Research Article

REVIEWING AND ACQUISITION THE CAUSES OF THE PROLONGATION OF THE CLOSING PHASE POWER PROJECTS AND PRESENT AN APPROPRIATE SOLUTION (CASE STUDY: UREMIA GAS POWER)

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ABSTRACT

The purpose of this study was to investigate the causes of prolongation of the project termination phase power and present an appropriate solution. For this purpose, the causes of delay in gas power projects were identified And then followed by an applied questionnaire to assess the validity and reliability of the questionnaire, Of the 97 patients in the study population were depending on this, in current research is gathered the Interpretation and analysis of data. There are two kind of analysis of statistical society: Descriptive and inferential statistics. In continue we study the relation between the existence variables in conceptual model of this research, all theories of research testified and accepted via appropriate statistical patterns. From the results of the studies the original cause of projects delay in second hypothesis power (Do not care about the closing phase and termination phase activities in the implementation phase) And the third hypothesis is the lack of coordination between the agents involved in order to carry out the activities in the closing phase of the project which the researcher present some requests as resolution to decline the delay in projects.

Keywords: Project Management, Delay, Termination Phase, Power, and Project

INTRODUCTION

Power projects were applied by foreign companies before 1993 as a key in hand, then they activated by internal nations support and some projects Despite the consultant and the contractor and employer monitoring was conducted. Despite the tripartite employer, consultant and contractor for the project management problems and lack of proper management patterns and inconsistencies involved, this project faced with the failures of application time and cost and other corresponding issues, this matter increases the heavy costs and projects are occasionally stop. In view of project manager the subject of increasing the time of power projects in compare with initial estimations is important matters which study its causes is so essential (Yousefian, 2003), the matter which researcher himself faced with it from 2000 to 2014. And the researcher studies the reasons of increasing the time of projects termination power.

Checking out the executive contracts is one of the biggest challenges in power project or termination of phase. With a bit of study in completed projects can be seen that despite the passage of time to implement major projects, still the closed contract matter is not completely solved. The reason can be cited obviously for the lake of coherent and systematic system in order to follow up and close down contractual obligations which in the role and responsibilities of parties are clearly defined. So it will be attempted to investigate and identify the reasons for the delay and provide a proposed solution to this phase of the project. In The standard of project management PMI, the last closing process is the process of project management. The fifth process of project management life cycle after the initial process, design, implementation and control, is termination process which ensure the full implementation of the project management system, and at the end of each project or each phase of its life cycle, the closing process is to be followed. Project termination is a process which is complied administrative activities in Systematic closed framework to complete the project and deliver the product or services to the project operator (Asmand, 2005). It's essential to gather all related documents for research, In order to terminate a contract. These documents include all initial agreements and its supportive documents like: timing program, contractual changes, and performance report. These documents must be careful examined to

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ensure the absence of unrealized matter which can be regarded as contractual responsibilities. The contractual documents should include Key objectives of the design, delivery and physical project items, contractual documents and (Asmand, 2005).

The starting point in the process of termination of the contract is when the power units are temporary delivered to the client. In other words, delivery items or project services to be delivered from deliver time. On the other hand, when a contract is closed that the warranty period has been completed and all contractual obligations are implemented and the Settlement and related administrative activities have been carried out.

The matter variables such as lake of proper time programming, lake of coordination between involved factors in projects like Inner and outer organizational, negligence in the closing phase of the involved factors in projects and Out of prioritizing and allocating sufficient resources to the closing phase, lack of motivation on the factors involved in the project, Temporary delivery of deliverables with minimal defects, political and economic situation prevailing on country and weaknesses in project management factors involved of the independent variables and the delay in the closing phase power projects as the dependent variable. Lack of timely completion of the project or plan in the anticipated demands of the employer and does not meet the objectives of the project and design. This is in large national projects such as power generation projects because of the large amount of investment in them and due to the complexity and uncertainties, many of which are of special importance to the timely completion and cost are required. The study identified the causes of increased latency in these projects and solutions to meet their significant benefits to the economy of country (Ghodusi *et al.,* 2006). So with regard the content expressed the purpose of this study is to investigate the causes of prolongation of the project termination phase power and present an appropriate solution.

Background of Research

Based on the research library of similar research, it's mentioned to some of the most important achievements in the field.

- In a research as "analysis of delay factors in power projects by FMEA technique "which is done by Louise. Its Studied delay factors in power projects and determined the most important ones. After determining 7 original delay factor and their sub-factors it was determined the priority risky mark for each factor. Then the correction which led to prevent and reduce delays in power plant projects is done. The most important delay factor was" lake of liquidity from employer to pay" which the resolution for it were such as the budget to finish uncompleted projects, starting the priority projects, managing the project islands depending on the related contractors and lake of extend commitment for the contractors. Another important delay was" the lake of equipment and tools" that its solution was realistic approach with the internal production ability of tools or their supply possibility from other country, applying the professional builders whose experience shows their commitments to the producing equipment programs and temporary delivery the ordered goods. Also the supervising and controlling the contractors in supplying the equipment programs and informing about order in time (Louise, 2012)

- "Strategies to accelerate the implementation of projects based on the standard PMBOK is the title of another study that was conducted in 2013 by Makki and his colleagues. It is based on a case study about the causes of delay in project design and development unit of Yazd Regional Electric Company, 9 factors which have the lake of useful and coherent system management and controlling the project, generate continuous in introductory design, lake of adequate human resources to follow up the project's affairs, lake of coordination among various units of company in introductory design level, official Bureaucracy, and the distribution of internal organizational correspondence, lake of adequate supervising on equipments suppliers and secondary contractors, the lake of standard approach for time schedule for application level of project, lake of written instruction in initial level, and weakness of database of equipment and initial materials suppliers, are determined as important internal factors which influenced on delays in recognized projects. The application of company in 42-fold management process was studied which is necessary for forming or extending each mentioned factor, and finally the weakness of coherent management and communication management were as important factors in generating the delay on

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recognized projects then with the usage of PMBOK guidance (PMIS) project management information system was introduced as a solution for covering the mentioned weaknesses (Maki *et al.,* 2013).

- There is another research as "identify causes of delay in projects, especially the Electricity Distribution Company of Tehran and prioritize them by MCDM" By Nostari *et al.,* in 2010. In This paper has been tried by using the applied projects of study the last years and the expert's view of country electricity industry in The Electricity Distribution Company in Tehran identify other causes of delay, But since the causes of these delays are not effective the same as each other, Managers also are not possible to eliminate or reduce them in a level. In the second step, using the technique of multi-criteria decision making to prioritize the causes of action, And finally regarding to circumstances of Electricity Distribution Company in Tehran provide solutions (Nosrati *et al.,* 2010).

- "Evaluation phase delay of dam projects" as another research title which was studied Ghodusi *et al.,* in 2008, In addition, in this research the overview of study related to delay, phase theory, and its usage was described. And by using the data related to some dams of country, the actual amount of time and cost is calculated and in continue identifying and analyzing the causes of phase time and cost of these projects is discussed (Ghodusi *et al.,* 2008).

- Another study entitled "Management of EPC project investigating the causes of the delay line 2 metro rail Tabriz using decision tree equipment's " conducted by Nikjoo *et al.,* in 2009 and during the introduction of the delay line 2 metro rail project, the main causes identified and recorded them with knowledge management tools and it will be presented the discovery of the law of the process and using decision tree model for documenting the knowledge generated by the project. Project delays will cause cost for creating enormous problems for the host organization, this is very visible and tangible in the metro rail, and this project is investigating the roots of the delay line 2 metro rail project of Tabriz. Most causes of delay, 1-frequent changes in the information and evidence provided 2. Employer long time and contract review and approval of proposals, plans, and contracts 3. Delay because of lake of budget 4-bit delay due to lack of staff motivation system. It is recommended to future researchers to pay more research how to reduce the delay in projects subway (Nickjoo *et al.,* 2009).
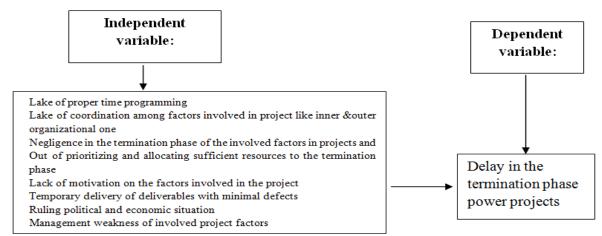
Statistical Research Model

Figure 1: Statistical Research Model

MATERIALS AND METHODS
Methods
The current study methodology, is descriptive and survey, and of target is application method. A survey in social research method is beyond a certain technique of gathering information. Although commonly used in the questionnaire, but other techniques such as structured interviews, observation and content analysis... is used Applied research are those which applied theory, logic, principles and techniques that are developed in basic research to solve real and administrative problems (Khaki, 2010). The statistical

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society of this research will contain exploit organization staffs, employers, contractors, monitoring and enforcement system in Uremia gas power constitute the warranty period. Based on the information obtained from this number includes 137 people. Obviously referring to all staff involved in the closing phase power at the desired time interval could be possible. And the selection of a significant portion of the population is inevitable. The results of sampling relative to any organization or company can be used. After estimating the sample size based on the number of employees in any organization or company the number of samples for each organization is determined.

$$n = \frac{N\left(z\frac{\alpha}{2}\right)^2 pq}{Nd^2 + \left(z\frac{\alpha}{2}\right)^2 pq}$$

$$n = \frac{137(1.96)^2 \times 0.7 \times 0.3}{137(0.05)^2 + (1.96)^2 \times 0.7 \times 0.3} \approx 97$$

In the current research to collect data from the population and to test the research hypotheses set, the measuring variable instruments of this study consists of a questionnaire of 43 determined causes.

In the present study, which is the main tool for measuring are questionnaires, to measure the reliability test of questionnaire is used Cronbach's alpha for the original parts of questionnaires individually. There are different ways to calculate the reliability coefficient in which are used measuring instruments, the most appropriate manner, is Cronbach's alpha coefficient.

Table 1: The reliability of the questionnaire

The number of questions	Cronbach's alpha statistic test
43	0.85

Finally, it's checked the normal or non-normal distribution of data using the Kolmogorov – Smirnov. Since the normal distribution of the data was verified so in the context of parametric statistical tests to confirm or reject the hypothesis of a linear regression model was used.

RESULTS AND DISCUSSION
Results
For information on the normality of data distribution was used Kolmogorov –Smirnov test that its results are shown in table 2. As it can be seen in table 2 in all variables the significance level is greater than P= 0.05, so it is not meaningful. With regard to this, we can say with 95% confidence that the data are normally distributed and regression test can be used.

Table 2: Kolmogorov – Smirnov test

	Kolmogorov – Smirnov		
	statistic	Free- degree	sig
lake of time Schedule	3.17	95	0/050
lake of coordination	3.382	95	0/062
Negligence	3.41	95	0/061
having no motivation	3.08	95	0/058
temporary delivery,	3.39	95	0/081
political conditions	3.62	95	0/076
management weakness project	3.49	95	0/071

Hypothesis 1: The main reason for the delay in the closing phase power projects is the lack of time Schedule.
Using linear regression analysis, we seek to answer this question whether the variable having the proper time schedule and delay in project completion phase power exist linear relationship or to what extent

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changes to the delay in the closing phase power projects are explained by the independent variable having a good schedule? Table 3 displays the results of ANOVA.

Table 3: The results of ANOVA

Sig	F	Average of Cubes	Free degree	Total Cubes	Model
0.000	39.922	4.105	1	4.105	Regression
		٠,103	95	9.769	Error
			96	13.874	Total

It can be said that between the two variables lake of appropriate time schedule (as independent variables) and the delay in the closing phase power projects (the dependent variable) there is a linear relationship. Now should see, what is the initial amount and coefficient of lake of proper time schedule for predicting the delay rate in the closing power phase? Table 4 displays this rate:

Table 4: Standard and non-standard coefficients

Sig	T	Standard coefficients Beta	Non-standard coefficients Std. Error	B	Model
0.000	12.285		0.180	2.216	Fix amount
0.000	6.318	0.544	0.056	0.353	Lake of time schedule

The results displays that regression correlation coefficient is 0.544 and coefficient of determination is 0.296 and adjusted coefficient of determination is 0.288. It can be concluded that 28% of the total variations in the dependent variable delay in the closing power projects related to independent variable that is the lake of appropriate time Schedule.

Hypothesis 2: Termination phase in power projects is not as important as implementation phase and the closing phase activities are outside the priority in compare with implementation phase activities from factors involved in project.

Using linear regression analysis, we seek to answer the question whether is a relation between negligence of termination phase from factors involved in project and out of the priority projects and delays in the completion phase power linear relationship or not? And how changes in the closing power phase projects by the end of the independent variables do not care about the closing phase of the factors involved in project and out of the priority? Table 5 displays the results of ANOVA.

Table 7: The results of ANOVA

Sig	F	Average of Cubes	Free degree	Sum of Cubes	Model
0.000	151.674	8.530	1	8.530	Regression
		.056	95	5.343	Error
			96	13.874	Total

It can be said that between the two variables of negligence of termination phase from factors involved in project and out of the priority projects (as independent variables) and the delay in the closing phase power projects (the dependent variable) there is a linear relationship. Now should see, what is the initial amount and coefficient negligence of termination phase from factors involved in project and out of the priority projects to predicating delay rate in termination power phase project? Table 7 displays these results:

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Table 7: Standard and non-standard coefficients

Sig	T	Standard coefficients Beta	Non-standard coefficients Std. Error	B	Model
0.000	12.091		.138	1.666	Fixed amount
0.000	12.316	0.784	.040	.490	The negligence of termination phase from factors involved in project and out of the priority

The results displays that regression correlation coefficient is 0.784 and the determination coefficient is 0.615 and adjusted determination coefficient of is 0.611. It can be concluded that 61% of the total variation in the dependent variable delay in the closing power projects related to independent variable is the negligence of the closing phase from the factors involved in project and out of the priority.

Hypothesis 3: Lake of coordination among factors involved in project to do the activities causes increasing the time.

Using linear regression analysis, we seek to answer the question whether is a linear relation between variable of lake of coordination among the factors involved in project as internal and external organizations and the delay in the closing power phase project t? And how is determined the changes in the closing power phase projects by independent variables, the lake of coordination among factors involved in project as internal or external organizations ? Table 5 displays the results of ANOVA.

Table 5: The results of ANOVA

Sig	F	Average Cubes	Free degree	Sum of Cubes	Model
0.000	130.291	8.023	1	8.023	Regression
		.062	95	5.850	Error
			96	13.874	Total

It can be said that between the two variables lake of coordination between factors involved in project as internal and external organizations (as independent variables) and the delay in the closing phase power projects (the dependent variable) there is linear relationship. Now should see, what is the initial amount and coefficient of lake of coordination among factors involved in project as internal and external organizations to predicating delay rate in termination power phase project? Table 6 displays these results:

Table 6: Standard and non-standard coefficients

Sig	T	Standard coefficients Beta	Non-standard coefficients Std. Error	B	Model
0.000	12.527		0.140	1.754	Fixed amount
0.000	11.415	0.760	0.041	0.466	The lake of coordination between factors involved in project as inner and outer organizational ones

The results displays that regression correlation coefficient is 0.760 and the determination coefficient is 0.578 and adjusted determination coefficient is 0.574. It can be concluded that 57% of the total variation in the dependent variable delay in the closing power projects related to independent variable is the lake of coordination among the factors involved in project as internal and external organizations.

Hypothesis 4: Note that the delivery of interim deliverables with minimal defeat can influence on complementation of termination phase.

Using linear regression analysis, we seek to answer the question whether is a linear relation between variable of temporary delivery and the delay in the closing power phase project t? And how is determined

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the changes in the closing power phase projects by independent variables, the temporary delivery of items? Table 8 displays the results of ANOVA.

Table 8: The results of ANOVA

Sig	F	Average of Cubes	Free degree	Sum of Cubes	Model
0.000	32.451	3.532	1	3.532	Regression
		.109	95	10.341	Error
			96	13.874	Total

It can be said that between the two variables temporary delivery items (as independent variables) and the delay in the closing phase power projects (the dependent variable) there is a linear relationship. Now should see, what is the initial amount and coefficient of temporary delivery items to predicating delay rate in termination power phase project? Table 9 displays these results:

Table 9: Standard and non-standard coefficients

Sig	T	Standard coefficients Beta	Non-standard coefficients		Model
			Std. Error	B	
0.000	17.237		.146	2.524	Fixed amounts
0.000	5.697	0.505	.042	.239	Temporary delivery items

The results displays that regression correlation coefficient is 0.505 and the determination coefficient n is 0.255 and adjusted determination coefficient is 0.247. It can be concluded that 24% of the total variation in the dependent variable delay in the closing power projects related to independent variable is the temporary delivery items.

Conclusion

The purpose of this study was to investigate the causes of prolongation of the project termination phase power and present an appropriate solution. Results shows there is a linear relationship between lake of appropriate time schedule and the delay in the closing phase power projects. Also, results showed there is a linear relationship between negligence of termination phase from factors involved in project and out of the priority projects and the delay in the closing phase power projects.

Also, results showed there is a linear relationship between the two variables lake of coordination between factors involved in project as internal and external organizations and the delay in the closing phase power projects. Also, results showed there is a linear relationship between the two variables temporary delivery items and the delay in the closing phase power projects.

It can be drawn from the results of study that the main reason for the delay power projects in the second hypothesis (the negligence of the closing phase and the activities of the closing phase in compared with the implementation phase) and the activity third hypothesis the correlation among factors involved in project to do the closing phase activities which Should seek to provide appropriate solutions to reduce delays in the projects.

Of the reasons for delay are solved in the short term such as "Not a great counselor and workshop monitoring devices"," the shortage of human resources subcontractor to perform the assurance professionals inappropriate and inefficient ones", and "Delayed follow-up issues and solve problems (the external and external organization) by the Project Management Client" and also some of the causes are not resolved in mediation, to resolve them this time period should plan in long-term and for the solution should meet the conditions for economic, social and political country.

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The main reasons which the respondents have been discussed in questionnaires about the causes of delay in projects:

• The shortage of human resources subcontractor to perform the assurance professionals inappropriate and inefficient ones

• Economical problem of country

• Lack of decisive and effective support employers in solving problems

• Select the less experienced subcontractors

• Sudden changes in products prices

• Not a great counselor and workshop monitoring devices

• Delayed follow-up issues and solve problems (the external and external organization) by the Project Management Client

• Replacing the key members with new projects

• To hasten the transition to the closing phase (delivery of derivable items with large defects remaining).

• Contractor's financial problems and lack of timely payment of the cost of the workshop

• Lack of motivation in the Operations and Client Because of the operation of the power house and use the services of a contractor

• Lack of commitment and responsibility of the subcontractor

• Absence of an effective project manager, supervisor or subcontractor

• Lack of timely supply of spare parts of special tools

• Lack of motivation in employer and exploiter to finish and leave the workshop

How much of a delay factors in Uremia power plant for similar power plant projects are applicable.

The average use of the results related to the research for others power plants projects regarding to administrative factors of planthouse projects along the country is limited in employers and contractors and statistical sample consultants in the country and often in limited tenders have been invited to other companies, The conclusion from this study is that we are certainly many results can be applicable to other power projects along the country.

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