

The determinants of the socio-cultural ecology architect's competence

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Abstract. Architectural competence is an important factor that must be owned and developed by professional architects even since completing basic education. These competencies need to be continuously honed so as to produce innovative, comfortable, safe and able to accommodate the social needs and keep inheriting the existing cultural values. This study aims to look at the factors that most determine the realization of the competence of the Socio-Cultural Ecology architect's competencies in Indonesia. The research method used is neuroresearch which is one of the mixed methods in the exploratory and explanatory stage. The result of the research is the competencies of the Indonesian Socio-Cultural Ecology architect is determined by the ability to build a harmonious relationship between human, building and the environment determined by the architect's understanding of building physics and the ability to find problems related to planning, implementation, control, and evaluation

Keywords: Architectural competence, Jakarta Socio-cultural ecology Architecture, Environmental Architecture.

1. Introduction

The success of a project in the field of construction related to knowledge and skills is determined by the competence of project executors, especially architects [1], [2]. In Construction Services Law No. 18/1999 on construction services has applied construction planners and construction supervisors must have a skill certificate and shall be valid for 1 (one) year as of the date of promulgation [3]. In Malaysia, certification even uses a system called Certificate Completion and Compliance (CCC) as a container where professionals known as Principle Submitting Persons (PSP) are professionals who issue the certificate [4]. Certification for this Building is important to provide security guarantees in the future so that



the competence to obtain certification for construction planners and supervisors is of paramount importance.

Association of Indonesian Architects is an accredited professional association at National Construction Services Development Agency to process skill certificates. The competent architect's profession becomes important because, in addition to following the rules, it also implements all Architecture planners required to have IPTB to be able to carry out Architectural planning work and come into effect on 3 March 2008. IPTB is a replacement for the revoked and declared Work Permit Planner not applicable unless the published of Work Permit Planner is declared valid until its license expires.

Association of Indonesian Architects also formulate the competencies that must be owned by graduates in the field of architecture through 13 competencies that have been designed. This competence is in accordance with the concept of the realization of Socio-Eco-Cultural Architect's. The problem is what is the most powerful factor determining the realization of the competence of Indonesian architects?

2. Research Framework

Competence is the ability to apply or utilize the knowledge and skills so as to be able to complete the assigned task. These competencies form the basis of skill standards as well as potential measurement criteria relevant to individual responsibilities, roles and tasks [5].

Socio-Eco-Cultural architect's competencies are very important in the world of construction. For the profession of architects, competence plays an important role among four other things namely role, strength, acting style and main focus [6]. Conceptually even an architect must be able to understand abstract ideas and processes, think creatively within the appropriate framework and understand the relationship between ideas, concepts, patterns and symbols [7].

The Association of Indonesian Architects even formulates the competencies starting from the basic competencies that must be possessed by graduates in the field of architecture. Competence for Architecture Diploma graduates is expected to be able to present technically ideas with drawings, models and construct modelling of construction information and architecture both manual and digital. Competence for Bachelor is expected to be able to design at the basic level as well as the master. While for doctoral expected able to develop art and science of architecture. Of these competencies became the basis for the architecture to develop the professionalism they possessed [8].

The architect's competence formulated by The Association of Indonesian Architects is 1) having ability in architectural design; 2) have knowledge of architecture; 3) having knowledge in art; 4) capable of planning and designing the city; 5) Able to build harmonious relationships between people, buildings and the environment; 6) Having knowledge in terms of environmental carrying capacity; 7) Able to portray architecture in the community; 8) Have ability in preparing design work; 9) Able to build the meaning of problems between disciplines; 10) Have good knowledge about physical and building physics; 11) Having the ability to synergize between budget constraints and building regulations; 12) Have knowledge of the construction industry in planning and 13) Have knowledge of project management [9].

3. Materials and Methods

Research method with Neuroresearch as one of mixed method [10], [11]. Neuroresearch is done through exploratory (qualitative) and explanatory (quantitative) research to explore theoretical indicators of Indonesian architects' competence [12] - [14]. Data collection techniques with an assessment of architects in 85 projects being managed. Interviews and closed observations were conducted with various data sources. Calibration of interview and

observation instruments is done with content validity. Reliability shows a high index of 0.991. The research paradigm like this in Figure 1.

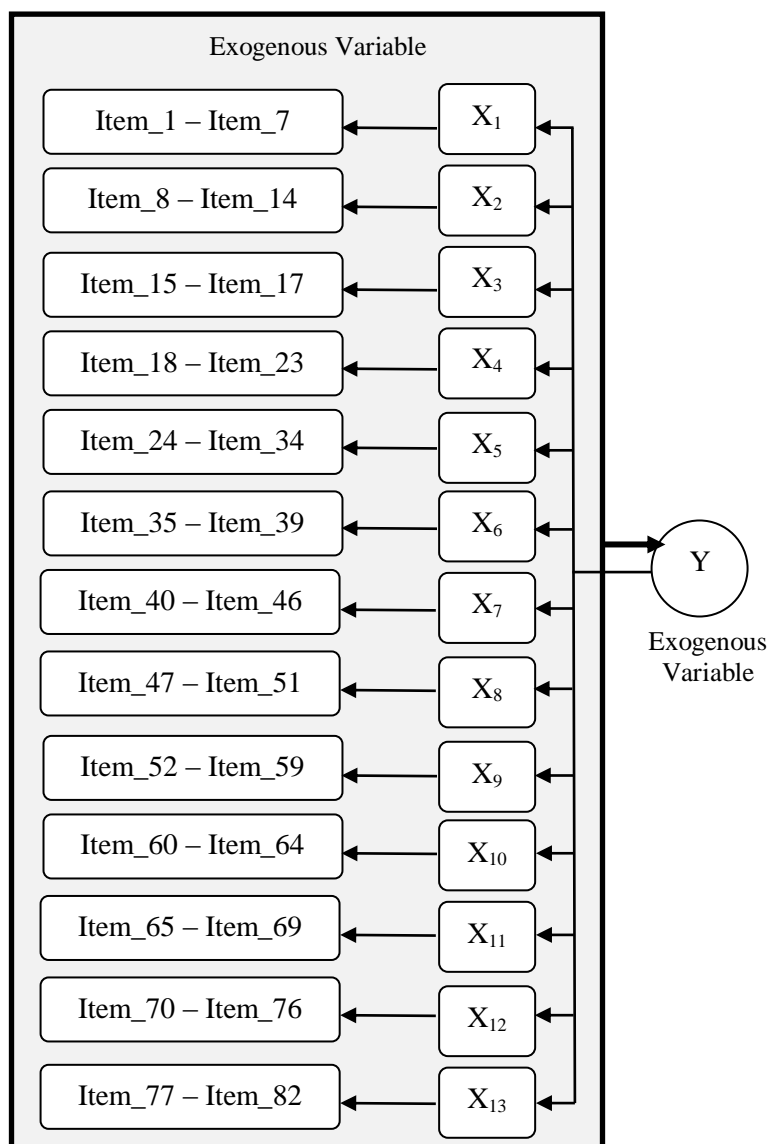


Figure 1. Paradigm of Research

Explanation:

- Y : Competencies of Architects Indonesia
- X₁ : Have the ability in architectural design
- X₂ : Have an architectural knowledge
- X₃ : Having knowledge of art
- X₄ : Capable of planning and designing the city
- X₅ : Able to build harmonious relationships between people, buildings and the environment
- X₆ : Have knowledge in terms of environmental carrying capacity
- X₇ : Able to plays architecture in the middle of society
- X₈ : Have ability in preparing design work
- X₉ : Able to build interdisciplinary meaning
- X₁₀ : Have good knowledge about physical and building physics
- X₁₁ : Has the ability to synergize between budget constraints and building regulations

X_{12} : Have knowledge of the construction industry in planning

X_{13} : Have knowledge of project management

4. Results and Discussions

4.1. Formation Indicators (X_1 to X_{13}) are most decisive in realizing the Competence of Indonesian Architects (Y).

The first result of the research, on the Formator Indicators (X_1 to X_{13}) is most decisive in realizing the Competence of Indonesian Architects (Y). The evidentiary analysis is done with this analysis approach established with Binary Segmentation called Classification and Regression Trees. In this analysis, the researchers set the Prunning of Depth by 2; Parent of 2; and Child of 1, with significance level $\alpha < 0,05$.

The result of this analysis proves that Ability to Establish Correlate Relationship between Human, Building and Environment (Build_Eco_X5) is the strongest indicator to realize the Competence of Indonesian Architects (Y) of 348,694. If the ability of architects increases in establishing harmonious relationships between people, buildings and the environment (Build_Eco_X5), then the competence of Indonesian architects will increase 423,098 times from current conditions. The improvement of the architect's competence is also determined by the Indonesian architect's understanding of building physics (Physical_X10) because it will increase the ability of architects in Building a harmonious relationship between Human, Building and Environment (Build_Eco_X5) of 54, 265 times from the current condition.

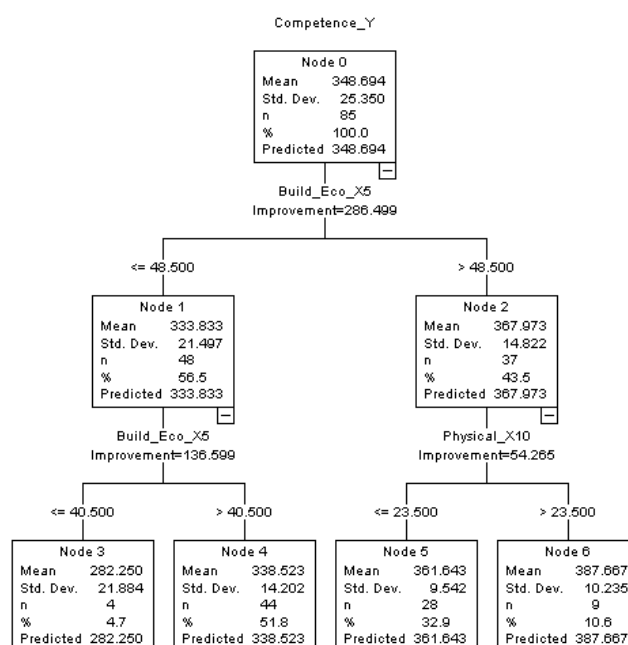


Figure 2. Results Classification and Regression Trees Formation Indicators (X_1 to X_{13}) on the Realization of Indonesian Architect Competence (Y)

4.2. The influence of all Items (Item_1 to Item_82) is most decisive in realizing the Competence of Indonesian Architects (Y).

The second research result, about the influence of all Items (Item_1 to Item_82) that most decisive in realizing the Competence of Indonesian Architects (Y). The evidentiary analysis is done with this analysis approach established with Binary Segmentation called Classification and Regression Trees. In this analysis, the researchers set the Pruning of Depth by 2; Parent of 2; and Child of 1, with significance level $\alpha < 0,05$.

The results of this analysis prove that Ability to Find Problems related to Planning, Implementation, Control, and Evaluation (Item_81) is the most powerful item predict the realization of Competence Architects Indonesia (Y) of 348.694. If the ability of the architect (Item_81) is improved, then the competence of Indonesian architects will increase 220,478 times from the current condition. The improvement of the competence of the architect is also determined by: (1) the ability to analyze the space requirement and implement it into the design (Item_29) which will increase the competence of Indonesian architects by 43,534 times from the current condition, and (2) the ability to see itself as the architect professional architect (Item_40) who will be able to increase the competence of Indonesian architects of 124,629 times from the current conditions.

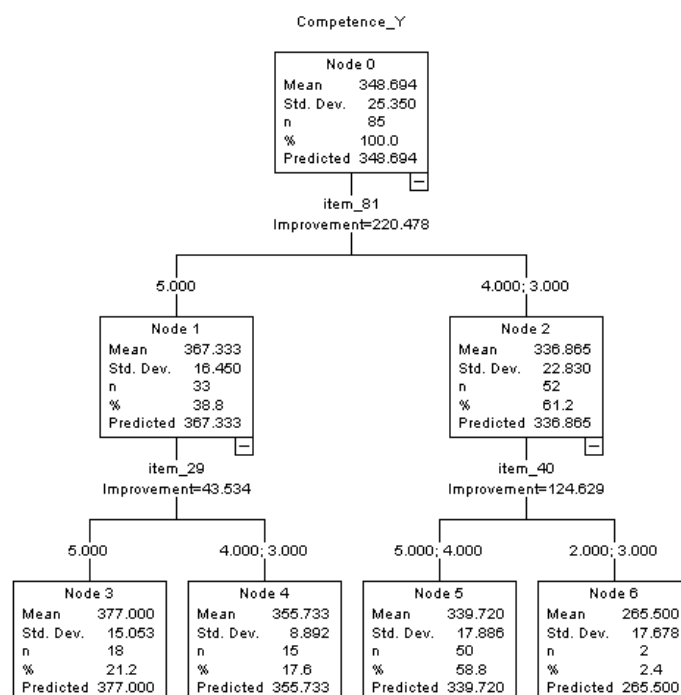


Figure 3. Results of Classification and Regression Trees of All Items (Item_1 to Item_82) on the Realization of Indonesian Architect Competence (Y)

5. Conclusion

The ability to build harmonious relationships between people, buildings and the environment is the strongest indicator of the realization of Indonesian Socio-cultural Ecology Architect's Competence. Humans form a sociocultural space through public awareness, so it must be able to be interpreted well by the architects. This is in accordance with previous research on Jakarta sociocultural ecology which presents a building concept that is connected with social activities and able to maintain the value of existing heritage.

The improvement of the architect's competence is also largely determined by the Indonesian architect's understanding of building physics because attention to energy is important in buildings so that building physics is an important insight because it is able to measure performance and innovate buildings well.

The ability to find problems related to planning, implementation, control and evaluation is the most powerful item predict the realization of Indonesian Architect Competence. Concepts, theories and methods of planning both conventional and parametric methods need to be done carefully because they make an important contribution to the architect's own success.

The improvement of the architect's competence is also largely determined by his ability in analysing spatial needs and implements them into design and the ability to see himself as a professional architect. This is important because ultimately an architect will continue to be equipped to serve the community.

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