

Stakeholder Management: State of The Art

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Abstract— This paper aims to provide a summary of several previous studies of effective stakeholder management in construction projects to identify the shortcomings and problems that may be faced by stakeholders in the construction industry. Stakeholders play a significant role in either project success or failure. The effective management of stakeholders in construction projects has a great contribution to the project success, since the stakeholders are a major source of uncertainty in construction project. Stakeholder management is one of the most important project management tools; although there has been some success in areas such as manufacturing industry, the construction industry still has a poor record of stakeholder management during the past decades. Stakeholder management as a central management task requires the right skills and responsibilities in the right places. The decision makers must explain to them the possibilities and limits they face in a realistic and understandable way. Early involvement of stakeholders in the planning process can not only avoid opposition, but also offers the opportunity to gain knowledge that can have a positive impact on the project goals. The projects are implemented in institutionally demanding environments and executed by coalitions of stakeholders that have differing interests, objectives and socio-cultural backgrounds. The projects are subject to the demands and pressures presented by external stakeholders such as community groups, residents, landowners, environmentalists, regulatory agencies, and local and national governments. This paper provides A summary of the most research for effective management to the stakeholders of construction projects.

Index Terms: Competitiveness, Construction, integration, management, motivation, projects, BIM, stakeholder.

1 INTRODUCTION

Construction is a very complicated industry that requires rigorous systems to deliver project on time, and in efficient and effective manner. Poor stakeholder management can lead to many serious problems in construction projects, such as: poor scope and work definition, inadequate resources assigned to the project (both in terms of quantity and quality), poor communication, changes in the scope of work and unforeseen regulatory changes, all of which may be the major source of delays and cost overruns [1]. The construction industry worldwide has a poor record of stakeholder management during the past decades [2]. It is noticeable that no project has reached to handing over stage without notable criticism from the end-users of the facility to the designers [3]. Many problems of stakeholder management in construction projects proposed by previous scholars include inadequate engagement of stakeholders, project managers having unclear objectives of stakeholder management, difficulty to identify the “invisible” stakeholder, and inadequate communication with stakeholders [4]. To solve these problems, project teams need to know what the essentials are for managing stakeholders [5]. [6] introduced the perspective of strategic stakeholder management and concept of stakeholders in project management. Present paper intent to present the results of a research done at all levels, with the purpose to identify and evaluate the Stakeholder Management in the construction projects.

2 STAKEHOLDERS’ DEFINATION AND CATEGORIES

2.1 Stakeholder Definations

[7] defines stakeholder as: “an individual, groups, or organizations who may affect, be affected by, or perceive themselves to be affected by a decision, activity, or outcome of a project”. [7]; Also, defines Project stakeholder Management as: “The

processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution” [7];

The stakeholder literature presented different conceptual and definitions of stakeholders ranging from wide to narrow views. [8] proposed classic definition of stakeholders that it is “any group and individuals who can affect or is affected by the achievement of an organizations objective”. This definition was especially important to this analysis in that it highlighted a two-way relationship among the organization and its stakeholders. But this definition is wide in the meaning that it does not specify the stake or relationship between stakeholders and the firm. also, the definition does not take a situation whether the claims of the stakeholders are legitimate or not. Freeman’s definition in fact means two types of stakeholders: strategic and ethical [9]. [10] defined stakeholders as any persons or groups that claim interests in an organization which implies that all stakeholders are of value and be worth equal treatment.

The stakeholder group definition was widened to include the natural environment and they suggest that the planet is the “ultimate organizational stakeholder” [11]. Table (1) shows summarization of the existing definitions for stakeholders in the field of project management according to (chronological order). [5]

TABLE 1: Project stakeholder definitions

Authors	Project stakeholder definition
Cleland (1986)	"Individuals and institutions that share a stake or an interest in the project."
Cleland (1998)	"People or groups that have, or believe they have, legitimate claims against the substantive aspects of the project. A stake is an interest or share or claim in a project; it can range from informal interest in the undertaking, at one extreme, to a legal claim or ownership at the other extreme."
Turner (1999)	"All the people or groups whose lives or environment is affected by the project but who receive no direct benefit from it. These can include families, people made redundant and local community actors."
McElroy and Mills (2003)	"Person or group of people who have a vested interest in the success of a project and the environment within which the project operates."
Newcombe (2003)	"Groups or individuals who have a stake in, or expectation of, the project's performance and include clients, project managers, designers, subcontractors, suppliers, funding bodies, users and the community at large."
Boddy and Paton (2004)	"Stakeholders are individuals, groups or institutions with an interest in the project, and who can affect the outcome."
Kolltveit and Gronhaug (2004)	"Individuals and/or organizations that are involved in or may be affected by the project activities, e.g. the project client, project sponsor, project manager and the employees involved in the project."
Cova and Salle (2005)	"Project marketing thinks of stakeholders from the standpoint of "markets as networks", i.e. stressing the relationship between stakeholders rather than the players themselves."
Bourne and Walker (2005)	"Individuals or groups who have an interest or some aspect of rights or ownership in the project, and can contribute to, or be impacted by, the outcomes of the project."
Bryde and Robinson (2005)	"People or organizations who have a vested interest in the environment, performance and/or outcome of the project."
Boonstra (2006)	"Any person or group who can affect or is affected by the change [brought by the project]."

El-Gohary et al. (2006)	"Individuals and organizations that are either affected by or affect the development of the project."
Olander (2007)	"A person or group of people who has a vested interest in the success of a project and the environment within which the project operates. Vested interest is defined as having possession of one or more of the stakeholder attributes of power, legitimacy or urgency (adapted from Mitchell et al, 1997)."
IFC (2007)	"Persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively."
Fraser and Zhu (2008)	"Individuals and groups affected by their actions and behaviors"
Chinyio and Akintoye (2008)	"Individuals or groups with an interest in and influence on an organization (adapted from Thompson, 2002)."
PMI (2008)	"Individuals and organizations that are actively involved in the project or whose interests may be affected as a result of project execution or project completion."
Walker et al. (2008)	"Individuals or groups who have an interest or some aspect of rights or ownership in the project, and can contribute to, or be impacted by, either the work or the outcomes of the project."
Ward and Chapman (2008)	"Various parties who may affect the form, progress and outcomes of a project."

2.2 Stakeholders Categories

[7] categorized stakeholders into two categories as: (i) Internal project stakeholders generally include the project sponsor, project team, support staff, and internal customers for the project. Other internal stakeholders include top management, other functional managers, and other project managers because organizations have limited resources. (ii) External project stakeholders include the project's customers (if they are external to the organization), competitors, suppliers, and other external groups that are potentially involved in the project or affected by it, such as government officials and concerned citizens. The projects management scientists have categorized stakeholders in a different way. Most outstanding in the literature are categorizations established on stakeholders' involvement in the project and the nature of their relationship with the project, the nature of stakeholders' claim and their attitude

towards the project, the role of stakeholder's role in the project, and the degree of anticipating of stakeholders' behavior [12]. Internal stakeholders are "the stakeholders who are formally members of the project coalition and hence usually support the project". External stakeholders can be divided into private and public actors. Examples of private actors are residents, local landowners, environmentalist and conservationists; examples of public actors are regulatory agencies, local governments and national governments. Also, a lot of the current research classified external stakeholders, such as local citizens, community groups and environmentalists to those stakeholder groups who oppose the project and that need to be satisfied of the project's value. Also, internal stakeholder behavior is considered as support towards the project [13].

The notion of internal stakeholders is oftentimes used with the concepts of essential stakeholders or business actors in modern project management literature [14] and [15]. Such stakeholders have a formal, official, or contractual relationship with the organization or are directly participatory in an organization's decision-making processes. Examples of internal stakeholders are clients, sponsors, contractors, and suppliers [13] and [16]. External stakeholders are not formal members of the project coalition, but they may affect or be affected by the project. These groups are indicated to as non-business stakeholders or secondary stakeholders [14]. Internal stakeholders as those who are actively involved in the project implementation and external stakeholders as those who are only affected by the project. So, their definition of internal stakeholders also comprises authorities [17]. External stakeholders defined as those affected by an organization's activities in an important way. So, these categorizations do not contain this groups that can affect the project as external stakeholders [16]. [18] provide internal stakeholders as project owners in the meaning of they have inclusive managerial responsibility and power in the project. They assumed that internal stakeholders may have a financial stake in the project or were in a contractual relationship with the project owner.

All another stakeholder is external stakeholders who try to influence the project through political lobbying, regulation, campaigning or direct action. Also, the project stakeholders can be divided into those who support the project and those who object it. [19] proposed a fine-grained model to the project from five different levels of stakeholder position: active opposition, passive opposition, noncommittal, passive support and active support. These positions towards the project finally determine the impact of each stakeholder on the project's decision making. "The distinction between stakeholders as claimants or as influencers" is casing a problem because it means that the media would not be classed as a stakeholder although, having the possible power to significantly affect a project's activities and performance [20]. Stakeholder categorizations in project management literature comprise the division of stakeholders according to their roles in a project, such as client, contractor, customers, sponsors, local community members, non-governmental organisations (NGOs), media, lobbying organizations, and government agencies [21]. [22] build on [23] and divided stakeholders into classes of upstream stakeholders (paying customers and end users), downstream stakeholders (suppliers and subcontractors), external stakeholders (general

community and independent concerned parties), invisible stakeholders (project sponsor and project delivery team) who participate with the project team where their cooperation is necessary for project success. [24] have adopted a contract-based approach and categorized stakeholders according to the extent to which their behavior in the project can be anticipated. They divide stakeholders into explicit stakeholders (such as financiers, partners, owners, sponsors and equity holders) implicit stakeholders (such as regulators, 1st tier suppliers, staff, and users) implicitly recognized stakeholders (such as community 2nd tier suppliers, government, local government, relevant NGOs, and unions) and unknown stakeholders (such as interest groups, 3rd tier suppliers, trade associations, public, and overseas regulators). In addition, [24] categorized stakeholder by label unknown stakeholders, such as interest groups, as an entity whose behavior is difficult to predict. However, the majority of extant research on uncertainty management concerning stakeholder behavior is focused on internal project stakeholders, such as customers or suppliers. [25] supposed that the potential impact of stakeholders, specially the external stakeholders, is highest during the early phase of the project, before the confirmation of detailed plans and the cost of making changes is still cheap. The primary stakeholder's groups are those stakeholders or individuals who are considered as base to the presence of the organization and often most of them have some formal contract with the organization as: owners, employees, customers and suppliers [26]; [27]). Secondary stakeholders are the group that plays an important part in giving credibility and acceptance to the organisation for its activities and include (NGOs), communities, governments and competition [26]; [27]). [28] classified stakeholders into two additional dimensions of social and non-social. The theory of stakeholder identification by inserting three criteria for evaluating stakeholders as: urgency, power and legitimacy. They confirmed that these are important stakeholder attributes where these attributes in different groups indicate the amount of management attention awarded to a given stakeholder [29].

3 STAKEHOLDER ENGAGEMENT & INVOLVEMENT

Stakeholder engagement assures the need for engagement to be "long-distance, comprehensive and balanced" [30]. The literature defines stakeholder engagement as the process of participating individuals and groups that are affected by the activities of the company in an active way [31]; [32]). Stakeholder engagement is a process of "consultation, communication, dialogue and exchange" [31]. While stakeholder activities like dialogue are a way in which stakeholder participation can be assessed [32]. Effective management of stakeholder relationship is achieved by participating in dialogue and building relationships with many various groups to find the best ways of doing business [33]. Engagement is the work of managing the relationship between the organization and different stakeholders to reinforce the effectiveness of the decisions, strategies and behavior [34]; [35]. According to the Institute of Social and Ethical Accountability (ISEA) stakeholder engagement is a "process of seeking realistic stakeholder views on their relationship" the aim of stakeholder engagement is to

upgrade an organization “social and ethical accountability and performance” [36].

3.1 Stakeholder engagement’s levels

The approaches of stakeholder management categorized into four levels (collaborate, involve, inform, and consult) to manage construction stakeholders, as it is shown in Figure 1. (Chinyio and Olomolaiye, 2010) [3].

Level of impact Importance	High	Keep satisfied Interest protected (Involve)	Key players Maintain good relation (Collaborate)
	Low	Minimal Effort (Inform)	Keep informed Monitor (Consult)
		Low	High
		Influence Probability of impact	

Fig. 1. Levels of stakeholder management

(Chinyio and Olomolaiye , 2010 [3] adapted from; Olander, 2007) [20].

These four levels of stakeholder management as the following:

Informing: it includes providing the stakeholders with realistic, true and topical information to help for understanding the problem and suggest the solutions. Although, this group of External stakeholders (the public) have lower probability of impact and lower level of impact, they should be aware and informed by all decisions taken which can be affect them directly. Taking into consideration that they will not have an effective or positive role in making any decision [37].

Consult: it is the method to keep stakeholders informed about the project by obtaining stakeholders’ feedback on analysis, alternatives and/or decisions. While the secondary stakeholders with higher probability of impact need to be ‘kept on board,’ they should be consulted to require their opinions for key decisions that can affect them directly or indirectly. It is unlikely that the strategy will be changed because of such consultation, but tactics may be well modified to keep higher levels of obligation [3].

Involve: it includes working fair and direct with the stakeholders during the process for ensuring that stakeholder attentions and ambitions are understood and considered continuously. Although their low probability of impact, stakeholders with high level of impact especially need to be involved in all activities in the project. But the project's management should deal directly with these stakeholders

continuously to achieve their requirements and their satisfaction [3].

Collaborate: it includes partnering with the stakeholders in all of decisions side, including evolution of alternative approaches. As the key stakeholders have a high level of impact to project success. Therefore, these approach of working as a one group to reduce conflict using multiple viewpoints and different perspectives. so, they should be considered as partners to increase their engagement and obligation. This can be achieved by revising and tailoring project strategy, objectives, and outcomes if necessary to win their support [38].

3.2 Analyzing and Engaging Stakeholders

Stakeholder analysis’ is a necessary and important part of successfully managing stakeholders [39]. ‘Stakeholder analysis’ means to identify stakeholders and their interests and assess stakeholders’ influence and relationships. Also, Stakeholders should be engaged as early as possible, and this considered to be fundamental for stakeholder analysis and decision making [40]. While, [41] illustrated that stakeholder engagement is to communicate with, involve and develop relationships with stakeholders.

Project managers should choose approaches conforming to the stakeholder management process, also they illustrated that there is no stand-alone approach, and most of the approaches should be combined with others approaches; and we should consider at the selection, not only the social and cultural context of the analysis but also limits the time and resources that can be assigned to the activity [42].

3.3 Effective Involvement of Stakeholder

It was clarified that project managers should be develop a stakeholder involvement plan to meet the various demands of different stakeholder sets, and in order to increase the effectiveness and efficiency of the decisions which are taken during the construction project lifecycle [43]. Stakeholders are involved in submitting different levels of influence and may have very various interests, which may result in conflict between them [44]. Overall, [45] reported that stakeholder involvement along with other factors such as leadership, measurement and improvement, teamwork and process approach are considered as the key factors that impact the successful execution of full management systems. In the opinion of the project management team, limiting the involvement of some stakeholder groups, especially opposing parties, will accelerate the completion of the project decisions. It is also necessary to analyze stakeholder groups characteristics and classify them based on their power and interest levels. Also, by involving diversing parties, which have various prioritys and objectives, in the project planning process, conflicts between plans and other threats to the action in the execution and operations phase, are minimized [46]. Stakeholders of construction projects are multiple and various and this lead to a level of complexity to the concept of stakeholder involvement within the construction industry. However, depending on the type of the project and its requirements, certain groups may get involved

in the process only [47]). [25]; [48]) advocated that the project preparation and planning phase is the stage where different stakeholders with various demands and objectives have the biggest possibility to impact the project and its outcomes. [25] clarified that effective and efficient participation of project participants, will better assist in improving the overall quality of the construction project and will leads to better project value. Participation of project stakeholders in various stages of construction project (e.g. the planning and development phases) can be useful in several ways [49]. Identifying and analyzing stakeholder concerns in construction projects are necessary tasks during the involvement process in order to reach at a consensus and avoid project failures [16]. Stakeholder involvement in infrastructure projects plays a very important role, because different problems have been faced on infrastructure project around the world that has been led to project failure, and the Public opposition due to various factors has been reported as the main reason for failure in several cases [50]. [51] presented the views of stakeholders on their possible participation with the marine planning process. They concluded that, for achieving active participation during a marine planning process might be difficult, because of the variation in stakeholder interest, knowledge and awareness. [52] described the theory surrounding interactive stakeholder involvement, reflecting upon a two-part workshop process for undertaking a participatory scenario construction process in the Northern Mediterranean region. They described the experiences of a series of participatory scenario workshops that were undertaken within the MedAction1 research project. They concluded that many of the stakeholders were able to engage for the first time in an interactive learning experience. A sampling of the comments highlights that the possibility to learn about other views and aspects was very valuable: (1) it was positive and useful; (2) it was interesting to hear the various opinions about the region; and (3) the workshop was very interesting and participative. Also, stakeholder theory argues that in addition to stockholders there are another involved external stakeholders, including communities, community groups, trade unions, trade associations, environmental groups, governmental organizations, associated corporations, likely employees, likely customers, and the public, that should be taken into consideration [53].

4 STAKEHOLDER MANAGEMENT STRATEGIES

It was Identified and described five different types of stakeholder management strategies, varying from negative to active approaches which used by the construction projects companies. The stakeholder management strategies were: an adaptation strategy, compromising strategy, avoidance strategy, dismissal strategy, and influence strategy [5].

[54] developed the Reactive, Defensive, Accommodative, and Proactive (RDAP) scale for describing the strategies used by organizations for managing stakeholders and to evaluate corporate performance. [55] developed descriptive stakeholder theory and adopt an organizational lifecycle approach towards stakeholder management. Also, they

proposed that the used strategy by organization to deal with each stakeholder was dependent on the importance of this stakeholder to the organization compared with other stakeholders. [56] tested empirically Frooman's [57] proposal by providing a report of different stakeholder influence strategies of four non-governmental organizations.

In addition to the four influence strategies defined by [57], [56] provided communication strategy as an important way of influencing a firm's behavior. Also, he focused in empirical analysis on identifying different determinants of influence strategy selection. She showed that the chance to use a strategy, stakeholder's experience or expertise of an influence strategy, potential alliances in support of a strategy and "bang for the buck" of a particular influence strategy are all important determinants that influence the stakeholder's influence in strategy selection. The understanding of the strategic actions of project stakeholders and factors impacting them in the field of project management is undeveloped [12]. The strategic importance of a stakeholder is determined by [58].

- i) The contribution to the environmental uncertainty,
- ii) The ability to reduce the environmental uncertainty, and
- iii) The strategic choices of managers.

[59], selected four different case projects that had involved external stakeholder related challenges and that had been implemented in emerging markets. They identified and described five different types of response strategies, varying from passive to active approaches enacted by focal project companies. They concluded that their empirical examination suggested that companies in project networks may respond to external stakeholder pressures in various ways, ranging from passive adaptation strategies to active influence strategies. Their findings suggest that, as power and legitimacy of stakeholders' claims increase, focal companies tend to involve more actively, and enact more active strategies such as the compromising strategy.

There was still needed a lot of theoretical and empirical research to build a wide understanding of project stakeholder management strategy.

5 STAKEHOLDER'S MANAGERIAL & STAKEHOLDER'S COMMUNICATIONS

5.1 STAKEHOLDERS COMMUNICATIONS

The Project success is connected to effectively communicate and managing relationships with the different stakeholders of the project. This considered the stakeholder management an important issue in project management [60]. Researchers indicated that formal and clear communication channels/networks are needed to transfer information efficiently. Therefore, increasing the degree of communication between the project participants, the higher the participant

satisfaction [61]; [62]). Communication is often listed as one of the maximum needed areas for improvement. To ensure the success of a project much information need to be communicated on a steady basis to all major stakeholders, including expectations, goals, needs, resources, status reports, budgets and purchase requests [63]. The Project managers should be highly levels skilled negotiators and communicators who are able to manage individual stakeholder anticipations and making a positive culture change within the overall project [2]. [7] In PMI's standard, the communication view on stakeholder management is specially highlighted, where, according to the standard, stakeholder management specially indicates to managing communications used to satisfy the needs of stakeholders and resolve issues with them [12]. One of the most important factors which has negative influence on project quality is inactive communication between Stakeholder involved in construction projects [64]. Poor coordination and communication between key project groups, shortage of knowledge and skills, weak effectiveness of project management systems, shortage of a strong quality culture and delays in making project decisions, were all examples of quality problems and result from ineffective management and involvement of stakeholders [64]; [42].

5.2 STAKEHOLDER'S MANAGERIAL

The challenges of stakeholder perspectives of unreasonable and wrongly concentrated about the project and its expected outcomes, may lead to problems in project quality because of poor communication and interaction between main stakeholders [20]; [64]). The most of the project stakeholders' research on managerial behavior concentrated on the conceptual development of various managerial frameworks, tools and processes to identify, categorize and manage project stakeholders and studying the role and value of stakeholder management process [65]; [6]; [66]; [15]; [2]. The research of the stakeholder management process has focused on two streams: 1) identifying project stakeholders, inclusive identifying the stakeholder limit, evaluating the obligation and benefits of stakeholders, and diagnosing their likely performances and 2) analyzing various types of stakeholder relationships, clarifying how stakeholders interact to conflict and formulating strategies based on this analysis. Then, in most of the project stakeholder management process frameworks these two related streams are not differentiated [1]. Although the criticism presented for current managerial stakeholder management processes and tools, only little studies have empirically described the employed activities and behaviors of a focal project related to stakeholders. For example, the managerial responses to the influences of stakeholders have deserved only little research attention. Also, different contextual factors current in projects that may be leader a project's behaviors about stakeholder influences have received only a little attention [67]. The lifecycle stage of an organization influences the importance of some stakeholders for managerial decision making [55]. For managing the conflict between the project

management team, the management team needs to take into consideration all stakeholder needs and their relative impacts on the project for decision making process [45]. Furthermore, ability to influence the final project characteristics is at the highest level at the starting of the project and it decreases as the project progresses. The importance of active stakeholder management efforts in the early phases of the project has been recognized and emphasized [25].

6 BUILDING INFORMATION MODELLING (BIM) APPROACH AND STAKEHOLDERS INTEGRATION IN THE (AEC) SECTOR

For more than ten years Building Information Modeling (BIM) has been one of the very significant innovation directions in the Architecture, Engineering and Construction (AEC) sector to access building design inclusively, to reinforce communication and collaboration between key stakeholders, to increase productivity, and to improve the total quality of the final product (building) [68]. Nowadays, BIM and concerning standards are indeed mandatory for projects established by public organizations in some Europe countries, but most of them still have to be adopt [68].

6.1 (BIM) and stakeholder perspective

The perspective of the key stakeholders related BIM in the AEC sector is essential because they achieve direct benefits from its adoption. The BIM approach can extremely improve the cooperation between them for getting an added value to their business [68]. according to [69] the cooperation between stakeholder can increase organizational capacities which reinforce the performance of the project management during the design and construction process. Furthermore, every stakeholder of AEC sector has their individual workflow and requirements, so their BIM value suggestion is different. Commonly, it changes based on competence of stakeholder or phase of the building process (design, building supply, construction, etc.).

As per [70] the stakeholders in Western Europe have various perception of business value of BIM. The present stakeholder experience with BIM confirms that they see the need to use this cooperative environment as a priority because it creates added value to their business and improves the participation, cooperation, knowledge sharing and networking [71].

6.2 Stakeholders' Integration

The participation of key stakeholders in the design, building supply and construction process through BIM approach can save important benefits in terms of cost and design time, building delivery, quality and communication, etc. [68]. [72] explained the relationships between three dimensions of stakeholders' integration and competitiveness focusing on 226 industrial corporations. They investigated the influences of stakeholders' integration on three dimensions of competitiveness. knowledge of the stakeholders will not supply any contribution to the various dimensions of competitiveness. Companies have to extend their concentration to fit behaviours in line with stakeholders' interests to get competitive advantages. Where, the data showed that in the stakeholders' theory concept, adap-

tive behaviour dimension positively affects the three dimensions of competitiveness [72].

7 DISCUSSION

As mentioned above, and Based on the comprehensive review of the literature, researchers have made a great effort in this issue. All the above-mentioned observations highlight the importance of, and need for, more study about stakeholder management and consideration of the possible positive influence on Stakeholder Management in Large Scale Construction Projects. Also, the perspective on stakeholder management that identifies, examines and evaluates Stakeholder Management in Large Scale Construction Projects is missing from the literature. In order to bridge this, gap this research concentrates on evaluating Stakeholder Management and improving the efficiency of stakeholder management by more effective stakeholder participation as a main step to achieving better outputs. Based on the comprehensive review of the literature the researcher has identified the follows;

However, further investigations are still required to improve the stakeholder's management. There is a need to; Study the stakeholder's management influence during the different stages of project execution, evaluate and analyze stakeholder management and their impact, for managing the stakeholder in large scale projects and the effect of internal and external stakeholders in construction industry. Translating the theoretical findings of the model into empirical study and show the impact of using the stakeholder's management on the overall cost and productivity of a project. Also, study the impact of different project types in improving stakeholder's management. In addition; study the management of the social, political and cultural aspects in the context of several stakeholders with varying socio-cultural backgrounds, goals and strategies. Also, answering the following proposed questions are still required:

- Q1. How can the stakeholders be more engaged in the construction of large scale projects?
- Q2. What are the effective factors in managing stakeholders?
- Q3. What are the methods used in the current practice of managing stakeholder in construction projects?
- Q4. How can project managers manage complex construction process of large scale projects optimally?
- Q5. How can project managers engage effectively with the variety of stakeholders in complex construction of large scale projects?

In order to achieve the answering of the proposed questions, the following objective have been identified:

- Explore and identify the stakeholders based on their influence. (From Q 1).
- Identify and rate the factors that affect the stakeholder management process in construction of large scale projects. (From Q 2).
- Investigate and evaluate the current practices of stakeholder management in the construction of large scale project. (From Q 3).
- Develop stakeholder management model "framework"

in the construction of large scale project during its life cycle. (From Q 4).

- Examine the validity of model "framework" of construction and stakeholder management in the construction of large scale projects. (From all Q).
- Provide a base for interface stakeholders and their requirements within construction process to their purpose and stakeholders' needs and concerns achieve all parties' satisfaction. (From Q 4) & (From Q 5).

8 CONCLUSION

In our opinion, we can conclude the following:

- Construction is a very complicated industry that requires rigorous systems to deliver the project on timely, efficient and effective manner;
- In our opinion, Stakeholder definition in simplest form as: anyone may affect or affected by the project;
- classify stakeholders in the construction industry into two categories: internal stakeholders, and external stakeholders
- The purpose of stakeholder identification and analysis is to facilitate the understanding of how to manage stakeholders in increasingly turbulent and unpredictable environments;
- The key issue in project stakeholder management is managing the relationship between the project and its stakeholders;
- The successful construction project management can be carried out only when the responsible managers take into account the potential influence of the project's stakeholders.
- The client and Sponsor are the main key stakeholders, who have the most influence in the construction project
- The construction of infrastructure projects has additional complexity factors such as the long stakeholders list and the considerable number of building components and systems.
- The Stakeholder Management concept is examined, and it is concluded that design managers shall develop the skill and understanding required in managing stakeholders, a process fraught with unpredictable actions and conflicts of interest between stakeholders.
- The use of tools that facilitate Stakeholder Management, such as the power-interest matrix, is highly recommended and has obvious benefits.
- A long-term survey with a larger number of participants is required in future research to track the status of BIM adoption and stakeholders' collaboration.
- The level of BIM adoption is still poor because of the high initial investment costs and shortage of client demand especially in small projects
- The literature review provides a useful tool for aiding design managers in managing the construction project design complexity and stakeholders.
- In conclusion, each complex project has very explicit and definite criteria that designers need to consider dur-

ing the model implementation such as stakeholder network complexity and building size. Therefore, applying it on a specific sector or type of projects requires extensive research and empirical studies.

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