

# A Study of the Awareness of Stakeholder Management amongst Project Managers in the Construction Industry in Ireland

Dissertation submitted in part fulfilment of the requirement for the degree of masters in business administration (MBA) in project management at Dublin Business School in conjunction with Quality and Qualifications Ireland (QQI).



MBA in Project Management

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## **CERTIFICATE OF ORIGINALITY**

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, nor material that has been accepted for the award of any other degree or diploma, except where due acknowledgement has been made in the text.

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Signed

Brendan O'Halloran

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## **ABSTRACT**

The aim of this dissertation is to develop an understanding of the theoretical basis and practical implementation of stakeholder management in the construction industry and to evaluate the awareness of stakeholder management amongst project managers in the construction industry in Ireland. Stakeholder management presents extreme difficulties to project teams due to the complex and uncertain nature of construction projects. The decision by the Project Management Institute in 2013 to define stakeholder management as a distinct knowledge area for the first time demonstrates its increasing importance.

However, just a limited number of studies have been undertaken to evaluate the perception of practitioners in the construction industry to stakeholder management. The research seeks to expand on the previous studies by investigating their findings in the context of the Irish construction industry.

As a result of an intensive literature review this research defined and assessed the stakeholder management model and the role of stakeholder management in the delivery of construction projects. Furthermore, the various stakeholder analysis and engagement methods were identified and evaluated based on previous surveys. As a result, assumptions could be made as to which methods are most effective in the context of construction projects. These assumptions were then compared to the results of the primary research in the discussion part of this dissertation.

The outcome of the primary research showed project managers in the Irish construction industry considered the vast majority of stakeholder analysis and engagement methods as effective. The particular method adopted is often dependent on the characteristics of the project and stakeholders. The results suggest construction project managers in Ireland are more likely to undertake stakeholder management processes in accordance with a standardised methodology. In addition, the respondents strongly advocate the use of a project stakeholder register and the central role of stakeholder management in delivering successful projects.

## Chapter 1. INTRODUCTION

### 1.1 Rationale for topic

*A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* defines a stakeholder as “an individual, group, or organisation who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project” (PMI, 2013). Project stakeholder management comprises the processes required to identify, analyse and engage stakeholders.

In the 5th Edition of the *PMBOK® Guide*, released in 2013, the Project Management Institute (PMI) defined stakeholder management as a distinct knowledge area of project management for the first time. This demonstrates the importance and increasing emphasis placed on this area (Mohan and Paila, 2013). In particular, stakeholder management in the construction industry presents extreme difficulties to project teams due to the complex and uncertain nature of construction projects (Yang et al., 2011).

There is a significant quantity of literature available on stakeholder management theory. Furthermore, several authors (e.g. Olander, 2006, Young 2006, Bourne and Walker, 2006, Reed et al., 2009) have highlighted the importance of stakeholder management in the construction industry and developed frameworks for analysis and engagement of stakeholders.

However, a limited number of studies have been undertaken to evaluate the awareness and attitudes of practitioners in the construction industry to stakeholder management and assess the factors that influence the stakeholder management approaches adopted in practice. The scope of these studies was limited to the construction industries in Indonesia, Australia, Hong Kong, Vietnam and the United Kingdom.

The research expands on the previous studies by investigating the awareness and perception of stakeholder management amongst project managers in the construction industry in Ireland.

### 1.2 Research question

The research question is the most critical part of any research. Saunders et al. (2009) argue that the extent to which a clear set of conclusions are drawn from the data collected is determined by the clarity of the research question. Furthermore, it is important to develop a

research question that the researcher is interested in so that the researcher can completely focus on the research.

As a result of his experience working as an engineering consultant in the construction industry, the researcher is interested by the growing emphasis placed on stakeholder management as shown by the PMI's decision to recognise stakeholder management as a distinct knowledge area (PMI, 2013).

The primary research question that motivated the researcher to undertake this dissertation is:

***What is the perception of stakeholder management amongst Project Managers in the Construction Industry in Ireland?***

The purpose of the research is to understand the role of stakeholder management and the factors that influence how it is employed in the construction industry from the perspectives of project managers.

The above question is supplemented with further research of the concept, role, frameworks, and importance of stakeholder management and to subsequently examine the circumstances that influence the stakeholder management methods utilised and the impact on successful project delivery in the construction industry in Ireland.

### **1.3 Research objectives**

Saunders et al (2009) defines research objectives as clear, specific statements that identify what the researcher wishes to accomplish as a result of doing the research. The following objectives are the focus of the research thesis:

- A. To identify the theoretical basis and practical implementation of stakeholder management in as recognised in stakeholder management theory and previous studies of the construction industry in other countries.
- B. To determine the awareness of the key stakeholder management approaches amongst project managers in the construction industry in Ireland.
- C. To compare the perception of the key stakeholder management approaches amongst project managers in the construction industry in Ireland with the findings from stakeholder theory and past research in other countries.

Table 1 presents the research strategies that are proposed to achieve the research objectives. The secondary research, which comprises the literature review, is presented in Chapter 2. The methodology adopted for the primary research, which consists of a questionnaire, is

described in Chapter 3. An analysis of the data obtained from the questionnaire and the key findings are provided in Chapter 4. A discussion of the findings of the literature review and questionnaire is included in Chapter 5. Finally, Chapter 6 details the key conclusions derived from the research undertaken, the research limitations and the recommendations for further research in this area.

<b>Research Objective</b>	<b>Primary or Secondary Research</b>	<b>Proposed Research Method</b>
A	Secondary	Literature Review
B	Primary	Questionnaire
C	Primary and Secondary	Compare findings of literature review and questionnaire

**Table 1: Research methods adopted to achieve the research objectives**

## **1.4 Researcher suitability**

The researcher holds a degree in civil engineering from University College Dublin and has eight years of experience working for two major multinational engineering consultancies in Ireland and Australia. The researcher is currently undertaking the Masters of Business Administration (MBA) programme in Dublin Business School and will utilise the knowledge obtained in the course modules, specifically the modules in Project Management, Strategic Management and Research Methods for the research.

Having worked for eight years in the construction industry, including roles requiring project stakeholder management, the researcher has a good level of understanding and interest in the topic. This is combined with the knowledge and research skills gained from the MBA programme.

## **1.5 Recipient for this research**

The research thesis is submitted as part of the curriculum of the MBA programme at Dublin Business School in association with Quality and Qualifications Ireland (QQI). The principal recipient of the proposed dissertation will be Dublin Business School and QQI.

As the research is intended to perform an investigation to understand the impact and methodology of stakeholder management in the construction industry as perceived by project managers, it is anticipated that many of the respondents will be interested in the outcome of

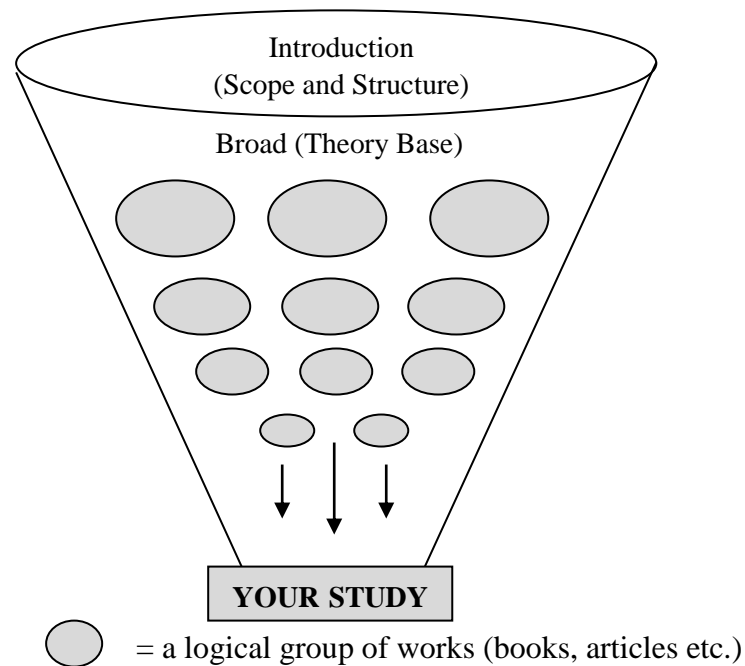
the research. Hence, a copy of the survey results will be made available to the respondents following assessment of the thesis by the examinations board.

## **Chapter 2. LITERATURE REVIEW**

### **2.1 Literature introduction**

The literature review is not simply a description of what others have published, but is a critical discussion, showing insight and an awareness of differing arguments, theories and approaches. There are numerous books, articles, journals and associated documents available in the stakeholder management area, but narrowing down the selected literature to the key focus areas is a crucial element of the literature review.

The literature review has been divided under four main headings, namely project and project management defined, stakeholder management, project stakeholder management in the construction industry and the construction industry in Ireland. The basis for the selection and sequence of these categories corresponds to the evolutionary stages of the research question. The researcher started with a general curiosity in the broad topic of project management. Following this a particular interest developed in the sub-discipline of project stakeholder management before the researcher focused on a specific industry (i.e. construction) and environment (i.e. Ireland). Furthermore, this approach is consistent with the funnel method of structuring a literature review, as shown in Figure 1 (Hofstee, 2006, p.96).



**Figure 1: The funnel method of structuring a literature review**

**Source: Hofstee, 2006, p.96**

## 2.2 Project and project management defined

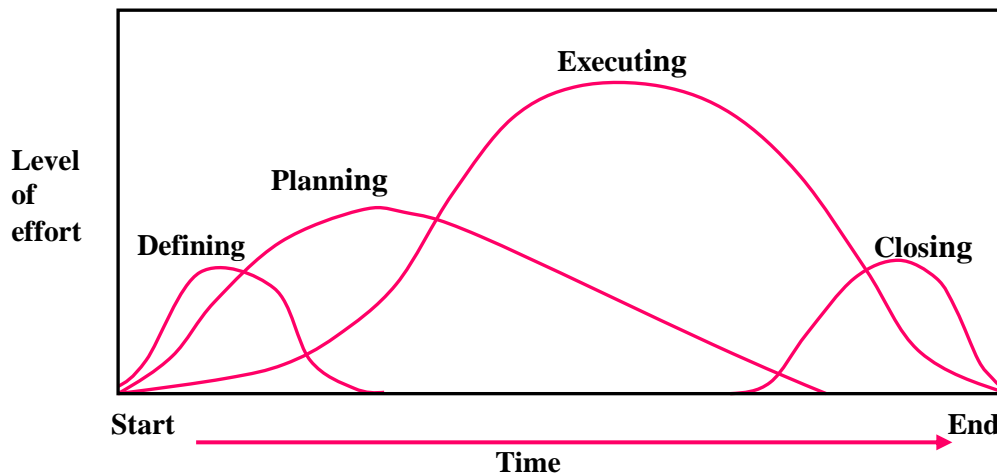
Given the primary research is concerned with the perspectives of project managers, it is first necessary to gain an understanding of the discipline of project management and how stakeholder management fits in and interacts with the other project management knowledge areas.

Larson and Gray (2011) identify the five characteristics of a project as follows:

1. An established objective.
2. A specified lifespan with start and finish.
3. The participation of numerous departments and professionals.
4. An undertaking that has never been carried out previously.
5. Defined time, cost and performance requirements.

In addition to the above characteristics, Kerzner's (2009) definition of a project includes the utilisation of "human and non-human resources (i.e. money, people, equipment)". The *PMBOK® Guide* offers a more succinct definition of a project as a "temporary endeavour undertaken to create a unique product, service or result" (PMI, 2013). Larson and Gray (2011) adopt the project life cycle model (see Figure 2 below) to demonstrate the limited

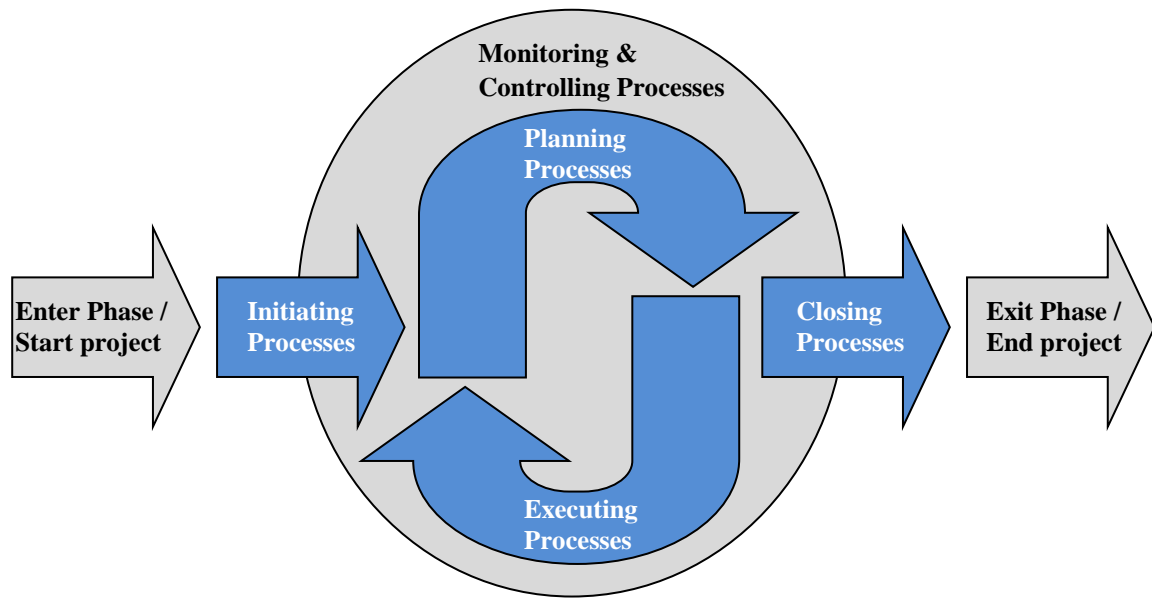
duration and unique nature of projects. The project life cycle model comprises four sequential stages (i.e. defining, planning, executing and delivering) and illustrates that projects typically involve conventional changes in the level of effort and focus over the span of the project (Larson and Gray, 2011).



**Figure 2: Project life cycle**  
**Source: Larson and Gray, 2011, p.7**

Projects have a number of related constraints including scope, time, cost, quality, resources and risks. The management of these constraints is one of the key challenges that the discipline of project management is designed to address.

The *PMBOK® Guide* defines project management as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI, 2013). Kerzner (2009) argues that project management involves the successful coordination and integration of the project activities, which, according to the *PMBOK® Guide*, are accomplished through the appropriate application and integration of 47 processes (PMI, 2013). These processes are grouped into five process categories as shown in Figure 3.



**Figure 3: Project management process groups**

Source: *PMBOK® Guide*, p.50 (PMI, 2013)

In addition to the five process groups, the *PMBOK® Guide* also categorises the 47 project management processes into ten distinct knowledge areas that integrate with the process groups (PMI, 2013). The knowledge areas identified in the *PMBOK® Guide* are: Project Integration Management, Project Scope Management, Project Time Management, Project Cost Management, Project Quality Management, Project Human Resource Management, Project Risk Management, Project Communications Management, Project Procurement Management and Project Stakeholder Management. The number of knowledge areas increased from nine to ten in the 5<sup>th</sup> edition of *PMBOK® Guide*, with the addition of Project Stakeholder Management (PMI, 2013). This demonstrates the growing emphasis that is being placed on this area (Mohan and Paila, 2013).

## 2.3 Stakeholder management

### 2.3.1 Stakeholders defined

Freeman and Reed (1983) credit the birth of the stakeholder concept to the Stanford Research Institute (SRI). An internal memorandum drafted at the SRI in 1963 used the term stakeholder to describe “those groups without whose support the organisation would cease to exist”. However, stakeholder management did not become prevalent as a theory within strategic management until the 1980’s. Freeman’s (1984) seminal textbook “Strategic

Management: A Stakeholder Approach”, which defined a stakeholder as “any group or individual who can affect or is affected by the achievement of the firm’s objective”, is cited by most researchers as the foundation of stakeholder management theory. Following this, stakeholder management theory developed rapidly and by 1995, over 12 books and 100 articles dedicated to the stakeholder concept had been published (Friedman and Miles, 2002). While the Freeman (1984) definition may be the most cited explanation of the term, Friedman and Miles (2006) detail fifty-five definitions for a stakeholder taken from seventy-five texts. Harrison and Freeman (1999) attribute the growing interest in stakeholder management theory to a greater focus by academics on the role and responsibilities of business organisations in society and an increased sensitivity among individuals and organisations to ethical issues. Philips et al. (2003) suggest that the authors of stakeholder management texts are from a wide variety of academic disciplines and backgrounds (e.g. business ethics, social issues in management etc.). This context helps to explain the quantity and diversity of definitions, as presented by Friedman and Miles (2006), for stakeholders at a societal and organisational level.

However at a project level, the literature shows a general consensus among project management scholars regarding the definition of a stakeholder. Larson and Gray (2011) describe project stakeholders as the “people and organisations that are actively involved in the project, or whose interests may be positively or negatively affected by the project”. Similarly, the *PMBOK® Guide* defines project stakeholders as “an individual, group, or organisation who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project” (PMI, 2013). For construction projects, Bourne (2005) adopted a wider definition of stakeholders as “individuals or groups who have an interest or some aspect of rights or ownership in the project, and who can contribute in the form of knowledge or support, or can impact or be impacted by, the project”. Yang (2010) concluded that these definitions are consistent with Freeman’s (1984) “affect/affected” concept and, in her study, defined stakeholders in construction projects as “individuals or groups who can affect or be affected by a construction project”. For this research, the project stakeholder definition proposed in the *PMBOK® Guide* is adopted for construction project stakeholders as:

*Stakeholders are individuals, groups, or organisations who may affect, be affected by, or perceive themselves to be affected by a decision, activity, or outcome of a construction project.*

This definition is deemed suitable for this study as the *PMBOK® Guide* is one of the key project management frameworks adopted by project managers in the construction industry (Chou and Yang, 2012).

### **2.3.2 Role of stakeholder management in project success/failure**

A study by the Standish Group in 2004 showed that 20% of Information Technology (IT) projects are terminated (Kappelman et al., 2006). Furthermore, Susser (2012) reported that the success rates for IT projects is on a downward trend with just 32% of all IT projects completed on time, on budget and with the required features and functions. Studies have attributed the failure of IT projects to a range of factors (Chua, 2009, Ahmad et al., 2009). The roots of the reasons for failure are related to project management (Ahmad et al., 2009).

Studies on project failures within the construction industry in both developed and developing countries demonstrate a similar trend. For instance, Windapo and Cattell (2013) highlight the relatively poor performance and low productivity of construction companies operating within South Africa. In addition, Nguyen et al. (2009) report a high proportion of construction projects in Vietnam are completed over budget, behind schedule and/or fail to meet project specifications and stakeholders' expectations.

A significant amount of research has been completed in a variety of industries in the area of evaluating project success. However, a clear and unambiguous definition of project success has not been obtained (Shahu et al., 2012). In the construction industry, researchers in the area of project success focus on two main interrelated topics, namely project success criteria and project success factors. Yong and Mustaffa (2012) define project success criteria as the measure by which a project will be judged as a success or failure. Project success factors are the factors that influence the project performance. Traditionally, the triple constraints of cost, time and quality, described by Atkinson (1999) as "the iron triangle", are the criteria utilised to measure project success in the construction industry. However, Chandra et al. (2012) argue that the requirements and satisfaction of the stakeholders are equally important project success criteria. Particularly, the long-term success of major construction projects is determined by the project stakeholders' perception of the outcomes achieved rather than the delivery of the project in accordance with the planned budget, schedule and specifications (Shahu et al., 2012, Turner and Ziolin, 2012). In addition, the *PMBOK® Guide* recognises stakeholder satisfaction as a "key project objective" (PMI, 2013).

Yong and Mustaffa (2012) indicate success criteria can be classified into two main groups:

- Hard objectives which are tangible and measurable (i.e. criteria of cost, time, quality, health and safety and environmental sustainability) and
- Soft objectives which are intangible, subjective and less measurable (i.e. satisfaction, effective communication and relationships among stakeholders).

However, it should be noted that the project success factor of stakeholder management influences both the hard and soft success criteria. For instance, a study by Doloi et al. (2012) demonstrated that a lack of commitment and poor communication between stakeholders are two of the most critical factors causing delays in Indian construction projects. Furthermore, a study of cost overruns in construction projects in Australia concluded that coordination and communication between all project stakeholders can greatly reduce the time and overall project costs (Doloi, 2013).

Given the increasing emphasis on stakeholder satisfaction as a key project success criterion and the potential for time and cost reductions, it is unsurprising that stakeholder management is considered to be a critical factor in the successful delivery of construction projects (Mohan and Paila, 2013). The following sections of this chapter include a detailed discussion of stakeholder theory and the previous project stakeholder management studies undertaken in the construction industry. Thus, a clear picture of where this study fits in with and builds on the existing research can be ascertained.

### **2.3.3 Overview of the stakeholder management process**

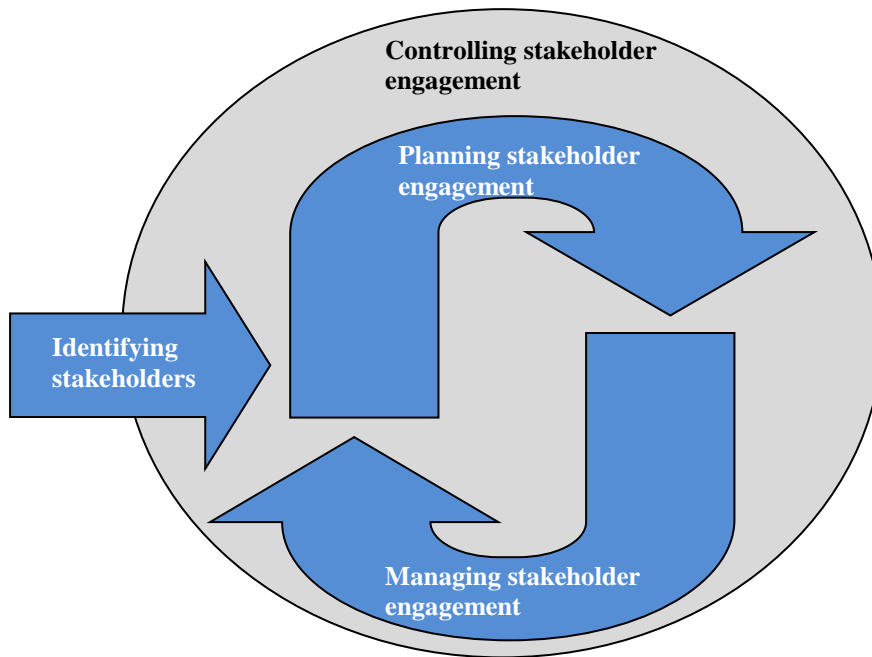
Johnson et al. (2008) assert that the identification of stakeholder expectations and analysis of stakeholders to determine their influence are the critical steps required to allow development and implementation of stakeholder related strategies. This suggests that the strategies adopted should prioritise the magnitude of the affect a stakeholder could have on a project rather than the impact of a project on the stakeholder or the stakeholders' objectives. Alternatively, Rowlinson and Cheung (2008) argue that the project manager and team should facilitate a process that enables stakeholders to identify, negotiate and achieve their objectives through stakeholder engagement and empowerment.

Following an extensive review of the literature, Yang (2010) concluded that the main stakeholder management theory is concerned with two principal areas:

- Identifying project stakeholders, evaluating the dedication and interests of stakeholders, and determining their potential influence on the project.

- Analysing different types of stakeholder relationships, explaining how stakeholders react to the divergence of the project objectives from their own objectives, and formulating strategies based on this analysis.

However, Yang et al. (2011) highlight the lack of clarity in previous studies surrounding the usage of stakeholder management terminology. Previous studies have led to some confusion by utilising terms such as “stakeholder management”, “stakeholder analysis” and “stakeholder engagement” interchangeably to describe interrelated concepts without including an unambiguous definition of their meaning. Furthermore, the stakeholder management approach detailed in the *PMBOK® Guide* (PMI, 2013) assigns the procedures involved in stakeholder management to the project management process groups as shown in Figure 4. This framework classifies “stakeholder analysis” as a technique under the process group titled “identify stakeholders”. Conversely, Yang et al. (2011) included “identifying stakeholders” as a sub-task of “stakeholder analysis”. Hence, to avoid any confusion, this section clearly defines the stakeholder management terminology used in this study and explains how they are interrelated.



**Figure 4: Stakeholder management processes**

**Source: *PMBOK® Guide*, p.423 (PMI, 2013)**

According to the PMBOK® Guide (PMI, 2013), stakeholder management includes processes required to achieve the following:

- Identify stakeholders.
- Analyse stakeholder expectations and their impact on the project.
- Develop effective engagement strategies that facilitate stakeholder involvement in project decision-making and execution.

In addition, the PMBOK® Guide suggests the focus of stakeholder management should be on continuous communication with stakeholders.

Yang et al. (2011) define stakeholder management as “the process of identification, analysis, communication, decision making and all other kinds of activities in terms of managing stakeholders” and categorise stakeholder management activities into the two interrelated sub-groups of stakeholder analysis and stakeholder engagement. Studies by Reed (2008) and Yang et al. (2011) broadly agree that stakeholder analysis comprises the following three steps:

- Identifying stakeholders and their interests.
- Assessing stakeholders’ influence.
- Analysing stakeholders’ relationships.

Similarly to the PMBOK® Guide, Chinyio and Akintoye (2008) indicate that effective communication among stakeholders on a continual basis is central to the processes involved in stakeholder engagement. Reed et al. (2009) conclude the failure to engage stakeholders at an early stage impacts adversely on the quality and robustness of decisions.

Stakeholder engagement is interrelated with the stakeholder identification and analysis processes since certain stakeholder identification and analysis techniques require data that is ascertained from stakeholder engagement (Reed, 2008). For example, snowballing is a stakeholder engagement method that is used to involve existing stakeholders in the identification of other stakeholders and their interests (Yang et al., 2011). Additionally, stakeholder workshops can provide important insights regarding the relationships between stakeholders. This information can then be utilised to analyse these relationships and their impact on the project.

The interrelationship between stakeholder engagement and stakeholder identification and analysis highlights the dynamic nature of the stakeholder management process (Yang et al., 2011). The relationship among stakeholder management, stakeholder identification and analysis and stakeholder engagement considered in this study is presented in Figure 5.



### 2.3.4 Stakeholder identification and analysis

The PMBOK® Guide states this process involves identifying the project stakeholders and analysing the relevant data with respect to their interests, involvement, interdependencies, influence and potential impact on project success (PMI, 2013). The outcomes of this process should be documented in a Project Stakeholder Register (refer to Figure 6). This register is a “live” document that is reviewed and updated throughout the project life cycle and includes sufficient information to identify, assess and classify the project stakeholders. The Project Stakeholder Register provides the basis for the development of stakeholder engagement strategies (PMI, 2013).

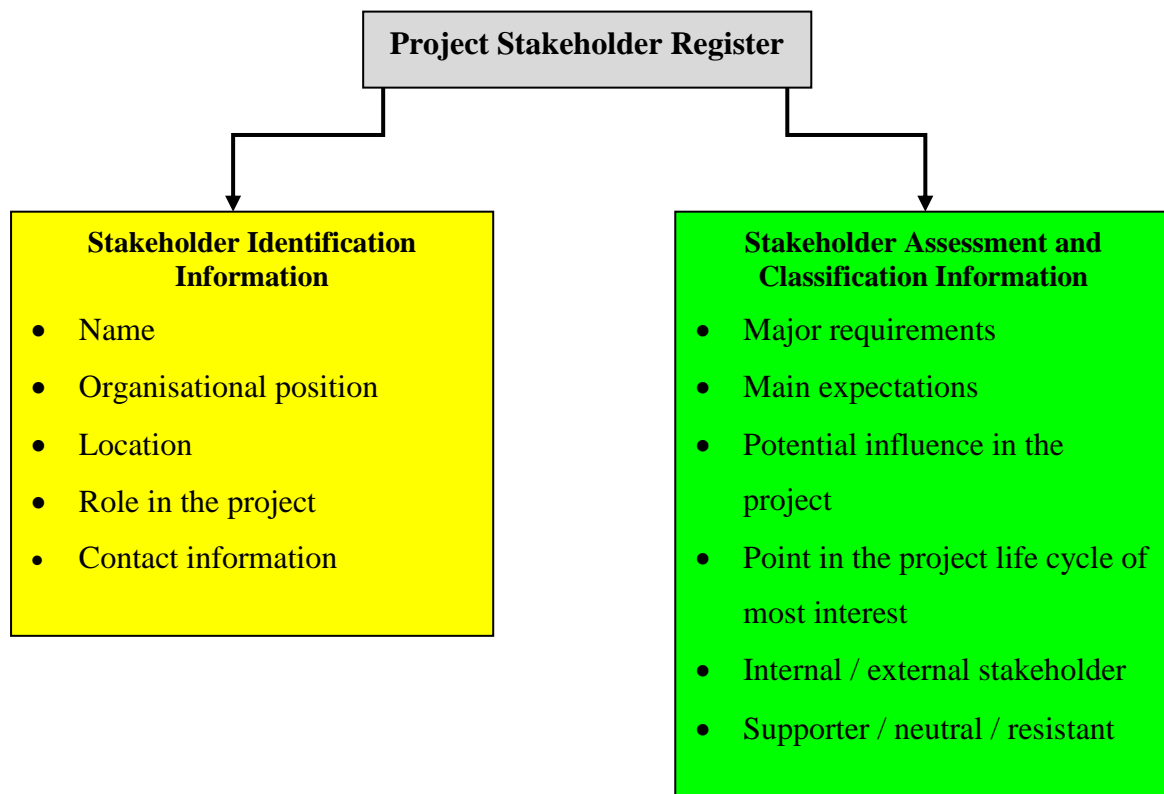
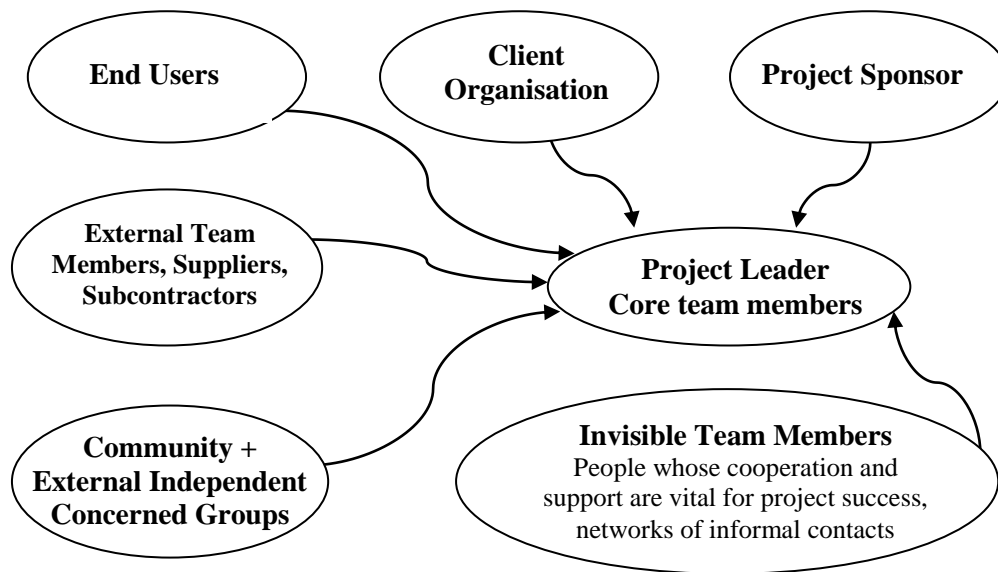


Figure 6: Information required for Project Stakeholder Register

Source: *PMBOK® Guide*, p.398 (PMI, 2013)

#### *Identifying stakeholders and their interests / Assessing stakeholders' influence*

Figure 7 presents a generic stakeholder model that helps to identify the broad groups from which project stakeholders are likely to emerge (Bourne and Walker, 2006).



**Figure 7: Generic stakeholder model**

**Source: Bourne and Walker, 2006.**

The *PMBOK® Guide* suggests there are two categories of stakeholders, internal stakeholders and external stakeholders (PMI, 2013). Internal stakeholders are actively involved in the execution of the project and external stakeholders are affected by the project (Olander, 2007). Figure 8 presents the potential stakeholders in a construction project divided into internal and external stakeholders (Olander, 2006).



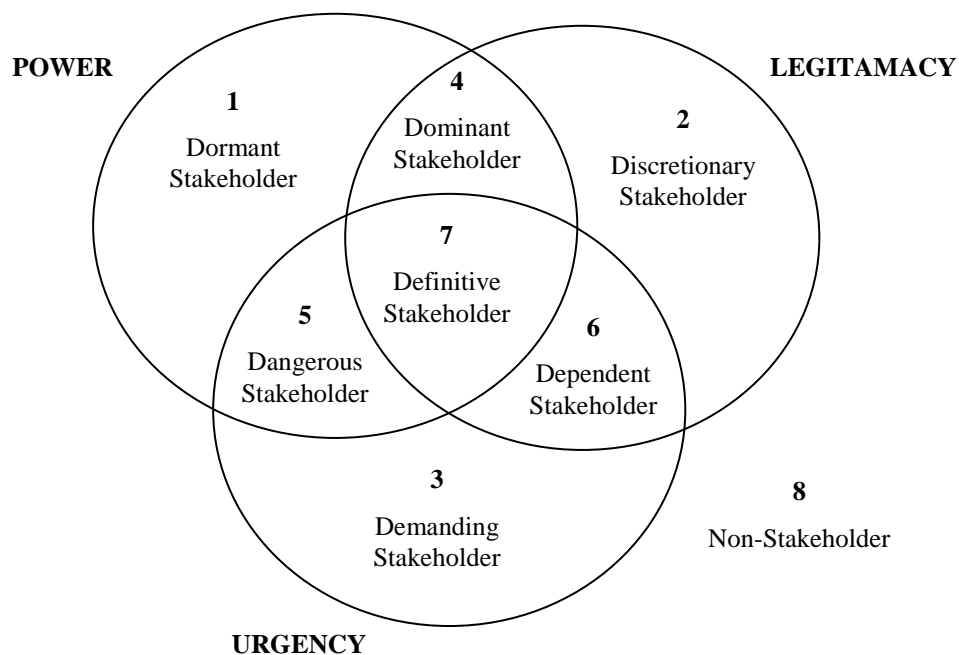
**Figure 8: Potential stakeholders for construction projects**  
Source: Olander, 2006.

The main methods proposed in the literature for the identification of project stakeholders and assessment of stakeholder attributes are discussed in this section.

#### *Salient model*

The salient model proposed by Mitchell et al. (1997) is generally recognised as a critical theoretical development in stakeholder theory and considered by some authors (e.g. Olander, 2007, Wang et al., 2013) to provide the definitive stakeholder identification and assessment model. According to the PMBOK® Guide, the salient model is based on the attributes of power (ability to impose their will), urgency (need for immediate attention) and legitimacy (their involvement is appropriate). Any individual, group or organisation possessing any one or more of these attributes is identified as a project stakeholder (Olander, 2007). The relative importance of the stakeholder is determined by the combination of these attributes (Wang et al., 2013).

Stakeholder classes are defined from the definitions of the stakeholder attributes. Stakeholders are designated to a specific class depending on the stakeholder attributes assigned to them. The stakeholder classes included in the salient model are dormant stakeholders, discretionary stakeholders, demanding stakeholders, dominant stakeholders, dangerous stakeholders, dependent stakeholders and definitive stakeholders.



**Figure 9: Stakeholder salient model**  
**Source: Yang (2010).**

Other stakeholder evaluation or mapping methods proposed in the literature include power/interest matrix (Johnson et al., 2011), vested interest-impact index (Bourne and Walker, 2005) and stakeholder impact index (Olander, 2007).

*Power/interest matrix*

The power/interest matrix is a stakeholder mapping technique used to identify stakeholder expectations and power (Johnson et al., 2011). The two stakeholder attributes are used to classify stakeholders in relation to their ability to influence the project and their level of interest in their expectations being met (Johnson et al., 2011). The power/interest matrix, as shown in Figure 10, provides a visualisation of the relative importance of the project stakeholders and is used to determine appropriate engagement strategies for different stakeholders (Wang et al., 2013).

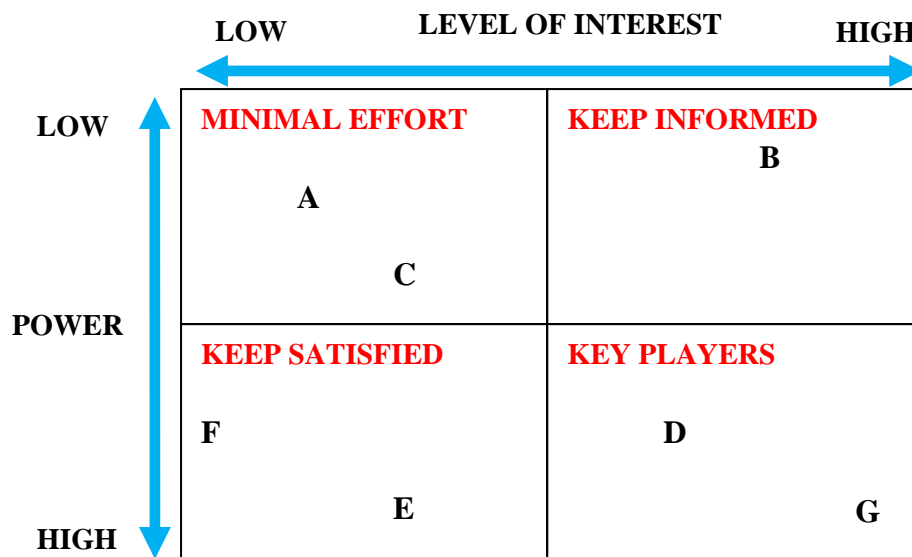


Figure 10: Stakeholder mapping using Power/Interest matrix (A to G represents generic stakeholders).  
Source: Johnson et al., 2011, p.142

#### *Vested interest-impact index*

In the analysis of two construction project case studies, Olander and Landin (2005) used a scale from 0 to 10 to place stakeholders in the power/interest matrix. However, Olander and Landin (2005) encountered difficulties in assessing the power and level of interest on a scale. Bourne and Walker (2005) proposed substituting power and levels of interest with influence impact and vested interest levels. In this model the influence impact level represents the level of impact each stakeholder has on the project and the vested interest level assesses the probability that a stakeholder will have an impact on the project decisions. The vested interest levels ( $v$ ) and the influence impact levels ( $i$ ) are rated from 1 to 5, where 1 = very low, 2 = low, 3 = neutral, 4 = high and 5 = very high. Bourne and Walker (2005) proposed the following formula for calculating the vested interest-impact index ( $V_{iII}$ ):

$$V_{iII} = \sqrt{\frac{(v \times i)}{25}}$$

Where  $0 < V_{iII} \leq 1$

#### *Stakeholder impact index*

While the vested interest-impact index approach provides a method to quantitatively assess project stakeholders, it still has certain limitations. It does not assign stakeholders to particular classes, as proposed by Mitchell et al. (1997) in the salient model. Furthermore,

this method does not assess the attitudes of project stakeholders towards the project (i.e. are the stakeholders project advocates or opponents?). Olander (2007) argues that the attitude or position a stakeholder has towards the project determines whether each stakeholder has a positive or negative impact on the project decision-making process. According to the PMBOK® Guide, stakeholder attitudes form part of the critical information required for the development of an effective engagement strategy, including assessment of current and desired engagement levels (PMI, 2013). Based on their position towards the project, McElroy and Mills (2000) propose the classification of stakeholders into one of the following five different levels: active opposition, passive opposition, not committed, passive support and active support.

To overcome the limitation of the stakeholder analysis models discussed previously in this section, Olander (2007) developed the stakeholder impact index (SII), which combines the attributes included in the salient model, the vested-interest index and the position of stakeholders into a single stakeholder analysis tool.

According to Olander (2007), each of the stakeholder attributes, included in the salient model (i.e. power, urgency and legitimacy), is assigned a weighting of between 0 and 1. The weighting assigned to each attribute will vary from project to project depending on the relative importance of the attributes. A further constraint on the attributes' values is that the sum of the attribute weights must be equal to 1. Hence, a stakeholder attribute value (A) of 1 is assigned to a project stakeholder that possesses power, urgency and legitimacy (i.e. a Definitive Stakeholder). The vested interest-impact index (ViII) is calculated for each of the stakeholders in accordance with Bourne and Walker (2005), as described previously. In order to calculate a position value (Pos), Olander (2007) recommends the following numerical values are assigned to the classification levels proposed by McElroy and Mills (2000): active opposition (Pos = -1), passive opposition (Pos = -0.5), not committed (Pos = 0), passive support (Pos = 0.5) and active support (Pos = 1).

The stakeholder impact index (SII) is calculated as:

$$SII = ViII \times A \times Pos \quad (\text{Olander, 2007})$$

Where  $-1 \leq SII \leq 1$

The overall stakeholder impact index for the project ( $SII_{proj}$ ) is determined as follows:

$$SII_{proj} = SII_1 + SII_2 + \dots + SII_{n-1} + SII_n \quad (\text{Olander, 2007})$$

Where  $n$  = the number of project stakeholders.

If  $SII_{proj}$  is a negative value, the overall impact of the project stakeholders is unfavourable. Conversely, if  $SII_{proj}$  is a positive value, the overall impact of the project stakeholders is favourable. Olander (2007) recommends the stakeholder impact index is assessed at different stages during the project life cycle. An increasing  $SII_{proj}$  indicates the stakeholder management process is having a positive effect on the project. Olander (2007) concludes the stakeholder impact index provides a comprehensive tool for the assessment of project stakeholders.

However, no consensus has been reached amongst researchers or practitioners within the construction industry on the criterion or methods, which should be used to classify project stakeholders (Wang et al., 2013).

### ***Analysing stakeholders' relationships***

A significant limitation of the stakeholder classification methods described previously is that they do not address the management of stakeholder relationships. Yang (2010) states "effective management of the relationships between the project management team and its stakeholders is an important key to project success". In construction projects, Olander (2006) argues that stakeholders are components of a system and that an analysis of the relationships between these components must be considered.

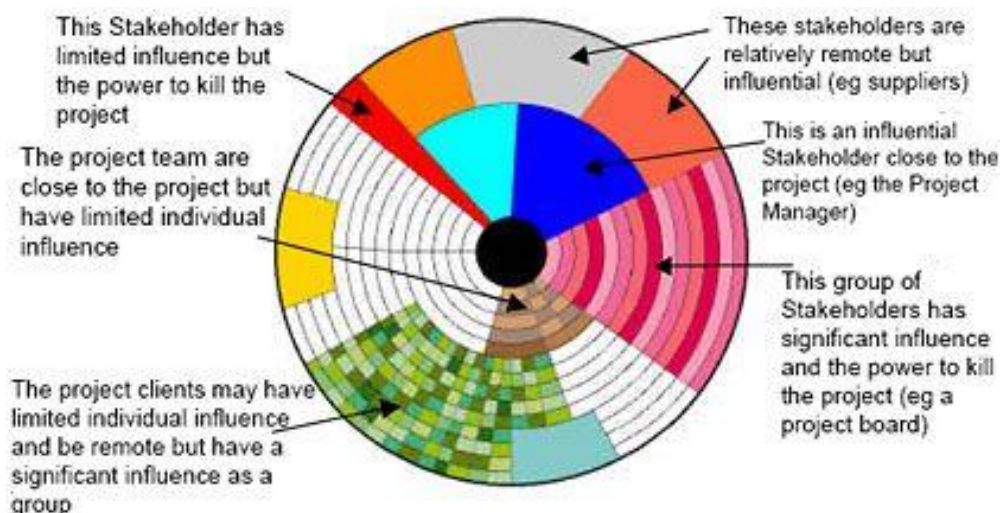
### ***Stakeholder Circle<sup>TM</sup>***

Bourne and Walker (2006) emphasise the opportunity/threat presented by hidden stakeholders. This type of project stakeholder does not have sufficient power to affect the project directly but can have a strong positive or negative impact on a project through their relationships with powerful project stakeholders. Hence, the successful delivery of project outcomes may hinge on the ability of the project manager to develop and maintain robust relationships with the project stakeholders (Bourne and Walker, 2006). Bourne (2005) developed the Stakeholder Circle<sup>TM</sup> to provide a stakeholder management tool capable of managing relationships between the project stakeholder community and the project and, ultimately, increasing the likelihood of project success.

According to Bourne and Walker (2006), the Stakeholder Circle™ methodology utilises some of the stakeholder classification techniques discussed previously and consists of three stages as follows:

- Stage 1 - Identifying project stakeholders: This requires the project team to identify the individuals and groups that can be classified as stakeholders; evaluate their significance to the project and define their project requirements.
- Stage 2 - Prioritising project stakeholders: The stakeholders identified in Stage 1 are classified and ranked in accordance with a method similar to the salient model proposed by Mitchell et al. (1997) and described previously in this section. The attributes used to prioritise the stakeholders are proximity, power and urgency.
- Stage 3 - Developing a project stakeholder engagement strategy: This stage involves the development of engagement strategies for the highest priority stakeholders based on a number of factors including their level of interest in the project and position towards the project.

The Stakeholder Circle™ visualisation tool is presented in Figure 11. The key elements of the chart include concentric circle lines that indicate the proximity of the stakeholders to the project or project deliverable; patterns of the stakeholder entities that depict the homogeneity of the stakeholder; the relative area of the circle covered by the stakeholder entity that represent the magnitude and scope of influence and the colour density that indicates the degree of stakeholder impact on the project (Bourne and Walker, 2005).



**Figure 11: The Stakeholder Circle™**  
**Source: Bourne and Walker, 2006.**

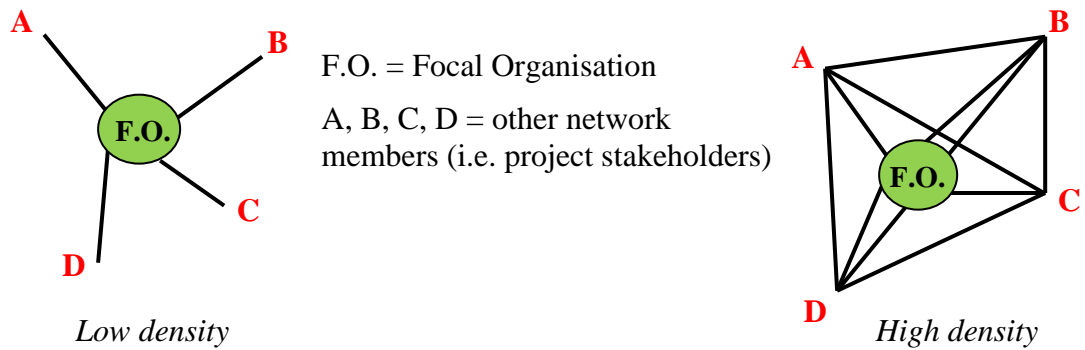
Although the Stakeholder Circle<sup>TM</sup> methodology provides many benefits to the ability of the project team to effectively manage stakeholder relationships, including a dynamic capability as the stakeholder assessment data can be revised at different stages of the project, it is heavily reliant on the project team to input information based on their assessment of each stakeholder (Bourne and Walker, 2006). Ultimately, the success of stakeholder relationship management processes based on the Stakeholder Circle<sup>TM</sup> is determined by the ability of the project team to accurately assess the influence of each stakeholder. Hence, it is likely that as project complexity increases, the accuracy of the project team's assessments decrease (Yang, 2010). Therefore, additional tools are required to overcome this limitation. Mohan and Paila (2013) suggest that Social Network Analysis (SNA) can be combined with other stakeholder assessment techniques to overcome this limitation.

#### *Social Network Model*

Rowley (1997) introduced the social network model, which emphasises the impact of entire stakeholder structures or networks over the influence of individual stakeholders on the project. The social network model aims to assess the impact of the multiple and interdependent relationships that are present within a project environment (Rowley, 1997). Bourne (2005) explains that the social network model considers the following two aspects of an organisation's stakeholder network:

- The *density* of the stakeholder network surrounding an organisation. This aspect describes the connections between all stakeholders, including the project management team, and reflects the effectiveness of the stakeholder's communication and influence.
- The *centrality* of the organisation, which is the position of the organisation in the network relative to other project stakeholders. This aspect illustrates the number of links between the focal organisation and the other stakeholders and relates to the power or influence of the stakeholder within the structure of the project network. It can be different to the individual stakeholder power described in the salient model or power/interest matrix, since the stakeholder's centrality is based on their relationships with other project stakeholders rather than their ability to directly influence the project decisions themselves.

The social network concept is illustrated in Figure 12.



**Figure 12: Social network theory of stakeholder management**  
Source: Rowley, 1997.

Based on the social network model, project stakeholders can be classified according to the system detailed in Table 2. For this system, each project stakeholder is analysed in turn as the focal organisation until all stakeholders in the network are classified.

		Centrality of the Focal Organisation	
		High	Low
Density of the Stakeholder Network	High	<b>Compromiser</b>	<b>Subordinate</b>
	Low	<b>Commander</b>	<b>Solitarian</b>

**Table 2: A structural classification of project stakeholder influences**  
Source: Yang, 2010.

### 2.3.5 Stakeholder engagement

Bourne (2005) emphasised the importance of stakeholder engagement in the stakeholder management process by including the development of a project stakeholder engagement strategy as the third and final stage in the Stakeholder Circle™ methodology. The *PMBOK® Guide* recommends that the management of stakeholder engagement processes include communicating and collaborating with stakeholders to meet their needs and expectations, addressing stakeholders’ issues and cultivating stakeholder involvement in project activities throughout the project life cycle (PMI, 2013). This approach minimises stakeholder resistance and significantly increases the likelihood of project success (PMI, 2013). Bourne and Walker (2006) argue that engagement strategies should be designed to correspond to the project stakeholders’ expectations and needs and developed based on the stakeholders’ interest in the project and level of support for the project. Furthermore, the unique engagement strategy devised for each project stakeholder should include the method, frequency and content of communications from the project team throughout the project life cycle (Bourne and Walker, 2006).

Previous studies have identified a number of strategies that can be utilised for the management of stakeholder engagement processes. These strategies typically range from holding to concession. Freeman (1984) describes holding as doing nothing and monitoring existing programs, maintaining and reinforcing the status quo and guarding against changes in processes. The converse to this strategy is concession, which is defined as listening and yielding to stakeholder demands (Chinyio and Akintoye, 2008). Yang et al. (2011) built on these studies to devise a list of four stakeholder engagement strategies as follows:

- Holding: Either fighting against addressing a stakeholder's issues or completely withdrawing and ignoring the stakeholder.
- Defence: Doing only the minimum legally required to address a stakeholder's issues.

- **Compromise:** Negotiating with stakeholders and trying to get a compromising solution.
- **Concession:** Implementing stakeholders' requirements or yielding to stakeholders' demands.

As discussed in section 2.3.3, stakeholder engagement is interrelated with the stakeholder identification and analysis processes and many stakeholder engagement methods can be used during the stakeholder identification and analysis processes. There are numerous stakeholder engagement methods utilised by practitioners in the construction industry. A study of the construction industries in Hong Kong and Australia by Yang et al. (2011) identified 23 different stakeholder engagement methods. The following section includes a discussion of the research by Yang et al. (2011) and other stakeholder management studies undertaken in the construction industry.

## **2.4 Project stakeholder management in the construction industry**

Stakeholder management in the construction industry presents extreme difficulties to project teams due to the complex and uncertain nature of construction projects (Yang et al., 2011).

### **2.4.1 Previous studies using the case study research strategy**

There is a significant quantity of literature available on stakeholder management theory, some of which has been discussed in the previous sections of the literature review. Furthermore, several authors (e.g. Olander, 2006, Reed et al., 2009, Bourne and Walker, 2006) have highlighted the importance of stakeholder management in the construction industry and developed frameworks for analysis and engagement of stakeholders. The frameworks have typically been developed based on a literature review and their effectiveness explored through case studies. A selection of the key studies is presented in Table 3.

<b>Author(s)</b>	<b>Year</b>	<b>Location</b>	<b>Research Objectives</b>	<b>Data Collection Method</b>	<b>Number of case studies analysed</b>
Beach, Keast and Pickernell	2012	Australia	Develop and apply a stakeholder network and management framework.	Case Studies	1
Reed, Graves, Dandy, Posthumus, Hubacek, Morris, Prell, Quinn and Stringer	2009	UK	Evaluate existing stakeholder analysis methods used in natural resource management projects and identify new tools and combinations of methods.	Case Studies	4
Olander	2007	Sweden	Develop a stakeholder impact analysis approach for construction projects.	Case Studies	3
Bourne and Walker	2006	Australia	Explore the effectiveness of the tool, the <i>Stakeholder Circle</i> <sup>TM</sup> , for measuring and visualising the influence of stakeholders on the management of construction projects.	Case Studies	2

**Table 3: Stakeholder management research using case studies**

The case studies were utilised to test the stakeholder management methodologies presented in the research. The methodology developed by Reed et al. (2009) is similar to the Stakeholder Circle<sup>TM</sup> methodology proposed by Bourne and Walker (2006). Both methodologies comprise stages that involve identifying the project stakeholders and their interests, analysing stakeholders' influence and relationships and developing stakeholder engagement strategies. Reed et al. (2009) used four projects in the natural resource management field to investigate the effectiveness of stakeholder analysis techniques using participatory (i.e. involving stakeholder engagement) and non-participatory (i.e. no stakeholder engagement required) methods. Olander (2007) used two residential building projects and a civil engineering rail project to investigate the utility of the stakeholder impact index as a stakeholder analysis tool. Bourne and Walker (2006) applied the Stakeholder Circle<sup>TM</sup> methodology to a building project requiring the construction of a town hall and an information and communications technology (ICT) business project.

Bourne and Walker (2006) emphasised the capability of the Stakeholder Circle™ tool to help project managers devise appropriate stakeholder engagement and leadership strategies through enhanced understanding of stakeholders' influence. However, Reed et al. (2009) acknowledged that due to time constraints, the use of the more complex stakeholder management software applications, such as Stakeholder Circle™ and Social Network Analysis, are not widespread among project managers in the construction industry. Typically, more simplistic stakeholder analysis methods (e.g. interest-influence matrix) are preferred by practitioners (Reed et al., 2009). Through analysis of the project case studies, Olander (2007) demonstrated that the stakeholder impact index is a straightforward and efficient tool, which can be used to effectively plan and evaluate the stakeholder management process. Furthermore, Olander's (2007) analysis of the case studies indicated use of the stakeholder impact index tool could have helped the project managers to be more proactive in engaging with the project stakeholders that opposed the projects.

However, Reed et al. (2009) also highlighted the limitations associated with quantitative stakeholder analysis methods such as the stakeholder impact index and interest-influence matrix. According to Reed et al. (2009), the primary disadvantages of these methods are that they do not provide answers to many of the critical questions about project stakeholders including:

- What the stakeholder's interest is?
- Why the stakeholder possesses the interest?
- Why certain stakeholders are more powerful than others?

Reed et al. (2009) argues that presenting this qualitative data in tables, which can be extended to include additional questions, provides more useful information. Furthermore, this method of data presentation and analysis is more flexible than quantitative methods and can be adapted to suit case-specific needs (Reed et al., 2009).

All of the studies concluded that adopting a standardised stakeholder management methodology contributes to the effectiveness of the stakeholder analysis process and using formal methods to undertake stakeholder analysis assists in delivering successful projects.

#### **2.4.2 Previous studies using the survey research strategy**

The research undertaken using case studies demonstrate the range and complexity of stakeholder management methodologies and analysis tools available to practitioners. However, a limited number of studies (Chandra et al., 2012, Yang et al, 2011, Nguyen et al.,

2009, Rowlinson and Cheung, 2008, Chinyio and Akintoye, 2008) have been undertaken to evaluate the awareness and attitudes of project managers in the construction industry to stakeholder management and assess the factors that influence the stakeholder management approaches adopted in practice. The scope of these studies was limited to the construction industries in Indonesia, Australia, Hong Kong, Vietnam and the United Kingdom. The pertinent details relating to these studies are presented in Table 4. All of the studies presented include a literature review, which contributes to the design of the interviews and questionnaires and achievement of the research objectives.

<b>Author(s)</b>	<b>Year</b>	<b>Location</b>	<b>Research Objectives</b>	<b>Data Collection Method</b>	<b>Number of responses</b>
Chandra, Indarto, Wiguna and Kaming	2012	Indonesia	Develop and test a model that predicts the role of stakeholders on project success.	Questionnaire	204
Yang, Shen, Bourne, Ho and Xue.	2011	Hong Kong	Identify stakeholder analysis and engagement approaches and measure the effectiveness of these approaches. Propose a typology of approaches for stakeholder analysis and engagement.	Interviews	6
		Hong Kong		Questionnaire	183
		Australia		Interviews	15
Yang, Shen, Ho, Drew and Chan	2009	Hong Kong	Identify the critical success factors associated with stakeholder management in construction projects, and explore their ranking and underlying relationship.	Interviews	6
				Questionnaire	183
Nguyen, Skitmore and Wong	2009	Vietnam	Investigate the impact of stakeholders on state-owned civil engineering projects.	Questionnaire	53
Rowlinson and Cheung	2008	Hong Kong and Australia	Investigate the relationship management process in real estate and construction projects. Identify good practice in the management of stakeholders. Develop a framework within which to compare and contrast stakeholder management practices.	Interviews and Questionnaire	Not specified
Chinyio and Akintoye	2008	UK	Identify effective stakeholder management approaches adopted in construction projects.	Interviews	12
<i>O'Halloran (i.e. this study)</i>	<i>2014</i>	<i>Ireland</i>	<i>Determine the awareness of the key stakeholder management methods amongst project managers in Ireland.</i>	<i>Questionnaire</i>	<i>64</i>

**Table 4: Stakeholder management research using interviews and questionnaires**

The studies undertaken previously generally focus on the following areas of stakeholder management:

- Evaluating the impact of stakeholders on project success (Chandra et al., 2012, Nguyen et al., 2009).
- Identifying stakeholder management approaches and measuring their effectiveness (Yang et al., 2011, Rowlinson and Cheung, 2008, Chiniyo and Akintoye, 2008).
- Identifying the critical success factors involved in stakeholder management (Yang et al., 2009).

The research objectives for this study are concerned with assessing the first and second of the above areas in the context of the Irish construction industry.

Nguyen et al. (2009) carried out a survey of project managers employed by state-owned civil engineering design firms in Vietnam to investigate the relative impact of project stakeholders. The respondents were asked to evaluate the identified project stakeholders in terms of the stakeholder attributes proposed by Olander (2007) in the stakeholder impact index. The findings of the survey highlighted the significant influence of clients and the project team on state-owned civil engineering projects in Vietnam (Nguyen et al., 2009). Chandra et al. (2012) developed a model to predict the influence of stakeholders on project success. The study examined the following three stakeholder elements that impact on project success criteria: stakeholder impact, stakeholder engagement and stakeholder psychological empowerment. The results of a survey of over 204 individuals involved in construction projects found that all three of the stakeholder elements examined have a significant influence on project success in the Indonesian construction industry (Chandra et al., 2012).

Yang et al. (2011) carried out a study of the construction industries in Hong Kong and Australia. The purpose of the study was to identify practical stakeholder analysis and engagement approaches and measure the effectiveness of these approaches. This resulted in a comprehensive typology of approaches for stakeholder analysis and engagement (Yang et al., 2011). Many of the approaches are multi-functional since they can be utilised for identifying, analysing and/or engaging stakeholders. The full list comprises thirty different methods and is presented in Table 5.

<b>ID</b>	<b>Approaches</b>	<b>SAIS</b>	<b>SAAI</b>	<b>SAAR</b>	<b>SE</b>
1	Guidelines	✓			
2	Snowball	✓			
3	Personal past experience	✓		✓	
4	Formal memos		✓		
5	Power/interest matrix		✓		
6	Stakeholder Circle <sup>TM</sup>	✓	✓		
7	Directed by higher authorities	✓	✓	✓	
8	Questionnaires and surveys	✓	✓		✓
9	Social Network Analysis (SNA)	✓	✓		✓
10	Focus Group	✓	✓		✓
11	Meetings	✓	✓		✓
12	Interviews	✓	✓	✓	✓
13	Professional services	✓	✓	✓	✓
14	Workshops		✓	✓	✓
15	Darzin <sup>TM</sup>	✓			✓
16	Displays and exhibits	✓			✓
17	Door knocks	✓			✓
18	Information hotline	✓			✓
19	Forums	✓		✓	✓
20	Listening post	✓		✓	✓
21	E-mail/fax/phone	✓		✓	✓
22	Open house/day	✓		✓	✓
23	Social contacts	✓		✓	✓
24	Newsletters/postcard series/fact sheets				✓
25	Feedback bulletins				✓
26	Media management				✓
27	Construction Advice Letter				✓
28	Negotiations				✓
29	Walking tour / site tour				✓
30	Website				✓

**Notes:**

SAIS: Stakeholder analysis - Identifying stakeholders and their interests

SAAI: Stakeholder analysis - Assessing stakeholders' influence

SAAR: Stakeholder analysis - Analyzing stakeholders' relationships

SE: Stakeholder engagement

**Table 5: Typology of approaches for project stakeholder management (Yang et al., 2011)**

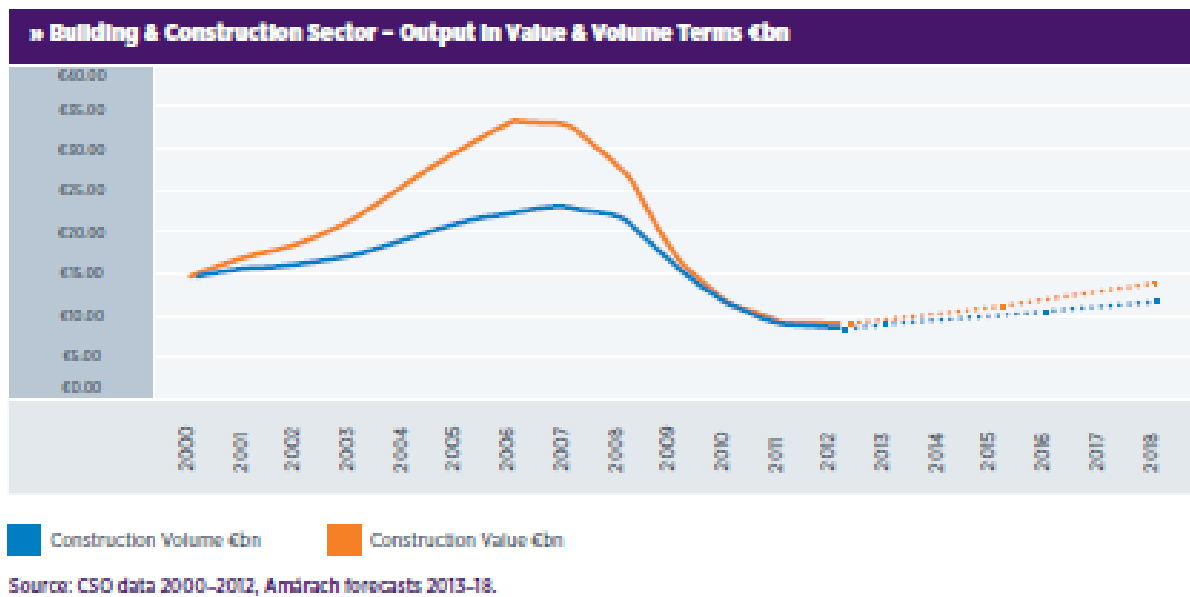
As discussed in section 2.3.3, Yang et al. (2011) consider stakeholder management to comprise the interrelated elements of stakeholder analysis and stakeholder engagement. Stakeholder analysis consists of identifying stakeholders and their interests, assessing stakeholders' influence and analysing stakeholders' relationships (Yang et al., 2011). Table A1 in Appendix A presents the results of a survey of project managers in the construction industry in Hong Kong, which was undertaken by Yang et al. (2011) to identify and measure the effectiveness of stakeholder analysis and engagement methods.

In addition to the development of a typology of stakeholder analysis and engagement methods, the authors also made a number of conclusions regarding the relatively low awareness and utilisation amongst key project personnel and decision-makers of stakeholder evaluation methods (Yang et al., 2011). However, Yang et al. (2011) noted that the study is limited in scope since the findings are based on a literature review and empirical studies in Hong Kong and Australia. This research thesis aims to verify the generalisability of their findings in the context of the construction industry in Ireland.

## **2.5 Construction industry in Ireland**

Windapo and Cattell (2013) highlight the important role and significant impact of the construction industry to a country's economic growth and development. The relationship between a country's economic growth and the performance of its construction industry is particularly relevant to the construction industry in Ireland. According to the Society of Chartered Surveyors Ireland (SCSI), the colossal decline in the value of output from the Irish construction industry from €39 billion (i.e. almost 25% of GNP) in 2006 to €8.8 billion (i.e. 7% of GNP) in 2013 was a major factor in the economic recession (SCSI, 2012). Figure 13 presents the output from the Irish construction sector from 2000 to 2012. Estimates from 2013 to 2018 are also included.

Given the weak economic growth estimates for the construction industry in Ireland over the next five years, the ability of project managers to deliver projects in a cost effective and efficient manner is crucial. Hence, the area of stakeholder management, which as described previously plays a significant role in the delivery of successful projects, is of critical importance to the economic performance of the Irish construction industry.



**Figure 13: Irish Construction Industry Output in Value and Volume (€billion)**  
Source: SCSi, 2014.

## 2.6 Literature conclusion

The literature review has been divided under four main headings, namely project and project management defined, stakeholder management, project stakeholder management in the construction industry and the construction industry in Ireland. The basis for the selection and sequence of these categories corresponds to the evolutionary stages of the research question. The literature review provided a general overview of project management and the sub-discipline of project stakeholder management. The PMBOK® Guide (PMI, 2013) was referenced frequently as it is one of the key project management standards widely recognised and adopted in the construction industry. The purpose of the literature review is to identify the key stakeholder management approaches as recognised in stakeholder management theory and previous studies of the construction industry in other countries. The key findings of the literature review are as follows:

- Effective stakeholder management is a critical factor in the successful delivery of construction projects. Specifically, stakeholder management has a key role in the achievement of both hard (e.g. cost) and soft (e.g. stakeholder satisfaction) project success criteria.
- Adopting a formal stakeholder management methodology assists in delivering successful projects.
- Theoretical and practical stakeholder management models generally consist of two interrelated elements, stakeholder analysis and stakeholder engagement.

- Stakeholder analysis involves three processes, namely identifying project stakeholders and their interests, assessing project stakeholders' influence and analysing the relationships amongst project stakeholders.
- Construction projects are usually complex and involve large numbers and categories of stakeholders. The project client organisation is considered the most important stakeholder.
- The most widely accepted stakeholder analysis models typically evaluate the impact and influence of stakeholders and, hence, prioritise stakeholders based on a selection of the following attributes: power, proximity, legitimacy, urgency, interest and position or attitude towards the project.
- However, these stakeholder classification methods are limited since they do not address the management of stakeholder relationships. Social Network Analysis (SNA) can be combined with other stakeholder assessment techniques to overcome this limitation.
- The outcomes of the stakeholder analysis processes should be documented in a Project Stakeholder Register. This register is a "live" document that is reviewed and updated throughout the project life cycle and includes sufficient information to identify, assess and classify the project stakeholders.
- Stakeholder engagement strategies should be designed to correspond to the project stakeholders' expectations and needs and developed based on the stakeholders' interest in the project and level of support for the project.
- Typical stakeholder engagement strategies include holding, defence, compromise and concession. Strategies that encourage stakeholder engagement and empowerment are more likely to lead to project success than strategies that advocate ignoring or limiting communications with stakeholders.
- There are a wide variety of stakeholder engagement methods available to project managers in the construction industry. Most methods are multifunctional in that they can also be used for stakeholder identification and analysis.
- The stakeholder analysis and engagement methods used in practice are dependent on the project characteristics. A combination of several stakeholder analysis and engagement methods is considered to be the most effective way of managing stakeholders.

Furthermore, a summary of the limited number of key studies of project stakeholder management in the construction industry identified a low level of awareness and utilisation of stakeholder evaluation methods.

The conclusions detailed above are the basis for the development of the primary research, which tests the generalisability of these findings by investigating the awareness of stakeholder management approaches amongst project managers in the construction industry in Ireland. The methodology and results of the primary research are presented in Chapter 3 and Chapter 4, respectively. A discussion comparing the findings of the literature review and the primary research is provided in Chapter 5.

## Chapter 3. METHODOLOGY

### 3.1 Methodology introduction

Saunders et al. (2009) defined research as “something people undertake in order to find things out in a systematic way, thereby increasing their knowledge”. According to Collins and Hussey (2003) there are multiple reasons for undertaking research including:

- Review or synthesize existing knowledge.
- Investigate existing situations or problems.
- Provide solutions to problems.
- Explore and analyse more general issues.
- Construct or create new procedures or systems.
- Explain new phenomenon.
- Generate new knowledge.
- Combination of any of the above.

Blaxter et al. (2010) make a distinction between research methodology and methods. The methodology is defined as the paradigm that forms the basis for how the research is carried out and encompasses the research philosophy, research approach, research strategy, time horizons, data collection methods and data analysis that is utilised in the research. Blaxter et al. (2010) defines the research methods as principally the tools used to collect and analyse data, such as questionnaires and interviews. This section presents an outline of the research methodology and methods proposed for the research to be undertaken.

Saunders et al (2009) used the analogy of the layers of an onion (see Figure 14) to illustrate the different layers of the research methodology or process. The six principal research layers are:

- Research philosophy
- Research approach
- Research strategy
- Research choices (i.e. single, mixed or multiple methods)
- Time horizons (i.e. cross-sectional or longitudinal)
- Techniques and procedures (i.e. data collection methods and data analysis)

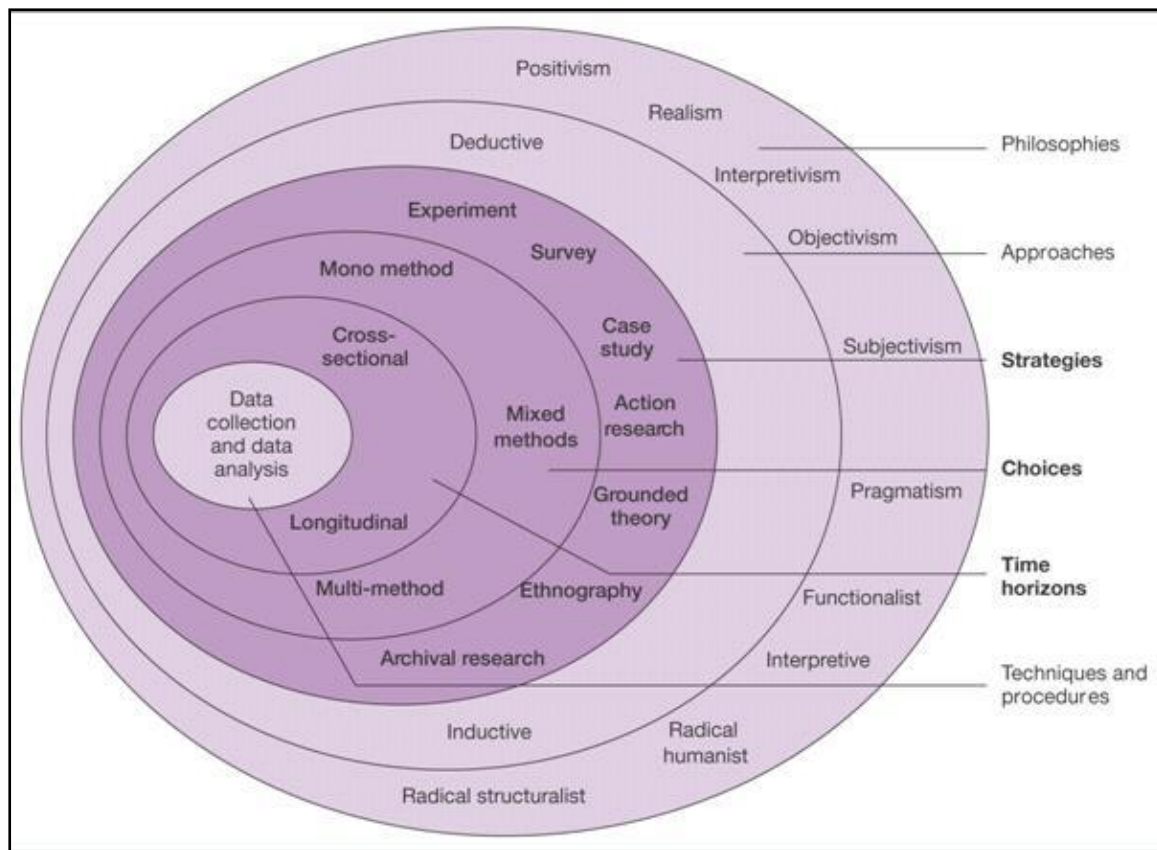


Figure 14: Research 'onion'

Source: Saunders et al., 2009, p.108

### 3.2 Research design

Since the research philosophy is located in the outmost layer of the research 'onion', it dictates the overall research methodology and methods adopted. Saunders et al. (2009) conclude that of critical importance is not that the research is philosophically informed but how well the researcher can reflect on the research philosophy and methodology adopted and defend these choices in relation to the alternatives. For this reason the following sections include a brief discussion of the options considered before detailing the option selected and the basis for its adoption.

#### 3.2.1 Research philosophy

According to Blaxter et al. (2010) the three most common paradigms adopted in social research are positivism, post-positivism and interpretivism.

##### Positivism

The positivism approaches to research are based on research methodologies commonly used in the natural sciences. They are characterised by an objective approach to research (Blaxter

et al., 2010). This approach aims to identify, measure and evaluate any phenomena and to provide a rational theory for it (Collins and Hussey, 2003). Quantitative approaches which utilise statistics and experiments are viewed as typical examples of positivism (Blaxter et al., 2010).

### **Post-Positivism**

This research philosophy retains the same set of basic values as positivism. However, it accepts that our knowledge of social reality can only be examined by methods which are flawed. Hence, the knowledge acquired is imperfect, probalistic and only partially objective (Blaxter et al., 2010). This philosophy typically involves increased utilisation of qualitative methods to validate the findings of the quantitative study.

### **Interpretivism**

According to Blaxter et al. (2010), the interpretivist approach regards interpretations of the social world as “culturally derived and historically situated”. This approach maintains that the social sciences should be concerned with understanding rather than explaining, which is the basis for the positivistic approach. Interpretivism is classified as a subjectivist approach (Saunders et al., 2009).

The research philosophy proposed is **positivism**. As the research objectives are concerned with determining the awareness and perception amongst project managers of stakeholder management, the researcher believes that the objective position provided by a positivistic approach is the most appropriate methodology. The intepretivistic approach has been rejected as the researcher believes that a subjective approach would influence the responses of the project managers involved in the primary research. This would not provide a valid representation of the current awareness amongst project managers of stakeholder management and, hence, the research objective will not be achieved.

### **3.2.2 Research approach**

Research approaches are classified as deductive or inductive. For the deductive approach, the researcher deduces a hypothesis (or hypotheses) based on the current level of knowledge on a particular subject and of any theory relating to that subject. The hypothesis (or hypotheses) is subjected to empirical testing (Saunders et al., 2009). This approach requires the researcher to be independent of what is being observed. Hence, the deductive approach typically corresponds to the positivistic philosophy.

According to Saunders et al. (2009) the inductive approach requires the researcher to undertake interviews to “get a feel of what is going on”. This then gives the researcher a better understanding of the nature of the problem, which provides a basis to form a theory. Hence, the inductive approach is converse to the deductive approach in that the development of a theory occurs after obtaining the primary data.

In the case of the proposed research, the literature review undertaken by the researcher has led to the development of a number of findings regarding the awareness of stakeholder management amongst project managers in the construction industries in other countries. The **deductive** approach will be utilised through the collection of quantitative data to assess if these findings are valid amongst project managers in the Irish construction industry.

### **3.2.3 Research strategy**

According to Saunders et al. (2009) the researcher’s choice of research strategy is directed by the research question, research objectives, the researcher’s level of expertise and knowledge of the subject, the time and resources available to the researcher and the research philosophy underpinning the methodology. Saunders et al. (2009) grouped Research Strategy into the following:

- Experiment
- Survey
- Case study
- Grounded research
- Ethnography
- Archival research

It is proposed to use **survey** as the research strategy for the study. According to Saunders et al. (2009), survey strategy is typically associated with the deductive approach and is used to collect quantitative data which can be analysed using descriptive and inferential statistics. Survey strategy is a popular and common strategy in business and management research and is most frequently used to answer questions concerned with who, what, where, how much and how many (Saunders et al., 2009). It is proposed to adopt survey as the research tool for this study since the research question and objectives for this study relate most closely to questions of what and how much.

### **3.2.4 Research choice**

Saunders et al. (2009) define the research choice as the decision by the researcher to either use a single data collection technique and corresponding analysis procedure (i.e. mono method) or use more than one data collection techniques and analysis procedures (i.e. multiple methods).

The data collection techniques and data analysis procedures available to researchers are typically classified as quantitative or qualitative methods. Quantitative methods are concerned with the collection and analysis of numerical data that represents the properties of the phenomenon being measured (Hair et al., 2003). Conversely, qualitative methods are used to generate and analyse non-numerical data. Qualitative data is typically associated with words but can represent data in other non-numerical forms such as pictures and video clips (Saunders et al., 2009).

Table 6 compares and contrasts data obtained by quantitative and qualitative methods.

<b>Description</b>	<b>Quantitative Data</b>	<b>Qualitative Data</b>
<b>Purpose</b>	More useful for testing	More useful for discovering.
	Provides summary information on many characteristics.	Provides in-depth information on few characteristics.
	Useful in tracking trends.	Discovering ‘hidden’ motivations and values.
<b>Properties</b>	More structured collection techniques and objective ratings.	More unstructured collection techniques requiring a subjective interpretation.
	High concern for representativeness	Little concern for representativeness
	Relatively short interviews (1 to 20 minutes).	Relatively long interviews (From 30 minutes to many hours).
	Interviewer is passive.	Interviewer is active and should be highly skilled.
	Large samples (over 50).	Small samples (1-50).
	Results objective.	Results subjective.

**Table 6: A comparison of qualitative and quantitative data  
Source: Hair et al., 2003, p.76**

Tashakkori and Teddlie (2003) argue that multiple methods can help the researcher to evaluate the extent to which their findings can be trusted and inferences made from them. However, based on a study of over 200 social science articles reporting research in which multiple methods (i.e. both quantitative and qualitative) were employed, Bryman (2006) found that only 5% of the articles provided clear evidence that the multiple methods research had been designed to answer different and specific research questions. Saunders et al. (2009) conclude that it is critical to only design and utilise methods that enable the researcher to achieve the research objectives

For this study, the research objectives are concerned with testing if the perception of stakeholder management among project managers in the Irish construction industry is in accordance with the findings from the literature review, which are based on stakeholder theory and studies in other countries. To achieve these objectives, it is vital that the results obtained are impartial and generalisable to the target population. These objectives can be achieved through quantitative methods comprising a survey and statistical analysis of the survey results. It is likely that using qualitative methods would be useful to help explain the

reasons for the answers obtained from the survey. However, this does not relate to any of the research objectives and is outside of the study scope. Hence, the research choice is mono-method and quantitative data collection techniques and data analysis procedures are employed.

### **3.2.5 Research time horizon**

The time-horizon is divided into two types: cross-sectional and longitudinal. According to Saunders et al. (2009), a cross-sectional study examines a particular phenomenon at a specific moment in time. Alternatively, a longitudinal study is concerned with events over a period and, hence, is able to investigate change and development (Saunders et al., 2009).

The research focuses on the current awareness among project managers of stakeholder management in the construction industry in Ireland and is time constrained. Hence, the researcher has adopted a **cross-sectional** survey strategy.

## **3.3 Selecting respondents**

Hair et al. (2003) argue that the use of an appropriate sampling process should result in a sample that is representative of the population from which it is drawn. Hair et al. (2003) recommends the following sampling process should be followed to help to ensure a representative sample is obtained.

- Step 1 - Define the target population.
- Step 2 - Choose the sampling frame.
- Step 3 - Select the sampling method.
- Step 4 - Determine the sample size.
- Step 5 - Implement the sampling plan.

The following sections describe how this generic sampling procedure has been adapted for this study.

### **Step 1 - Define the target population**

According to Hair et al. (2003), the target population comprises the entire group of objects or elements that possess the relevant data required for the research. In addition, Hair et al. (2003) states “the research objectives and scope of the study are critical in defining the target population”. The research objective for the primary research element of this study is concerned with the awareness of stakeholder management activities among project managers

in the construction industry in Ireland. Hence, the criteria used to select the target population are:

- Individuals involved in project management activities for construction projects.
- Individuals employed by organisations within the Irish construction industry.

### **Step 2 – Choose the sampling frame**

A sampling frame is defined as a complete list of all the elements in the target population (Hair et al., 2003). Typical examples of sampling frames are the Yellow Pages listing of companies, telephone directory of individuals and electronic directories available on the internet.

The sampling frame for this study comprises the following:

- A list of privately owned construction companies drawn from the Irish Times online list of one thousand Irish companies with the highest turnovers in 2013 (Irish Times, 2014).
- A list of consulting companies drawn from the Association of Consulting Engineers of Ireland (ACEI) list of members.
- A list of construction companies drawn from the Construction Industry Federation (CIF) list of members.
- A list of public and quasi-public organisations involved in the management of construction related projects obtained from the Yellow pages directories in Ireland.

In addition, a review of the websites of the companies was undertaken to verify that the companies are involved in project management activities. The companies that are not involved in project management activities were removed from the sampling frame as they are not likely to employ individuals that would meet the target population criteria. Finally, as the sampling frame is compiled from multiple lists, any duplicate elements were deleted.

### **Step 3 – Select the sampling method**

According to Saunders et al. (2009) sampling techniques can be divided into two types:

- Probability or representative sampling
- Non- probability or judgmental sampling

Probability sampling (or representative sampling) is most commonly associated with survey-based research strategies where it is necessary to make assumptions based on the sample about a population to achieve the research objectives.

Saunders et al. (2009) further stated that there are five main techniques that can be used to select a probability sample as follows:

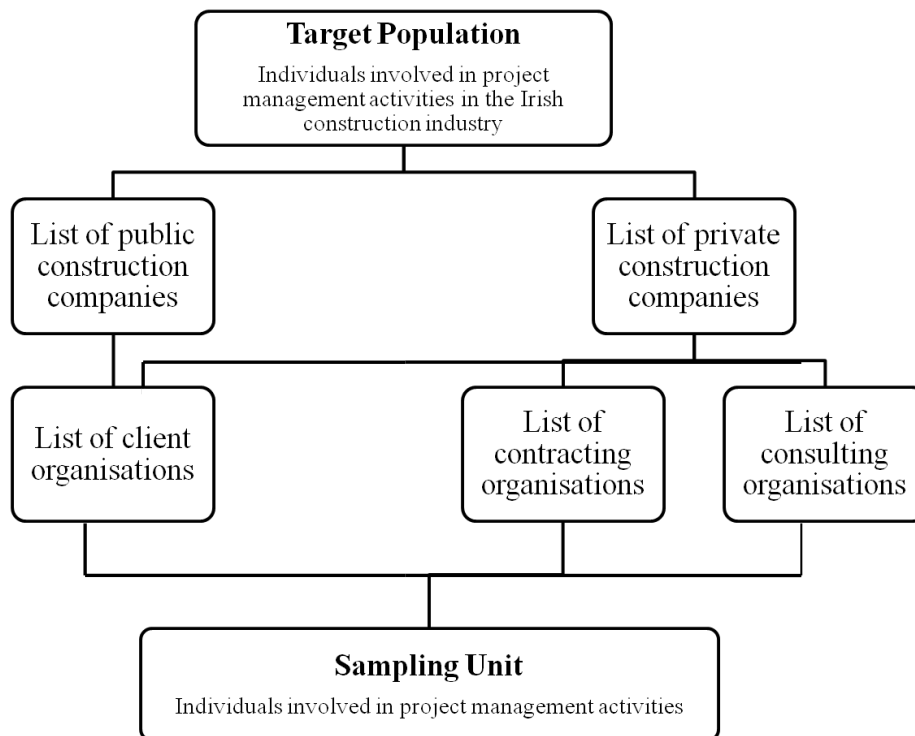
- Simple random
- Systematic
- Stratified random
- Cluster
- Multi-sampling choice

Alternatively, non-probability sampling provides a range of techniques to select samples based on the researcher's subjective judgment. Based on the researcher's evaluation of the likely suitable sample size, the most appropriate non-probability sampling techniques that will achieve the research objectives are selected. The available range of non-probability sampling techniques include:

- Quota Sampling
- Snowball Sampling
- Purposive Sampling
- Self Selection Sampling
- Convenience Sampling

It is proposed to adopt **probability** sampling and the **stratified random** sampling technique. Saunders et al. (2009) state that the stratified random sampling technique requires the division of the sampling frame into two or more, non-overlapping sub-groups. A random sample is drawn from each of the sub-groups. Saunders et al. (2009) argue that this method provides a more representative sample than simple or systematic random sampling as it ensures that each of the strata or sub-groups is represented. This sampling methodology is deemed appropriate for this study.

For this study, the sampling frame was divided into two sub-groups, namely public or quasi-public and private companies. The sub-group containing private companies was further subdivided into client, contracting and consulting companies. The sub-group containing public companies consists solely of client organisations. The sampling unit, which consists of individuals involved in project management activities, is drawn from the sub-groups. An overview of the stratified random sampling process used in this study is presented in Figure 15.



**Figure 15: Overview of stratified random sampling process adopted for the study**

The sampling unit comprises five companies selected at random from each of the lists (i.e. client, contracting and consulting organisations). An appropriate individual in each of the companies was identified and contacted by e-mail or telephone to request their company's participation in the study. Upon receiving approval, a link to the questionnaire was issued to the contact for them to distribute to all the individuals within their organisation that are involved in project management activities. Where companies did not respond to the initial e-mail or were unwilling to participate in the study, a further company was randomly selected from the corresponding list and contacted. This process was repeated until the target number of companies was reached.

#### **Step 4 - Determine the sample size**

Hair et al. (2003) argue that the following three factors must be assessed to determine the sample size using statistical formulas.

- The degree of confidence (typically 95%).
- The specified level of accuracy (i.e. amount of acceptable error).
- The amount of variability (i.e. population homogeneity).

Based on estimates of these three elements, the sample size can be calculated as follows:

$$\text{Sample Size } (SS) = \left( \frac{DC \times V}{DP} \right)^2 \quad (\text{Hair et al., 2003})$$

Where:

DC (Degree of Confidence) = the number of standard errors for the confidence level specified for the research results.

V (Variability) = the standard deviation of the population.

DP (Desired Precision) = the acceptable difference between the sample estimate and the population value.

For this study, the researcher is required to determine the sample size that will estimate project managers' perception of the effectiveness of the stakeholder management methods used in the construction industry in Ireland to a desired level of precision and to a specified level of confidence. To do so, all three elements of the sample size formula must be considered.

In this study, the effectiveness of the stakeholder management methods is measured with a 1 to 5 rating scale, where 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree (refer to section 3.5 for further details of the questionnaire design). This gives a range of 4 (i.e.  $5 - 1 = 4$ ). The standard deviation (variability) of the range is estimated by dividing the range by 4 (i.e.  $V = 4 / 4 = 1$ ). The division by 4 is based on the assumption that the distribution of the responses to the questions regarding the effectiveness of stakeholder management methods is normal. According to Hair et al. (2003), in business research it is typical to use a confidence interval of plus or minus 2 standard errors (i.e. 95 percent).

The precision level for this study is specified as one-quarter of a unit on the rating scale (i.e.  $DP = 0.25$ ). This indicates the sample estimate should be accurate within one-third of a unit. The confidence level desired is 95 percent (i.e.  $DC = 0.95$ ). Hence, for this study, the sample size is calculated as follows:

$$\text{Sample Size } (SS) = \left( \frac{0.95 \times 1}{0.25} \right)^2 = 64.00$$

Therefore, the minimum sample size required to meet the specified precision and confidence levels is 64.

### **Step 5 – Implement the sampling plan**

The target population comprises project managers currently employed in the construction industry in Ireland. An extensive list of organisations within these subsets is identified through a number of sources including Irish Times, Yellow Pages and inquiries to representative bodies such as Construction Industry Federation (CIF) and Association of Consulting Engineers in Ireland (ACEI). The random stratified sampling technique is utilised to initially segment the target population into subgroups consisting of public and private sector companies and then further separate these subgroups into contracting, consulting and client organisations. Five organisations from each of the subsets are randomly selected and primary contacts within the companies are established. This is achieved in a number of ways including professional social media communities (e.g. LinkedIn), the researcher’s own professional and personal network of contacts within the construction industry in Ireland and, where required, contacting the organisation directly by telephone or e-mail. The researcher targets five valid responses from each of the organisations resulting in a total sample size of 75 individuals involved in project management activities in the construction industry in Ireland.

The overall research methodology adopted for this study is summarised in Table 7. The remaining sections of this chapter discuss the research methods used for the collection and analysis of data, research ethics and limitations of the methodology.

<b>Philosophy</b>	<b>Approach</b>	<b>Strategy</b>	<b>Choice</b>	<b>Time Horizon</b>	<b>Sampling Method</b>
Positivism	Deductive	Survey	Mono method: Quantitative	Cross-sectional	Probability: Random stratified

**Table 7: Summary of research methodology**

### **3.4 Data collection instruments**

Hair et al. (2003) argue that data collection methods for questionnaires can be divided into two main categories, namely self-completion and interview-administered. Interview-administered questionnaires generally have higher response rates and significantly reduce the likelihood of the respondents misinterpreting the meaning of the question since the interviewer can respond directly to any queries (Blaxter et al., 2010). However, self-completion questionnaires are typically less time consuming and more suitable for a large sample size (Blaxter et al., 2010).

Since this study adopts quantitative methods, has a relatively short-timeframe for completion and requires a large sample size, self-completion data collection instruments are utilised. Saunders et al. (2009) divides self-administered questionnaires into three types, namely (1) internet and intranet-mediated, (2) postal and (3) delivery and collection. Saunders et al. (2009) presents attributes of these three types of self-administered questionnaires. Questionnaires distributed and collected via the internet are suitable for studies where the target population is computer literate, the sample size is large and limited time duration for data collection and analysis (Saunders et al., 2009). These attributes are consistent with this study, hence, it is proposed to distribute the questionnaire and collect the resulting data via the internet. The online survey website SurveyMonkey.com<sup>TM</sup> is used to prepare and conduct the survey. The link to the questionnaire will be distributed by e-mail to the primary contacts in each organisation. The primary contact will then distribute this e-mail to the individuals within their organisation with project management experience. A unique link will be sent to each organisation so response rates for individual organisations can be tracked. However, the completed surveys are automatically randomised upon input into the online database to protect the anonymity of the respondents.

The primary benefits of this data collection method are ease of access for the respondents and ease of collection for the researcher. Furthermore, the data will be available immediately upon completion and can be imported directly into data analysis software packages.

For this study, a target of 75 responses has been selected based on a minimum sample size of 64 (see section 3.3). In total, 15 companies will be involved and the questionnaire will be issued to about 300 project managers. Hence, the anticipated response rate is 25% (i.e. 75 responses) and the minimum response rate is 21% (i.e. 64 responses). Yang et al. (2011) state the typical response rate to questionnaires in the construction industry is 20-30%. The data collection approach selected is preferable compared to issuing hard copy questionnaires since it allows the researcher to track the response rate in real time. This is critical to allow swift actions to be taken, such as selecting additional companies and issuing more questionnaires, if the response rate falls below the expected level.

### **3.5 Questionnaire design**

The research approach is quantitative and a questionnaire has been developed based on the research question and objectives. The questionnaire is designed to obtain adequate data to achieve the research objectives, and address the overall research question.

Hair et al. (2003) states that a well-constructed questionnaire should result in reliable and valid data. Hair et al. (2003) suggests that a well-constructed questionnaire can be achieved by adopting the following systematic process.

- Step 1 – Initial considerations.
- Step 2 – Clarification of concepts.
- Step 3 - Select the sampling method.
- Step 4 - Determine the sample size.
- Step 5 - Implement the sampling plan.

### **Step 1 – Initial considerations**

According to Hair et al. (2003), prior to developing a questionnaire, the research question must be clear. This requires the researcher to define the research objectives, develop questions to achieve the objectives and determine the sampling and data collection methods. All of these issues have been clarified previously.

### **Step 2 – Clarification of concepts**

This stage requires the researcher to identify the concepts to be measured, define the method of measurement and specify the questions. Generally, only questions that relate directly to the research objectives should be included (Hair et al., 2003).

### **Step 3 – Typology of a questionnaire**

Hair et al. (2003) identify the two main types of questions that can be included in a questionnaire as closed-ended (i.e. respondent must choose answer from a number of predetermined answers) and open-ended (i.e. respondent is free to answer in their own words). Blaxter et al. (2010) recommends that open-ended questions are used sparingly since they require too much of the respondent's time to answer and the researcher's time to analyse. Furthermore, Hair et al. (2003) indicates that open-ended questions are likely to have an adverse impact on response rates, particularly for self-completion questionnaires. Hence, only close-ended questions have been included in the self-completion questionnaire developed for this study. In terms of wording the questions and structuring the questionnaire, the guidelines provided by Blaxter et al. (2010) have been adhered to. These guidelines include numerous hints on wording questions, such as avoiding ambiguous, leading and/offensive questions.

The closed-ended, self-completion questionnaire used by Yang et al. (2011) to measure the perception of stakeholder analysis and engagement methods amongst project managers in the construction industry in Hong Kong has been adopted for this study. Some additional questions concerning stakeholder management related concepts, which were not part of the Yang et al. (2011) study, have been added to the questionnaire. Most of the questions use a 5 point Likert scale asking respondents to indicate whether they strongly agree, agree, neither agree nor disagree, disagree or strongly disagree to each of the statements. Prior to the issue of the questionnaire, the questions were pre-coded and different codes allocated to identify various responses categories for easy of recording findings and analysis.

Table 8 presents the concepts, their sources and the corresponding question numbers. The full questionnaire is presented in Appendix B.

<b>Section ID</b>	<b>Element</b>	<b>Key Source(s)</b>	<b>Question numbers</b>
1	Background of respondents	Yang et al. (2011)	Q1 – Q5
2	Stakeholder management approach	Yang et al. (2011) Bourne and Walker (2006)	Q6 – Q8
3	Identifying project stakeholders	Yang et al. (2011) Olander (2006) Bourne (2005)	Q9 – Q11
4	Stakeholder assessment and analysis	Yang et al. (2011) Mitchell et al. (1997) Olander (2007) Johnson et al. (2011) Olander (2006)	Q12 – Q15
5	Stakeholder engagement	Yang et al. (2011) Freeman (1984)	Q16 – Q17
6	Stakeholder management and project success	Chandra et al. (2012) Yong and Mustaffa (2012) Doloi et al. (2013)	Q18
7	Stakeholder identification and documentation	PMI (2013)	Q19 – Q20

**Table 8: Questionnaire design**

#### **Step 4 – Pretesting a questionnaire**

Hair et al. (2003) argue that if an existing questionnaire is to be used with a different group of respondents, it must be pretested. The questionnaire developed for this study is based on a questionnaire previously used in a similar study in Hong Kong. Hence, pretesting of the questionnaire is required. Five project managers currently employed in the construction industry in Ireland were identified and sent a copy of the pilot questionnaire. The project managers selected comprised individuals who were personally known to the researcher. They came from a variety of backgrounds that were considered representative of the target population. The main purpose of the pilot study was to check the clarity and validity of the survey. Particularly, to ensure that the list of stakeholder analysis and engagement methods included in the questions were comprehensive.

### **Step 5 – Administering a questionnaire**

The questionnaire was amended based on the feedback obtained from the respondents to the pilot study. The questionnaire was then administered using SurveyMonkey.com<sup>TM</sup> in accordance with the data collection methods described previously.

## **3.6 Data analysis procedures**

In order to analyse the raw quantitative data collected from the questionnaire, the researcher used Statistical Package for Social Sciences (SPSS) computer software. The data was exported from the online survey website SurveyMonkey.com<sup>TM</sup> to the program SPSS (Version 22) in a Microsoft Excel (2010) file format to undertake statistical analysis. The data gathered from the responses to the questionnaire are primarily analysed for frequency distribution and measures of central tendency. For questions where the respondents were asked to rate the effectiveness of a number of stakeholder analysis or engagement methods on a Likert scale, the arithmetic mean value for each method is calculated. Kendall's Coefficient of Concordance,  $W$ , is then calculated to examine whether the respondents ranked the methods in a similar order.  $W$  ranges from 0 (i.e. no agreement) to 1 (agreement is unanimous). The closer  $W$  is to 1, the stronger the agreement among the respondents. Likewise, the closer  $W$  is to 0, the weaker the agreement among respondents. Kraska-Miller (2013) indicates Kendall's  $W$  can be interpreted as a correlation with weak, moderate and strong agreement denoted as 0.10, 0.30 and 0.50, respectively.

### **3.7 Research ethics**

Research ethics means ensuring the design of your research methodology is sound and morally defensible to all those involved (Saunders et al., 2009). Research ethics is an area of concern throughout the duration of the dissertation and, hence, has been considered and evaluated on an ongoing basis. The research is undertaken in accordance with the Dublin Business School (DBS) code of ethics at all time. Saunders et al. (2009) suggests that this approach should help to ensure that the researcher does not transgress the behavioural norms for undertaking research established by their institution.

The main ethical issues identified relate to the data collection element and objectivity. In accordance with recommendations by Saunders et al. (2009), participants in the survey are required to give permission on the information provided by the researcher to use their responses in the dissertation. Any amendments made by the researcher to the responses provided is considered as unethical behaviour. Furthermore, the respondents always have the option to withdraw their permission at any time.

### **3.8 Limitations of methodology**

The primary limitations of the methodology relate to difficulties in obtaining a sufficient sample size. The construction industry is renowned for slow and low response rates to survey questionnaires (Yang et al. 2011). Furthermore, members of the Construction Industry Federation (CIF) take annual holidays from 21 July, 2014 to 4 August 2014. This presents a significant challenge to ensure an adequate response rate to the questionnaire to provide a sufficient sample to be able to draw generalisable conclusions for the entire target population from the data obtained. However, the researcher is confident that this obstacle can be overcome by accounting for the low and slow response rate by issuing a high number of questionnaires (i.e. assume a response rate of 1 in 4) at an early stage (i.e. allow at least 4 weeks for responses). This approach is reflected in the schedule for the dissertation provided in Appendix C.

## Chapter 4. DATA ANALYSIS AND FINDINGS

### 4.1 Introduction

This chapter presents the analysis of the data collected through the primary research (i.e. questionnaire). A discussion of the results of the primary research in relation to the findings of the secondary research (i.e. the literature review) is provided in chapter 5.

### 4.2 Structure of data analysis

According to Saunders et al. (2007), very little meaning can be derived from quantitative data until it is processed and analysed. Therefore, the data collected needs to be categorised and assessed to obtain conclusive findings.

In total, 64 respondents took part in the survey of the questionnaire. All respondents are involved in project management activities in the construction industry in Ireland.

The data gathered from the responses to the twenty questions are primarily analysed for frequency distribution and measures of central tendency. For questions where the respondents were asked to rate the effectiveness of a number of stakeholder analysis or engagement methods on a Likert scale, the methods have been ranked in accordance with their arithmetic mean values. Kendall's Coefficient of Concordance,  $W$ , was then calculated to examine whether the respondents ranked the methods in a similar order.  $W$  ranges from 0 (i.e. no agreement) to 1 (agreement is unanimous). The closer  $W$  is to 1, the stronger the agreement among the respondents. Likewise, the closer  $W$  is to 0, the weaker the agreement among respondents. Kraska-Miller (2013) indicates Kendall's  $W$  can be interpreted as a correlation with weak, moderate and strong agreement denoted as 0.10, 0.30 and 0.50, respectively.

The online survey website SurveyMonkey.com<sup>TM</sup> was used to distribute and collect the data and undertake preliminary analysis. The data was exported to the program SPSS (Version 22) in a Microsoft Excel (2010) file format to undertake statistical analysis. Pie charts, bar charts and frequency tables are used to present the quantitative data findings.

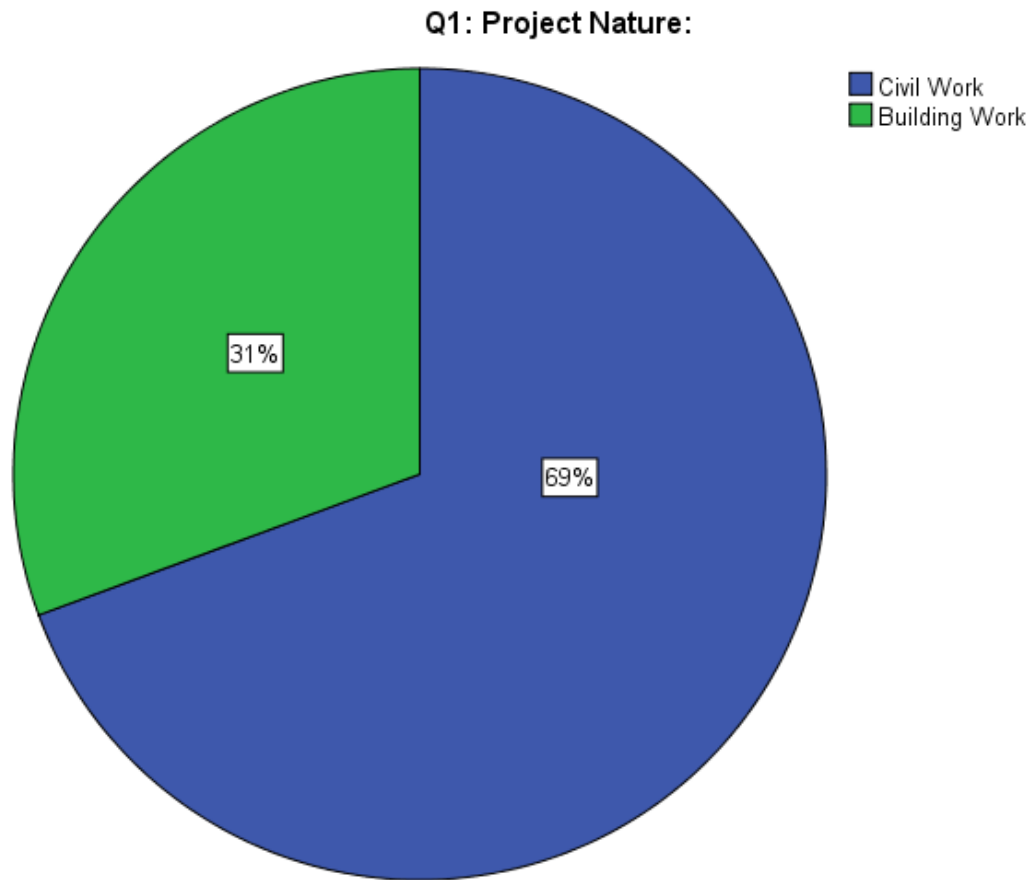
### 4.3 Section 1 – Background information

The questions in this section aim to establish the following information:

- Project information: nature of the project, client sector and cost.

- Respondent information: role in the project, years of experience.

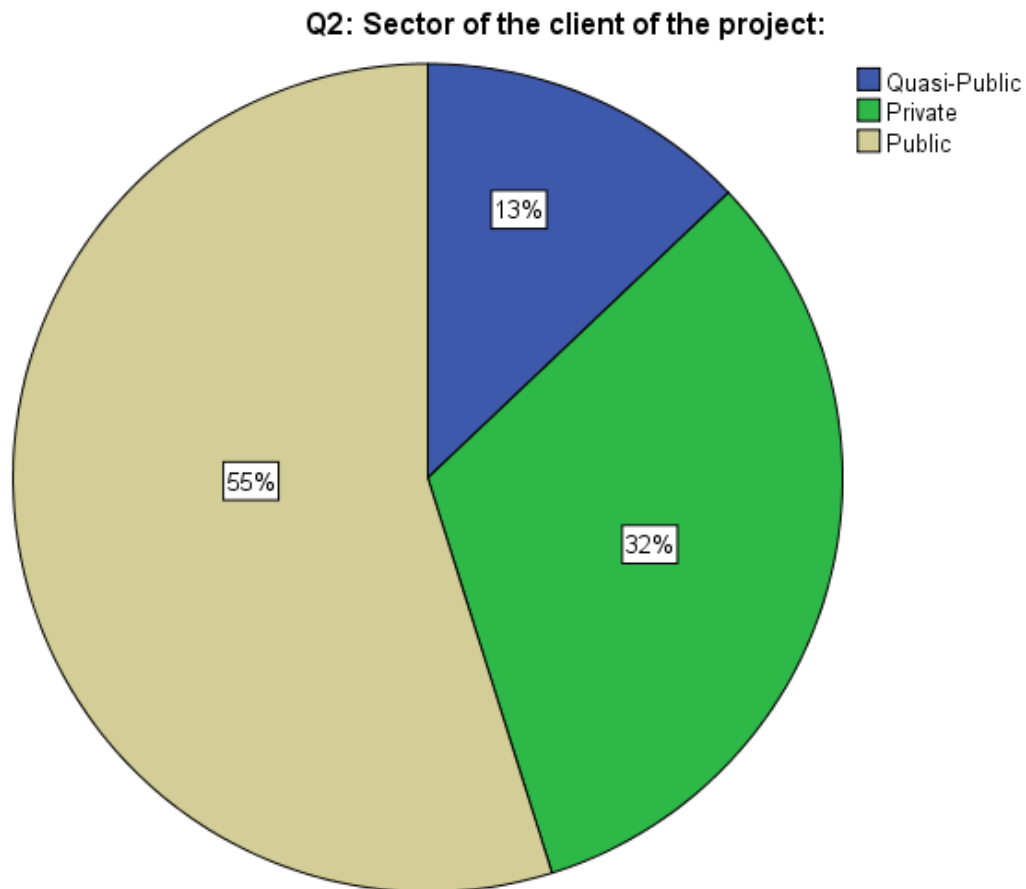
**Question 1: Nature of the project:**



**Figure 16: Responses to Question 1: Nature of the project**

At the start of the questionnaire, the respondents are instructed to base their answers on a single project, which is representative of their general stakeholder management approach. The responses to question 1 indicate that out of the sample size of 64 individuals involved in project management activities in the construction industry in Ireland, 69% of the respondents based their answers on civil engineering projects. The remaining 31% of the respondents' answers are based on building projects.

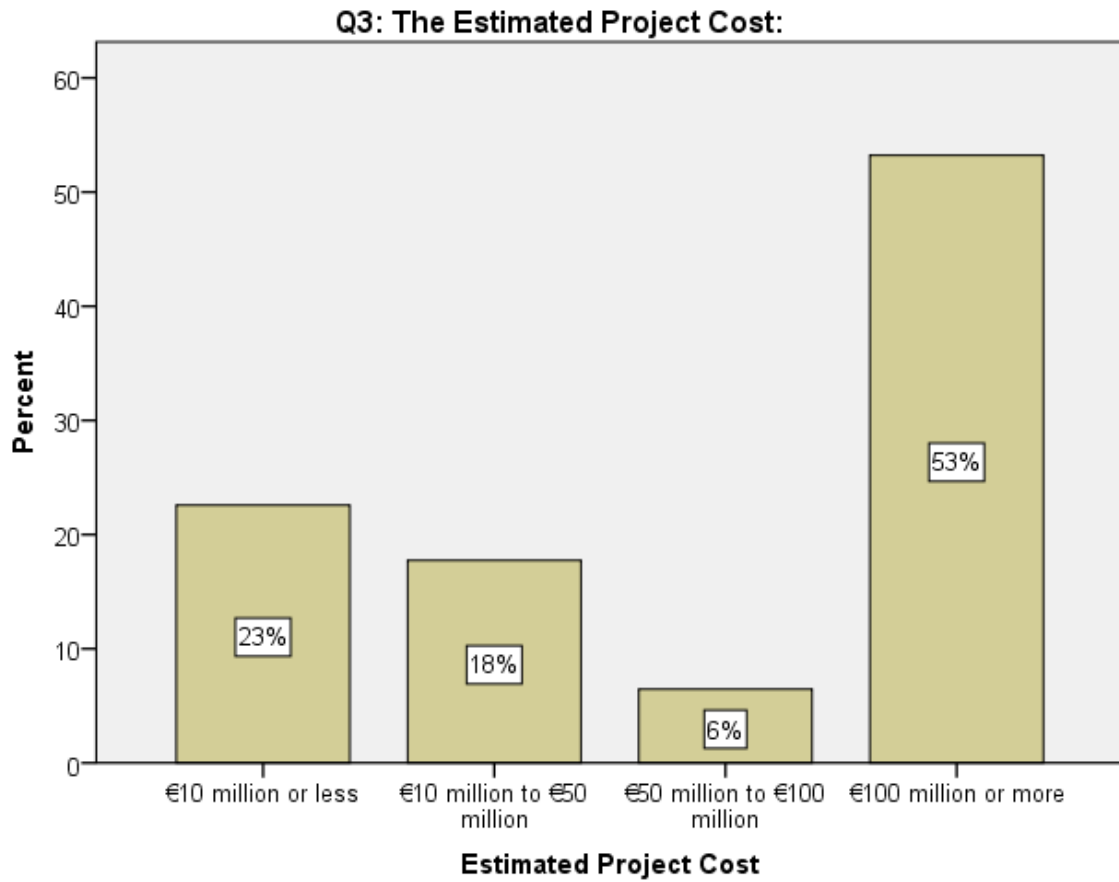
**Question 2: Sector of the client of the project:**



**Figure 17: Responses to Question 2: Sector of the client of the project**

The results revealed 55% of the respondents' projects were for clients from the public sector, followed by 32% for clients from the private sector and 13% for quasi-public clients. This is consistent with the results for question 1 as the majority of civil engineering projects undertaken in the construction industry in Ireland are for public sector clients.

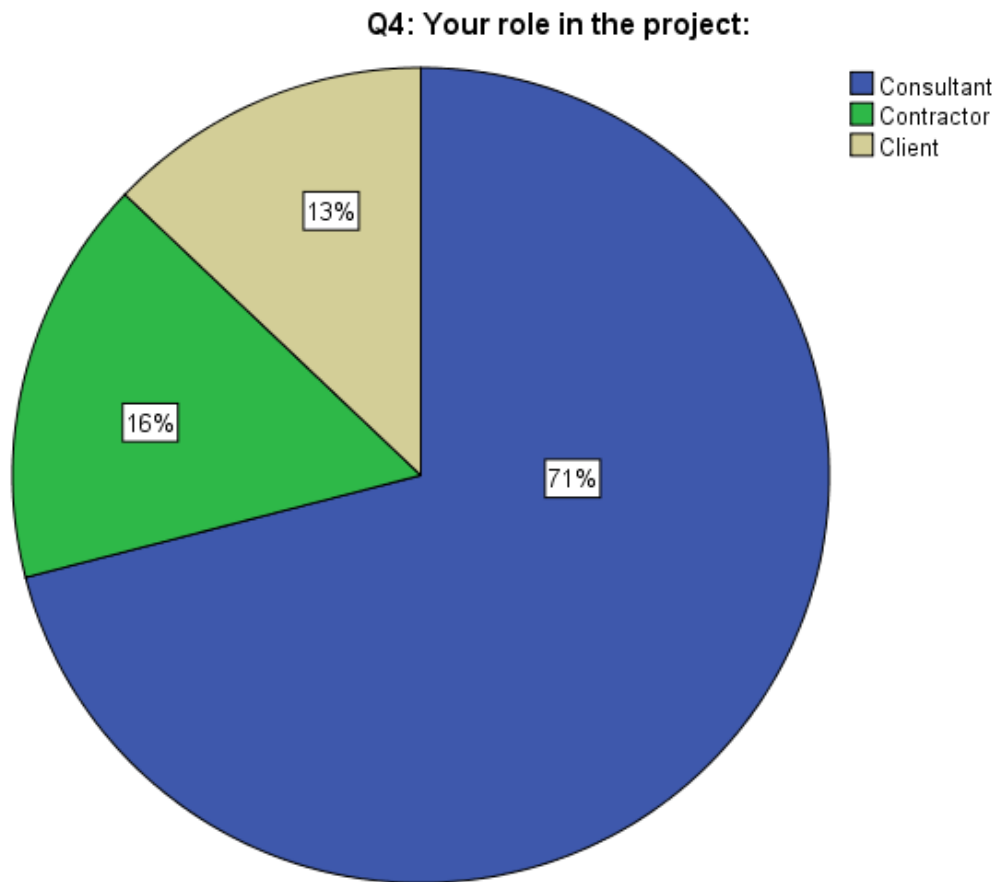
**Question 3: The estimated project cost:**



**Figure 18: Responses to Question 3: The estimated project cost**

According to the responses, the majority of the projects on which the respondents based their answers to the questionnaire had an estimated cost of €100 million or more (i.e. 55%). 24% of the sample population selected projects with an estimated cost of €10 million to €100 million. The remaining 23% of respondents based their answers on projects with an estimated cost of €10 million or less.

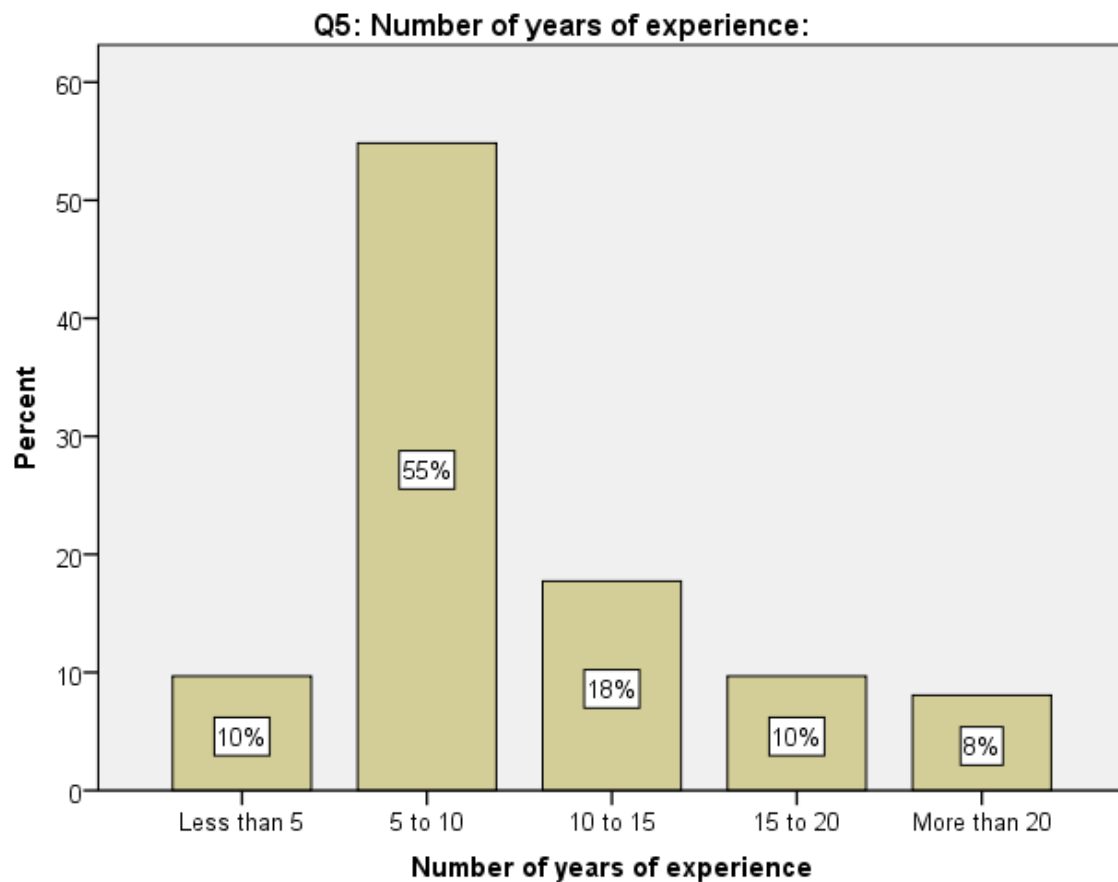
**Question 4: Your organisations role in the project:**



**Figure 19: Responses to Question 4: Role in the project**

According to the results, it is clear that the majority of the respondents are employed by consulting organisations (i.e. 71%) with the remaining respondents almost equally divided between contracting (16%) and client (13%) organisations. This indicates a significantly higher response rate to the questionnaire for individuals working in consulting organisations compared to individuals working in contracting and client organisations.

**Question 5: Number of years of experience:**



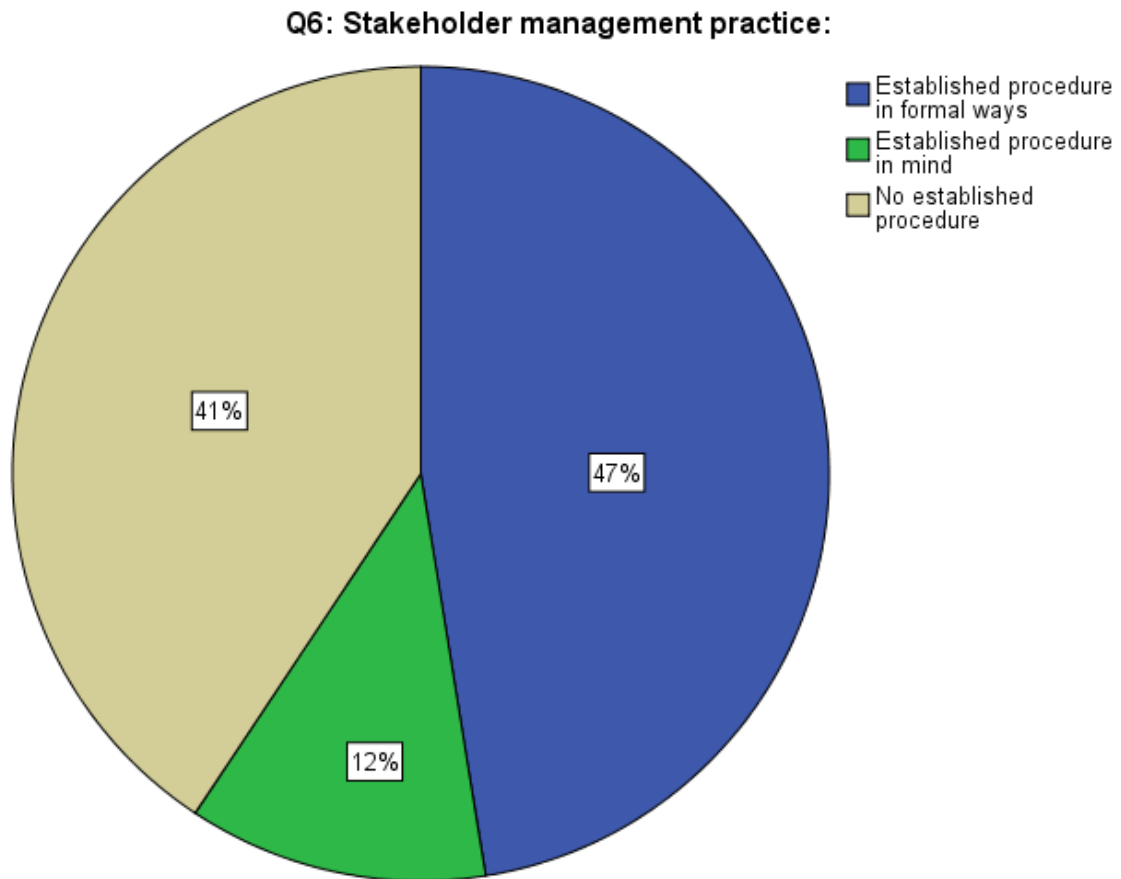
**Figure 20: Responses to Question 5: Number of years of experience**

According to the survey results, out of the 64 respondents, 55% of the sample population had 5-10 years of experience, followed by 18% with 10-15 years and a further 18% with more than 15 years. The remaining 10% of the respondents had less than 5 years experience.

#### **4.4 Section 2 – Stakeholder management approach**

The research objectives are concerned with determining the awareness amongst respondents of the key stakeholder management methods identified from the literature review. The questions in this section are designed to ascertain if the respondents have an established stakeholder management framework and utilise any specialised software to aid their stakeholder management practice.

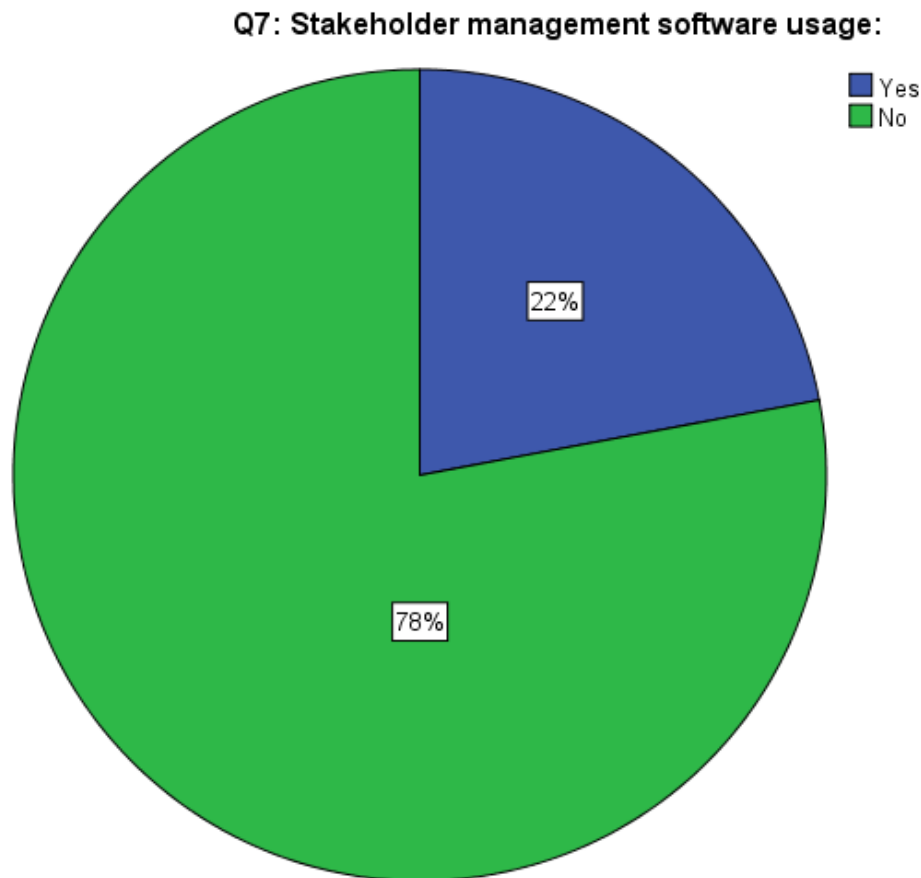
**Question 6: Which of the following statements best describes your stakeholder management practice?**



**Figure 21: Responses to Question 6: Stakeholder management practice**

The results show that over half of the respondents either implement their stakeholder management processes based on a procedure stored in their mind (i.e. 12%) or have no established stakeholder management procedure at all (i.e. 41%). The remaining 47% of the respondents implement stakeholder management processes based on a formal framework.

**Question 7: Do you use any stakeholder management software applications?**



**Figure 22: Responses to Question 7: Use of stakeholder management software**

A previous study in Hong Kong and Australia (Yang et al., 2011) suggests that only a small number of project managers in the construction industry use software applications specifically designed for stakeholder management activities. The results of this study in Ireland reveal that 22% of the respondents use stakeholder management software compared to 78% that do not.

**Question 8: Which stakeholder management software applications do you use (You can select more than one box)?**

Stakeholder management software application	Frequency
Stakeholder Circle <sup>TM</sup>	4
Darzin <sup>TM</sup>	0
Social Network Analysis (SNA) software	0
Consultation Manager <sup>TM</sup>	1
Centralised Stakeholder Communications System (CSCS) database	3
Custom-made database	4
Other	2
<b>Total</b>	<b>14</b>

**Table 9: Responses to Question 8: Type of stakeholder management software**

Out of the fourteen respondents that use stakeholder management applications, four selected Stakeholder Circle<sup>TM</sup>, which is widely identified in stakeholder management related research articles. Eight respondents use database software to aid their stakeholder management processes. Half of these developed their own in-house bespoke databases. Two respondents did not specify the stakeholder management software application they use. No respondents selected the commercial stakeholder management software Darzin<sup>TM</sup> or SNA software applications.

#### 4.5 Section 3 – Identifying project stakeholders

The questions in this section are used to determine the relative importance of project stakeholders and to measure the effectiveness of the methods adopted to identify project stakeholders.

**Question 9: To what extent do you think the following individuals or organisations are project stakeholders?**

Project stakeholders preferred by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Clients	4.76	98%	2%	0%
End Users	4.63	94%	6%	0%
Local Communities	4.49	90%	8%	2%
Local Authorities	4.29	88%	8%	4%
Financiers / Sponsors	4.18	82%	14%	4%
Governments	4.12	78%	18%	4%
Contractors	3.96	73%	23%	4%
Utilities	3.96	76%	18%	6%
Consultants	3.90	65%	29%	6%
General Public	3.82	65%	21%	14%
Special Interest Groups	3.78	70%	18%	12%
Suppliers	3.27	45%	27%	28%
The Media	2.80	23%	30%	47%
Competitors	2.51	12%	35%	53%

Note: Kendall's W = 0.428.

Level of significance = 0.000

**Table 10: Responses to Question 9: Identifying project stakeholders**

According to the mean values in Table 9, the respondents agreed that most of the fourteen groups were project stakeholders. The main discrepancy in the respondent opinion regarded the inclusion of 'suppliers', 'the media' and competitors. Particularly, in the cases of the media and competitors whose mean values were less than 3 (neutral) and the proportion of respondents that disagree or strongly disagree with their inclusion as project stakeholders are more than double the percentage of respondents that strongly agree or agree with their inclusion.

**Question 10: To what extent do you think the following methods are effective to identify project stakeholders?**

Approaches preferred by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Personal past experience	4.39	94%	6%	0%
Asking other stakeholders	4.27	92%	8%	0%
Public engagement methods	4.10	80%	10%	10%
Directed by higher authorities	3.94	76%	22%	2%
Guidelines in the organisation	3.88	74%	22%	4%
Professional services	3.71	57%	37%	6%
Social contacts	3.20	33%	43%	24%

Note: Kendall's W = 0.288.

Level of significance = 0.000

**Table 11: Responses to Question 10: Methods for identifying project stakeholders**

Respondents ranked personal past experience as the most effective method for identifying project stakeholders. 'Asking the obvious/identified stakeholders to identify others' and 'public engagement' were also considered as highly effective approaches. 'Directed by higher authorities', 'guidelines in the organisation', 'professional services (i.e. external to the project management team)' and 'social contacts' are also considered to be appropriate methods as the results of the questionnaire show mean values of 3 (neutral) or larger. However, just 33% of respondents strongly agree or agree with the use of 'social contacts' to identify project stakeholders

**Question 11: To what extent do you think the following issues about project stakeholders should be addressed?**

<b>Approaches preferred by the respondents</b>	<b>Mean</b>	<b>Strongly agree or agree</b>	<b>Neither agree nor disagree</b>	<b>Strongly disagree or disagree</b>
Addressing stakeholder needs	4.61	96%	4%	0%
Addressing stakeholder constraints	4.39	88%	12%	0%
Addressing stakeholder interests	4.33	90%	10%	0%
Addressing stakeholder commitments	4.20	82%	14%	4%

Note: Kendall's W = 0.138.

Level of significance = 0.000

**Table 12: Responses to Question11: Issues about project stakeholders**

The mean values show there was strong agreement amongst respondents that stakeholders' needs, constraints, interests and commitments should all be addressed.

## 4.6 Section 4 – Stakeholder assessment and analysis

This section is concerned with assessing the effectiveness of stakeholder analysis methods and the factors that influence project managers’ prioritisation of stakeholders.

**Question 12: To what extent do you think the following methods are effective to analyse project stakeholders’ information and interests?**

Approaches preferred by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Meetings	4.54	93%	7%	0%
Workshops	4.37	93%	0%	7%
Public consultation	4.37	92%	4%	4%
Focus Groups	4.02	80%	11%	9%
Interviews	3.85	74%	11%	15%
Personal past experience	3.83	72%	24%	4%
Questionnaires	3.63	67%	13%	20%
Professional services	3.52	54%	33%	13%
Formal memos	2.89	24%	41%	35%

Note: Kendall’s W = 0.343.

Level of significance = 0.000

**Table 13: Responses to Question 12: Assessing project stakeholders’ information and interests**

Respondents ranked ‘meetings’ as the most effective method for assessing stakeholders’ information and interests, closely followed by ‘workshops’ and ‘public consultation’. ‘Focus groups’ were also considered by respondents as a highly effective approach. ‘Interviews’, ‘personal past experience’, ‘questionnaires’ and ‘professional services are also considered to be appropriate methods as the results of the questionnaire show the mean values of 3 (neutral) or larger. Just 24% of respondents strongly agree or agree that ‘formal memos’ is an effective method for identifying stakeholders’ information and interests. This is the lowest ranked method and achieved a mean score of just 2.89.

**Question 13: To what extent do you think the following methods are effective to analyse the interrelationships (conflicts/coalitions) among project stakeholders?**

<b>Approaches preferred by the respondents</b>	<b>Mean</b>	<b>Strongly agree or agree</b>	<b>Neither agree nor disagree</b>	<b>Strongly disagree or disagree</b>
Workshops	4.26	87%	11%	2%
Personal past experience	4.11	83%	15%	2%
Public consultation	3.96	71%	19%	11%
Interviews	3.76	70%	19%	11%
Social interaction	3.63	59%	28%	13%
Professional services	3.54	59%	28%	13%
Questionnaires	3.48	61%	22%	17%
Directed by higher authorities	3.39	50%	33%	17%

Note: Kendall's W = 0.143.

Level of significance = 0.000

**Table 14: Responses to Question 13: Analysing project stakeholders relationships**

Respondents ranked 'workshops' as the most effective method for analysing stakeholders' interrelationships. 'Personal past experience' and 'public consultation' were also considered as highly effective approaches with mean values of 4.11 and 3.96, respectively. The remaining methods are also considered to be appropriate as the results of the questionnaire show mean values of 3 (neutral) or larger. 'Directed by higher authorities' was the lowest ranked method with a mean value of 3.39.

**Question 14: To what extent do you think the following factors are important in your decision-making when there are conflicts among stakeholders?**

Factors prioritised by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Power	4.22	83%	15%	2%
Legitimacy	4.09	85%	13%	2%
Proximity	4.07	80%	13%	7%
Knowledge	3.70	72%	9%	19%
Urgency	3.67	58%	31%	11%
Position	3.57	65%	13%	22%
Directed by higher authorities	3.57	55%	28%	17%

Note: Kendall's W = 0.097.

Level of significance = 0.000

**Table 15: Responses to Question 14: Project stakeholders' attributes**

According to the results, 'power' is deemed the most important attribute for prioritising stakeholders. 'Legitimacy' and 'proximity' were also highly regarded by the respondents. 'Knowledge', 'urgency' and 'position' are also important factors, since their mean values are above 3. 'Directed by higher authorities' was considered the factor least important for prioritising stakeholders. However, it still has a mean value above 3, which suggests it should be considered by project managers during the decision-making process.

**Question 15: Which methods do you use to make decisions to deal with stakeholders (Please rate the methods based on a scale of 1 to 5 where 1 represents “never use” and 5 represents “always use”. Select “n/a” if you are uncertain in rating any statement)?**

Approaches preferred by the respondents	Mean (SD, variance)	5 (always use)	4	3	2	1 (never use)	N/A
Meetings	4.46	56%	33%	11%	0%	0%	0%
Personal past experience	4.09	31%	50%	13%	4%	0%	2%
Negotiations	3.84	22%	41%	24%	7%	0%	6%
Directed by higher authorities	3.83	26%	41%	24%	7%	2%	0%
Workshops	3.78	33%	30%	20%	11%	4%	2%
Using guidelines	3.71	24%	30%	35%	9%	0%	2%

**Table 16: Responses to Question 15: Frequency of use**

Meetings are the most popular approach, followed by personal past experience. Though the other approaches, i.e. negotiations, directed by higher authorities, workshops and using guidelines, are ranked lower, their mean values indicate they are also often used by project managers to develop strategies for dealing with stakeholders.

## 4.7 Section 5 – Stakeholder engagement

The questions in this section are used to determine the stakeholder engagement strategies and methods preferred by project managers in the Irish construction industry.

**Question 16: To what extent do you think the following types of strategies should be used in dealing with project stakeholders?**

Approaches preferred by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Compromise	4.46	98%	2%	0%
Concession	2.85	28%	33%	39%
Defence	2.09	11%	15%	74%
Holding	1.89	15%	7%	78%

Note: Kendall's W = 0.707.

Level of significance = 0.000

**Table 17: Responses to Question 16: Stakeholder engagement strategies**

The responses to this question about strategies for dealing with project stakeholder showed a strong preference among project managers towards cooperation, rather than confrontation, with stakeholders. The mean value of the compromise strategy is significantly greater than the mean values of the other three strategies and, significantly, the only strategy to obtain a mean value greater than 3 (neutral). There was mixed attitudes towards adopting a concession strategy. However, the vast majority of respondents strongly disagree or disagree with using defence (74%) or holding (78%) strategies. These results indicate it is believed that project managers should be proactive in engaging directly with stakeholders to resolve their issues.

**Question 17: To what extent do you think the following methods are effective to engage project stakeholders?**

Approaches preferred by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Meetings	4.39	96%	4%	0%
Workshops	4.22	89%	4%	7%
Negotiations	4.07	83%	15%	2%
Walking tour / site tour	3.98	78%	20%	2%
Phone	3.91	78%	15%	7%
Public engagement	3.89	78%	13%	9%
Media (e.g. radio, T.V., print)	3.50	57%	28%	15%
Interviews	3.48	50%	33%	17%
Social interaction	3.48	55%	30%	15%
Construction advice letter	3.43	55%	30%	15%
Website	3.35	54%	24%	22%
Questionnaires	3.26	46%	30%	24%
E-mail / fax	3.22	55%	13%	32%
Other social media	3.13	37%	41%	22%
Intranet	2.96	33%	37%	30%

Note: Kendall's W = 0.240.

Level of significance = 0.000

**Table 18: Responses to Question 17: Stakeholder engagement methods**

Out of the fifteen stakeholder engagement methods included in the question, respondents ranked meetings as the most effective method, closely followed by workshops and negotiations. Walking tour/site tour, phone and public engagement were also considered by respondents as highly effective approaches. Intranet and other types of social media were the lowest ranked stakeholder engagement methods. Both these methods attracted a significant number of neutral answers, which may indicate that a large proportion of project managers are still undecided about their effectiveness. The remaining methods were generally considered to be appropriate approaches by the respondents as the results show their mean values are greater than 3 (neutral).

#### 4.8 Section 6 – Stakeholder management and project success

The purpose of this question is to evaluate the impact of stakeholder management on project success criteria from the perspective of project managers.

**Question 18: To what extent do you think effective stakeholder management is a critical factor in the achievement of the following success criteria?**

Success criteria preferred by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Long-term stakeholder satisfaction	4.63	100%	0%	0%
Maintaining good relationships among stakeholders	4.46	93%	7%	0%
Avoiding delays in schedule	4.43	94%	2%	4%
Effective communication among stakeholders	4.41	92%	4%	4%
Avoiding cost overruns	4.24	87%	9%	4%
Meeting quality requirements	3.83	64%	27%	9%
Meeting environmental sustainability requirements	3.70	65%	20%	15%
Meeting health and safety requirements	3.54	48%	37%	15%

Note: Kendall's W = 0.275.

Level of significance = 0.000

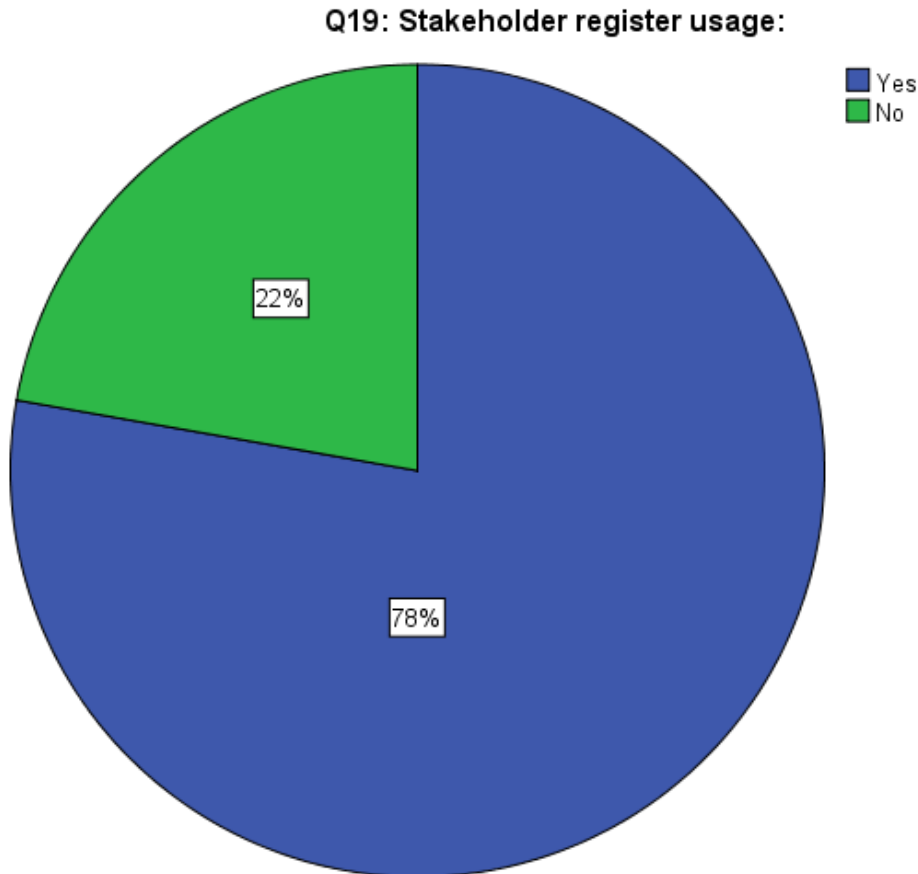
**Table 19: Responses to Question 18: Stakeholder management and project success**

The results to the survey show that all respondents strongly agree or agree that effective stakeholder management is a critical factor in the achievement of long-term stakeholder satisfaction. Mean values for avoiding cost overruns and delays in schedule and maintain good relationships and effective communication among stakeholders ranged from 4.24 to 4.46, which indicates these project success criteria are also strongly linked to the stakeholder management processes. Although ranked lower by the respondents, stakeholder management is still considered to have an important role in helping projects meet quality, environmental sustainability and health and safety requirements.

#### 4.9 Section 7 – Project stakeholder register

The final section of the questionnaire is included to estimate the proportion of project managers that maintain project stakeholder registers on their projects and to assess the type of stakeholder information that should be documented.

**Question 19: Were the stakeholders documented in a project stakeholder register?**



**Figure 23: Responses to Question 19: Project stakeholder register**

The results of this study reveal that 78% of the respondents documented the stakeholders in a project stakeholder register. The remaining 22% of the project managers that responded to the survey did not use a stakeholder register during their project.

**Question 20: To what extent do you think the following information about project stakeholders should be included in the project stakeholder register?**

Stakeholder information preferred by the respondents	Mean	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Stakeholder identification information	4.54	96%	4%	0%
Stakeholder requirements of the project	4.28	89%	9%	2%
Stages in project life cycle of interest to stakeholder	4.04	80%	16%	4%
Stakeholder classification (i.e. internal or external)	4.04	81%	15%	4%
Stakeholder expectations of the project	3.83	65%	22%	13%
Stakeholder potential influence in the project	3.69	64%	20%	16%
Stakeholder position towards the project	3.38	53%	22%	25%

Note: Kendall's W = 0.186.

Level of significance = 0.000

**Table 20: Responses to Question 20: Project stakeholder information and documentation**

Respondents ranked stakeholder identification information as the most important data to be included in the project stakeholder register. A significant proportion of respondents also strongly felt that stakeholder requirements (89%), stages in the project life cycle of interest (80%) and stakeholder classification (81%) should also be documented in the register. To a lesser extent, most respondents deemed information pertaining to stakeholder expectations, potential influence and position of sufficient importance for inclusion in the project stakeholder register.

## **Chapter 5. DISCUSSION**

The literature review in chapter 2 presents the key stakeholder management methods as recognised in stakeholder management theory and previous studies of the construction industry in other countries. The results of the survey undertaken to determine the awareness of the key stakeholder management methods amongst project managers in the construction industry in Ireland are described on chapter 4. The findings of the literature review and survey are discussed and compared in the following sections of this chapter.

### **5.1 Stakeholder management approach**

Numerous authors (e.g. Bourne and Walker, 2006, Reed et al., 2009, Olander, 2006) have used case study research to demonstrate that adopting a formal stakeholder management methodology helps project managers to deliver successful projects. However, Yang et al. (2011) and Reed et al. (2009) contend that just a small proportion of project managers use standardised stakeholder management methodologies in practice.

The survey results show that almost half (i.e. 47%) of the respondents from the Irish construction industry has an established approach to stakeholder management that is implemented in formal ways. This is a significant proportion of the total number of respondents and suggests that there may be higher use of formal stakeholder management methodologies amongst project managers in the construction industry in Ireland compared to other countries.

Based on interviews with experienced project managers in Hong Kong, Yang et al. (2011) concluded that there is not likely to be significant usage of stakeholder management software applications amongst project managers in the construction industry in Hong Kong. Reed et al. (2009) also indicate that more complex stakeholder analysis software packages (e.g. SNA software applications) are not widely used by project managers due to time constraints.

The survey results show 22% of respondents use stakeholder management software applications. However, the majority of these individuals indicated that they use general database applications rather than the more powerful commercially available stakeholder management and analysis applications (e.g. Stakeholder Circle<sup>TM</sup>, Darzin<sup>TM</sup>, SNA programs). Hence, it is concluded that the findings of the survey regarding the use of commercial

software applications designed specifically for stakeholder management is generally in agreement with the research undertaken in other countries.

## **5.2 Identifying project stakeholders**

Construction projects are usually complex and involve large numbers and categories of stakeholders. Olander (2006) proposed a list of the potential stakeholders in a construction project divided into internal and external stakeholders. The results of the survey generally agreed that the generic stakeholders identified by Olander (2006) have an important role in construction projects in Ireland and all their needs, commitments, constraints and interests should be collated.

Similarly to studies in Vietnam (Nguyen et al., 2009) and Hong Kong (Yang et al., 2011), the results of the survey showed client organisations are considered the most important stakeholder. Furthermore, the classification of the media and competitors as the lowest ranked stakeholders agreed with the findings of Yang et al. (2011). These findings support the supposition presented by Olander and Landin (2005) that the media do not have an outright stake in construction projects but can significantly influence legitimate stakeholders.

In terms of methods for identifying project stakeholders, the results of the survey indicate personal past experience and asking the obvious/identified stakeholders to identify others are the most effective methods, which is in agreement with Yang et al. (2011).

## **5.3 Stakeholder assessment and analysis**

In addition to identifying project stakeholders, the stakeholder analysis element of the stakeholder management process involves identifying project stakeholders' interests, assessing project stakeholders' influence and analysing the relationships amongst project stakeholders (Reed et al., 2009, Yang et al., 2011).

The results of the survey are in agreement with findings from the Hong Kong survey (Yang et al., 2011) that public consultation, focus groups, personal past experience, interviews and questionnaires are all effective methods for assessing stakeholders' information and interests. Conversely, the survey findings suggest that formal memos are not an appropriate method. This slightly contradicts the findings by Yang et al. (2011). In their study, formal memos achieved a mean score greater than 3 (neutral), despite having the second lowest ranking. Interestingly, meetings and workshops, which scored the highest rankings in the survey of project managers in the Irish construction industry, did not feature in the Hong Kong survey.

However, these methods were identified in the same study through interviews with experienced project managers (Yang et al., 2011).

According to the results, stakeholders' power to the project is deemed the most important attribute for prioritising stakeholders. This is in line with findings from previous studies by Bourne and Walker (2005) and Yang et al. (2011). Legitimacy and urgency were also regarded by the respondents as important factor thus validating the salient model proposed by Mitchell et al. (1997). Interestingly, although it achieved a mean value greater than 3, the survey results show directed by higher authorities was considered the least important factor for prioritising stakeholders. This is in sharp contrast to the study by Yang et al. (2011), which deemed only stakeholder power was of more importance than directives from higher authorities. This may reflect cultural differences between the construction industries in Ireland and Hong Kong.

In terms of methods for analysing interrelationships among project stakeholders, the results of the survey indicate workshops, personal past experience, public consultation and interviews made up the top four rankings, which is in agreement with Yang et al. (2011).

The survey results suggest meetings are the most popular approach for dealing with project stakeholders in the construction industry in Ireland. This is unsurprising given the respondents ranked meetings as the most effective method for assessing stakeholders' information and interests and engaging with stakeholders. Conversely, although it achieved a mean value of 3.74, workshops were the second least popular method despite being ranked by respondents as the most effective method for analysing stakeholders' interrelationships.

According to the *PMBOK® Guide*, the outcomes of the stakeholder analysis processes should be documented in a Project Stakeholder Register (PMI, 2013). The *PMBOK® Guide* recommends including sufficient information in the Project Stakeholder register to identify, assess and classify the project stakeholders (PMI, 2013).

According to the results of the survey, the vast majority of project managers follow the advice of the *PMBOK® Guide* and maintain a Project Stakeholder Register. In terms of the information that should be included in the register, virtually all of the respondents agreed that stakeholder identification information should be included in the project stakeholder register. Stakeholder requirements, stages in the project life cycle of interest and stakeholder classification also scored high mean values above 4.

## **5.4 Stakeholder engagement**

Rowlinson and Cheung (2008) proposed a stakeholder management model that emphasised the need to empower stakeholders in the project decision-making process. Furthermore, Chandra et al. (2012) discovered that there are strong positive correlations between levels of stakeholder engagement and stakeholder psychological empowerment and the achievement of project success criteria. These findings suggest that project managers should develop strategies that encourage stakeholder involvement and empowerment.

The survey responses indicate that project managers in the Irish construction industry are in agreement with the findings of the literature review. The respondents showed a strong preference for the compromise strategy, which emphasises a cooperative relationship between the project team and stakeholders. In keeping with this attitude, the respondents were generally against using defence or holding strategies. These findings are in accordance with the results of the Hong Kong survey by Yang et al. (2011).

In terms of stakeholder engagement methods, the results of the survey indicate project managers in the construction industry in Ireland consider meetings workshops and negotiations as the most effective approaches. This is in line with the findings from the previous questions, which show meetings and workshops as the most effective methods for stakeholder assessment and analysis. Kendall's Coefficient of Concordance,  $W$  is 0.240, which indicates there is general agreement among project managers on the rankings of the stakeholder engagement methods. However, the relatively low value of Kendall's  $W$  suggests that the most effective stakeholder engagement approach may vary depending on the situation. This is in agreement with the finding by Yang et al. (2011) and Reed et al. (2009).

## **5.5 Stakeholder management and project success**

Numerous studies (e.g. Chandra et al., 2012, Turner and Ziolin, 2012, Shahu et al., 2012) highlight the significant influence of stakeholder management on the achievement of project success. Particularly, studies of construction projects in India (Doloi et al., 2012) and Australia (Doloi, 2013) emphasised the critical role of stakeholder management in the realisation of project success criteria.

The results to the survey show that most respondents strongly agree or agree that effective stakeholder management is a critical factor in the achievement of both hard (e.g. cost,

schedule, quality) and soft (e.g. long-term stakeholder satisfaction, effective communication among stakeholders) project success criteria.

## **Chapter 6. CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS**

This chapter contains the conclusions, limitations and recommendations regarding the findings of this study. Since the 1990's there has been paradigm shift by companies in all industries towards the utilisation of projects to manage their business. Furthermore, logic dictates that the company which manages its projects in the most effective and efficient way and delivers projects successfully on a consistent basis are likely to be the leader within their industry (Larson and Gray, 2011). Project stakeholder management is widely recognised as a key critical factor in the delivery of successful projects (Mohan and Paila, 2013).

The purpose of the study is to gain a better understanding of project stakeholder management and investigate the awareness of this subject amongst project managers in the construction industry in Ireland. This research purpose has been achieved by answering the research question and satisfying all the stated objectives. The following section provides a summary of the findings.

### **6.1 Conclusions**

#### **Stakeholder Management and Project Success**

Effective stakeholder management is a critical factor in the successful delivery of construction projects (Shahu et al., 2013, Turner and Ziolin, 2012). Specifically, stakeholder management has a key role in the achievement of both hard (e.g. cost) and soft (e.g. stakeholder satisfaction) project success criteria (Doloi et al., 2012, Doloi, 2013). By adopting a formal stakeholder management methodology, project managers increase the likelihood of delivering their project successfully (Bourne and Walker, 2006).

#### **Stakeholder Analysis**

Stakeholder management models proposed in previous research studies generally consist of two interrelated elements, stakeholder analysis and stakeholder engagement (Yang et al., 2011). Stakeholder analysis involves three processes, namely identifying project stakeholders and their interests, assessing project stakeholders' influence and analysing the relationships amongst project stakeholders (Reed et al., 2009).

Project stakeholders are typically documented in a project stakeholder register, which should include sufficient information to identify, assess and classify the project stakeholders (PMI, 2013). Due to their complexity, construction projects typically involve a large number and

variety of stakeholders. The project client organisation is generally considered the most important stakeholder (Nguyen et al., 2009, Yang et al., 2011).

The most widely accepted stakeholder analysis models typically evaluate the impact and influence of stakeholders and, hence, prioritise stakeholders based on a selection of the following attributes: power, proximity, legitimacy, urgency, interest and position or attitude towards the project (Mitchell et al., 1997, Nguyen et al., 2009). Stakeholder power is often deemed the most important of these attributes by the project manager. However, these stakeholder classification methods are limited since they do not address the management of stakeholder relationships (Reed et al., 2009). Social Network Analysis (SNA) can be combined with other stakeholder assessment techniques to overcome this limitation (Mohan and Paila, 2013).

### **Stakeholder Engagement**

Stakeholder engagement strategies should be designed to correspond to the project stakeholders' expectations and needs and developed based on the stakeholders' interest in the project and level of support for the project. Typical stakeholder engagement strategies include holding, defence, compromise and concession (Freeman, 1984). Strategies that encourage stakeholder engagement and empowerment are more likely to lead to project success than strategies that advocate ignoring or limiting communications with stakeholders (Chandra et al., 2012). There are a wide variety of stakeholder engagement methods available to project managers in the construction industry. Most methods are multifunctional in that they can also be used for stakeholder identification and analysis (Yang et al., 2011).

The stakeholder analysis and engagement methods used in practice are dependent on the project characteristics. A combination of several stakeholder analysis and engagement methods is considered to be the most effective way of managing stakeholders (Reed et al., 2009).

### **Findings of study of awareness of project managers in Irish construction industry**

The findings of the survey of project managers in the construction industry in Ireland generally agreed with the conclusions from the literature review. Respondents considered the vast majority of analysis and engagement methods as effective. The overall low values obtained for Kendall's Coefficient of Concordance,  $W$ , indicate the particular method adopted is dependent on the characteristics of the project and stakeholders. In comparison to studies in other countries, the results suggest project managers in the Irish construction

industry are more likely to undertake stakeholder management processes in accordance with a standardised methodology and formal analysis methods. In addition, the respondents strongly advocate the use of a project stakeholder register and the central role of stakeholder management in the delivery of successful projects.

## **6.2 Research limitations**

This study adopted a standard approach to determine the awareness of stakeholder management amongst project managers in the construction industry in Ireland. However, it is important to acknowledge that there are several limitations. The key limitations of this study are detailed as follows:

- The questionnaire survey issued to project managers comprised closed-questions, which restricted the responses. Specifically, in the questions that required the respondents to rate the effectiveness of various stakeholder analysis and engagement methods, it was necessary to limit the methods to a reasonable number. Particularly, some of the stakeholder engagement methods identified by Yang et al. (2011) were grouped together under the monikers of ‘public engagement’ or ‘public consultation’.
- The study is also limited in terms of its generalisability. All of the respondents worked in the construction industry in Ireland. Therefore, the findings of the study may not be in agreement with the attitudes of project managers involved in construction projects in other countries. However, the results were generally in agreement with previous research in other countries, particularly a survey of project managers in the construction industry in Hong Kong.
- A further limitation is that out of the sample size of 64, individuals from consulting organisations made up 71% of the respondents compared with 16% from contracting companies and 13% from client organisations. This may create a level of bias in the overall results towards the views of engineering consultants. However, it should be noted that cross-tabulation of results based on role of the respondents’ organisation in the project did not show any statistically significant differences in the mean values.

## **6.3 Recommendations for further research**

Project managers’ perception of stakeholder management could be influenced by factors including their organisation’s role in the project. Since only 16% of the respondents came from contracting organisations and 13% from client organisations, it is not possible to assess

if the role of the project manager's company impacts on their perceptions of stakeholder management based on the results of this survey. Therefore, further research involving larger sample sizes from these types of organisations will help increase the generalisability of these findings.

Furthermore, a study that focuses specifically on stakeholder engagement methods could be undertaken to overcome the limitation caused by the need to group a number of individual public engagement type methods together.

The generalisability of the findings would be enhanced by conducting similar representative studies in other countries.

## **Chapter 7. BIBLIOGRAPHY**

- ‘SurveyMonkey.com<sup>TM</sup>’ (no date). Available at: <https://www.surveymonkey.com/>
- Al-Ahmad, W., Al-Fagih, K., Khanfar, K., Alsamara, K., Abuleil, S. and Abu-Salem, H. (2009) ‘A Taxonomy of an IT Project Failure: Root Causes’, *International Management Review*, 5 (1), pp. 93-104. EBSCOhost [Online].
- Association of Consulting Engineers Ireland (2014) ‘Members Directory’. Available at: <http://www.acei.ie/memberdirectory.asp> (Accessed 10 June 2014).
- Atkin, B. and Skitmore, M. (2008) ‘Editorial: stakeholder management in construction’, *Construction Management and Economics*, 6 (26), pp.549-552.
- Atkinson, R. (1999) ‘Project management: cost, time and quality, two best guesses and a phenomenon, it’s time to accept other success criteria’, *International Journal of Project Management*, 17 (6), pp. 337-342.
- Beach, S., Keast, R. and Pickernell, D. (2012) ‘Unpacking the connections between network and stakeholder management and their application to road infrastructure networks in Queensland’, *Public Management Review*, 14 (5), pp.609-629.
- Beringer, C., Jonas, D. and Gemünden, H.G. (2012) ‘Establishing Project Portfolio Management: An Exploratory Analysis of the Influence of Internal Stakeholders’ Interactions’, *Project Management Journal*, 43 (6), pp. 16-32. Business Source Complete, EBSCOhost [Online].
- Blaxter, L. Hughes, C. and Tight, M. (2010) *How to Research*. 4th edn. Buckingham: Open University Press.
- Bourne, L. (2005) ‘Project relationship management and the Stakeholder Circle<sup>TM</sup>’, PhD Thesis, RMIT University. Melbourne, Australia.
- Bourne, L. and Walker, D. (2006) 'Visualizing Stakeholder Influence - Two Australian Examples', *Project Management Journal*, 37 (1), pp. 5-21. Business Source Complete, EBSCOhost [Online].
- Bourne, L. and Walker, D.H.T. (2005) ‘Visualising stakeholder influence – two Australian examples’, *Project Management Journal*, 37 (1), pp.5-22.
- Bryman, A. (2006) ‘Integrating quantitative and qualitative research: how is it done?’, *Qualitative Research*, 6 (2), pp.97-113.
- Chandra, H.P., Indarto, Wiguna, L.P.A. and Kaming, P.F. (2012) ‘Model of stakeholder influence on project success, an important finding from construction project in East Java’ *International Journal of Academic Research*, 4 (2), pp.41-45.
- Chinyio, E.A. and Akintoye, A. (2008), ‘Practical approaches for engaging stakeholders: findings from the UK’, *Construction Management and Economics*, 26 (6), pp. 591-599.
- Chou, J.S. and Yang, J.G. (2012) ‘Project Management Knowledge and Effects on Construction Project Outcomes: An Empirical Study’, *Project Management Journal*, 43 (5), pp.47-67.
- Chua, A.Y.K. (2009) ‘Exhuming IT projects from their graves: An analysis of eight failure cases’, *Journal of Computer Information Systems*, pp.31-39. EBSCOhost [Online].

Collis, J. and Hussey, R. (2003) *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. 2nd edn. Basingstoke: Palgrave Macmillan.

Construction Industry Federation (2014) 'Members Construction Annual Holidays 2013/14'. <http://cif.ie/news-feed/news/384-construction-annual-holidays-2013-2014.html> (Accessed 10 June 2014).

Construction Industry Federation (2014) 'Members Directory'. Available at: <http://cif.ie/membership-directory.html> (Accessed 10 June 2014).

Doloi, H., Sawhney, A., Iyer, K.C., and Rentala, R. (2012) 'Analyzing Factors Affecting Delays in Indian Construction Projects', *International Journal of Project Management*, 30 (4), pp. 479-489.

Doloi, H. (2013) 'Cost Overruns and Failure in Project Management: Understanding the Roles of Key Stakeholders in Construction Projects', *Journal of Construction Engineering and Management*, 139 (3), pp.267-279.

Freeman, R. and Reed, D. (1983) 'Stockholders and Stakeholders: A New Perspective on Corporate Governance', *California Management Review*, 25 (3), pp. 88-106. Business Source Complete, EBSCOhost [Online].

Freeman, R. E. (1984) *Strategic Management: A Stakeholder Approach*. 1<sup>st</sup> edn. Boston: Pitman.

Friedman, A.L. and Miles, S. (2002) 'Developing Stakeholder Theory', *Journal of Management Studies*, 39 (1). Business Source Complete, EBSCOhost [Online].

Friedman, A.L. and Miles, S. (2006) *Stakeholders Theory and Practice*. UK: Oxford University Press.

Hair, J.F., Babin, B.; Money, A.H. and Samouel, P. (2003) 'Essentials of Business Research Methods', Hoboken, New Jersey: John Wiley & Sons, Inc.

Harrison, J. S. and Freeman, R. E. (1999) 'Stakeholders, social responsibility, and performance: Empirical evidence and theoretical perspectives', *Academy of Management Journal*, 42 (5), pp. 479–487.

Hofstee, E. (2006) Extract from *Constructing a Good Dissertation: A Practical Guide to Finishing a Master's, MBA or PhD on Schedule*. [Online] Available at: [www.exactica.co.za](http://www.exactica.co.za).

Irish Times (2014) 'The Top 1000 Companies'. Available at: <http://www.top1000.ie/> (Accessed: 10 June 2014).

Johnson, G., Scholes, K. and Whittington, R. (2008) *Exploring Corporate Strategy – Text and Cases*. 8th edn. Harlow: Pearson Education Limited.

Johnson, G., Scholes, K. and Whittington, R. (2011) *Exploring Corporate Strategy – Text and Cases*. 9th edn. Harlow: Pearson Education Limited.

Kappelman, A.L., McKeeman, R. and Zhang, L. (2006) 'Early warning signs of IT project failure: The dominant dozen', *Information Systems Management Journal*, pp.31-37. EBSCOhost [Online].

Kerzner, H. (2009). *Project management*. Hoboken, New Jersey: John Wiley & Sons, Inc..

- Kraska-Miller, M. (2013) 'Nonparametric Statistics for Social and Behavioral Sciences', CRC Press Inc.
- Larson, E.W. and Gray, C.F. (2011). Project Management: The Managerial Process. 5th edn. New York, NY: McGraw-Hill / Irwin.
- Madter, N., Brookes, N.J., Bower, D.A. and Hagan, G. (2012) 'Exploring project management continuing professional development in engineering construction', *Construction Management and Economics*, 8 (30), pp.639-651.
- McElroy, B. and Mills, C. (2000) 'Managing stakeholders', *Gower Handbook of Project Management*, 3rd edn, Gower Publishing Limited, Aldershot, pp. 757-75.
- Mitchell, R.K., Agle, B.R. and Wood, D.J. (1997) 'Toward a theory of stakeholder identification and salient defining the principle of who and what really counts', *Academy of Management Review*, 22 (4), pp. 853-997.
- Mohan, V. and Paila, A. (2013) 'Stakeholder Management in Infrastructure/Construction Projects: The Role Of Stakeholder Mapping And Social Network Analysis (SNA)', *Aweshkar Research Journal*, 15 (1), pp. 48-61. Business Source Complete, EBSCOhost [Online].
- Newcombe, R. (2003) 'From client to project stakeholders, a stakeholder mapping approach', *Construction Management Economics*, 23 (9/10), pp.762-784.
- Nguyen, N.H., Skitmore, M. and Wong, J.K.W. (2009) 'Stakeholder impact analysis of infrastructure project management in developing countries: A study of perception of project managers in state-owned engineering firms in Vietnam', *Construction Management and Economics*, 27 (11), pp.1129-1140.
- Olander, S. (2006) 'External Stakeholder Management' PhD Thesis, Lund University, Sweden.
- Olander, S. (2007) 'Stakeholder impact analysis in construction project management', *Construction Management & Economics*, 25 (3), pp. 277-287. Business Source Complete, EBSCOhost [Online].
- Olander, S. and Landin, A. (2005) 'Evaluation of stakeholder influence in the representation of construction projects', *International Journal of Project Management*, 23 (4), pp.321-328.
- Olander, S. and Landin, A. (2008) 'A comparative study of factors affecting the external stakeholder management process', *Construction Management and Economics*, 26 (6), pp.553-561.
- Philips, R., Freeman, R.E. and Wicks, A.C. (2003) 'What stakeholder theory is not', *Business Ethics Quarterly*, 13 (4), pp.479-502.
- PMI (2013) *A Guide to the Project Management Body of Knowledge (PMBOK Guide)*. 5th edn. Newtown Square, PA. Project Management Institute.
- Reed, M.S. (2008). 'Stakeholder participation for environmental management: A literature review', *Biological Conservation*, 141, pp.2417-2431.
- Reed, M.S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C.H. and Stringer, L.C. (2009), 'Who's in and why? A typology of stakeholder analysis methods for natural resource management', *Journal of Environmental Management*, 90, pp. 1933-1949.
- Rowley, T.J. (1997) 'Moving beyond dyadic ties: A network theory of stakeholder influences', *Academy of Management Review*, 22 (4), pp.887-910.

- Rowlinson, S. and Cheung, Y.K.F. (2008) 'Stakeholder management through empowerment: Modelling project success', *Construction Management and Economics*, 26 (6), pp. 611-623. Business Source Complete, EBSCOhost, [Online].
- Saunders, M.; Lewis, P. and Thornhill, A. (2009) *Research Methods for Business Students*. 5th edn. London: Pearson Education Ltd.
- Shahu, R., Pundir, A.K. and Ganapathy, L. (2012) 'An Empirical Study on Flexibility: A Critical Success Factor of Construction Projects', *Global Journal of Flexible Systems Management*, 13 (3), pp.123-128.
- Society of Chartered Surveyors Ireland (2012) 'The Irish Construction Industry in 2012'. Available at: <http://www.scsi.ie/constr2012> (Accessed 25 June 2014).
- Society of Chartered Surveyors Ireland (2014) 'Construction Sector Outlook 2014'. Available at: [http://www.scsi.ie/construction\\_sector\\_outlook\\_2014](http://www.scsi.ie/construction_sector_outlook_2014) (Accessed 25 June 2014).
- Sorooshiana S., Ismailb, Y., Ibrahima, A., Mansora A. and Sialia, F. (2013) 'Project Analysis: A Research Gap', *Journal of Management and Science*, 3 (4), pp.69-70.
- Susser, B.S. (2012) 'How to Effectively Manage IT Project Risks', *Journal of Management and Business*, 2, pp.41-XX. EBSCOhost [Online].
- Tashakkori, A and Teddlie, CH. (2010) 'Putting the human back in human research methodology'. *Journal of Mixed Methods Research*, 4 (2), pp.219-242. Business Source Complete, EBSCOhost [online].
- Turner, R. and Zolin, R. (2012) 'Forecasting Success on Large Projects: Developing Reliable Scales to Predict Multiple Perspectives by Multiple Stakeholders Over Multiple Time Frames', *Project Management Journal*, Vol. 43, No. 5, 87-99.
- Wang, J., Jiaoju, G, and Qiang, L (2013) 'Stakeholder involvement in the drinking water supply system: a case study of stakeholder analysis in China', *Journal Of Water Supply: Research & Technology-AQUA*, 62 (8), pp. 507-514. Academic Search Complete, EBSCOhost [Online].
- Windapo, A.O. and Cattell, K. (2013) 'The South African Construction Industry: Perceptions of Key Challenges Facing Its Performance, Development and Growth', *Journal of Construction in Developing Countries*, 18 (2), pp.65-79.
- Yang, J. (2010) 'A Framework for Stakeholder Management in Construction Projects', PhD Thesis, The Hong Kong Polytechnik University. Kowloon, Hong Kong.
- Yang, J., Shen, G.Q., Ho, M., Drew, D.S. and Chan, A.P.C. (2009) 'Exploring critical success factors for stakeholder management in construction projects', *Journal of Civil Engineering and Management*, 15(4), pp. 337-348.
- Yang, J., Shen, P.Q., Bourne, L., Man-Fong Ho, C. and Xue, X. (2011) 'A typology of operational approaches for stakeholder analysis and engagement', *Construction Management & Economics*, 29 (2), pp. 145-162. Business Source Complete, EBSCOhost [Online].
- Yong, Y.C. and Mustaffa, N.E. (2012) 'Analysis of Factors Critical to Construction Project Success in Malaysia', *Engineering, Construction and Architectural Management*, 19 (5), pp. 543-556.
- Young, T.L. (2006) *Successful Project Management*. 2nd edn. UK: Kogan Page.

## Appendix A – Results of survey in Hong Kong by Yang et al. (2011)

Purposes	Methods	Mean	Kendall's W <sup>a</sup>
Identifying project stakeholders	Personal past experience	4.15	0.094
	Asking the obvious/identified stakeholders to identify others	3.70	
	Guidelines in the organisation	3.61	
	Professional services	3.55	
	Directed by higher authorities	3.52	
Identifying stakeholders' interests / information	Focus group meetings	4.28	0.197
	Personal past experience	3.80	
	Interviews	3.78	
	Public consultation approaches	3.75	
	Formal memos	3.45	
	Questionnaires	3.23	
Assessing stakeholders' influence	The stakeholders' power	4.17	0.184
	The directives from higher authorities	4.08	
	The urgency of the stakeholders' requests	3.77	
	The stakeholders' proximity	3.60	
Analysing stakeholders' relationships	Personal past experience	3.91	0.067
	Workshops	3.90	
	Interviews	3.79	
	Public engagement approaches	3.71	
	Surveys	3.47	
Stakeholder engagement	Meetings	4.31	0.202
	Workshops	3.96	
	Negotiations	3.92	
	Interviews	3.86	
	Social contacts	3.67	
	Public engagement approaches	3.63	
	Surveys	3.26	

**Table A1: Effectiveness of approaches for analysing and engaging stakeholder in Hong Kong**

Source: Yang et al. (2011)

## **Appendix B – Questionnaire**

## Appendix C – Research Timeplan

ACTIVITY UNDERTAKEN												
Month	June					July				August		
Week beginning Monday	2	9	16	23	30	7	14	21	28	4	11	18
Week	1	2	3	4	5	6	7	8	9	10	11	12
Conduct literature research and write and finalise literature chapter												
Identify and contact suitable companies for research investigation												
Finalise research question and objectives												
Construct a methodology strategy												
Construct quantitative surveys												
Ethical approval process												
Write / finalise method chapter												
Issue questionnaire												
Conduct primary data collection												
Conduct data analysis phase												
Write / finalise results chapter												
Write / finalise discussion, conclusions & abstract												
Referencing, appendices & final proofing												