The Jakarta society’s perspectives on Architechnopreneurship design

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Abstract. Building architecture in urban areas is very important, especially for settlements that are at risk of flooding. Architechnopreneurship is a residential architectural design concept that can provide comfort even in a flooded area, has a concept that utilizes technology, provides insight into entrepreneurial values and provides education for residents in mitigating flood risk. This study aims to obtain an overview of the Jakarta society's perspectives on architechnopreneurship design. The research method used is the Neuroresearch method, a mixed method which has three stages of research, namely exploratory, explanatory, and confirmatory research. The results showed that the Architechnopreneur building design concept presented was still not in accordance with the views of the people of Jakarta significantly at α <0.05. These results provide input for changes and improvements to architechnopreneurship design in accordance with community expectations.

Keywords: architechnopreneurship design, Jakarta society, flood area

1. Introduction
Building architecture in urban areas is inseparable from the lifestyle of the people who live in the city [1], [2]. Both urbanization and modernization have been able to change the characteristics of residential buildings so that the variations are colored by the socio-economic status of the local community [3]. Jakarta as the center of Indonesian government has an area of approximately 661.52 square km with a dense population. Jakarta is located on the lowlands of the north coast of West Java Province [4]. The massive development of the city of Jakarta exponentially impacts on environmental problems, land subsidence and flooding [5] - [7]. Growth in industry, trade, transportation, real estate and various other sectors increases urbanization thereby increasing the quantity of housing and buildings which reduce green areas in the city of Jakarta [8]. The result of Jakarta's rapid growth is land subsidence, building cracks and flooding that can easily occur at various points in Jakarta [9], [10]. From another point of view, the development of a city also needs to pay attention to the social and economic factors of the community so that it remains open to opportunities for each social group to interact well [11]. Various flood management efforts have been carried out [12]. The concept of Architechnopreneurship was developed as a scientific contribution to...
architects in the flood zone in the Jabodetabek area so that the architectural concept can be applied to buildings in flood zones by utilizing technological advances while promoting and promoting value education and entrepreneurship in it. The concept of architechnopreneurship which will be used as input for implementation in community settlement development needs to obtain input first. This study aims to obtain an overview of the perspective of the people of Jakarta on the architechnopreneurship design developed.

2. Literature Review

Jakarta is a coastal city that is prone to flooding due to its plains which have a lower elevation than sea level. Jakarta is also crossed by thirteen rivers. This means that the problem of flooding in Jakarta means that there will be three schemes of flooding. First, flooding due to high tide (Rob). Second, flooding due to local rainfall where the water inundates locally in basin areas. Third, flooding due to the overflowing of rivers that cross the city of Jakarta, which accommodates water sent from the upstream [13], [14]. In the context of settlement, this condition will have an impact on the characteristics of the building and the landscape of the building. Therefore, the building design should adapt to the characteristics of Jakarta as a city with a big chance of flooding.

To show a work that can adapt to flooding and its various consequences, an architect must be able to present works that can be legacy, modern by adopting technological advances and benefiting from a business aspect called Architechnopreneurship. This concept will be more optimal if done together with education to the architect, education to the population and education to the people involved. The concept of architechnopreneurship is a scientific encounter in the fields of architecture, technology, entrepreneurship, and education.

3. Research Method

This study uses the Neuroresearch method as a mixed method model consisting of exploratory research, explanatory research, and confirmatory research [15], [16]. The exploratory research stage is to find a theoretical construct and development of Architechnopreneurship instruments that will be distributed to the people of Jakarta as research respondents.

The explanatory research stage as the first stage is to find the construct validity calibration of the Architechnopreneurship research instrument. The standard instrument was then disseminated to become the basis for the second phase of research. The explanatory research stage as the second stage is in the form of analyzing the perspective of the Jakarta community on the design of the Architechnopreneurship concept created. This stage also seeks to find the most dominant indicators that shape the conditions of Architechnopreneurship. At this stage, it will be used as the basis for the development of city planning and at the same time the basis for new policies related to Embrace Floods with Architect Adaptation in the flood zone (the case of Jakarta).

4. Result

Before proving the formulation of the problem, first two tests of sample data requirements are carried out, namely the Normality Test of the distribution of the Jakarta Society's View of Architechnopreneurship (ARCHITECH) and the Linearity Test.

The normality test is carried out by using Proportion Estimation through the Blom formula with the Q-Q Plot approach. This approach was chosen because the number of samples in the study was greater than 200 people. Based on the calculation of the Normal Q-Q Plot, it is found that the view of the Jakarta community on Architechnopreneurship (ARCHITECH) is normally distributed. The data distribution tends to lead to the normal line, and the data distribution has no outliers. Likewise, when viewed from its Detrended Normal Q-Q Plot, it proves that the data distribution does not describe a sine or cosine curve. So, the conclusion is the view of the people of Jakarta about Architechnopreneurship (ARCHITECH) is normally distributed (Figure 1).
Figure 1. Data Normality Test of the Views of the Jakarta Community on Architechnopreneurship (ARCHITECH)

Linearity test of the line relationship of each Exogenous Variable, namely the Aspect of Architect, Aspect of Education and Aspect of Architechnopreneurship with the Views of the Jakarta Community on Architechnopreneurship (ARCHITECH) as an Endogenous Variable. The results of the analysis were carried out with deviation from linearity. As a whole can be seen in Table 1 below.

Table 1. Summary of Linearity Test Results of the Line Relationship between each Exogenous Variables and the Views of the Jakarta Community on Architechnopreneurship (ARCHITECH) which functions as an Endogenous Variable

| Uji Linearitas Hubungan Garis antara | Deviation from Linearity Test |
|-------------------------------------|------------------------------|
| F                                   | Sig                          |
| ARC-ARCHITECT ASPECT                | 1.004                        |
| EDO-EDUCATION ASPECT                | 1.595                        |
| ATP-ARCHITECHNOPRENEURSHIP ASPECT   | 1.535                        |

Based on Table 1 above, the relationship of each exogenous variable with the Jakarta Society's View of the Architechnopreneurship (ARCHITECH) as an Endogenous Variable is all linear.

First Research Results
In proving the tendency of the condition of the public views throughout Jakarta regarding Architechnopreneurship (ARCHITECH), the researcher determined 3 (three) categories, namely that the public has the views: (1) very inappropriate, (2) inappropriate, and (3) unsuitable. The value range score is 60, class interval is 21. Data analysis was performed with a confidence interval (μ) at a significance level of 0.05 and resulted in a lower value of 51.3664 and an upper bound of 53.1444. In detail, the results can be seen in Table 2 below.
Table 2. Results of the Confidence Interval (μ) Calculation as a Prediction of the Jakarta’s Society Perspective about Architechnopreneur

| Description | Statistic | Std. Error |
|-------------|-----------|------------|
| ARC-TECH    | Mean: 42.254 | 0.027 |
|             | 95% Confidence Interval for Mean | Lower Bound: 42.204 | Upper Bound: 42.304 |
|             | Variance | 0.057 |
|             | Std. Deviation | 0.05 |
| Minimum | 42.204 |
| Maximum | 42.304 |
| Range | 0.05 |

Based on the results of the analysis in Table 2 above, it can be concluded that the Architechnopreneur building design concept presented tends to be inconsistent with the views of the Jakarta people significantly at α < 0.05.

Second Research Result

In proving the strongest indicator in determining the society who views Architechnopreneur as inappropriate, the researcher uses the Binary Segmentation approach which is also called Classification and Regression Trees. In this analysis, the researchers set Prunning Depth at 2, Prunning Parent at 2, and Prunning Child at 1, with a significance level of α < 0.05. The result is as shown in Figure 2 below.

Figure 2: ARC is the most powerful determinant so that people perceive architechnopreneur as incompatible, and ARC itself is highly dependent on ATP.

The picture above can be explained that to increase the suitability of views on Architechnopreneur by the people of Jakarta as a whole, it is necessary to improve the ARC indicator. With the improvement of the ARC aspect, the public opinion is expected to increase 45,940 times from the current condition of the assessment of the Jakarta community. To be able to increase the repair of ARC, it is also necessary to improve the overall ATP. Because the improvement of ATP will contribute 20,128 times the current state of the ARC society.
5. Discussion and Conclusion

Floods as a disaster that often hits people in Jakarta with all its complex problems require synergistic problem solving from various fields of science and expertise. Architechnopreneurship is the work of an architect who not only puts forward its beauty but also considers the potential for flooding in his work. Architechnopreneurship's work in the view of the people of Jakarta is still not in accordance with the concept imagined. So that a study and design changes are needed to align this concept with the needs of the people in Jakarta.

The results show that the architechnopreneurship design is still less attractive in terms of architectural design, so it needs improvement from this aspect. This research is a combination of architecture, entrepreneurship and education departments which are expected to provide input on urban planning policies that are adaptive to the threat of flooding.

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