

Framework on Effective Stakeholders' Management Process Related to Project Success in Public Building Construction Projects: The Case of Gondar City, Ethiopia

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ABSTRACT: The construction industry is the major sector where developers are investing a huge amount of budget. The industry has complexity in its nature because of a large number of stakeholders. Poor stakeholder management can lead to many serious problems in construction projects. The aim of this research is to study stakeholders' management aspects related to project success: in Gondar City. A mixed research design was employed. Together primary and secondary sources of data were used. Interview was used to strengthening the questionnaire and for the framework validation. Purposive sampling was used to select the sample. The analysis was done by SPSS v. 20. Descriptive statistics which include percentages, graphs, and tables were used to present the data. Factor analysis was used to group factors in order of strength and to eliminate variables with low variance. The finding indicates that project success can be achieved by properly implementing of critical success factors of stakeholder management because it has a positive strong correlation to productivity, cost, and time performance of a project and in reverse, barrier factor of stakeholder management has a negative strong correlation to productivity, cost and time performance of a project. The study concludes that critical success factor for stakeholder management in construction projects was reviewed leading to the identification of twenty barrier factors and thirty critical success factors. The main recommendations of this research are the management team in the Gondar city should use the proposed framework for managing the construction stakeholders for project success.

Key Words: public building projects, Effective Stakeholder management, Critical success factor, barrier factor, framework,

1. Introduction

Stakeholder management in construction projects has been regarded as one of the most important factors in successful project achievement and the construction industry makes significant contributions to the socio-economic development of every country. The industry makes its direct contributions to economic growth by providing the buildings which are used in the production of all goods in the economy and it has many complex linkages to the other sectors of the economy and can stimulate activities in these sectors procured, constructed, or produced, altered, repaired, maintained, and demolished (Ofori, 2003). Construction projects are generally unique in nature based on their fragmentation, processes, and interaction with numerous parties; and just like any other venture, are constrained by time and resources (both human and material) which are needed for the projects to be delivered (Olander & Landin, 2005). The different parties involved together directly and indirectly on the project are referred to as the project stakeholders whose management is energetic to achieving project success (Karlsen, 2002). Stakeholder management, therefore, has been recognized as an important strategy for achieving project success in construction projects. The stakeholder's nature in the construction industry is public and private type, the fragmented and inadequate relationship between stakeholders are the major cause of inefficiency in the

industry. Based on construction industry development policy, in order to avoid facing limitation and strength to the development of the construction industry requires many years of sustained effort and the right operating environment. Furthermore, achieving meaningful results within an appropriate timeframe; there is a need for commitment, cooperation, and collaboration among stakeholders in the construction industry. Therefore stakeholder management is a critical component especially; to assess the factors of the stakeholder management process and identify strategies of the stakeholder management process to respond as essential to the successful delivery of projects, packages, or activities on public buildings. Stakeholder management plays a significant role in the successful delivery of construction projects. However, being able to carry out effective stakeholder management in construction is dependent upon understanding the interrelationships among the critical success factors (CSFs) for stakeholder management and how they are related to project success. This would enable the individuals' responsibility for stakeholder management to know the logical process for addressing the critical success factors in order to get stakeholder management right for project success. One could observe that the building construction project in Gondar City has not fully been able to grasp the vast importance of managing stakeholders involved in

construction projects. The management team always faces a lot of challenges one of them is how to manage project stakeholders because the list of these contains a large number of parties with different goals. Therefore research on stakeholder management is crucial to bridge the gaps of stakeholders' management related to project success, especially focusing on, barrier and success factors, strategies of stakeholder management to respond to claims. Finally develop a framework for the effective stakeholder management process in Gondar City public building construction projects was applied.

1.1 Stakeholder Definitions

A stakeholder is any group or individual who can affect or is affected by the achievement of the project's objectives whereas, Stakeholder management is the process of identification, analysis, communication, decision making, and all other kinds of activities in terms of managing stakeholders (Freeman, 2004). Stakeholder management is the process of identification, analysis, communication, decision making, continuous support and other kinds of activities in terms of managing stakeholders. The effective participation of key stakeholders in the construction industry has been of interest to the stakeholders (Freeman, 2004).

1.2 Stakeholders in building construction project

Building strong relations with stakeholders such as employees, customers, suppliers, and communities not only increases the firm's ethical standing but may also lead to an increase in shareholder wealth and firm performance. Project stakeholders across all projects are placed importance on strong relationships to promote motivation towards the project goals and highlighted the initial relationship workshops had a positive impact on team motivation, as they facilitated teamwork and relationship building between the project stakeholders (Freeman, 2004). The nature of construction industries involves diverse stakeholders such as construction professionals, consultants, contractors, financial institutes, governmental agencies, local communities, etc. In order to gain an overall view of construction stakeholders, it is helpful to classify them into different categories according to their legal or contractual relationship (Olander & Landin, 2005). Therefore, the identification of key stakeholders and their objectives are important to achieve business success. Each stakeholder usually has different interests and priorities that can place them in conflict or disagreements with the project (Mok, Shen, & Yang, 2015). If diverse stakeholders are present in construction undertakings, then the construction industry should be able to manage its stakeholders (Yang, J., et-al 2009)

1.3 Factors of the Stakeholder Management in the Building Construction Projects

1.3.1 Barrier Factors of stakeholder management process

Construction projects have numerous stakeholders with diverse occupational, professional backgrounds, different levels, and types of interests in the project (Mok, et-al 2015). In addition, stakeholders can be aggressive or otherwise, can impact a project in several ways; the outcome being either positive or negative hence must be

managed (Mok, et-al 2015). Meeting stakeholder satisfaction and effective stakeholder management is, therefore, a success criterion Yang, J., et al., (2009). Stakeholder management is thus a positive approach of bringing to surface concerns of stakeholders and developing healthy relationships in complex environments (Hasan & Jha, 2015). Stakeholder management entails a systematic approach to identifying, engaging, analyzing, and monitoring stakeholders, suggests, identifying stakeholders, gathering information about stakeholders, and analyzing their influence (Walker, et-al 2014). There are challenges in the processes of identifying stakeholder and their needs, assessing stakeholder impacts and their relationships, and formulating appropriate engagement strategies (Maak, T., 2007). Language barrier; Cultural differences; Uncooperative Attitude of Stakeholders; Client's Attitude; Conflicts between Stakeholders; Lack of Periodic Stakeholder Meetings; Assigning one task to two stakeholders; Lack of clear demarcation of levels of authorities of two stakeholders Yang, J., et al., (2011) Non-determination of requirements and expectations of stakeholders; Inadequate identification and engagement of all stakeholders Yang, J., et al., (2011). Inadequate engagement with external stakeholders; Mistrust on the part of stakeholders; Non-existent communication process; Failure to recognize or cooperate with adverse stakeholders; Stakeholder neglect; Failure to consider the wider collection of stakeholders; Non-Identification of potential conflict areas; Issuance of incorrect information to stakeholders; Mistrust on the part of stakeholders; Lack open and ongoing communication process; life cycle of project for the purpose of gaining knowledge about the potential influence various stakeholders have at different stages (Zarewa, G.A., 2019). Having several stakeholders working together for the first time; Project cost increase; Scope and quality changes; Changes in stakeholders; Project delays; Inadequate stakeholder identification, engagement, and analysis; Absence of formal stakeholder management process (Ujene, A.O. et-al 2015). Lack of continuousness in the stakeholder management process; Lack of clear definition or agreement as to who should be responsible for stakeholder management (Molwus, J 2014).

1.3.2 Critical success factors for effective stakeholder management

Construction projects have numerous stakeholders with diverse occupational, professional backgrounds, different levels, and types of interests in the project (Mok, et-al 2015). In addition, stakeholders can be aggressive or otherwise, can impact a project in several ways; the outcome being either positive or negative hence must be managed (Eyiah-Botwe, E., et-al (2015). Meeting stakeholder satisfaction and effective stakeholder management is, therefore, a success criterion Yang, J., et al (2009). Stakeholder management is thus a positive approach of bringing to surface concerns of stakeholders and developing healthy relationships in complex environments (Hasan & Jha, 2015). Stakeholder management entails for effective stakeholder management in construction projects, it is necessary to identify and understand the interrelationships among the CSFs for stakeholder management. Therefore, CSFs should be given constant and careful attention in stakeholder

management in construction being enablers of the process Critical success factors. Successful competitive performance for the organization; they are the few key areas where things must go right for the business to flourish”. In other words, CSFs are actions, decisions, conditions, or circumstances in which the right things have to be done in order for the desired goals to be achieved in a project Mwesigwa, R., et al., (2018). Identification of the factors which are critical to the success of stakeholder management in construction projects. Mok, et-al (2015). Identified four factors affecting the stakeholder management process: Analysis of stakeholders’ concerns and needs; communication of both potential benefits and negative impacts to stakeholders; evaluation of alternative solutions; project organization and relationship with the media. Similarly, Jergeas, G.F., et al., (2000), suggested effective communication with stakeholders and setting common goals and priorities among them for the project will improve stakeholder management. These CSFs for stakeholder management in construction were used to develop the conceptual model used in this study based on the groupings by Yew Wong, K., (2005) with slight modifications. Every project with a set of parameters for measuring success has critical factors that impact the project outcome. Yang, R.J. et-al (2014) viewed them as “those key areas of managerial planning and action that must be practiced in order to achieve effectiveness. Critical success factors (CSFs) for stakeholder management are activities, practices, and considerations that directly or indirectly can ensure successful stakeholder management. Critical barriers are factors militating against the achievement of successful stakeholder management and project set targets of cost, time, and quality. (El-Sawalhi, N.I. and S. Hammad, 2015) had these factors, found within management groups of: ‘Stakeholder Identification’, ‘Stakeholder Assessment’, ‘Decision Making’, ‘Action and Evaluation’ and ‘Continuous Support. It is worth noting that these activities become challenge and barriers to stakeholder management if not properly managed. Identified challenges to stakeholder management in the construction industry. Project manager with high competency, transparent evaluation of alternative solution, ensuring effective communication between the project and its stakeholder (Wong, K.Y., 2005).

1.3.3 Framework for Stakeholder’s Management Process

[22] States that a framework is a device that organizes empirical observations in a meaningful structure. The framework incorporates different dimensions into one area and it is used to make conceptual distinctions and organize ideas. Develops a framework which considers a process of stakeholder identification, assessment, decision making, action and evaluation with continuous support (El-Sawalhi, N.I. and S. Hammad, 2015). It is clearly stated in the Figure 2.2 below from Pre-condition up to Sustainable support for successful stakeholder. Framework for stakeholder management in construction” in which they added a box for “action and evaluation”. Their framework is more detailed than Yang et al.’s but did not capture the construction life cycle perspective as well as responsibility for stakeholder management. It assumes the project

manager is responsibly disregarding the different success of projects.

3. Material and Methods

In this research, mixed method design was used. Which are qualitative unstructured interview, observation, historical document review (cost and time) and quantitative survey approach to identify the critical success and barrier factors of stakeholder management in construction projects and to identify strategies of stakeholder management claims in the Gondar City public building construction projects, and data was obtained from closed ended questionnaire. Then the data acquired was analysed using descriptive statistics, frequency and relative importance index. Findings was discussed in graphs, percentages and statements.

3.1. Research sampling technique

purposive sampling technique has been chosen based on the target populations’ critical case since sampling focuses on specific cases that are dramatic or very important/key personnel experience above 5 years and Heterogeneous/maximum variation sampling relies on researcher’s judgment to select participants with diverse characteristics. This is done to ensure the presence of maximum variability within the primary data.

3.2. Sample Size Determination

In order to assess the current situation of stakeholder management aspect on selected public building projects in Gondar City, a wide range of construction parties are involved in construction of projects which was targeted. A sample of population of at least 30% of the target population as being appropriate in order to arrive at accurate and reliable results (Saunders, M.N., 2012). Therefore, the following equation was used to determine the sample size (Mugenda, O.M. and A.G. Mugenda,1999),

$$Ss = \frac{Z^2 * P * (1-P)}{C^2} \text{-----Equation 3.1}$$

Where SS = Sample size

Z = Z value (e.g. 1.96 for 95% confidence level)

P = percentage picking a choice, expressed as a decimal (0.50 used for sample size needed).

C = margin of error (9%)

$$Ss = \frac{(1.96)^2 * 0.5 * (1-0.5)}{0.09^2} = 118.57 \sim 119$$

Correction for Finite Sample:-

$$Ss \text{ new} = \frac{Ss}{1 + \frac{Ss-1}{pop}} \text{----- Equation 3.2}$$

Where pop =population size

So, Total population of this study based on city development and construction office data = 121 match the proposed professional parties.

$$Ss \text{ new} = \frac{119}{1 + \frac{119-1}{121}} = 60 \text{ samples}$$

3.2. Sources of Data Collection and Procedures

- Primary sources of data collection: It obtained by through unstructured interview, questionnaire, observation (work study), and historical document.
- Secondary sources of data collection: The data were collected from literature. The basic information relating to research variables and stakeholder management practice of the study were recovered from previous works. The materials used in the course of the review include textbooks, articles from journals, unpublished thesis and conference papers.

Data for this study were collected by the use of questionnaire survey, unstructured interview. The information included in the questionnaire was determined by the research objectives. The method adopted in administering questionnaire is basically dependent on the research design. Exploratory research design adopts literature search while descriptive research design adopts questionnaire survey. Fontana, A. and A.H. Prokos, (2007) admitted that questionnaire design is appropriate to get information from any group of respondents. Questionnaire for framework validation were used to get information in this study. Unstructured interview was used basically to clarify information provided in the questionnaire by the respondents.

3.3. Reliability of the Questionnaire

Cronbach's Alpha method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. The normal range of Cronbach's coefficient alpha (α) value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency based on equation 3.3 (Famakin, I. and A. Abisuga, 2016).

$$\alpha = \frac{K_r}{1 + (K-1)r} \text{ ----- Equation 3.3}$$

- The closer the Alpha (α) is to 1, the greater the internal consistency of items in the instrument being assumed. The formula that determines alpha is fairly simple and makes use of the items (variables), **k**, in the scale and the average of the inter-item correlations, **r**.
- The Cronbach's coefficient alpha was calculated for each field of the questionnaire.
- The values of Cronbach's Alpha for each field of the questionnaire more than 0.70 (Table 3.1), which indicates an excellent reliability of the entire questionnaire. Cronbach's Alpha equals 0.89 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

3.4. Validity of Questionnaires

A scale is said to be valid when it measures the intended purpose (Famakin, I. and A. Abisuga, 2016). Further, he argues that empirical proof of scale use is sufficient to ascertain its validity. However, the following validity tests were deployed in this study: content, construct, and criterion.

1. Content Validity: Content validity is the extent to which a scale covers a sufficient sample from the intended population or universe. This was satisfied in this study

through the use of purposive sampling techniques. This method of sampling was used because the study targets a group of respondents, in this case, the project managers and supervisors that cannot be ordered to allow the use of probability sampling.

2. Construct Validity: Construct validity is the degree to which the study variables as they relate to theoretically developed hypotheses are measured (Curtis, E.A., et al, 2016). This study considered critical success factors of stakeholder management and barrier factors of stakeholder management variables in line with the study objectives which were derived from theories underlying the study. Construct validity test was therefore satisfied through a pre-tested questionnaire pretesting of questionnaire: The questionnaire was pretested through a pilot survey that was carried out among the population that was studied. Fifteen (15) questionnaires were distributed and ten were filled and returned. This helped to ensure that it measures what it is designed to measure and also helps to eliminate the error. However, after the pilot survey, modifications were made to the questionnaire. These modifications include an introduction to how the questions in the questionnaire should be answered.

3. Criterion Validity: Criterion validity is the degree to which a score from a tool accurately predicts behaviour in an area. The criterion validity used in this study is concurrent validity, because the study correlates relationship between variables to establish their association.

3.5. Statistical Data Analysis and Presentation Technique

The statistical package that was used to analyze the data collected for this study is SPSS version 20 and RII. The data collected were coded and entered into a spreadsheet provided by SPSS for that purpose. The independent variables for this study are the critical success factor of stakeholder management and barrier factors stakeholder management, while the success of the project is the dependent variable. [33] Suggests that when a study is, correlation analysis was used to establish the strength of association between variables of interest suitable. Argued further that causal relationships can further be explored among these variables.

4. RESULTS AND DISCUSSIONS

This chapter presents the analysis and discussion of results that have been construed from a field survey of 60 questionnaires and historical document reviews on public building projects like Municipal Institutions, Educational Institutions, financial institutions, health offices material and education offices of respondents to study stakeholder management related to project success. The first objective of this study is to determine the barrier factors affecting the effective stakeholder management process in public building construction projects. To what extent do you think that the following factors are the most significant barriers in managing stakeholders in public building construction projects according to the levels of influence they may impose? The outcome of the analysis is presented in Table 4.1

4.1. Barrier Factors Affecting the Stakeholder Management

Research questions: To what extent do you think that the following factors are significant barriers in managing stakeholders in public building construction projects.

Table 4.1. Barriers Factors of Stakeholder Management

No	Variables	SA*5	A*4	Ne*3	D*2	SD*1	Total (W)	A*N 5*60	RII	Ranks
1.	Conflict and coalitions among stakeholders	135	92	0	0	0	227	300	0.757	10
2.	Failure to identify potential conflict areas	100	64	42	8	6	220	300	0.733	12
3.	Lack of Periodic Stakeholder Meetings	120	96	24	8	0	248	300	0.827	2
4.	Failure to understand Stakeholders' needs & Expectations	90	88	45	4	3	230	300	0.767	7
5.	Lack of strategies and tactics of stakeholders management	125	76	18	10	2	231	300	0.770	5
6.	Lack of fairness and equity, for all stakeholders	145	44	33	18	0	240	300	0.800	3
7.	Lack of constant communication with stakeholders	135	48	45	8	2	238	300	0.793	4
8.	Project Manager's poor knowledge of SM	95	112	21	8	2	238	300	0.793	4
9.	Failure to identify key stakeholders	95	84	36	16	0	231	300	0.770	5
10.	Failure to understand relationship between and among stakeholders	90	88	45	4	3	230	300	0.767	6
11.	Failure to meet information requirements of all stakeholders	85	96	66	16	0	263	300	0.877	1
12.	Stakeholders' incapacity to participate in discussions	95	80	27	12	4	218	300	0.727	10
13.	Project scope changes and quality	85	84	18	0	9	196	300	0.653	13
14.	Client's uncooperative attitude	95	68	42	14	3	222	300	0.740	10
15.	Incomplete Stakeholder Identification	100	64	42	8	6	220	300	0.733	11
16.	Inadequate engagement with external stakeholders	85	64	63	8	4	224	300	0.747	11
17.	Involvement of numerous stakeholders	60	84	57	0	8	209	300	0.697	12
18.	Uncooperative Attitude of Stakeholders	50	108	27	16	6	207	300	0.690	13
19.	Language barrier between stakeholders	10	112	36	24	6	188	300	0.626	14
20.	Cultural differences between stakeholders	25	64	45	32	8	174	300	0.58	15

Key: SA-strongly agree, A-agree Ne- neutral, D-disagree, SD-strongly disagree & N- sample size

Source: Primary Data, (2020/21)

Table 4.1 shows that the most ranked barrier factor of stakeholder management in public projects is a failure to meet the information requirements of all stakeholders with an RII value of 0.877. Therefore, the assurance of meet information requirements of all stakeholders is given by stakeholder management is very important. This factor is closely followed by a lack of periodic stakeholder meetings with an RII value of 0.827. This is seen as sufficient to aggravate the barrier factor of stakeholder management. The third most ranking factor is lack of fairness and equity, for all stakeholders with a mean value of 0.80 and, since lack of fairness and equity, for all stakeholders' leads to poor communication between stakeholders, poor communication of people being claimed by their positions could also lead to struggling the process. The next is a lack of constant communication with stakeholders and the project manager's poor knowledge of stakeholder management with an RII value

of 0.793. From their own point of view; understand stakeholders' needs and expectations is a collective responsibility of the managers Therefore, project leaders should make regular communication with stakeholders to aid the success of projects. The least ranked factor is cultural differences between stakeholders with an RII value of 0.5.

4.2. Critical Success Factors of the Stakeholder Management

In addition, this is the 2nd objective to identify critical success factors of the stakeholder management that enhance the success of construction stakeholder's performance in Gondar City. The ranking of the identified critical success factors of stakeholder management according to their influence on the success of the project is indicated in Table 4.2

Table 4.2. Critical Success Factors of the Stakeholder Management

No	Variable	SA*5	A*4	Ne*3	D*2	SD*1	Total (W)	A*N 5*60	RII	Ranks
1.	Managing stakeholder with corporate social responsibilities	140	96	24	0	0	260	300	0.867	5
2.	Flexible project organization	85	120	27	8	0	240	300	0.800	19
3.	Project manager competences	170	56	6	12	4	248	300	0.827	15
4.	Setting common goal and objective of the project	220	32	6	12	0	270	300	0.900	3
5.	Identifying stakeholders	160	64	24	4	2	254	300	0.847	10
6.	Exploring the stakeholder need and expectation	115	116	24	0	0	255	300	0.850	7
7.	Assessing stakeholders' attitude	130	72	24	16	0	242	300	0.807	20
8.	Understanding area of stakeholders' interests	110	96	24	12	0	242	300	0.807	20
9.	Predicting the influence of stakeholders	110	96	42	0	0	248	300	0.827	15
10.	Analyzing conflicts and coalitions among stakeholders	115	104	21	0	4	244	300	0.813	17
11.	Evaluate the stakeholder power	145	88	6	10	2	251	300	0.837	12
12.	Evaluating the stakeholder legitimacy	105	112	6	18	0	241	300	0.803	17
13.	Understand the stakeholder urgency	120	80	36	4	2	242	300	0.807	20
14.	Determine the stakeholder proximity	110	96	24	12	0	242	300	0.807	20
15.	Determine the stakeholder Knowledge	110	120	12	8	0	250	300	0.833	14
16.	Transparent evaluation of the alternative solution based on stakeholder concern.	135	92	18	8	0	253	300	0.843	11
17.	Ensuring effective communication between the project and its stakeholder.	160	72	24	4	0	260	300	0.867	5
18.	Formulate appreciate strategy to deal with stakeholder	75	140	18	8	0	241	300	0.803	17
19.	Implementing the strategy based on schedule plans.	200	48	12	8	0	268	300	.893	4

20.	Flexibility in the implementing strategy to deal with stakeholder' reaction.	100	76	51	4	2	233	300	0.777	25
21.	Evaluation the stakeholder satisfaction in terms of achievement of the stakeholder pre- project expectation.	105	96	33	8	0	242	300	0.807	20
22.	Communication with the engaging stakeholder properly and frequently.	175	84	12	0	0	271	300	0.903	2
23.	Stakeholder involvement in decision-making.	125	108	18	4	0	255	300	0.850	7
24.	Keeping and promoting an ongoing relationship with stakeholder.	110	96	30	8	0	244	300	0.813	17
25.	Analyzing the change of multiple stakeholder engagement and the relation.	85	76	54	8	2	225	300	0.750	29
26.	Obtain support assistant from higher authorities.	75	92	42	8	4	221	300	0.737	30
27.	Mutual trust and respect amongst the stakeholder	190	80	6	0	0	276	300	0.920	1
28.	Reduce the uncertainty	135	84	36	0	0	255	300	0.85	7
29.	Maintain alignment between or among the stakeholder	80	128	24	4	2	238	300	0.793	24
30.	Access to resource and knowledge	140	64	36	4	0	244	300	0.813	17

Key: SA-strongly agree, A-agree Ne- neutral, D-disagree, SD-strongly disagree & N- sample size

Source: Primary Data, (2020/21)

According to Table 4.2, the most significant critical success factors of stakeholder management that enhance the achievement of the project is mutual trust and respect amongst the stakeholder with an RII of 0.920. Mutual trust and respect amongst the stakeholder in any project helps to increase the achievement of construction work and productivity. This factor is closely followed by communication with the engaging stakeholder properly and frequently with an RII value of 0.903. Therefore according to the survey result communication between the stakeholders is considered to be important as it ensures the involvement of all stakeholders for reducing conflict and generating new ideas. The third most ranked critical success factor of stakeholder management is setting common goal and objective of the project with an RII value of 0.900, since setting common goals, objectives and project priorities” is significant for improving stakeholder management and it also suggested that the purpose of the project should be understood, and feedback from stakeholders be solicited in order to achieve

alignment between stakeholder and project. The least ranked factor is to obtain support assistant from higher authorities with an RII value of 0.737. Generally according to the survey result the RII value of all the variables that the opinion of respondents is closely related. Therefore the listed variables are very important critical success factors of the stakeholder management in public building projects in Gondar City.

4.3. Response Strategy to Deal with the Stakeholder Claims

The respondents were asked about their points of view regarding the effective response strategy types to deal with the stakeholder claims in the construction project? The analyzed results in Figure 4.1 indicated that the project management teams considered the approaches were useful with one expectation that the respondents did not agree to use the dismissal strategy, and these strategies should be used as a supplement to a systematic process of stakeholder management.

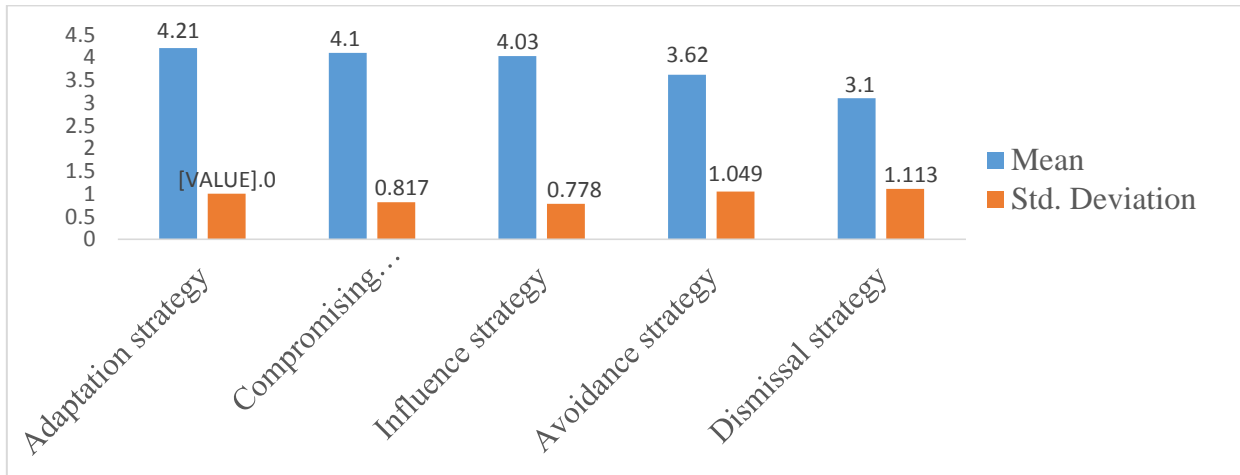


Figure 4.1. Response Strategy to Deal with the Stakeholder Claims

The construction project prefers to use is negotiating with the stakeholders, listening to their claims related to the project, and offering possibilities and arenas for dialogues. As clearly indicated in Figure 4.1 compromising strategy is come in the second position, since sometimes project managers found it is better to focus on achieving the objectives of the project by accepting the demand when it is possible and there is no major change will be happening. Influence strategy is listed in the third position, this means that the project manager does not like to deal with a strategy in general since his time is limited and may use this type of strategy with the key stakeholders to try to influence their claim to fit with the project objective. Avoidance strategy is falling in the fourth position, this type of strategy could be used in some cases, especially when the demand of the stakeholder claim is over the capacity of the project.

4.4. Framework of effective stakeholder management

This research proposes a framework to explore the factors that have an influence on stakeholder management to the achievement of construction works related project success. A conceptual framework is designed based on the information collected from the historical document findings and questionnaire findings using CSF. A conceptual framework is a device that organizes empirical observations in a meaningful structure [34]. The conceptual framework incorporates different dimensions into one area and it is used to make conceptual distinctions and organize ideas. The proposed framework incorporates stakeholder management, construction productivity and construction project performance dimensions [35]. If the purpose of the framework is to answer a variety of questions, then its validity should be determined with respect to these questions [36]. The significance of this conceptual framework lies in its ability to incorporate different themes of the research objectives into a common ground. The purpose of the framework is to better understand the different factors of stakeholder management impacting on the construction project success targets and construction project performance. Common factor analysis (CFA) and principal component analysis (PCA) represent two technically distinct approaches to exploratory factor analysis [37]. CFA extracts factors by calculating common variances of each variable, and PCA extracts factors by calculating the variances of overall

variables. In this study, the authors used PCA, which has more stability and a better factor-recovery capability than CFA [37].

Frameworks validation/evaluation are developed to address specific problems but they cannot be used with confidence to solve such problems unless they are validated or evaluated. Framework validation and evaluation are complementary terms that are being used interchangeably by researchers and framework/model developers. Validation or evaluation is carried out not to discover new knowledge but to ensure that a framework or model is able to serve its intended purpose(s). Therefore, it is important to adopt appropriate methodology invalidating a framework/model but there is no known formal guide for choosing the methodology to use in validating a framework/model as each framework development (modelling) tool has its peculiar challenges. Moreover, each framework or model developed has its peculiar intended purpose(s) in line with which the validation should be carried out. If the purpose of the framework/model is to answer a variety of questions, then its validity should be determined with respect to these questions [38]. Therefore, the researcher has to Figure out the best method to adopt invalidating their framework.

4.3. Framework for Effective Stakeholder Management Process

This framework to explore the factors that have effective stakeholder management to the achievement of construction works related to project success. A framework is designed based on the information collected from literature, the historical document findings and questionnaire findings with CSF and main barrier factor, and the model results. First, factor analysis was conducted to classify the thirty CSFs into appropriate groups on the basis of attributes of the data provided in the survey. Second, unstructured interviews were conducted to review the results of the factor analysis and analyze the meaning of each group. Factor analysis is a statistical method for dimension reduction that classifies factors into groups on the basis of data commonalities to analyze the shared meanings features across factors. The KMO index value and the P-value of the data set in this study were 0.567 and 0.000, respectively. As a consequence, the data set of this study was suitable for factor analysis in terms of both

sample size and sampling adequacy. Figure 4.2 is a scree plot that shows the eigenvalues and the corresponding numbers of the components [37]. Table 4.3 lists the results of the factor analysis. To discuss the results, an unstructured interview with six experts who had attended the interview in the first stage of the study was conducted. The main purpose of the unstructured interview was to discuss the shared meanings of the CSFs in each factor group. 2 CSFs of factors in Component 3 were related to the project itself and internal decision making, whereas the other five CSFs in Component 3 were related to social cooperation. This division led to the formation of two-factor groups. On the basis of the results of the factor analysis and the focus-group interview, a framework for stakeholder management in Gondar City projects was developed. As shown in Figure. 4.3, the framework is composed of five themes, 10 sub agendas, and 30 CSFs. 4 BFs, 3 response strategies to deal with the stakeholder claims based on the analysis result.

Theme 1: Management support: Component 1 in Table 4.3 indicates management support is the main group in related to the support which is given from top management in the implementing agencies toward the construction project, by hiring a project management team with high competencies, support to manage stakeholder with corporate social responsibilities, and flexibility in the project organization.

Theme 2: Clear Understanding of Stakeholders: Table 4.3 in component 1 indicates that the success of stakeholder management starts with a clear understanding of the stakeholders. Project managers in Gondar City projects should clearly understand first who the stakeholders are and what they want, second, how they affect the project, and third, how they can change during the project. Thus, each CSF for understanding stakeholders can be classified into one of the seven agendas, stakeholder identification, stakeholder assessment, or responding to the change of stakeholders.

Theme 3: Clear Definition of Project: The two CSFs in Component 3, related to the project and internal decision-making, are summarized as clear definitions of the project. Project managers who clearly understand the goals and scope of a project can perform better in stakeholder management. Project managers in Gondar City public building projects should first set a clear common goal and scope for the project and, second, prepare alternatives and strategies for effectively executing the project. Thus, each of the four CSFs for defining a project can be classified into one of two sub agendas, setting common goals or strategic flexibility.

Theme 4: information input: Table 4.3 in component 2 and 6 stakeholder information is an important task for assessing stakeholder's information is important as sharing information with stakeholders and exploring the stakeholder need and expectation. It is the back bone in the project success. Before any management activities, information about the project and stakeholders around requires extensive research and analysis. The information includes project missions, full list of stakeholder, area of stakeholder's interests, and their needs and constraints to

the project the stakeholder commitments, interest and power should be fully assessed.

Theme 5: Effective Communication: Effective communication between project teams and stakeholders might be the core of stakeholder management, but it is not easy to achieve. Effort is required to develop detailed and applicable methods for effective communication in the field. Component 2 (or Factor Group 2), which includes nine CSFs, shows effective means of communication. Managers of Gondar City projects should, first, maintain two-way communication, second, try to minimize stakeholder dissatisfaction, and third, let stakeholders participate actively.

Theme 6: Decision making: the project management team has the responsibility to compromise conflicts among stakeholders by choosing the transparent evaluation of the alternative solution based on stakeholder concern, and to decide on the levels of stakeholder engagement in order to ensure effective communication, and formulate appropriate strategies to deal with the issues raised by stakeholders at this stage. Managers of Gondar City public building projects should understand how the decision of the project can change and how to respond to these changes appropriately.

Theme 7: Action & evaluation: The action and evaluation group is also one of management activity group in the process of stakeholder management. The inputs required are the formulated strategies, and the level of stakeholder engagement to ensure effective communication. This group includes The three CSFs are from component 5 flexibility in the implementing strategy to deal with stakeholder' reaction, from component 6 evaluating stakeholder' satisfaction and from component 8 implementing the strategy based on schedule plans.

Theme 8: Continuous support: This group includes the activities which should be carried out by project managers to support the implemented management activities. This group includes the activities which should be carried out to support the management activities implemented, and the name of this group as 'continuous support' come from that the activities within, not only support a single management process, or contribute to the success of a single project, but can be used for accumulating the experiences and knowledge of the project management team in the long term

Theme 9: Success of project: The ultimate goal of stakeholder management in construction projects is to achieve successful projects but the meaning and measure of project success in construction have different meaning. But in this paper project success means productivity of work, cost performance and time performance.

4.3.1 Analysis results of framework

Top level or management support from the implementing agencies, was essential for effective stakeholder engagement in some projects, certain individuals at director level are tasked with the responsibility of overseeing their stakeholder management activities and to develop their relevant. Top management must endorse the

principle of stakeholder consistently and wholeheartedly, a framework was developed as a conceptual framework model for stakeholder management in Gondar City public building projects. This result can be explained by the fact that Gondar City public building projects can affect a

broad range of issues subject to lack of management support. Successful stakeholder management of Gondar City public building projects requires more attention to clearly understanding of stakeholders such as stakeholder identification, the stakeholder assessment.

Scree Plot

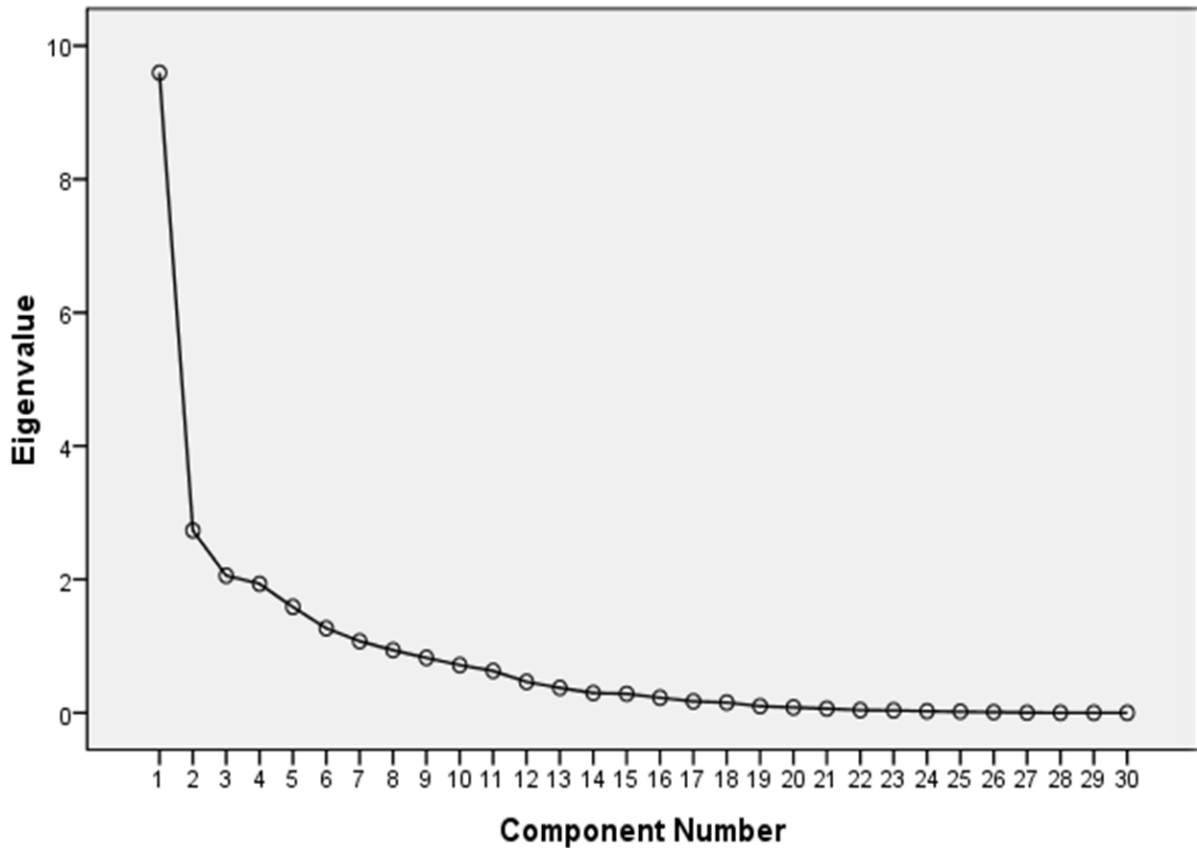


Figure 4.2. Scree Plot of Factor Analysis

The scree plot graphs the eigenvalue against the factor number. As shown in Figure 4.2 the values in the first 7 columns of the Figure immediately above. From the 8

factor on, can see that the line is almost flat, meaning the each successive factor is accounting for smaller and smaller amounts of the total variance.

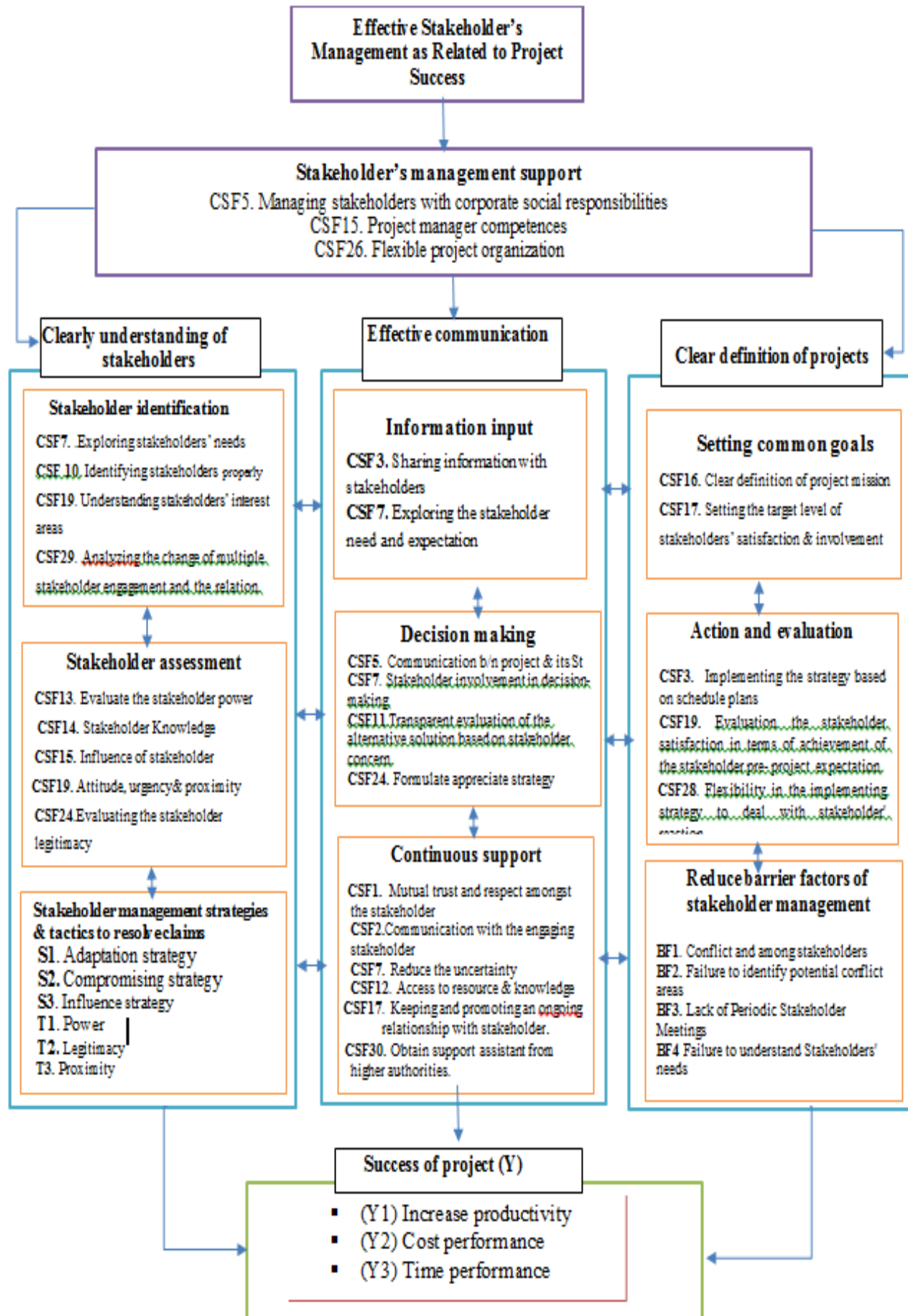


Figure 4.3. Framework for Effective Stakeholder Management Process for Project Success

Table 4.4. Validation Responses on Scoring of Key Aspects of the Framework

No	Validation questions	Minimum Score	Maximum Score	Mean Score	Skewness	Kurtosis
1	How useful would you rate the overall framework for stakeholder management in construction?	4	5	4.47	.115	-2.235
2	How effectively can the framework facilitate the overall success of construction projects?	2	5	3.63	-.921	.719
3	How would you rate the applicability of the framework in construction projects?	3	5	4.16	.385	1.113
4	How would you rate the logical structure of the framework?	3	5	4.05	-.026	.024
5	To assess the extent to which the framework is able to enable continuity of stakeholder management process in construction projects.	4	5	3.89	-.498	.302
6	How effectively does the framework focus on stakeholder management issues relevant to construction projects?	2	5	4.05	-.717	.367
7	How would you rate the comprehensiveness of the framework?	3	5	4.05	-.074	-.766

Table 4.5. Percentage Scores of the Key Aspects of the Framework Based on the Scale Points

No	Validation questions	Fair (1)	Satisfactory (2)	good (3)	Very good (4)	Excellent(5)
1	How useful would you rate the overall framework for stakeholder management in construction?				52.6	47.4
2	How effectively can the framework facilitate the overall success of construction projects?		10.4	21.1	63.2	5.3
3	How would you rate the applicability of the framework in construction projects?			5.3	73.6	21.1
4	How would you rate the logical structure of the framework?			15.7	63.2	21.1
5	To assess the extent to which the framework is able to enable continuity of stakeholder management process in construction projects.		5.3	21.1	52.6	21.1
6	How effectively does the framework focus on stakeholder management issues relevant to construction projects?			21.1	52.6	26.3
7	How would you rate the comprehensiveness of the framework?			5.3	73.6	21.1

An investigation of the results from the closed questions reveals an overall positive response by the validators on the framework. Table 4.3 shows that none of the 7 questions was scored 1 (fair) by the validators and most of them had a score of 5 (excellent). This can be seen from the 4th and 5th columns of Table 4.2 which present the minimum and maximum scores respectively for each of the seven closed questions included in the framework validation questionnaire. The mean scores for all the seven questions ranged from 3.63 to 4.47, all of them above the acceptable score of 3.5 for a five-point Likert scale. Furthermore, the Skewness and Kurtosis values shown in Table 4.3 indicate the distribution of scores for the seven closed questions [36] Positive Skewness values indicate that scores are clustered around the low values of the scale whereas; negative Skewness values indicate scores are clustered around the high values of the scale. Positive Kurtosis values indicate that scores are clustered around

the middle of the scale. A combined look at the Skewness and Kurtosis values shows clustering of scores from the middle to high values of the scale. The percentage scores indicate that the validators rated the questions mostly from 3 to 5. The highest mean score of 4.47 out of 5 was recorded by the question on the overall usefulness of the framework. Conversely, the lowest mean score of 3.63 out of 5 was recorded by the question on process in the framework.

5. Conclusion and Recommendation

➤ The most barrier factors are, BF1. Conflicts among stakeholders, BF2. Failure to identify potential conflict areas and BF3. Lack of Periodic Stakeholder Meetings and the critical success factors for stakeholder management in construction projects were reviewed leading to the identification of thirty critical success factors. Furthermore, the need for a

deeper understanding of the interrelationships among these critical success factors and how they can be used to achieve project success were identified. When group the factors decision making is ranked in first position among the 6 components critical success factors of the stakeholder management with a mean of 0.6538. The second rank is management Support with a mean of 0.500.

- The adaptation strategy, compromising strategy, influence strategy, and avoidance strategy are effective in response to the stakeholder claims. On the other hand they refused to use the dismissal strategy in dealing with stakeholder.
- The framework structure is presented based on the result of the critical success factor for stakeholder management process in the Gondar city, and with reference to the statistical correlation between group's factor, and factor analysis results, and model results. Finally, the framework (Figure 4.3) is developed. The framework for stakeholder management in construction projects provides a smooth methodology to guide the process of stakeholder management in construction projects. The validation of the framework for stakeholder management in construction projects was carried. The framework has been evaluated and found to be credible and acceptable to the construction industry.
- Construction professionals should be dynamic in stakeholder position as important and gaining new information is explanatory for that, but not loss of confidence in the project team. It is necessary for all stakeholders to be adequately briefed about the project including telling them both the positive and negative aspects of the project.
- It is advisable that the implementing agencies recruit a project manager based on his competencies to lead the management of stakeholders successfully. While at the same time to delegate a suitable degree of authority to the project management team.
- The proposed framework is proposed as a guideline (Figure 4.3) to assist project managers in managing stakeholders effectively.

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Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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