

## Analyzing Project Management in Housing Construction in Erbil

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**Abstract:** The main purpose of this study is to analyze project management of housing construction in Erbil. This research used secondary and primary data to find out the number of housing projects in Erbil between 2006 and 2015. The primary findings are based on the collection of data through conducting a survey which consists of six dimensions of project management such as project efficiency, impact on the customer, impact on the team, business and direct organization success, preparing for the future and overall success. The data collected was analyzed by using SPSS-23 statistical software. The data was collected by using a questionnaire which was distributed among managers and engineers of housing projects in Erbil. Housing projects in Erbil were 81 projects between 2006 and 2015. These projects consisted of 15% of finished projects and 85% of unfinished housing projects. It was found that managers and engineers have used unfinished projects' budgets for new projects. The researcher found that the mean of project efficiency is equal to 3.3, which shows that most of the respondents' answers were neutral. This also means that the housing projects do not analyze the efficiency of the projects properly. It was also found that the demand for projects were not adequate, based on the mean of the impact on the customer which was equal to 3.7. This means that the customers have impacts on project demands.

**Keywords:** Project, Project Management, Erbil, Kurdistan

### 1. Introduction

In the process of innovation in most industrial organizations and across many industries, project management is an essential factor. Development of large constructions can advance by using some formal procedures of project management, which also ensures its success. The success of these projects will benefit the employment sector. This also goes in parallel with project management theory (Heerkens, 2002). Between the project management and challenges, project managers' skills decide on the outcome of overcoming the risk. To explain the goals of the projects, the manager understands and knows that the reason for project failure is not stating the goals clearly. The manager likewise must also manage the project range and attempt not to extend the project beyond its stated objects. Project managers need time to review and understand education and reflect upon development of project management (Winter *et al.*, 2006). Prolonging projects results in the increase of expenditure (Arslan & Kivrak, 2008). The approach or technique to project management is not parts of any particular theory. In present scenario nationwide project-management theory is better defined as a number of theories – a tool chest (Bredillet, 2006). Project management is the main practice of design-engineering companies. The success of the job is a determinant issue for project usefulness, and it has a direct correlation to structural viability (A Financial Survey of Consulting Engineering firms, 2006).

## **2. Literature Review**

The information is obtained from the articles, books and other report papers that were published in this area, in the literature review eight subtitles are included: Project management, the time value in the project management, project management processes, organizational project management, project risk management, these subtitles give all details about literature review.

### **2.1 Project Management**

We have some visions and we would like to achieve those visions. It may be a new organization structure, a new product, a new production process, a new computer system, or more competent managers. To improve performance of our business, we need to get help from the operation of that new state, by resolving and exploiting, for repaying the cost of achieving, which will provide us with benefits. To successfully deliver for the future states, we need project-based management. Users and providers of the project resolutions have adapted project management approaches and methods, which firstly grew in the construction and engineering regulations to enable the complex implementation and planning deeds for a resolution to assemble its intentional aims (Crawford, 2000). According to Brandel (2004) some project managers receive official education on agreement and toll discussion, if a problem arises it means that at the beginning of the project, they don't understand well. According to Pihie and Sani (2008) project costs, profits and fees, are areas of business knowledge engineering which apprentices have to know and help the business with management, marketing, and finance to be competitive (Klastorin, 2004).

### **2.2 The Time Value in the Project Management**

The organization needs to use a software program for controlling real-time for construction and complete the project on time and it can also be controlled by using an online program which can be done by a confidential person. Therefore, I believe that there are ample sources to collect the data for analysis and time protection. However, the time schedule gives to accounts and finance department to make the quantitative real-time operating worth of project and time with value which has equally important and integral parts in the profit and loss statement (Kendall, 2003).

### **2.3 Project Management Processes**

The project management process recognized five method groups that form the building block for any project life cycle. These process groups are as follows: initiation of a process group, planning process group, execution process group, monitoring and control process group than closing process group. All of these methods take place at minimum once in the life cycle of each project (Wysocki, 2009).

### **2.4 Organizational Project Management**

According to Lechler (1998) the project management decision of an organization strategy is to finish project by combining the systems of program management. Therefore, the project management started to help companies to evaluate and develop the ability of their companies' project management staff.

## **2.5 Project Risk Management**

The risk is the unexpected conditions that are intrinsic in human activities of which project management is no exception. This may show to be a clearer meaning surrounding all human activities. In the setting of project management; risk can be described as the “insecurities that could negatively affect the project by challenging the project’s parameters or limits” (Mintzer, 2002). This can result in loss of time, money, labor, or the project as a whole.

### **2.1.1 Research Objective**

- 1- To state the reasons for unfinished projects in Erbil.
- 2- To show the importance of project management for the projects in Erbil.
- 3- To explain the effect of customer or the user on the projects in Erbil.

## **3. Methodology**

In this research paper, I used a questionnaire in order to collect the data about the project management of some companies in Erbil, KRG. The questionnaire was comprised of two sections. The first section consisted of demographic questions, starting with the participants’ age, gender, level of education, marital status, job experience, spoken Language.

The second section of the questionnaire consisted of six factors: the first factor was project efficiency, which consisted of four questions. Second factor was impact on the customer/user, which consisted of five questions, the third factor was an impact on the team, which consisted of five questions, fourth factor was business and direct organization success, which consisted of six questions, the fifth factor was preparing for the future, which consisted of six questions, sixth factor was overall success, which consisted of one question.

I distributed questionnaire for collecting data as a primary data; my surveys were distributed to managers and engineers, from some housing construction companies in Erbil. Also, I used secondary data for my research work, which consisted of reviewing recent academic articles, books, and previous studies related to project management, challenges and opportunities. A random sampling method was adopted to gather the data by which all managers and engineers in housing construction companies had equal chances of being selected from the sample group. However, within the borders of Erbil, there were 333 companies between the years 2006 to 2015 and from those companies, 81 companies were construction companies and 85% of their projects were not finished which means 69 projects were not finished, and 15% of the projects were finished. So, in this study the 30 companies are (Kurdistan city, Mamostayan city, Kavar city, Hiwa city, Zhyan city, Lana city, Ferdaws city, Slava city, Future city, Shady city, Darwaza city, Galyawa group, Rekany group, Biyaban group, Aso group, Salay group, Rost valley company, Xalla company, Natrsn company, Namam company, Baranaty company, Mansur company, Zanyary apartment, Iskan apartment, Makoktawar, R.M.F, Shary hawler bo ragayandn, Family land, Aram village, Balsam hospital) and the sample size of the study was 104.

The questionnaire was structured in the form of multiple-choice questions. The participants were asked to rate whether they strongly disagree, disagree, neutral, agree, or strongly agree, in each question. The questionnaire was adopted from the resource as seen in appendix (A). All questions from the questionnaire were taken from (Dvir & Shenhar, 2007). Data were collected and analysed using SPSS - 23 software. The T-test was applied with all dimensions to check the acceptability of items for the further study. The correlation was checked to check the inter-relation of dimensions with each other. Regression analysis was also applied to know the effect of independent variables on dependent variable. The conclusion of the study is drawn based on the outcomes of the data analysed.

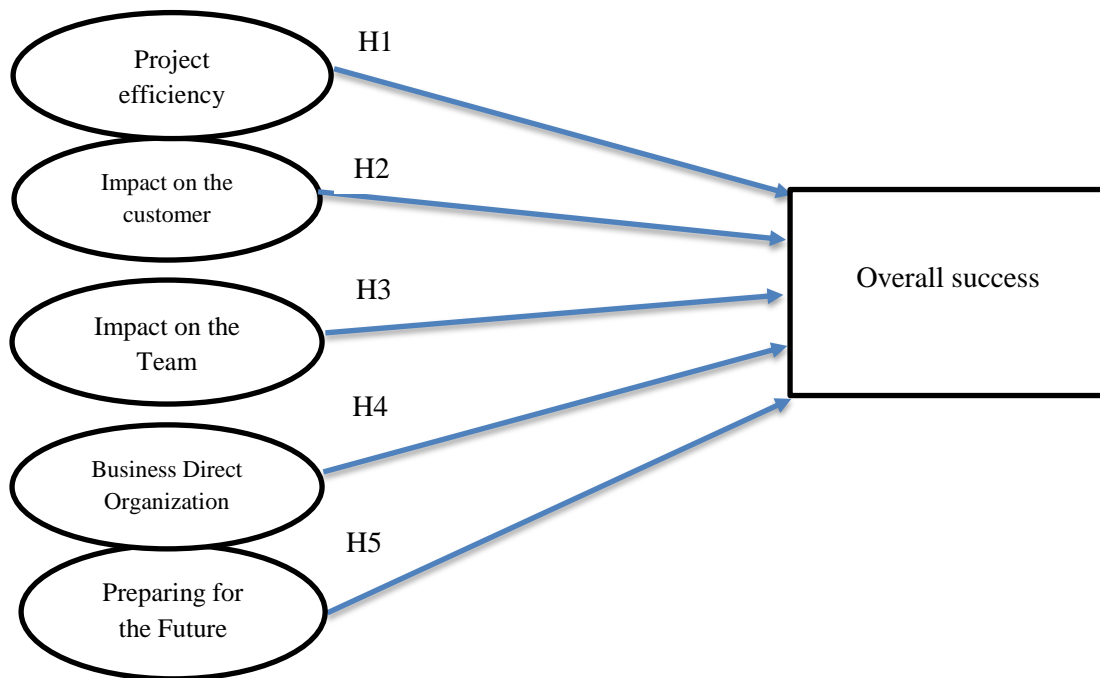


Figure 1: Conceptual Model

The hypotheses are:

H1: Project efficiency does not affect overall success of the organizations.

H2: Impact on the customer does not affect overall success of the organizations.

H3: Impact on the team does not affect overall success of the organizations.

H4: Business and direct organization does not affect overall success of the organizations.

H5: Preparing for the future does not affect overall success of the organizations.

#### 4. Findings

Table 2: Demographic Questions

Demographic	Items	Frequency	Percent
Age	28-24	10	9.6
	25-31	33	31.7
	32-41	32	30.8
	41-44	22	21.2
	+53	7	6.7
Gender	Male	104	100
Education level	Bachelors	80	76.9
	Master	19	18.3
	other	5	4.8
Martial States	Single	21	20.2
	Married	83	79.8
Job Experience	1-4	17	16.3
	5-9	36	34.6
	10-14	21	20.2
	15-20	30	28.8

	Kurdish	23	22.1
	Arabic	2	1.9
Spoken Language	K-A	17	16.3
	K-E	9	8.7
	K-A-E	35	33.7
	All	18	17.3

Table 3: Descriptive Statistics

Items	N	Min	Max	Mean	Std. Deviation
q7- the project was completed on time or earlier	104	1.00	5.00	2.8846	1.29456
q8- the project was completed within or below budget	104	1.00	5.00	3.1538	1.18050
q9- the project had only minor changes	104	1.00	5.00	3.5096	1.10599
q10- other efficiency measures were achieved from the project	104	1.00	5.00	4.0096	.83020

The total mean is equal to 3.3894 and the majority of the responses for questions 7, 8, and 9, are close to neutral, and the majority of the responses showed agreement for question 10. While the maximum value for this dimension is equal to 4.00, the minimum is equal to 2.8.

Table 4: Descriptive Statistics

Items	N	Min	Max	Mean	Std. Deviation
Q11- The product improved the customers performance	104	1.00	5.00	3.7404	.90302
Q12- The customer was satisfied from the project	104	1.00	5.00	3.8558	.92870
Q13- The product met the customers requirement	104	1.00	5.00	3.7308	.88384
Q14- The customer is using the product	104	1.00	5.00	3.6827	1.12573
Q15- The customer will come back for future work	104	1.00	5.00	3.7500	.97293

The total mean is equal to (3.7519) and the majority of responses for questions 11, 12, 13, 14, and 15, are close to agree. While the maximum value for this dimension is equal to 3.8, the minimum is equal to 3.6.

Table 5: Descriptive Statistics

Items	N	Min	Max	Mean	Std. Deviation
Q16- The team was highly loyal to the project	104	1.00	5.00	4.0962	.94014
Q17- The project team had high morale and energy	104	1.00	5.00	3.9615	.93397
Q18- The team felt that working on the project was fun	104	1.00	5.00	4.0288	.94977
Q19- Team members experienced personal growth	104	1.00	5.00	3.7788	.94465
Q20- Team members wanted to stay in the company	104	1.00	5.00	4.0288	1.06540

The total mean is equal to (3.9788) and the majority of the responses for questions 16, 17, 18, 19, and 20, are agree. While the maximum degree for this dimension is equal to 4.09, the minimum is equal to 3.7.

Table 6: Descriptive Statistics

Items	N	Min	Max	Mean	Std. Deviation
Q21- The project was an economic business success	104	1.00	5.00	3.721 2	.90797
Q22- The project increased the company profitability	104	1.00	5.00	3.586 5	1.04844
Q23- The project has a positive return on investment	104	1.00	5.00	3.644 2	.98452
Q24- The project increased the organizations market share	104	1.00	5.00	3.586 5	.87700
Q25- The project contributed to shareholders value	104	1.00	5.00	3.317 3	.75382
Q26- The project contributed to organizations direct performance	104	1.00	5.00	3.163 5	.92548

The total mean is equal to (3.5032) and the majority of the responses for questions 21, 22, 23, and 24, are close to agree, and the majority of the responses for questions 25 and 26 are natural.

Table 7: Descriptive Statistics

Items	N	Min	Max	Mean	Std. Deviation
Q27- The project outcome will contribute to future projects	104	1.00	5.00	3.5288	1.10565
Q28- The project will lead to additional new products	104	1.00	5.00	3.4519	1.04165
Q29- The project will help create new markets	104	1.00	5.00	3.4423	.91192
Q30- The project create new technologies for future use	104	1.00	5.00	3.2981	1.09615
Q31- The project contributed to new business processes	104	1.00	5.00	3.3269	.79369
Q32- The project developed better managerial capabilities	104	1.00	5.00	3.9327	.97805



The total mean is equal to (3.4968) and the majority of the responses for questions 27, 28, 29, 30, and 31, are natural, and the majority of the responses for questions 32 are agree.

Table 8: Descriptive Statistics

Item	N	Min	Max	Mean	Std. Deviation
Q33- Overall the project was a great success	104	1.00	5.00	4.0288	.89721

The total mean is equal to (3.4968) and the maximum and minimum values for this dimension are equal to 4.00, because this dimension has one question.

Table 9: Correlations

	Project efficiency	Impact on the customer	Impact on the team	Business and direct organization	Preparing for the future	Overall success
Project efficiency	1	.649**	.367**	.564**	.592**	.549**
	Pearson Correlation					
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	104	104	104	104	104
Impact on the customer	.649*	1	.576**	.622**	.669**	.767**
	Pearson Correlation					
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	104	104	104	104	104
Impact on the team	.367*	.576**	1	.431**	.527**	.627**
	Pearson Correlation					
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	104	104	104	104	104

Business and direct organization	Pearson Correlation	.564*	.622**	.431**	1	.732**	.633**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	104	104	104	104	104	104
Preparing for the future	Pearson Correlation	.592*	.669*	.527*	.732**	1	.660**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	104	104	104	104	104	104
Overall success	Pearson Correlation	.549*	.767*	.627*	.633**	.660**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	104	104	104	104	104	104

\*\* . Correlation is significant at the 0.01 level (2-tailed).

In the above table, the six dimensions are correlated to each other where all correlation is highly significant with value 0.000. The correlation of impact on the customer with impact on the team is 0.576, impact on the customer with business and direct organization is 0.622, impact on the customer with preparing for the future is 0.669, impact on the customer with overall success is 0.767. The correlation of impact on the team with business and direct organization is 0.431. Impact on the team with preparing for the future is 0.527, impact on the team with overall success is 0.627. The correlation of business and direct organization with preparing for the future is 0.732, business and direct organization with overall success is 0.633. The correlation of preparing for the future with overall success is 0.633.

Table 10: One-Sample Test

Items	Test Value = 3		
	t	df	Sig. (2-tailed)
PE7	-.909-	103	.365

PE8	1.329	103	.187
PE9	4.699	103	.000
PE10	12.402	103	.000
IC11	8.361	103	.000
IC12	9.397	103	.000
IC13	8.432	103	.000
IC14	6.185	103	.000
IC15	7.861	103	.000
IT16	11.890	103	.000
IT17	10.499	103	.000
IT18	11.047	103	.000
IT19	8.408	103	.000
IT20	9.848	103	.000
BDOS21	8.100	103	.000
BDOS22	5.705	103	.000
BDOS23	6.673	103	.000
BDOS24	6.820	103	.000
BDOS25	4.293	103	.000
BDOS26	1.801	103	.075
PF27	4.878	103	.000
PF28	4.424	103	.000
PF29	4.946	103	.000
PF30	2.773	103	.007

PF31	4.201	103	.000
PF32	9.725	103	.000
OS33	11.694	103	.000

The project efficiency of these two items (PE7 + PE8) does not have significant responses so it should not be considered in the study. So from business direct organization one item (BDO26) does not have significant responses so it should not be considered in the study. Preparing for the future (PF30) does not have significant responses so it should not be considered in the study. Other items, for all dimensions (project efficiency, impact on the customer, impact on the team, business and direct organization success, preparing for the future and overall success) are highly significant with the value of 0.000.

Table 11: Regression for project efficiency with overall success

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.633	.369		4.427	.000
1 Project efficiency	.707	.107	.549	6.631	.000

a. Dependent Variable: Overall success

Project efficiency table shows that all overall success of independent and dependent variables shown in the above tables have significant value 0.000, and the beta is 0.660.

Table 12: Regression for impact on the customer with overall success

ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48.758	1	48.758	145.606	.000 <sup>b</sup>
	Residual	34.156	102	.335		
	Total	82.913	103			

a. Dependent Variable: Overall success

b. Predictors: (Constant), Impact on the customer

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.366	.309		1.185	.239
	Impact on the customer	.976	.081	.767	12.067	.000

a. Dependent Variable: Overall success

Impact on the customer table shows that all overall success of independent and dependent variables shown in the above tables have significant value 0.000, and the beta is 0767.

Table 13: Regression for impact on the team with overall success

ANOVA<sup>a</sup>

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	32.622	1	32.622	66.164	.000 <sup>b</sup>
	Residual	50.291	102	.493		
	Total	82.913	103			

a. Dependent Variable: Overall success

b. Predictors: (Constant), Impact on the team

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	.972	.382		2.545	.012
	Impact on the team	.768	.094	.627	8.134	.000

a. Dependent Variable: Overall success

Impact on the team table shows that all overall success of independent and dependent variables shown in the above tables have significant value 0.000, and the beta is 0.767.

Table 14: Regression for business and direct organization with overall success

ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	33.202	1	33.202	68.126	.000 <sup>b</sup>
	Residual	49.711	102	.487		
	Total	82.913	103			

a. Dependent Variable: Overall success

b. Predictors: (Constant), Business and direct organization

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.926	.382		2.425	.017
	Business and direct organization	.886	.107	.633	8.254	.000

a. Dependent Variable: Overall success

Business and direct organization table that all overall success of independent and dependent variables shown in the above tables have s significant value 0.000, and the beta is 0.633.

Table 15: Regression for Preparing for the future with overall success

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.100	1	36.100	78.658	.000 <sup>b</sup>
	Residual	46.813	102	.459		
	Total	82.913	103			

a. Dependent Variable: Overall success

b. Predictors: (Constant), Preparing for the future

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.925	.356		2.598	.011
	Preparing for the future	.888	.100	.660	8.869	.000

a. Dependent Variable: Overall success

Business and direct organization table shows that all overall success of independent and dependent variables shown in the above tables have significant value 0.000, and the beta is 0.660.

## 5. Discussion and Conclusion

The aim of this research is to mention some important concepts to the companies, who have a project, as defined by Presidency of Erbil Municipality from 2006 to 2015 in the border of Erbil. Erbil has 333 companies and 81 of them are construction companies which have projects. But from those 81 companies only 15% are finished and the rest are not finished. The researcher distributed a questionnaire to managers and engineers in the 30 different companies. The researcher used frequency analysis in order to answer the main research questions.

The researcher found that the mean of project efficiency is equal to 3.3 which shows that the housing projects are not analyzing the efficiency of the projects properly and it was found that the demand for projects were not adequate based on the mean of the impact on the customer/user which is equal to 3.7. The T-test showed that 23 items were accepted and 4 items were not significant to consider in the study.



The regression analysis tested all five hypotheses where they were all rejected with highly significant value of 0.000. The study shows that project efficiency impact on the customer, impact on the team, business, direct organization and preparing for the future influence on the overall success of the organizations, with 55%, 77%, 62%, 63% and 66% of effectiveness respectively. So the research concludes that all the independent variables have a strong impact on the dependent variable.

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