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The Decisive Factors in Selection of Architects according to the Developers of Apartment Projects in Surabaya

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Abstract. Selection of an architect is not as easy as buying finished goods because their services are intangible. The selection of architect consists of several variables, namely task performance, contextual performance, network relationships and prices. The purpose of this study is to analyze which factors are most decisive in selecting an architect according to apartment developers in Surabaya, and to analyze whether there are differences between the factors in each variable. This study used a pilot study with a questionnaire method that was distributed to the architect lecturers of Petra Christian University, Indonesia. The results of the pilot study were re-synthesize and distributed to apartment developers in Surabaya. The conclusion is that the most decisive factor in task performance variable is a creative, innovative, and constructability.

Keywords: apartment developer, architect selection, decisive factor

1. Introduction

Architect is people who expert in planning, design, and building construction. An architect's design applied to a building can increase the value and selling price. Choosing the right architect can help clients to optimize investment in buildings.

Surabaya is the second largest metropolitan city after Jakarta, where people need housing close to the city center and workplace to avoid congestion. One suitable residential alternative in this densely populated city is apartment buildings. Selection of an architect for apartment planning with large scale development planning is not easy. Many factors must be considered when choosing a right architect. This is because architect service is intangible.

The intangible service will make the owner / client more difficult to compare alternatives and understand the evaluation criteria that must be considered. This is because the client usually an unprofessional person in that area but some clients are already experienced in the

construction field. Selecting an architect become more complex because the architect's design is determined based on the wishes of the client and answers the design problem.

In the selection of architect, many factors must considered by developers such as task performance, contextual performance, network relationship and prices. To follow up on this case, the developer needs to know the decisive factors in the selection of architects in the design of apartment projects in Surabaya. The purpose of this study is to analyze which factors are most decisive in choosing the architect, and whether there is a difference between the factors in each variable for architect's selection. The method of this study is quantitative descriptive.

2. Theoretical Basis

2.1. Selection of Architect Factors

Selection of architect is not as easy as buying finished goods because architect service are intangible. Several main variables in selecting architect are task performance, contextual performance, network relationship and price [1].

Task performance is a multi-dimensional concept that refers to individual abilities / skill that contribute to the organization, namely the core technical network [2][3]. In general, task performance is an activity that convert material into goods / service produced by the organizational efficiency and effectiveness [4]. There are several criteria for evaluating task performance such as innovative and creativity; good project approach; knowledge of economical design, constructability; legislation and regulation, and administration contract; have technical and functional quality, accurate and error-free; design within client budget; manageable level of workload, from a financially stable and large firm; and have experience in similar project [1].

Contextual performance is an activity that does not contribute to the technical core but can support the course of the organizational, social environmental psychology to achieve organizational goals [2]. This contextual performance arise because individual work within the framework or organizational flow rather than from their own plot and therefore need communication between one and another to coordinate action, follow instruction, and do other work outside of their job description. There are several criteria for evaluating contextual performance such as produce design drawing and obtain statutory approval rapidly; pay attention to important design and construction details; have toughness and enthusiasm to face problems; ensure project in accordance with specifications; has initiative suggestion; respect and follow client instruction; independence; has interpersonal and communication skill; willingness to revise work drawing; interest in project and leadership [1].

Besides the performance of architect who are the main factor in the selection of architect, network relationship and price also include in the selecting factor of architect. Because architect live in environment that are interconnected with each other. So relation is important for the sustainability of their business [5]. A good reputation will invite other client to entrust the project to the architect. From previous research reputation is the most thing in selecting architects because reputation will create image inherent the architect. Such as reputation for being trustworthy, professional, competent, and recommended and referenced by other client and consultant [1][6][7][8][9]. Architect who have worked with previous clients and the client was satisfied with the services will recommend the architect to other friend and clients. This proves that the past relationship will make architect understand the desires of the client.

Price is one factor that always considered. In the American Institute of Architect (AIA) [10] identified that there are three general criteria in selecting architect. One of that criteria is price / cost. One factor influence selecting architect is architect provide economical price and allow payment to be repaid and postponed [1][6][7][8].

Completion of time work has highest rank in the important criteria for architect selection. Architect must be able to convince the client that architect can complete work on time and with appropriate / acceptable cost [6][7].

The architectural service fee listed in IAI is based on percentage of service fee parameters that are influenced costs and building categories. Lump-sum is the price of architect service agreed upon both parties [11].

2.2. Pilot Study

The pilot study was conducted to re-synthesize the variable that not fulfilling in this study. The pilot study was conducted using questionnaire forms distributed to respondent who work as architectural lecturers can be seen as Table 1 as follows:

Table 1. The result of mean analysis of the architect selection factors

	Factor	Selecting of Architect Factors	Mean
Task Performance	X1.1	The capacity of architect is seen from innovative and creative design solutions	4.77
	X1.2	Architect has a good project approach	4.31
	X1.3	Architect has problem solving capabilities	4.08
	X1.4	Architect has knowledge of economical design	4.23
	X1.5	Design of architect can be done / realized	4.31
	X1.6	Architect has design knowledge and relevant regulation to the project	4.38
	X1.7	Architect has knowledge of contract administration	3.46
	X1.8	Designs of architects are technical and functional qualities	4.23
	X1.9	Designs of architect are accurate and error-free	3.92
	X1.10	Designs of architect are according to available budget	4.00
	X1.11	Architect has a manageable level of workload	3.25
	X1.12	Architect is from a financially stable firm	3.08
	X1.13	Architect is from a large firm	2.92
	X1.14	Architect has many job experience in their fields	4.08
	X1.15	Architect has handled similar project in terms of type and size	3.69
Contextual Performance	X2.1	The speed of architect in making working drawings	4.00
	X2.2	The speed of architect in obtaining legal approval	3.58
	X2.3	Architects pay attention to important things in design and construction details	4.23
	X2.4	Architect's toughness in dealing with problems	4.38
	X2.5	The enthusiasm of the architect in solving difficult problems	4.23
	X2.6	Architect ensure that construction projects are built according to specification	4.17
	X2.7	Architect has the initiative to advise on design improvisation	4.31
	X3.8	Architect respects and accepts clients as team leaders	3.54
	X2.9	Architect follow the client instruction and order	3.62
	X2.10	Architect respond quickly to the client's instructions and requests	4.23
	X2.11	Architect can maintain his/her independence	3.85
	X2.12	Architect has good interpersonal and communication skills	4.31
	X2.13	Architect can be trusted by the client	4.54
	X2.14	Architect willing to revise work drawing to meet deadline to save cost and time	4.08
	X2.15	Architect is interest in the project	3.77
	X2.16	Architect is able to lead and coordinate with contractors and consultants	4.69
Network Relationship and Price	X3.1	Architect has a reputation for being trustworthy, professional, and competent	4.54
	X3.2	Architect is recommended and referenced by other client or consultant	4.08
	X3.3	Architect has good relationship with client	4.15
	X3.4`	Architect has worked with client before	3.62
	X3.5	Low fee of architectural service	3.42
	X3.6	Architect allows client to delay payment	3.33
	X3.7	Architect can complete work on time at the appropriate cost	4.62

From the results of the pilot study above, it can be seen that lowest mean scores are in the variables X1.11, X1.12, and X1.13. Then these will be eliminated. On the other hand, there are also less precise variables is not include in the design and planning, namely variable X2.6. Architect ensure that construction projects are built according to specification. The definition of this variable has entered the implementation stage so that the design cannot be measured. As well as several other variables whose word are improperly corrected.

2.3. Theoretical Framework

From the literature obtained as well as from the result of the pilot study analysis, the following framework is found (see Figure 1).

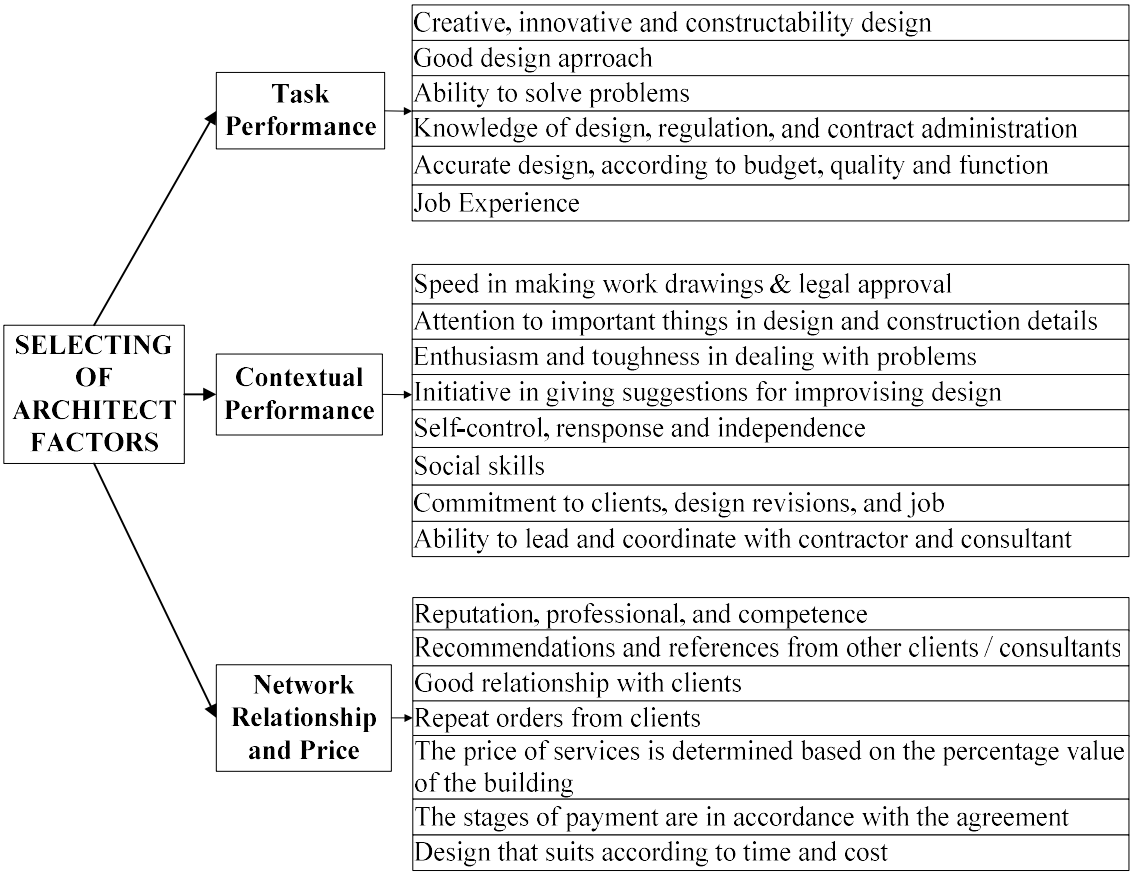

Figure 1. Theoretical framework for selection of architect factor

3. Research Methodology

This research uses quantitative descriptive method. The primary data were collected via postal questionnaire. Respondents were asked to indicate the importance of these attributes on a five point Likert scale, where 1 represents ‘very not decisive in selecting the architect’, 2 ‘not decisive in selecting the architect’, 3 ‘neural’, 4 ‘decisive in selecting the architect’, and 5 ‘very decisive in selecting the architect’. The data collection techniques use several methods as shown in Table 2.

Table 2. Source of data collection

No.	Variable	Data Source
1.	Literature study	Books and journals
2.	Pilot study	Respondents from architect lecturers at Petra Christian University
3.	Result of pilot study	Respondents from apartment developers

4. Analysis and Discussions

4.1. General Description of Research Objects

The sample in this research are owners / representatives of the apartment developers. There are three factors: task performance, contextual performance, network relationship and price. The analysis used in this research is mean and one way ANOVA analysis using Statistical Package for Social Science Software (SPSS).

4.2. Research Results

4.2.1. *Mean of Factors*

In the task performance variables, there are six factor items. The result of respondents' responses can be seen in Table 3 as follows:

Table 3. Source of data collection of mean factors in task performance variables

Item	5		4		3		2		1		Mean
	f	%	f	%	f	%	f	%	f	%	
Creative, innovative and constructability design	14	77.78	3	16.67	1	5.56	-	-	-	-	4.67
Good design approach	7	38.89	11	61.11	-	-	-	-	-	-	4.27
Ability to solve problems	10	55.56	8	44.44	-	-	-	-	-	-	4.44
Knowledge of design, regulation, and contract administration	11	61.10	7	38.90	-	-	-	-	-	-	4.61
Accurate design, according to budget, quality and function	9	50.00	9	50.00	-	-	-	-	-	-	4.50
Job experience	6	33.33	12	66.67	-	-	-	-	-	-	4.33

The result is all factors in task performance get mean rate above 4. It can be concluded that the variables task performance influences the selection of architects. In the contextual performance variables, there are eight factor items. The result of respondents' responses can be seen in Table 4 as follows:

Table 4. Source of data collection of mean factors in contextual performance variables

Item	5		4		3		2		1		Mean
	f	%	f	%	f	%	f	%	f	%	
Speed in making work drawings & legal approval	6	33.33	10	55.56	2	11.11	-	-	-	-	4.22
Attention to important things in design and construction details	13	72.22	2	11.11	3	16.67	-	-	-	-	4.56
Enthusiasm and toughness in dealing with problems	8	44.44	5	27.78	3	16.67	1	5.56	1	5.56	4.00
Initiative in giving suggestions for improvising design	7	38.89	5	27.78	6	33.33	-	-	-	-	4.06
Self-control, rensponse and independence	5	27.78	8	44.44	4	22.22	-	-	1	5.56	3.89

Table 4. Source of data collection of mean factors in contextual performance variables (contd.)

Item	5		4		3		2		1		Mean
	f	%	f	%	f	%	f	%	f	%	
Social skills	3	16.67	8	44.44	4	22.22	2	11.11	1	5.56	3.56
Commitment to clients, design revisions, and job	14	77.78	1	5.56	3	16.67	-	-	-	-	4.61
Ability to lead and coordinate with contractor and consultant	7	38.89	5	27.78	5	27.78	1	5.56	-	-	4.00

In the table of mean contextual performance variables, it can be seen that all factors in contextual performance get mean rate above 3. It can be concluded that the variables contextual performance influences the selection of architects. In the network relationship and price factor, there are seven factor items. The result of respondents' responses can be seen in Table 5 as follows:

Table 5. Source of data collection of mean factors in network relationship and price variables

Item	5		4		3		2		1		Mean
	f	%	f	%	f	%	f	%	f	%	
Reputation, professional, and competence	9	50.00	7	38.89	1	5.56	1	5.56	-	-	4.33
Recommendations and references from other clients / consultants	7	38.89	9	50.00	2	11.11	-	-	-	-	4.28
Good relationship with clients	8	44.44	8	44.44	1	5.56	-	-	1	5.56	4.22
Repeat orders from clients (X3.4)	5	27.78	9	50.00	3	16.67	-	-	1	5.56	3.94
The price of services is determined based on the percentage value of the building	4	22.22	8	44.44	4	22.22	1	5.56	1	5.56	3.72
The stages of payment are in accordance with the agreement	4	22.22	6	33.33	5	27.78	2	11.11	1	5.56	3.56
Design that suits according to time and cost	7	38.89	5	27.78	6	33.33	-	-	-	-	4.06

In the table of mean network relationship and price factors, it can be seen that all factors in network relationship and price get mean rate above 3. It can be concluded that the variables network relationship and price influences the selection of architects.

4.2.2. *Analysis of One Way Anova*

One way Anova analysis were conducted on factors in each variables to aimed at finding out whether there were significant differences between factors in one variables, see Table 6.

Table 6. One way Anova analysis in task performance variables

	Sum of Squares		df	Mean Square	F	Sig.
Between Groups	2,083		5	,417	1,378	,239
Within Groups	30,833		102	,302		
Total	32,917		107			

Table 6. above shows that the value of significant for respondents' assessments of 0,20. Because it has a value p > 0,05, which means that there is significant difference between the task performance factors at the error rate of 5%.

Table 7. One way anova analysis in contextual performance variables

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15,222	7	2,175	2,485	,020
Within Groups	119,000	136	,875		
Total	134,222	143			

Table 7. above shows that the value of significant for respondents' assessments of 0,20. Because it has a value p > 0,05, which means that there is significant difference between the contextual performance factors at the error rate of 5%.

Table 8. One way anova analysis in network relationship and price factors

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9,302	6	1,550	1,698	,127
Within Groups	108,667	119	,913		
Total	117,968	125			

Table 8. above shows that the value of significant for respondents' assessments of 0,127. Because it has a value p > 0,05, which means that there is no significant difference between the network relationship and price factors at the error rate of 5%.

4.3. Discussions

The results of mean factor analysis in task performance, contextual performance, network relationship and price variables, shown that all factors are influential in selection of architects according to the developer. But there is one of the most influential factors in task performance factor are creative, innovative, and constructability. It confirms creative and innovative are influential because they are make it keep up with times and trends at the time. Also constructability is also known as build-ability. It means design can be realized in the real world so it can be help an architect to bring design solution to make it has a high aesthetic building.
One of the most influential factor in contextual performance is commitment to client, revisions, and job. It confirms when selecting architects, commitment is important because architect will loyal to client and defend client's need and will focus in their job assignment. In addition, there are differences in respondents' opinions on contextual performance variables.

One of the most influential factor in network relationship and price are reputation, professional, and competence. Reputation become good reference for client to know profile, project, how professional and competence that architect in their job also become good predictor of future behavior.

5. Conclusions and Suggestions

5.1. Conclusions

All of three factors are task performance, contextual performance, network relationship and price have mean value 3 and above, with 3 represents 'neutral', 4 'decisive in selecting the architect', and 5 'very decisive in selecting the architect'.

This means all factors of 3 variables are influential in decisive the selection of architects according to the developers in designing apartments in Surabaya.

The most influential factor from all factors in three variables is creative, innovative, and constructability design because design must have a high aesthetic value but if the design has a high aesthetic value but cannot be realized or have expensive budget that is nor accordance with target market / consumer, it will also harm the developer.

From the results of the one way Anova analysis, it was concluded that overall in task performance, network relationship and network factor did not have significant difference between the factors. It mean there is no difference of opinion between respondents. While for contextual performance have significant difference between the factors. It means there is difference of opinion between respondents. This happens because contextual performance is the supporting performance of all work in accordance with their respective fields.

5.2. Suggestions

It is expected that in the next study, researchers can deepen interviews for other apartment developer respondents. Besides that, it is suggested that architects can follow up so that designs are made more creative, innovative, and can be realized so that they can be superior in the apartment industry competition.

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