To Study Delays in Irrigation Project and its Effect on Profitability

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***Abstract*: The delay in construction is the challenge often faced in the course of executing construction projects. To the government projects, the delays become very serious. This problem directly affects the lives, social welfare of the people, and the other negative social impacts. However, the government projects have not been much interest. The questionnaire surveys in Vietnam were conducted to determine the causes of the delay and to find solutions for dealing with the delay. The average index was used to rank the delay factors and the solutions. The delay is a common problem in the global construction industry affecting development of the construction industry in particular and of the overall economy of countries in general.**

***Keywords*: Delays, Cost, economic, effects, questionnaire.**

I. INTRODUCTION

Delays and cost overruns occur in both preconstruction and construction phases. However the major instances of project overruns usually take place in the construction phase. Delays in project construction means overrun, loss of capital and revenue, increases market risk, delay in production, increasing material cost as well as lack of efficiency. While completing project at right time leads profit, market growth, increasing 2 customer's trust and increasing self as well as team's confidence. In this case, irrigation construction projects in the country are commonly undertaken by government agencies and are of national interest. Studies indicate that the construction industry has been dogged by a myriad of challenges which include mismanagement, skills shortage, corruption, lack of technology, inflexible credit terms, late payments to contractors and difficulties in accessing finance. According Projects have largely not been delivered on time, budget and expected quality standards. In short, construction too often fails to meet the needs of modern businesses and impacts on their competitiveness in international markets and rarely provides best value.

➢ Significance of the Study

The study hopes to be of significance to policy and decision makers in the agricultural sector in identifying measures to improve successful implementation of irrigation projects. In addition, the study hopes to assist project managers by providing insight into what factors may affect completion of projects that will guide in future planning. The study also hopes to be of significance to farmers and communities who are the intended beneficiaries of irrigation as it will provide information on mitigation of project completion which will improve irrigation projects service delivery. The study also hopes to be of significance to researchers and academicians on the factors affecting completion of irrigation projects.

II. METHODOLOGY

The delay is a common problem in the global construction industry affecting development of the construction industry in particular and of the overall economy of countries in general.

➢ Questionnaire design

Questionnaires were distributed and were filled out by experienced construction professionals including technical consultants, main contractors and sub-contractors, and site/design engineers with a response rate of 78 %. The collected data were analyzed through Relative Importance Index (RII) method. The analysis included ranking the different causes according to the relative importance indices. Irrigation projects in Egypt have four participants:

i. The government as the owner;
ii. A consultant team usually from the faculty of engineering as the consultant;
iii. Directorate of irrigation and transportation as the supervisor on the implementation; and
iv. Contractors of irrigation projects as the real implement. The respondents samples had the three last participants excluding the owner (the government) with the one point of view.

III. Result & Discussion

Table No 3.1: Financing Related Cause Group

Note	Causes	(W)	(A)	(N)	Average	RII
F1	Owner Financial Problems/Client Finance/Economic Ability For The Project	87	5	25	3.48	0.7
F2	Payment Of Completed Work	76	5	25	3.04	0.61
F3	Delays In Contractors Progress Payment By Owner	72	5	25	2.88	0.58
F4	Partial Payments During Construction/Financing	68	5	25	2.72	0.54
F5	Delay In Honoring Payment Certificates	67	5	25	2.68	0.54
F6	Difficulty In Accessing Bank Credit	76	5	25	3.04	0.61
F7	Financing By Contractor During Construction	65	5	25	2.6	0.52
F8	Exchange Rate (Price) Fluctuation/Economic;	66	5	25	2.64	0.53
F9	Changing Of Bankers Policy;	64	5	25	2.56	0.51
F10	Cash- Flow Problems During Construction;	74	5	25	2.96	0.59
F11	Global Financial Crisis;	77	5	25	3.08	0.62
F12	Material And Labour Wage Escalation (Inflation)	63	5	25	2.52	0.5
F13	Financial Instability In Markets;	73	5	25	2.92	0.58
F14	Difficulty In Obtaining Materials At Official Current Prices;	76	5	25	3.04	0.61
F15	Late Payment To Subcontractor By The Main Contractor;	72	5	25	2.88	0.58

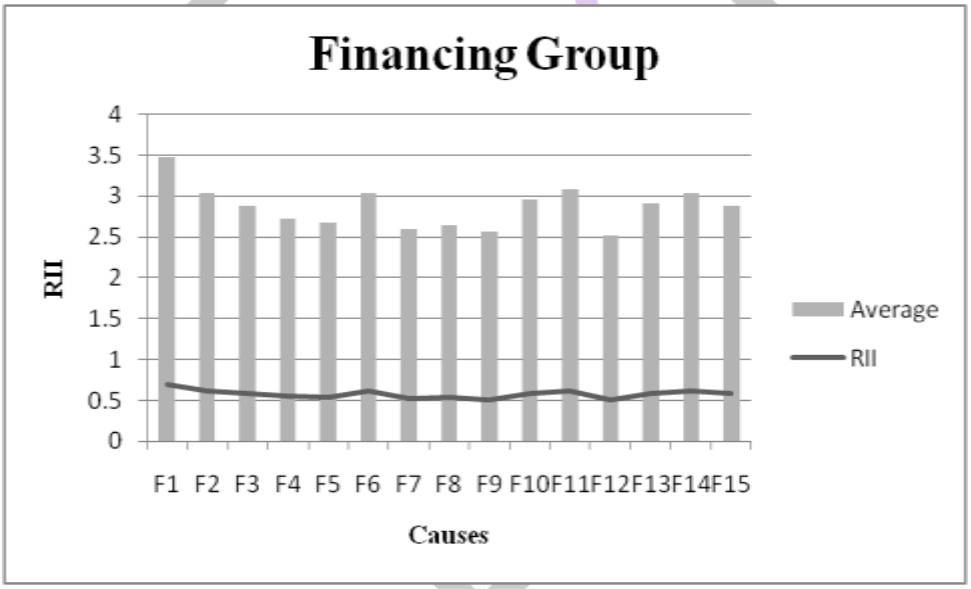

Figure No - 3.1: Financing Related Cause Group

Table No 3.2: Contractor Related Cause Group

Note	Causes	(W)	(A)	(N)	Average	RII
C1	Controlling Subcontractors By General Contractors In The Execution Of Work	66	5	25	2.64	0.53
C2	Poor Subcontractor Performance/Delays	78	5	25	3.12	0.62
C3	Often Change Of Subcontractors	67	5	25	2.68	0.54
C4	Construction Methods	64	5	25	2.56	0.51
C5	Rework Because Of Errors During Construction	74	5	25	2.96	0.59
C6	Unreliable Subcontractors	80	5	25	3.2	0.64
C7	Poor Site Management And Supervision By Contractor	76	5	25	3.04	0.61
C8	Delay In Site Mobilization By Contractor	80	5	25	3.2	0.64
C9	Poor Resource Management	72	5	25	2.88	0.58
C10	Incompetent Project Team	75	5	25	3	0.6
C11	Inadequate Contractor Experience (Work) Causing Error	83	5	25	3.32	0.66
C12	Non-Adherence Of Material Specifications Provided By Client	73	5	25	2.92	0.58
C13	Low Ability Of Contractor To Provide Imported Material	73	5	25	2.92	0.58
C14	Delay In Commencement	73	5	25	2.92	0.58
C15	Poor Qualification Of The Contractors Technical Staff	67	5	25	2.68	0.54
C16	Obsolete Technology	66	5	25	2.64	0.53
C17	Unstable Management Structure And Leadership Style Of Contractor	73	5	25	2.92	0.58
C18	Lack Of Trade's Skill	68	5	25	2.72	0.54
C19	Defective Work	82	5	25	3.28	0.66
C20	Time Spent To Find Appropriate Subcontractors For Each Task	67	5	25	2.68	0.54

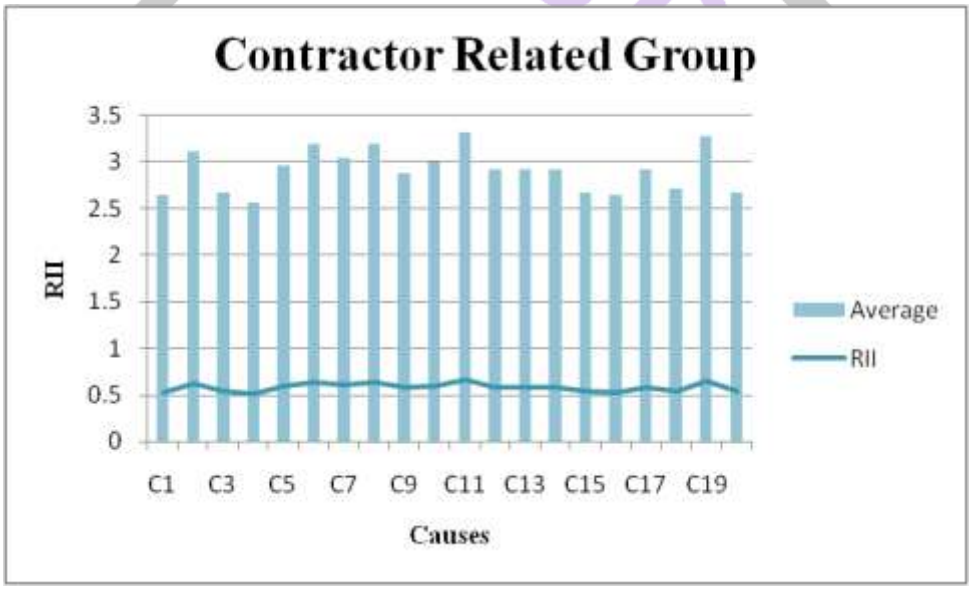

Figure No - 3.2: Contractor Related Cause Group

Table No 3.3: Labour Related Cause Group

Note	Causes	(W)	(A)	(N)	Average	RII
L1	Shortage Of Labour	74	5	25	2.96	0.59
L2	Labour Skill	77	5	25	3.08	0.62
L3	Nationality Of Labourers	67	5	25	2.68	0.54
L4	Labour Injuries	65	5	25	2.6	0.52
L5	Labour Disputes And Strikes	82	5	25	3.28	0.66
L6	Absenteeism Of Labourers	73	5	25	2.92	0.58
L7	Low Motivation And Morale Of Labour	78	5	25	3.12	0.62
L8	Slow Mobilization Of Labour	68	5	25	2.72	0.54
L9	Staffing Problems	73	5	25	2.92	0.58
L10	Shortage Of Unskilled Labours	63	5	25	2.52	0.5
L11	Shortage Of Technical Ersonnel/Staff	70	5	25	2.8	0.56
L12	Insufficient (Un Qualified - Inadequate Experienced) Labourers	76	5	25	3.04	0.61
L13	Low Productivity Level Work	74	5	25	2.96	0.59
L14	Foreman Incompetence	65	5	25	2.6	0.52
L15	Severe Overtime	75	5	25	3	0.6

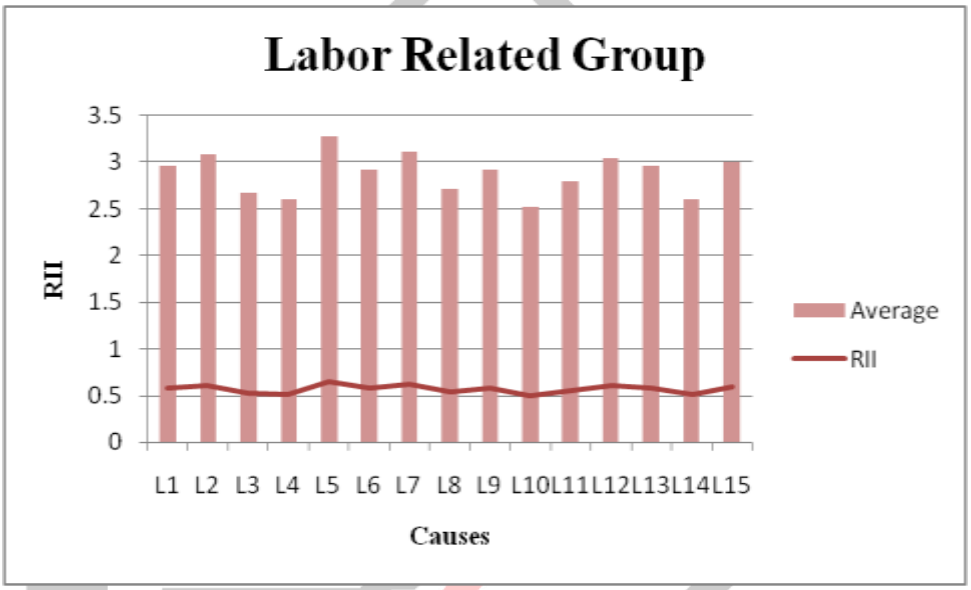

Figure No - 3.3: Labour Related Cause Group

Table No 3.4: Project Related Cause Group

Note	Causes	(W)	(A)	(N)	Average	RII
P1	Project Delivery Systems Used (Design – Build, General Contracting, Turnkey, Etc.)	77	5	25	3.08	0.62
P2	Category (Public, Private)	67	5	25	2.68	0.54
P3	Complexity Of Project	70	5	25	2.8	0.56
P4	Location Of Project	72	5	25	2.88	0.58
P5	Unreasonable Project Time Frame	69	5	25	2.76	0.55
P6	Function Or End Use (Office, Residential, Industrial)	76	5	25	3.04	0.61
P7	Inadequate Definition Of Substantial Completion	73	5	25	2.92	0.58
P8	Ineffective Delay Penalties	69	5	25	2.76	0.55
P9	Improper Project Feasibility Study	74	5	25	2.96	0.59
P10	Type Of Project Bidding And Award (Negotiation, Lowest Bidder)	69	5	25	2.76	0.55
P11	Delay In Finalization Of Rates For Extra Items	75	5	25	3	0.6
P12	Increase In Scope Of Work/Notification Of Extra Work	69	5	25	2.76	0.55
P13	Poor Means Of Contracting	78	5	25	3.12	0.62
P14	Interfering Of Other Projects	71	5	25	2.84	0.57

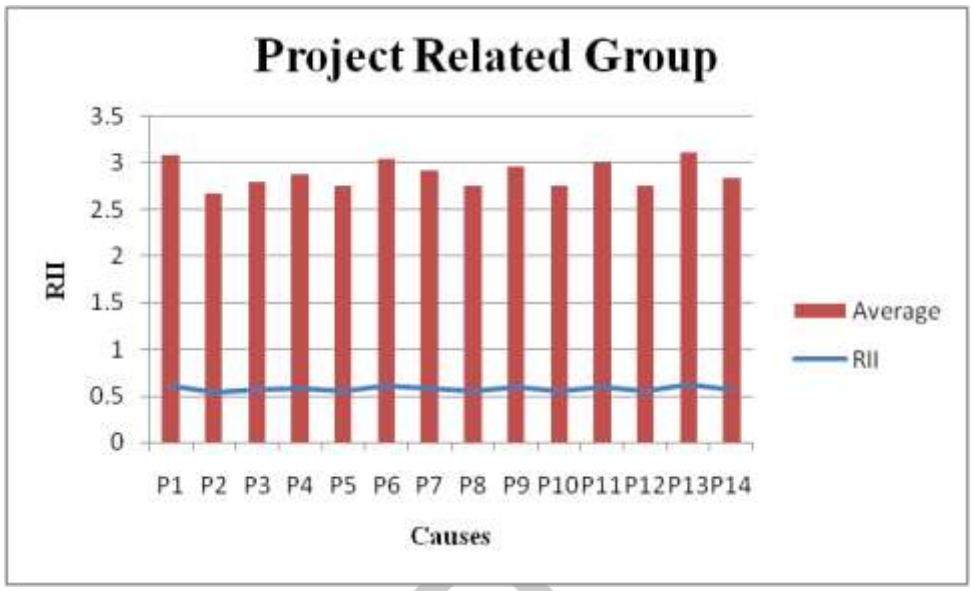

Figure No - 3.4: Project Related Cause Group

IV. CONCLUSION

The most important causes affecting delay identified by the survey by using questionnaire that was conducted and the results were analyzed for the overall view and for each of the three parties who participated in the questionnaire separately to make an overall view of the causes of delay in irrigation projects in Egypt. From overall results it was found the owner financial problems was considered the first cause affecting delay in irrigation projects in Egypt which in this case is considered the government, in comparison this cause was not included in the causes affecting delay in the case of study because in assigning contracts the funds of the project is already presence for that project.

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