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CRITICAL FACTORS WHICH ARE AFFECTING THE SUCCESS OF CONSTRUCTION PROJECT IN GWALIOR AND DATIA DIVISION, INDIA

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Abstract - Overruns in terms of budget and schedule are typical in building projects. Critical factors aggravate overruns. It is generally accepted that one of the best ways to increase construction productivity, cost, schedule, quality, and safety is to reduce field critical factors. More study and continuous improvement of critical factors reduction methodologies are constantly needed to improve project performance, even with the abundance of literature on the topic and the current critical factors reduction programs. The present investigation aims to ascertain the total critical factors costs as well as to identify, rank, and evaluate crucial elements in building projects. These crucial elements were ranked by an on-site questionnaire survey, and the resulting data was analyzed using multi-criteria decision-making and relative relevance techniques to ascertain the relative significance of these variables, after which the critical cost was calculated. In this study, we discovered that the most responsible factors in construction projects by the global matrix are poor construction technique, scope, and design change.

Keywords— critical factors , cost management, project management, cost,analytical hirarchy process

1.introduction -

India is a developing nation. India construction industries growing rapidly... India is pooling numerous billion-dollar construction projects where the stopping for any excuse will not just be important but pardon. Several key factors are coming up in this fast paced construction industry which decides whether the building structure is successful or not. The first point noticed by (1991) “Determination of cross-functional cooperation in the project implementation process” is that "the most important difference between these two definitions lies here: And connected to this we can observe with the definition which includes" perception-of-success-as-a-win measure." Success on a project is when the needs are met for that given member - owner, planner, designer or architect, engineer consulting firm operator. Tuman (1986) “

“According to Sanvido, V. et al. 1992 “Success modelling: A technique for building a winning project team”, project success is “having everything turned out as wanted to foresee all project requirement and to have adequate resources to address issues in an opportune way”. Be that as it may, these expectations might be different for every member and the investigation of critical success factors are often considered as one of the vital approaches to enhance the adequacy of project delivery. According to T. Anoop dec-2016”The Critical Success Factors affecting the performance of construction industry”An successful project is one which is conveyed on time on time and managed inside the financial plan, quality, cost and time have been perceived as “triple constraint” or important factors of a successful projects. This is a general issue with the development business, where there are developing vulnerabilities in innovation spending plans and advancement process. Nowadays, construction industries are growing a lot more complex and difficult. The industrie will see huge changes. The intention of studying the critical factors is regarded as one way to potentially increase the efficiency and effectiveness in an construction project. In any case, accomplishment is as achievement has by big bee or hereabouts characterized in the brain of professionalists.

2.objective-

A. ranking of critical factors and find most responsible critical factors in construction projects

B. calculate critical cost for most responsible factors.

3. Responsible critical factors in construction projects-

TABLE 3.1 CRITICAL FACTORS

Sr.no.	CRITICAL FACTORS IN CONSTRUCTION PROJECTS
	Project management related factors
1 2 3 4 5 6 7	inadequate preparation Ineffective site administration Ineffective communication Making decisions Not using the construction process inadequate supervision Insufficient client satisfaction
	Cost related factors
1 2 3 4 5 6 7	Organizational liquidity Project's cash flow Cost of project design Rework expenses Variation order costs Price increases for materials Rate of material waste
	Client related factors
1 2 3 4 5 6 7	Customer trust in the construction crew Low building costs are important to the client Client prioritises superior building quality The client prioritizes speedy development Decision-making Capability; Client experience; Conflict between the client and the construction team
	Time related factors
1 2 3 4 5 6 7	Time spent preparing the site The amount of time required to implement variation orders Average amount of time it takes to approve a claim Lack of resources Scheduled duration of construction Average amount of time that owners postpone paying contractors Average delay due to material scarcity caused by shutdown
	Environment related factors
1 2 3 4 5 6 7	quality of air Waste in the vicinity of the site noise level Weather conditions Potential for earthquakes The accessibility of water Soil type

4.methodology-

4.1 Critical factor ranking-

AHP METHOD is used to rank the critical factors. The relative relevance of each of the primary components and cofactors determines the analytical hierarchy process.

15 Group comparison matrix

FACTOR	PM	CLRF	CF	TM	EF
PM	1	3	7	5	8
CLRF	0.3	1	3	5	7
CF	0.14	0.3	1	1	5
TM	0.2	0.2	1	1	5
EF	0.12	0.14	0.2	0.2	1
TOTAL	1.76	4.64	12.2	12.2	26

Table 4.16 Main Group weight matrix

FACTORS	PM	CLRF	CF	TM	EF	TOTAL	WEIGHT AVERAGE	CONSISTENCY MEASURE
PM	0.57	0.65	0.57	0.4	0.3	2.49	0.498	5.52
CLRF	0.17	0.22	0.25	0.4	0.27	1.31	0.262	4.906
CF	0.08	0.06	0.08	0.09	0.2	0.54	0.108	5.187
TM	0.11	0.04	0.08	0.09	0.2	0.52	0.104	5.134
EF	0.07	0.03	0.02	0.02	0.03	0.17	0.034	5.076
TOTAL	1	1	1	1	1	1	λmax	5.164
							CI	0.041
							RI	1.12
							CR	0.0366

5.RESULT ANALYSIS-

Ranking according to factor weight or AHP

GROUPS	GW	GR	FACCTORS	FW	RANK
PROJECT MANAGEMENT	0.4980	1st	inadequate preparation	0.130	3
			Ineffective site administration	0.080	5
			Ineffective communication	0.050	7
			Making decisions	0.320	1
			Not using the construction process	0.140	**4**

			inadequate supervision	0.070	6
			Insufficient client satisfaction	0.190	2
Cost related	0.1080	3^{rd}	Organizational liquidity	0.080	5
			Project's cash flow	0.050	6
			Cost of project design	0.040	7
			Rework expenses	0.210	3
			Variation order costs	0.140	4
			Price increases for materials	0.210	2
			Rate of material waste	0.250	1
Clint related	0.2620	2nd	Customer trust in the construction crew	0.060	5
			Low building costs are important to the client	0.30	1
			Client prioritises superior building quality	0.280	2
			The client prioritizes speedy development	0.180	3
			Decision-making Capability;	0.070	4
			Client experience;	0.050	6
			Conflict between the client and the construction team	0.030	7
Time related	0.1040	4th	Time spent preparing the site	0.205	2
			The amount of time required to implement variation orders	0.065	5
			Average amount of time it takes to approve a claim	0.027	7
			Lack of resources	0.330	1
			Scheduled duration of construction	0.045	6
			Average amount of time that owners postpone paying contractors	0.191	4
			Average delay due to material scarcity caused by shutdown	0.134	3
Environment related	0.0340	5th	quality of air	0.160	2
			Waste in the vicinity of the site	0.090	4
			noise level	0.200	7
			Weather conditions	0.110	3
			Potential for earthquakes	0.030	6
			The accessibility of water	0.330	1
			Soil type	0.050	5

CONCLUSION-

This study identified and quantified Analytic hierarchy process of 35 critical factors affecting the construction projects in Gwalior and datia division India. The factors separated into five primary groups are: (1) Project management related factors, (2) cost related factors, (3) Client related factors, (4) Time related factors, (5) Environment, related factors. After the analysis

of results, we find top ten following factors which are causes Conflicts and disputes in construction projects in Gwalior and datia division such as: (1) making decisions , (2) low imphesis cost are impotent to the clint, (3) rate of materials waste, (4) lack of resources, (5)Waste in the vicinity of site, (6)price increases of material (7) ineffective Site administration, (8)Average delay due to material shortage, (9)Client priority superior building quality, (10) inadequate preparation.

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