

Investigating of Delay Factors in Multistorey Buildings

Sivaram Nambirathinam

Department of Civil Engineering

Cihan University – Duhok, Kuridsitan Region Iraq

Abstract: Today in development industry a few difficulties are confronted by development ventures. A hefty portion of them straightforwardly influences the development, operation finishing up the deferral in venture or influencing the execution of venture. This postponement contrarily influences economy, development of foundation and the general public on the loose. To enhance execution of venture it is essential to concentrate the postpone variables which influence the accomplishment of venture. The reason for this review is to intelligently investigate the defer elements of venture and how these can be maintained a strategic distance from or controlled. This exploration principally concentrates on recognizing the defer considers development. From writing audit the primary postpone variables of development is recognize. A poll review is to be completed in different multistory building tasks and rank them by Relative Importance Index. Utilizing that information's the real postpone components must be distinguished. At last from the outcomes appropriate proposals was given to the organizations for decreasing their postponements.

Keywords: Postpone elements, Questionnaire study, Relative vital file, rank.

1. INTRODUCTION

The development business is a key segment in the improvement and monetary development of most nations over the world. Notwithstanding, the industry confronts various difficulties, for example, extend delays. Tasks or development works that are not conveyed on time to the customer are alluded to as postponed undertakings. The business which is encountering successive and exorbitant postponements is the building and development industry. Be that as it may, as per late study, a quantities of development undertakings which had the postpone issues are exceptionally huge. Development extend includes numerous unpredicted components which comes about because of many sources. These sources incorporate the execution of venture gatherings, assets accessibility, condition conditions and authoritative relations. Be that as it may it happens in each development extend and the huge of these deferrals shifts significantly from venture to extend. Along these lines deferral is a vital issue in the development business. This review is to recognize the components contributing development delay and their significance. This paper recognizes the causes from the perspective of the primary venture experts. The development postponement is a general obvious reality not just in India however every one of the nations confronted this worldwide truth. Development

deferral can be characterized as execute later than proposed arranged, or specific period, or letter than particular time that all the concerned gatherings concurred for development extend. Delay in venture is included as a typical issue development ventures.

The main consideration of development issues is venture's postponement. Defer issues happen every now and again amid venture life-time which may prompt clashes, contract end, case and so forth... Hence it is vital to consider and break down reasons for development delay, as the administrations given by framework ventures serve contribution for different segments and cost invade in these venture prompt an expansion in capital yield proportion for the whole economy. The essential point of the examination is to distinguish the central point that influence the nature of the development ventures. The elements were distinguished in light of relative essential list technique.

1.1 Objectives

The targets of the present review are

To recognize the instability figures that impacts the arranging and causes delays in development extends in Indian situation. To rank instability figures that causes delays by RII (relative significance Index) strategy and to

discover the main drivers for these variables. Sort postpone considers development extend.

Measure relative significance of defer variables and to show the positioning of elements and classifications as indicated by their significance level on postponements;

1.2 Importance of the Study

1. The development business is the apparatus through which a general public accomplishes its objective of urban and provincial advancement.
2. It is one of the segments that gives vital fixing to the advancement of an economy.
3. Numerous development ventures have confronted different issues because of the intricacy of venture, absence of administration, dishonorable arranging and booking and so on.
4. These all issues finish up with one of the real issue deferral of time.
5. In least complex the significance is that, both for proprietor and temporary worker time is cash and for this development calendar ought to be checked, investigated and remedial moves ought to be made in an auspicious way to keep this issue.

2. LITERATURE REVIEW

S.M.Renuga and Balasubramanian Malathi (2013) they have distinguished the basic variables affecting postponement and their effect on venture culmination. In this review they have packed in Resource (Manpower, Material and Equipment) related deferral in development ventures. For this examination, a poll study technique was embraced to discover the effect of basic elements that prompts asset related deferrals in development ventures. The review brings about this writing they have recognized main ten basic variables utilizing Relative Importance Index (RII) in each of the classes (Manpower, Material and Equipment) and gave a few suggestions to lessen the effect of the asset related deferrals in development ventures.

Shebob.A, Dawood.N and Xu.Q (2011) made a Comparative review b/w Libya and UK development extend through poll overview. The postpone elements were positioned utilizing the recurrence of event and seriousness scale. The overview result uncovered that the development extends in the creating nations endures more deferral than the created nations because of absence of innovation in the creating nations.

Ahsan and Gunawan (2010) made a different review looking at the execution of worldwide advancement extends in India, China, Bangladesh, and Thailand, in which they announced that development extends in India demonstrated the most exceedingly bad timetable execution. The review found that in India normal timetable invade is the most astounding (55% of real calendar) contrasted with alternate countries.

Majid (2006) expressed that postponements can be limited when their causes are recognized. Recognizable proof of the elements that added to the reasons for postponements has been examined by various analysts in a few nations. Deferral is a circumstance when the temporary worker, specialist, and customer together or severally added to the non-finishing of the venture inside the first or the stipulated or concurred contract period.

3. METHODOLOGY

Different written works identified with the undertakings are evaluated. In view of the survey, the elements for postponement of development venture are recognized which outlines a poll. Poll review is led among temporary worker, specialist and customer of different multistory building venture. These review reactions are broke down utilizing relative essential file technique. For the mean esteems, positions are given and this investigation gives the most noteworthy delayfactors in development.

3.1 Assessment Method

Five point scale

1 – strongly agree , 2 – Agree , 3 – moderate , 4 – disagree , 5 – strongly disagree.

3.2 Analytical Tool

Relative important index

This method is used to find the contractor , owner and labor perceptions of the relative important of the identified quality factors.

$$RII = \sum W/A * N$$

Where,

RII - Relative Importance Index,

W - weighting given to each factor by the respondents (ranging from 1 to 5)

A - highest weight (i.e. 5)

N - total number of respondents.

3.3 Identified Factors

The identified factors from the literature review are

1. Client
2. Contractor
3. Consultant
4. Material
5. Labour
6. Equipment
7. Project related
8. Finance related
9. External related

4. RESULT AND DISSCUSSION

4.1 Aggrement Analysis

The degree of agreement reliable value done by using spearmans rank correlation method .which is commonly

used to estimate agreement analysis.the spearmans rank correlation coefficient obtained for respondents.

Client and contractor	0.605
Client and consultant	0.551
Contractor and consultant	0.540

The value must be in the ranges of 0.3 to 1 if the data has to be reliable. Hence in this analysis the data values are reliable.

4.2 Data Analysis

A) Questionnaire survey is conducted through post and field survey. From this survey 55 responses were received. These data are analyzed using Relative Important Index method. Ranks are provided for the mean values analyzed using this method.

Table 1. Gives the mean values and ranks provided for the analysis

1.Strongly disagree, 2.Disagree, 3.Moderate, 4.Agree, 5.Strongly agree.

MAJOR FACTOR	SUB FACTOR	CONTRACTOR			CONSULTANT			OWNER		
		RII	MEAN	RANK	RII	MEAN	RANK	RII	MEAN	RANK
contractor	Frequent change of sub contractor	0.56	0.55	8	0.43	0.53	8	0.52	0.69	2
	Inadequate contractor experience	0.43			0.65			0.67		
	Ineffective project planning and scheduling	0.61			0.32			0.63		
	Compatibility of contractor with new software	0.48			0.71			0.76		
	Poor communication	0.70			0.52			0.42		
equipment	Inadequate modern equipment	0.72			0.65			0.59		
	Equipment allocation	0.85			0.73			0.61		

	Frequent equipment breakdown	0.62	0.74	1	0.86	0.78	1	0.72	0.65	3
	Lack of safety	0.93			0.71			0.80		
	Shortage of recent technology equipment	0.57			0.93			0.44		
material	Late delivery of material	0.67	0.65	5	0.56	0.56	7	0.34	0.55	7
	Damage of sorted material	0.48			0.49			0.48		
	Escalation of material prices	0.52			0.73			0.60		
	Shortage of material	0.83			0.61			0.58		
	Poor material management	0.75			0.43			0.69		
labour	absenteeism	0.82	0.69	3	0.66	0.49	9	0.39	0.57	6
	Low motivation & morale of labour	0.59			0.49			0.62		
	Low productivity of labour	0.62			0.55			0.77		
	Shortage of labour	0.52			0.41			0.65		
	Labour strike due to revolutions	0.89			0.33			0.41		
Project related	Traffic control at site	0.40	0.47	9	0.69	0.76	2	0.53	0.52	8
	Changes in site condition	0.63			0.77			0.74		
	Unforeseen ground condition	0.44			0.80			0.62		
	Insufficient data collection & survey	0.56			0.73			0.46		
	Restricted access	0.33			0.79			0.52		
client	Change orders	0.86	0.70	2	0.44	0.58	6	0.38	0.60	5
	Conflicts between joint ownership	0.77			0.52			0.41		
	Delay in progress payment	0.65			0.68			0.65		

	Lack of owner experience in construction project	0.57			0.88			0.81		
	Delay in approving design documents	0.63			0.39			0.76		
Consultant	Slowness in approving drawing & material samples by the consultant	0.51	0.66	4	0.42	0.60	5	0.29	0.46	9
	Total quality management by consultant	0.63			0.59			0.55		
	Mistakes in consultants drawing	0.79			0.67			0.49		
	Consultants less experience	0.81			0.70			0.35		
	Modification in contract	0.58			0.63			0.61		
Finance	Rapid changes in the national economy	0.72	0.59	7	0.74	0.69	3	0.83	0.76	1
	Inadequate support from banking sector	0.85			0.48			0.75		
	High inflation rate	0.62			0.59			0.69		
	High interest rate	0.93			0.86			0.93		
	Limited credited facilities	0.57			0.76			0.61		
External	Changes in government regulation and laws	0.65	0.63	6	0.66	0.67	4	0.53	0.62	4
	Accident during construction	0.89			0.56			0.68		
	Delay in obtaining permit from municipality	0.72			0.81			0.73		
	Unfavourable weather condition	0.46			0.72			0.85		
	Delay in providing service from utilities (water, electricity)	0.55			0.60			0.33		

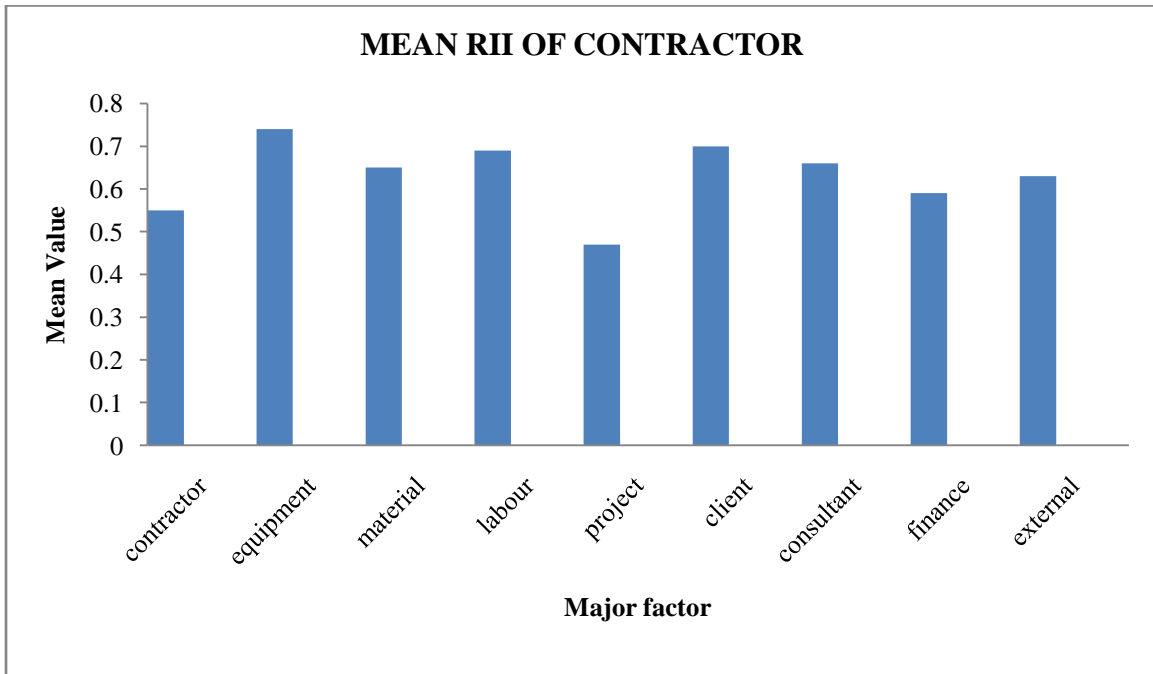


Figure 1. Mean RII of Contractor

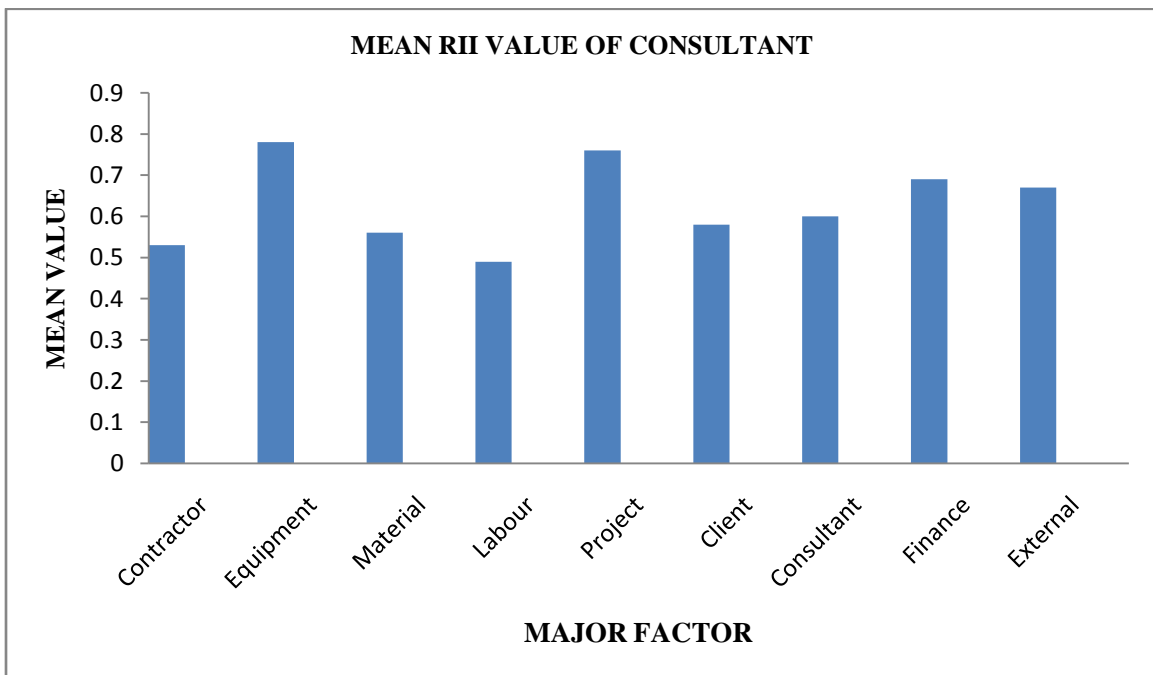


Figure 2. Mean RII Value of Consultant

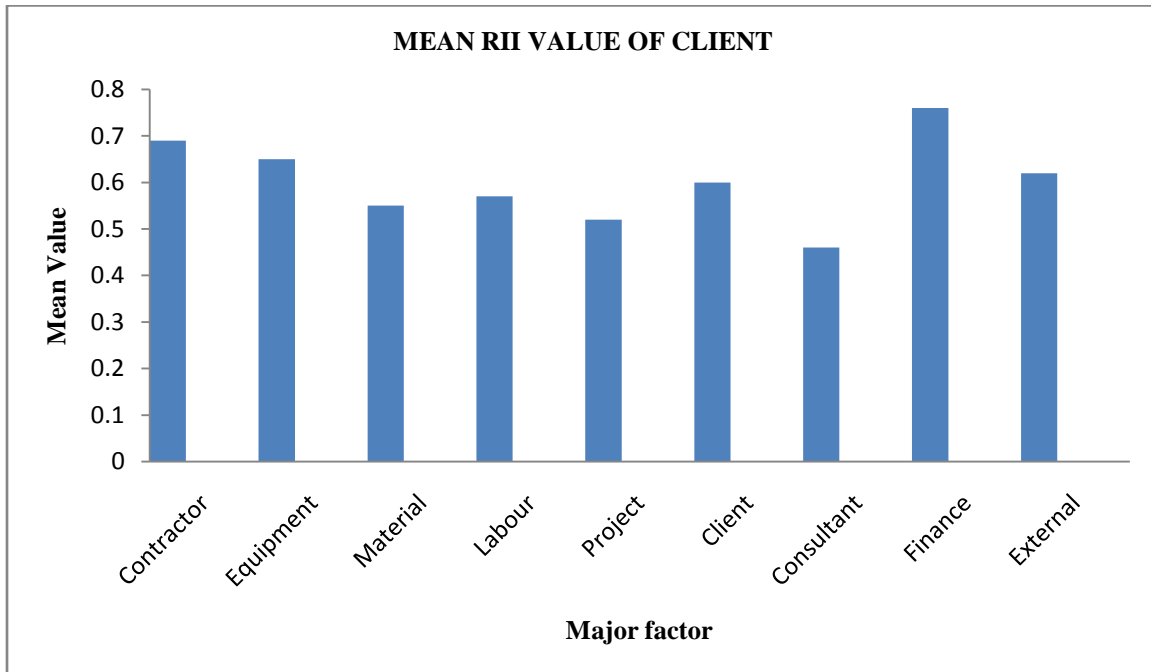


Figure 3. Mean RII Value of Client

5. CONCLUSION

This report outlined the reasons for postponements in the development business and proposed a few suggestions to alleviate the deferrals. It ought to be noticed that the little example size of 32 respondents to the poll overview represents a few impediments to the degree in which the aftereffects of the review could be summed up. Because of this restriction, the review might not have recognized all the conceivable components that could bring about development delays. However, the review made a huge endeavor at distinguishing the significant reasons for defer considers the development extend in view of the constrained information.

In the interim, there are no particular methodology to overcome delays in the activities, however it depends primarily on the causes and fitting moves made. In light of the postpone components distinguished in this examination, exchanges and proposals have been made to limit their causes.

From the above rundown of most critical elements bringing about postponement in the development, . Numerous literary works are explored and the significant defer elements of development is distinguished. In light of that survey are arranged and appropriated to the 43 organizations and 32 were effectively gotten. From that information by utilizing

relative essential list technique RII is distinguished and positioning were given to the main considerations.

From that outcome we presume that the real main 5 elements of postponement in development, in the perspective of respondents like contractual worker, expert and proprietor are hardware, Financial issues, gradualness in taking choice of clientcontractor, Problems in temporary worker side, and additionally work side.

5.1 Recommendation

The accompanying proposals are made in light of the outcomes and exchanges of the review. These suggestions are exceptionally useful to enhance to complete the venture at right time development.

1. Proper correspondence and coordination framework amongst proprietor and temporary worker ought to be created. Installments ought to be done on time so that venture execution won't get influenced.
2. Communication and in addition record framework ought to be produced so that drawings and their oversights (assuming any) can be rectified as quickly as time permits.
3. Implementation of reasonable learning likewise for junior advisor's appropriate instructional class ought to be produced. The part of this preparation program ought to

incorporate administration ability advancement, co-appointment framework change.

4. Decision and steps taken amid venture life cycle ought to be helpful for venture execution. As the development ventures incorporate immense number of members, group approach ought to be produced. Contractual worker ought to utilize distinctive groups like, specialized group; fund group; examine group and so on and each group will have their particular objective or reason. Specialized staff ought to be doled out to extend as indicated by their subject matter or ability. This will be useful to decrease the modify and in addition beat the issue of insufficient treatment of venture advance. Meeting between all groups ought to be orchestrated to develop powerful administration between venture groups.

5. For the execution of material administration and quality confirmation a devoted group ought to be conveyed. The part of this group ought to be material acquirement, seller determination, assessment. Along these lines it will be useful in stores administration and also defeat the element of less than ideal conveyance. In venture cost estimation this group will be useful for cautioning the element of value heightening.

6. To enhance work profitability and aptitude, preparing system ought to be produced and executed. To stay away from mischances on development site, security instruments, wellbeing preparing program and security plan ought to be readied.

7. In request to produce security familiarity with various wellbeing contraptions to specialists and representatives, Construction Company ought to get ready for wellbeing spending plan.

8. During choice of development gear by temporary worker due thought ought to be given to its owning cost, its working cost, working fuel cost and support cost. To help hardware determination handle advancement demonstrate, illustrations display, guileful knowledge based model must be utilized relying on venture.

9. To keep away from inaccessibility and deficiency of development hardware a legitimate gear merchant database ought to be kept up by temporary worker.

10. Another basic component is 'poor site administration and supervision by contractual worker'. There is a requirement for temporary worker in enhancing capacities of directors, specialists which is a tremendous request in effective consummation of tasks. Hence, the temporary workers need to adjust some basic imaginative administration strategies, including sorting out and

controlling, and group building and esteem designing that might be more productive and compelling. Having connected these procedures, it would ensure to diminish the danger of such basic elements.

11. Ineffective arranging and planning has likewise a noteworthy effect on development delays. Successful arranging and programming of a venture is an unquestionable requirement to secure early finish of the venture. The arranging procedure ought to be created from begin of the venture until fulfillment of a venture. The arranging stages ought to be contrived painstakingly, beginning from vital, strategic and operational arranging.

12. Delay in advance installment by customer is a basic reason for deferrals, and therefore many undertakings are behind calendar. There is a genuine requirement for the customers to devise an express system to accelerate the installment procedure. The qualified experts and amount surveyors, who are frequently in charge of issuing the ascertaining and installment declarations, ought to be utilized to facilitate the procedure. Then again, Bureaucracy in government organizations likewise suspends the installment advance. Along these lines, it is prompted that the legislature ought to discover a path how to limit the procedure.

13. Pay advance installment to the temporary workers on time as it debilitates the contractual workers capacity to back the work

14. Minimize changes all together amid development to maintain a strategic distance from deferrals

15. Speed up auditing and affirming of configuration reports

16. Improve the learning and abilities of specialized staff

17. Manage the budgetary assets and plan income by using progress installment

18. Avoid deferrals in investigating and endorsing configuration records

19. Build up the information and abilities of specialized staff

20. Improve coordination between gatherings

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