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Risk Analysis of Planning Factors and Variables in residential construction projects in Banyumanik (Case Study of construction projects: Apartment X Banyumanik Semarang)

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ABSTRACT: The Project planning stage is a series of activities that are very important and integrated, starting from the process of initiation, conceptual, design and development, to preparation activities before the construction phase begins. One example of a dominant risk factor and variable that was not identified at the planning stage was the superblock "Pruitt Igoe", apartment project in St. Louis America. The superblock was completed in 1956 and was destroyed in 1972 due to the inconvenience of the building (wikipedia.org/wiki/Pruitt%E2%80%93Igoe). In the case study of the superblock Apartment X Project in the Banyumanik Semarang residential area, researchers carried out the identification process of all planning phases and analyzed the problems and project risk management in general. Assess factors and various variables to minimize the impact of the risks since the project planning stage. The problems that will be solved in this study are: knowing the series and groups of activities at the project planning stage; knowing what factors and variables must be studied more deeply because they have an impact on project financing performance; find out the results of the risk analysis of factors and variables that have a dominant and significant impact on the financing performance of the X apartment project in Banyumanik Semarang. The various literature reviewed in this study are: risk management, project planning, project financing performance, portrait of apartment projects in Banyumanik residential areas Semarang and various relevant research results in the last 10 years. This research methodology begins by reviewing various relevant issues, identifying research problems, literature review, analysis and discussion. The research method used is qualitative and quantitative methods. In this preliminary study, descriptive analysis was used, resulting in 10 (ten) factors of the main activity group of the project planning stage along with the risk variables that had a significant impact on project financing performance, namely; (a) Feasibility Study documents, 17 variables. (b) Land and Site analysis, 4 variables. (c) Licensing and Socialization, 5 variables. (d) Business Plan, 9 variables. (e) Conceptual and Pre-Design, 15 variables. (f) Design and Development, 9 variables. (g) Agreement and Contract, 6 variables. (h) Preparation for Pre Construction, 7 variables. (i) Marketing and Sales, 7 variables and (j) Input Management (Office and Site support management), 9 variables.

KEYWORDS:..Analysis, Risk, Performance, Project financing.

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I. INTRODUCTION

In the planning project of apartment X in the Banyumanik residential area of Semarang, there are many activities that must be scheduled and completed in an integrated manner. Researchers re-examine any internal external activity groups that have been or have not been implemented. All activities are grouped into main activity factors, then the details of what activities are closely related to the main activities are determined. After the entire series of activities at the planning stage were identified, the researchers examined the risk of all risk factors and variables which had a significant impact on project financing performance.

Research problem

This research problem can be formulated as follows: a) What are the groups in the planning phase of the superblock apartment x project in the Banyumanik residential area of Semarang that affect the project financing performance? b) What are the factors and risk variables that must be studied more deeply considering the impact of the risk is quite significant on financing performance? c) How are the results of factor analysis and dominant risk variables at the planning stage that have a significant impact on financing performance?

Research purposes

Research with a case study of the Apartment x project in the Banyumanik residential area of Semarang, aims to; a) Knowing all activities and grouping them into the main activities of the planning phase that have the potential to cause risk impacts that hinder project financing performance; b) Determine which factors and risk variables must be studied more deeply because the impact of the risk is quite significant on financing performance; c) Knowing the results of the dominant risk analysis of the factors and variables of the project planning stage which have a significant impact on the project financing performance, especially the apartment project x in the Banyumanik residential area of Semarang.

Method and discussion.

The research method used is qualitative and quantitative methods. In this preliminary study descriptive analysis method was used. This initial study material data source was collected from all technical staff in the project and technical managers at the head office. All data activities related to the initiation and planning process are grouped according to certain categories, processed according to the research objectives. Factors and variables used to identify and analyze risks are obtained from the study of literature and the experience of construction service players and from the results of interviews with resource persons validated by several experts. Produce 10 (ten) factors of the main activity group of the project planning stage along with its variables which have a significant impact on financing performance.

II. RESEARCH PROCESS

Literature study of books and journals relevant to the research topic was carried out, then the researchers carried out a preliminary survey to study the actual conditions in the field, collecting the necessary data related to the research topic including interviews and distributing the first phase questionnaires to several experts to obtain research variables have been grouped into several main activity factors in the planning phase. From the results of the identification and analysis obtained conclusions related to the dominant risk factors and variables that have a significant impact on financing performance.

III. ANALYSIS

Based on the results of the literature study and preliminary survey of objects in the field and the results of discussions /interviews with key personnel in the Apartment X project planning team, researchers categorized activities in the project planning activities into several main activity factors that have a risk impact on project financing performance.

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Research problem analysis 1

The results of the identification of activities at the planning stage obtained 10 (ten) main activity factors that affect the financing performance of the superblock / apartment X project, namely as follows; (a) review of feasibility study documents (b) land and site analysis; (c) licensing and socialization; (d) business plan; (e) conceptual and pre-design; (f) design and development; (g) agreement and contract; (h) preparation of pre-construction (i) marketing and sales (j) input management (office and site support management).

Research problem analysis 2

Based on various references in literature reviews and processed data on apartment projects, 10 (ten) the main activity factor at the planning stage has risk variables that affect the project financing performance as follows;

(a) Document review of feasibility study, has 17 risk variables; 1) risk of location and non-smooth access. 2) risk of attractiveness of the product is not achieved and facilities are inadequate. 3) risk of production and schedule incapacity. 4) risk of miscalculating demand and need. 5) competitive risk and variable prices. 6) risk of sales targets that are not achieved. 7) risk of lack of investment funds. 8) risk of miscalculating the need for capital and loan costs. 9) risk of wrong estimation of cash flow. 10) risk of incorrect estimation of production costs. 11) risk of wrong income projections. 12) risk of not achieving the target profit/loss. 13) risk of changes in economic policy; inflation, taxes, interest rates, exchange rates. 14) incomplete company legality risk. 15) risk of changes to city planning and related installation requirements. 16) risk of impact on the environment (EIA). 17) risk of changes in public policy, incidents of riots, security, safety, disaster. [1],[10],[11],[14].

(b) Land and site analysis, has 4 risk variables; 18) risk of project location that is not in accordance with the city spatial structure policy. 19) risk of land area and land contour plan that is inaccurate with existing conditions and conditions of infrastructure facilities for environmental infrastructure. 20) risk of unclear land ownership status. 21) risk of wrong decision making on land acquisition by buying and selling or cooperation. [1],[10],

(c) Licensing and socialization, has 5 risk variables; 22) the risk of planning a building that is not in accordance with the requirements for permit height, KLB KDB green space, parking, social facilities. 23) risk of changes in regional national policies. 24) risk of impact of traffic density. 25) risk of impact on the comfort of the environment around. 26) risk of community barriers and compensation. [1],[10],

(d) Business plan, has 9 risk variables; 27) risk of swelling costs for land acquisition, licensing and socialization. 28) risk of incorrect assumption of planning costs and pre-construction costs. 29) risk of incorrect assumption of construction costs and operating costs and maintenance. 30) risk of incorrect assumption of infrastructure and development costs. 31) risk of assuming incorrect marketing market costs and projections. 32) risk of incorrect assumption of capital and loan costs. 33) the risk of incorrectly setting the selling area revenue and rental area. 34) risk of incorrectly setting the sale price of the apartment unit area / price list. 35) risk of incorrectly calculating cash flow and financing priorities. [1],[10],[14]

(e) Conceptual and pre-design, 15 risk variables; 36) risk of lack of support management and company owner resources. 37) risk of change in aspiration of the owner's needs / desires that are sudden / late. 38) risk of error in appointing a team of consultant planners related to resource capabilities and engineering design technology. 39) risk of wrong land use macro initiation. 40) risk of misconception of macro infrastructure. 41) the risk of miscalculating building area, height, KDB KLB, parking and green areas as well as micro infrastructure and public facilities. 42) risk of incorrect land boundary measurement and land contour measurement. 43) risk of incorrect architectural design scheme and incorrect designation of space programs. 44) risk of study errors in mass form of buildings. 45) risk of incorrectly setting the technical and schematic standards of architecture, structure, mechanical electrical (mep) design. 46) risk of wrong soil test results and groundwater level. 47) risk of miscalculating construction loads and anticipating earthquakes. 48) risk of miscalculating the utility requirements of a building mep. 49) risk of incorrect estimation of overall project financing. 50) risk of wrong internal coordination communication with the integrated planning team. [1], [3],[8],[10],[14].

(f) Design and development, 9 risk variables; 51) risk of architectural detail design errors. 52) risk of incorrect design of structural details. 53) risk of incorrect design details of mechanical (electrical mechanical plumbing). 54) risk of miscommunication and lack of integrated design coordination. 55) risk of incomplete image documents. 56)

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risk of incorrectly setting standards and technical specifications. 57) risk of miscalculating the volume and budget plan. 58) risk of design changes due to misinterpretation and adjustment to licensing requirements. 59) risk of incomplete documents for auction [1],[3],[8],[10],[14].

(g) Agreement and contract, 6 risk variables; 60) risk of incomplete legality of apartment ownership. 61) risk of legality disputes on lease and sale area status. 62) risk of contract administration errors on price changes. 63) risk of contract administration errors for consultants, main contractors and specialist contractors. 64) risk of contract administration errors for financial and banking institutions. 65) risk of contract administration errors against investor partners. [1],[4],[10],

(h) Preparation for pre construction, 7 risk variables; 66) risk of misrepresentation of work scope and specifications. 67) risk of incorrectly composing key personnel plans and organizational structures for construction implementation. 68) the risk of misplacing the implementation method and site plan management plan. 69) risk of incorrectly compiling plans for implementation time and planning for procurement of resources for vendor and manpower subcontractors. 70) the risk of miscalculating the volume and cost plan. 71) risk of misinterpretation of contract administration and wrong cash flow plan. 72) risk of miscommunication and coordination in determination; operational standards and procedures, planning tools for quality and cost time control, plan for record report form and action plan. [1], [2] [3] [4] [6] [10],[13],[14],[15].

(i) Marketing and sales, 7 risk variables; 73) risk of changes in buyer's profile / character. 74) risk of competitors. 75) the risk of product design and specifications is changing. 76) risk of misjudging leaders and sales agents. 77) risk of wrong marketing and sales systems. 78) the risk of not creating a gallery and mock up unit. 79) risk of withdrawal of launching time and ground breaking. [1],[10],

(j) Input management (office and site support management), 9 risk variables; 80) risk of misunderstanding the company's vision and mission and not having a corporate culture. 81) risk of incorrectly determining key personnel and organizational structure. 82) risk there is no standard reference and standard work procedures. 83) risk of wrong in preparing the work program plan of the units. 84) risk of wrong implementation of work units. 85) risk of not directing the work of controlling the control of work units. 86) the risk of misplacing work priorities. 87) risk of absence of team work training and leadership and expertise certification. 88) non-conducive work environment risks have the potential to reduce customer trust. [1],[2],[3],[4],[5],[7],[10],[12],[16],

Research problem analysis 3

All factors and risk variables in the main activities of the planning phase, in this initial study were tested by several consultant experts who became resource persons in the Banyumanik residential area of Semarang. The researcher distributed the first phase questionnaire and the result was that all identified risk factors and risk variables were approved by experts as factors and variables that were quite dominant and had a significant impact on project financing performance, especially apartment projects X in the Banyumanik residential area of Semarang.

IV. CONCLUSION

- 1) In the planning phase activities there are 10 (ten) main factors that influence the financing performance of superblock apartment X projects, namely; (a) Document review of Feasibility Study (b) Land and Site Analysis; (c) Licensing and Socialization; (d) Business Plan; (e) Conceptual and Pre-Design; (f) Design and Development; (g) Agreement and Contract; (h) Preparation of Pre-Construction (i) Marketing and Sales; (j) Input Management (Office and Site support management).
- 2) The 10 (ten) main factors in this planning phase activities have approximately 88 (eighty eight) risk variables that must be examined more deeply considering the risk impact on project financing performance.
- 3) All factors and risk variables in the series of planning phases, in this initial study several experts have been tested and agreed to have a significant impact on cost performance. Of the 88 (eighty eight) risk variables, the experts answered YES.

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With the results of the preliminary study of risk analysis of these factors and variables, the researcher will continue this research in more depth so that the relationship between variables and the level of risk impact on project financing performance can be identified, especially the Apartment X project in the Banyumanik residential area of Semarang.

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