



# EVALUATING STAKEHOLDER'S LEVEL OF INVOLVEMENT IN PROJECT EXECUTION PHASE

**KEYWORDS:** STAKEHOLDER INVOLVEMENT,  
PROJECT EXECUTION, CONSTRUCTION,  
PROCESSES

**KAMAL JAAFAR, SHAFIZ MOHD YUSOF**

FACULTY OF ENGINEERING AND INFORMATION SCIENCE  
UNIVERSITY OF WOLLONGONG IN DUBAI  
UNITED ARAB EMIRATES

**Abstract:** The study aim is to examine the involvement level of the stakeholders during the project execution process. Stakeholders play a vital role in providing the needed resources and Ultimately they have strong influence on project success. The research intends to formulate a matrix which will reflect the list of elements which effect the project execution, type of stakeholder involved for each element, involvement level of each stakeholder which resulted in the delay of the execution, Criticality of involvement on project which will result in the output answer we are seeking the process of involvement for each stakeholder.

## 1. INTRODUCTION

A construction project development involves a lot of capital for the execution of the project and convert it into a success project. During the execution a lot of problems are involved for which a simple solution needs to be found in order to make the project run smoothly without any complexity.

This research will help the manager in charge of the project to help run the project without any chaos and confusion caused during the execution processes which will involve different stakeholders. We intend to formulate a matrix which will reflect the list of elements which effect the project execution, type of stakeholder involved for each element, involvement level of each stakeholder which resulted in the delay of the execution, Criticality of involvement on project which will result in the output answer we are seeking the process of involvement for each stakeholder.

We will develop a detail case study which will show the involvement of stakeholder during the execution phase, their behavioral analysis during the involvement, advantages and disadvantages of their involvement, how their involvement will benefit the variations caused during the execution process and also the efficiency improvement of the manager in charge of the construction project.

Assumptions will be specified in the relevant section as per the circumstances used during analysis of the methodology used to prove the research.

## EVALUATING STAKEHOLDER'S LEVEL OF INVOLVEMENT IN PROJECT EXECUTION PHASE

### 2 Research Approach

The aim of this research is to calculate the stakeholder's level of involvement in the execution phase of building construction projects. In order to achieve the desired output of this research we are going to use a questionnaire based survey. A qualitative and quantitative approach is used to conduct the methodology to obtain the desired output. We need to decide the questions that we need answers for.

### 3 Project Deliverables

The study has to calculate whether the level of stakeholder involvement during the execution phase is sufficient for the project success. It should highlight the strength & weakness of the stakeholder involved for different process in the execution phase. Secondly, to identify the reasons of delay in construction execution phase in UAE. Consequently, to check the importance of the delay between each group of stakeholder involved. After which we study the modifications in views of the three major leaders in constructions namely, owners, contractors and consultant.

Resulting in evaluate the extent of involvement of the stakeholders in the execution phase during the delay caused in construction projects in UAE. Main aim is to measure and benchmark the involvement of stakeholder participation in the execution phase in construction projects in UAE.

### 4 Research Gap

Several researchers [16], [9], [7], [13], [1], and [12] have recognized that "Failure in project is commonly not due to of lack or unsuccessful project management performs, but of indifferent social communications between the various project stakeholders".

Various limitations have been stated and classifies into three categories of improved areas: the relevance, Dynamic & the development of stakeholder analysis & commitment involved. Despite these classification, there is no sufficient

tools & methods provided to identify different stakeholders & their respective interests [16], [13], [10], [11], [14], and [6].

The findings indicated that the involvement of stakeholder in the beginning was high.

Hence, the journal outlines the problems that [3] and [5] emphasize: "the false hypothesis that there is steady alliance of stakeholders across the duration of a project".

Specifically, [3] showed that "there is an interaction & influence between all the stakeholders' in a project".

This study emphasis on bridging the stakeholder management & issue management in two methods:

- A path from stakeholders to issues and
- A path from issues to stakeholders.

The methodology used in this paper is quantitative analysis. The data is gathered using site research and design- oriented approach. After the data is collected via interviews & observations. The data is coded & analyzed.

The analysis showed that link between issues and stakeholders as the initial stage. Two main conclusions were made out the analysis. First, the framework created from the analysis showed a more structured and well defined focus at the issue management & stakeholder management approach.

Consistently, [5] premises stakeholders govern temporary organization like projects. Evidently, [3] states that interpretation processes also have an impact on analysis of stakeholder and it also suggests that it makes more understanding to consider to regard concerns as stakeholder-owned knowledge that is important for project managers.

The issue is created in the starting/planning phase of the project construction thus lowering the involvement of stakeholder in the execution phase. It involves a lot of time in resolving the issues caused during the planning phase.

The above journal emphasis on the different categories, methodology & processes used for the planning phase of the stakeholder involvement in a building construction projects. Hence in the further research the main focus will be given to evaluate the stakeholder's level of involvement in the project execution phase of building projects.

## 5 Methodology

### 5.1 Data Collection and Sampling

In this survey we are looking into answers for the involvement level of the stakeholders in the execution process, criticality of their involvement & their process of involvement. The survey used in this research targets on a set of following key groups of stakeholders as shown in

Figure 1.

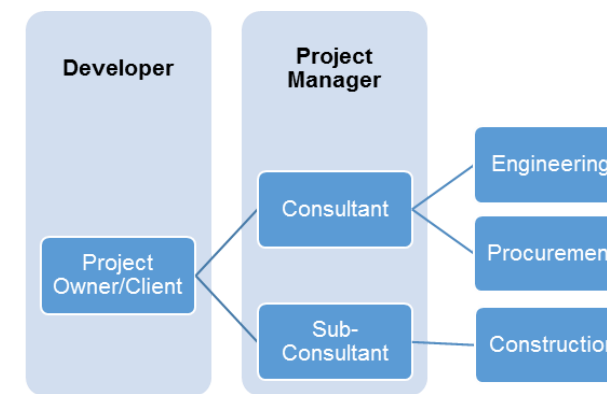


Figure 1: Key Stakeholder Group

The information needed was achieved in a span/period of 6 months and more than 500 corresponded to the survey. The general purpose of study used is very exploratory. Only construction sector in UAE was targeted in this research.

### 5.2 Questionnaire Design

The questionnaire emphasis on the level of involvement of the stakeholders in the sub phases of the execution phase. It was designed to answer the important question: "What is the current stakeholder's level of involvement in the execution phase of building construction projects?" The execution process is divided in to 6 phases as shown in Figure 2.

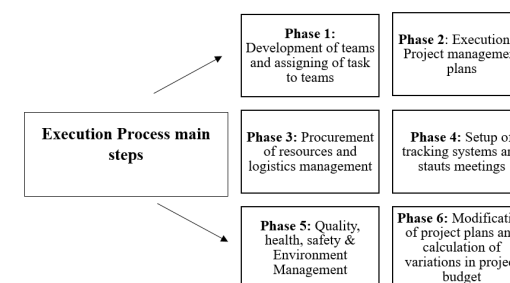


Figure 2: Execution Process Main Steps

## 6 Analysis & Results

### 6.1 Analyzing stakeholder's Level of Involvement

The main objective of this section is to evaluate the stakeholder's level of involvement in the execution phase of construction projects. We have considered 5 group of stakeholder's involvement in 6 facets of the execution phases. Each of these facet includes elements corresponding to the goals of that particular phase.

### 6.2 Using descriptive statistical analysis

This section includes a briefing on the data received along with graphical analysis of quantitative analysis results. In this study we calculate the median, Mean and standard deviation of the ranking response by the respondents. Based on each phase of the execution process, the mean & median of the highest and lowest response by the respondents is compared as shown in

Table 1.

Group of Stakeholders	Median	Mean	Standard Deviation
Owner/developer/designer	4	3.6	1.18
Consultant	4	3.6	1.09
Construction/project manager	4	3.88	1.05
Contractor	4	3.59	1.18
Suppliers	3	3.09	1.24

Table 1: Development of teams and assigning of task to teams

### 6.3 The level of involvement during development of teams and assigning of task to teams.

As per Table 1, it is found that construction/project manager, owner/ developer/designer, consultant and contractor stakeholder group are highly involved in the development of teams and assigning of task to teams. The mean and median of both the groups as shown in the table are approximately around 4.

## EVALUATING STAKEHOLDER'S LEVEL OF INVOLVEMENT IN PROJECT EXECUTION PHASE

Whereas supplier have low level of involvement and low contribution in which the mean and median value falls around 3. In this phase, the construction project manager is a crucial part in the development of the respective team for the particular role played in the building construction project and setting roles and targets to the team which were decided in the planning phase.

The contractor also plays an equal important role as most of the instructions are given by the project manager to carry out the task scheduled and assigned. The owner and the consultant do interfere in the role if they have certain preferences in the team and particular supplier and sub-contractor if they have in mind.

### 6.4 The level of involvement during execution of project management plans

In **Table 2**, the construction/project manager and contractor has the highest level of involvement during execution of project management plans. As self-explanatory that most of the roles in a project are assigned by the project manager and contractor. This can be concluded from the mean & median which is almost 4. Whereas the suppliers and the owner/developer/designer have a low level of contribution with a score of 3.45 and 3.59.

The consultant stands in between with value of 3.88. The construction project manager and contractor play the most important role in the execution of the project. Ensuring that all the sub-contractor and suppliers stick to their assigned duty in the building construction projects.

Group of Stakeholders	Median	Mean	Standard Deviation
Owner/developer/designer	4	3.59	1.18
Consultant	4	3.88	1.08
Construction/project manager	4	4.1	0.94
Contractor	4	3.94	1
Suppliers	3	3.45	1.05

Table 2: Execution of Project management plans

### 6.5 The level of involvement during the procurement of resources and logistics management.

In this phase as shown in **Table 3**, the construction/project manager and the contractor have the highest level of involvement during the procurement of resources and logistics management. The resources are approved by the contractor and the project manager in the project. The submittal for the resources are finally reviewed by both and approved in a construction project for further action. The mean & median value is approximately around 4 for both.

Owner/developer/designer has the least involvement in this phase. The consultant and the supplier play a fair role in this phase. In this phase the contractor and project manager decides on the materials used for the project and are responsible for reviewing the submittals proposed by the suppliers for their respective materials as previously decided in the planning phase as per the scope of the building project.

Group of Stakeholders	Median	Mean	Standard Deviation
Owner/developer/designer	3	2.98	1.13
Consultant	3	3.38	1.08
Construction/project manager	4	3.8	0.97
Contractor	4	3.83	1.03
Suppliers	4	3.75	1.12

Table 3: Procurement of resources and logistics management

### 6.6 The level of involvement while set up of tracking systems and status meeting

In this phase as shown in **Table 4**, the role is played by 3 main stakeholders namely Construction project manager, Consultant and contractor with a mean and median value of 4. This phase plays an important role in the efficient and effective running of the project. Communication plays a key role.

Owner/developer/designer and suppliers have low contribution as the owner need to be updated of the status and supplier is present just to ensure that his

materials are sold and used. The Value of Mean and median for Owner/developer/designer is near 4 and for a supplier is around 3. This phase plays an important role in the execution of the project as communication and status meeting help in keeping all the stakeholder up to date with construction progress. The Project manager, partly the consultant and the contractor play an important role here.

Group of Stakeholders	Median	Mean	Standard Deviation
Owner/developer/designer	4	3.58	1.15
Consultant	4	3.79	1.07
Construction/project manager	4	3.99	0.99
Contractor	4	3.78	1.02
Suppliers	3	3.05	1.05

Table 4: Setup of tracking systems and status meetings.

### 6.7 The level of involvement during the Quality, health & safety management of the execution process

In this phase as shown in **Table 5**, the construction/project manager and the contractor have the highest level of involvement with the mean and median value at 4. In case of any HSE interference during the progress of work can lead to delay in work progress.

Contractor and Project manager intervene in this case in order to run the project. Consultant has a fair amount of contribution in this phase of 3.66. Owner and supplier have low contribution in this phase with a value of 3.48 & 3.28.

Group of Stakeholders	Median	Mean	Standard Deviation
Owner/developer/designer	4	3.48	1.15
Consultant	4	3.66	1.15
Construction/project manager	4	4.14	0.92
Contractor	4	4.05	0.96
Suppliers	3.5	3.28	1.22

Table 5: QHSE management

### 6.8 The level of involvement during modification of project plans and calculation of variations in project budget of the execution process

In this phase as shown in Table 6, consultants have the highest level of involvement with the mean and median value of 4. There is considerable level of interference from the consultant during the project execution for some minor change in device and material & resource approval which causes a hindrance in the project execution.

Next level of contribution is by Owner /developer / designer and construction / project manager with mean and median value of 4. The contractors have a fair level of involvement in this phase with a value of 3.79. The suppliers have a low level of involvement in this phase. The owner, consultant and project manager play the role here during the final stage of the project to calculate the miscellaneous budget and variations caused in the building construction project.

Group of Stakeholders	Median	Mean	Standard Deviation
Owner/developer/designer	4	3.96	1.11
Consultant	4	4.01	1.02
Construction/project manager	4	3.96	0.97
Contractor	4	3.79	1.06
Suppliers	3	3.1	1.18

Table 6: Modification and project budget

## 7 Summary of the above analysis

From the above tables, the level of involvement as per the respondents says that it's from the construction Project Manager and the contractor. In order to check further Relative important index method was used to the ranking of the stakeholder in each phase of the execution process.



## EVALUATING STAKEHOLDER'S LEVEL OF INVOLVEMENT IN PROJECT EXECUTION PHASE

### 8 Relative important Index

In this research, relative importance index (RII) was used to make a decision about the order of all factors that were explored. All these factors include:

- Development of teams and assigning of task to teams.
- Execution of project management plans.
- Procurement of resources and logistics management.
- While setup of tracking systems and status meeting.
- Quality, health, safety & Environment management
- Modification of project plans and calculation of variations in project budget.

#### 8.1 The level of involvement during development of teams and assigning of task to teams

The construction project manager has a vital part in this phase with a ranking of 0.0095. The owner and the consultant play a relatively important role in this phase as shown in **Table 7**, with 2nd ranking of 0.0088 each.

Meanwhile the role of the contractor is not of much interference in this phase with a ranking of 0.00886 which is very slightly less compared to the owner and the consultant. The role of the supplier is yet to be defined in the future phases hence in the 4th place with a ranking of 0.0076.

Group of Stakeholders	RII	Ranking
Owner/developer/designer	0.00888889	2
Consultant	0.00888889	2
Construction/project manager	0.009580247	1
Contractor	0.008864198	3
Suppliers	0.00762963	4

Table 7: RII for Phase 1

#### 8.2 The level of involvement during execution of project management plans

The project manager plays an important role here with the RII ranking of 0.01 in the first place. The role and task are combined and distributed by the project manager and the contractor together as the contractor is located in the 2nd place with the RII index of 0.0097, **Table 8**.

Respectively, the consultant has a relative fair role in the phase with ranking of 0.0095 in the 3rd place followed by owner in the 4th place with the ranking of 0.0088. The supplier has no much role in this phase. Hence it lies in the 5th place with the ranking of 0.0085.

Group of Stakeholders	RII	Ranking
Owner/developer/designer	0.008864198	4
Consultant	0.009580247	3
Construction/project manager	0.010123457	1
Contractor	0.009728395	2
Suppliers	0.008518519	5

Table 8: RII for phase 2

#### 8.3 The level of involvement during the procurement of resources and logistics management

In this phase, as shown in **Table 9**, the contractor and the project manager plays an important role in the procurement of resources and logistics of materials with the ranking of 1st and 2nd with RII of 0.0094 & 0.0093.

The material type and make is decided by the former. The supplier plays a relative important role here since the materials are delivered and supplied by them. Hence they are ranked 3rd with an RII of 0.0092.

Consultant and the owner have a less role in this phase with the ranking of 4th and 5th with RII of 0.0083 and 0.0073.

Group of Stakeholders	RII	Ranking
Owner/developer/designer	0.007358025	5
Consultant	0.008345679	4
Construction/project manager	0.009382716	2
Contractor	0.00945679	1
Suppliers	0.009259259	3

Table 9: RII for phase 4

#### 8.4 The level of involvement while set up of tracking systems and status meeting

The project manager has an important role with the status update and tracking of the project progress of the project and to update the other stakeholder of the project of the construction. It is ranked 1st with RII of 0.0098. The consultant and the contractor lie pretty close to each other with the respective RII of 0.00935 & 0.00933 with 2nd & 3rd ranking, (**Table 10**). The owner is more to be updated of the progress than to provide the status hence they are ranked 4th with RII of 0.0088. The suppliers have no much role in this phase with the RII of 0.0075 placed in 5th.

Group of Stakeholders	RII	Ranking
Owner/developer/designer	0.008839506	4
Consultant	0.009358025	2
Construction/project manager	0.009851852	1
Contractor	0.009333333	3
Suppliers	0.007530864	5

Table 10: RII for phase 3

#### 8.5 The level of involvement during the Quality, health & safety management of the execution process

The role of the contractor plays an important role with RII ranking of 0.01, **Table 11**. They are known to interfere with QHSE standards in order to increase the progress of the project. The Project manager too plays a role with that of the contractor in the 2nd place with an RII of 0.01022. Respectively, the consultant falls in the 3rd place with an RII of 0.009 and the owner in the 4th place with an RII of 0.008. The supplier has no role in this phase hence in the 5th place with an RII of 0.00809.

Group of Stakeholders	RII	Ranking
Owner/developer/designer	0.008592593	4
Consultant	0.009037037	3
Construction/project manager	0.010222222	2
Contractor	0.01	1
Suppliers	0.008098765	5

Table 11: RII for phase 5

#### 8.6 The level of involvement during modification of project plans and calculation of variations in project budget of the execution process

The consultant plays an important role in this phase with an RII of 0.0099, **Table 12**. He/she ensure no work is carried out outside the budget area and no variations arise in the total construction project. The project manager and the owner play an equal role in this phase located in the 2nd place with an RII of 0.0097 for each.

The contractor has a less role located in the 3rd place with an RII of 0.0093 and the supplier in the 4th place with an RII of 0.007.

Group of Stakeholders	RII	Ranking
Owner/developer/designer	0.009777778	2
Consultant	0.009901235	1
Construction/project manager	0.009777778	2
Contractor	0.009358025	3
Suppliers	0.007654321	4

Table 12: RII for Phase 6

### 9 Factors impacting the project performance during execution

Apart from the execution process and the involvement of the stakeholder in this process, there are few factor which effect the project performance during execution. Few below are listed and found from various journals. The respondents were asked to rank from 1 to 5 with the least important to high important using a Likert scale.

The relative importance index for each factor is shown below. A total of 25 factors impacting the project performance during execution phase are noted down below. As per the respondents rating is it found that the top five factor are:

- Delay in making decisions and approvals by owner with an RII ranking of 0.01.
- Contractor performance also plays an important factor resulting in the delay of the project with an RII of 0.01.

## EVALUATING STAKEHOLDER'S LEVEL OF INVOLVEMENT IN PROJECT EXECUTION PHASE

Constant change in the design & scope also results in delay of the project. It is ranked with an RII of 0.01.

- Budget and financial projects can cause issues at the startup of the projects resulting in sometime projects to hold midway with an RII of 0.01.

- Inadequate planning in the planning phase is also considered a one of the factor. List above are just few of the top five factor impacting the project performance. **Table 13** shows the rest of the factor with the RII index and ranking for each.

### 10 Using Mann-Whitney test

In this survey, Mann-Whitney test is undertaken to determine if there is a significant difference between the mean rankings of their responses. The data collected are ordinal data hence this test can be used for this survey analysis. A social science statistical tool was used to calculate the survey analysis.

#### 10.1 Bonferroni Correction

In the below survey, the significance level is  $\alpha = 0.05$  but 10 comparisons are being made between the stakeholders as shown below. Hence the new significance level will be  $0.05/10 = 0.005$ .

Mann Whitney test (U test) is calculated for each phase with respect to each couple of stakeholder as shown below. Results highlighted in yellow in **Table 14** shows the significant P-value values of the test.

It shows that the results are significantly different at  $P < 0.005$ . Table 14 shows that there is a significant difference in the mean rankings between the construction project managers, contractor with the other stakeholder others in the 6 phases of the execution process. However, there is not much significant difference found between Owner/developer/designer, consultants and the supplier's level of involvement.

Factors	RII	Ranking
Owner Involvement	0.00891358	22
Contractor performance	0.010246914	2
Financial problems	0.010123457	4
Changes in design & scope	0.010197531	3
Delay in making decisions and approvals by owner	0.010246914	1
Difficulties in obtaining work permit	0.009703704	6
Coordination & communication problems	0.009580247	9
Poor risk management & supervision	0.009506173	11
Unforeseen site conditions	0.009283951	17
Client initiated variations & work variations	0.009407407	13
Material cost increase due to inflation	0.009135802	21
inaccurate material estimation	0.009580247	10
Degree of complexity	0.008790123	24
Design changes	0.00962963	7
Poor labour productivity	0.009333333	16
inadequate planning	0.009728395	5
Resource shortages	0.009209877	19
Incomplete and unclear drawings	0.009604938	8
Deficiencies between consultants and contractors	0.009259259	18
Inadequacy of subcontractors	0.008962963	21
Incompetent Designers	0.009358025	14
User changes	0.00891358	23
Weather conditions	0.007975309	27
Site conditions	0.008493827	26
Late deliveries	0.009358025	15
Economic conditions	0.009209877	20
Increase/decrease in quantity	0.008790123	25
Lack of experience	0.009481481	12

Table 13: RII rating for factors impacting the execution process

**Figure 3** represents the stakeholder's involvement in the 6 phases of the execution processes. It shows that the construction project and the contractor have the highest level of involvement compared to other stakeholder in the execution process. It holds a constant response of median 4 in all phases of the execution process. Even though the Owner /developer/ designer and the consultant nearly have the nearly same level of involvement in these phases but eh dispersion range is wider for the construction project manager and contractor in the 6 phases.

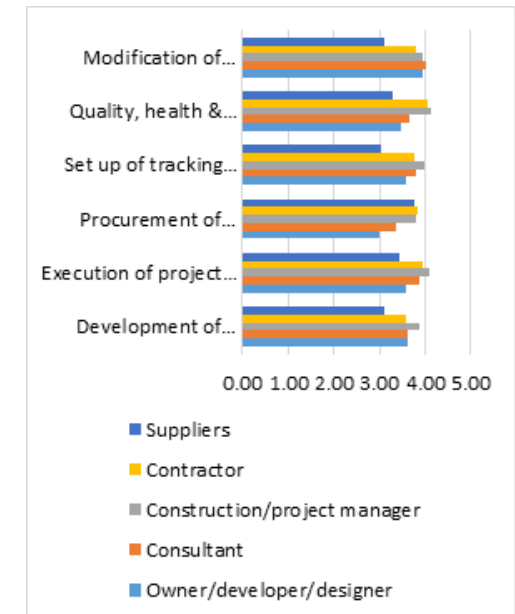


Figure 3: Comparing stakeholder involvement in execution process

Stakeholders	Analysis Method	Development of teams and assigning of task to teams	Execution of Project management plans	Procurement of resources and logistics management	Setup of tracking systems and status meeting	QHSE management	Modification of project plans and calculation of variations in project budget
Owner-Consultant	Mann-Whitney U	3128.5	2750	2580	2859.5	2901	3170
	Exact Sig	0.4	0.06	0.017	0.123	0.153	0.46
Consultant-Project Manager	Mann-Whitney U	2734.5	2846	2480	2876	2451.5	3081.5
	Exact Sig	0.055	0.1131	0.00695	0.135	0.005	0.34
Contractor-Suppliers	Mann-Whitney U	2494.5	2352	3104	1990	2031	2138.5
	Exact Sig	0.007	0.00193	0.3707	0	0.0003	0.0001
Project Manager-Contractor	Mann-Whitney U	2769.5	2906	3124	2801.5	3046.5	2895.5
	Exact Sig	0.07	0.158	0.397	0.086	0.301	0.14
Owner-Supplier	Mann-Whitney U	2449	2891	2034	2298	2924	1907

Table 14: Results of Mann-Whitney test

Comparing the stakeholder involvement, supplier have the low involvement in the 6 phases.

### 10.2 Kruskal Wallis Test

**Table 15** shows the summary of the mean ranking of the data. The highlighted numbers show the highest ranking of stakeholder in each phase. It can be seen from the table that the Construction project manager and contractor have the highest level of involvement in each phase. Particularly that of the construction project manager.

### 10.3 The Kruskal- Wallis test statistic results

**Table 16** illustrates the Kruskal- Wallis test results. The results shows that there is a significant difference in the mean ranking of rating of all the 6 phases of the execution phase. As the significance level is considered  $\alpha = 0.05$ .



EVALUATING STAKEHOLDER'S LEVEL OF INVOLVEMENT IN PROJECT EXECUTION PHASE

Ranks			
	Role in the Organization	N	Mean Rank
Development of teams and assigning of task to teams	Owner/developer/designer	288	16518
	Consultant	288	16220.5
	Construction/project manager	310	18462
	Contractor	287	16273.5
	Suppliers	247	12726
Execution of Project management plans	Owner/developer/designer	287	14590
	Consultant	310	16858
	Construction/project manager	328	18632
	Contractor	315	17166
	Suppliers	276	12954
Procurement of resources and logistics management	Owner/developer/designer	238	11637
	Consultant	270	14558
	Construction/project manager	304	18010
	Contractor	306	18292
	Suppliers	300	17703
Setup of tracking systems and status meeting	Owner/developer/designer	286	15683
	Consultant	303	17432
	Construction/project manager	319	18976
	Contractor	302	17039
	Suppliers	244	11070
QHSE management	Owner/developer/designer	278	14013
	Consultant	293	15549
	Construction/project manager	331	19324
	Contractor	324	18588
	Suppliers	262	12726
Modification of project plans and calculation of variations in project budget	Owner/developer/designer	317	17744
	Consultant	321	17972
	Construction/project manager	317	17483
	Contractor	303	16055
	Suppliers	248	10946

Table 15:  
The 'Kruskal-Wallis'  
test results

Test Statistics						
Execution phases	Development of teams and assigning of task to teams	Execution of Project management plans	Procurement of resources and logistics management	Setup of tracking systems and status meeting	QHSE management	Modification of project plans and calculation of
Chi-Square	16.051	18.966	31.142	34.025	30.495	32.42
df	4	4	4	4	4	4
Asymp. Sig.	0.003	0.0008	0	0	0	0

Table 16:  
Kruskal- Wallis test  
statistics results

11 Discussion

The study shows a comprehensive study on the evaluation of the stakeholder involvement in the execution process of building construction projects. It is shown in the above analysis that the contractor and the project manager have the highest level of involvement in this process. But looking more closely into the other stakeholder and discussing about each in detail, it shows that the least amount of contribution in the execution phase is by the supplier in this process.

Its involvement is shown considerably only in the procurement of resources and logistics management phase of the execution process and not so much in the other phases. In the more business sense, the suppliers are concentrated more in selling off their products to the industry sector to obtain their profits rather than giving a helping hand in the progress of the project.

But this attitude from the supplier may also be due to interest shown towards them from the other stakeholders involved in the project. [1] stated that project performance increases by team work and interaction between the stakeholders, but it is evidently shown less in this field of study. Therefore, this nature in the execution phase needs to be more emphasized in the earlier stages of the project in order to establish a smooth flow of the project.

The analysis has also shown that the Owners and consultants have less involvement in the execution process but this varies in each phase. This statement might be contradictory as it varies from project to project in the construction industry. There has been several projects across UAE where the construction has been slowed down or stopped due to insufficient funds from the Owner or late payments from the owners. It can also be that the owner keeps a step by step track of the project where he feels the need to interfere in every step or sudden change in scope during the construction of the project.

The same also can be said also for the consultant involved in the project. In spite of the fact that the stakeholders were carefully picked by the owners and the consultant in the initial planning phase of the project which includes their needs and requirements, the same is sometimes not followed the execution process. Carefully managing the stakeholders in the projects leads to the project success and failure.

**This can also be other way around that they have the least amount of interference in the project due to lack of information and knowledge of the project can cause a communication barrier among the stakeholders. [4] stated that "Poor client knowledge can negatively influence both the project and its stakeholders." Also, quality in planning plays an important role in highlighting the stakeholder requirements which should be assessed properly by the project team.**

The Owners show only significance amount of involvement in the Development of teams and assigning of task to teams phase and the Modification of project plans and calculation of variations in project budget i.e. the first and last phase of the execution process. They show a very less involvement in the other phases. Whereas in the case of a consultant, they show involvement only in the Setup of tracking systems and status meeting and during the Modification of project plans and calculation of variations in project budget. It is vital for the owner and the consultant show involvement during this phase of the process but it is also necessary in the other phases too. For the achievement of the phase objectives, it is necessary that owners and consultants have a greater contribution. The most probable reason for this may be due to lack of commitment of these stakeholders for the completion and activities in this phase. This can cause and result in hindrance in achieving project success due to lack of awareness on significance and advantages.

Further, as mentioned in previous chapters, Quality involvement and management of stakeholders are 2 main factors and these factors lead to achieving the phase objectives and result in project success. Overall involvement is shown by the Project Manager and contractors show the highest level of involvement in this process. Project managers have a significant involvement in the all the phases. The project manager plays an important role in the execution phase as major roles and responsibilities in the successful running of the project falls on the project manager. Further, the survey data also shows the contractors'

## EVALUATING STAKEHOLDER'S LEVEL OF INVOLVEMENT IN PROJECT EXECUTION PHASE

involvement in the execution phase was higher than other stakeholders.

In a construction industry, the contractors are usually defined as the builders and hence their role falls mainly in the execution phase of the project. Their role is only active during this phase which is after the planning, the scope of the project, objectives and the role of the stakeholders are defined.

But in few cases they are involved in necessary even in the planning phase but mainly after most of the planning is completed. This is done in order to align the contractor's objects with the project objectives to avoid conflict during the progress of the project. Also, most of the time, contractors have to carry out the entire project life cycle.

### 12 Recommendation and Conclusion

Certain barriers were also found which are said to cause hindrance in the project execution process. These barriers are also inter related with the stakeholders and their corresponding roles and responsibility in the project execution. 25 barriers were identified from various papers and were distributed among the respondents to calculate which barriers impacted the project execution performance. Relative important index (RII) analysis were done on these barriers to calculate the important from the most to least. The top five barriers and the recommendation for each barrier will be discussed here.

As per the respondents rating it is found that the top five factors are:

- Delay in making decisions and approvals by owner.
- Contractor performance also plays an important factor resulting in the delay of the project.
- Constant change in the design & scope also results in delay of the project.
- Budget and financial projects can cause issues at the startup of the projects resulting in sometime projects to hold midway.
- Inadequate planning in the planning phase is also considered as one of the factors

### 12.1 Delay in making decisions and approvals by owners' Constant change in the design & scope also results in delay of the project

As seen above the discussion, owners show a low involvement in the project execution process except during the first and the last phase of the process. From previous papers it is shown that they have a significant involvement in the planning phase. But delay in making decisions and approvals cause a major role in project delays. Owners should give special attention to the following factors:

- Payment on time is very important during the project progress as it impedes the ability of contractor to finance the tasks.
- Avoid modification during project progress as it causes change in the scope of the project resulting in delay.
- Stick to the time line decided during the planning phase for the reviewing and approval of design documents.
- Before awarding the contract to the lowest bidder, it is important to cross check their resources and capabilities through sources as this might cause delay in project progress.

### 12.2 Contractor performance also plays an important factor resulting in the delay of the project

In spite of the highest level of involvement in the execution process, the contractor also may cause barriers impacting project performance. Following factors should also be taken into consideration by the contractors:

- Shortage of labors and their productivity should be available on site in order to improve productivity of the project progress.
- Monitoring periodic Financial and cash flow problems as the contractor should manage his financial resources and plan cash flow by utilizing progress payment.
- Periodic Planning and scheduling of the project progress in order to avoid cost disputes and overrun.
- Administrative and technical staff hired at the Site should manage and supervise the project in order to monitor that project progress and that the project is completed within specified time, budget and quality.

### 12.3 Budget and financial projects can cause issues at the startup of the projects resulting in sometime projects to hold midway and Inadequate planning in the planning phase

Following points have to be taken into consideration:

- Timely Reviewing and approving design documents in order to avoid delays in the progress of the site work.
- Consultants should be flexible in evaluating contractor works. Compromising between the cost and high quality should be considered.

Apart from the above, design manager and Architects should take following points into consideration:

- Producing design documents on time on a timely schedule in order to avoid delay for the start of the project.
- Mistakes and discrepancies in design documents are also a common reasons and problems for the delay. Due to this the drawings have to be redrawn causing unnecessary delay.

### 13 Some key recommendations include

- All projects should have specific, attainable, and comprehensive target benefits.
- Project teams should focus on a robust product design, coupling with an effective quality management process and technology adoption strategy to enhance long product utilization time.
- Project managers should engage stakeholders during project development, including the establishment of inter-agency agreement for cross-agency projects if necessary.
- Project teams should modularize a large-scale project into subprojects and use integrated master schedule to coordinate project activities.
- To minimize the impact of political influence, project teams should ensure that the project is in alignment with the current legislation and organization's strategies.
- Stakeholder interest and changing business considerations are important to explain issues that impact the project during execution. Lack of desired progress and changes priorities are additional explanations.

It is also important to note that this research supports the importance of adopting project management principles, tools, and techniques for projects that would result in enhanced performance.

### 14 Conclusion

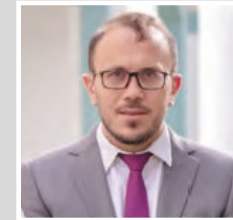
The outcome of this research is to provide a base for the further development to improve and enhance the level stakeholder's level of involvement in the project. Further, this research findings show that it is best to incorporate various project members during the entire life cycle of the project. This research gives more importance on high-rise and medium-rise residential building projects with special consideration on the building construction projects in UAE.

"...THIS RESEARCH  
FINDINGS SHOW  
THAT IT IS BEST TO  
INCORPORATE  
VARIOUS PROJECT  
MEMBERS DURING  
THE ENTIRE LIFE  
CYCLE OF THE  
PROJECT."

## REFERENCES

- [1] **Aaltonen, K.** Project stakeholder analysis as an environmental interpretation process. *International Journal of Project Management*, 29:2, 165-183, 2011.
- [2] **Achterkamp MC, Vos JFJ.** Investigating the use of the stakeholder notion in project management literature, a meta- analysis. *International Journal of Project Management*, 26, 749-57, 2008.
- [3] **Baumann, Thomas et al.** Managing successful project teams in a diverse stakeholder environment: Merging industry best practices with an education system to address critical human factors. *Procedia - Social and Behavioral Sciences* 194, 20-32, 2015.
- [4] **Bryson, J.M., Bromiley, P.,** Critical factors affecting the planning and implementation of major projects. *Strategic Management*, 14: 5, 319-337, 1993.
- [1] **Davis, Kate.** A Method to measure success dimensions relating to individual stakeholder groups. *International Journal of Project Management* 34:3, 480-493, 2016.
- [2] **Fageha, Mohammed K. and Ajibade A. Aibinu.** Managing project scope definition to improve stakeholders participation and enhance project outcome. *Procedia - Social and Behavioral Sciences* 74, 154-164, 2013.
- [3] **Franco Caron.** Project planning and control: early engagement of project stakeholders. *Journal of Modern Project Management*, 2: 1, 84-97, 2014.
- [4] **Globerson, S., Zwikael, O.** Impact of the project manager on project management planning processes. *Project Management Journal*, 33: 3, 58-64, 2002.
- [1] **Heravi, A., Coffey, V. and Trigunarsyah, B.** Evaluating the level of stakeholder involvement during the project planning processes of building projects. *International Journal of Project Management*, 33: 5, 985-997, 2015.
- [2] **Jepsen, A. and Eskerod, P.** Stakeholder analysis in projects: Challenges in using current guidelines in the real world. *International Journal of Project Management*, 27: 4, 335-343, 2009
- [3] **Mazur, Alicia et al.** Rating defense major project success: The role of personal attributes and stakeholder relationships. *International Journal of Project Management* 32: 6, 944-957, 2014.
- [4] **Meyer, Marc H., Utterback, James M.** Product development cycle time and commercial success. *IEEE Trans. Eng. Manag.* 42: 4, 297-304, 1995.
- [5] **Missonier, S. and Loufrani-Fedida, S. (2014)** 'Stakeholder analysis and engagement in projects: From stakeholder relational perspective to stakeholder relational ontology'. *International Journal of Project Management*, 32, 7, 1108-1122.
- [6] **Mok, Ka Yan, Geoffrey Qiping Shen, and Jing Yang.** Stakeholder Management Studies in Mega Construction Projects: A Review and Future Directions. *International Journal of Project Management*, 33:2, 446-457, 2015.
- [7] **Pouloudi A, Whitley EA.** Stakeholder identification in inter-organizational systems: gaining insights for drug use. *Eur J INF Syst*; 6:1, 1, 1997.
- [8] **Van Offenbeek, Marjolein A.G. and Janita F.J. Vos.** An Integrative Framework for Managing Project Issues across Stakeholder Groups. *International Journal of Project Management* 34:1, 44-57, 2016.

## AUTHORS



**Kamal Jaafar**

Dr Jaafar is an Associate Professor at University of Wollongong in Dubai. He is the Director of postgraduate studies for the Faculty of Engineering and Information Sciences. He holds a PhD degrees in civil Engineering from the University of Cambridge and an MBA degree from Ashcroft International Business School. Dr. Jaafar was honored by Prince Charles as a Fellow of the Cambridge Overseas Trust and he was honored by KRSF for his research at Royal College, UK. Dr Jaafar is a corporate consultant in Project Management for many international organizations.



**Shafiz Mohd Yusof**

Shafiz received the B.S. degree in Information Technology from University Utara Malaysia, Malaysia in 1996, M.S. degree in Telecommunications and Network Management in 1998, M.Phil degree in Information Transfer and Ph.D degree in Information Science and Technology in 2005 from Syracuse University, Syracuse, USA. He is currently an Associate Professor at the Faculty of Engineering and Information Sciences, University of Wollongong in Dubai. He is the Discipline Leader for Master of Information Technology Management (MITM) and Head of the Information Systems and Technology (INSTECH) Research Group. From 2012 to 2016 he was a faculty member of School of Computing as Associate Professor in University Utara Malaysia. He held various other senior roles including Director of International Telecommunication Union - Universiti Utara Malaysia Asia Pacific Centre of Excellence (ITU-UUM ASP CoE) for Rural Information and Communication Technologies (ICT) Development and Deputy Director of Cooperative and Entrepreneurship Development Institute (CEDI). He is a certified professional trainer (Train of Trainers' Programme) under the Ministry of Human Resource, Malaysia and has conducted several workshops on computers and ICT.

Dr Shafiz's was awarded the "Excellence Service Award 2008" for his teaching, research and administrative contributions to his university. He was also awarded several research grants under several national and international bodies such as the Windows on Science (WOS) Program from the Asian Office of Aerospace Research & Development (AOARD) Japan; Ministry of Energy, Water and Communication (MEWC), Ministry of Higher Education (MED), Malaysia; and Malaysian Commission of Multimedia and Communications (MCMC). He was chosen to represent Malaysia to the Asian Pacific Economic Cooperation (APEC) Workshop on Embedding Entrepreneurship at University Curriculum in Hanoi, Vietnam (2008) to present a paper on Malaysia's initiatives on developing entrepreneurship programmes at institutes of higher learning.