

Path Analysis Method for Identification Enabler of Enterprise Governance in Implementation of Vocational Higher Education Governance

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ABSTRACT

In model of vocational university governance generated by the authors previously, generate a model that there is an enabler of enterprise governance (EG) that may impact the implementation of governance in vocational higher education. The enablers include the principles, policies, and frameworks; process; organization structure, culture, ethics, and behavior; information; person, skills, and competencies; services, infrastructure, and applications. Each enablers give effect to the implementation governance in higher education. The problem is how to identify the enablers which has significant impact in implementation of Vocational Higher Education Governance (VHE – Gov). To answer the problem in this paper, the author build a path analysis method to identify the enablers of enterprise governance that have a significant impact in implementation of vocational higher education governance and using SPSS 21 software as a tool for statistical data processing. Basically the method can be used to identify enablers of enterprise governance for other higher education model such as universities, high schools, and colleges so that the model can be expected to produced enablers which have a significant impact generally in the implementation of governance in higher education

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1. INTRODUCTION

Meier (2005) in his paper “how global is good corporate governance” suggests that good enterprise governance should be able to explain how the company should be directed and monitor [3]. Governance enterprise must be able to answer questions that arise in an enterprise such as: Does the enterprise have done the right thing? Is enterprise do it the right way? Is the enterprise to benefit from what it does? The questions will realize that there is a good way to set up the enterprise. How to sets a strategic direction, execution strategies and manage risks and how to ensure compliance with enterprise policies, standards and procedures that apply a scope of enterprise governance. COBIT 5 provides guidance that enterprise governance is influenced by individual and collective factors. The existence of this factor will influence process in scope of governance enterprise either for governance and management area, these factors then known as the enabler [1]. Nugroho and Surendro (2013) in this paper “*Proposed Models of Vocational University Governance and Measurement Models by Utilizing The ISO 38500 Framework And COBIT 5 Enabler*” that presented in International Conference On ICT For Smart Society (ICISS) 2013 describe that vocational university governance covered by enabler enterprise governance as a factor which give impact for governance process in vocational higher education. From the model we can indentify which enablers that have significant factor in governance for vocational higher education. The problem is how to identify the enablers which has significant impact in implementation of Vocational Higher Education Governance.

Path analysis is a statistical technique use primarily to examine the comparative strength of direct and indirect relationships among variables. Path analysis is also known as causal modeling, and it examines the web of relationships among measured variables. The strength of path analysis is that it can help researchers understand complex relationships and determine the most significant relationships. Path analysis models are based on correlations, and, as a result, do not show causality, but they can show which models best fits the data [2]. Path analysis, an extension of multiple regressions, lets us look at more than one dependent variable at a time and allows for variables to be dependent with respect to some variables and independent with respect to others [4].

Path analysis method is a method that uses a statistical approach. Therefore, this method starts with the determination of hypothesis based governance models that have been produced, to eventually perform data analysis results of questionnaires filled in by the respondent. To perform data analysis will used software SPSS 21, which will be designed questionnaire validity and reliability to ensure that the questionnaire used to be feasible measuring tools to test the hypotheses that have been set. Valid and reliable questionnaire will be used to capture and manage the data.

Path analysis methods used to examine associated with the presence or absence a significant relationship between the independent variable (X) with the dependent variable (Y). This method is used to determine the influence of independent variables on the dependent variable that will determine which variables are contributing considerable influence on the governance of vocational higher education. It can certainly help vocational higher education for preparing university governance with attention to enabler that provides the largest contribution based on the results of data processing using correlation and regression analysis by software SPSS 21.

2. RESEARCH METHOD

The methodology used for this research was information systems design science research [6]. Based on this methodology, there are six steps to achieve the expected outputs of this research, problem identification and motivation, goal setting, design and development, demonstration, evaluation, and communication.

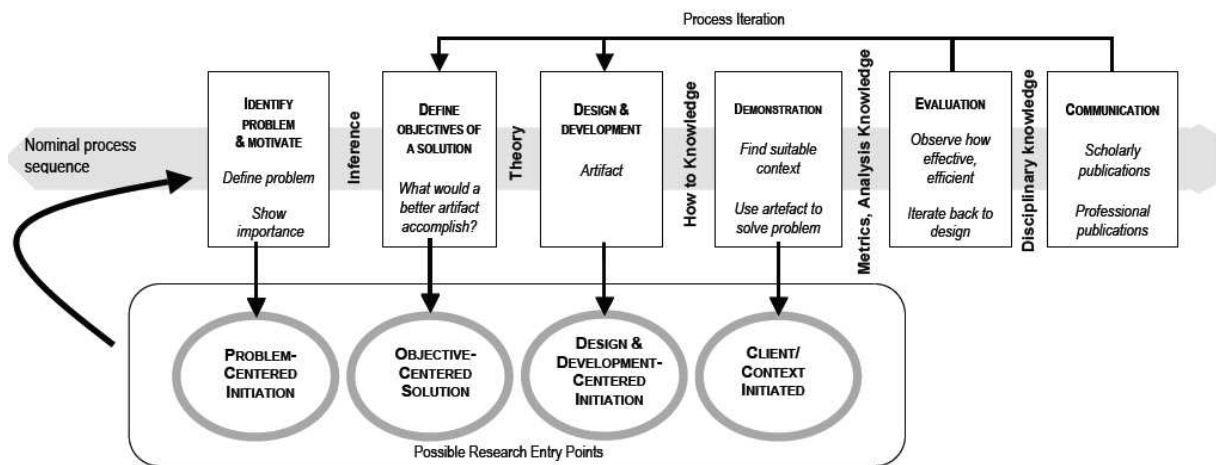


Figure 1. Information System Design Science Research [6]

In this paper, not all steps in the methodology in figure 1 is performed. It is concerned with the needs and expected outcomes. The steps - steps to be taken in accordance with the methodology used is following.

- Identify Problem and Motivate

Input of this step is well-defined problem can be used to develop an effective artefact and atomize the problem and justifying the value motivates the researcher to pursue the solution and accept the result. The problem is how to determine enablers that gives significant influence on the governance of higher vocational education. Motivate of this paper is how to help vocational higher education management to know what is main enabler and support enabler during the preparation of university governance

- Define Objective of A Solution

Input of this step is inferring the objectives of a solution from the problem definition and knowledge of what is possible and feasible. The objective of this paper is build a path analysis model to identify the enablers of enterprise governance that have a significant impact in the application of governance in higher vocational education by using software SPSS 21 as a tool for statistical data processing.

- Design and Development

Input of this step is Create the artefact, such like constructs, models, methods, or instantiations or “new properties of technical, social, and/or informational resources. Designing methods of path analysis begins with the determination of hypothesis based vocational university governance models that already exist. The hypothesis of this study relates to the presence or absence a significant relationship between the dependent and independent variables. Hypotheses that have been set will be a reference to build a framework that describes the relationship between the independent variable (governance enabler) and the dependent variable (governance of vocational higher education). Based on the variables, will made a questionnaire as a tool for data collection and test the validity and reliability by using software SPSS 21. Analysis correlation and regression will be used to determine the significant influence of each enabler to the implementation of governance in higher vocational education

3. RESULTS AND ANALYSIS

Governance in higher vocational education is influenced by individual and collective factors. The existence of this factor will influence process in scope of governance enterprise either for governance and management area, these factors then known as the enabler. Nugroho dan Surendro in the paper “*Proposed Models of Vocational University Governance and Measurement Models by Utilizing The ISO 38500 Framework And COBIT 5 Enabler*” propose a model of governance in vocational higher education based on ISO 38500 framework and COBIT 5 Enabler as shown in figure 2.

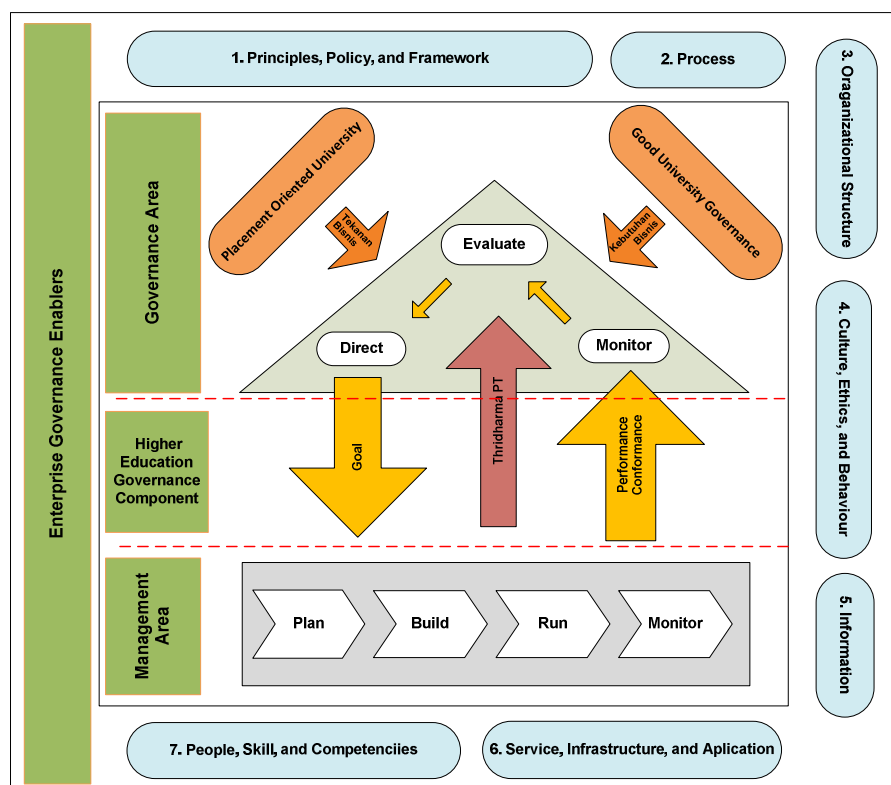


Figure 2. Model of Governance in Vocational Higher Education [5]

Based on these models, it will be designed a path analysis method to determine the enablers which have a significant impact in the implementation of governance in vocational higher education. The steps taken in the path analysis method is as follows:

1. Variable determining research
2. Determine hypotheses based on the research variables.
3. Build a path analysis model
4. Make the questionnaire based study variables
5. Doing tests the validity and reability questionnaire
6. Conduct a test of normality of the data
7. Correlation analysis
8. Perform regression analysis

3.1. Path Analysis Model

Hypotheses that be tested in this research relates to the presence or absence a significant relationship between the independent variable (X) with the dependent variable (Y). To get the result of hypothesis test, will used path analysis. This method is used to determine the influence of the independent variables with the dependent variables that will determine which variables are contributing considerable influence on the governance of higher vocational education. Path analysis testing can be done if the measurement scale that used is the interval. Because the questionnaire was constructed used ordinal scale than must be convert it into a form of interval using Method Successive Interval (MSI). Changing the ordinal scale into an interval scale will use the help of Microsoft Excel. Furthermore, testing hypotheses using path analysis will be using software SPSS 21. Path analysis model in the first step can be seen in figure 3.

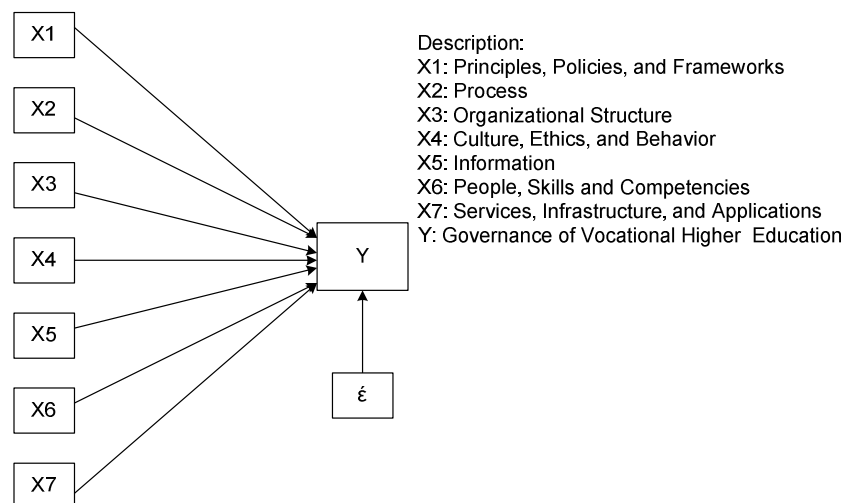


Figure 3. *Path Analysis Model(1)*

3.2. Correlation Analysis

Path analysis method is used to determine the relationship between the independent variables and the dependent variable so needs to performed correlation analysis using SPSS 21. Correlation analysis basically compare the value of r calculate an r table. The value of r calculate is obtained based on the number of respondents used in the study. The terms used in the correlation analysis are as follows:

- If the r calculate $> r$ table than the independent variables (X_i) has a significant relationship with the dependent variable (Y).
- If the r calculate $\leq r$ table than the independent variables (X_i) has no significant relationship with the dependent variable (Y).

3.3. Regression Analysis

To determine the influence of each independent variable (X_i) to the dependent variable (Y), it can be used regression analysis. Regression analysis is used by linear regression analysis and using software SPSS 21 for data analysis. In the method of path analysis, regression analysis is used to determine which

independent variables that significantly influences in the governance process in vocational higher education. In a regression analysis, it will be performed 3 phases:

1. Correlation Coefficient and Coefficient of Determination

Correlation coefficient at this stage will describe the overall between the independent variables and the dependent variable. The coefficient of determination will describe how much (percentage) effect of independent variables on the dependent variable.

2. Linearity Regression

Linearity is one of the conditions or assumptions that must be fulfilled during the regression analysis. Linearity is the nature of the linear relationship between variables, meaning that any changes in one variable will be followed by massive parallel changes in other variables. The criteria can be determined from the F test or significant values (Sig). If the Sig < specified significant level (e.g. 0.05), then the regression model is linear and the other way around.

3. Path Analysis

Path analysis is basically an identification process enabler of enterprise governance that gave significant influence on the governance of vocational colleges. At this stage will produce a regression equation with the value of the significant of each independent variable is nothing but an enabler of enterprise governance. If the significant values < specified significant level (e.g. 0.05) then the variable will be back in the linearity test and regression analysis to determine the next phase of enterprise governance enabler that gives significant influence. For variables with significant values \geq specified significant level (e.g. 0.05) then the variable will be out in the subsequent path analysis. At this stage the obtained path analysis model (2) which contains variable - the value of the independent variable significant values < specified significant level.

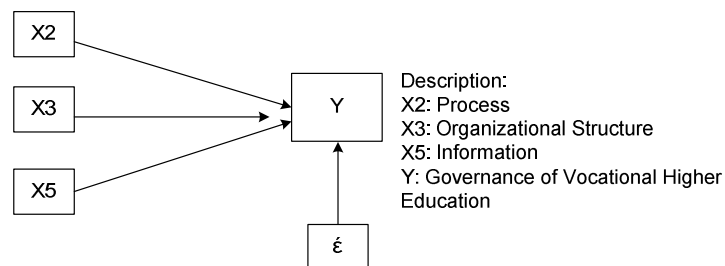


Figure 4. Path Analysis Model (2)

This stage will stop if the significant value of the variables examined in the next phase < specified significant level. At this stage, obtained path analysis model (3) which will serve as the basis for making a conclusion which enabler of enterprise governance which has significant impact in implementation of governance in vocational higher education.

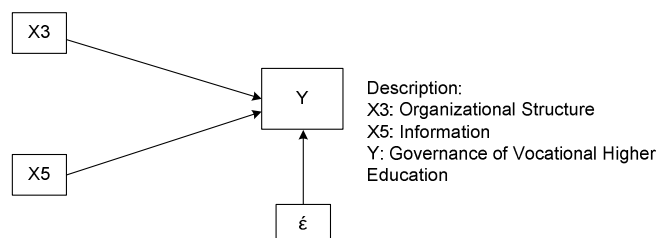


Figure 5. Path Analysis Model (3)

4. CONCLUSION

Results of the analysis in the previous section shows that the path analysis method can used to identify enabler enterprise governance that have a significant impact on the implementation of governance in vocational higher education. The main stages are carried out in line with the method of analysis by using software SPSS 21 as tools in data processing and data analysis are as follows:

1. Variable determining research
2. Determine hypotheses based on the research variables.
3. Build a path analysis model
4. Make the questionnaire based study variables
5. Doing tests the validity and reability questionnaire
6. Conduct a test of normality of the data
7. Correlation analysis
8. Perform regression analysis



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