

Exploring the Factor affecting Client Evaluation of Ready Mix Concrete: A survey Study

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Abstract - Ready mix concrete (RMC) is a familiar material, which is been prepared at location away from actual casting position. Here the material is been prepared at a batching plant, then transported to site through transit mixer (TM). Although these process have an advantage over traditional practice in area of mass production, quality control on various level, consistency of mix. The overall cost of product depend upon cost of raw material and transportation cost. Preparing schedule for transportation to different site is important for RMC planner, were preliminary sequencing of order is done. In our research work, we prepare a questionnaire survey to understand the various parameter affecting the evaluation of client while sequencing the order. A survey through internet is been circulated for the response from RMC industry. Data obtained from survey will help us to understand the parameter with weightages.

Key Words: Ready-Mix; Concrete; Batch plant, Questionnaires, construction, Transit-Mixer, Parameter.

1. INTRODUCTION

The Indian development industry has been customarily labour oriented. The pace of automation in the past had taken a step back because of the availability of cheap labour in profusion, lesser investment in the capital market and the intensely divided nature of the development business. The level of automation is still around 25%-30% while it is well over 70% in the vast majority of the developed nations. In India, of the total cement used for concrete making in the country, 10-12 per cent is using RMC. According to AT Kearney, the market share for RMC is expected to reach 25 per cent by 2025.

In India, RMC industry structure is quite fragmented. While about five to six organized players hold a market share of 45-50 per cent, unorganized local players cater to the remaining market. Earlier, the use of RMC was mainly confined to metro projects, while the smaller cities used SMC. However, with the growth of the RMC industry, it has also found usage in other cities. RMC, in present day development is a standout amid the most well known manufacturing resources in development industry and concrete requests are scaling as of late.

RMC is not created at the creation site where it is essential, as rightly its name suggests. Creation happens at plants, from where the ready-mix concrete is transported to the development destinations, utilizing vehicles called

"transit Mixer" particularly intended to transport concrete. Essentially, concrete is created by water, aggregates and cement. After around 2 hours, depending upon the quickening agents and retarders being used, concrete solidifies and it will get its required toughness and quality.

The nature of RMC structures generally relies upon nonstop close coordination between the provider and the developer on location, from requesting the material to releasing and setting up it successfully and proficiently conveying RMC to development destinations is an essential issue. The point is to diminish the cost of conveyance process. Hence, there is a dire need to oversee concrete dispatching from a solitary place for a specific district/city. There are numerous RMC producers in the market and the material cost is not entirely different. In this way, every producer rivals each other on the client benefit fulfilment. Clients are searching for the merchant that can convey RMC as indicated by their necessities, for example, on-time conveyance, lesser waiting time, Favoured Terms and Condition, and so on.

RMC industry has few key challenges like supply of good and consistent quality of aggregate from each source. Skilled work force and adaption of automation in the process attract huge cost and requires time. More often than not, the organizer takes care of RMC conveyance issue based upon his understanding of the whole system and this can cause disappointment from the customers if the truck is in line, waiting for a long time to unload the material. Hence, careful planning of the whole system is very much crucial. It is to determine which plant group would convey concrete in which locale and boost the delivery of RMC. This pandemic has left good damages on Supply chain of resource and Client demand for RMC. Therefore, any saving at Producers end will help him to cover his damages.

Since, due to huge competition in RMC sector, various research in areas of automation, new material, evaluation, risk factor are in process.

2. Literature Survey

As India rank second in the world for its cement industries, with over 8 % of the global installed capacity. With government focus on spending largely on infrastructure and housing sector, ultimately the demand for concrete will be on higher level.

With high quantity of concrete required for development are in process, selection of RMC Company will

be vital point. Ashish H.Makwana¹ has discussed analytic Hierarchy Process for selection of RMC, were 7-8 heads like Quality Control, Safety Measure, Financial Capability, Managerial Capabilities and other were made. On the scale of 1 to 9 rating were given to derive a score for selection process. Whereas Allan Collard-Wexler² has developed, a model to understand effect of turbulence in local construction market on RMC industry with database of more than 5000 plant has been used.

Remon Fayek Aziz³ has considered an engineering approach for evaluation of RMC through various parameter. A case study has been discussed were performance influencing factor for Ready-Mix concrete plant are been discussed. Relation between Plant performance and other efficiency like manager efficiency, operator efficiency, driver efficiency, etc. is found to be directly proportional. For the case study, relation between Plant performance and Distance between plants has been studied. It also stated that project schedule and order quantities are related to plant performance, optimal production quantity was obtained.

From literature survey it was found that various studies has been conducted in RMC sector but evaluation, few evaluation like Client and Route have not been conducted. In this paper, we will obtain weighted point from respondent related to evaluation of Client through mentioned parameter.

3. Methodology

3.1. Questionnaires

A questionnaire survey will be prepared on available online platform. It will shared through social media platform to industry people.

3.2. Data Collection

Response from respondent will be automatically collection in a tabular through the platform.

3.3. Data analysis

Use of excel or other statistical tool for data analysis will be performed.

4. Analysis

4.1. Respondent

The accuracy of data depends upon the type of sample set consider. For the survey, Professional working in RMC sector, Professor & Researcher were considered for the survey.

Table -1: Connection with Industry

Sr No	Sectors	Response	Percent Share
1	Currently working in RMC industry	12	22.22
2	Was associated with RMC industry	3	5.56
3	RMC industry is a part of your organization	20	37.04
4	Professor / Researcher	5	9.26
5	Other	14	25.93
	Total	54	

From graph, it can be concluded that the respondent are majorly associated industries, which account for 65 % of total response. 23% were associated with RMC industry, their experience of RMC industry are invaluable. Professor / Researcher with a valid experience were considered which provide us the in-depth response for the survey.

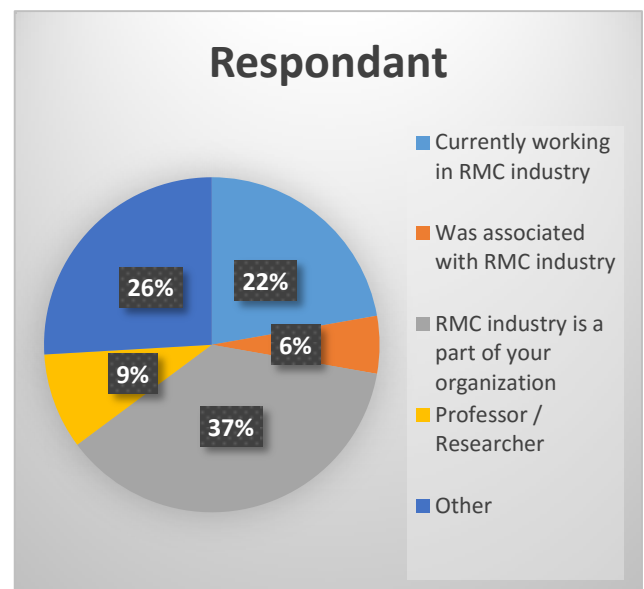


Chart -1: Respondent from Sector

4.2. Client Evaluation

In this survey, few parameter related to client are drawn through Personal Interview with Professor, RMC planner. Further a questionnaire is been prepared, respondent have to weigh the mentioned parameter from a total score of 100 through their experience.

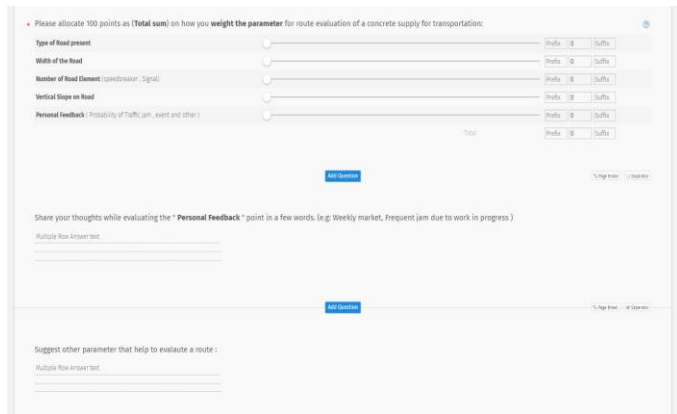


Fig. 1 : Screenshot of Client Evaluation

Table -2: Client Evaluation

Sr No	Sectors	Response
1	Payment Condition	22
2	Cumulative Quantity ordered (min. 6 month)	17
3	Type of Supply (Direct fall from TM or use of Pump for lifting)	13
4	Multiple Grade Ordered (In single P.O.)	12
5	Duration required for emptying TM at location	12
6	Grade of Concrete Order	12
7	Personal Experience (Engineer has the experience of the event as mentioned above)	12
	Total	100

From survey it was found that for client evaluation highest weightage are given to Payment condition (22) and Cumulative order quantity from 6 month (17). Looking at current market condition, most of the RMC owner are trying

to be stabilized with better cash flow management. In addition, they are looking at retaining maximum share of the market by creating long-term relation with client.

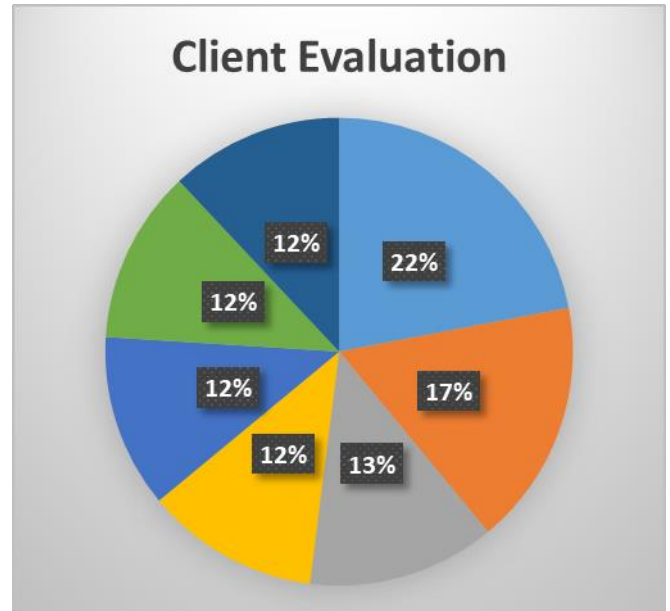


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4.3. Route Evaluation

Survey consist of parameter related to Route Evaluation were tool such as Personal interview of Vehicle Manager at plant , Contractor of Labor & TM , and other expertise. Based on the interview a survey was generated were respondent have to weight each parameter from a total of 100 points.

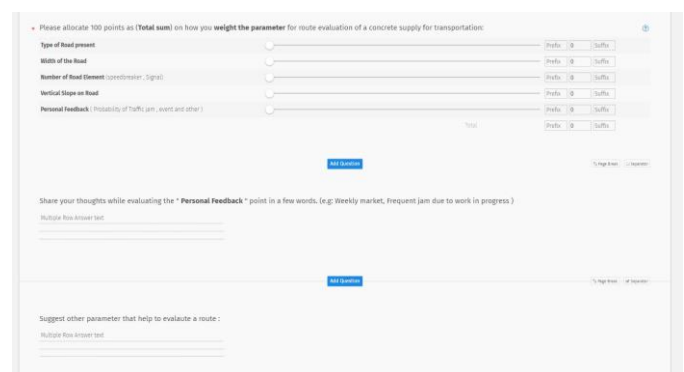


Fig. 1 : Screenshot of Route Evaluation

Table -3: Route Evaluation

Sr No	Sectors	Response
1	Type of Road present	26
2	Width of the Road	18
3	Number of Road Element (speed breaker , Signal)	17
4	Vertical Slope on Road	17
5	Personal Feedback (Probability of Traffic jam , event and other)	22
	Total	100

Maximum weightage are given to Type of Road (26) and Personal Experience (22) for the route evaluation survey. From practical experience it was mentioned that the efficiency of Transit Mixer is been affected by the available type of road. As per statistics, maximum cost for transportation of concrete is due to either fuel consumption or Vehicle charges.

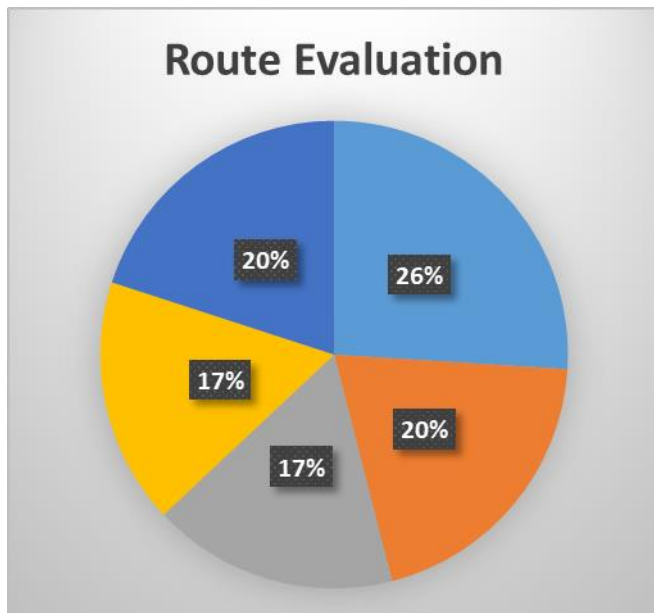


Chart -3: Route Evaluation

5. Result

- The survey was conducted online were 53 response has been received, more than 55 % participant belong to industries.

- From client Evaluation it was found that maximum weightage has been given to Payment Condition (22), followed by Cumulative order quantity (17), Type of supply (13), Multiple Grade order (12), and Other. (ref Table : 2 Client Evaluation)
- Route Evaluation is important from transportation cost point, were type of road with weightage of 26 has max. Effect on such cost. Other parameter like Width of road, Road Element, Vertical Slope has significant effect on overall performance.

6. CONCLUSIONS

From above survey, it can be concluded that for client evaluation significant weightage is given on Payment condition and Cumulative order quantity for consistent cash flow, long-term relationship with customer and for growth of the company. Whereas other factor can affect the evaluation of client for any RMC company.

From Route Evaluation survey, major respondent weighted for better availability of Roads for timely delivery of concrete and similar respondent to personal feedback were issues such as Chocking of pipes while pump concrete, shortage of Labor on site, and changes in plan, which lead to cost & time, overrun.

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BIOGRAPHIES



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