and validity of the indicators)

The measurement model using invalid constructs (variables) with indicator consists of reflective consciousness (X) and (Y) the Green Campus, for the measurement of validity can be seen on Table 1 above and in the table outer Loading below. Prior to testing using Smart PLS Software first tested outliers on the data respondents to produce quality data to be processed further. There is an outlier if expensive. Distance Maximum > Prob. & Number of variables [= CHIINV (0.001; 10): searchable via Excel] = 29,588.

Validity of the indicators measured value Factor Loading of the variable to the charge indicators will be greater than 0.5 and or value of the T-Statistic greater than 1.96 (value of $\alpha = 0.05$ Z on). Factor Loading is the correlation between indicators with variable, if greater than 0.5 then the correlation is said to be valid and if the value of the T-Statistic greater than 1.96 then considered to have significance. Based on table outer loading above, all of the indicator variable in reflective consciousness (X) and Green Campus (Y) indicates the factor Loading (original sample) greater than 0.50 and or significant (T-Statistic Value over the value of Z $\alpha = 0.05$ (5%) = 1.96), thus the whole estimation results indicators in this study can be said to have fulfilled Convergent validity or either validity.

Table 1. Outer Loadings (Mean, STDEV, T-Values)

	Factor Loading (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	Error T Statistics (O/STERR)
X1 <- awareness(X)	0,851264	0,850428	0,034969	0,034969	24,343169
X2 <- awareness (X)	0,876145	0,873882	0,030231	0,030231	28,981592
X3 <- awareness (X)	0,816057	0,809740	0,050911	0,050911	16,029111
Y1 <- GREEN CAMPUS (Y)	0,693276	0,693285	0,069371	0,069371	9,993750
Y2 <- GREEN CAMPUS (Y)	0,689936	0,696121	0,057607	0,057607	11,976607
Y3 <- GREEN CAMPUS (Y)	0,501229	0,499678	0,083692	0,083692	5,988987
Y4 <- GREEN CAMPUS (Y)	0,808517	0,801299	0,056542	0,056542	14,299523
Y5 <- GREEN CAMPUS (Y)	0,787486	0,783440	0,052215	0,052215	15,081678
Y6 <- GREEN CAMPUS (Y)	0,789454	0,779669	0,053445	0,053445	14,771476
Y7 <- GREEN CAMPUS (Y)	0,786268	0,779155	0,049981	0,049981	15,731280

Table 2. Average variance extracted (AVE)

AVE	
GREEN CAMPUS (Y)	0,531880
AWARENESS (X)	0,719410

The next measurement model is value Variance Extracted Average (AVE), i.e., the value present in Table 2 indicates the magnitude of the variant conceived by indicator variables latency. Convergent Value larger 0.5 AVE shows the adequacy of validity is good for latent variables. At variable indicator value can be seen from the reflective Average variance extracted (AVE) for any invalid constructs (variables). A good model is required if the value of the respective AVE invalid constructs larger than 0.5. Results of testing the Average variance extracted (AVE) in the variable consciousness (X) and (Y) the Green Campus each have values above 0.5 AVE, so that all variables in this study is said to be good validity.

Reliability Test

Reliability test done by looking at the value of the composite reliability of indicators that measure the block invalid constructs. Testing reliability can be seen from the output composite Reliability in table 3 below:

Table 3. Composite Reliability

	Composite Reliability
GREEN CAMPUS (Y)	0,886385
AWARENESS (X)	0,884862

Reliability invalid constructs measured by the value of the composite reliability that seen in Table 3, reliability if invalid constructs the value of the composite reliability above 0.70 then indicator called consistent in measuring the variable latency. The test results indicate the reliability of composite variables (X) and awareness of Green Campus (Y) each have the value composite reliability above 0.70 so that all variables in this study meets the reliability or reliability said.

Test reliability can also be reinforced with Cornbrash's Alpha where the output of the Smart PLS gives the following results:

Table 4. Cornbrash's Alpha

	Cornbrash's Alpha
GREEN CAMPUS (Y)	0,849008
AWARENESS (X)	0,805648

The recommended value is above 0.6 and in table 4 shows that the value of Cornbrash's Alpha for all construct is above 0.6. The lowest value was found in the 0.805648 of invalid constructs of consciousness and the highest of 0.849008 on invalid constructs Green Campus.

Testing The Structural Models (Inner Models)

Testing against the structural model is done by looking at the value of R-Square which is a test for goodness-fit model. Testing inner models can be viewed from the R-square value on the similarities between latent variables. The value of R2 describes how large the exogenous variables (independent/non) on the model was able to explain the endogenous variable (the dependent/bound).

Table 5. R-square

	R Square
GREEN CAMPUS (Y)	0,519205
AWARENESS (X)	

Based on Table 5 that the value of R2 = 0.519205. This can be interpreted that the model was able to explain the phenomenon of Green Campus that is affected by the variable Consciousness of 51.92%. While the rest of 48.08% explained by other variable (other than Consciousness) that have not been entered into the model, and error.

C. Hypothesis testing is as follows:

Hypothesis testing in this study can be seen from the table Path Coefficients (Mean, STDEV, T-Values) below by way of comparing the value of the T-Statistic Z α value (5%).

Table 6. Test of the hypothesis with the Path Coefficients (Mean, STDEV, T-Values)

	Path Coefficients (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error T (STERR)	T (O/STERR)	Statistics
AWARENESS (X) → GREEN CAMPUS (Y)	0,720559	0,722593	0,064075	0,064075	11,245577	

• Awareness (X) positive effect against Green Campus (Y) with the path coefficients of 0.720559, are acceptable where a T-Statistic value = 11.245577 is greater than the value of Z α = 0.05 (5%) = 1.96, then is said to be significant (positive).

CONCLUSION

From the test that has been done by using software partial least square (PLS) showed result of hypothesis significant positive and can be accepted. Of the exogenous variables are awareness consisting of three indicators, namely, social factors, learning factors, and self-factors, which has the most dominant influence on endogenous variables Green Campus is a learning factor with factor loading value of 0.876. From the exogenous variables Awareness with these three indicators resulted in R Square to the Green Campus variable of 0.519 or 51.9, this shows the contribution of the awareness variable to the high green campus variable, which is only 48.1 from the other variables that have not been entered into in models and errors. Based on the results of tests that have been done related to the hypothesis obtained from the test results that Awareness (X) significantly positive effect on Green Campus (Y) with the value of the coefficient path of 0.720559 with the value of T-Statistics of 11.245577 > 1.96 (α = 5%).

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