



To Determine the Factors Affecting on Supplier Selection for Material Supply in Construction Company by using RII

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Abstract

Construction industry is one among the large employment providers after agriculture. Despite it importantly, the development industry has not made the required management progress. Within the formation of supply chain to extend productivity and responsiveness Industry. As we've a bent to all or any understand that Construction sector is associate unorganized sector wherever numerous individual parties in Construction offer Chain on the brink of finish one project. Generally several offer Chain players within the development industry return together for less than one project and on completion of the project they're going their separate ways. This paper contains a review on previous research paper to seek out our various methods and factors affected on for supplier selection by other industries includes housing industry as well as here we also trying to find out supplier point of views also for selling of material to company. so here we prepare a questioner and analysis them by using RII(Relative Importance Index), then we rank the factors as per RII to be determine factors affecting on supplier selection.

Key Words- Construction Industry, Research Papers, Questioner, RII, Factors affecting

1. INTRODUCTION

As we've understand that Construction sector is associate unorganized sector wherever numerous individual parties in Construction offer Chain on the brink of finish one project. Generally several offer Chain players within the development industry return together for less than one project and on completion of the project they're going their separate ways. During this industry all the supplier to safe guard their own profits and wish their desires to be attended initial. The Supplier selection study in Construction supply chain management is relatively unexplored in Indian context. Much enlighten business had started with this concept with the help of experts and consulting firms. However, expectedly Indian enterprises had not taken this approach thus far. A summary of the tactic of supplier selection are often helpful for companies to possess a transparent understanding of the concept so on enhance their success and competitiveness. The results show that the appliance of a structured decision-making technique is critical, especially under the complex conditions that include both qualitative and quantitative criteria. This study would be an enormous approach towards integrating vendors within the development supply chain management and improves its deliverables as well as what the vendors wish from company regarding materials, payment etc..

2. OBJECTIVE OF PAPER

To determine the factors affecting supplier selection in construction sectors. Following are the objectives of this paper,

- [1] To study literature like journals, papers, books, etc. for identification of the factors affecting supplier selection in construction sectors.
- [2] To analyze the questioner collected from various sites by using RII and Rank the factors.

3. METHODOLOGY



For this paper, we start with introduction part whether we try to find out current scenario in construction sector regarding material supply. After deciding objectives for this paper we start to study various literature like journal, research papers, book, internet etc.. to identify the previous research light up on this regards. What kind of questioner or method they adopt to identify the problem & its solution. Further we prepare the questioner & carrying out the survey among the construction companies and supplier to identify what factors affect on supplier selection for material supply. Then by using likart scale and Relative Importance Index [RII] we rank the factors which are to be considering for supplier selection. Lastly we discuss results, discussions and Conclusion.

4. LITERATURE REVIEW

The author Georgios N. Aretoulis, Glykeria P. Kalfakakou at.el..., specialise in providing a uniform approach in selecting the simplest supplier through the formation and use of an appropriate mathematical equation supported multiple criteria. Questionnaire survey is employed to seek out the function of prototype. The participants were presented with a predefined set of criteria and were asked to rank them consistent with their significance. This paper provides an easy, practical and easy methodology; to assist managers evaluate potential suppliers. the simplest supplier is taken into account the one who acquires the very best score consistent with the proposed model. The author finalize a number of the standards for suppler selection like, Special charges, shipping cost, total evaluated cost to destination, Expiration date of bidder's quotation, discount percentage, terms of payment, escalation, material dimensions, Total cost acceptance of project terms and conditions, guarantee for delivery date, technically acceptable material etc..

The author Carr and Pearson observed that, firms with a strategic approach to buying were more involved in supplier evaluation than other firms. it had been also shown that this strategic approach had a positive impact on buyer-seller relationships and eventually , supplier evaluation systems had a positive effect on the buying firm's financial performance and should benefit various departments of the buying company.

The author Vonderembse and Tracey also observed that, supplier selection tactics positively impact on a buying firm's manufacturing performance. They demonstrated that prime performing companies attach greater importance to key supplier selection criteria like quality and delivery performance than low performing companies. Increased reliance on supplier capabilities and technologies, however, increases the impact that supplier selection and assessment can wear the buying firm and especially, its performance.

The author Don Amila Sajeevan Samarasinghe, John E Tookey at.el, study on building materials purchasing comes with supplier selection, and depend upon careful examination of supplier economics among other criteria. Supplier selection is that the purchasing function that forms the inspiration for the success or failure of projects. Supplier selection may be a multi-criteria deciding problem which incorporates both qualitative and quantitative considerations. This study specializes in small to medium construction company to secure 'best prices' for his or her key material inputs. As per author past literature focused on the manufacturing industries and thus an area exists for development of pertinent supplier selection models within the housing industry because it a singular sector by itself since all decision methods employed by manufacturing industry won't be relevant to the development sector. This paper found that the criteria's like quality, delivery dependability, price, etc play more crucial role for supplier selection.

As per Hamed Taherdoost and Aurelie Brard, In supplier selection company perform firm identification, evaluation and contract with supplier for material delivery. during this paper the author specialise in overall supply chain management, supplier selection criteria and supplier selection evaluation methods (multi-criteria decision making). A summary of the tactic of supplier selection are often helpful for companies to possess a transparent understanding of the concept so on enhance their success and competitiveness. The results show that the appliance of a structured decision-making technique is critical, especially under the complex conditions that include both qualitative and quantitative criteria. This provide overall review on SCM, Supplier selection criteria etc. As per author the method of supplier selection are going to be helpful for companies to know the concept of supplier selection. Supplier selection



criteria are dividing into quantitative and qualitative attributes and on the purchasing situation of materials this selection criteria may change.

As per Juthathip Suraraksa and Kwang Sup Shin, this integrates supplier selection and monitoring phases, which aren't independent of every other for systematic supplier management framework. During this paper the author explores the difference within the set of criteria for supplier selection and supplier monitoring. This paper specializes in automotive industry in Thailand. This paper shows three-step framework of this study, Step-I Identifying criteria Step-II analytic hierarchy process [AHP] & Step-III comparative Analysis. The most dimensions were Cost, Quality, Capacity, Service, Finance, Information and technology (ICT), and Sustainability of this study. The complete set of criteria was divided into two sets first, the set of criteria for choosing the supplier consisted of seven main dimensions (level 1) and 33 criteria (level 2).

The author Ruth Mwikali and Stanley Kavale, focus on identify the factors affecting supplier selection; the supplier selection process. The author state that cost criterion may be a key factor affecting supplier selection for it dictates among many elements, the profit margins. Technical capability, quality of materials and therefore the profile of the supplier also are closely considered. To Analysis Factors Affecting Optimal Supplier Selection the authors specialize in Cost Criteria, Price, Technical Capability, Quality Assessment, Organizational Profile, Service Levels, Delivery, time interval for delivery of materials, simple Communication, Response of consumers, Performance History, Geographical Location etc.. As per author Supplier selection should be an open and transparent process, thorough and detailed to spot the salient and most vital aspects of suppliers.

5. RESEARCH GAP

After studying various literatures, we found that there is no combine interest shows through company quality standard issue as well as Suppliers Profile point of views. Some of the researcher generates a big questioner which is quite difficult to fill by company due to company's policy. As well as researcher focus only in point of views of company but no one try to consider the supplier views also. So here we are preparing the questioner to try to fulfill this gap.

6. QUESTIONER DESIGN AND ANALYSIS

By using the various literatures we prepare a questioner for Determine the Factors Affecting on Supplier Selection for Material Supply in Construction Companies. For creating of this questioner we mainly focus on company quality standard issue as well as Suppliers Profile point of views with sub questioning. Here we are use the rating scale of Strongly Agree (5), Agree (4), Neutral (3), Disagree (2) and Strongly Disagree (1). Here we use Relative Importance Index[RII] to identify the rank of questions.

B] Questions Based on Actual Field Reality Related

Category 1: Company Point of View

Table No.1 RII Analysis of Company Point of Vies Factors

Qn. No.	Questions	1	2	3	4	5	RII	Rank
20	Is the term Certification of supplier is important for supplier selection.	1	2	6	16	5	0.747	1
18	Suppliers are not primarily open in negotiating financial matters are to be considering for selection criteria.	1	3	8	16	2	0.700	2
10	At what level you think the Acceptance of project terms and conditions is to be consider for material supplier selection	1	2	11	14	2	0.693	3
1	How much you think Quality of the material to be kept up to as per standards.	3	2	6	18	1	0.680	4



7	How much the geographic location of supplier matters for material delivery?	5	2	2	18	3	0.680	5
17	Up to what status During emergency provide credit consider for supplier selection.	2	2	12	14	0	0.653	6
12	Is the term market reputation affect the supplier selection for delivery of construction materials,	2	3	14	10	1	0.633	7
5	Up to what status is your communication between Company & Supplier consider for material supply.	4	2	15	6	3	0.613	8
3	How much is the production capacity of supplier, does it able to achieve the target set?	4	2	18	6	0	0.573	9
Qn. No.	Questions	1	2	3	4	5	RII	Rank
6	Is the Terms of payment matters for consideration of supplier selection	6	4	12	6	2	0.560	10
8	How much you think about the discount percentage matters the supplier selection Process.	3	17	5	5	0	0.480	11
2	High level should be achieve on the delivery aspect of the Product or material	10	4	12	4	0	0.467	12
11	Up to what status Technical support may matters the supplier selection process.	7	12	8	3	0	0.447	13
13	Technical expertise of supplier has helped us immensely to finish the project as per given schedule and budget	12	8	4	4	2	0.440	14
9	Is Materials dimension consider for supplier selection for materials supply.	12	8	8	1	1	0.407	15
14	Testing capability of supplier ensured execution of work according to QA and QC.	12	10	4	3	1	0.407	16
4	What you think about Delivery time will considerable for construction Material?	12	9	6	3	0	0.400	17
16	Provides incentives for waste elimination is to be consider	14	11	2	2	1	0.367	18
15	Poor testing capability of supplier has delayed the work	18	6	3	2	1	0.347	19
19	Suppliers are not at all transparent and open in all matters are to be consider for supplier selection.	14	10	6	0	0	0.347	20

Category 2: Suppliers Pont of Views

Table No.2 RII Analysis of Supplier Point of Vies Factors

Qn. No.	Questions	1	2	3	4	5	RII	Rank
6	Does the awareness of the supplier to towards environmental sensitivy should be considered	0	0	1	4	5	0.880	1
7	How much should be the professionalism with the suppliers angel and customer as well	0	0	0	8	2	0.840	2
2	How much the supplier profiles matter while finalizing quotation	0	1	1	4	4	0.820	3



1	How much you think the mutual trust between supplier and customer	0	0	2	6	2	0.800	4
3	How much the Suppliers Attitude towards Customer matters in considering for supplier for a longer time	0	0	3	5	2	0.780	5
4	Up to what level u agree with the affect risk factor to be considered while finalizing a consignment.	0	1	4	3	2	0.720	6
5	How much the reliability should be of the customer on the supplier about the product deliver on time	0	1	4	3	2	0.720	7
8	How which the legal past legal issue should matter finalizing a product delivery.	1	1	3	4	1	0.660	8

SAMPLE CALCULATION FOR RII AND GRAPHICAL REPRESENTATION FOR Q.20

$$(5*5) + (4*16) + (3*6) + (2*2) + (1*1)$$

$$RII = \frac{\quad}{5*30}$$

RII =0.747 and Rank is 1 out of 20

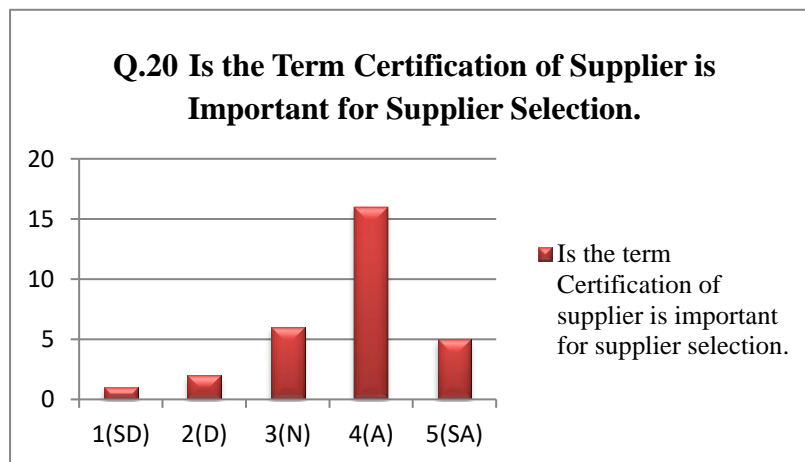


Chart No.1 Views of Company against Q.20

The graphical representation clear that, out of 30 participant 16 participant i.e. 53% participants are agree about certification is important factor for selection of supplier. ISO Certification, Registered supplier of company etc.. Certificates are very important, while some company does not focus on these criteria. But the number of these companies is less as compared with agreed one.

7. CONCLUSION

From the literature reviews it's clear that the there is no combine interest shows through company quality standard issue as well as Suppliers Profile point of views. As per the study people feels that tendering is the best way of selecting suppliers and subcontractors, as it provides good quality resources at competitive price. As per the study the supplier



should have a good testing capability to finish project as per established QA & QC Most of The Company focuses on certification at the same time they are not bother about testing of materials. While selecting supplier construction industry looks for consistent performance in terms of quality and on time delivery while supplier profile supplier also want consideration while quotation finalization.

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