

**INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH  
TECHNOLOGY****ANALYSIS OF CONTRACTOR SATISFACTION TO PERFORMANCE OF THE  
GOVERNMENT PROJECT OWNER****Dedy Eko Suwandi, Miftahul Huda, Priyoto**

Graduate student (S-2) of Civil Engineering, University of 17 August 1945 Surabaya and  
As the President Director of PT. Indokon Raya (General Contractor), Surabaya-Indonesia<sup>\*1</sup>  
Lecturer of Civil Engineering, Faculty of Engineering, University of Wijaya Kusuma Surabaya  
Lecturer of Civil Engineering, Faculty of Engineering, University of 17 August 1945 Surabaya<sup>\*3</sup>

DOI: 10.5281/zenodo.1185199

**ABSTRACT**

This study aims to analyze the degree of importance and satisfaction of contractors on the performance of government project owners in East Java Province-Indonesia. This study used 6 variables and 42 indicators. Technique of collecting data using Likert Scale questionnaire (1-5) by involving 170 respondents of medium and large qualification contractor in East Java-Indonesia. The sampling technique uses combination of simple random sampling and purposive sampling method. Methods of data analysis using Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA). The result of the analysis concludes that the medium and large qualification contractor satisfaction index on the performance of government project owner in East Java Province is 57,89% or in the category is satisfactory. There are contractors answered 23,81% very satisfied, 40,48% satisfied, 21,43% enough satisfied 9,52% dissatisfied and 4,76% very dissatisfied. Priority factors that need to be improved by the project owner include: 1) Contract document clearly explains the scope of work and is used as the reference of the project owner, 2). Ease of approval of payment or bureaucratic flow that does not complicate the contractor, 3). Have a more secure payment system with regard to the terms of payment specified, 4). Payment agreements on government project owners are highly structured.5). Decisions are made promptly and appropriately to project issues, 6) Project Owner Decisions are in line with the contractor and 7). Adequacy of project execution time.

**KEYWORDS:** expectations, satisfaction, performance, contractors, owners of government projects.**I. INTRODUCTION**

Contractor companies are an important economic sector because they can contribute significant national gross peroduct (NGP), absorb large enough labor and have an important role in national development (Indonesian Construction Services Constitution, 2017) [1]. Construction services firms are highly prospective to grow, as on average > 60% of the State Budget (APBN) is allocated annually for infrastructure development [2]. Contractor companies also have an important role to absorb labor and become multiplier effect in the national economy. Thus the contracting company is an important sector for every country [3].

Projects are an essential part of a contractor's business activities that always involve multiple stakeholders [4]. Stakeholders are some groups or individuals that can influence or be influenced by the achievement of project objectives. The condition of stakeholders has a great influence on the success of the project [5]. The success of project management is influenced by many things, including the management of stakeholders related to the project. The success of the project depends on the intersection of expectations and stakeholder performance throughout the project cycle to interact optimally in accordance with the main tasks and functions of each stakeholder [6]. One of the stakeholders who has a major influence on the contractor business is the project owner. The working relationship between project owner and contractor is arranged in contractual form [1].

Although the working relationship between the contractor and the project owner is regulated in contractual terms, there are still many problems caused by the project owner's performance [4]. Some of the problems that often occur due to the performance of the project owner are among others caused by: late payment, design changes, poor communication, less clear contract documents, difficult bureaucracy and so on ([7]. These problems resulted in the contractor unable to work effectively and efficiently, the project completion became

late and the contractor eventually incurred losses. Therefore, it is necessary to measure the contractor's SERVQUAL to the performance of the project owner of the government.

Research related to SERVQUAL is often done, but in general the research measure about consumer satisfaction to a product. Fitriana et al., (2014) [4] has suggested that the measurement of performance satisfaction from a contractor perspective is an ideal assessment used to improve project quality. The level of contractor satisfaction can be influenced by cultures related to motivation, efforts to innovate, incentives offered and implementation of new technologies. However, to date in Indonesia, the contractor's satisfaction evaluation on the performance of service users (project owners) is still not widely implemented. Some of these studies can be seen in Table 1.

**Table 1. Related Research SERVQUA**

No	Researchers	Title
1	Legcevic, 2009 [8]	Quality Gap in Educational Services in Viewpoints on Students
2	Kwek et al., 2010[9]	Education Quality Processes Model and its Influence on Students Perceived Service Quality
3	Sharma & Narang, 2011 [10]	Quality of Healthcare services in Rural India: The User Perspective
4	Cerry, 2012 [11]	Assessing the Quality of Higher Education Services Using a Modified Servqual Scale
5	Osman & Sentosa, 2013 [12]	Service Quality and customer Loyalty in Malaysian Rural Tourism: A Mediating Effect of Trust
6	Khan, 2014 [13]	Strategic Management For Costumer Satisfaction Within Construction Project
7	Fitriana et al., 2014 [4]	Measurement of Contractor Satisfaction on Client Performance in Private Construction Project
8	Rahman & Alzubi, 2015 [14]	Exploring Key Contractor Factors Influencing Client Satisfaction Level in Dealing with Construction Project: an Empirical Study in Jordan
9	Noviana et al., 2016 [15]	Measurement of Contractor's Satisfaction with Performance Clients on Government Construction Projects.
10	Huda et al., 2017 [3]	The Effect of Project Performance to Satisfaction of The Project Owner
11	Shafieisabet et al., 2017 [16]	An Assessment of Villagers' Satisfaction with the Quality of Construction-Related Services Based on the SERVQUAL Model

Table 1 describes the various studies with the theme of SERVQUA. Still a little research of SERVQUA in the field of contractor company. Fitriana et al. (2014) [4] about the measurement of contractor satisfaction with the performance of clients of private construction projects. Research Noviana et al. (2016) [15] on the measurement of contractor satisfaction on the performance of clients of government construction projects, implemented in Central Java Indonesia. This study relates contractor satisfaction to the performance of government project owners in East Java Indonesia, similar to Noviana et al. (2016) [15], but this study takes a combination of variables and indicators from previous studies.

The objectives of this study are to: (1) identify indicators of interest to contractors and indicators affecting the assessment of the performance of government project owners, analyze the contractor's satisfaction index on the performance of government project owners, (2) analyze the factors that become priorities for performance enhancement and sustainability by government project owners and (3) provide solutions and recommendations for the performance of government project owners, so contractors can work optimally. Given this research, it is hoped that it will be useful to know the performance priorities of government project owners which influence the contractor's performance optimally.

## II. MATERIALS AND METHODS

### Research design

This research uses quantitative descriptive approach based on user-approach with survey research type. This study used primary data through the spread of Likert scale questionnaires (1-5) collected from the population of contractor companies in East Java. The sampling technique uses proportional and purposive sampling. Research respondents are the owners of medium and large qualification contractor companies in East Java Province, which are 85 companies that have certification of business entity (SBU), are still actively operating and have offices in East Java-Indonesia province. Number of research variables as many as 6 variables with 42 indicators. Preliminary research was conducted by distributing questionnaires to 20 companies to test the validity and reliability of measuring instruments. Preliminary research results show the level of reliability and validity of the questionnaire.

**Data analysis**

The SERVQUA model generally uses the Customer Satisfaction Index (CSI) method and the Importance Performance Analysis (IPA) Method [17] [18] [19]. The method of Customer Satisfaction Index (CSI) consists of process stages including: (1) Determining Mean Importance Score (MIS) and Mean Satisfaction Score (MSS), (2). Create a weight factor (WF), (3). Creating Weighting Score (WS), and (4) Determining CSI. The formulas used are:

$$MIS = \frac{\sum_{i=1}^n Y_i}{n} \dots\dots\dots(1), \quad MSS = \frac{\sum_{i=1}^n X_i}{n} \dots\dots\dots(2)$$

$$WF = \frac{MIS}{\sum_{i=1}^p MIS_i} \times 100 \% \dots\dots\dots(3) \quad WSi = W_{fi} \times MSS_i \dots\dots\dots(4)$$

Where :

- n = Number of respondents
- Y<sub>i</sub> = Value of attribute importance to i
- X<sub>i</sub> = Value of service performance / attribute quality to i
- P = Number of attributes of interest (k)
- I = Attribute service i-th
- i = Service attribute

From the level of satisfaction of respondents as a whole can be seen from the criteria of customer satisfaction or consumer level in Table 2

**Table 2 Value of Consumer Satisfaction Index**

No	Value	Index
1	81% - 100%	very satisfied
2	66% - 80.99%	satisfied
3	51% - 65.9%	enough satisfied
4	35% - 50.99%	dissatisfied
5	0% - 34.99%	very dissatisfied

Source: PT. Sucofindo [4][15]

While the method of Importance Performance Analysis (IPA) [20] [21] consists of a process of stages: (1) Calculating the level of respondent's suitability by level of performance and importance, (2) Calculating the level of implementation, (3) Calculating attributes of importance and performance, and (4) Doing mapping in Cartesian diagram. The formulas used include:

$$Tki = \frac{X_i}{Y_i} \times 100 \dots\dots\dots(5),$$

$$X' = \frac{\sum X_i}{n} \dots\dots\dots(6)$$

$$Y' = \frac{\sum Y_i}{n} \dots\dots\dots(7),$$

$$X'' = \frac{\sum X_i}{k} \dots\dots\dots(8)$$

$$Y'' = \frac{\sum Y_i}{k} \dots\dots\dots(9),$$

$$X''' = \frac{\sum_{i=1}^N X_i}{N} \dots\dots\dots(10)$$

$$Y''' = \frac{\sum_{i=1}^N Y_i}{N} \dots\dots\dots(11)$$

Where :

- Tki = Degree of respondent's suitability
- X<sub>i</sub> = Score of performance level assessment
- Y<sub>i</sub> = Score of importance rating
- X' = Average score of client performance level
- Y' = Average score of importance to contractor satisfaction
- n = Number of respondents
- X'' = Average score of implementation level or Project Owner performance of all factors or attributes
- Y'' = Average level of importance of all attributes that affect contractor satisfaction
- N = Number of attributes or facts that can affect the contractor's satisfaction with the Project Owner's

performance

The next level of these elements will be split into four parts into the Cartesian diagram as in Figure 1

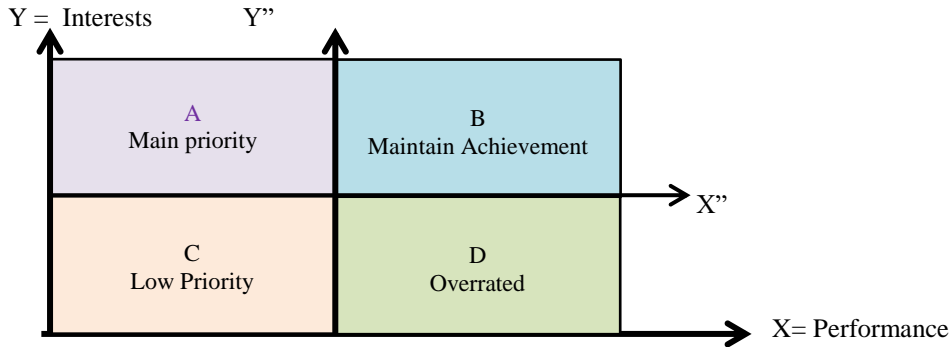


Figure 2 Cartesian Diagram Importance Performance Analysis (IPA)

### III. RESULTS AND DISCUSSION

The results of preliminary research indicate that the research instrument is valid and realibel, so the instrument can be used for further research. Based on the answers of 85 respondents Mean Importance Score (MIS) and Mean Satisfaction Score (MSS) can be seen in Table 3.

Table 3 Calculation of Mean Importance Score (MIS) and Mean Satisfaction Score (MSS)

Code	Description of the Questionnaire	MIS	MSS	WF	WSi
X1	Project Needs				
X11	Contract documents clearly explain the scope of the project work	4,33	2,05	2,65	5,43
X12	Contract documents are used as reference of the Project owner	4,26	2,17	2,61	5,66
X13	The Project Owner understands the construction process of the construction project	3,43	2,48	2,10	5,20
X14	Project Owners have a clear idea that is embodied in the design drawings	3,83	2,67	2,35	6,26
X15	Project Owner is able to explain the limits of work, scope and technical specifications well	3,52	2,83	2,16	6,11
X16	The Project Owner understands the needs of the contractor in terms of fulfilling its needs	4,12	2,90	2,52	7,33
X2	Project Finance				
X21	Conformity / fairness of owner estimate value to project price	4,29	3,05	2,62	8,00
X22	Accuracy of payment by Project Owner in accordance with work contract	4,36	3,31	2,67	8,83
X23	Ease of approval of payment or bureaucratic flow that does not complicate the contractor	4,33	2,88	2,65	7,65
X24	Project Owners have a clear payment system and set forth in the budget	4,33	3,10	2,65	8,21
X25	Project Owners have a more secure payment system with due regard to the terms of payment specified	4,40	2,48	2,70	6,68
X26	Payment agreements on Government Project Owners are highly structured	3,76	2,62	2,32	6,07
X27	Implementation money and the maintenance period of government projects are relatively cheaper	3,40	2,86	2,09	5,96
X28	In the government project there is no delay influenced by the national policy and the improper local government budgeting	3,81	3,00	2,33	7,00
X3	Decision Making				
X31	Decisions / solutions are done quickly and appropriately to project issues	3,86	2,86	2,36	6,75
X32	Decision / solution without waiting for analysis from the supervisory consultant	3,64	3,02	2,23	6,75
X33	Project Owner's Decision is in line with the contractor	4,33	3,05	2,65	8,09
X34	Unity of opinion of Project Owner team (between owner, consultant and MK)	3,95	2,90	2,42	7,03
X35	Owners Government projects make decisions relatively quickly and precisely	3,86	2,83	2,36	6,69
X36	Make a decision by waiting for a higher decision hierarchy (title)	4,07	2,81	2,49	7,01
X37	Decision-making is always on the side of the contractor's interests	3,74	3,19	2,29	7,30
X4	Management Capabilities				
X41	The Project Owner provides sufficient authority to the Constitutional Court	3,33	2,71	2,04	5,54
X42	Project Owners have work qualities / competencies	3,67	2,64	2,25	5,93
X43	Project Owners have good internal organizational skills	3,55	3,02	2,17	6,57
X44	The Project Owner administration system works well	4,12	3,29	2,52	8,29
X45	The project owner is able to control the problems arising from the external	4,14	2,98	2,54	7,55
Code	Description of the Questionnaire	MIS	MSS	WF	WSi
X5	Government Project Owner Performance				

X51	Sufficient and timely Information Support from Project Owners	3,55	2,83	2,17	6,16
X52	Adequate project duration (realistic allocation of implementation duration)	4,21	2,69	2,58	6,94
X53	Readiness of land to begin the development process (eg no dispute)	3,43	2,98	2,10	6,25
X54	Project Owners regularly monitor progress / performance on a regular basis	3,45	2,83	2,11	5,99
X55	Project Owners are not too interfering with the Contractor's business	4,17	2,50	2,55	6,38
X56	Project Owners supports if required addendum contract	4,05	2,64	2,48	6,55
X57	Project Owners provide more support to contractors	4,05	3,19	2,48	7,91
X58	Project Owners have regular monitoring schedules	3,43	3,12	2,10	6,55
X59	Project Owners have Integrity and honesty	3,86	3,29	2,36	7,76
X510	Qualified and effective coordination (meetings)	4,26	3,26	2,61	8,51
X511	The owner of the Project discipline coordinates	4,29	3,74	2,68	9,81
X6	ISO and K3 management System				
X61	Project owner has implemented ISO and SMK3 system in its management	3,64	2,86	2,23	6,37
X62	The project owner has implemented ISO and SMK3 management in the implementation	3,67	2,88	2,25	6,47
X63	The project owner completed the amdal traffic and submitted the land	3,57	3,00	2,19	6,56
X64	Project owners understand the existence of offices, workshops, staff and labor	3,50	2,93	2,14	6,28
X65	The project owner values the intellectual property and methods of the Contractor's work	3,69	2,98	2,26	6,73
	Jumlah	163,29			289,11

Source: Analysis Results

From Table 3 above we get  $CSI = 289,11 / 5 = 57,89\%$  (meaning satisfied). From the calculation results obtained CSI value 57.89%, CSI index calculation into the third category that shows that respondents feel quite satisfied with the performance of government project owners in East Java Province. The gap analysis is taken into account to evaluate the contractor's satisfaction with the Project Owner's performance by calculating the gap between the rating scores of the satisfaction level and the rating scores of importance for all of the project management performance evaluation variables. The results of Gap analysis can be seen in Table 4. The result of gap analysis shows that there are contractors answer 23.81% very satisfied, 40.48% satisfied, 21.43% quite satisfied, 9.52% not satisfied and 4.76% very dissatisfied.

Table 4. Gap Scores For Performance Variables

Var	MIS	MSS	GAP	Indeks Kepuasan
X11	4.048	2.333	34.29	very dissatisfied
X12	4.048	2.262	35.71	very dissatisfied
X13	3.786	2.357	28.57	dissatisfied
X14	3.881	2.571	26.19	dissatisfied
X15	3.762	2.738	20.48	satisfied
X16	3.976	2.833	22.86	enough satisfied
X21	4.190	2.905	25.71	enough satisfied
X22	4.357	3.071	25.71	enough satisfied
X23	4.238	2.833	28.10	dissatisfied
X24	4.071	3.024	20.95	enough satisfied
X25	4.095	2.786	26.19	dissatisfied
X26	3.952	2.833	22.38	enough satisfied
X27	3.881	2.929	19.05	satisfied
X28	3.929	2.905	20.48	satisfied
X31	3.929	2.857	21.43	enough satisfied
X32	3.929	2.976	19.05	satisfied
X33	4.024	2.857	23.33	enough satisfied
X34	3.857	2.857	20.00	satisfied
X35	3.929	2.976	19.05	satisfied
X36	3.857	2.905	19.05	satisfied
X37	3.810	3.238	11.43	very satisfied
X41	3.595	2.881	14.29	very satisfied
Var	MIS	MSS	GAP	Indeks Kepuasan
X42	3.738	2.738	20.00	satisfied

X43	3.667	3.000	13.33	very satisfied
X44	3.952	3.000	19.05	satisfied
X45	3.905	3.048	17.14	satisfied
X51	3.762	2.857	18.10	satisfied
X52	3.952	2.833	22.38	satisfied
X53	3.714	2.833	17.62	satisfied
X54	3.786	2.905	17.62	satisfied
X55	3.833	2.929	18.10	satisfied
X56	3.857	2.929	18.57	satisfied
X57	3.929	3.071	17.14	satisfied
X58	3.905	3.143	15.24	very satisfied
X59	3.952	3.167	15.71	very satisfied
X510	4.143	3.143	20.00	satisfied
X511	4.167	3.119	20.95	enough satisfied
X61	3.714	2.976	14.76	very satisfied
X62	3.619	2.952	13.33	very satisfied
X63	3.524	2.976	10.95	very satisfied
X64	3.500	2.929	11.43	very satisfied
X65	3.690	2.929	15.24	very satisfied

Source: Analysis Results

Importance Performance Analysis (IPA) are depicted in the four-quadrant diagrams, namely quadrants A, B, C and D. Each quadrant has the following criteria: quadrant A (top priority), quadrant B (important priority), C quadrant less important for contractors) and quadrant D (not important, but the implementation is over). The calculation results of Importance Performance Analysis (IPA) as shown in Figure 3 below.

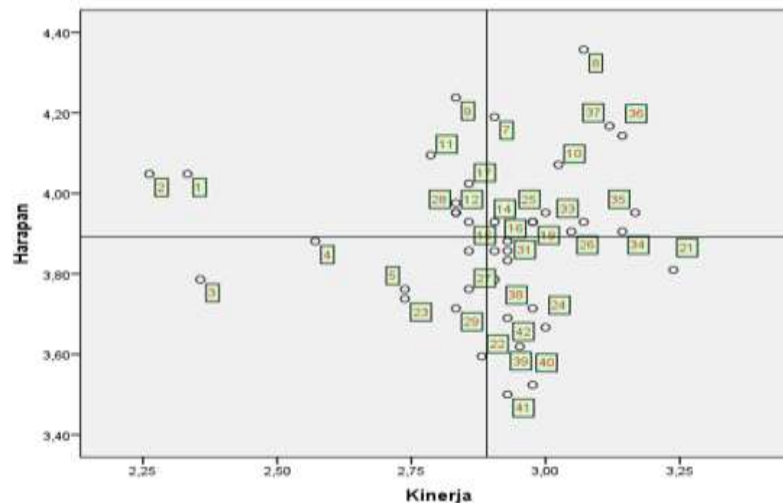


Figure 3. Results of Importance Performance Analysis (IPA)

### 1. Quadrant A

The variables in this quadrant are the main priority for improved performance by Government Project Owners as they have an effect on contractor satisfaction. After the analysis with IPA, the variables that enter the quadrant A are:

- 1) The contract document clearly states the scope of the project work (X11).
- 2) Contract document is used as the reference of Project Owner (X12).
- 3) Ease of approval of payment or bureaucratic flow that does not complicate the contractor (X23).
- 4) Project Owners have a more secure payment system with due regard to the terms of payment specified (X25).
- 5) Payment agreements on Government Project Owners are highly structured (X26).
- 6) Decision / solution done quickly and appropriately to the project problem (X31).
- 7) The Project Owner's Decision is in line with the contractor (X33).
- 8) Adequacy of project implementation duration (realistic allocation of implementation duration) (X52).

## 2. Quadrant B

Showing these variables in this awareness position, it is important to influence the contractor's satisfaction with the Project Owner's performance and be successfully implemented by the Project Owner. After analyzing with IPA, the incoming variables of B quadrant are:

- 1) Conformity / fairness of owner estimate value to project price (X21).
- 2) Accuracy of payment by Project Owner pursuant to work contract (X22)
- 3) Project Owners have a clear payment system and set in APBD / APBN (X24).
- 4) On government projects, no delays are affected by national policies or inappropriate local budgeting (X28)
- 5) Decision / solution without waiting for analysis from supervisory consultant (X32).
- 6) Owners Government projects make decisions relatively quickly and appropriately (X35).
- 7) Project Owner administration system running well (X44)
- 8) Project Owners provide more support to contractors (X57)
- 9) Project Owners have Integrity and honesty (X59)
- 10) Qualified and effective coordination (meeting) (X510)
- 11) Project owner discipline coordinate (X511)

## 3. Quadrant C

Indicating the variables in this quadrant position is deemed less important to the contractor, and is carried out solely by the Project Owner. After analyzing with IPA, the incoming variables of B quadrant are:

- 1) Project Owners understand construction project construction process (X13)
- 2) The Project Owner has a clear idea that is embodied in the design drawings (X14).
- 3) The Project Owner is able to explain the limits of work, scope and technical specifications well (X15).
- 4) Project Owners have work quality / competence (X43)
- 5) Sufficient and timely Information Support from Project Owner (X51).
- 6) Readiness of land to begin the development process (eg no dispute) (X53)

## 4. Quadrant D

Contractor satisfaction variables on the performance of Project Owners in this quadrant are overestimated in their implementation, this is mainly due to the fact that the contractor considers the implementation of these variables less important, but the implementation is done very well by the contractor so it is very satisfactory. After analyzing with IPA, the incoming variables of Quadrant D are:

- 1) Decision-making is always in favor of the contractor's interests (X37).
- 2) The Project Owner gives sufficient authority to the Constitutional Court / Planner consultant (X41).
- 3) Project Owners have good internal organizational skills (X43).
- 4) The project owner is able to control the problems arising from external parties (X45).
- 5) Project Owners do not interfere with the affairs of the Contractor's Area (X55)
- 6) Project Owners have regular monitoring schedules (X58)
- 7) Project owner has implemented ISO and K3 system in its management (X61)
- 8) The project owner applies ISO and K3 management to consultants and contractors (X62)
- 9) The project owner completes the amdal traffic and redirects the land to the contractor (X63)
- 10) Project owners understand the existence of offices, workshops, staff and contractor workers (X64)
- 11) The project owner values the intellectual property and methods of the Contractor's work / (X65).

## IV. CONCLUSION

Based on the result of Customer Satisfaction Index (CSI) or medium and high qualification contractor satisfaction index on the performance of government project owner in East Java Province obtained contractor satisfaction index of 57.89% or in the category is quite satisfactory. There are contractors answered 23,81% very satisfied, 40,48% satisfied, 21,43% enough satisfied, 9,52% dissatisfied and 4,76% very dissatisfied. Out of a total of 42 factors, there are 8 factors that are the main priority for improved performance by Government Project Owners in East Java because they are very influential on satisfaction of medium and large qualification contractors. There are 11 factors that have been well implemented by the Project Owner of the Government to satisfy the contractor, therefore these 11 factors must be maintained.

## V. ACKNOWLEDGEMENTS

Thank you and appreciation submitted to the leadership and staff of PT. Indokon Raya (general contractor),

Surabaya-Indonesia and the association of contractor companies which have given much contribution in the form of easiness and accessibility to the researcher to obtain research data.

## VI. REFERENCES

- [1] Presiden Republik Indonesia. Undang - Undang Republik Indonesia No. 12 Tahun 2017. Tentang Jasa Konstruksi. Jakarta. 2017
- [2] Huda, M. & Wibowo. Strategies, Performance, Sustainability and Competitiveness Model: Small and Medium Construction Services Industries in Indonesia. *World Applied Sciences Journal* 25 (8): 1186-1196, 2013
- [3] Huda, M. Dynamic model: The influence of project management competencies, resources and capabilities towards the performance of small-medium qualification contractor in Indonesia. *International Journal of Engineering and Technology (IJET)*. Vol 9 No 5 Oct-Nov. 2017.
- [4] Fitriana, D. Florencia Y. K. O, Jati Utomo, D. H. Tanto. Pengukuran Kepuasan Kontraktor Terhadap Kinerja Klien Pada Proyek Konstruksi Swasta. *Jurnal Teknik Sipil.*, Volume 3, Nomor 1, Halaman 283 – 295. 2014
- [5] Chandra, M.P. Indarto. Wiguna. Model Pemangku Kepentingan dalam Keberhasilan Proyek, *Jurnal Teknik Industri*, Vol. 13, No. 1, Juni 2011, 51-58
- [6] Wiguna, P.T. & Chandra, H.P. Pengelolaan Pemangku Kepentingan Dalam Upaya Peningkatan Inovasi Kinerja Proyek. Thesis (S-2) Program Studi Magister Manajemen Teknologi Institut Teknologi Sepuluh Nopember Surabaya. 2012.
- [7] Soetanto, Proverbs. Modelling the Satisfaction of Contractor: the impact of client performance. University of Wolverhampton, UK. 2002
- [8] Legcevic, J. Quality Gap in Educational Services in Viewpoints on Students. *Eco-nomic Thought and Practice*, 18, 279-298. 2009.
- [9] Kwek, C. L., Lau, T. C., & Tan, H. P. Education Quality Processes Model and its Influence on Students Perceived Service Quality. *International Journal of Business and Management*, 5, 154-165. 2010.
- [10] Sharma, J., & Narang, R. Quality of Healthcare Services in Rural India: The User Perspective. *Vikalpa*, 36, 51-60. <https://doi.org/10.1177/0256090920110104>. 2011.
- [11] Cerry, S. Assessing the Quality of Higher Education Services Using a Modified Servqual Scale. *Annals Universities series Oeconomica*, 14, 664-679. 2012
- [12] Osman, Z., & Sentosa, I. Service Quality and Customer Loyalty in Malaysian Rural Tourism: A Mediating Effect of Trust. *International Journal of Marketing Practices*, 1, 31-42. 2013.
- [13] Khan. Strategic Management For Costumer Satisfaction Within Construction Project. *European Journal of Contemporary Economics and Management* December 2014 Edition Vol.1 No.2. 2014.
- [14] Rahman, A. & Alzub, Y. Exploring Key Contractor Factors Influencing Client Satisfaction Level in Dealing with Construction Project: an Empirical Study in Jordan. *International Journal of Academic Research in Business and Social Sciences*. Dec 2015, Vol. 5, No. 12.
- [15] Hastuti, N.D. Luthfia, N. Ayu. Pengukuran Kepuasan Kontraktor terhadap Kinerja Klien pada Proyek Konstruksi Pemerintah. Jurusan Teknik Sipil, Universitas Diponegoro, Semarang. 2016
- [16] Shafieisabet, N. Doostisabzi, B. Azharianfar, S. An Assessment of Villagers' Satisfaction with the Quality of Construction-Related Services Based on the ERVQUAL Model. *Current Urban Studies*, 2017, 5, 20-34.
- [17] Idrus, B.A and, Sodangi, M. Framework for evaluating quality performance of contractor in Nigeria. *International journal of Civil and Environmental Engineering*, Vol (10), no.01. 2011.
- [18] Importance-Performance Analysis (IPA) in Evaluating Japan's E- government Services. *Journal of Theoretical and Applied Electronic Commerce Research*. Unicersidadnde Talca.Chile
- [19] Excel, C. N., 2012. Satisfaction assessment in construction projects: a conceptual framework. Aston University, Birmingham, UK. 2: 86-102.
- [20] Sumaga, A.U. Analisa Kepuasan Pengguna Jasa Terhadap Penerapan Rekayasa Konstruksi Profesional Ruko di Kawasan Bussiness Park Kota Gorontalo. *Jurnal Ilmiah Media Engineering* Vol.3, No. 1 pp.6-13. 2013
- [21] Taprian, D. Abdulah. Hafnidar A. Rani. Pengaruh Kinerja Kontraktor Terhadap Kepuasan Kepuasan Stakholders di Dinas pengairan Aceh. *Jurnal Teknik Sipil. Pascasarjana Universitas Syiah Kuala*, Volume 4, No.1, pp. 52-60. 2015.