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To cite this article: Alaa AL-Saedi and Jerzy Pasawski 2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **518** 022068

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IOP Conf. Series: Materials Science and Engineering **518** (2019) 022068 doi:10.1088/1757-899X/518/2/022068

Influence of stakeholder management and communications management in choosing of the best product achieve quality by Analytic Hierarchy Process method

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Abstract. This article investigate an analytical study of the stakeholder management and the communications management of Ready Mix Concrete, its importance and the role to identify, plan, management, engagement and control engagement in process of production to make decision about the best product achieve quality through the Analytic Hierarchy Process method (AHP) to compare criteria and variances pairwise comparison to choose best product meet with the requirements of quality management. The choice (best product) will determine the quality of actions that we can take without losses of costs for development of other products that can consume the time, effort and cost to correct or update its progress in the production process. Our choice of a product that reduces costs will help us to determine the tests and inspections that can achieve and have the most impact on quality (control and assurance). The Stakeholder management and communications management help us to determine criteria and variances as well as management. The author uses Expert Choice software for submitting goals, criteria, pairwise comparison of criteria and as well as submitting of alternatives. Moreover, the study of information base on the matrices of pairwise comparison to the alternatives with respect to cost, meet with standards, experience of functional manager, the reliability of engineering system, quality of human resources, safety and the analysis of the results based on sensitivity criterion, performance sensitivity, dimensional sensitivity, dynamic sensitivity, and the opinion of the experts, the best product achieve quality is Ready Mix Concrete more than other main products.

Keywords: Stakeholder Management, Stakeholder map table, Stake holder analysis, Stakeholders Engagement Assessment Matrix, Communications Management, and the AHP method.

1. Introduction

We can describe management as a group of actions could be simple or very complicate aware to the process flow which is could have a huge impact on the quality of the products, Marcel Dekker was the person who generates this type of structures of actions. The opportunity established by him to create feedback loops for the process of production in the company, which is the help to recognize chances for perfections and deliver data for regulatory procedures. The Ready Mixed Concrete (RMC) as a type of concrete delivered in the plastic state and needing no more treatments before actuality placed in the work site, which it is to set and strengthen. In other hands, the Analytic Hierarchy Process (AHP) is the way of

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study that try to provide a decision maker a group of means and tools that DM need to find solution of problems foe many complicate problems inn different position in process.

The fact that rank reversal also occurs in the AHP when near copies are considered also has been studied by Dyer and Wendell (1985). Saaty (1983a and 1987) provided some axioms and guidelines on how close a near copy can be to an original alternative without causing a rank reversal [1]. The importance of criteria compared pairwise with respect to the desired goal to derive their weights. Then we check the consistency of judgments; that is, a review of the judgments done in order to ensure a reasonable level of consistency in terms of proportionality and transitivity [2]. The programs carried out an assessment were represented as scores which made it possible to carry out a cross-case analysis to assess factors affecting the success of largescale quality [3]. A study of how changes in the weights of the criteria could affect the result done to understand the rationale behind the obtained results. Moreover, the final decision will base on the synthesis results and sensitivity analysis [4]. It supports the Decision Making and enables him/her to advance in solving the so-called multiple criteria decision problems. Its methodology helps to structure and solve the unstructured, complex decision problem and reach the final compromise solution, based on the analysis of the existing trade-offs and the DM and stakeholders preference [5]. In our case, the most important thing for us is how to manage stakeholders and communications. Because of that we will establish standards and deliver the full information to choose the criteria and variances which is basic information to generate the comparison matrices which is lead in final to choose the best product to achieve quality and lead costumers satisfaction.

2. Literature review

The management process improvement rests on fundamental concepts. In this part, the author will review the definitions of the study concepts used in the research:

2.1 Stakeholder Management

It includes the processes required to identify the people, groups, or organizations that could influence or be impacts by the project, to analysis stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution. It is also, focus on continuous communication with stakeholders to understand their needs and expectations, addressing issues as they occur, managing conflicting interests and fostering appropriate stakeholder engagement in project decisions and activities [6].

2.2 Stakeholder map table

The stakeholder map is a powerful tool during the set-up phase of a project as it helps to understand the bigger picture and who is part of the game. To understand which stakeholders are part of the scope and who they belong to specific interest groups and therefore need to be involved in initiative [7].

2.3 Stake holder analysis

It refers to the reorganization and acknowledgement of stakeholder's needs, concerns, wants, authority, common relationships, and interfaces and aligns this information within the Stakeholder Matrix [8].

2.4 Stakeholders Engagement Assessment Matrix

It used to document the current engagement level of all stakeholders, which needs to be comparing to the planned engagement levels required for successful project completion [7].

2.5 Communications Management

Project Communications Management includes the processes that are required to be ensuring timely and appropriate planning, collection, creation, distribution, storage, retrieval, control, management, monitoring and the ultimate disposition of project information [6].

2.6 The AHP method

The AHP Analytic Hierarchy Process) method is a multiple objective ranking procedure, proposed by Saaty [9], and focused on the hierarchical analysis of the decision problem. The method is based on the multi attribute utility theory and allows ranking a finite set of variants [10].

3. Study case

The process of production for a company of Ready Mix Concrete (RMC) (ALSenaf Company) which is producing all types of concrete according to orders has problems in the process (Stakeholders and commutations). The main products are ready mix concrete, pre-stressed concrete, precast members and concrete piles. The company has been providing services to the construction sector over 45 years hence today. The experience absorbed over these years enables to qualify the company to earn many good contracts higher compensations may arise from various reasons. Through the information collected from the company, interviews with the company's chief, those responsible for the production process, the company's employees and the field visiting the plant's work site the concrete batching plant is a copy taken from MB-100W stationary concrete batching plant from the Turkish company Meka plant. The type of stationary concrete plant is dry mix system.

4. Stakeholder Management

It is a procedure essential to define the persons, companies could influence to investigate stakeholder expectations, the effect on the process to improve proper management approaches for professionally attractive stakeholders in the process decisions making and the execution. The management of stakeholder procedure describe as the following steps:

4.1 Identify the Stakeholders

Stakeholders are those individuals who have a stake, share or stake in a given outcome. They might not only affect, but also be affected by the outcome. They influence not only the results but are influence by the results. They are participants who positively or negatively influenced the outcome. The main result is recognizing the stakeholder, which is mean:

1. Identification information: what are the names, positions, locations and roles of the company?
2. Assessment information: what are the main expectations and reservations?
3. Stakeholder classification: who are the internal and external stakeholders?

The table below represents an option for a stakeholder map, giving detailed information about who is internal, who are the external stakeholders, to which functional area do they belong, are they more or less important or which priority do they have. In addition, take into account, which stakeholder groups are in and out of scope with regard to this process to understand which stakeholders are parts of the scope, therefore, need to be involved in the process. The stakeholder's map is good mean through the first level of the process. Moreover, in the table below, the author used stakeholder analysis is to capture the expectations and reservations of all the stakeholders, documents and communicates these in a simple way. This map identifies quality of the actions and the process used to explain the quality influence processes and topics needful to identify of the precise documentation, evaluations, highlights, and prevention actions.

Therefore, it’s essential require to advance a group of indicators for the quality [11]. As we mention in table above. Which is reflecting the management based on audit data [12]. Quality constituent through the considering of the influence of the visualization on the observed quality at each level of process [13].

4.2 Plan for the Stakeholder Management

According to the analysis of stakeholder’s requirements, interests, and the impact on process success the researcher will develop the next step a suitable management strategy to effective engagement of

stakeholders throughout the process through using of stakeholder scoring table and the Power Interest Grid with Stakeholders to intermingle with process to support its interests.

Table 1. Stakeholder map table.

NO	Stakeholders	Function/ area	first Priority	Second Priority	Out Scope
1	Internal	The owner	Chief of plant	allocates capital	---------
2		Project Manager	Manger of Managers	Manager& Director of all operations	---------
3		Engineers	Manger of process	Manger of employees	Legal issues
4		Design &Planning	Manager of formula	Manager of planning	marketing
5		Production	Manager of Production	Manager process	Distribution
6		Legal	Manage legal issues	Manager contract	Design
7		Financial	Finance manager	Finance Director	Vendor
8		Sales & product service	Manager of Call Centre, Procurement Director of sales	Manager After Sales Service	maintenance
9		Marketing	Head of Marketing & Communications	Director sales	Sales force
10		Human resource	Manager of employees record system	Notifications of HR issues	Design
11		Inspection &Testing	Manger of QM	Manger/ Inspection	---------
12	External	Customers	Corporate clients	Current clients	New clients
13		Investor	Seeking information to mitigate risks	seeking IT to get benefits of invest.	----------
14		Sellers	Customer's satisfaction& Deliver on time.	Sell as much as possible/products	Human resource
15		Suppliers	Dealing with reliable people	Provide as much possible material	company Structure

4.3 Manage the Engagement of Stakeholders

Managing the engagement includes interactive and operational (as we will explain in communications management) with the stakeholders to meet the expectations and encourage suitable engagement in activities of the process. To manage which stakeholder group influences in the process and which the process and its intended outcome affect the stakeholder group, the researcher used the table of stakeholder scoring. The formula of scoring table matrix is:

$$X_T = X_1 + X_2 + X_3 + X_4 \quad (1)$$

Where X_1 means the interest, X_2 means the influence, X_3 means the impact, X_4 means the support, X_T means the total or summation of grade.

Moreover, the number (1) is score factor refers to the low important and (5) the excellent or the higher score factor means more important, a valuable stakeholder and the higher level of required attention. Then

it was worth the usage of Power influence or impact grid, gathering stakeholders according to the phase of the authority (authorization power) and the active involvement of its impact (interest) in the procedure.

Table 2. Stakeholder scoring table.

No	Stakeholders	X_1	X_2	X_3	X_4	X_T
A.	The Chief of investment (owner)	5	4	5	5	19
B.	Project Manager	5	5	5	4	19
C.	Engineers (Manager)	4	3	4	3	14
D.	Design and Planning Manager	3	3	3	2	11
E.	Production Manager	4	3	4	2	13
F.	Legal Manager	2	2	4	1	9
G.	Financial Manager	4	3	4	3	14
H.	Sales &product service Manager	3	2	3	3	11
I.	Marketing Manager	4	2	3	1	10
J.	Human resource Manager	2	1	2	2	7
K.	Inspection and Testing Manager	5	3	5	2	15
L.	Services & Equipment Manager	3	2	4	2	11
M.	Customers	4	2	3	1	10
N.	Investor	2	2	2	3	9
O.	Sellers	2	1	3	1	7
P.	Suppliers	4	3	4	2	13

Where, the results of the table were the biggest Level of interest the owner and project manager, the biggest influence and impact project manager and owner and the inspection manager, biggest support the owner.

4.4 Control the engagement of stakeholders

It is classification of stakeholders according to the degree of authority which is can call power and the degree of interest regarding the production results. It is a process of generally observing of the relationships process of stakeholders and regulating the strategies for involving stakeholders. The benefits can get are we will preserve the competence and the ability of stakeholder's involving.

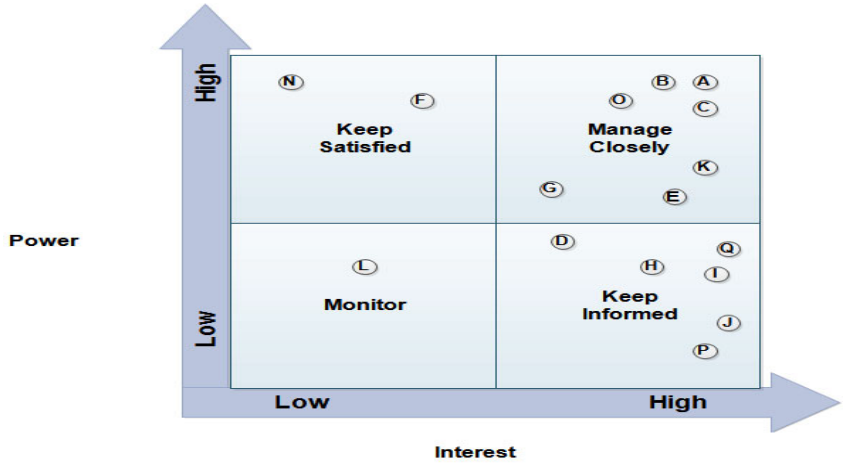


Figure 1. Power/Interest Grid with Stakeholders.

In figure above and based on the result of Stakeholder scoring table the author used Power/Interest Grid with Stakeholders where found that the A,B,C,E,G,K and O manage closely. The D, H, I, J, Q and P keep informed. The N and F keep satisfied. The L monitor. The stakeholders engagement phase can be categorize as follows:

1. The neutral phase where, the aware position of stakeholder in the procedure resistant not supportive.
2. The unaware where, the watchful position in the process and the potential consequences.
3. The supportive phase where conscious position in the production, impacts and changing supportive.
4. The resistant where, cognizant to position in procedure, possible influences and changing resistant.
5. The leading where, the conscious to his position in company, possible impacts on the production and engagement management to confirming that the process of production is not failed.

The present engagement can identify by using the Engagement Assessment Matrix of Stakeholders, as the explanation in table below, where 1 means the indicator of the current position engagement and 2 means the indicate of the desired position engagement.

Table 3. Stakeholders Engagement Assessment Matrix.

No	Stakeholder	Neutral	Unaware	Resistant	Supportive	Leading
1	The Chief of invest (owner)		1		2	
2	Project Manager			1		2
3	Engineers (Manager)				1	2
4	Design and Planning	1			2	
5	Production Manager	1				2
6	Legal Manager			1	2	
7	Financial Manager				1, 2	
8	Sales/product service	1			2	
9	Marketing Manager				1	
10	HR Manager				2	2
11	Inspection/Testing				1	2
12	Services/Equipment				1, 2	
13	Customers	1			2	
14	Investor			1	2	
15	Sellers			1	2	
16	Suppliers		1		2	

The table above showing us the Engagement Assessment Matrix of Stakeholders, it has identified the present engagement and the anticipated engagement for each stakeholder in the process. Where the results of the matrix are, show the big difference between the current and desired engagement for stakeholders the matter causing a general system malfunction.

5. Communications Management

The managers spent big time communicating with members of teamwork and stakeholders, whether, if they are from inside or outside of the company are communications effectively at work. According to PMBOK Guide of the Communications Management processes, the process will be as following:

5.1 Plan Communications Management

The communication plan needs of the stakeholder map (we define it in stakeholders management).

The plans of management will base on the questions below. We need to answer these in order to create a communication plan, irrespective of whether you use the provided template:

- Why and what are the reasons, objectives or intentions behind the message?
- Who, when and whom do you want to reach with the message? When? Where?

- How often and what is the intended frequency of the communication?
- From whom and who is the official owner of the message? When and what are the start, end date and period of communication? Why? When we use the communication plan?

The communication tools that will use are: Interactive communication, interviews, video conferences, distribution of printed, displayed communication means, status reports, brochure wares, the project newspaper hand-outs , reports, electronic communications means, electronic newsletters, web-based surveys, interactive multimedia platforms or portals, intranet or mixed bag: Roadshows, info display stands, forum and group presentation and hotlines. In other words, the communication activities will involve in one these processes:

1. Internal activities and external activities like internal with the process and external with customer, vendors, public and other projects.
2. The official means like annual report or unofficial like recording the communications.
3. The formal state like reports or informal like emails.
4. The vertical state like up or down the company or horizontal with employees from the same level.
5. The Written way, verbal like inflexions of the voice or nonverbal like the body language.

5.2 Manage Communications

The company information process is to manage and spread by means of many means, which are for example not all:

- Documents management the hard copy like press releases, notes, reports and letters.
- Electronic means of communications management like phone, e-mail, speaker, video and electronic journal, online video conferencing, and websites.
- Electronic tools of administrative like scheduling and electronic version of the folders.
- The Software of project, management, portals and collaborative work management tools.

The figure below shows example of project manager communications inside and outside the company.

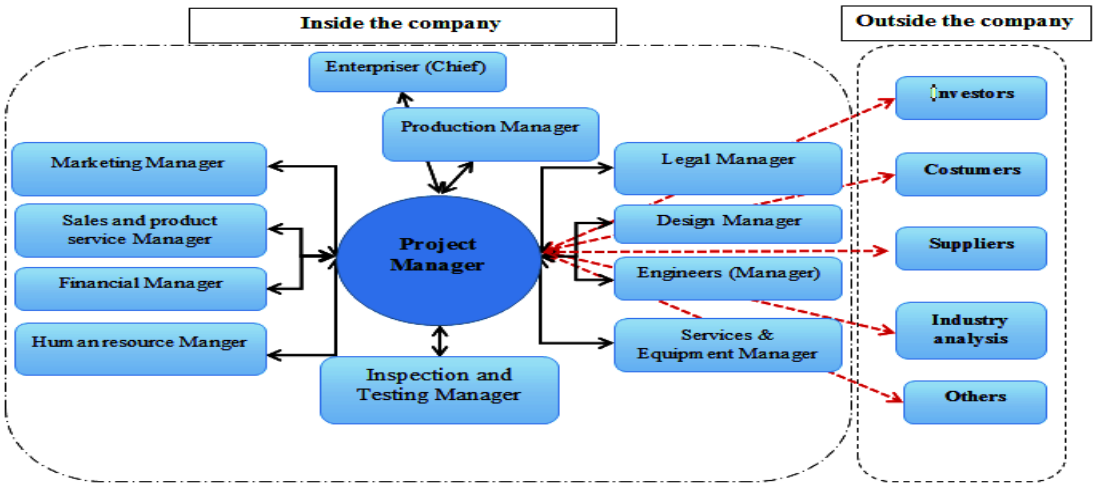


Figure 2. Project Manager Communications.

5.3 Control Communications

It the procedure requires conversation and connection with team of work to control the best suitable means to communicate company process to the reply to requirements from stakeholders. These consultations and discourses are typical simplified by meetings, which might happen direct, online or by means for different

locations, the work place and the supplier's place for example. The meetings include also negotiations and dialogue with client, suppliers and others. Therefore, the researcher describes in the table below the type of relationship between communication tools and stakeholders and related stakeholder's role to these tools to ensure that the tools, channels and frequencies of communication are clear defined for all project stakeholders.

The table below will show the type of the communication as weekly, between weekly, monthly, between monthly and as needs.

Where, **WM** means weekly mandatory, **wo** means weekly optional, **BW** means by-weekly mandatory, **bw** means by-weekly optional, **MM** means monthly mandatory, **mm** means monthly optional, **AM** means as need mandatory, **ao** means as need optional.

Table 4. Control communications (tools and stakeholders) type of communication.

No	Name of the Communication tool	Stakeholder role												
		Project Manager	Engineers	Design and Planning	Production	Legal	Financial	Sales service and Marketing	Inspection	Human resource	Services	Customers	Suppliers	Investor
1	Communications plan	WM	AM	AM						AM				
2	Daily newsletter							a o	a o			AM	AM	AM
3	Email	a o	AM	a o	a o	a o	a o	a o	a o	a o	a o	AM	AM	AM
4	Execution plan	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM			
5	Specific letters &memos	a o	AM	a o	a o	a o	a o	a o	a o	AM	a o		AM	a o
6	Project report	wo	wo	a o	WM	a o	AM	WM	WM	a o	AM			mm
7	Meetings	AM	AM	AM	AM	AM	AM	AM	AM	a	AM		a o	a o
8	Project charter	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM			
9	Project plan	BW	BW	BW	mm	BW	mm	MM	MM	mm	MM			
10	Project progress report	WM	WM	AM	AM			MM	WM	WM	WM			
11	Risks plan	AM	AM	a o	a o	a o	a o	a o	a o	a o	a o			AM
12	Test plan	AM	AM	AM	AM	AM	AM	AM	AM			AM		a o
13	Training plan	a o	a o	AM	AM	mm	a o	AM	AM	AM	AM			

6. The AHP (Analytic Hierarchy Process) method

It is the procedure of the comparisons (pairwise) which, is encouraged the design of numerous decisions making approaches. Moreover, its extensive approval, it likewise shaped some substantial censure; for the theoretical besides actual aims. Meanwhile the primary days, it suited seeming there many issues with method of the pairwise comparisons that used and assesses the variances. The AHP in standard model is extensively accepted and considering through the numerous features as the highest reliable for decisions maker according to Saaty's comparisons (pairwise) which is used to define the virtual importance of every variance in terms of every standard, therefore, the author need to take in care the judgment on the result of each comparison, where, the essential steps in several decision means is the precise valuation of the relevant information. Saaty suggested that the makers of decision have to exclude variances from the contemplation based on score of 10 factor for the variances which, means the intensity of importance is (1-9) as following:

- The importance intensity (1) defining as identical importance where, it means two actions participates similarly to the goals.
- The importance intensity (3) weak importance where, it means that experience and judgment a little bit prefer action more than other).
- The importance intensity (5) vital or power importance where, that means the experience is favour in first place and the judgment favour in second place; both of them prefer activity more than other.
- The importance intensity (7) confirmed the importance where, that means the action is powerfully preferred and control explanation in training.
- The importance intensity (9) Absolute importance where, it is meaning the proof to preferring action over another which is the highest instruction of assertion.
- The importance intensity (2, 4, 6 and 8) defining as middle values in between two similar judgments.
- Invers of above nonzero in case the activity (I) has number overhead nonzero factor allocated to it once when compared to action (J), where, it has the invers factor once compared to (I) activity.

6.1 Introduction of Expert Choice software

For our case, author use Expert Choice software, which is software of decision-making execute the AHP. It is an intensive implementation program can result in an improved delivery and slightly improved outcomes and Quality.

It has been use in field such as manufacturing, environmental management, shipbuilding and agriculture [14]. The quality strategies are tools, procedures or activities aimed at improving [15]. The software is supplied by Expert Choice Inc.

6.2 Structuring of AHP model (problem modelling)

The structure of AHP model includes the main aim or goal of work at first level, the evaluation of criteria will be in the second level (middle) and the variances will be down in the third level (bottom). The company structure is flexible, dynamic, self-oriented and reliable and could be competitiveness for each phase of hierarchically.



Figure 3. The decision hierarchy of chose the best product for RMC production.

6.3 The definition of the Criteria

The quality management systems can be seen as a set of interacting activities, methods and procedures used to monitor, control and improve the quality [16]. Therefore, we can describe family of criteria of the company of Ready Mix Concrete (RMC) as following:

6.3.1 Cost

It's the sum of costs incurred by a company in preventing poor quality, the cost incurred to ensure and evaluate that the quality requirements are being met, and any other cost incurred as a result of poor quality being produced [26]. However, the costs must be allowable, allocable (the project, which paid, must benefit from it) and reasonable (the cost mirrors what a sensible person might pay. The cost of quality for different technologies of construction varies widely.

6.3.2 Meet with standards (Quality)

It's the organizational unit that is assigned responsibility for quality assurance [17]. This point Include quality control which is monitoring and inspection the process results to evaluate if they meeting with associable standards of quality and define ways to remove causes of non-conformance performance. Also, it does include quality assurance the process of guessing the whole process to give trust to process will meet suitable standards. Quality assurance takes very important position in maintenance the quality-processed products at levels and tolerances acceptable to the consumer. It also assures meeting with government regulations, reducing the probability of spoilage, minimizing the cost of production and raise the product value.

6.3.3 Experience of the functional managers

It refers to the experience of the persons who have the authority to do the management tasks within the administrative zone of the work, like procurement, human resources or accounting.

6.3.4 Reliability of Engineering System

Reliability describes the ability of a system or component to function under stated conditions for a specified period of time [18]. It is normally relate to availability. It typical describes as the capability of a constituent of the system to task for moment or long time. The reliability may defines as the thought of the system is suitable for the aims with time or the capability of the system to do as required with respect time and the prevention defects in components of the system.

6.3.5 Quality of Human Resource

It's contains the procedures to organize and manage the process. The process contains the employees with allocated duties or tasks to finish the process. The participation of the member's team in the process preparation is so helpful. The contribution of the employees during preparation increases them knowledge and supports them commitment to the company.

6.3.6 Safety

Safety typically concentrates on conserving the life and the nature more than cost. safety factor levels also result from good engineering and from attention to detail [19].

6.4 The definition of the Variances

The improvement by Expert Choice software in this level required to find alternatives, so the variances can describe the variances as following:

6.4.1 Ready Mix Concrete

It's the type of concrete made in a stationary batch plant, based on the engineering design of mix formula. It's usually sold in two shapes dry or wet (fresh concrete) the wet type loaded in the truck to supply it in a plastic shape to the customers. The dry state concrete delivers and then mixes in the site.

6.4.2 Pre-stressed concrete

It's a type of concrete pre-stress through place under compression prior to supporting any loads beyond its own dead weight [20]. It's normally use in different type of high structures, long spans, reduced the thicknesses structural member and decreases the material waste.

6.4.3 Precast members

It's a construction product produced by casting concrete in a reusable form, which then cured in a controlled environment, transported to the construction site and lifted into place and It's building components and site amenities are use architecturally as fireplace mantels, cladding, trim products, accessories and curtain walls [21].

6.4.4 Concrete Piles

It's normally make with steel bars which pre-stressing the tendons to get the required strength of tensile, to driving, providing and carrying satisfactory deflection resistance by giving the strength of corporation required .

6.5 Using AHP Software and getting the results

Through the support, management and effective use of available resources we will develop decision as professional to choose the best product. Therefore, we will define the variants and their pairwise comparison with respect to each Criterion. All variances imports acquired mutual as a standard summation to know the value of every criterion to build the priorities for all variances. The variances which have the highest priority will be the best product, as showing in figures below:

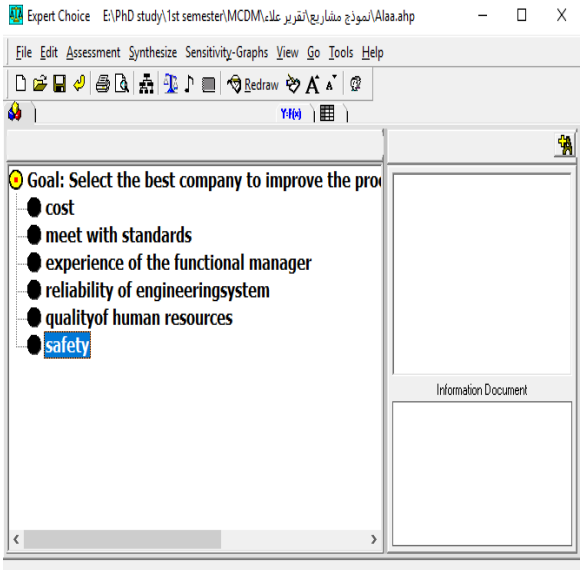


Figure 4. Submitting of goals and criteria.

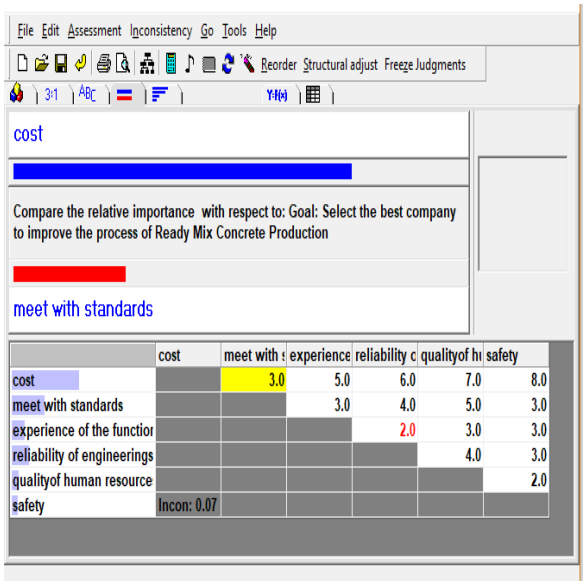


Figure 5. Pairwise comparison of criteria.

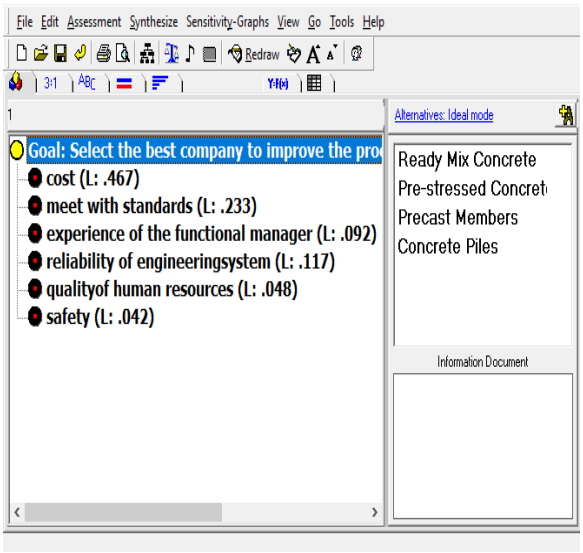


Figure 6. Submitting of the alternatives.

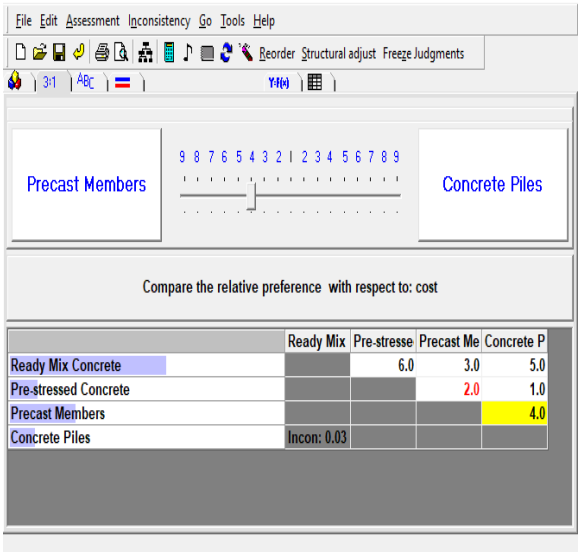


Figure 7. The comparison of alternatives with cost.

Originate the variances (alternatives) with every standard individually (the following is a procedure to make comparison between the alternatives based on respect criterion).

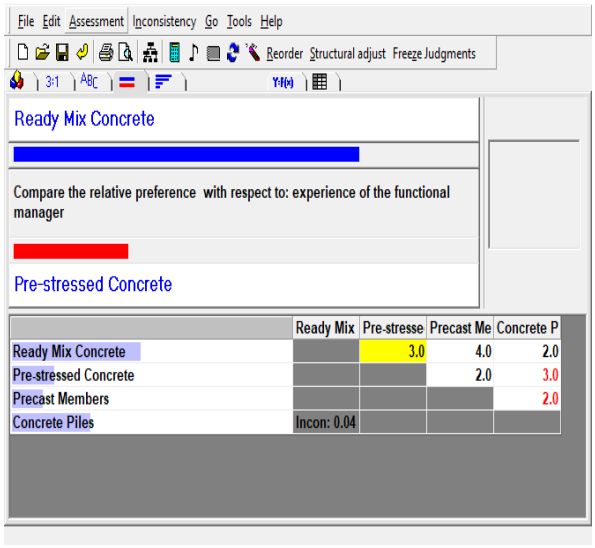


Figure 8. The comparison of Alternatives with Experience of the functional manager.

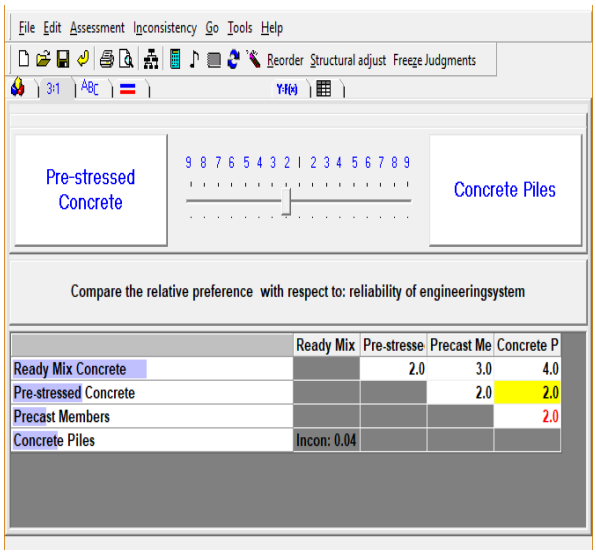


Figure 9. The comparison of Alternatives with Reliability of Engineering System.

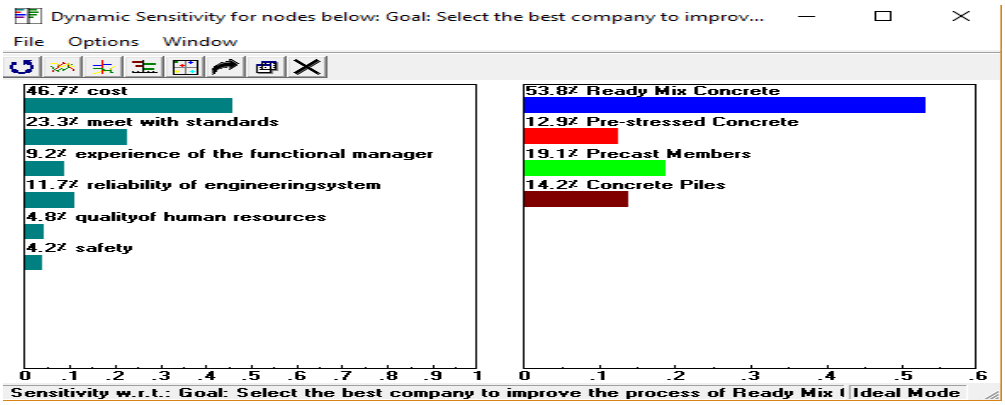


Figure 10. The dynamic sensitivity.

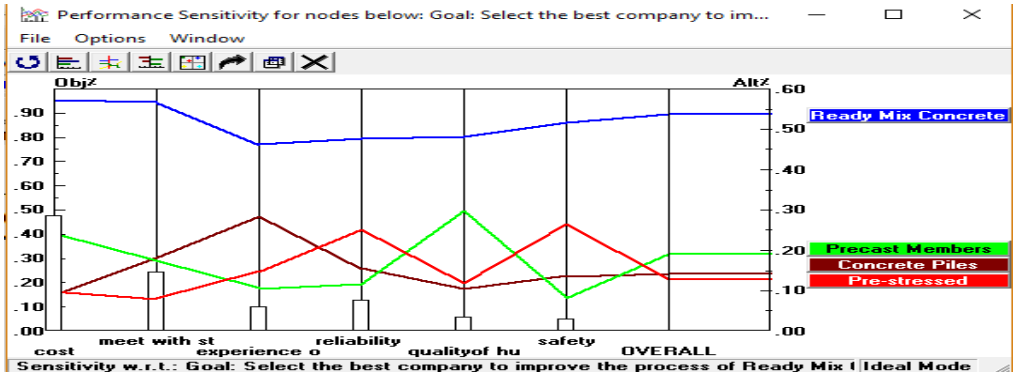


Figure 11. The performance sensitivity.

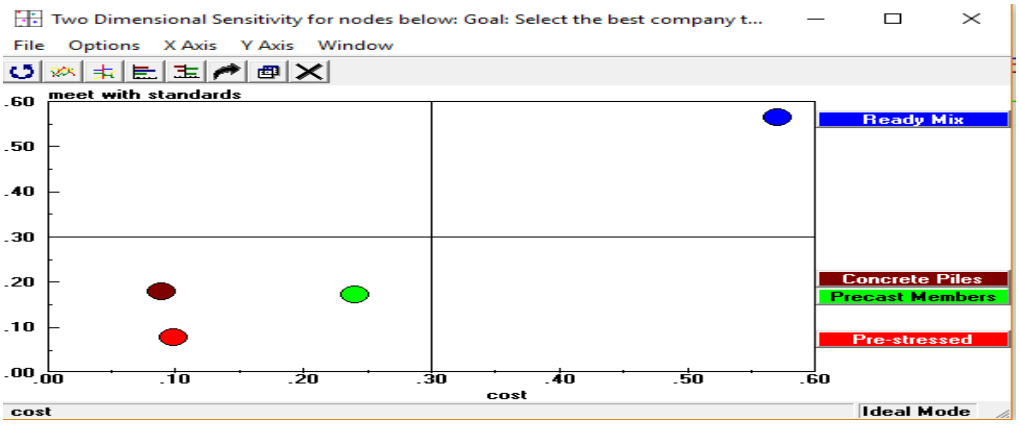


Figure 12. The dimensional sensitivity.

The figures above showing us that the best choice as a product achieves quality through all matrixes above and the roles of the stakeholder's management and communications management where the software used according to Saaty's Pairwise comparisons by AHP to criteria, then alternatives with respect to each of cost, meet with standards, experience of functional manager, the reliability of engineering System, quality of human resources, and safety. Then the result from the matrices above is performance sensitivity, dynamic sensitivity, dimensional sensitivity which telling us that the Ready Mix Concrete is the best choice.

7. Conclusions

Depending on the AHP method and using of Expert Choice software by using pairwise comparison (which gives flexibility to the facilitator and DM) in analysis of criteria and variances of our case study to make decision about the most efficient variance and the most effective criteria the results are:

1. The stakeholder management gave us a clear picture about identify stakeholders, function/ area, Priority , the classification, analysis expectation and reservations, manage engagement by their influences in the process of production, scoring table and control engagement by Power/Interest Grid and stakeholders engagement assessment matrix to give an idea about the current position engagement and the desired position engagement.
2. The communications management has given us the opportunity to make the all team of work involved in the process, clear view about communication activities involving, communication plan, tools of communication, com. responsibilities of stakeholders, objectives and control communications (tools and stakeholders) and type of communication.
3. Ready Mix Concrete get is the most efficient choice (variance) to quality to improve the process of production because of the value of it more than the other variances Precast Members, Concrete Piles and Pre Stressed Concrete.
4. The main effective criteria to improve quality of process of RMC production is the Cost because of the updating process of production (tools, machines, delivery machine, workers, good quality materials, tests and inceptions) because the improvements for other products will cost lot money for sure so it was need to choose one product as the results shown.
5. Meet with standards come in second place as criteria for our case because it is the most second important for quality is to meet with standards by improve Quality to get ISO:9001 Quality certificate at the end .
6. In third place, Reliability of Engineering System because it is the capacity of the system to execute as compulsory, opposition to defects in components of the system and it is closely relate to availability.

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Acknowledgments
I'm thankful to institute of Construction Technology Management /Poznan University of Technology to assistance me and I'm so grateful for professor Jerzy Pasławski to assistance, supervise, advising my research.