

The Application of Value Management on Real Estate Development Case Study: Developers in Surabaya

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ABSTRACT

The application of a method in real estate development process is needed in order to ensure the project runs smoothly. There are methods that can increase the value of the project and even discard unnecessary cost of the project called value management. Many practitioners of real estate development in Surabaya claim that they always apply value management method. However, based on empirical data, it is known that not much research of value management in Surabaya. The purpose of this paper are to determine how the application of value management by developers of real estate development in Surabaya and when the right stage is to execute that method. Statistic descriptive analysis is used to achieve the research objectives. Results of research in this paper are the perception of value management by developers in Surabaya and real estate development stage in which value management method commonly executed in Surabaya.

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Key words: Developers, Real Estate, Value Management

1. Introduction

Real estate is a product of architecture. The application of a method in real estate development process is needed in order to ensure the project runs smoothly such as in Surabaya which is selected as one of five potential areas to invest in Asia based on an assessment of global property portal. That thing make Surabaya as a city that targeted by developers to build real estate. The statement was supported by the globalization of real estate development in Surabaya, which increased by fifty three real estate development projects in 2015 that listed in the Real Estate Indonesia currently hold construction. There is a method that can increase the value of the project and even discard the unnecessary cost of the project called value management (VM) [1]. In Indonesia, the role of value management should be reflected in the building development activities. [2] mentioned that almost all of real estate development practitioners in Surabaya confess that they applied value management in their real estate project. But, they also mentioned that research on value management is still limited, especially that discusses about awareness of value management methods and its application in real estate development, and it is proved by buildings in Surabaya that indicated wasteful costs.

2. Material and Methods

Method of analysis that is used in this study are statistic descriptive analysis. The sample taking and respondent determination are applied by a purposive sampling followed by snowball sampling. Data collection techniques use a survey by distributing the questionnaires, there are 35 samples namely real estate developers and they are being or has served as manager or above. The range of work to examine the value management is quite extensive, it could be from the engineers to the director, but the range of perception of engineers and directors are so far, so as to minimize the perception range, the researchers chose the manager to managing director as the respondent to represent the population. It is also due to the manager and above who know about all stages of the real estate development process. The data that is used in this study consisted of primary data. Primary data is data obtained directly from the respondent, through questionnaires. The collection of primary data obtained directly from the first informant [3]. Distribution of questionnaires carried out gradually and one by one within a specific deadline to the respondents who have been determined, the researchers met with the respondent. Results of research in this paper are the perception of value management by developers in Surabaya and real estate development stage in which value management method commonly executed in Surabaya.

2.1 What Actually Value Management is

There is no single definition of value and its meaning is abstract or ambiguous [4]. English is the

only western language that uses the two words 'value' and 'worth' interchangeably. Worth is defined as 'the lowest cost to perform basic functions reliably' [5]. Value management is based on scientific methods of data collection from reliable sources and on functional requirements. The functional requirements try to fulfill the needs, wants, and desires of the customers. A multidisciplinary team approach is advocated to avoid erroneous decisions of an individual. Then, it is possible to increase the value of a product by increasing its function even when these results in greater cost, if the added function increases more than the additional cost. The first person that introduced the term "value" into the industry, defined "value" as "the relationship between function and cost" using the following equation: Value = Function/Cost was Miles in 1972. Value management is the name given to a process in which the functional benefits of a project are made explicit and appraised consistent with a value system determined by the client [1]. Value management is focused on the examination of functions aimed at identifying and eliminating unnecessary cost [6].

Value management is one of the methodologies of design decisions in construction, involving multi-discipline, collaboration and teamwork [7]. According to [1] value management in the UK construction industry has evolved to become 'an established service with commonly understood tools, techniques and styles'. Then [8] describe that value management is widely accepted as an important tool in the management of projects. While this may be so for construction industries in developed countries, but it is not so clear in developing country, it is like Indonesia especially in Surabaya city. [8] also maintained construction process improvement by value management are project schedule improvement, higher quality project, cost effective material, cost or schedule effective design, and efficient maintenance or operating systems. Then [9] declare that value management benefits can be divided into two types, which are monetary value terms and non-monetary value terms such as aesthetics/image, expansion potential, spatial relationship, flexibility or versatility, safety, reduction of environmental pollution, conformity with political considerations sales and marketing considerations. There are three main methodologies of value management which are job plan, function analysis and Function Analysis System Technique (FAST), and Life Cycle Cost (LCC). Job plan is a disciplined approach consisting of sequenced steps through problem solving process to distinguish value management from other cost cutting processes [5][9].

Value management is seen as a process that involves multiple disciplines and business teamwork, then, negotiation becomes an important role in the decision making process based on the value of a component or element or building system and a support system is required for the negotiations in the decision based on the value in the management process value [10]. The larger and more complex construction projects that are developed, the more involving various parties that exchange ideas, desires, and concept through design collaboration [11].

Collaborative design was developed with the primary objective to facilitate the integration of some of

the participants in the design process to produce the best designs [11]. For research aimed at the development of real estate, the value management processes at the design stage is very important, one of which is design collaboration. Research on collaborative design primarily addresses the attainment of success [12]. Most of them explained that there are problems and failures in achieving the most appropriate design. Collaborative design defined as a concept that can be applied to facilitate the integration of multi-participant involved in the design process to achieve the best design [13].

There are many phase of value management method, [1] states that the value management processes consist of three phases, namely the phase of orientation and diagnostics, workshop phase, and an implementation phase. In three of that phase there are eight stages of the value management process i.e. pre-study phase information, the information stage, the stage of creativity, the evaluation stage, the development stage, the stage of the action plan, the recommendations and final stage is the implementation phase.

The phases that mentioned before, are different than another result of the research by Leeuw in 2001, [14] states that there are seven phases of value management, although it also said that there are some practitioners that use different methodologies in application of value management, but generally, value management are consists of seven stages or seven phases, namely the phase of information, the phase of the objective, phase of functional analysis, phase of creativity, evaluation phase, the development phase, and the last is the recommendation phase. While [15] concludes the process of value management consists of the phase information to find the facts, the analysis phase to evaluate the information, the phase of creativity to explore alternatives, the phase of the election as a stage determination, and the last is the phase of development as an implementation of the plans that have been made.

Value management can add improvements to the entire construction processes, as in the following areas, increasing the project schedule, make the project quality higher, save the cost of materials or products, save the cost of schedule design, and the efficiency of system maintenance and operation [16]. Additionally, [9] stated that the benefits of value management can be divided into two types, namely monetary and non-monetary benefits. Examples of non-monetary benefits include aesthetic/image, expansion potential, spatial relationships, flexibility, security, reduction of environmental pollution, compliance with political considerations, considerations of sales and marketing. [17] wrote in the publication of his dissertation, that the relationship between the value management process and the objectives of value project is the safety of personnel and facilities; maintenance of safety and health; construction safety and health; regulatory compliance; the efficiency of capital costs; operating cost efficiency; the efficiency of the maintenance costs associated with the reliability of operation of the facility; quality of the project/service, which focuses on client satisfaction with the final product or project; quality of construction; schedule optimization, related to the timely completion of the project with optimized resource allocation;

environmental protection; and the prevention of risks and uncertainties.

2.2 Value Management Perception in Surabaya Real Estate Development

Value management perception on real estate development process in Surabaya was confusing, because most of real estate development practitioners in Surabaya did not understand the different between two methods, neither value management method nor value engineering method. It is proven by [2] mentioned that almost all of practitioners in real estate development always apply value management to their real estate development project, whether they are directors or managers. Number of managers that applying value management more than the number of directors. A lot of practitioners who apply value management do not understand about value management, they assume that value management is value engineering.

VE or Value Engineering mentioned as a part of value management or Value Management [1]. Value engineering is one of specialized application of value management to replace or discard unnecessary cost. It explained that many practitioners in Surabaya have purposes to make cost effectiveness of the project in order to get maximum profit. As approved, one respondent mentioned that the value management is applied to the project when it was intended that can manage the cost, so that the project was economical, efficient but not degrade the performance at all.

value management has a business focus and it is strategic in nature whilst value engineering (VE), a subset of value management, has a greater technical focus. In a construction industry focus context [1]. They also said that value management focuses on business project, which is fundamental reason why client organization needs a project in the first place. The business project is expressed normally in a business case, justifying the investment for a project. The business project will be defined in terms of need, finance, returns, benefits, risks, and time horizons. This is strategic phase of a project. [18] define value management as a structured approach to defining what value means to a client in meeting a perceived need by establishing a clear consensus about the project objectives and how they can be achieved. It also incorporates value engineering, which is defined as a systematic approach to delivering the required function at lowest cost without detriment to quality, performance and reliability.

It is like [1] who said that technical project, the construction industry's response to that need, is the focus of value engineering studies. This corresponds to the tactical phase of the business project. The technical project will be defined much more in terms of technical specifications to meet that need. A value management stance necessitates that the technical project should be in alignment with the business project to deliver value for money. value management addresses the business project (which could include the contribution from a program of project) and the alignment of the technical project while value engineering is concern with aligning correctly stage within the technical project to ensure the business project is delivered through an appropriate

technical solution. Value management studies have to address not only the business and technical project but also the objectives elements of value as mentioned earlier.

Then, value management can be defined as the process by which the functional benefits of a project are made explicit and appraised consistent with a value system determined by the client. While value engineering is the process of making explicit the functional benefits a client requires from whole or parts of a project at an appropriate cost during design and construction, or value engineering can also be the process of identifying and eliminating unnecessary cost during design and construction [1]. They also state that value management is not about cutting cost, but maintenance cost, operating cost and disposal costs. Making choice about cost could include, deciding to reduce cost, deciding to redistribute the way that cost is allocated and deciding to increase cost.

2.3 Real Estate Development

Real estate development process has so many stages; there are the briefing stages, the design stage, the contract stage, the construction stage, the stage of reciprocity and the stage of completion [19]. While [4] in his study, mentioned that the development phase of the project is regarded as a constituent entire project life cycle, namely the feasibility and planning stage, detailed design stage, procurement stage, construction stage, then operation and maintenance stage. It is different with [19] who said that the project development stage that is good for the use of value management approach starts from briefing stage to the construction stage. According to [20], design stage has three phases, namely the conceptual design phase, the detail design phase and the last is design production phase. Thus, real estate development stages that examined in this study consists of project briefing stage, the feasibility study stage, conceptual design stage, detailed design stage, design production stage, contract stage, and construction stage.

Briefing phase is an early stage of real estate development, which means consisting of arcing idea stage to stage the deepening of ideas. Briefing stage is the stage where there is a process of identifying and defining the requirements of the client organization in the early design phase of construction projects [19]. At this stage consists of the inception of an idea (arcing idea) and Refinement of the Idea (deepening of the idea) [21]. At the time of arcing ideas, developers looking for opportunities and estimate how that idea was initiated can gain maximum benefit. At this stage, the developers have done a market analysis and generate ideas through strategic decision-making of the results of the market research [21][22]. During the refinement of the idea (deepening of the idea), the developer has decided to develop and decide what kind of her real estate, for example, retail, apartments, office or mixed-use.

At this stage the developer began a relationship with partners its real estate projects [21][22]. If it turns out the type of project or land sought is not feasible (no benefit) according to the developer, the developer must re-sparked the idea of a new, more promising. However, if as expected, the developer can begin to make a

feasibility study of the project. This stage also allows the owner of the project or client or developer to explain the function of the project and the costs are allowed, so the consultant planner can accurately interpret the owner's desire of the project and make the estimated cost necessary [19].

The feasibility study stage, aiming to convince the owners that the project proposed construction project feasible to build, both in the planning and design aspects, economic aspects (costs and sources of funding), as well as environmental aspects [21]. Developer conduct further market studies to estimate the market absorption and feasibility studies by comparing the value of the project with the costs. Inclusion can be calculated from the estimated gross revenue to be generated, how many unsold (vacancy), fixed operating expenses, net operating income, the value of the project in the future. This revenue must be greater than the rate of return (inflation) and therefore, if these requirements are not met, the developer had to rethink his idea from the start.

The next stage is the conceptual design that is the stage at which many participants were involved, namely the owners, specialist specifications, architects, engineers civil engineers ME to generate ideas by describing the needs and requirements of the functional specification and then found several alternative design solutions in order to detail the design is able to produce optimal design and appropriate levels [23][24]

Detailed design stage is the stage which consists of making detailed drawings of design, prepare technical specifications, preparing the budget plan, draw up the volume or quantity of work and make a final report. Almost all participants involved in the project at this stage, such as the owner, architects, civil engineers, engineers and interior designers ME [23][24].

At this contract stage, [21] reported that the developer decided the final design based on studies of what is desirable and would be paid by the user. A contract negotiated, the proposed fund loan demand, the main contractor is selected, and permission from the government also included which should get. All such contracts, construction contracts, loans, and other contracts signed. Then [21] also explained that at the stage of construction, the developer acts as a financial controller, ensuring that all project costs are still within budget and to keep the work done on schedule. At this stage, changes in design, marketing has been defined and implemented [1].

3. Results and Discussions

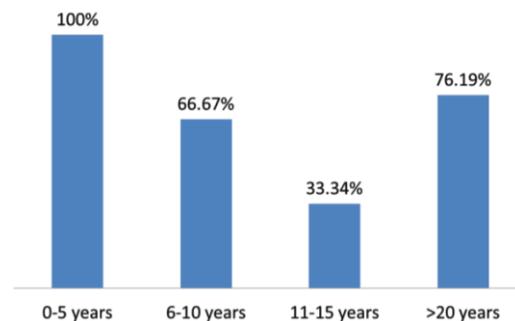
Questionnaire was used to get information from practitioners about value management application in their real estate development process. First question was asking about their perception about the application of value management on their real estate development project, such as where company they are from, how many times they applied value management method to their each real estate development project, what the function of value management for their project was. The second question was asking about the position of value management on their real estate development process, which means that trying to know the actual stage of real

estate development process that was applied value management method. Real estate development process were consist of 8 (eight) stages, they are project briefing as stage one, feasibility study as stage two, conceptual design as stage three, detailed design as stage four, design production as stage five, contract as stage six, construction as stage seven, property management as the last stage.

3.1 Developers Perception Of Value Management

The role of value management at each stage of developing real estate is identifying project tasks, needs and wishes of the client in this case is the developer which is expressed in the form of a function to generate the optimal design for the project to be assessed technically and functionally at the beginning of the project and on the design phase to identify and eliminate the cost of unnecessary during the design through to construction [1][6][9][18][19].

In this case, the questioners were given to some developers' manager or above in Surabaya to represent their real estate developers company. And it turn out that respondents who work in companies that aged 0-5 years admitted often apply value management, further application of high intensity value management by companies that are aged 6-10 years as many as 66.7%. Companies aged 11-15 years are less likely to apply value management, only 33.34% of them who claims often apply value management. The intensity of the frequent apply value management by the company over the age of 20 years is 76.19%. In this synthesis is known that it is precisely the company aged 0-5 years that tend often to apply value management, so it can be concluded that the level of maturity or duration of these companies cannot stand indicates the high intensity of the application of value management, it is shown by Fig.1.



Source: (Sari, 2015)

Figure 1: Real Estate Developers Company that Apply VM by the Aged of the Company

The percentage of companies that apply value management is varied by the age of the company. And it turns out that this happens because the company that aged 0-5 years, considers applying value management when they apply value engineering, they misunderstood the value management as value engineering. It is proven by some respondents that work in a quite new company mentioned that they apply value management to reduce

the unnecessary cost. And it is different than respondents that work in quite senior real estate developers company who mentioned that they apply value management to make their real estate more valuable than ever.

3.2 The Common Stage to Execute VM Method

Position of value management application in Surabaya is known from the domination of the value management application in real estate development by respondents in Surabaya. Application of value management positions in real estate development in questioner is ranging from briefing stage, feasibility studies, conceptual design, detailed design, contract, construction until the stage of the handover and managing the property. It is shown by Table. 1.

Table 1: Ranking of the Real Estate Development Stage to Execute VM Method

Ranking	Real Estate Development Stage
3	Project Briefing
2	Feasibility Study
1	Conceptual Design
4	Detailed Design
5	Design Production
6	Contract
7	Construction
8	Property Management

Source: (Sari, 2015)

In Table 1, it is known that the conceptual design phase is a phase that often for practitioners in Surabaya to apply value management. This finding is slightly different from the findings made by [4] which states that the early stages of planning and feasibility study stage is the stage of the most potential to influence the optimization of a project and provide the most benefits both in implementing value management. the findings of [4] in line with the theory that as the important decisions that affect the value of the project is taken early in the project, the most useful value management method benefit is implemented in the early stages of project development [18].

Because of differences in the results of this research with the existing theory, then conducted an empirical study, then some respondents mention that the different findings of this theory due to the many real estate development company in Surabaya who do not have executive design, manager of value, the project manager (operations project) or the civil engineers. Other respondents added even if there is a real estate developer who has executive design and project implementers themselves, the professionals are not involved in achieving the objectives of the project, these professionals began to be involved in the conceptual stages of design. So the value management is often applied at the conceptual design stage.

Practitioners of real estate development that choose the conceptual stages of design as the stage most often apply value management, they are experienced in the field of real estate development in over 6 years and is dominated by the practitioner who served similar managers such as project managers and general managers.

Furthermore, 77% of these practitioners working in companies whose age above 20 years. It can be concluded that the real estate development company that over the age of 20 years in Surabaya more often implement value management in the conceptual stages of design, because of the involvement of multi-disciplinary just started since the conceptual stage of design. In these companies, similar practitioners manager not involved in the initial stages of the project or in the process of determining the project and the determination of the main objectives of the project. As stated by a respondents that the owner or owners have the funds, the directors also sparked the idea feasibility study and then submitted to the project officers have the tools and the means to develop the concept, one of them with value management.

The conceptual design stage is the stage that commonly executes value management method by respondents who served as directors and managers. This is partly also due to the role of managers and directors are required to ensure that the process value management should be able to make the project manageable in time, quality and budget constraints specified, therefore the majority considers that the conceptual stage of the design is the stage most excellent for them to execute value management method, because at that stage, the needs and objectives of the project are known.

4. Conclusion

A hundred percent of respondents that work in quite young (mentioned as 0-5 years age of company) real estate developers company assumed that they always apply value management method on their real estate development process. They considers applying value management when they apply value engineering, they misunderstood the value management as value engineering. But it is different than the quite senior company (it is mentioned as more than 20 years aged company) that apply value management to make their project more valuable.

The conceptual design stage is the stage that commonly executes value management method by real estate developers in Surabaya, because of many real estate development company in Surabaya do not have their own executive design, manager of value, the project manager (operations project) or the civil engineers. Even if there is a real estate developer who has executive design and project implementers themselves, the professionals are not involved in achieving the objectives of the project. These professionals began to be involved in the conceptual stages of design. So the value management is often applied at the conceptual design stage.

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