

**Managing international projects:
The contribution of locally employed staff**

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ABSTRACT

Purpose/objectives:

In an international and globalised world with unlimited boundaries, the field of project management has expanded into a multinational environment. International engineering projects have increasingly become common practice, however, also more challenging due to their international nature.

Relevant project management literature has been systematically reviewed and a gap in knowledge has been identified. Whilst the challenges of managing projects in an international environment have been researched extensively, the involvement of local personnel and their specific contributions has not been studied to date. This research will focus on the criticality of involving local personnel when executing international projects in the engineering sector and will identify the contribution of local project team members to the success of such projects.

The aim of this research was to explore and identify the contributions of local personnel when managing engineering related projects in an international environment, thereby contributing to knowledge and practice in the field of international project management.

Design/methodology/approach:

In-depth, semi-structured interviews have been conducted with experienced international project managers as well as local coordinators with a leading role within the local project office. These interviews have been recorded, transcribed and analysed using an inductive approach. Based on the identified categories and the grand themes of international project management identified during the literature review, the findings have been presented.

Findings:

The findings represent a significant contribution both for knowledge as well as business practice. In-depth interviews and the subsequent analysis have resulted in the clear finding, that the involvement of local personnel is critical to the success of an international engineering project. In addition, numerous

specific contributions have been identified by the respondents and have been categorised in order to develop a theoretical framework of contributions.

Framework:

Based on the findings of this research, a theoretical framework that identifies the contributions of local personnel has been developed. This framework summarises the specific contributions of the local coordinator as well as local engineers. Additionally, potential project organisational structures have been presented to show the possible implementation of the framework and maximise the contribution of local personnel.

DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text.

No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

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1 INTRODUCTION

1.1 Background to the research topic

In an international and globalised world with unlimited boundaries, the field of project management has expanded into a multinational environment. International projects have increasingly become common practice, especially for many multinational companies (Adenfelt, 2010) and since the fall of the iron curtain in the late 1980's, firms have become global players and continue to face pressures to establish operations in multiple geographical locations, for various reasons related to globalization, economies of scale and improved communication methods (Turkulainen, Ruuska, Brady, & Artto, 2015).

Project management oriented companies used to have three pay grades for project managers, namely junior project managers, project managers, and senior project managers. Nowadays, the job title of global project manager has been added to this defined set. An additional set of skills is required, including "managing virtual teams, understanding global cultural differences, working in an environment where politics can dictate many of the decisions, and working under committee governance rather than a single sponsor" (Kerzner, 2017, p. 75).

Surveys indicate that a majority of these international projects are unsuccessful (e.g. Lientz and Rea (2011); Ika, Diallo, and Thuillier (2012)) or at most indicate a success rate of 50% (Kealey, Protheroe, MacDonald, & Vulpe, 2006) which provides an indication that not all companies have found an ideal solution for setting up teams in ways, that projects are implemented in an effective and productive manner. Global projects are complex and cannot be managed within a rigid structure from one location as "the underlining technology, international standards, government policies, regional economies and customer awareness are not always moving in the same direction as the project anticipates" (Cleland & Gareis, 2010, p. 17-3).

Further complexities or barriers specific to international projects have been identified as unique political and legal environments, security issues but also geographical distances, language as well as cultural barriers (Freedman & Katz,

2007). These barriers are to be kept in mind and will continue to be highlighted throughout this thesis. Whilst not all of these can be overcome easily, it is certainly a good start to be aware of such complexities and take them into consideration when executing an international project.

Many companies working in international markets opened local offices (Owusu, Sandhu, & Sören, 2007) or have a partner company in the local area in order to support their business (Mo, Abdelnaser, & Abdul Hamid, 2012). However, when it comes to specifically international projects, the support from locally employed staff (LES) is not always utilised or even available. Companies and project teams need to adapt and be organised in order to meet the specific challenges of an international project. In fact, researchers have established that the way in which a company internationalizes its projects is one of the most important decisions it makes (Owusu et al., 2007) and should therefore be approached with extreme diligence. Whilst there are examples of large corporations who are running successful global operations, there are many more examples of global failures of companies who have not understood or considered the particularities of internationalization (Moran & Youngdahl, 2008).

The general idea of this research topic was based on an initial personal experience in the field of international engineering projects. Having worked as a project manager on international projects for almost twenty years, the researcher has encountered many barriers that had to be overcome and seemed to be specific to multinational projects. A local office or local staff were not always present to support these initiatives. However, in cases where a local subsidiary was involved in the project, locally employed staff were found to be extremely helpful and supportive especially in specific issues such as overcoming cultural barriers or using local knowledge to overcome problems. The researcher has experienced the benefits of involving locally employed staff in international projects and was very eager to share this positive experience with colleagues and friends. It became evident that whilst they were interested in the personal experiences, the suggestions I made did not result in any major shift in project setup or approach to projects within the organisations. Therefore, it was required to underline this single personal experience with an extensive, objective research project in order to make reliable and trustworthy

recommendations for the execution of international projects and contributing to the improvement of the outcome of international projects.

The researcher therefore was committed to firstly conduct an extensive literature review in order to understand the available knowledge on this topic and had found that there was a clear gap in available knowledge related to the inclusion of local staff when managing international projects. The literature review performed as part of this research had highlighted the complexities of international projects and particular critical aspects to consider, thereby for the most part confirming the personal experiences throughout the researcher's career. However, it was not in any way argued that including local staff in a project team would bring critical benefits to the running of a project. The researcher's personal experience was therefore not discussed in the available literature. Therefore it was clear that a carefully conducted research project was necessary in order to close this gap in available knowledge and provide clear recommendations to project teams with regards to the execution of international projects.

In the following chapter, the general field of project management is first presented. Thereafter, the specific aspects and intricacies of international projects are discussed.

1.2 Introduction to project management

The field of project management was first established in the mid 1950's and mainly evolved during this decade (Pádár, Pataki, & Sebestyén, 2011). In fact, it was in the aerospace, defence and the construction industry where these specific tools and techniques which are utilised by a project manager, were initially developed and utilised (Kerzner, 2010). With an ever changing economy resulting in increased number of projects, "project management is the tool set of the twenty-first century" (Verzuh, 2003, p. Vii).

"A project is directed work that is aimed at achieving specific goals within a defined budget and schedule" (Lientz & Rea, 2011, p. 3). It is owned by an organization, the project sponsor and the stakeholders. The project manager owns the facilitation, integration and communication which is fundamentally

required to manage projects for the client (Thomsett, 2002). “Project management is orientated towards planning and control. It is concerned with on-time delivery, within-budget expenditures and appropriate performance standards” (Munns & Bjeirmi, 1996, p. 82)

This definition from Munns and Bjeirmi is a very common understanding of the goal of project management and is quite often depicted in the form of a project management triangle as shown in Figure 1 below. The goal of the project manager is to ensure overall benefit to the client but of course also the project organisation. This can be done by executing the project on time, within budget and in accordance with the defined scope. However, in case one of the sides of the triangle changes, only one other side can be fixed whilst the third side also changes. For example, if the scope of the project increases, you can no longer stay within time and budget. One of the two needs to also change (e.g. with an increased scope, to stay within the time frame you need to increase the cost such as resources).

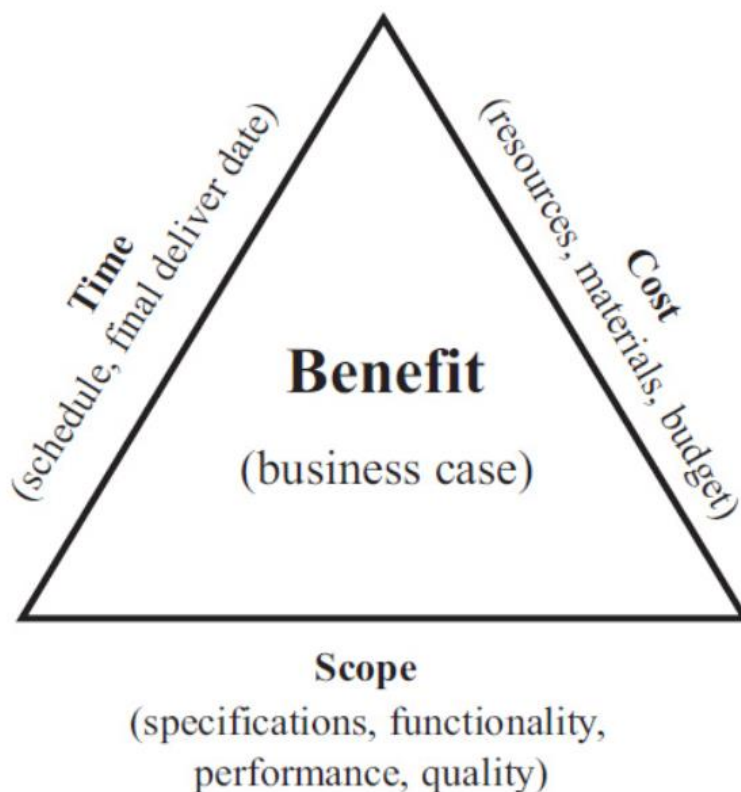


Figure 1: Classic Project Management Triangle (Zein, 2015, p. 88)

The ultimate goal of a project is to add value to an organisation and in the end, the project manager is responsible for making his project run efficiently (Bender, 2009).

The differences between a project manager and a general manager within an organisation are related to the fact that a project is of limited duration and personnel assigned to a project will most likely be re-assigned once the project is completed. Therefore, the project manager has no direct authority over the personnel, only on a project level (Lewis, 2002). The project team is typically made up of team members who are allocated to differing departments and their superior has nominated them for a specific project. Whilst the project manager is in charge of taking decisions on a project level, the actual authority over these team members still lies with their department manager (or similar).

As can be seen from the above discussion, there are various definitions for project management and one of the theorists of the field, Harold Kerzner, defined it with a rather blunt statement: "Project management is the art of creating the illusion that any outcome is the result of a series of predetermined, deliberate acts when, in fact, it was dumb luck" (Kerzner, 2009, p. 4). This of course is a rather provocative statement and the theories propagated and described by Kerzner indicate that there is surely more to project management than luck. Nonetheless, it may be correct to say that a certain amount of luck or good fortune is also required in project management, just as would be the case in general management.

Whilst this thesis has a specific focus on international project management, it has become clear throughout the research, that some of the theories which will be discussed would be applicable to also local project management. It is, however, important to acknowledge that international projects cannot be taken as a standalone item or theory but rather is a more specific and detailed version of general project management. The specific complexity which an "international" factor adds to a project is what has to be kept in mind and is something which is, amongst other aspects, described and defined in the following section.

Overall, the theories of project management in general can form a basis when working on international projects. However, in order to be able to improve the success rates of such global projects, it is important to have a closer look at

what makes an international project both special and complex and to identify the main success criteria specific to global projects.

1.3 The specifics of international project management

This thesis examines international project management and its unique particularities. In the context of this thesis, an international project may be defined as a project where project teams and/ or stakeholders are spread across various locations globally. This means, for example, that the client and/or the implementation location is in a foreign country and the majority of the project team is most commonly still located within the home country. To give another example, the project team may be located in several countries, partially being relocated to the project location in a foreign country. Therefore, an international project involves multiple locations, entities or organisations (Lientz & Rea, 2011). Or to define it more concisely, “a unique, transient endeavour undertaken to create a unique product or service that utilizes resources from, or provides product or services in, more than one country” (Grisham, 2010, p. 72). Grisham (2010), in his book on international project management describes the differences and similarities between international projects and regular, domestic projects. International projects “differ from domestic projects by their complexity of culture, politics, law, local practice, language, time zones, holidays, processes, resources, and more” (Grisham, 2010, p. 2). On the other hand, international and domestic projects share the requirement to apply basic project management processes. Furthermore, Grisham states that, in addition to the common success factors of cost, time, scope and customer satisfaction, international projects should include also sustainability as an additional success factor. This success factor is not necessarily common to domestic projects and is referred to as the requirement for project managers to be aware of the economic and social disparities in the international environment and to ensure that the project but also the project team takes this into consideration. An example may be to ensure a certain local content when sourcing labour or materials.

As identified by Nicholas and Steyn (2012) the important issues and unknowns specific to international projects can be both tacit (e.g. local institutions and

culture, local stakeholders) and explicit (e.g. local natural environment, local technology). Tacit knowledge being “semiconscious and unconscious knowledge held in peoples' heads and bodies” (Leonard & Sensiper, 1998, p. 113) and explicit knowledge being “codified, structured, and accessible to people other than the individuals originating it” (Leonard & Sensiper, 1998, p. 113).

International projects tend to have a more complex purpose, more diverse organisations or stakeholders involved, have greater risk but also greater potential benefits (Lientz and Rea (2011); Köster (2009)). “Ignorance about such unknowns makes it difficult for managers to anticipate problems and issues, set priorities, and act appropriately. It is why foreign projects often have trouble meeting schedule, budget, or requirements commitments” (Nicholas & Steyn, 2012, p. 630). Another specific factor to differentiate between national and global projects, as described by Ika et al. (2012), is the cultural as well as geographical distance between the project team and their beneficiaries. Furthermore, different countries and cultures required or prefer different project management styles, to which the project manager needs to adapt (R. Turner, Ledwith, & Kelly, 2010).

Murphy (2005), in his book on International Project Management, defines the complex nature of international projects. Furthermore, he states that it is “a fact of business life that many international projects fail – projects that have been underestimated, poorly planned, or poorly managed; projects in which the customer and contractor had significantly different views on what was to be accomplished” (Murphy, 2005, p. 1).

Up until the year 2000, World Bank projects (international development projects) in Africa specifically were deemed to have a failure rate of around 50%. An independent survey by the Independent Evaluation Group in 2010 showed that on an overall international level, around 60% of World Bank projects had been a success (Ika et al., 2012). However, this still leaves over one third of all international projects as being unsuccessful, a statistic which shows that improvement is possible but does not identify a reason for success or failure. Nevertheless, it does show that international projects have a special complexity which apparently not all project owners or project managers have been able to control. This observation is also supported by Lientz and Rea

(2011) who claim that standard project management techniques tend to fail or only work partially in an international environment as “statistics show that over half of international projects either fail, fail to be completed, or do not deliver the results that were promised” (Lientz & Rea, 2011, pp. 3-4). A similar analysis was also presented by Shore and Cross (2005) who conclude that managing collaborative international projects is in many cases more complex than standard business projects as team members and decision makers often come from various countries with differing standards, beliefs and decision-making behaviours.

International project managers have to cope with the particularities of varying countries. “Some countries have a higher quality of life, some have corruption issues, some have a civil strife, and some face refugee challenges. Some government agencies have strict regulations regarding procurement of goods and services, and in some countries, the rule of law is not yet fully established. It is a wonderfully challenging and complex environment. For this reason, each project will be unique and will have its own set of challenges” (Grisham, 2010, p. 6).

World Bank projects all too frequently fail to achieve their goals due to a number of problems including lack of management of cultural differences and local knowledge, as well as managerial and organisational shortcomings (Kwak, 2002). Imperfect project design, poor stakeholder management (Youker, 1999), delays between project identification and start-up as well as problems in sourcing consultants (Ahsan & Gunawan, 2010) are further identified as causes for failure.

Following on from this general review of project management and international project management, the researcher has conducted an extensive literature review on international projects and has established grand themes as part of this review. This is presented and discussed in detail in chapter 2

Based on this detailed review, the researcher has identified a gap in knowledge similar to the personal experience described earlier. Currently available literature did not cover the role of locally employed staff or local project team members in order to facilitate international projects and support in achieving a successful project result. The basis for this research are the following research aim, objectives and questions which have been established.

1.4 Research aim, objectives and questions

This research will focus on the criticality of involving local personnel when executing international projects in the engineering sector and how local project team members can contribute to the success of these projects.

The aim of this research is to explore and identify the contributions of local personnel when managing engineering related projects in an international environment. Finally, these are summarised in the form of a framework which provides a contribution to knowledge in the field of international project management and has a practical applicability for the execution of engineering projects in an international environment.

The objectives of this doctorate research are therefore to:

- Identify and analyse the importance of local personnel to the success of international projects in an engineering sector.
- Identify and define the specific contributions that can be executed by local personnel when executing international engineering projects.

In order to meet the aim and objectives of this doctorate thesis, the following research questions have been established:

- RQ1: To what extent is the contribution of local personnel critical to the success of international, engineering related projects?
- RQ2: What contributions can be provided by and can be carried out by local personnel for the successful execution of such a project?

1.5 A guide to this thesis

In this thesis, existing theories of project management are briefly summarised as they form the basis for the topic of this research. A detailed systematic literature review related to the critical success factors of international projects and project management is then performed and described in detail within this thesis. The aim of this literature review is to identify the core available knowledge directly related to international aspects of project management in the

engineering sector. This literature is then analysed in detail in order to identify the main common topics related to international project management in the engineering sector. Following this detailed analysis, a gap in available knowledge is identified and defined. Based on this identified gap, research objectives and research questions are developed with the aim to fill this gap in available knowledge.

Thereafter, this thesis discusses the varying types of research methods and methodologies from which the approach to this research has been established. This includes a brief discussion on research ontology as well as the researchers own ontological position and its relation to the chosen research method. The chosen method is described and justified in detail, particularly with regards to sampling and data analysis. Based on the research which has then been carried out, the results of the findings are presented. An analysis and discussion of the findings is presented from which a final conclusion has been reached. This is then used to define the theoretical framework as set out in the original aim of the research.

2 LITERATURE REVIEW

2.1 A systematic literature review on international project management in engineering projects

The purpose of this literature review is to obtain an understanding of the available knowledge (i.e. related theories and related research) and to be able to identify a possible gap in knowledge. Based on this systematic review, as well as the researcher's own experience, the research questions will then be developed.

2.1.1 Introduction to the systematic literature review

The researcher has chosen to perform a systematic literature review in order to identify the grand themes which are relevant when aiming to successfully manage international projects. These grand themes will then be analysed and reviewed in detail in order to identify a possible gap in knowledge from which the research questions are then derived.

A systematic literature review is considered by Booth, Sutton, and Papaioannou (2016) to provide three principal components: clarity, validity and auditability. Clarity because a "focused question and explicit search strategy help to clarify scope and terminology". Validity because the "review product must be defensible against potential bias" and auditability to ensure that the "reviewer's conclusions are grounded" (Booth et al., 2016, p. 19).

However, also the downsides of this review method need to be taken into consideration and, if possible, be avoided or mitigated. Negative aspects may include a limit in creativity and intuition, being restricted to the accessibility of sources and having to rely on databases allowing the keyword search to be manageable and effective (Easterby-Smith, Thorpe, & Jackson, 2012).

On the other hand, in accordance with Tranfield, Denyer, and Smart (2003), traditional narrative reviews often lack the required rigour and thoroughness whereas an evidence based approach such as the systematic literature review is a comprehensive search now regarded as a "fundamental scientific activity"

(Mulrow, 1994, p. 597). In short, a systematic review consists of three main stages which are generally also followed by this research:

Stage 1: Planning the review

A brief overview of the generic business management as well as project management theories has been given in the previous sections in order to perform the required “scoping study” (Tranfield et al., 2003, p. 214) of the surrounding fields and to be able to narrow the review down to the significant aspects. The aim of the systematic literature review is identified and defined within the following sections.

Stage 2: Conducting the review

When conducting the systematic literature review, certain criteria need to be defined in advance. This includes the identification of keywords and search terms, the inclusion and exclusion criteria as well as an identification of databases in which the search will take place. “The search strategy should be reported in detail sufficient to ensure that the search could be replicated” (Tranfield et al., 2003, p. 215). All of the above steps are defined and described in detail in the following sections.

Stage 3: Reporting and dissemination

The final step of the systematic literature review entails the reporting of the findings including a detailed descriptive account of the research topic including examples to justify the findings. This is also presented and discussed in the following sections.

In addition, the literature review is somewhat of a cyclical process in which the search terms are often refined or certain topics arise which need to be looked at in more detail. This is also described by Saunders, Lewis, and Thornhill (2015) in their book on research methods for business students where the authors state that the literature review is started at the beginning of the research and is continued throughout the development of the research and is only really finished once the research is completed. This spiral from the beginning to the

end of the research with a continuous revision of search terms is summarised and depicted in Figure 2 below.

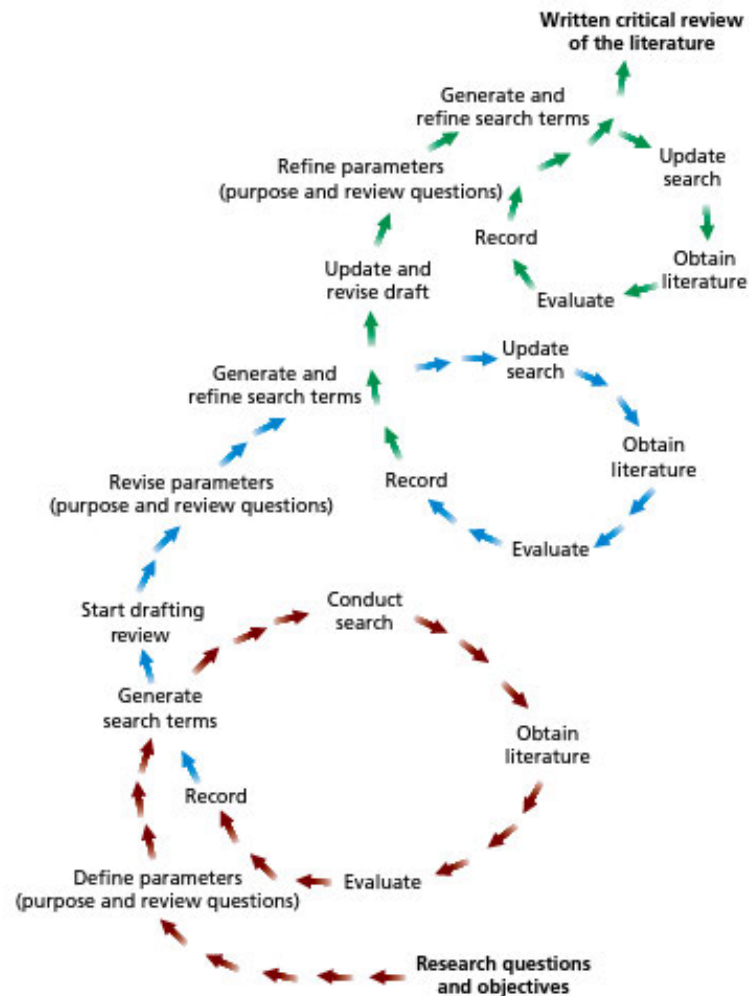


Figure 2: A summary of the literature review process (Saunders et al., 2015, p. 73)

The narrowing of the spirals depict also the narrowing down of the search criteria and terms to exactly the topic at hand and under discussion. This is also the strategy for this literature review, having started in the introductory section of the thesis with a broader overview of general management as well as project management and international project management and then refining further in a detailed literature review on international project management.

2.1.2 Aim of the review

The aim of this literature review is to identify the core available knowledge, directly related to international project management in the engineering sector. This core knowledge is then to be grouped into so-called grand themes in order to be able to analyse this knowledge in a structured manner and to be able to identify a gap in the available knowledge. Furthermore, the aim is to analyse critically the current status of research and the theories that are put forward with regards to this topic with the purpose of identifying the main critical aspects particular to international projects and then, as described earlier, to identify the gap in currently available knowledge.

Specifically, this literature review will focus on critical success factors, tools and techniques for international projects as well as the importance and influence of specific aspects when managing a project in a global engineering environment. It is acknowledged that also other discipline areas such as international organisational behaviour or international human resource management are also confronted with their respective complexities of internationalisation. However, this research is focusing on international project management and therefore such other disciplines lie beyond the approach adopted in this systematic literature review in order to keep the focus on the key research topic.

2.1.3 Search strategy

The research for academic articles and literature was performed mainly using online resources. Access to the databases was provided by the University of Gloucestershire. There are a number of online resources listed by the University, however, after some testing of keywords in various databases, the focus was placed on the research within the databases of:

- ABI/Inform Global
- Business Source Complete
- EBSCO eBooks
- EThos
- Google Scholar
- Library Catalogue

- Open Access Theses and Dissertations
- Science Direct

The research focused on articles and books specifically related to international projects.

Depending on the search engine, the search strategy was slightly adapted but overall, the search criteria were related to keywords related to international project management and engineering sector together with success factors. The detailed search strategy per search engine is defined further in Table 2 below.

As the topic of international project management is a very often discussed issue in literature, it was important to establish sound inclusion and exclusion criteria in order to be able to apply a first rigid filter without losing valuable academic literature. These criteria are defined in the following section.

2.1.4 Inclusion / exclusion criteria

The focus of this literature review was placed on literature published from 1990 onwards in order to capture a wide range of project management literature but keeping the focus on relatively current data. Considering the fall of the Iron Curtain and subsequent increase in globalisation, thereby leading to an increase in international projects, the cut-off point 1990 was deemed appropriate. It is acknowledged that at the time of finalisation of this thesis, studies from the early 90's are nearly 30 years old and may be deemed to be out-of-date. Specific care was taken to ensure that the content and specific content of a study from the 90's was not entirely out of date and therefore inappropriate. For example, a study highlighting the technologies for communication would be entirely different in the 90's (focus on telephone and perhaps instant message) as opposed to the 2010's (focus on videoconferencing).

On the other hand, since for example research on the effectiveness of professional training programmes experienced a surge in the 1990's (discussed in chapter 2.2.3.2), a majority of these studies are from that time period. For sure, training programmes have also evolved since then but the core aspects of differences between training and learning on the job has not changed since

then since it is very much linked to human behaviour. Therefore the research from the 1990s is still deemed very relevant.

However, it is also recognised that the literature review process has been conducted throughout the entire research, with a majority performed in the beginning phases and therefore naturally, the majority of the literature reviewed is from that time period of the 2010s. It is not deemed critical or out-of-date since, as stated before, the topic of international project management has experienced a major shift after the fall of the iron curtain and the surge of globalisation. However, since then, the changes have not been so severe that a complete shift in results of studies on international project management is to be expected.

Furthermore, this research was limited to peer reviewed academic journals or literature rather than opinion pieces or non-academic writing. This was considered to be the first barrier for ensuring seriousness and objectivity in the literature being reviewed. Conference papers or proceedings were included as the researcher did not want to exclude a possibly interesting and relevant presentation, however, these few hits were vetted carefully and closely to ensure that it was an academically backed presentation and not simply an opinion piece voiced at a conference.

A summary of inclusion and exclusion criteria can be found in the table below.

Parameters	Inclusion Criteria	Exclusion Criteria
Language	Studies written in English or German	Studies not written in English or German
Time frame	Studies published from 1990 (inclusive)	Studies published before 1990
Source	Academic/ Scholarly Journals, Books, Dissertations/Theses, Conference papers	Non-academic journals, opinion pieces, trade journals
Doc. Type	Articles, peer reviewed	other

Table 1: Inclusion and Exclusion Criteria

The languages German and English were chosen by the researcher as these are the ones he is capable of fully understanding and evaluating. It is to be noted that most articles and books which have been identified were written in English language. This is understandable as the topic of international project

management has an international focus not only in terms of research topic but also in terms of expected readers and therefore most books and articles on this topic were written in English language.

2.1.5 Summary of studies which met the assessment criteria

An initial search with high level key words such as “international project management” or “international projects” has led to up to 60,000 hits, with many articles or books focussing on specific country related issues. An example of this would be contract and labour relations in Poland (Seweryński, 2003). Whilst these are topics which play a role when discussing various types of international projects, these articles show only one very specific aspect in a specific country, giving conclusions which cannot necessarily be applied elsewhere and were therefore deemed to be generally irrelevant for the purpose of this research.

The search therefore had to be narrowed down to specific keywords which resulted in a more manageable size of results. Therefore, a combination of keywords was chosen based on the main themes of this research. Such search terms combinations included for example:

- “Project Management” AND (international OR global) AND engineering AND (skill or capability or success factor*)
- “Global project management” AND skill
- “International project management” AND “success factor*”
- “Global project management” AND “success factor*”

Further details on the chosen search terms for each online database can be seen in the respective column of Table 2 below.

The results of this search without applying any further exclusion criteria still resulted in a very large number of hits in many of the databases. This result can be seen in the column “overall results” in the table below.

In order to further reduce the quantity of results to a manageable and refined size, it was necessary to apply the inclusion and exclusion criteria as stated in the previous chapter. Studies performed prior to 1990 were excluded, only English and German language studies were chosen, peer reviewed studies were chosen and the search fields were altered depending on the database. The results after applying these criteria are shown in the last column of Table 2 below.

Source	Search terms	Search fields	Overall results	Results after applying inclusion/exclusion criteria
ABI/Inform	“Project Management” AND (international OR global) AND engineering AND (skill or capability or success factor*)	Anywhere except full text	1319	370
Business Source Complete	“Project Management” AND (international OR global) AND engineering	Keywords, Title or Abstract	355	86
EBSCO eBooks	“Project Management”	Title, Subject or category	1	1
EThos	“Project Management” AND (international OR global) AND engineering	No selection	14	3
Google Scholar	<ul style="list-style-type: none"> • “Project Management” AND (international OR global) AND engineering • “Global project management” AND skill • “International project management” AND “success factor*” • “Global project management” AND “success factor*” 	In title	272 +126	252 +122
Library Catalogue	“Project Management” AND (international OR global)	All text fields	68	10
Open Access Theses and Dissertations	“Project Management” AND (international OR global) AND engineering	Keywords, Title or Abstract	173	14
Science Direct	“Project Management” AND (international OR global)	Keywords, Title or Abstract	333	322

Table 2: Online database summary of search results

Following on from this search, these resulting literature pieces were checked in more detail by reading at first the title or abstract. In case the title or abstract indicated that the article was after all not relevant to the research topic, the literature piece was excluded. Thereafter, the full text was checked in detail and at first checked for relevance to the research topic. The main criteria for deeming a literature piece to be irrelevant to the research topic were:

1. Lack of objectivity – articles which seem to cling on to stereotypical cultural clichés without giving evidence for the claims that are being made.
2. Articles not discussing project management or international projects but using these only as examples to make a case for another topic.
3. Lack of empirical data – articles which are only opinion pieces or weak literature researches and do not bridge the gap to “real life” examples.

All in all, the research was then narrowed down to the studies which are presented and analysed in the following sections.

2.2 Relevant research on international project management in engineering

The literature search described in the previous section has resulted in a refined set of literature. The refined set of literature was read and analysed in detail by highlighting sections which were deemed interesting and relevant and noting down key words to quickly identify the topic of each study. During this process, it became evident to the researcher that certain key topics and common themes kept repeating. It was then decided to group the refined set of literature into so-called grand themes in order to allow for a more structured approach to this analysis. The following three grand themes specific to international projects were identified:

1. Hard skills and soft skills of project management and their relevance when managing international projects
2. Management of cultural aspects, cultural awareness and communication
3. Knowledge management and knowledge transfer

This literature will be reviewed and analysed in detail in the following sections in accordance with these identified grand themes, allowing for a structured overview of available theories on international project management.

2.2.1 The differences between soft and hard skills and their relevance when managing international engineering projects

From the majority of the literature analysed as part of this review, it has become evident that soft skills and the related success criteria play an important role in project management and particularly in international projects as “excellent interpersonal, or soft skills, are necessary requisites for success” (Gillard, 2009, p. 728). Nevertheless, there are also a number of academic articles and books which emphasize the importance of hard skills in international projects and both cases will be presented within this section.

In order to clarify the terminology of soft skills and hard skills, the following brief high level overview may be useful.

Hard Skills	Soft Skills
<ul style="list-style-type: none">• Planning• Contracting• Budgeting• Performance measurement• Procedures• Risks	<ul style="list-style-type: none">• Communication• Leadership• Cultural awareness• Motivation• Team management• Empathy

Table 3: Overview on hard skills and soft skills

Hard skills can be defined as a “person's skills set and ability to perform a certain type of task or activity” (Hendarman & Tjakraatmadja, 2012, p. 37), which, in the context of project management includes tasks such as scheduling, work breakdown structures or risk analysis.

Soft skills are defined by the Cambridge Dictionary as “people's abilities to communicate with each other and work well together”.

The importance of soft skills will be discussed and presented within this section, however, there are also counterarguments to this theory which are to be considered as some researchers claim that the hard skills of project management are key to the success of any project. In fact, the entire field of project management practice of the 1970's focused on hard skills as project management was seen to be "a collection of organizational, schedule and cost-control tools" (P. Morris, 1997, p. 104)

A more recent example of this would be the empirical study performed by T. Cooke-Davies (2002), which shows that most success factors for the projects which were investigated were related to skills such as methodology, tools and techniques rather than soft skills. This empirical research of over 70 multinational or national large organizations concluded with 12 critical success factors, all of which are related to hard factors. It is to be noted that the author of this article speculates on the reason that the personal skills of project management have been omitted and indicates that the way the research was conducted led to a focus on project management tools rather than the people side. This may explain the outcome of the study identifying only hard skills and no soft skills at all.

The Project Management Institute (PMI) publishes the widely recognised PMBOK Guide (Project Management Body of Knowledge) which is an industry standard recognised by the American National Standards Institute (ANSI). PMI defines its guide as "the preeminent global standard for project management. It provides project professionals with the fundamental practices needed to achieve organizational results and excellence in the practice of project management" (Project Management Institute, 2016). This literature is to be seen as a general guideline, applicable to all projects and does not distinguish particularly between international and non-international projects. It is evident that this guide focuses almost entirely on tools and techniques (i.e. the hard skills) and only very few sections are related to interpersonal skills or other soft skills. This was also identified by Alam, Gale, Brown, and Khan (2010) in their summary of the PMPBOK guide. The following table of content of the PMBOK guide as well as a short comment summarising the topic of each chapter shall depict this statement in a more clear manner:

Chapter	Title	General Comment
1	Introduction	Presents the basis for the guide and defines "project" and "project management"
2	Organisational Influences and Project Life Cycle	Presents the various phases of a project and the relationship between each of the phases. In addition, depicts how a project sits within an organisation and how that can influence the role of the project manager.
3	Project Management Processes	Presents the five process groups defined by the PMI as: Initiating, Planning, Executing, Monitoring and Closing. It further defines the knowledge areas which are detailed in the next chapters and maps them with the process groups.
4	Project Integration Management	Presents the necessity to integrate various knowledge areas of project management and perform the following tasks: <ul style="list-style-type: none"> - Develop Project Charter - Develop Project Management Plan - Direct and Manage Project Execution - Monitor and Control Project Work - Perform Integrated Change Control - Close Project or Phase
5	Project Scope Management	Primarily concerned with defining what is within the scope of the project and what is outside the scope by using the following 5 steps: <ul style="list-style-type: none"> - Collect Requirements - Define Scope - Create Work-Breakdown-Structure (WBS) - Verify Scope - Control Scope
6	Project Time Management	Defines the processes required to ensure an on-time completion of the project including: <ul style="list-style-type: none"> - Defining and Sequencing Activities - Estimating Resources and Duration - Develop and Control the Project Schedule
7	Project Cost Management	Defines the processes required for cost estimating, budgeting and cost control to ensure that the project is completed within the foreseen budget.

Chapter	Title	General Comment
8	Project Quality Management	Presents the tasks of quality assurance and quality control as well as establishing a quality management plan at the outset of a project
9	Project Human Resource Management	Defines the processes required to organise, manage and lead a project team. These include: <ul style="list-style-type: none"> - Developing a human resource plan - Setting up the project team - Developing the project team - Managing the project team
10	Project Communications Management	Defines the processes for communication with internal as well as external stakeholders by following these steps: <ul style="list-style-type: none"> - Identify the stakeholders - Plan communications - Distribute the information - Manage the expectations of the stakeholders - Report the performance
11	Project Risk Management	Defines the processes require to manage risks in terms of risk analysis as well as risk monitoring and control
12	Project Procurement Management	Defines the processes necessary to purchase goods or services from outside the project organisation

Table 4: Table of Contents of the PMBOK Guide (Project Management Institute, 2008) with comments by the researcher

As can be seen from Table 4, it is relatively simple to ascertain the high value the PMI gives to the technical aspect of project management when 10 out of 12 chapters are related to the hard skills of project management. Only chapter 9 (human resource management) and chapter 10 (communications management) deal with the softer side of project management. It is still to be noted that also in these chapters, the body of knowledge focuses very much on how to organise and structure the human resource aspect as well as communications aspect of project management rather than delving more deeply on the interpersonal skills required from a project manager. On the other hand it is to be noted that the Institute states particularly that “skills such as empathy, influence, creativity, and group facilitation are valuable assets when managing the project team” (Project Management Institute, 2008, p. 232). Pant and Baroudi (2008) have also

analysed the PMBoK in more detail and have come to the same conclusion, that the skills described are those that are overwhelmingly hard. The few soft skills that are described within this body of knowledge are seen as secondary to the technical hard skills. A possible explanation for this, according to the authors, could be that the foundations for project management are based on systems theory, which is recognised for its hard approach. This explanation is, however, not entirely conclusive as “arguably a form of systems thinking governs the creation of key project management outputs such as network charts and Gantt charts. Nevertheless, systems thinking has never been an explicit part of mainstream education in project management” (Emes & Griffiths, 2018, p. 6).

All in all, it is found that within the project management body of knowledge, “the coverage of soft skills appears to be both piecemeal and inadequate. Some might even suggest it is tokenistic” (Pant & Baroudi, 2008, p. 125).

Grisham (2010) in his book titled “International project management: Leadership in complex environments” explains that he has mirrored the structure of his book on that of the PMBOK guide, however, clearly states that it is “in need of significant adjustment to meet the needs of international projects” (Grisham, 2010, p. 5). Thomas Grisham describes the required skills of project managers specific to international projects and places a relatively balanced priority on hard and soft skills. In terms of chapter content, as it follows the structure of the PMBOK guide, he has a tendency to lean towards the hard skills such as quality management or time management but on the other hand delves deeply into the importance of soft skills. This balanced view is also shown in his conclusion that “the book takes the view that international project managers need to be leaders with high cross-cultural intelligence, creative communication skills, the ability to establish and maintain dependable project management processes, and compelling curiosity” (Grisham, 2010, p. 8).

Another example of high value given to hard skills of project management can be seen from the concept of the project management maturity model which has been developed by leading project management researchers such as Ibbs and Kwak (1997) as well as Kerzner (2002). This model is based largely on the principles of the measurement of organisational process maturity developed by

the Carnegie Mellon University in the late 1980s describing an organisation going through five stages of development resulting in improved productivity.

The project management version of this maturity model also measures the development of an organisation in terms of project management capability, largely based on elements from the PMBOK guide (Terence Cooke-Davies & Arzymanow, 2003) which, as discussed previously, mainly focuses on the hard skills of project management. For example, the main topics covered by this maturity model are largely based on skills such as project integration management (i.e. integrating project management strategies with techniques), scope, time and cost management or risk management. Also, the topic of communication management is part of the overall maturity evaluation and questions the capabilities of planning communication (i.e. reporting) (Kwak & Ibbs, 2002) and not the soft skill aspect of communication.

The association of project managers (APM) publishes also a body of knowledge (Association for Project Management, 2006), which is deemed as a “major guide in British project management education” (Alam et al., 2010, p. 497), however, perhaps not as popular on an international level as the PMI body of knowledge. It is noteworthy, that this body of knowledge addresses the people side of project management in an entire section (section 7 out of total 7 sections) of its guide.

However, it is also to be noted, that this body of knowledge, similar to the PMBoK guide, does not address any project management techniques particular for international projects. In fact, a search within the 200 page document revealed that the words international or global are not mentioned once within the text. Nonetheless, this body of knowledge is deemed to be applicable in all cases of project management and therefore also applies to international projects in the eyes of the APM.

Harold Kerzner, a globally recognized expert on project management has written several books on project management and its various techniques. In his book on Project Management, Planning and Control (Kerzner, 2017), he has created a balance in content between the hard skills and the soft skills. It is to be mentioned that at first glance, the hard skills seem to take an overall more important position in his literature than the soft skills. Kerzner, as many other authors, very often refers to the PMBOK guide, which already gives an

indication of his preference towards hard skills. In addition, Kerzner states that “the most important responsibilities of a project manager are often recognised as planning, integrating and executing plans” (Kerzner, 2017, p. 461). Also, major chapters within his book describe the essential tasks of creating work breakdown structures, project charters and schedules as well as scheduling techniques. However, Kerzner also defines a set of actions that the project manager and the team can take in order to ensure project success. These list of actions can be summarised and grouped into hard and soft skill as follows:

Hard Skills

- Develop realistic cost, schedule, and performance estimate goals
- Create a workable set of planning and control tools
- Do not rely only on one of the control tools
- Keep changes under control
- Have a backup plan in case of problems

Soft Skills

- Create commitment and a sense of mission in the mind-set of the team members early on
- Seek sufficient authority as the project manager
- Maintain a good relationship the project stakeholders
- Enhance the public image of the project
- Involve key team members when taking decisions and solving problems
- Go beyond formal authority to maximize influence over people and key decisions.
- Stress to the team the importance of meeting the project goals
- Find ways to ensure that team members who are performing effectively can have job security

Mix of Hard and Soft Skills

- Select team members with proven expertise in their field and insist on them being available to your project team

- Create a flat and flexible team hierarchy
- Give priority to achieving the mission or function of the end item

From the above summary, it can be seen that Kerzner has found a relatively equal balance between the hard skills and the soft skills of project management. Sometimes an action of a project manager cannot be seen as black and white in terms of hard skills vs. soft skills but in general it can be said that according to Kerzner, it is an equal balance of skills which brings success to a project. There is one thing that it is to be noted specifically, and has become quite apparent whilst reviewing this work. Similar to the PMBoK Guide, Kerzner in almost no instance has referred to any particularities or specifics of managing an international project. It is very apparent that in a book of over 1000 pages, there is only one subchapter on international project management which turns out to contain 2 paragraphs only. It is not clear and perhaps only speculation that the author, similar to the PMBoK, concentrates on project management in general and assumes that this also covers the international aspect. However, in a highly globalised economy with an increased amount of international projects, it could be expected that this is expressly discussed in a book which many may consider to be one of the key texts of the project management discipline.

Having discussed the focus on hard skills or mix of hard skills and soft skills of project management literature, it is worth discussing and summarising literature which has focused mainly on the soft skills of project management.

An empirical study performed by White and Fortune (2002) has shown that most project managers focus on a small number of tools and techniques, meaning Project Management software and Gantt Chart. However, it has also shown that this focus does not allow the project managers to monitor the real world and are failing to identify potential problems or side effects to ensure a project runs smoothly and efficiently. Their study has shown that nearly 50% of all project encountered unexpected side effects and of that, nearly 70% of the unexpected side effects were due to the project manager's lack of awareness of the project's environment or surroundings. This means that the hard skills on which the project managers had relied on, did not allow them to identify

potential problems to the projects which may have been avoided by keeping an eye on the project surroundings.

Academic literature, in particular specific to international projects, had shown this emphasis on the importance of soft skills over hard skills. For example, research conducted by Sapsed and Salter (2004) shows that the typical project management tools (hard skills) such as PERT (Program Evaluation and Review Technique), Gantt Charts or Work Breakdown Structures are not applicable in, or critical to, the success of international projects. They argue that these hard skills will be “relegated to the edge of the project” (Sapsed & Salter, 2004, p. 1531) as they become ineffective when dealing with an international project team. This is because these tools are inflexible and cannot be adapted sufficiently to any given situation. The authors further come to the conclusion that tools and procedures may have a supporting function but in the end, they are not critical to the success of the project.

In addition to the findings of Sapsed and Salter, research performed by White and Fortune (2002) on project management tools has shown that a large portion of project managers are not satisfied with the applicability of common project management methodologies and tools. It was found that they did not truly model the “real world” and were deemed to be inadequate for large scale, complex projects. White and Fortune did not show a direct link to international projects as such, however, it can be argued that international projects can be grouped in the “complex project” category mentioned in their article and therefore the respective findings can be applied.

Also, Ramazani and Jergeas (2015) in their study of project management education and training had found that the curricula need to be adopted to focus on “developing softer parameters of managing projects, especially interpersonal skills as opposed to just technical skills” (Ramazani & Jergeas, 2015, p. 51). The qualitative research was performed with a focus only on project managers in the oil and gas sector in Canada so the significance of the international context may be questioned. However, it is known that the oil and gas environment in Canada is very multi-cultural and it may be argued that there is a certain touch to international project management even in this specific case.

Other authors have compared the significance of hard skill and soft skills when managing projects. For example, the significance of soft skills and the soft

success factors have been highlighted in a study performed by Gemuenden and Lechler (1997). This study shows that a project in which its team members are motivated to be actively involved and encouraged to consider their task as having a direct influence on the outcome of a project, is more likely to be successful. Furthermore, the results have shown that “the factor information/ communication (amongst team members) shows the strongest direct impact on project success” (Gemuenden & Lechler, 1997, p. 376). The findings have further shown that the project team itself has the greatest influence on the success of a project, rather than outside project stakeholders.

These findings all seem to be very obvious and even common sense would dictate that for example a motivated team performs better than an unmotivated. What, however, has to be considered is that the factor of motivation is deemed to be critical to the success and therefore is a must, not a nice-to have. Also, in an international context, motivating a project team which is geographically dispersed is not such a simple task.

Therefore it would have been beneficial had Gemuenden and Lechler also analysed how these findings are best implemented. After all, the project leader or project manager is the person who should be promoting the above mentioned actions. A further finding of this study has shown that hard skills such as planning or controlling are not as relevant. “Surprisingly low is the direct impact of planning/ controlling on project success. This result contradicts the widespread opinion that planning/ controlling is one of the most important success factors” (Gemuenden & Lechler, 1997, p. 376) and shows that on the spot, quick decisions have to be taken which outweigh the importance of these hard skills.

Other authors have focused mainly on soft skills and thereby neglected to analyse the importance of hard skills in an international environment. For example, goal commitment of the project team, smooth communication with effective supporting infrastructure as well as a supportive project culture are some of the key success criteria for international project management identified by Köster (2009).

With regards to training and education of project management skills, researchers have analysed the effectiveness, particularly in regards to training of soft skill and of hard skills. Many university programs structure their courses

along the basis of the PMBOK Guide and therefore very much focus on teaching the hard skills which they deem essential to achieve project success. This may actually be related to the fact that hard skills are easier to teach as these are tangible techniques which can be taught and easily evaluated if taken on board by the student. Nevertheless, it is to be acknowledged that universities are making an effort to improve both hard and soft skills (J. R. Turner & Huemann, 2000).

Also Pant and Baroudi (2008) have found that university education in project management is primarily focused on the technical capabilities to achieve project success. Also these authors find that hard skills are easier to teach in a classroom situation, involving simulations and case studies, whereas soft skills are particularly hard to train. The authors state that universities need to consider their syllabus and ensure that students are trained in all skills required by project management, being hard skills and soft skills as well as tacit and explicit knowledge.

Alam et al. (2010) have performed a case study of a British Project Management Professional Development (PMPD) programme in order to study its effectiveness in training professionals from varying industries. The outcome of their research clearly states that the PMPD programme, whilst being designed to cover both hard and soft skills of project management, has resulted in a distinctive improvement of the behavioural competencies of the graduates. It has shown that, not only did the graduates show an improvement of the hard skills, but it was possible to identify an improvement of the rather intangible skill. Industries are sometimes reluctant to spend money on training programmes for soft skills as the improvements are difficult to measure. However, Alam et al. (2010) have established within their research a measurement technique to indicate the improvement of the soft skills of the individuals. This included their leadership ability or style, ability to motivate project teams, in decision making and negotiations but also in self-composure.

It is this researcher's opinion that training courses may be important as a basic guidance at first. However, based on the literature reviewed and the experiences in the professional career, it is most often down to the willingness and openness of the project team members to enhance his or her own skills by individually learning about cultures and adapting very quickly to new

environments and varying cultures. The biggest learning curve comes, as the project manager starts working in an international setting and is trained on the job. The project manager but also his or her employer benefits from the learning experience. The project managers broaden their horizon and imagination which allows them to apply such gained abilities also to other situations or issues. This again increases his worth to the company.

In summary, the literature research has shown that soft skills such as communication or motivation certainly play an important role in general project management but even more so in an international environment. This is due to the increased relevance of cultural influences, local stakeholder management and knowledge transfer on the success of a project in an international environment which will be discussed in the following section. Nevertheless, it shall not be neglected that some researchers as well as the Project Management Institute with its PMBOK guide put the hard skills of project management still at the forefront of their research and discussions. Perhaps it is in the end the balance of the two aspects which is required in order to manage a project in an international environment. "There is a need to realise that PM tools help to plan but in delivering these plans, the important thing is people management" (Azim et al., 2010, p. 399).

2.2.2 *Managing cultural aspects in international engineering projects*

As an additional key topic relevant for managing international projects, researchers identify the factors of cultural influences and communication as critical (Adenfelt (2010); Bredillet, Yatim, and Ruiz (2010); Pheng and Leong (2000); Lientz and Rea (2011); Prasad and Babbar (2000)). Also Gronwald (2017) in his book on global project management and cross-cultural competencies has identified that cultural challenges seem to be widely underestimated, specifically with regards to the functioning of an international project team. When defining the reasons for project failure, Schein (2003, p. 27) states that “at the root of the issue we are likely to find communication failures and cultural misunderstandings that prevent the parties from framing the problem in a common way”.

The term culture is often defined as a combination of common values, expectations and norms which can be found within a region or country (e.g. (Pheng & Leong, 2000), (Hogan, 2014)). Or more simply put, a “collective mental programming” (Hofstede, 1983, p. 76).

Regarding the cultural influences in the execution of international projects, Geert Hofstede is an influential figure whose model of cultural dimensions “has become the most widely accepted and most frequently cited model for cross-cultural research” (Van Ness, Seifert, Franko, & Buff, 2005, p. 162). He is a well-respected author and researcher with a focus on cultural aspects in the field of management, giving a strong insight into the international side of businesses (Hofstede, Hofstede, & Minkov, 1991) who claims to have successfully “uncovered the secrets of entire national cultures” (Hofstede, 1980, p. 44). Hofstede, in his publication on Culture’s Consequences (Hofstede, 2001) presents a cross-cultural study based on five major cultural dimensions:

1. Power distance: The extent to which the less powerful members of organizations and institutions (such as the family) accept and expect that power is not distributed equally
2. Uncertainty avoidance: A society’s tolerance for uncertainty and ambiguity
3. Individualism: The extent to which people feel independent

4. Masculinity: The extent to which the use of force is approved in society
5. Long term orientation: The basic notion that the world is constantly changing and preparation for the future is constantly required.

It is to be noted that some researchers do not agree with the wide approval of Hofstede's findings and openly critique the views and theories of Hofstede. McSweeney (2002) for example challenges the claims made by Hofstede and investigates whether they are valid and warranted. In fact, the author investigates specifically the research methodology chosen by Hofstede and critiques for example the number of questionnaires on average per country and specifically of some countries to be too small. Also, that Hofstede speaks of a national sample whilst all respondents were of the same company – IBM. He comes to the conclusion that the assumptions on which Hofstede's conclusions are based are all flawed and therefore the conclusions invalid. "Fallacious assumptions necessarily lead to inaccurate empirical descriptions regardless of the quantity of data and statistical manipulation used" (McSweeney, 2002, p. 112). This is of course an interesting approach by McSweeney but perhaps a little far-fetched. Only focussing on one company such as IBM might at first glance seem to be limiting the representative views of the respondents, however, a multinational and global enterprise such as IBM does not (and cannot) constrain the cultural views of their employees so that I do believe that one can speak of a national culture in the responses.

Hofstede further argues that management theorists who try to apply their knowledge worldwide can be compared to Alice in Wonderland, meeting strangers and things never seen before. "Alice's croquet playing problems are good analogies to attempt to build culture-free theories of management" (Hofstede, 1993, p. 81). This may be a very candid example but shows the helplessness and perhaps naivety in which some managers are acting in an international context.

In an ideal world, such managers who have then experienced the international environment and a differing culture will take these new ideas on board in order to enhance their world of thinking. US management theories therefore, cannot necessarily be applied in all regions of the world (Hofstede, 1993) and have to be adapted based on the relevant culture.

The following chapters will analyse the literature reviewed on the topic of culture with a focus on the topics of cultural awareness and specifically the related intercultural communication.

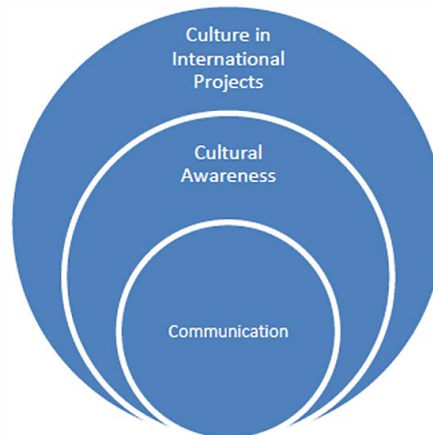


Figure 3: Culture in International Project Management

2.2.2.1 Cultural awareness in international engineering projects

In a modern world where travel has become easier and information on foreign countries is readily available, it can be argued that the familiarity with other cultures as well as the awareness of particularities of a foreign culture has increased over time. Also, “company internationalization, cultural dimensions and distances are helping to develop cross-cultural competencies and conflict management styles for international project managers” (Gronwald, 2017, p. 1). It could therefore be expected that a project manager or a project team working in an international environment is fully aware of the individual cultures and how to master an international environment ensuring that the cultural barrier is a hurdle which most international project managers have already surmounted. However, it seems to be not that easy as “cross-cultural sensitivity has turned out to be the most demanding area when leading global teams, especially in times of polarization when tolerance is decreasing” (Gronwald, 2017, p. viii). Readily available theories of international management as well as the general trend for companies to expand globally may help international project managers to improve cross-cultural competencies and increase knowledge of cultural

dimensions, however, this section will show that this aspect has not yet been fully mastered by most project managers.

Moran and Youngdahl (2008) in their book on leading global projects have identified that having “worked closely with many hundreds of leaders of global projects, and thousands of mid-level to upper-level managers, we no longer have to convince any leader or member of a global project team that culture counts” (Moran & Youngdahl, 2008, p. 9). The authors continue to discuss this importance even further, highlighting that culture not only refers to a nationality but also to certain subcultures within a nation which have to be taken into account. Whilst understanding this statement and theory and acknowledging the fact that a native American subculture for example within the United States is differing to the overall national culture, the researcher believes that when talking more general of international projects and cultures, this step into subcultures mentioned by the authors may be a step too far in practice. It is already an important step for a foreign project organisation to understand the national culture of the project location, therefore diving into a subculture is usually only a fine-tuning of the adaptation process and is not deemed to be the most critical of the success factors. A project manager cannot know about all of these cultural specifics when managing a project but “will have to have a great deal of sensitivity toward culture so that they can pick up on new factors and take them into account” (Lientz & Rea, 2011, p. 15).

This critique is partially supported by the findings of Kiznyte, Ciutiene, and Dechange (2015) in their paper on cultural intelligence (CQ) and its relevance in successful management of cultural differences in international projects. The entire concept of CQ is in fact based on the notion that the detailed intricacies of specific cultures and practices do not play an important role. This does not mean that cultural factors are not important but rather states that it is not necessary, according to these authors, to be aware of cultural details but rather to have a broad understanding and an open mind. “CQ provides a broad-based model that helps to emphasize an overall understanding of other cultures, and it does not require comprehensive knowledge of specific information about every individual culture” (Kiznyte et al., 2015, p. 2). The authors have taken a general concept (i.e. CQ) which was defined to take into consideration the phenomenon of globalization as a general issue and have transferred its applicability also to

international project management. It is an entirely theoretical article based on literature research and the concept of CQ and its applicability to international projects may well have to be validated in further research, however, the paper does present a thorough theoretical approach and the concept is logically argued. The fact that CQ does not require detailed knowledge of all aspects of a specific culture is deemed as an advantage of CQ as it presents a “holistic approach to cultural differences management by evaluating how an individual behaves and how he/she is supposed to behave in culturally diverse situations overall” (Kiznyte et al., 2015, p. 12). The authors believe that applying CQ in a project motivates project personnel in developing their overall intercultural competencies and thereby improving their performance in an intercultural environment.

Henderson, Stackman, and Lindekilde (2018) in their study on cultural intelligence (CQ) placed a particular focus on that motivational aspect of team members to work with culturally diverse co-workers. They had termed this ‘CQ-motivation’. In their research they had found that team members “must not only be able to communicate effectively and efficiently – in the process of aligning their norms and clarifying their roles – but also be motivated to do so with diverse project team members” (Henderson et al., 2018, p. 964). Therefore, according to the researchers, a high motivational CQ has a positive impact on an increased project performance.

Research by Pheng and Leong (2000) also highlights the importance of culture in project execution and shows that cultural awareness has a great influence on the outcome of a project and can lead to failure if not handled correctly. Contrary to the previously described concept of CQ, Pheng and Leong (2000) argue that specifically in the Asian market, being aware of cultural specifics is very important when managing a project. Special considerations such as making sure that a person does not lose his or her face may seem trivial when thinking about managing a project but can become key criteria for failure if not handled correctly. Additionally, the authors describe the importance of personal relationships when managing projects in Asia. This applies to both the project team but also to the relationship with the client or other stakeholders. These findings are presented to be specific to the Asian market but one may argue that this is also applicable to other countries and cultures. It is known that the

concept of losing face is at the forefront of cultural awareness in Asian countries but it may be argued that in any culture, a certain pride exists within each person and the concept of losing face is not only specific to Asian culture.

In the researcher's experience of having worked on projects in China for more than 4 years, these cultural specifics have proven to be vital when dealing with a project team or also a client. However, a cultural faux-pas can be easily made in certain, unplanned situations but can lead to irreparable damage in the eyes of a local. Moran and Youngdahl (2008) for example quote an unpublished research performed by Andre Laurent of INSEAD finding that in certain situations, when project leaders are under pressure or stress, they fall back to their natural instincts coming from the culture that they had grown up in. Interpreting this it means that the theory may show that cultural awareness is of a great importance in project management, however, it is simply not practicable to expect this from a project leader during all decision making situations.

The study by Sapsed and Salter (2004) has shown that projects which are set up with a core team in one country and a supporting team elsewhere may face problems related to differing priorities and interests stemming from cultural discrepancies. These differences need to be overcome as they can create disagreements and arguments between project teams and thereby lead to inefficient project execution. As shown in the study by Gemuenden and Lechler (1997), conflicts can have a strong negative impact on the success of a project and are therefore to be avoided as far as possible.

When looking at cultural differences and its effect on project success, it is important not only to look at the constitution of a project team itself but also to look at other players in a project. For example, the cultural difference between a project manager and a project stakeholder (be it a client or a third party for example) is significant in terms of management approach by the project manager. Differing cultures result in differing success measures of a project which the project manager of course needs to be aware of and take into consideration. In their research, Zwikael, Shimizu, and Globerson (2005) establish significant difference in success criteria for projects in Israel and Japan. This as such is not a great surprise, especially when taking the project specialities of Asia as described earlier and defined by Pheng and Leong (2000)

into consideration. However, what was novel in the findings by Zwikael et al. was that Israeli projects in general focused more on customer satisfaction and took this concern as their top priority. Japanese projects, on the other hand, are for the most part budget and schedule driven. The authors are reluctant to emphasize that this difference in project focus is related to cultural factors within the respective societies, however, they do hint at the possibility of this cultural factor having an effect. Nevertheless, a clear link was not established by the authors and is therefore difficult to apply in practice. After all, the typical success factors of cost, time, scope and customer satisfaction (Grisham, 2010) apply in all projects and need to be taken into consideration by the practitioners. Knowing that a certain client may have a greater focus on a specific aspect may well be a benefit when managing a project, nevertheless, all factors need to be well executed in order to make a project an overall success.

The vital role of cultural aspects when managing international projects was also established by Bredillet et al. (2010) in their study of the impact of cultural differences on project management. In this study, the economic situation (gross domestic product per capita) of a country or region as well as the four cultural dimensions established by Hofstede and Hofstede (2005) and their impact on project management were analysed. In terms of cultural aspects, Bredillet et al. have concluded that project management is better deployed in countries, where people generally have a greater acceptance of authority and do not feel threatened by ambiguous or unknown situations, i.e. uncertainty. In terms of the additional factor of gross domestic product, Bredillet et al. (2010) have concluded that this also plays an important role in the acceptance and effectiveness of project management. The authors indicate for example, that countries with a low GDP have a greater expectation for novel, innovative management approaches. Bredillet et al. (2010) support this argument with a conclusion made by Hofstede in his study of culture's consequences (Hofstede, 2001) in which he argues that the gross domestic product of a country has an impact on the correlation between the acceptance of power and individualism i.e. the project manager and working within a team.

These are interesting factors which can be taken into consideration by the project manager, however, the question of practicability has to be raised. The project manager will have to take the GDP of the project country into

consideration when deciding on whether to initiate a novel management approach? This is not practicable and after all, will strongly depend on the composition of the project team, the nationalities and cultures which are present and also the personalities of the individual team members. The project manager will have to remain credible and will rather focus on understanding the people in his team than to base his or her approach on overall cultural theories. In order to avoid cultural boundaries becoming a hindrance to project success, international project managers also need to focus on their communication and interpersonal skills (Pheng & Leong, 2000). This is an aspect which will be discussed in detail in the following section.

2.2.2.2 Communication in international engineering projects

Communication specifically in an international environment is a factor which is closely related to cultural awareness and is therefore analysed within this section of management of cultural factors.

Communicating with other cultures has been found to be a critical and difficult aspect of international project management and may be considered to be the most important component when managing international project teams ((Mayer, 2010), (Ochieng & Price, 2010)). “Intercultural communication is the management and transmission of messages for creating meaning across cultures. Intercultural communication difficulties are the cause of many problems in global business contexts” (Wibbeke, 2009, p. 70). Also further researchers have found the criticality of communication specific to international projects as “in our work with many organizations and hundreds of project leaders, we have yet to hear that projects fail due to inadequate scheduling software. Clearly, albeit anecdotal, most projects fail due to communication problems and lack of understanding” (Moran & Youngdahl, 2008, p. 25).

In order to be able to communicate effectively within a multicultural project, project managers must be sensitive to other cultures and be able to build relationship and trust amongst the project team (Ubell, 2010).

With regards to being sensitive to other cultures in terms of communication, Hall and Hall (2000) in their book on understanding cultural differences have described the theory of high and low context culture. The authors state that

whilst communicating, people make certain assumptions as to how much the opposite knows about the specific topic which is being discussed. Low context communication is the assumption that the opposite knows very little and needs to be taught. High context communication is based on a joint understanding of the background information. The authors have then shared a tendency based on nationality, thereby stating that the Chinese, Japanese, Arabs and Mediterranean people tend to be high-context as they have an elaborate information network amongst their peers and colleagues with whom they also have close personal relationships.

On the other hand, nationalities such as Americans, Germans, Swiss, Scandinavians and other northern Europeans are rather low-context communicators as, based on their culture, they keep more to themselves and consequently, when interacting with others, require more background information. Whilst this may be a somewhat generic and too simple form of compartmentalising nationalities, the basic notion of high and low context communication is an interesting aspect which may be considered when working in a project team and understanding the various personalities within the team.

An aspect which also arises when researching communication in an international project environment is the concept of the virtual team. Due to the rapid improvements in online communication technology, the use of virtual teams has increased rapidly worldwide. Gronwald (2017) has found that the virtual team strategy has several advantages such as allowing a project team to utilise the best expertise or competencies, despite there being geographical distances. Nevertheless, the global dispersion does present specific challenges to the project manager such as a less formalized approach when working and communicating online.

A virtual team may be defined as “a group of geographically and/or organizationally dispersed co-workers assembled using a combination of information and communication technologies for accomplishing an organizational task” (Kuruppuarachchi, 2009, p. 20). The general concept is based on a geographically dispersed project team with a rather flat hierarchy being able to communicate with each other through modern technological means, particularly web-based techniques (Denton, 2006).

The following table summarises the main differences between a conventional team and a virtual project team.

Characteristic	Traditional Teams	Virtual Teams
Membership	Team members are all from the same company	Team members may be multinational and all from different companies and countries
Proximity	Team members work in close proximity with each other	Team members may never meet face-to-face
Methodology usage	One approach exists, perhaps an enterprise project management methodology	Each unit can have their own methodology
Methodology structure	One approach which is based upon either policies and procedures, or forms, guidelines, templates and checklists	Each unit's methodology can have its own structure
Trust	Very little trust may exist	Trust is essential
Authority	Leadership may focus on authority	Leadership may focus on influence power

Figure 4: Characteristics of Traditional and Virtual Teams, (Kerzner, 2017, p. 384)

In this table it is again highlighted that in virtual teams, the team members are multinational and dispersed globally. Most noteworthy, in this researcher's eyes, is the fact that trust is a named factor which is deemed essential in virtual teams. This is a topic which has also been found by further researchers and is discussed and analysed in more detail within this literature review.

The research by Kuruppuarachchi (2009) utilises a case study to show the specific factors which need to be taken into consideration in virtual project teams as opposed to national project teams. As it is a research based on a single case, the inherent limitation with regards to its generalizability needs to be taken into consideration. The author's findings are highly related to managing the flow of information and communication between the various locations as virtual teams offer several benefits, "but they also create various challenges, particularly associated with communication and leadership" (Kuruppuarachchi, 2009, p. 31).

Duarte and Snyder (2006) in their book on mastering virtual teams have analysed the impact of culture on virtual teams and come to the following conclusions:

- Using cultural differences to create synergy can be a competitive advantage. Project managers and team members who understand and are sensitive to cultural differences can become more robust than teams of the same culture, who think and act alike.
- Create a team culture where problems amongst each other can be discussed openly, in a respectful manner
- Clearly and openly distinguish between problems based on cultural difference and problems based on actual performance
- Clearly and openly discuss how in each other's culture, business ethics and practices are viewed and understood so that all team members understand each other's positions and can abide by these rules.

In short, these conclusions are all based on an open form of communication within the virtual team in order to allow for an open and clear understanding of the various cultures. If this is in place, then the variance of cultures is a clear advantage for a project team. However, what is not defined by the authors but certainly a critical issue is the practical aspect of it. How can a team culture and open atmosphere be created? Is it the role of the project manager to create a forum for this in a virtual team only or is every team member responsible? Is a face-to-face aspect important to implement the above stated conclusions and create certain amount of trust within the project team?

Curlee (2008) has studied the effects of a virtual team on communication and has come to the interesting conclusion that one important aspect of a virtual team was trust. Without trust the entire concept would not succeed as "trust enhances communications and this is essential in a virtual environment and in fact alternate channels of communications should be encouraged" (Curlee, 2008, pp. 594 - 595). The researcher goes on to say that large amounts of communication may be seen as unimportant noise but in a globally dispersed team, this builds trust and thereby improves communication.

Also Evaristo (2003) in his study on globally distributed projects across cultures has found that a key variable is trust which itself is impacted by cultural differences and similarities. A higher level of trust amongst the project teams enhances the cooperation and thereby has a large positive influence on the outcome of a project. Ochieng and Price (2010) have studied the practices of 20 senior project managers in the construction industry and specifically the task

related to cross cultural issues in multicultural project teams. The researchers have found that effective communication is important in order to build trust which is “essential to the success of multicultural teamwork” (Ochieng & Price, 2010, p. 11).

In addition to trust, the topic of empowerment is identified as important and critical when working in virtual teams. “While direct leadership strategies are possible in conventional teams, members of virtual teams might be managed more effectively by empowerment and by delegating managerial functions to the members” (Hertel, Geister, & Konradt, 2005, p. 81). Project team members spread across locations will be required to take decisions at their respective locations. The question is, whether all decisions have to be run by the overall project manager or whether personnel at various locations are empowered to take certain decisions based on pre-defined and clearly communicated goals.

Hertel et al. (2005) in their study on virtual teams have found a positive correlation between project team performance and team empowerment. They furthermore introduced the concept of management by objective (MBO) and linking it to empowerment in project teams spread across varying locations. MBO can be defined as a “group of management practices with an emphasis on goal setting, participation, and feedback about task fulfilment” (Hertel et al., 2005, p. 81). The authors argue that specifically for virtual teams, the clear definition and communication of goals as well as continuous feedback was found to be a critical aspect in virtual teams and should be focused on when applying MBO. The authors however do recognise, that most studies on MBO focused mainly on local project teams and that virtual teams have not yet been fully studied in that relation.

In general, the topic of empowerment is split into two main categories, structural empowerment (also known as empowerment climate) and psychological empowerment. Structural empowerment occurs through “objective and often formal organisational changes that grant individuals greater latitude to make decisions and exert influence regarding their work” (Tuuli & Rowlinson, 2007, p. 241). Psychological empowerment, on the other hand, focuses on the employee and is a “constellation of experienced cognitions manifested as sense of meaning, competence, impact and self-determination” (Tuuli & Rowlinson, 2009, p. 479). Team psychological empowerment can be defined as “team

members' collective belief that they have the authority to control their proximal work environment and are responsible for their team's functioning" (Mathieu, Gilson, & Ruddy, 2006, p. 98).

Kirkman, Rosen, Tesluk, and Gibson (2004) in their study on empowerment in virtual teams have focused on the psychological aspect (team empowerment) and have found a positive correlation between team empowerment and the success of a project. "For managers to enhance virtual team process improvement and customer satisfaction, they should increase team empowerment. In virtual teams, team members must demonstrate a particularly high level of initiative and proactivity" (Kirkman et al., 2004, p. 185).

Nauman, Khan, and Ehsan (2010), on the other hand, focused their study on structural empowerment in virtual teams and also there have found a positive correlation between structural empowerment and project team performance. The authors, having taken the findings of Kirkman et al. (2004) into consideration, conclude that "empowerment climate is also imperative for project success in virtual project management in addition to psychological empowerment" (Nauman et al., 2010, p. 645).

What is missing in these studies, however, is the link or the combination of the two types of empowerments particular to virtual teams. It is assumed that the logical conclusion is the statement made above showing that an addition of psychological and structural empowerment is leading to project success, however, an analysis of which of the two factors is more important in virtual teams is still outstanding. In the view of this researcher, the structure of course needs to be available in an international setting, however, the psychological aspect and in particular in relation to cultural differences in international teams is the crucial and most difficult aspect to manage. Communication with the team is therefore a crucial aspect, also in terms of empowerment.

Other researchers have highlighted the challenges and difficulties of communication amongst geographically dispersed virtual teams. Kirkman, Rosen, Gibson, Tesluk, and McPherson (2002) for example have defined five specific challenges to virtual team success, all related to the overall topic of communication.

1. Building trust by responding reliably and quickly to electronic communication. Trust is gained by predictable performance instead of informal gatherings of face-to-face teams
2. Allow for comprehensive training processes to generate synergy, thereby overcoming the geographical and time distance and improving collaboration
3. Overcome feelings of isolation and detachment amongst virtual team members. Virtual team members actually require more frequent and almost daily communication to avoid feelings of alienation.
4. Create a balance between the technical expertise and interpersonal skills. In fact, interpersonal skills in virtual teams is almost more important than technical know-how.
5. Provide continual feedback on virtual team performance for example via 360-degree assessments.

These challenges can be used as a guideline by international project managers on what to consider when setting up an international team. However, in order for the above mentioned challenges to be handled, specifically the factor of time needs to be taken into consideration and planned. All of the above mentioned challenges require the project manager or the team to take time off the actual project in hand and focus on frequent communication, continuous feedback and quick or instant feedback or replies.

Also Moran and Youngdahl (2008) have found that communication with virtual teams is actually more complex and more time consuming as “we need to spend extra time on the telephone, not just email, connecting with virtual team members to make them feel valued and informed” (Moran & Youngdahl, 2008, p. 180). It needs to be considered that projects not always run smoothly and stressful situations in a project do not allow for this extra time and will cause communication breakdown in a virtual team (Daim, 2012).

Gronwald (2017), in his book on global communication and collaboration in international projects has not only stated the challenges of working within a virtual project team but has also summarised various communication related techniques for a project manager to overcome these difficulties. These techniques are for the most part soft-skill based but also various hard techniques have been mentioned such as the need to establish a clear

communication procedure or charter. This procedure “establishes norms of behaviour when participating in virtual meetings, such as limiting background noise and side conversations, talking clearly and at reasonable pace, listening attentively and not dominating the conversation” (Gronwald, 2017, p. 75) for example. Soft skilled techniques mentioned by Gronwald include the prioritizing of cultural sensitivity as well as creating an environment allowing for team bonding. In addition, the project manager needs to be available to the team and allow for regular contact. The author mentions the positive effects of utilising collaborative communication technologies such as shared workspaces or videoconferencing. Nevertheless, Gronwald has also found that team members should not only communicate online but actually meet face-to-face once or twice per year in order to build relationships. In addition, perhaps even encouraging team members to rotate and spend a certain amount of time at another team location in order to further break down barriers.

Modern communication tools may be of additional assistance in that for example videoconferencing may help team members understand more easily their oppositions than via regular phone. Nevertheless, further researchers have also found that it “is not a good replacement for personal contact when transferring large amounts of highly complex information” (Daim, 2012, p. 220).

The fact that personal contact, i.e. face-to-face interactions is most important is also highlighted by other researchers. For example Sapsed and Salter (2004) have researched a project which spans the globe, from East to West, where project teams were set up in USA, Europe and Japan and therefore included specific problems such as communication via extreme time zone differences. These communication barriers had somewhat been overcome by modern technology such as videoconferencing and web-based monitor sharing, however, the authors have clearly come to the conclusion that they are no substitute to face-to-face communication as “interacting in person generally solves problems and completes tasks faster than electronic mediated communication” (Sapsed & Salter, 2004, p. 1516)

Also, Lientz and Rea (2011) in their chapter on using technology to one’s advantage come to the conclusion that after all, face-to-face interaction is still

deemed to be best form of communication as team members are able to read their counterpart's body language and understand certain nuances better.

Grosse (2002) has found that teams benefit from personal interaction, specifically at the beginning of a project as it can establish a good working relationship and trust which is somewhat in contradiction to the first challenge of communication stated earlier, that responding quickly and reliably is more trust-building than face-to-face meetings.

Whilst some authors are critical of the concept of virtual teams, claiming that team members feel isolated instead of connected (Moran & Youngdahl, 2008), others have broken this issue down a little further and found a compromise as a solution. Lindeblad, Voytenko, Mont, and Arnfalk (2016) for example are of the opinion that routine or weekly meetings can be held virtually without any impact on effectiveness, however, in some instances, and for specific cases, there is no substitute to face-to-face meetings such as for special project workshops or meetings.

Overall, the solution to the question of face-to-face versus electronic communication in a virtual team may lie in a compromise between the two, allowing team members to meet for important workshops and meetings, thereby creating a certain level of trust in personal interaction and allowing for more effective communication through web-based tools during the course of the project. Virtual team leaders should encourage informal communication and provide "as many opportunities for face-to-face interaction as possible. Virtual teaming improves significantly when participants are brought together at the start" (Ubell, 2010, p. 100).

Ika et al. (2012) also have identified communication with project stakeholders as a key soft skill and one of the most critical factors to project management success. When analysing the topic of stakeholder management a little more in depth, one can find quite clearly that communication is the main driver and key to the successful management of project stakeholders.

In fact, Clarkson (1999) has stated his seven principles to stakeholder management in the form of a doctrine for the Clarkson Centre for Business Ethics of the School of Management of the University of Toronto. One of these seven principles encourages managers to openly communicate with

stakeholders and to seek the dialogue in order to openly discuss risks and avoid concerns. “Whatever the nature of the project, various researchers have acknowledged that project failure is generally not the result of lacking or ineffective project management practices, but of inappropriate social interactions between the project stakeholders” (Missonier & Loufrani-Fedida, 2014, p. 1108).

Through open communication and building of a personal relationship with the stakeholders, a certain level of trust can be built up which may avoid a conflict between the project team and its stakeholders. “Trust, therefore, plays an important role acting as a lubricant in stakeholder relations and project management” (Francisco de Oliveira & Rabechini Jr, 2019, p. 131)

According to Lientz and Rea (2011), language itself is an important factor when dealing in an international environment as team members are not always fluent in a common language. This makes it even more important for a project manager to be able to communicate clearly, to bring across his or her thoughts and intentions understandable to all project team members and in addition, to be able to listen what others are telling him or her. Furthermore, the project manager has to encourage communication amongst team members of different locations to avoid compartmentalization.

Also Moran and Youngdahl (2008) describe specific factors to be aware of in cross-cultural communication, specifically considering that not all team members are fluent in the dominant language of international business, which is English. The authors highlight several issues such as avoiding certain sayings which not all persons understand or to avoid telling jokes as they rarely translate well. They further recommend to follow up verbal communication in writing (summary) in order to avoid misunderstandings. Similarly, Nicholas and Steyn (2012) recommend for the communication plan to address specifically the difficulties based on differences in languages and time zones when working on an international project. All project team members should be familiar with the common working language and “everyone using the common language should be reminded to speak slowly and use simple terms and no slang” (Nicholas & Steyn, 2012, p. 649).

When bringing back the link to international projects and combining this with the importance of stakeholder management and the related open communication

with stakeholders, this becomes a challenge for the project manager when working on an international project. This is because apart from having to deal with the stakeholder's concerns, possible difference in opinion and priorities, one has to overcome the further hurdles of cultural and geographical gaps as well as possible language barriers (Lientz & Rea, 2011).

2.2.3 Knowledge management and knowledge transfer in international engineering projects

Apart from ensuring open communication, another factor identified to be critical for project success but closely linked to communication, is the transfer of knowledge and information within a project team.

Knowledge can be split into two main types: “(1) tacit knowledge — knowledge that is inimitable, valuable, underutilized, unarticulated, and residing in employees' brain; (2) explicit knowledge — knowledge that is distributable, easy to handle, documentable, and storable” (Birasnav, 2014, p. 1623). Knowledge management can be defined as “strategies and processes designed to identify, capture, structure, value, leverage, and share an organization's intellectual assets to enhance its performance and competitiveness” (Business Dictionary, 2019).

It is to be noted that project managers quite often hesitate to implement knowledge management or lessons learned aspects in their projects as it is seen to be a time consuming task which itself is not effectively progressing the project at that moment in time. Project managers primarily focus on time, cost and effective progress and as knowledge management mostly entails a long term effect, this part of project execution is typically not the primary interest of project managers (Pemsel & Wiewiora, 2013). On the other hand, it is critical for the success of any project, that team members are creative in certain situations and in other situations to be able to fall back on available knowledge. As “the ability to increase the efficiency and productivity of a project through constant innovation and reuse of existing intellectual property has become a core competency of a project” (Cleland & Gareis, 2010, p. 17-5).

The importance of knowledge management is highlighted by many researchers, however, the distinction between international projects and local projects is not always made. Nonetheless, the aspect of knowledge sharing or knowledge transfer is often already considered to be a challenge for a business situated in one location rather than in an international context (Szulanski, 1996). However, it is also a general understanding that this is an even greater challenge for globally dispersed organisations or project teams (Turkulainen et al., 2015). The field of knowledge management and knowledge transfer has been widely covered in academic literature and its importance to project management has

been highlighted for example by Reich, Gemino, and Sauer (2014) in their study on how knowledge management impacts performance on projects. They have shown that project managers, specifically in IT projects which are highly knowledge intensive, place a larger focus on knowledge management in order to be more likely to succeed. Further, that it is most important to align certain specialist knowledge to ensure that there is a common understanding within the project team as “knowledge management matters when it is focused on aligning knowledge in the project” (Reich et al., 2014, p. 599).

In her study on the performance of transnational projects, Adenfelt (2010) recognizes and emphasizes the way knowledge sharing directly affects the success of transnational projects and is in fact one of the core competencies. The case study presented by Adenfelt, a transnational product development project spread across 5 European countries, shows the difficulties in bringing together the various pieces of information and knowledge which are spread across the different locations. The mistake that had been made within the project was that it was divided into sub-projects, with each location working in their frame of the new scope and not getting any information or knowledge from other teams, thereby resulting in a schedule delay and lower quality end-product. Of course this research was based only on a single case but the outcome is consistent with other research identified earlier showing the negative affect that lack of knowledge sharing has on the outcome of a project. The question at hand and which was further analysed within this literature review was the “how” with regards to knowledge management. It has been established that it is particularly important in international projects but the real question is, how this transfer of knowledge can most effectively be performed.

This literature review has shown two main answers to this particular question:

- 1) Knowledge transfer through intensive and organised inter-team communication as well as storing such knowledge in database systems
- 2) Knowledge transfer through Cross-Cultural Training

2.2.3.1 Knowledge transfer through communication

Researchers who have studied the effects of a virtual team and how to manage the transfer of knowledge on international projects are Alin, Iorio, and Taylor

(2013) in their study on digital boundary objects. A digital boundary object is for example an advanced electronic communication tool such as videoconferencing, which facilitates “cross-boundary negotiations and coordination among individuals from different knowledge domains (Alin et al., 2013, p. 49). The research by Alin et al. used a specific videoconferencing tool with the ability to share the work screen, thereby allowing the participants to show on a common screen what they were talking about. The findings of the research have shown that digital boundary objects had mediated cross-boundary negotiation by giving it a defined space in which the engineers had focused attention on the specific aspect of knowledge being shared, thereby giving the transfer of knowledge a certain structure. Furthermore, it not only structured the transfer itself but also the knowledge that was shared in that it enabled to group the knowledge into relevant categories. The research was based on a sample of recorded interactions between eight university student teams. One may argue that the interactions amongst students using a digital boundary object may be somewhat different to the professional world, where time-pressure and sometimes even personal interests would hinder individuals to share knowledge to a larger extent. Also, the research did not take into account any differences in sharing of explicit versus tacit knowledge. Specialist knowledge for example is considered to be more difficult to transfer as it mostly consists of tacit rather than explicit knowledge.

The difficulties in transferring tacit knowledge has also been one of the findings of Pemsel and Wiewiora (2013) in their research on Project Management Offices and their role in knowledge management. The findings to their case study research have shown that the typical methods for knowledge management such as a structured database approach to lessons learned or similar boundary objects were only useful for the transfer of explicit knowledge “but the management of tacit knowledge was limited” (Pemsel & Wiewiora, 2013, p. 39).

Furthermore, project managers were found to be not very willing to perform standard knowledge management activities such as for example lessons learned workshops as they did not see an immediate benefit but only a costly exercise. They “often did not have the time or motivation to produce and store lessons learned” (Pemsel & Wiewiora, 2013, p. 35). So the exercise of

transferring knowledge via boundary objects was not very popular amongst the project managers in this particular research but they much rather preferred a face-to-face or personal exchange of information. This direct form of communication allowed for clarifications and a better understanding of the context when transferring tacit knowledge.

This is supported also by the research of Burström and Jacobsson (2011) which was based on two cases studies which highlight specifically the importance of project managers or project team members bringing together the variety of available knowledge and ensuring a constant personal interaction within the project team. These knowledge managers or “glue people” as they were called by Burström and Jacobsson take a vital role in ensuring the success of a project. Julian (2008) defines this role as a “knowledge broker” and further defines that this intermediary role is best performed by senior managers who have a broad experience and also a hierarchical position which commands respect from the team. Studies of team identification have shown that people working in geographically dispersed project teams are more likely to stick to the colleagues who are in close proximity and ignore and therefore ‘drop’ the team members who are distant (Hinds, 2002). Also, they have found that employees tend to share more of their experience and knowledge with direct colleagues rather than with external consultants. However, in a typical international project environment, it is very regular to work in a project team consisting also of external personnel. Therefore, such glue people or knowledge brokers may be the solution to such a problem in order to bridge the gap between local and distant personnel and may be a solution in facilitating the transfer of tacit knowledge. As was established earlier, projects often use boundary objects to facilitate explicit knowledge transfer but the unwillingness and difficulties in project teams to share experience (i.e. tacit knowledge) “calls for the introduction of a knowledge sharing broker” (Pemsel & Wiewiora, 2013, p. 40) i.e. glue people.

The research described and identified so far with regards to knowledge management mostly considers that vital knowledge lies with the project manager or within the core team at the central location and has to be communicated or transferred out to the globally dispersed organisations or team

members. What has rather seldom been considered by the literature identified within this literature review but nevertheless deemed to be important is the management of local knowledge and how this can be fed back to the rest of the project organisation. The knowledge of specific local requirements for example may be critical for a project but may easily be overlooked as “the global project manager may not be aware of the amendment of local economic, political and security policies and regulations” (Cleland & Gareis, 2010, pp. 17-4 - 17-5). This specific local knowledge, for example, will have to be fed back to the project manager and his globally dispersed team. The majority of literature reviewed, unfortunately only points out such importance but does not describe how local knowledge can be acquired and most importantly, how it may be transferred in a controlled manner. A researcher who has placed a particular focus on this aspect of local knowledge is Amy Javernick-Will, a professor at the University of Colorado-Boulder.

In her study on internationalization and acquisition of local knowledge, Javernick-Will (2009) firstly establishes the importance of local knowledge in international projects and its criticality in the success of internationalization. In addition, the researcher grouped the type of local knowledge into three main categories:

1. Regulative elements such as local laws, norms or standards which tend to be explicit knowledge
2. Normative elements such as social contacts, knowledge of the local market, logistics or locally available resources
3. Cultural cognitive elements such as local social norms or cultural practices, an aspect which was also evaluated earlier within this thesis.

The research then set out to analyse from which sources local knowledge can best be acquired and thereby contribute to organizational learning during internationalization. The findings have shown that local consultants as well as sending in experienced staff to the local organisation (i.e. “pioneering”) are most common methods for acquiring regulative local knowledge. This is an interesting finding considering that the regulative elements are explicit knowledge which, as identified earlier, could just as well be transferred into the project organisation by utilising boundary objects or information databases.

With regards to the normative elements, the findings have shown that most commonly the method of pioneering is utilised, as project organisations “send staff (often who have experience working internationally) into the area to ‘walk the streets’, ‘learn the lingo’ and start to identify local norms” (Javernick-Will, 2009, p. 790). Finally, the research has shown that respondents had deemed also the acquisition of cultural knowledge to be best performed by the so-called pioneers. It is to be noted that the researcher clearly states that the results with regards to this category were sparse as it is most difficult for foreigners to acquire and comprehend cultural know-how. All in all, the findings have shown that as the type of knowledge becomes more tacit, there is an increase in hiring locals or sending in staff to the local workplace in order to figure it out personally. “Because this knowledge tends to be more context rich, the communication medium required to transfer it must also be rich in an attempt to avoid ambiguity” (Javernick-Will, 2009, p. 791).

In further research, Javernick-Will (2013) studied the level of embeddedness of project organisations as well as the methods used to transfer this local knowledge from a project location across the project team. The concept of local embeddedness is a means to describe how deeply a project team or organisation is ingrained within the local location, including the establishment of local relationships and networks. The study has shown that particularly engineering projects require mainly a mix of regulative and normative knowledge, which is in contrast to the earlier identified importance of cultural awareness in international projects. However, as stated within her research on acquisition of local knowledge analysed previously, the cultural aspects are more difficult to comprehend and perhaps therefore not deemed to be as critical by the engineering respondents to the study on embeddedness.

With regards to the transfer of knowledge, Javernick-Will has found that engineering projects tend to prefer a mix of formal methods such as databases and social interaction when transferring particularly the regulative information. Project teams had established a database of knowledge, allowing team members to search for specific terms and identify the team members with that specific know-how. They then went over to the social method, contacted the knowledge holder and were then able to transfer this knowledge via face-to-face or videoconference discussions. The researcher has found that “social

methods, which required personal connections and interactions through discussions and meetings, increased as the knowledge generally became more tacit (i.e. when moving from regulative elements to normative and cultural elements).

This finding is also supported by the research performed by Lagerström and Andersson (2003) who have found also in the researched case study that respondents acknowledged the importance of formal knowledge management however clearly stated, that the most important method of knowledge transfer was via personal interaction as “creation and sharing knowledge within a transnational team rests upon efficient communication and interaction” (Lagerström & Andersson, 2003, p. 94).

It is important to note that a structured approach and personal interactions for the transfer of knowledge are not mutually exclusive. Team members should of course talk to each other and share their findings and knowledge in order to progress the project, however, in order to allow this knowledge to be managed in a controlled and also reproducible manner, findings need to be documented and shared within the project team. As in the end, “how a project manager creates a command, control and communication centre to manage a virtual workplace will determine the effectiveness and final results of the project” (Cleland & Gareis, 2010, p. 17-5).

2.2.3.2 Cross-cultural training

In addition to the previously described structured communication to enhance knowledge transfer, companies and organisations often offer cross-cultural training courses or seminars to international project team members with a focus on facilitating intercultural working. As much of the interpersonal cross cultural contact, an aspect which logically is predominant in an international project, has not been successful in economic, political and social arenas, cross cultural training has been established in order to facilitate interaction (Black & Mendenhall, 1990).

Cross-cultural training has been defined as an “educative process focused on promoting intercultural learning through the acquisition of behavioural, cognitive,

and affective competencies required for effective interactions across diverse cultures” (Littrell & Salas, 2005, p. 308).

Littrell and Salas (2005) in their article summarising best practices and guidelines for cross-cultural training have defined seven main components of cross-cultural training programs. This can be broken down into cultural awareness aspects such as interpreting behaviours, understanding the cultural differences to one’s own culture as well as do’s and don’ts of certain cultures. In addition, factual aspects of the country or region as well as language (few basic words) are part of the proposed training. Lastly, a practical aspect is covered focusing on learnings from other expatriates as well as mock scenarios simulating circumstances they may encounter in the international environment. This part of the training is in the eyes of this researcher rather questionable. Learning from other expats may be very subjective and depends very much on the habits and attitudes of the expats who are reporting their experiences. Had they taken part in the culture of their assignment or mainly stuck to expat compounds? Also, mock scenarios very seldom mirror actual encounters. The intended outcome of this is an “improvement of the cross-cultural communication skills necessary for adjustment and the possession of the cross-cultural knowledge needed to determine which option for dealing with various situations will be the most culture-appropriate response” (Littrell & Salas, 2005, p. 312). It is understood that this is a training scenario and apart from travelling to the country or region, this would be the only alternative. Nevertheless, the adequacy and usefulness of such mock scenarios is questionable and perhaps can be left out entirely.

Having established the general content of cross-cultural training, it is necessary to review the actual effectiveness of such training programmes further.

Deshpande and Viswesvaran (1992) have established that an increase in international operations has led to an increase in interactions between employees or project team members with differing cultural backgrounds and values. They argue that most of these interactions have been unsuccessful as expatriate managers return home early as they were not able to work productively, performed poorly and were not able to adjust to a foreign culture. The authors further argue that cross cultural training may be a vehicle to facilitate such interactions, however, they summarise that available studies on

this topic do not clearly show that such training programs have a positive impact on the course attendees and cannot be proven to be considered effective. Therefore, the authors have set out to establish a way to determine the effectiveness of cross cultural training based on a meta-analysis. They have found that they are able to support the thesis that “cross cultural training has a strong and positive impact on cross cultural skills development, cross cultural adjustability and job performance of individuals” (Deshpande & Viswesvaran, 1992, p. 306).

Further researchers who have studied the effectiveness and importance of cross-cultural training are Black and Mendenhall (1990) who have used social learning theory (SLT) and combined it with the requirements of cross-cultural training in order to establish an empirical methodology for measuring the effectiveness of such training. SLT is based on the premise that individuals anticipate actions and their associated consequences, which allows persons to establish how they will act before the actual situation occurs. It is based on four central elements established by Bandura (1977):

- 1) Attention: An individual must pay attention and observe certain behaviour before it can be modelled
- 2) Retention: The modelled behaviour becomes stored as a memory
- 3) Reproduction: This is the act of taking what was stored and implementing it by imitating the modelled behaviour.
- 4) Motivation: The individual decides whether or not to reproduce the modelled behaviour based on their own motivation or personal incentive.

Black and Mendenhall (1990), whilst utilising SLT in relation to cross-cultural training, have found that novelty plays a critical role in the cross-cultural training process. Trainees are learning not only work-related behaviours but also non-work related, such as how to behave appropriately in the public within a certain culture. They have found that “the attention and retention aspects of the SLT become much more important in the international context” (Black & Mendenhall, 1990, p. 132) meaning that individuals preparing to work in an international environment must specifically pay more attention and observe as well as remember what they have observed before putting it into practice. In a familiar setting (i.e. domestic project), individuals who have not specifically paid attention to surrounding behaviours may still be able to reproduce correctly as

the modelled behaviour is still familiar. In an international environment with differing cultures, this is not so easily possible. Hence, in a cross-cultural environment, cross-cultural training becomes more intense but also necessary. On the other hand researchers, such as M. A. Morris and Robie (2001) have found in their meta-analysis that their results “show the effectiveness of cross-cultural training somewhat weaker and can vary widely. Unfortunately, few organisations systematically evaluate or validate the effectiveness of their training programs” (M. A. Morris & Robie, 2001, p. 120). The researchers, however, do acknowledge that their findings support the use of cross-cultural training if implemented systematically. Training courses are to be developed based on the actual requirements of a certain assignment (i.e. a project) as well as the needs of the individuals and findings of cultural competence evaluations. In the end, the results of the training programs have to be evaluated carefully. From the available literature, one can summarise that cross-cultural training can be an effective tool if implemented carefully and tailor-made (M. A. Morris & Robie, 2001). Nevertheless, corporations and project managers have been cautious to implement such training courses as the real value and effectiveness are not particularly apparent. In addition, Project managers are not always keen to spend a certain amount of their project budget on non-billable time such as a training course. Therefore, research on cross-cultural training has seen an immense surge in the 1990’s in order to bridge this apparent gap. Corporations have accepted that there is a need to improve cross-cultural awareness within their project teams but are not convinced that the available methods (i.e. cross-cultural trainings) are an effective and efficient tool. “Multinational corporations have not yet adopted many of the cross-cultural training strategies that researchers propose because cross-cultural researchers have not successfully resolved the controversies surrounding the goals, content, effectiveness, implementation and processes of cross-cultural training” (Littrell & Salas, 2005, pp. 305-306).

This literature review has shown that the effectiveness of cross-cultural training is questionable but researchers have found tools to be able to measure the effectiveness of such trainings. In addition it has been established that training in an international context specifically needs to focus on the cross-cultural aspect of the assignment. Other forms of training such as specific technical

product training or systems training has not been discussed in the studied literature as it is not a topic which is particular in an international context. This, however, does not mean that this form of knowledge transfer is less relevant. In fact, the importance of transferring expert knowledge has been specifically highlighted in the previous sub-section.

2.2.3.3 Summary on knowledge management

Overall, this literature review has found that in order to be successful in a global project environment, project managers need to adapt in terms of knowledge management. Local knowledge can be critical in a project and therefore has to be combined with the knowledge of the core team. The top-down knowledge of an institution needs to be combined with the bottom-up local information in order to form the overall picture and lead to an effective project (Ramaprasad & Prakash, 2003).

Although this review has shown that knowledge transfer is important for internationally dispersed projects, it is also important to note that specialist skills or tacit knowledge are not easily transferrable (Szulanski, 1996) and therefore it is often the case that the core technical knowledge remains within the project head office to the disadvantage of the project.

In addition to the results of the literature review presented within this section, also in the researcher's experience as a project manager for an international engineering consultant in the oil & gas industry, the factor of knowledge management plays a vital role. The researcher's current employee has offices in almost 30 countries worldwide and in many projects, team members are working from 2 or 3 different locations. Knowledge transfer is therefore key to the successful execution of a project. This is not only valid for his current company, but certainly also for his clients, who are mainly major global oil & gas companies. The first point of contact between the engineering company and a client when carrying out projects includes pre-qualification questionnaires or requests for bids. Almost all of these formal bidding guidelines and documents have an entire chapter on questions dedicated to the bidder's proposal to manage various engineering locations, sub-contractors and to ensure the effective running of a project. The transfer of knowledge and management of

expertise is a question which almost all clients want to have answered, prior to contracting an internationalised engineering partner.

This review has shown that it is important, especially on an international level, for all project team members to be well equipped and trained to perform such an intercultural job. In addition and perhaps more importantly, team members need to be able to work together, communicate and share information and knowledge for the benefit of the project. This form of collaboration needs to be supported by organisational structures and procedures but more importantly, needs to come from the project team. The success of a project needs to be the common goal of team members and collaborating and sharing of knowledge is a precursor for the success of a project (Klimkeit, 2012).

2.3 Conclusion on literature review and identification of knowledge gap and definition of research objectives and questions

The literature review which has been performed as part of this doctorate thesis has shown that in an international environment, specific factors play an important role in ensuring the success of an engineering project. These factors can be summarized as follows:

1. Higher importance needs to be placed on soft skills rather than on hard skills when running a project in an international environment. Project Managers need to lay greater focus on soft skills, as typical project management tools (hard skills such as Work Breakdown Structure) have proven to be inefficient and ineffective when managing a transnational project (Sapsed & Salter, 2004).
2. Cultural awareness and communication within the project team and with major project stakeholders is a key success factor in an international environment and needs to be encouraged both by the project manager but also by the company itself.
3. Knowledge management and specifically knowledge transfer needs to be handled diligently and effectively in an international project. This means transfer of knowledge in both directions, from the project office to the local team as well as local knowledge fed back from local staff to the project management team.

However, a gap in knowledge has been identified by the researcher with regards to the question of how to effectively involve local personnel and their specific competencies when managing an international engineering project. Whilst the challenges of managing projects in an international environment have been researched extensively, the involvement of local personnel and their specific contributions has not been studied to date.

At first it was necessary to determine what is important to ensure a successful international project. However, the execution of an international project and the

implementation of recommendations are critical. How can it be ensured, that the 3 major factors mentioned above and discussed in the literature review are actually implemented effectively within a project? How can local personnel be of assistance or even play a vital role in implementing the success criteria? No literature found to date has researched and analysed such involvement of local personnel, be it in a local office or simply a small project team made up of locals who are able to support the project manager and their team in implementing a successful project.

The aim of this research, as defined earlier, will be to fill this knowledge gap and to establish a theoretical framework that identifies the contributions of local personnel when managing engineering related projects in an international environment.

The objectives of this doctorate research are therefore to:

- Identify and analyse the importance of local personnel to the success of international projects in an engineering sector.
- Identify and define the specific contributions that can be executed by local personnel when executing international engineering projects.

In order to meet the aim and objectives of this doctorate thesis, the following research questions have been established:

- RQ1: To what extent is the contribution of local personnel critical to the success of international, engineering related projects?
- RQ2: What contributions can be provided by and can be executed by local personnel for the successful execution of such a project?

The following sections will describe the research approach taken in order to answer the previously stated research questions to meet the objectives of this doctorate thesis.

3 METHODOLOGY AND METHOD

This section shall describe the methodology and method chosen for this research. At first, the link between ontology and research design is analysed, the researcher's own ontological position is described and following on from this, the chosen research methodology is defined. Furthermore, the selection of research method, data sampling as well as the method for data analysis is defined.

3.1 Research design and ontology

Before choosing how to research, a researcher has to understand his/ her philosophical position as to why and in what way a research is to be conducted (Holden & Lynch, 2004). Guba and Lincoln (1994) argue that both quantitative and qualitative research methods can be applicable to any ontological position, but most researchers tend to differ and require researchers to establish a direct relationship between ontology and research design, which will be presented and discussed within this section.

The relationship between ontology, epistemology and methodology is extensively described by Easterby-Smith et al. (2012) as well as Saunders et al. (2015) in their respective books on management research. Ontology is related to the philosophical assumptions as to nature and reality and "determines how you see the world of business and management and, therefore, your choice of what to research for your research project" (Saunders et al., 2015, p. 127).

Epistemology "is about the best ways of enquiring into the nature of the world" (Easterby-Smith et al., 2012, p. 17) and determines how we can know what we know (Saunders et al., 2015). According to Audi (2010), knowledge and justification are key topics in epistemology and as human beings, there is much we want to enquire. We also, generally speaking, care that what we find out is justified and that what we pass on is justified. "The study of epistemology can help in making this quest, even if it often does so indirectly. It can certainly help us assess how well we have done in the quest when we review our results" (Audi, 2010, p. 10).

Whilst ontology spans from realism (single truth) to relativism (many truths) and the extreme nominalism (there is no truth), epistemology spans respectively from positivism to constructionism. Easterby-Smith et al. (2012) further establish a link between ontology/ epistemology and the applicable research methodology. As the realism end of the scale (including the corresponding positivist epistemology) is seeking for a single truth, the authors argue that the researcher requires a set of data giving specific numbers and facts through experiment i.e. predominantly quantitative research. On the other hand, the nominalism end of ontology (and the corresponding constructionist epistemology) is based on the meaning of several truths, therefore a methodology is selected to gather multiple perspectives i.e. predominantly qualitative research. The following figure depicts these theories.

Ontology – nature of reality and existence



Epistemology – ways of enquiring



Methodology – techniques used for enquiry



Figure 5: Relationship between Ontology, Epistemology and Methodology

The general notion that a positivist epistemology would inevitably result in quantitative research and the constructionist would prefer the qualitative approach is also supported by Bluhm, Harman, Lee, and Mitchell (2011) in their review of qualitative research in management or Tuli (2011) in his paper on quantitative and qualitative research in social sciences.

Lee (1992) in her analysis of the quantitative versus qualitative research method describes this aforementioned understanding in more detail, showing the differences between these two approaches and highlighting specifically the positivist vs. phenomenologist, and as she terms it, the outsider vs. the insider. The positivist (i.e. the quantitative researcher) aims to research on a global scale, thereby taking the role of an outsider as a researcher. The term “outsider” in this case meaning to be free of opinion and looking at the research from an outside point of view. On the other hand, the phenomenologist (i.e. the qualitative researcher) aims to define and investigate a specific problem by immersing him/herself in the research and taking the insider’s perspective.

According to Bluhm et al. (2011), the positivist approach through quantitative research is still the most commonly chosen methodology and the number of barriers which are placed in the way of qualitative research before it is being published when compared to quantitative indicates the overall preference towards the positivist approach. Harris (2000) states that positive research in general results in valid and trustworthy data, however, he also clearly points out the limitations and restrictions of this form of research. Because this type of research focuses so much on obtaining only rigorous information, it usually examines only a narrow bandwidth of observable and quantifiable pieces of information. Whilst quantitative research has been the predominant method in the social sciences in the 20th Century (Tuli, 2011), social scientists have, in recent decades, begun to question the quantitative approach when dealing with persons and individuals as it did not fully display the bigger picture and have therefore shifted toward qualitative research.

Also Cole, Chase, Couch, and Clark (2011) highlight that a majority of research is quantitative, stating that students on a professional doctorate programme tend to draw from experiences in the business and management world, where decisions are often based on facts and data. Therefore, the positivistic/ realistic ontological approach seems to be predominant. However, Cole et al. (2011) further argue that especially when striving to make a contribution to both knowledge and professional practice (a key aspect to the professional doctorate), an alternative such as a subjectivist approach shall be taken.

This section has shown that a researcher’s ontology has to be taken into consideration when taking a decision on the most appropriate research design

due to the close relationship between the two. After all, epistemology is deemed to be the foundation of research (Bryman, 1984).

3.2 Research methodology

This section will demonstrate the ontological basis of this research, justify the applicability of the qualitative methodology in relation to the research topic and will investigate the importance of validity and generalizability in research.

3.2.1 *The researcher's ontological position*

The researcher's own ontological and epistemological position has changed at an early stage of performing this research. His first feeling at the beginning was that he would surely be a positivist. Looking back at it now, he believes this had more to do with the fact that he only had a very generic and basic understanding of ontology and epistemology and believed that being an engineer, defining himself as a positivist was the right thing to choose. He is a scientifically oriented person and perhaps simply believed that this meant that he had to be factual, numeric and that there is only one right answer. Prior to the research, this was his stance even though he had never put much thought into it. As mentioned earlier, this was a mixture of gut feeling and the belief that an engineer should be a positivist.

However, the more he studied the topic, his own research topic and the topic of ontology itself, the more he began to doubt this initial view and reflected on how he approaches life, his job and also the research. His favourite saying, especially when having to diffuse an argument between his project team members is "there's always two sides to a story and the truth is almost always somewhere in the middle". This in itself, be it on a more personal than scientific level, shows that he cannot really be a positivist but on the contrary, is a constructionist at heart.

3.2.2 *Reflection on qualitative research*

Having understood to be much more comfortable with constructionist views, it is important to this researcher to understand and note the advantages of the related qualitative research. The researcher's view when performing

quantitative research does not allow the gathering of deeply hidden data, a statement also supported by Venkatesh, Brown, and Bala (2013). Quantitative research is not the optimum method when trying to excavate tacit knowledge from experts and professionals. Especially when comparing it to the qualitative approach, it lacks in personal interaction and the digging deeper to find this special knowledge or specific piece of information. Interaction is an important aspect which is given in the interview scenario and is lacking in the quantitative approach (Cole et al., 2011).

As argued by Cole et al. (2011), the interpretive aspect of qualitative research is exactly the chance given by such an approach, where it is possible to look behind the superficial data in an interview scenario. Both researcher and respondent can enhance a specific topic during a discussion and by this, push the boundaries of knowledge both from a theoretical as well as practical aspect. "Researchers engaging in a qualitative study focus on observing, describing, interpreting and analysing the way that people experience, act on or think about themselves and the world around them" (Bazeley, 2013, p. 4). As this research is focussing on the skills of international project management including cultural components, an aim is to look for answers related to personal feeling, communication with others, cultural aspects and motivation of a project team amongst others. These are topics which can be researched through interviews and discussions with experts in order to find out about the hidden, tacit knowledge and lead to questions with no simple yes/no answer.

Qualitative research is deemed to be the ideal method for uncovering tacit knowledge in a structured and rigorous manner. The immense advantage of this type of research is the interaction part of research, where the researcher is in direct contact with experts in the field of study and aims to delve into their knowledge and experience through in-depth interviews and discussions. The immersed researcher is another attribute relatively specific to qualitative research. The idea of it being that this participatory form of research requires continuous interaction with the research participants. This ability to discuss and communicate directly with the source of information in order to gain a common understanding is a specific strength of qualitative research. Quantitative, non-contact data gathering would not allow for such clarifications and could

therefore lead to misunderstanding of question or answers, especially in an international environment (Harris, 2000).

A goal of this research is to uncover tacit knowledge of international project managers who need to take specific decisions in various project situations. Qualitative research assists the practitioner in formulating his/ her experience and knowledge and reflect on his/ her approach in practice (Schön, 1983). This in fact is one of the key arguments in favour of qualitative research in general. The subjective approach recognises and is based on a researcher's hunch or experience and can act as a guideline to bring the contribution to knowledge as well as the contribution to the professional world together (Cole et al., 2011). All in all, the real strength in an interpretative approach is the ability to be able to stimulate the respondent and try to generate new ideas within this interview scenario. It enables the researcher to "capture the complexity and subjectivity inherent within management thinking, in order to help build and refine theoretical propositions and to enrich findings" (Harris, 2000, p. 756).

3.2.3 *Validity and generalizability*

When performing research and selecting a research method, one of the concerns can be that the performed research is not deemed to be valid or trustworthy and is therefore not seen to be legitimate. This section summarises the views of several researchers who have analysed the connection between chosen method and validity of research and indicates the considerations taken by the researcher to ensure the trustworthiness of the chosen method of the performed research.

One such analysis has been compiled by Winter (2000) in his comparison between quantitative and qualitative research. In general, Winter defines validity as an indication for whether the means of measurement are accurate and reliability on the other hand to be a measure for degree of replicability. Winter's research paper concludes that the notion of validity is deemed to be a more important concept in quantitative research and not so much applicable in qualitative research. Although he notes that some qualitative researchers have rejected the notion of "validity" entirely, most others have realised the necessity for a quality check and have adopted the terms "plausible" or "trustworthiness"

instead. Also Thomas (2003) referred to such a quality check in qualitative research as a check for trustworthiness instead of validity.

Whilst understanding that the fundamental difference between quantitative and qualitative research has led to these differing views with regards to the importance of validity, it is still an overall quality check which needs to be ensured. Watling (cited by Winter 2000, p.6) states that “reliability and validity are tools of an essentially positivist epistemology”, however, in this researcher’s view, a check for quality, be it termed validity or otherwise, is necessary no matter which epistemology and resulting method is chosen.

A factor which quantitative researchers strongly build their case on is the generalizability of results and it is often considered to be a true test of validity in quantitative research (Winter, 2000) but not seen as crucial within the community of qualitative researchers. For example Maxwell (1992) states that in principle, generalizability does not apply to qualitative research. Nevertheless, Maxwell does analyse this further and does concede that internal generalizability is a viable factor in qualitative research but external generalizability is not. In short, internal generalizability is defined by Maxwell as generalizing within a group or institution or community whereas external generalizability is defined as generalizing globally across all groups or institutions. In the context of this research, internal generalizability is deemed to be within the “institution” of engineering projects whereas external generalizability would be applicable to all situations in life.

In terms of internal generalizability, Maxwell questions whether the interview form of sampling allows the researcher to generalize the findings (internal) as it only depicts this specific situation and the relationship between the researcher and the interviewee which is being built up during such a scenario might skew the results. However, “understanding the nature of that situation and relationship, how it affects what goes on in the interview, and how the informant’s actions and views could differ in other situations is crucial to the validity of the accounts based on interviews” (Maxwell, 1992, p. 295).

As mentioned also by Cole et al. (2011), the qualitative approach to research leaves room for interpretation and is not free of influence by the researcher. An aspect to be considered when in the interview scenario is that people generally like talking about the work they have conducted, however, they tend to

exaggerate or be overly enthusiastic about specific aspects of their actions (Cole et al., 2011). This is most likely the case for achievements or positive actions. People generally tend to talk more about what they have done well rather than their shortcomings or mistakes.

Also, “in business organizations and academic institutions, realities are suppressed, feelings are stuffed and intellectualization forces new realities into old paradigms. We build mental worlds of should and might have beens” (Moran & Youngdahl, 2008, p. 15). This aspect was taken into consideration by the researcher in order to allow “internal generalizability” and ensure trustworthy research.

When considering sampling method and size, Maxwell (1992) notes that in qualitative research, sampling is done more purposeful rather than random as statistical representativeness is not an important factor in qualitative research. However, how large must a sample size really be in order to be free of any scrutiny? For quantitative research, the choice of the sample size is a key decision as it is an important measure with regards to its generalizability. In terms of sample size in qualitative research, Marshall (1996) argues that this fully depends on the research question and is not willing to give an ultimate or even indicative number. However, he does argue that this might even be as low as single figures when researching simple questions in great detail.

Saunders et al. (2015) on the other hand, argue similarly but do give a rather wide range of sample size from 5 – 30 interviewees, dependant on the research topic and the level of research definition. In the further discussion, however, the authors do state that 12 interviewees is a good sample size for a defined set of research questions and objectives, thereby narrowing the topic to a necessary degree.

Guest, Bunce, and Johnson (2006) have analysed the requirements for sample size a little further. The authors have initially found that most literature on sampling refers to theoretical saturation being a criterion to justify adequate sample sizes. However, none of the literature reviewed by the researchers actually mentions a number or range, at which the theoretical saturation may be reached. Therefore, the researchers have set out to perform an experiment and detailed analysis to come up with a number to form as a guideline. The results have shown that after 12 interviews, a majority of common codes and theories

have been found and any further interviews brought only minor amounts of new information. They, of course, limit this guideline of 12 interviews to certain underlying factors and assumptions such as quality of data and clearly defined research topic.

It is also to be considered, that there are very often limitations to the amount of stakeholders who are accessible and can be sampled (Venkatesh et al., 2013). Performing interviews with seemingly random people does not gather data from experts but from anyone who has an opinion on a specific topic. There surely are many pieces of research which have been performed and satisfy the statistical requirement for sample sizes, however, in order to make a serious claim for generalizability, this aspect of the research needs to be carefully considered in order to avoid any room for criticism. The link between sample size and generalizability is mostly a line of argument found within quantitative research, however, is partially also deemed applicable to qualitative research.

The factors mentioned above had to be taken into consideration during data analysis and had to be mitigated during the data gathering phase.

During the continuous review of the interviews which have been performed for this research it had become evident, that after approximately 10 interviews, the responses in general had become rather similar and a certain saturation point had been reached. Whilst the project examples of course varied from respondent to respondent, the overall topics which were covered had become similar and started to be repetitive. After 12 in-depth interviews, the researcher had then decided that the saturation point was reached whilst still ensuring that a sufficient sample size was considered to ensure trustworthiness.

This may be a critique point in terms of verification and validity. Especially positivists may question the validity of this qualitative research, which is performed by interviewing selected experts and then summarising the findings. This form of research is lacking the outside point of view, which takes a very factual and objective look at the findings in order to judge whether these are true or not.

However, for Cole et al. (2011), finding the objective truth is not the ultimate quest in qualitative research. The aim is not to eliminate bias but to accept it and take it into consideration during the analysis. It is to be considered that validity of a result does not necessarily guarantee a useful piece of research

and therefore it might be necessary to accept a certain level of bias and take it into consideration during data analysis.

3.3 Research method

By way of briefly summarising the available research methods related to qualitative research methodology, this section justifies the chosen method of semi-structured interviews. Following on from this, the method of sampling, a presentation of the research respondents as well as the method for data analysis for this research will be discussed.

3.3.1 *Background to qualitative research methods*

Easterby-Smith et al. (2012) define three general modalities for collecting qualitative data:

1. Collecting data through language
2. Collecting data through observation
3. Collecting data through interaction

Both, the observation method as well as the interaction method, are challenging to conduct considering the international context of this thesis and the worldwide spread of interviewees. This makes it highly difficult to be able to observe on a continuous basis let alone interact with one or several of the interviewees in the same place. In addition, the method of observation does, in the researcher's opinion, open up a weak spot in credibility and especially replicability of conclusions as, in an international context, looking at only very few case studies may not allow for any form of generalization.

Therefore, the researcher has chosen to collect data through language, where Easterby-Smith et al. (2012) have defined four subcategories of research methods:

- a. Diary methods
- b. Postcards
- c. In-depth interviews
- d. Group and focus interviews

The diary method involves respondents to keep a diary of their day-to-day routines, allowing the respondents to share information thereby preventing the researcher to be personally involved. However, it was not deemed to be feasible to request international project managers to keep a diary over a lengthy period in order to support this research. One of the very tedious tasks of project management is the inevitable reporting which needs to be performed. Adding on top of this a personal diary to be submitted to the researcher was not deemed to be a reasonable request and therefore was neglected as a research method.

The postcard method involves sending an electronic postcard to potential respondents with a limited number of open questions, with a design attracting immediate attention and enhancing the chances of receiving responses. This method is mostly used when the researcher is facing problems in reaching or accessing potential respondents. However, it only allows a very limited amount of fixed questions and does not allow an in-depth discussion on specific topics and was therefore also not seen as a relevant method for this research.

The researcher had chosen to perform interviews in order to be able to discuss in depth with the interviewees and be able to find the tacit knowledge which is deemed most important when researching in an international perspective. The group or focus interviews were not deemed plausible as, as mentioned earlier, the respondents are located worldwide on certain projects and finding a common time and place for respondents to participate would have been nearly impossible considering the personal schedules and travelling times of many of the interviewees. Therefore, the in-depth interview was chosen as the most relevant research method which allowed one-on-one discussions between the researcher and the interviewee and thereby allowed the researcher to “probe deeply to uncover new clues, open up new dimensions of a problem and to secure vivid, accurate inclusive accounts that are based on personal experience” (Burgess, 2003, p. 107).

3.3.2 *Semi-structured interviews*

On the topic of interview structure, Easterby-Smith et al. (2012) defined three levels, from highly structured, to semi-structured and finally unstructured interviews (see Table 6 below). The structured interview typically leads to a fixed set of data and very much leans towards a quantitative form of research and data analysis and is therefore not applicable to this research. The unstructured interview, whilst allowing the interviewee to speak freely and without intervention, requires the interviewee to make an assumption of what the researcher is interested in and “too many assumptions of this kind lead to poor data which is difficult to interpret” (Easterby-Smith et al., 2012, p. 128) and was therefore also excluded as a method.

The chosen method for this research was the semi-structured interview due to its characteristic flexibility in being “sufficiently structured to address specific dimensions of the research question while also leaving space for the study participants to offer new meanings to the topic of study”(Galletta, 2013, p. 2). The semi-structured interview would lead to two different sets of research data. In general, it was expected that the fixed set of questions would lead to a fixed set of data which can be analysed and compared across all project managers interviewed for this research.

The development of this fixed set of questions was very much based on the three grand themes identified during the literature review as well as the topics within these grand themes. However, it was the role of the interviewer to probe further and ensure the development of new ideas and to branch off from the theories found in the literature review and in particular, to focus on the local aspect of project management and support from local project team members. Therefore the following topics and the literature where they were derived from were covered in the set of fixed questions. Further details can be found in Appendix 3:

Topic of Question	Literature Review Basis
Hard and soft skills and importance of soft skills in international projects	Based on literature review chapter 2.2.1
Specific knowledge of local personnel relevant to international projects	Based on literature review chapter 2.2.2.1 as well as personal experience
Training of expat personnel	Based on literature review chapter 2.2.2.1 and 2.2.3
Training of local personnel and knowledge transfer	Based on literature review chapter 2.2.3

Table 5: Summary of prepared questions and basis of literature

Once the first set of interviews had been held, the researcher had reviewed the set of answers and slightly refined the set of semi-structured questions, in particular with regards to training and knowledge sharing but also regarding organisational setup. These were topics which the first set of respondents had all covered during the discussions but it was found to be important that these topics are covered throughout all interviews.

In addition to the prepared questions, a set of improvised questions and topics were covered leading to further, interpretative data. Here the challenge lay in the credibility of the received data and it was the researcher's responsibility to probe and to question further in order to receive data that can be utilised as part of this research, which cannot be discredited (Barriball & While, 1994).

Level of Structure	Type of Interview
Highly Structured	Market research interview
Semi-structured	Guided open interview
Unstructured	Ethnography

Table 6: Types of interview (adapted from Easterby-Smith et al. (2012, p. 128))

As mentioned by Harris (2000) in his study on international management research, it is important for qualitative research and its credibility to not only discuss the fixed questions and theories prepared by the researcher, but to let

the respondent do the exploring of thought. He or she should speak in their own native categories because that is where the real value of such research lies and how tacit knowledge may be unveiled.

The challenge was to keep the semi-structured interviews focused and streamlined in order to try and minimise the inevitable telling of long stories. The fixed set of questions, as part of the semi-structured interview, assisted in keeping this certain structure. In-depth preparation and professionalism was key in order to gain the trust of the respondents and be able to react to any given situation during this participatory form of research. In order to be able to quickly react to a given topic being discussed, a set of facts and quotes from the literature review were present in the researcher's mind in order to either challenge or perhaps support the respondent's point he or she is making at that time. This was important also to keep the discussions flowing and instil continuous interest in the respondents because respondents to research, specifically practitioners, are most helpful if they see the research being conducted not as a nuisance but as a form of development (Schön, 1983). In addition, it was helpful to reach a collaborative form of interview where the "interviewees want to know that what they have to say matters. They want to know what will become of their words" (Silverman, 2016, p. 131).

Even though the experiences of the respondents are exactly what the researcher wants to base his analyses on, the answers had to be concise and meaningful in order to be regarded as valid and credible and result in analysable data. On the other hand, it would have been of little use to this research if the respondents simply gave short answers without backing up their thoughts and theories with experienced examples. In such cases, it was the researcher's job to probe the respondent in order to find out more what lies behind a given statement.

This technique of probing is covered by Barriball and While (1994) in their research on semi-structured interviews. It is a useful tool to ensure reliability of given statements as it allows the researcher to clarify any inconsistencies and provides an opportunity to further explore critical topics. There is a given structure which the researcher planned to uphold, however, this structure was very flexible and changes had to be made as is so often the case during the course of qualitative research (Sergi & Hallin, 2011). "It is fundamental to reflect

and act upon the nature of the exchange between researcher and participant. One may prompt the participant, rephrase questions and make changes according to the interview situation” (Galletta, 2013, p. 75)

The immersed researcher has to carefully lead the discussion, bring in his own ideas and findings of the literature review and carefully understand if a discussion is going into the right, concise direction or is leading into a dead-end. The danger of becoming too immersed and this form of interaction possibly compromising the validity of the research has also been analysed by Silverman (2016) in his book on qualitative research. The author shows varying viewpoints on how to handle an interview scenario but in the end does state that it simply has to be acknowledged, that all interview data are products of interpretive practice and a certain researcher bias has to be taken into consideration during the data analysis.

Nevertheless, the goal was to fully develop the understanding of a topic and ideally enhance this understanding through rigorous methodological research and validated evidence (McNiff, 2013). It is the role of the researcher to make quick decisions during the interview and steer the discussions into the right directions, thereby taking knowledge from literature review but also from the experience made during previous interviews into consideration.

Therefore, once the first set of interviews had been held, the researcher had reviewed the set of answers and slightly refined the set of semi-structured questions to include specific topics such as training and knowledge sharing. These were topics which the first set of respondents had all covered during the discussions but it was found to be important that these topics are covered throughout all interviews.

This aspect led to effective and concise interviews, considering that the interviewing skills had been enhanced due to the immersion in data collection and experiencing of certain patterns (Galletta, 2013).

3.3.3 Sampling

This section describes at first the theoretical background to sampling techniques and will then define in detail the persons who were interviewed for this research as well as the respective selection criteria.

3.3.3.1 Background to sampling techniques

In his article on *Sampling for Qualitative Research*, Marshall (1996) describes the different techniques and factors which are to be considered for both quantitative and, in more detail, the qualitative approach to sampling. He defines the three main strategies to sampling in qualitative research as:

- Convenience sample,
- Theoretical sample and
- Judgment sample.

The convenience sample is deemed the least rigorous technique as it simply focuses on the most easily accessible respondents which are not necessarily the most reliant or credible subjects, thereby possibly resulting in poor quality data.

The theoretical sample is an iterative process of sampling, where during the course of the first interviews, certain theories evolve which are then further examined and elaborated in the following interviews.

The judgment sample “is the most common sampling technique. The researcher actively selects the most productive sample to answer the research question” (Marshall, 1996, p. 523).

This research focussed mostly on the judgement sampling technique whereas it is to be acknowledged that a certain sense of convenience sample is given due to the nature of some respondents being easily accessible to the researcher through his line of work. It is to be noted though, that all respondents fulfilled the rigorous sampling requirements which are formulated in the following section.

3.3.3.2 Research Ethics

Whilst performing this doctorate research, particularly the topic of research ethics had to be considered closely to ensure the integrity of all respondents and respect the non-disclosure of their identity or any information which may not be intended for the public. After all, “ethical principles should underpin all

practice and especially so when research is being used to explore and develop professional practice” (Smith, 2008, p. 144).

In order to ensure that all respondents understand that the data they provide in the interview scenario is handled diligently and with care, a consent form was developed (see Appendix 1). “Participants need to know why and how the research is being conducted and by whom, before they can make an informed decision about participation” (Smith, 2008, p. 147). This consent form briefly explained the background of the research topic, a short explanation of the interview to take place as well as key points of data protection as follows:

- Personal and organisational information will not be disclosed in the research report or to other research participants, and your privacy will be protected
- It is anticipated that the interview will be recorded for achieving better quality of data, and an audio file will be stored on my computer for transcript. Upon your request I will e-mail you this file and I will delete it permanently after completion of transcript.
- All interview materials (e.g. notes, transcripts) will be kept confidential during the research, and will be destroyed after the research has been assessed by the University of Gloucestershire
- You may withdraw the interview information at any time without providing a specific reason for such withdrawal
- You will be provided with a transcript and/or recording (whichever appropriate) of your interview
- Upon your request, you will be provided with the final research report after it has been assessed by the University of Gloucestershire

Each respondent then acknowledged this consent by signature.

3.3.3.3 *Sampling criteria and approach*

For this doctorate research, interviews with experienced project managers who have worked on international projects were conducted. Some of these project managers have moved to live within a foreign country in order to manage their respective projects locally. Others have worked on international projects based in their respective head office, with regular business trips to the project location.

Some respondents are or have been managing directors or have a leading role within a local project office and also have extensive project management experience. All project managers who have been interviewed have worked on projects where the project teams are globally dispersed.

The researcher has drawn on contacts from his business world as well as personal life. Additional respondents have been added during the course of the research, as the researcher has come across further project managers or project directors with extensive international project management experience and were willing to participate as respondents. One such respondent was identified through the so called snowballing effect, where other project managers who are suitable respondents may be suggested by the samples (Marshall, 1996).

All respondents are experienced project managers with a minimum of 10 years of work experience. They have managed engineering projects with a budget of more than \$1 million in an international setting. This means that the client, the project location and/ or also the entire project team was located in a foreign country.

Detailed interviews were conducted with these senior project managers, managing directors as well as leading personnel of selected, large scale subsidiary offices who all have the relevant project management experience in order to be of real benefit for the objective of this research. All respondents are fluent in the English language, therefore the researcher has decided to perform the entire interview in English. Temple and Young (2004) argue that persons speaking in their native language are more comfortable to express their feelings and thereby push the boundaries of what will be said. Nevertheless, the authors do argue that translation can lead to other problems and misinterpretations due to false translation or a misunderstanding. In order to avoid any of such misinterpretations, the entire research is conducted in English.

All respondents were contacted well in advance, informed about the general research topic and reason for the request to interview them. A consent form was sent in advance of the interview in order to inform the respondents about the handling of the data obtained from the interviews. This consent form can be seen in Appendix 1. A personal meeting was scheduled and if not possible due to separate locations, a videoconference was conducted. It was the absolute

intention of the researcher to try to avoid only a telephone interview as the gestures and mimics of the respondent may not be important for analysis of the actual spoken answers but gave a more personal touch to the interview. It can give the interviewer a sense of whether a question or specific topic has touched a nerve which may need to be explored further.

Raymond Opdenakker (2006) has analysed and compared various interview techniques including face to face, telephone, MSN messenger and Email interviews. For the sake of this research, the latter two techniques were not considered valuable and are therefore not further taken into account. Opdenakker's conclusions on face to face and telephone interviews are however very relevant and interesting. With regards to face-to-face interviews, the author mentions various advantages, particularly related to the value of social cues such as voice or body language which may add extra information. Of course, the downside may be that also the interviewer utilises body language in a way to guide the discussion or the answers in a certain direction which may, however, be diminished by the awareness of the interviewer not to do this. A further disadvantage may be the time constraint, both in scheduling for a meeting and particularly meeting in a certain place considering the possible global distribution of interviewees.

This is a direct advantage of the telephone interview (or videoconference in that case), as there is a wide geographical access allowing people from all over the world to be interviewed. The telephone interview, however, does have the downside of lack of social cues, which are more likely to be transmitted in a videoconference call. The social cues of voice and intonation are nevertheless still available in telephone interviews.

In summary, for this research the preferred interview technique was face to face if time and place allowed for this. In case this was not possible, a videoconference call took preference over a telephone call, however, in very few cases this was required simply due to technical issues where not all interviewees had this facility or the required bandwidth readily available.

Approximately 1 hour interviews were foreseen and the call or in-person meeting was requested and scheduled. All interviews were recorded and respondents were informed of this in advance. Following on from the interview, a full transcript was documented based on the recordings. In terms of

transcription, “what appears at first sight as a purely mechanical task is, in fact, plagued with interpretative difficulties” (Bazeley, 2013, p. 73). The task of transcription itself was deemed to be best done by the researcher himself as it allowed building intimate knowledge of the available data along with ensuring a quality transcript without the omission of words or punctuation, potentially altering the meaning or intention of the spoken word. Even though this may be a very time consuming task, full transcriptions were performed in order to allow a full analysis of the interview. It is to be noted that for one hour of tape, approximately 6 hours of transcription were foreseen (Opdenakker, 2006).

3.3.4 Presentation of respondents

Throughout this thesis, the persons with which the researcher has conducted the interview have been labelled “respondents”. As this term may be somewhat misleading to indicate a pure question and answer session, it is to be mentioned and clarified that the semi-structured interviews have been conducted in an open, discussion type of interview setting.

3.3.4.1 Overview

In general, the 12 respondents can be separated into 2 main groups as shown below.

1. Senior Project Managers (Home Office Based)

- a) Respondent #1
- b) Respondent #2
- c) Respondent #3
- d) Respondent #4
- e) Respondent #5
- f) Respondent #6

2. Locally Employed Staff (LES)

- i. Local Nationals

- a) Respondent #7 – Chinese National
- b) Respondent #8– Croatian National
- c) Respondent #9 – Russian National

ii. **Expats**

- d) Respondent #10
- e) Respondent #11
- f) Respondent #12

A short summary on the background and experience of the respondents will be provided as follows.

Group 1

- a) Respondent #1: German national, age group 40-50. Head of Project Management at an Engineering Company with 20 years of project management experience. Started with smaller projects with a budget of around €2-3 million and now managing projects with several €10 million. All projects are within the oil and gas industry, and the locations vary from Asia, Africa, southern Europe and North America.

Interviewed on 09.11.2018– face-to-face interview

- b) Respondent #2: German national, age group 40-50. Area manager upstream oil and gas projects in an engineering company with 15 years of project management experience. Previous to this position, managing projects for a world major oil and gas production company in the UK. Has managed international projects in the UK, China, Germany, Kazakhstan, Iran and Russia for example.

Interviewed on 10.12.2018 – face-to-face interview

- c) Respondent #3: Greek national, age group 40-50. Project Manager for various engineering companies with 12 years of experience. Has managed approximately 10 different large scale oil and gas engineering

projects which were mainly located in Arabic countries. Mostly in Middle East, North Africa and Greece.

Interviewed on 18.06.2018 – face-to-face interview

- d) Respondent #4: German national, age group 40-50. Project Manager at a shipbuilding company, thereafter large enterprise manufacturing company, with nearly 20 years of project management experience. Has managed international projects with a focus mainly on China, now USA and Saudi Arabia as well as South Korea, Japan and Singapore.

Interviewed on 08.07.2018 – face-to-face interview

- e) Respondent #5: German national, age group 40-50. Project Manager and Head of Order Management at large enterprise manufacturing company, with nearly 20 years of project management experience. Has managed international projects in the European countries but now in the last 5 years, changed the market segment from European projects to projects dedicated to naval and governmental authorities in India or South East Asia.

Interviewed on 10.08.2018 – videoconference interview

- f) Respondent #6: German national, age group 60+. Project manager for a large paint manufacturing company in the late 60s and early 70s, responsible for Eastern Europe and Russia. Thereafter, founder and owner of a manufacturing company for thick walled technical parts from plastic. Opened subsidiaries in the US, in Malaysia and Italy as well as a sales office in China.

Interviewed on 20.12.2014 – face-to-face interview

Group 2:

- a) Respondent #7: Chinese national, age group 40-50. Head of order management for the Shanghai office of a large enterprise manufacturing company with 15 years of project management experience. Is currently leading a team of order managers and application engineers, all Chinese

nationals. This team is executing projects as the local office in China, for projects headed by the project management team in Germany.

Interviewed on 08.11.2017 – videoconference interview

- b) Respondent #8: Croatian national, age group 40-50. Local project representative with 20+ years of experience, including working for an American non-profit organisation during the Yugoslav Wars in the 90s. Thereafter, working as a project manager for an international company managing projects in Australia and India.

Interviewed on 02.11.2015 – face-to-face interview

- c) Respondent #9: Russian national, age group 40-50. Former managing director of the Moscow office of an engineering company in oil and gas. Has acted as the local representative for multiple large scale projects and has over 20 years of project management experience, within the Petroleum and Construction industries in the Russian Federation as well as Caspian Region (Turkmenistan and Kazakhstan).

Interviewed on 14.05.2019 – videoconference interview

- d) Respondent #10: German national, age group 40-50. Project Manager for various engineering companies as well as oil and gas major, with 15 years of project management experience. Long term expat assignment to Nigeria in addition to project management experience in India, Germany, Russia and Egypt for example.

Interviewed on 17.05.2016 – videoconference interview

- e) Respondent #11: US American national, age group 60+. Former managing director of the Kazakhstan as well as Russian office of an engineering company in oil and gas. Has held over the years various positions in project management and general management in USA, Western Europe, Eastern Europe, former Soviet Union and Africa.

Interviewed on 24.10.2017 – videoconference interview

- f) Respondent #12. German national, age group 60+. Over 30 years of project management experience in various large enterprise oil and gas companies. Has managed projects worldwide, both from home office as well as from local project offices. International project experience includes North America, South America, Australia, Russia, Middle East and Malaysia.

Interviewed on 12.05.2016 – videoconference interview

The first interview was conducted with respondent #6, the most senior of all respondents. This was intentionally chosen and turned out to be very valuable as the experience gained by this respondent over the many years in international projects ensured a very effective and productive interview. The researcher was able to learn from this experience, was able to adjust some of the interview questions in order to cover some of the topics brought up by this respondent and to see if also other respondents had similar experiences. It is acknowledged that the time span for all interviews to be conducted was over a long period of time, partially for personal reasons but also in order to allow intermediate analysis of the received data and ensure a more precise or concentrated questioning for the next interview.

3.3.4.2 Age and years of experience of respondents

The table below shows the age groups of the respondents. Considering the sample criteria of minimum 10 years of experience in project management, the respondents were all over the age of 40 whereas three respondents were in fact over the age of 60.

Age Group	# of Respondents
40-50	9
60+	3

Table 7: Evaluation of age groups of respondents

Here, the study presented by Müller and Turner (2007) is to be mentioned and taken into consideration in order to check for bias or generalizability related to age of respondents for this doctoral study. The authors have questioned nearly

1000 project managers on their perception on whether soft criteria such as customer satisfaction or team satisfaction have an influence on the overall success of a project. “Respondents over 55 years of age assign a significantly higher importance to team satisfaction than those up to 40 years of age. Across all age groups the importance of team satisfaction increases linearly with increasing age of the respondents” (Müller & Turner, 2007, p. 304). Therefore it may be deducted that the older or more experienced the project managers are, the more value they give to the soft skills of project management. This needs to be taken into consideration in the data analysis in order to ensure that results have not been influenced by the age of the respondents.

The graph showing the result of the study by Müller and Turner (2007) is depicted below in Figure 6. Again it is to be noted that the term project success criteria in this chart is related to satisfaction of clients, teams and other stakeholders. The age groups and nationalities of the respondents to this research have been marked within this chart with a red circle. As justified in the section on sampling criteria, a minimum of 10 years of project management experience was required from the respondents. Therefore, the lower extreme of the chart (low age group, low rating of importance to these success criteria) is not needed to be considered within the analysis of data. The red indication shows that the respondents chosen for this research present a wide and balanced range of experience and views.

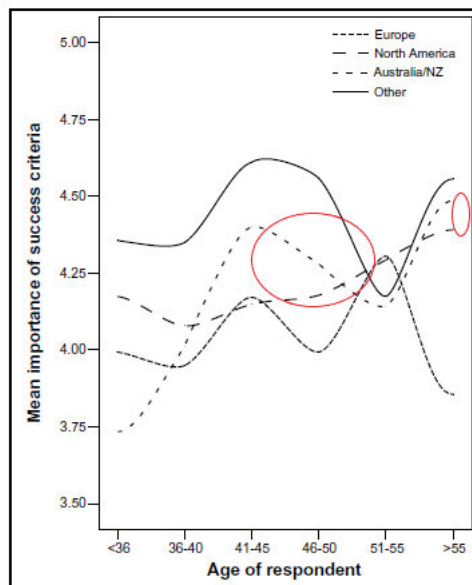


Figure 6: Mean importance of success criteria by project manager age (Müller & Turner, 2007, p. 305), adapted for this research.

As established in the literature review, client and team satisfaction are considered to be a major success criteria in international projects (Grisham, 2010), therefore the relevance (or irrelevance) of age/ years of experience and the type of response given will be considered in the upcoming sections.

3.3.4.3 International experience/ variety of respondents

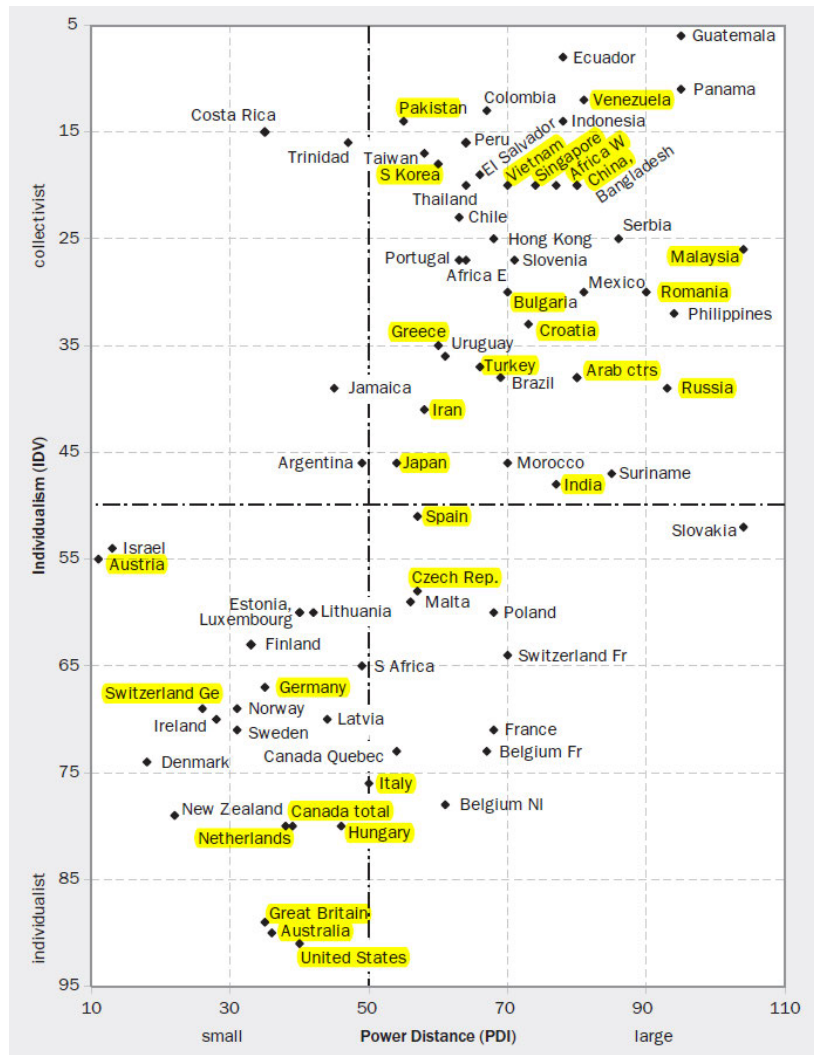
The following table lists the countries and regions in which the respondents have managed projects and have had active experience:

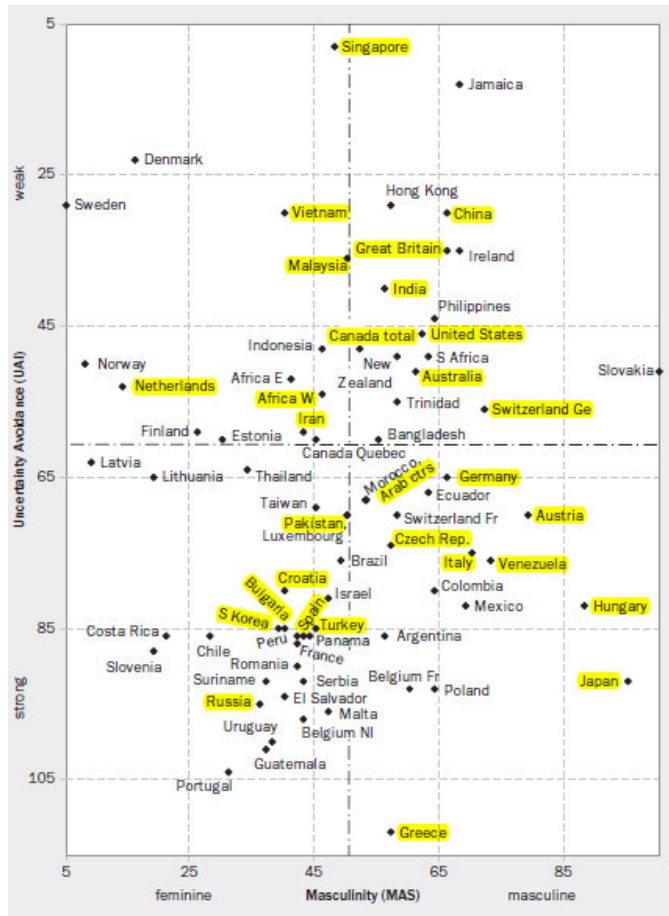
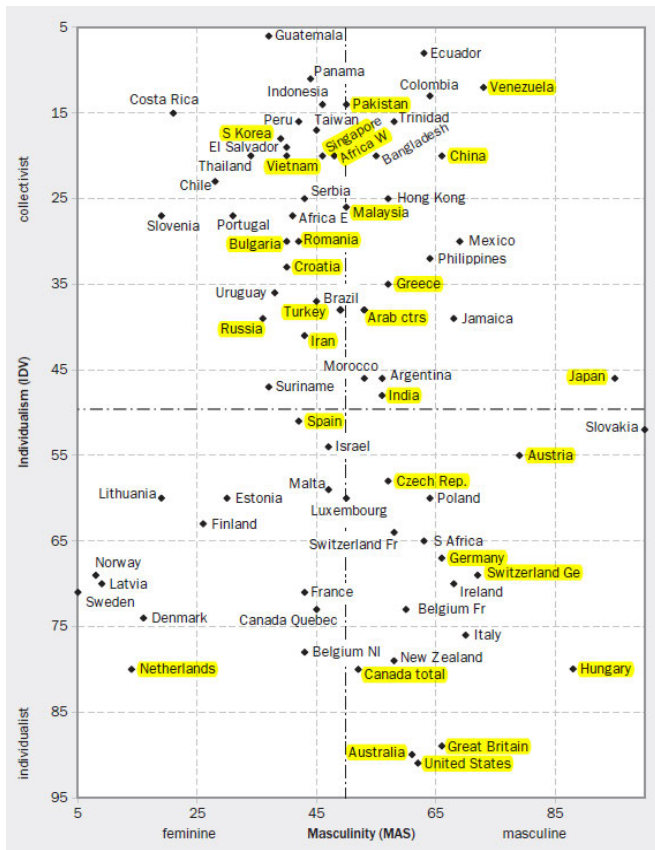
Respondent #1	Respondent #2	Respondent #3	Respondent #4	Respondent #5	Respondent #6
Canada	China	Croatia	China	Germany	China
Eastern Europe	Germany	Germany	Germany	India	Czech Republic
Germany	Iraq	Greece	Japan	Italy	Germany
Middle East	Iran	Jordan	Saudi Arabia	Middle East	Italy
Nigeria	Kazakhstan	Qatar	Singapore	Spain	Malaysia
Pakistan	Russia	Saudi Arabia	South Korea	Vietnam	Russia
Turkmenistan	UK	Tunisia	USA		USA
Western Europe					

Respondent #7	Respondent #8	Respondent #9	Respondent #10	Respondent #11	Respondent #12
China	Australia	Russia	Germany	USA	Australia
Japan	Croatia	Kazakhstan	India	Africa	Canada
South Korea	Papua New Guinea	Russia	Nigeria	China	Germany
	Singapore		Russia	Eastern Europe	Malaysia
	USA			Kazakhstan	Middle East
	Australia			Russia	Russia
				Western Europe	South America

Table 8: Overview of countries and regions of respondents' experience

This overview shows that the respondents have a wide range of experience in terms of countries, regions and cultures in which they have managed projects. It is to be noted that not all countries, regions or cultures of this world are covered by this list. In order to put this into perspective in terms of cultural diversity, the above list of countries and regions have been highlighted on the following graphs in order to show the potential variety in cultural experience which has been brought to the table by the respondents. The original graphs have been charted by Hofstede, Hofstede, and Minkov (2010) in their book on cultures and organisations and are the result of a survey conducted by Hofstede amongst IBM employees worldwide. It is to be noted that the dimension scores shown on the charts do not explain all the differences in management. “To understand management in a country, one should have both knowledge of and empathy with the entire local scene” (Hofstede, 1993, p. 90). However, the purpose of using these graphs is not to explain all the differences in management but to have a baseline on cultural diversity on which the diversity experienced by the respondents to this research can be highlighted. By doing this, it is possible to gain an overview on whether the chosen respondents have significant international expertise in project management and to see if most areas are covered.





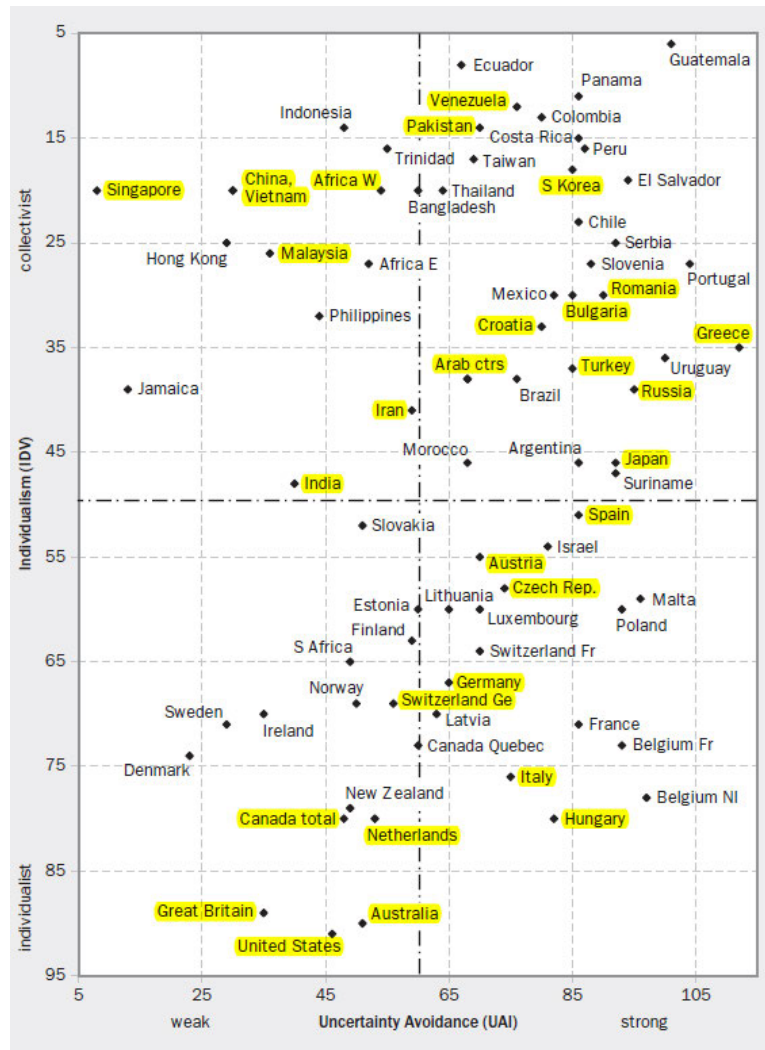


Figure 7: Cultural dimensions comparisons (Hofstede et al., 2010, p. 103; 147; 214; 218) with highlighted countries of experience of respondents

These highlighted graphics show that the chosen respondents cover a very wide range of cultural experiences in their professions and nearly all areas of cultural dimensions are covered by the chosen respondents. However, it is to be noted that this does not infer that the responses provided are deemed, by the respondent, to be true for all countries or regions of their respective experience. In fact, in many cases the respondent backed up his views with specific examples from specific projects and specific countries or regions. This will be taken into consideration in the upcoming sections.

3.3.5 Data analysis

Based on the theories of Miles and Huberman (1994), Pat Bazeley (2013) describes qualitative analysis as a recursive process with three concurrent activities:

- Data reduction based on analytic choices
- Data display is a form of organising and displaying the available data, thereby facilitating further analysis and interpretation
- Conclusion drawing/ verification as a final step to ensure a tested and meaningful conclusion.

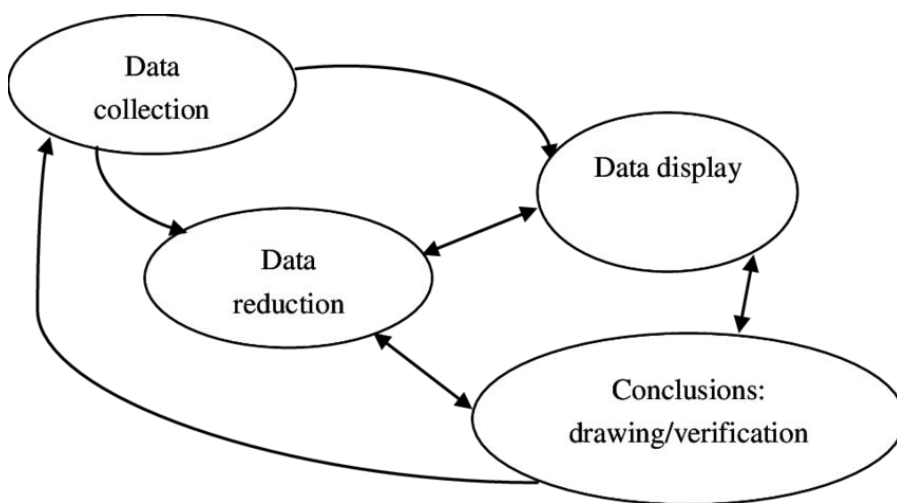


Figure 8: Components of data analysis (Miles & Huberman, 1994)

Thereby it is to be noted that these concurrent activities of data analysis described above, already begin during the data collection phase and are merely continued and finalised during the data analysis phase.

The data which has been gathered throughout this qualitative research is summarised, analysed and interpreted accordingly by the researcher.

According to Burnard, Gill, Stewart, Treasure, and Chadwick (2008), there are, in general, two fundamental approaches to qualitative data analysis, the deductive approach and the inductive approach. Whilst the deductive approach is based on a predetermined framework to analyse the data, the inductive approach requires building a structure based on the available data. Within the variety of inductive approaches, this researcher has chosen to perform a thematic content analysis for this research. This entails analysing the available

transcripts, identifying common themes and providing example of such from the text.

Further justification for the chosen method may be given by analysing Thomas (2006), who has grouped qualitative data analysis techniques into 4 main categories: the general inductive approach, grounded theory, discourse analysis and phenomenology. A summary of the main differences can be seen in table 1 below.

	General Inductive Approach	Grounded Theory	Discourse Analysis	Phenomenology
Analytic strategies and questions	What are the core meanings evident in the text, relevant to evaluation or research objectives?	To generate or discover theory using open and axial coding and theoretical sampling	Concerned with talk and texts as social practices and their rhetorical or argumentative organization	Seeks to uncover the meaning that lives within experience and to convey felt understanding in words
Outcome of analysis	Themes or categories most relevant to research objectives identified	A theory that includes themes or categories	Multiple meanings of language and text identified and described	A description of lived experiences
Presentation of findings	Description of most important themes	Description of theory that includes core themes	Descriptive account of multiple meanings in text	A coherent story or narrative about the experience

Table 9: Comparison of Qualitative Data Analysis Approaches (Thomas, 2006, p. 241)

The general inductive approach and grounded theory are most applicable when taking the research objectives into consideration as both approaches aim to uncover tacit knowledge through interaction. However, the general inductive approach (i.e. thematic content analysis) is deemed most relevant and appropriate as it is the aim of the research to find the core meaning behind actions taken by the project managers during the course of the international projects they have managed whilst straying not too far away from the research objectives identified within this thesis. This is supported by Dey (2003) who states relatively clearly that data analysis shall always be guided by the research objectives and shall be done with a purpose. In addition, this type of content analysis will result in a coherent formulation of the respondents' lived experiences. In order to establish a guideline on how local personnel can best contribute in a project (as is the case in this doctorate thesis), such a structured approach needs to be taken and the general inductive approach with the outcome of relevant themes and categories offers just that. Therefore, the general inductive approach has been chosen as the most appropriate and

effective method of analysing the results of the qualitative data sampling of this research.

The various steps and the main purposes of inductive analysis have been described by Thomas (2003) in his paper on the general inductive approach for qualitative data analysis and were followed in this research. At first, the results were condensed and summarised by inductive coding, where specific segments of answers that have been given by the respondent were categorised and given a unique code. Classifying data is deemed “an integral part of the analysis: it lays the conceptual foundations upon which interpretation and explanation are based” (Dey, 2003, p. 41). A simple overview of this process can be seen in table 2 below.

Initial read through text data	Identify specific segments of information	Label the segments of information to create categories	Reduce overlap and redundancy among the categories	Create a model incorporating most important categories
Many pages of text	Many segments of text	30-40 categories	15-20 categories	3-8 categories

Figure 9: The coding process in inductive analysis (Thomas, 2003, p. 6)

The qualitative data analysis software tool NVivo was utilised to facilitate the analysis and structure the received data. This allowed an organised, thorough and structured analysis of the gathered information. A multitude of one hour long interviews resulted in a large set of data and therefore this tool was a very helpful and organised method for data structuring.

Furthermore, the data needed to be checked to see if any clearly false statements or misinterpretations had occurred which may have led to a loss in credibility of the research. As part of this research, consistency checks and credibility checks were performed continuously. Not only regularities but also variations and exceptions were highlighted during the analysis. It would be important to compare these and perhaps identify some common factors within them to explain such variations and study such exceptions to the rule (Dey, 2003).

Finally, the findings were written up and this was mostly done in the categories developed earlier. As Thomas (2003) states, this labelling of categories,

description of categories and backing up with specific examples of data is an effective style when reporting qualitative research results.

This approach is similarly supported by Dey (2003) who has defined the main steps of describing, classifying and connecting similar to Thomas, however, has described this approach to a circular process rather than linear as depicted above.

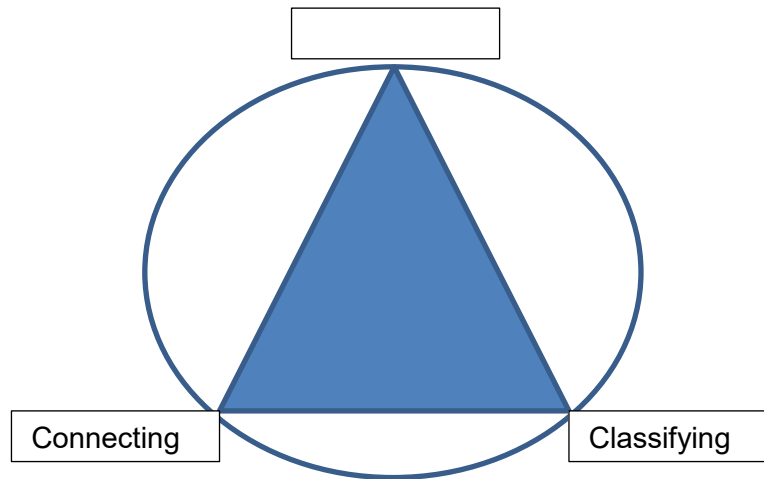


Figure 10: Qualitative analysis as a circular process (Dey, 2003, p. 32)

It is important to note as a guideline, that approximately eight categories are to be generated. Any more than that would be an indication that unimportant categories have been left in the research or that sub-categories have not been grouped together effectively.

3.4 Conclusion on methods and methodology

This research is based on the epistemology of constructionism. It is the intent of the researcher to look closely at the various skills of project management, the contribution of local personnel and the human factors which are most important in international projects.

Based on this ontological position, a qualitative research was performed where experienced project managers who have worked in an international engineering environment were interviewed. These semi-structured interviews aimed to explore the experiences of the respondents and stimulate thought with regards

to the research topic within the interviewed project managers. In the interview scenario, the researchers task was to extract these thoughts through the medium of language and this content was then rearranged and categorised (Silverman, 2016).



Figure 11: Sequence of Qualitative Data Gathering and Analysis adapted from (Silverman, 2016)

A general inductive approach (i.e. thematic content analysis) was used to analyse the sampled data in order to result in a fixed set of categories and theories to generate a framework to identify the contribution of local personnel when managing international engineering projects.

4 RESEARCH FINDINGS

4.1 Introduction

This research has been performed in accordance with the methodology defined in the previous section. Interviews with 12 selected project management professionals have been conducted, transcribed and thereafter analysed. The purpose of this section is to present the findings of the research in order to find answers to the research questions defined earlier in this thesis:

- RQ1: To what extent is the contribution of local personnel critical to the success of international, engineering related projects?
- RQ2: What contributions can be provided by and can be executed by local personnel for the successful execution of such a project?

In this section, samples of respondents' statements will be utilised to provide arguments related to answering the research questions. These arguments will then be further developed into an overall framework in the discussion section of this thesis.

4.2 Background information to responses

It is worth clarifying and defining certain expressions and terms which have been used by the respondents and will be further utilised and evaluated throughout this section as well as the discussion and conclusion.

The organisational setup of international projects which have been the basis of this research but also the basic understanding for all respondents was that the project organisation or home office is located in a country different from the project location/ country. Foreign personnel, international personnel or home office personnel are persons located primarily outside of the project location, whilst of course travelling to the project country when required. The local office or local personnel are persons or organisations located within the same country as the project location.

4.3 Grand themes and identified nodes

During the literature review, the following three grand themes specific to international projects were identified:

- Grand Theme 1 (GT1): Hard skills and soft skills of project management and their relevance when managing international projects
- Grand Theme 2 (GT2): Management of cultural aspects, cultural awareness and communication
- Grand Theme 3 (GT3): Knowledge management and knowledge transfer

The following table summarises the main nodes which had been identified during the first round of coding and additionally shows the grand theme associated to that respective node (numbers equivalent to the numbering above). Further details to the nodes identified during coding of the transcripts can be found in Appendix 2.

Node #	Topic	Grand theme
Node 1	Hard and soft skills of project managers	GT1
Node 2	Skill set of local staff	GT1
Node 3	Culture	GT2
Node 4	Empowerment of local staff	GT2*
Node 5	Local knowledge	GT3
Node 6	Knowledge transfer within project organisation	GT3
Node 7	Training of project team members	GT3
Node 8	Project organisation	**

Table 10: Identified nodes and associated grand themes

* The topic of empowerment was discussed in the literature review on international projects and was found to be very closely related to cultural awareness. During the research interviews, all respondents had a clear view on the topics of empowerment as well as compliance and related these topics closely to cultural understanding. Hence, the findings of the node empowerment will be presented in the section on grand theme 2, management of cultural aspects, cultural awareness and communication.

** The topic of project organisation is in a way related to all grand themes but is as such not much discussed in the available literature on international project management. In any case, it was deemed important by the researcher to pose questions related to project organisation to the respondents in order to gain an understanding of the local support experienced by the respondents as well as their understanding of an ideal setup. This was understood to be an important aspect for developing the final framework, irrespective of the direct connection to the literature review.

The results within these main nodes will be presented in alignment with the grand themes mentioned above as well as the research questions stated earlier.

At the beginning of each grand theme section, a hierarchy chart of the relevant nodes and sub-nodes will be shown to give an overview of the coding which was performed on the data to that specific topic. The hierarchy chart is presented in the form of a tree map. A tree map is a diagram that shows hierarchical data as a set of nested rectangles of varying sizes. The size indicates the amount of coding references found for that specific node. The tree map is scaled to best fit the available space so the sizes of the rectangles should be considered in relation to each other.

4.4 Findings on hard skills and soft skills of project teams and their relevance in the successful execution of international projects

The following hierarchy chart gives an overview of the nodes and sub-nodes identified during the evaluation of the interview transcripts with relation to hard and soft skills of the project manager. In addition, the node and sub-nodes related to skills of the local staff has been added as these are directly related to hard and soft skills of the project team.

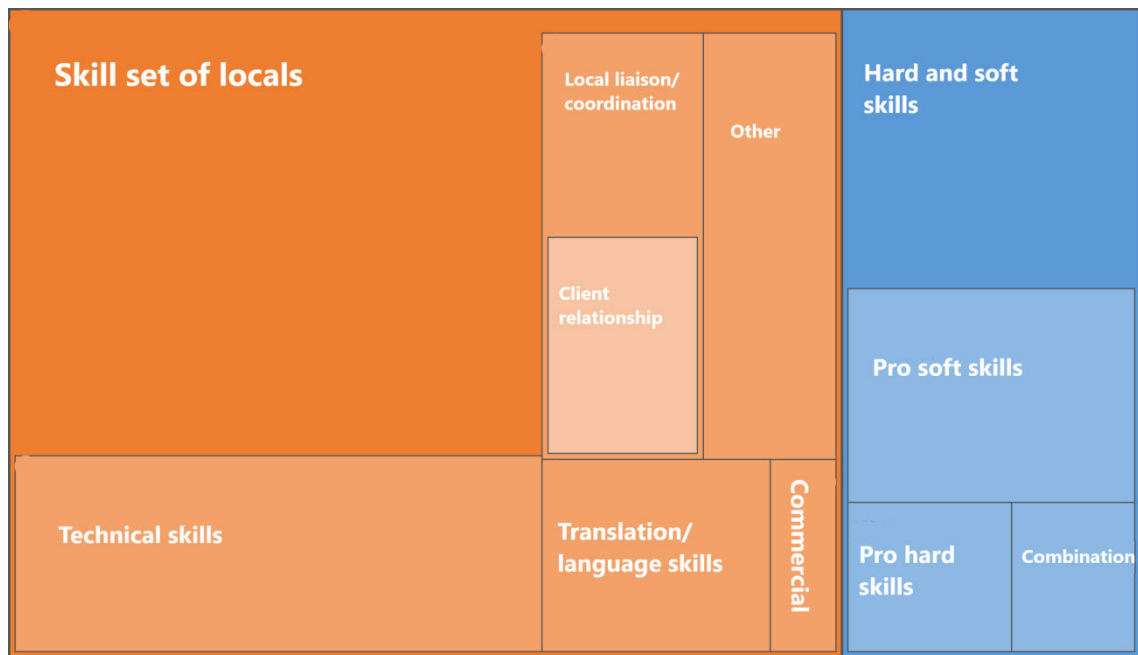


Figure 12: Hierarchy chart for nodes related to hard and soft skill of project managers and their project team

As can be seen, the interview and the answers focused much more on the skill set of the local staff. Respondents were very keen to talk about local personnel and how they have supported them as project managers and all respondents were able to provide specific examples. When it came to talking about the role of the project manager and the required skill set, all respondents had a clear opinion but did not elaborate as much. This can also be seen in the hierarchy chart where the quantity of responses related to skill set of locals far surmounted the examples and opinions related to the project management skills. The upcoming summary of the findings related to these two nodes may show that more clearly and will allow to discuss why that may be the case.

4.4.1 Importance of hard and soft skills in international project management

It is to be noted that it was deemed important to have respondents from various age groups to avoid any bias in terms of project management techniques (i.e. hard and soft skills of project management). As was established in the literature review, project management techniques were based mainly on the hard skills during the 1970's (P. Morris, 1997) and only thereafter a certain shift or recognition of the importance of soft skills was seen. It is to be noted and will be further shown within this section, that the age of the respondent did not have

any influence on the perceived importance of hard vs. soft skills (i.e. the older age group did not show a tendency towards preferring hard skills over soft skills as perhaps may be expected given that they had typically started managing projects in the 1970's).

With regards to the importance of soft skills in international projects, all respondents have stated that they deem soft skills to be an important factor specific in international projects. However, not all were clear in stating that they were more important than hard skills. Respondent #1, for example, was of the opinion, that a combination of both sets of skills is required but a solid basis of hard skills is key to success:

For the success of a project I somehow feel that more important and more focus may be given to the controlling and scheduling administrative, but again depending on the size of the project. Hard skills start from the beginning of the project.

Going along the tendency scale from hard skills towards soft skills being the decisive factor, Respondent #2 was of the opinion that both are equally important:

Both need to go hand in hand, otherwise you cannot manage the project, especially large scale projects, you can't do without the hard ones, neither without the soft ones. Depending in which culture you are moving, the soft ones are important to get the project done, if you are on an international project in a political sensitive environment.

But that per se doesn't necessarily work hand in hand so you have the strong hard factors but you still need room for manoeuvre, which is basically the soft skills to make the project happen.

Others have stated that it is a combination of both, but with the hard skills forming the basis of project management and ultimately, the soft skills being the decisive factor.

Respondent #6:

So, in my eyes, the hard skills can be the frame, the soft skill is the practice, and therefore it is my own experience and my opinion, that soft skills are at the end more important than hard skills.

Respondent #11:

I think it takes a combination of both but at the end of the day sometimes and often soft skills are more important in delivering a successful project than even the hard skills.

Respondent #5 actually had a rather clear view on the share of skills required:

I would call it 70% soft skills, 30% hard skill.

Many have backed up this view with project examples such as Respondent #10:

My experience was that the soft skills were much more important than the hard skills.

In order to perform properly in such a country (Nigeria), especially when you have to integrate a local team, it is so important that you are a good communicator, integrator and you try to understand the demands and needs of the local staff, apart from what is happening in the office.

Looking at the view of the LES, both Respondent #7 and Respondent #8 mentioned clearly the key importance of soft skills and also provided project examples.

Respondent #8:

Yes, there is no doubt that the soft skills play a big role. I have seen that in practice. There are people who are adaptable and down to earth and they can put themselves on the right level and talk to the locals and be accepted. It is regardless of the country but some people are not able to adapt. They are coming here, bottom line is, they had fear of the locals and did not know local culture, not travelling enough. I think you can always find a line of common communication but some people behave too imperialistic and that didn't work. That would stifle communication and they would achieve less. If you are to operate in such an environment you have to accept the local people. You will find that they have the initial barrier to work with you but you have to break that barrier, which is soft skills but also normal communication or human skills, and you will get to cooperate with them.

Also Respondent #9 confirms this view from a local perspective:

The difference that makes people and projects better or worse also depends much on the soft skills which the company or person propels in working in individual projects within individual countries. Out of my experience I have seen unfortunate examples where people well educated representing the strongest companies of the world but not possessing proper respect and communication skills in managing local workforce for their own Project. This initiated such serious problems for the company which actually ended in sabotage.

Respondent #7 at first describes the lack of soft skills from headquarter causing a stalemate in the project:

We have found that we have a technical problem and we have to resolve it. It was just like a bomb to the owner. In owner consortium they have Chinese, they have Koreans and they have Japanese. Different kind of personalities, different philosophies and ideas in their mind. What happened, what is wrong? From our side from headquarters it was a simple thing, it is just a technicality. But the owner could not accept that. So afterwards, the head of order management comes from the headquarter to China to fight with the customer. And the last day of negotiations, our head of order management just closed the laptop and said ok, I don't want to talk anymore and will leave it. The head of the owner consortium also just closed his laptop and said OK, bye-bye. So we had no result and the negotiation is over.

So now the local personnel have taken over this issue and, due to the knowledge of the culture and soft skill to adapt to this client, found a result:

I prepare everything and I go to the owner and after three weeks we made a deal and the owner accepted our concept and said OK, we will follow. They also wanted some benefits and we agreed to negotiate and we gave them some spares and benefits and finally we achieved the target. We know how the Asians are thinking, and in this case our headquarter thought that this is a simple technical question and thought about the singularity of only that one issue and all others are ok. There is a technical solution to it which is quite easy. They don't understand how these Japanese are thinking.

Finally, Respondent #7 issues a clear statement on this topic:

Sometimes, it is best that we as the local office know better how the customer is thinking. Sometimes they don't worry about the technical issue. We need to convince somebody to accept the current situation, that is the truth.

Finding #1:

The interviews have shown that a large majority of the project managers value soft skills of project management higher than the hard skill of project management when successfully executing an international engineering project. This does not mean that the respondents did not value the hard skills of project management, but rather saw them as a given basis on which the soft skills build.

Briefly coming back to the topic of age and school of project management, the following graph is intended to visualise the statement made earlier, that the age of the respondent did not have an influence on the responses regarding the soft skills or the hard skills of project management.

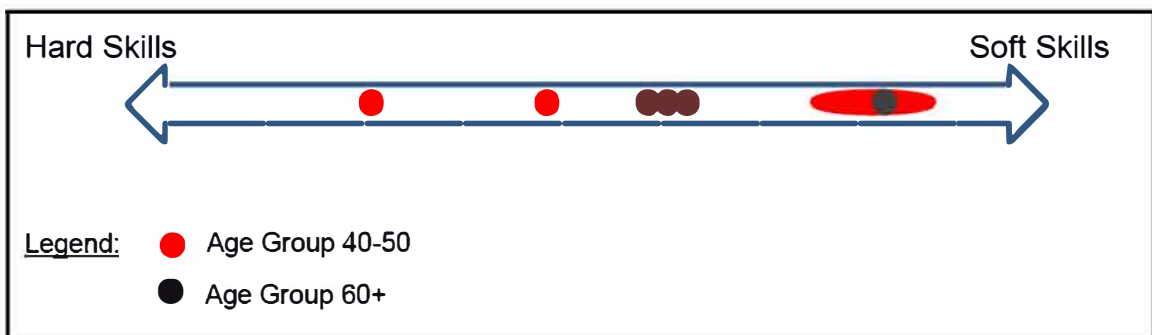


Figure 13: Graph showing the age distribution of opinions on importance of hard and soft skills in international engineering projects.

It shows, in a simplified form, that both age groups had a wide spread view on importance, with a tendency towards the soft skills of project management and therefore age had no influencing factor on the result.

4.4.2 Skills of local personnel contributing to the execution of international engineering project

With regards to the skill set of local staff, the respondents provided examples and opinions for both the hard skills as well as the soft skills. In general, the skills mentioned by the respondents can be grouped into three different sub-categories:

1. Technical/ Commercial Capabilities (Hard Skills)
2. Liaison/ Coordination and client relationship (Soft Skills)
3. Language/ Translation (Hard Skill)

Respondent #9 at first added a condition to his answer, stating that the response very much depends on various factors. He mentioned that the required skills depend on:

The magnitude of the project, the skills and experience which is required by the final client within this project which basically means the stakeholder interests, the overall organisational and contractual set up of the project as well as duration and scope of the project.

Nevertheless, he and all other respondents have shared a clear view on the skills which are required in a typical international project. This will be presented in the following sections.

4.4.2.1 Technical/ commercial capabilities

For many countries in which respondents have executed projects, the salary rate is quite extensively lower than in their respective home office country. Therefore the clear benefit of engineering at lower prices if performed locally was mentioned by many. In addition, many respondents have experienced projects in countries, where so called local content is a requirement. In such cases, the local government dictates the number of personnel (typically as a percentage of total project team members) which have to come from the local country. The topic of local content and examples provided by the respondents will be provided throughout this section.

All respondents, when questioned about the type of skills required from local personnel, provided an answer or an example related to the technical or commercial capabilities of local staff (i.e. the hard skills). This is an interesting factor as it shows that in the minds of the project managers, local staff can support a project not only in terms of simple translation/ language skills but should also be technically skilled. Respondent #6 for example mentions this:

The translator is not enough. Due to two reasons: the first reason why it is not enough, when he doesn't know enough about your product or whatever you will discuss with business partners. When he does not know enough about the product, he will make mistakes. The second reason, every person has a different

interpretation. So what you tell the person to translate to your opposite, is not the same what he is translating what you are telling him.

Respondents provided real project examples to indicate the type of hard skills which had proven to be beneficial to a project.

Respondent #10 for example mentioned the advantage for local engineers (in this case in India) being familiar with rules and regulations which apply to that location and are relevant in the engineering design:

For things like drawings, which have to stick to local rules and standards, it is better to keep that in the country.

Respondent #1, similar to Respondent #10, saw the simpler engineering tasks ideally to be located in the local office:

Simple example, the standard approach, the easy production process like drawings, alignment sheets, in our fields, maps, mapping being done by the locals, these are products which are repeated, where you have a certain learning effect. As-built documentation, those things you could give to the locals, site supervision as well maybe.

However, it is to be noted that many respondents voiced their concerns about the technical quality and capability of local staff and especially finding such qualified staff. Exemplary, the project described by Respondent #2.

In our Russian project as an example, it was impossible to find a piping designer that was qualified enough to do Western style piping design. The same was for Instruments & Control which was also hard to find. Even though they have a high output in the universities, but most of them are working in the Russian Design Institutes and are not working Western style but Russian style.

So for Respondent #2 it is a combination of technical capability and language problems which have caused him issues in his projects. There does not seem to be a general rule of thumb for a solution as even the local, who was educated abroad, did not provide sufficient support to the project.

Right now we have a project controls manager who is Kazakh and we need him from there because of the rates we can apply. He had Western education so far as that he was working for Western companies in Kazakhstan but we would need to put so many hours of education into him to make him into what we require.

Respondent #1 found that even the clients demanded engineering from head office rather than locally:

I somehow feel that the client representatives were even keen to have more international expertise since they somehow realized that the local did not follow up to the end or did not really always provide the right quality and the right delivery at the end.

For this point of view, Respondent #12 put it in quite clear terms:

A general observation, typically certainly in major projects the technical skills of the locals are not up to a level which is required.

On the other hand, for cost saving purposes and perhaps local content requirements, project teams have to be staffed with local personnel. Respondent #12 has experienced this situation in his projects and has found a unique solution:

In Ecuador I had a case where I had to take on certain managers from local area and the question is how you give them a job with high visibility, which gives them a lot of respect amongst their friends and families, without disturbing the project progress. For many years in projects in Africa and South America, we added a local person into safety and into quality. Safety people were driving in important cars with sirens, quality also gave them visibility but internally you had the backup of the people you trusted.

As cost is a clear criterion for project success, Respondent #12 does acknowledge the issue of cost saving as mentioned previously:

Yes, ideally as a project manager you want as many locals as you can because they are also usually cheaper than the international staff. So if you get a qualified local, I always go with the locals.

Respondent #3 on the other hand does mention that it is not so easy to source qualified personnel locally:

For example my project in Jordan, if I wanted to do it with Jordanian engineers... do you know any? It is not easy. I would try to cherry pick, if necessary but this has to come according to the situation in the project and what kind of experience I have in the country.

The respondents from the local offices saw it differently. Respondent #9 clearly stated:

In every country today with all access to proper information sources, there are strong universities and institutes which allow local personal to be really up to speed with high qualification. Perhaps lacking some individual skills but on a professional level they are very well established. This is very important and we have seen it in many occasions.

The following statement from Respondent #9 shows that apparently foreign engineers had a somewhat arrogant view on their capabilities being stronger than that of the locals. In Respondent #9's view, this was unfounded:

People from the Netherlands came to Turkmenistan and claimed for every visit that they will bring their magical knowledge from abroad. But every time they came they provided knowledge which was based on the knowledge from the local persons.

Respondent #7, however, did acknowledge that certain training of local personnel was at first required:

For our application engineer they need a better design background and after certain training they can do something alone so it is not the case that I always interfere with their design so they can do this by themselves. The background and knowledge about the mechanical design is very important. We have to do some things by ourselves and so the draft skills are very important.

Both Respondent #11 and Respondent #8 clearly advocated the benefits of local engineers, in particular with regards to knowledge of local rules and regulations.

The input of the local team is critical because they know the local regulatory environment. (Respondent #11)

One thing is to deal with local engineers, another is to deal with local authorities via local representatives. This is where as an international you do not have the right understanding and may send the wrong messages. Regarding local standards and regulations, locals know them better or know better where to look. (Respondent #8)

Respondent #12, having been an expat many years and managed projects locally, had a clear view on the technical advantages which LES have over foreign engineers:

Certainly in your initial planning where local knowledge is important, is when it comes to logistics. What can you transport and how do you do it? That would define the layout of your plant, how you design it from stick built to modular, what sizes you can plan with. Can you pass with your trucks through the narrow roads?

Furthermore:

Also with regards to pollution, water effluents which impact your design. Sometimes local codes and standards are not available or only very vague so you have to decide what to use.

The title of this section also mentions commercial capabilities, as both Respondent #5 and Respondent #4 also described the commercial skills required from LES.

As soon as parts are damaged or need to be exchanged during commissioning which then needs to be sent out to Saudi Arabia, this customs clearance issues are managed by our local office. (Respondent #4)

The local staff is doing quite a lot of tasks, starting from purchasing, we need to keep to a certain localisation rate, so purchasing is in the team. We have quality management there, we have documentation department there. (Respondent #5)

Finding #2:

From a technical and commercial (hard skills) perspective, there was found to be a discrepancy in the views of the locally employed staff and the home office project managers. The majority of the respondents have found that it is beneficial to employ LES as they are typically cheaper, are aware of the local rules and regulations as well as the local conditions. However, foreign project managers have found that the quality of engineering is not up to the required standard or not in alignment with the project requirements. It would be difficult to find qualified local staff and most likely, this local staff needs to be trained extensively. Local respondents, on the other hand, provided examples where local engineers were beneficial to the success of a project, from a purely technical perspective.

Respondent #8 summarised it aptly in stating:

So a part of these standard things that cross your mind such as they are working for cheaper rates and need to be supervised, that is all true but my big revelation wherever I went is that local people are really switched on. I found some really good experts, I found some really smart people, switched on, modern and educated people and their only issue was that they used to lack confidence in dealing with westerners and embracing this western style.

4.4.2.2 Liaison/ coordination and client relationship

The second sub-topic found within the overall node of local skills, was related to local coordination tasks as well as client relationship issues. In some cases, respondents called this task or position to be the local liaison (Respondent #3) or the local project manager (Respondent #5).

Particularly the relationship with the client (soft skill) came up as a critical benefit, when utilising LES. Respondent #4 mentioned that

They know how to influence a client and know how to get their fellow countrymen to do the work as it is most effective.

Also Respondent #3 added to this:

For interfaces with the client or for consultation for this engineering, which is again not too many persons but they are key persons, this is the most important part and this is something that we cannot leave to ourselves.

From a local perspective, Respondent #9 added that it is actually demanded by some clients to have this direct contact person locally:

Ultimately the person who represents the company at local level talks to the client same as the person from head office. Now the world has changed. A majority of serious clients want local presence.

Both Respondent #4 and Respondent #3 have found that the local coordinator or local liaison ought to have close relationship with the clients to fully understand the clients position and requirements. This also goes hand in hand with the understanding and interpretation of contractual items. Whilst ideally, a contract is drafted very clearly, it was mentioned by some respondents, that the local team tend to have a better understanding of the view or interpretation of

the client of certain contractual items. Such as Respondent #6, who was advised by local staff to waive certain warranties:

In many cases we were here in Germany, we were very nervous about the contracts, but we have been told that when we insist on our warranty documents, we would not get the orders and so we did accept their contract issues. We were nervous about it, but over many years now we never had a problem. Therefore you need local knowledge, and you can only get local knowledge with local personnel.

Also Respondent #2 had found that the client's understanding of the scope of work not necessarily matches the understanding of the western world.

The Iranian understanding of project execution was different. What they called detail engineering, the western world would call vendor engineering.

When everybody tried to explain that this is vendor engineering and part of the vendor package, they would not agree. They had the western expectation of engineering but not the western way of executing projects.

From that point of view you always need local expertise in the initial phase, otherwise you will be in recover mode immediately, from day one, because your client will tell you this is not how it's going to work.

Respondent #11 mentioned a very similar scenario and solution proposal in stating:

You really have to make sure that in planning the contract, even hopefully before you sign it, at least you are aware of what the real requirements are and how you can meet them. To meet them in countries like Russia and Kazakhstan, without local input is almost impossible.

So the ideal solution was presented by Respondent #3 who mentioned:

Some interface manager. And again I would choose someone who has also experience of, not necessarily contract management experience but some experience how contracts works in that specific country. Not to be as a lawyer but at least to know how contracts are observed during the validity periods. How do owners or the contractual counterparts react to the stipulations of the contract. How strict they are, how relaxed will they be.

In terms of the role of the local liaison, Respondent #1 found that they are helpful when dealing with the clients but in the end, the decision is brought back to head office:

Letting those guys talk directly to the clients, discussing, preparing the things and then finally shifting it to a higher level for final decision

Contrary to that, Respondent #7 has brought the view from the local office and described a project in which the decisions were taken locally and only supported by head office if required:

Local staff is more or less between the customers and headquarter. We play the role that is more and more important. Previously we were simply supporting our headquarters to clarify all the questions with our customers but in recent days I think we played a more important role. For example a current large project, the local office is in the leading role. Even the head of order management confirmed that the local office is in the leading role to handle the complete order management for this project and the head office project managers are supporting.

In terms of communication with the client, there seemed to be differing views between Respondent #1, a project manager mainly based in home office and Respondent #7, the head of the local project managers. In terms of local decision making, this will be further analysed and looked at in the section on empowerment of LES.

Finding #3:

Overall, a majority of respondents had mentioned it to be critically important to employ a local project manager or a local liaison as part of the project team, in particular in order to enhance the client relationship and support also in the cultural understanding of contractual matters.

4.4.2.3 Language/ translation skills

This section focuses on the responses related to language or translation skills. In a later section on cultural awareness, the topic of communication and understanding the locals is also covered. It is to be noted that there is a distinct difference with understanding the language, and being able to communicate with foreign nationals as communication in this sense is not only the language skill but actually understanding the culture and being able to read between the lines.

In terms of language and translation skills, many project managers have found it to be a key aspect to have a strong translator present in the project. In this sense, strong means having a basic technical understanding which is required for the translation of engineering documents. On top of that, translation speed was identified as an issue as it has a direct effect on the completion time of documentation and therefore on the overall project schedule.

I have been working now on Russian projects since 2011 and the translation part was always underestimated. Something that is extremely difficult.

It is extremely hard to find good technical translators at the level in which we are playing. The success and quality of the project is going up or down with translation. And it takes an awful long time as well. If you have a 100 page document, and you have a delivery time, in many projects I have recently seen that translation time is neglected.

If you don't plan the time in, your overall project schedule is immediately out because it takes a long, long time. (Respondent #2)

Respondent #9, as the local coordinator in Russia, confirms this statement.

All the projects that require dual language documentation will become a nightmare in case of unskilled translation or lack of translation support or unavailable translation support. An example which we had in Turkmenistan the documentation which we were preparing was translated but one critical word was translated wrongly resulting in potential dangerous situation on an oil and gas platform.

The issue was very clear but it took a long time to convince people that it was a simple translation mistake.

Respondent #10 had found a similar issue in his projects, not so much focussing on translation of documents but more on the day to day discussions and communication with the client during a project:

This is a lot of work for the local project manager because whatever he did, he had to translate it back to English to ensure that everybody is in the same picture. The same applies to local staff. When they do their communication on a discipline engineering level, they can do the direct technical discussions with the client but still have to translate it back into English for the head office. This is an enormous task which also requires trust.

Respondent #5 has found that a local is required for translation even in a country such as India, known for the excellent English skills:

Yes, for sure for sure. I mean there are quite a lot of things more what the local staff are used for. I mean the language, dealing with India I can still see different dialects which I cannot handle. It is even in Europe. I can speak Spanish language but when the dialect comes in, I am lost. Then it is always good to have local staff with me.

Respondent #12 sees a critical issue in translation of the project language. Translators need to be aware of the project and terminology within the project in order to be able to translate documentation effectively and correctly.

If you come to softer things such as contracting or project management strategies, anything that is not expressed in numbers or figures, then it is most critical to have good translators. Sometimes I have seen it where a meaning of a word has been translated completely wrong. So yes, such elements of communication for sure are important. Having the right type of translators, who understand your project language is important.

A solution was presented by Respondent #9, who stated that he has always endeavoured to train his technical staff on language skills in order to ensure that they are fully capable of executing projects in both English as well as their native Russian. This even had given his company a competitive edge over other local organisations.

It is so much better to have dual language engineers than translators who know something about engineering. The engineer will provide skill and the essence of the message and idea and if he can express it in two languages, everything becomes clear, fast and transparent.

I did it when I was the director of a company. I was training local guys, sending engineers for English courses. I was taking them with me for the meetings the guys from our local office from engineering team so they would be present there and learn. This was a competitive edge which we had from a local company point of you.

Finding #4:

As a summary, all respondents had found that translation or language is an issue when performing an international project, however, not all agreed on how

to best solve the problem. Most respondents have stated that not only simple translation but technical and project specific translation is required in order to execute a project effectively. Often, the duration for translation of documents is underestimated during the planning stage which will cause problems when trying to complete the project on schedule. A solution may be to ensure that all local engineers are able to speak the project language in addition to their native language in order to avoid having to use translators.

4.5 Findings on management of cultural aspects, communication and empowerment

The following hierarchy chart gives an overview of the nodes and sub-nodes identified during the evaluation of the interview transcripts with relation to culture, cultural awareness and communication in international projects. As mentioned previously, the node of empowerment has been added to the findings in this section as it is very closely related to the topic of cultural awareness.

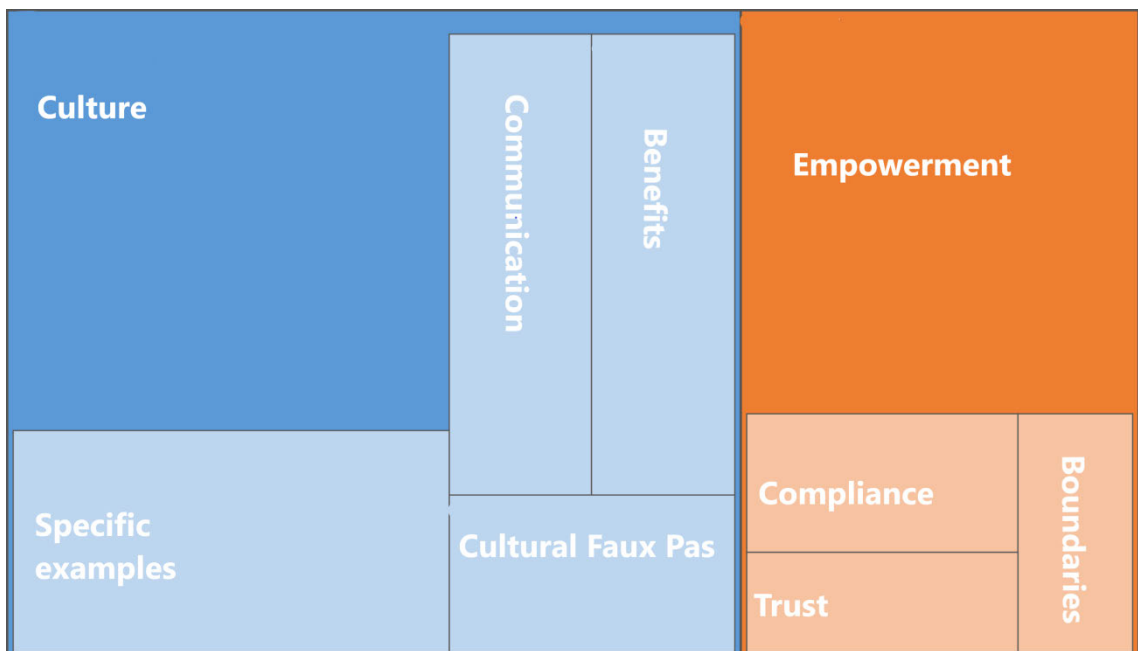


Figure 14: Hierarchy chart for nodes on culture and empowerment

From this hierarchy chart, it can be seen that both topics were discussed and mentioned relatively evenly in terms of quantity of statements, with the topic of culture, being a more generic topic, having been mentioned a few more times.

4.5.1 Findings on culture

In this section, the findings on culture and communication will be presented. A majority of the respondents have provided example of cultural do's and don'ts which they have experienced in their projects and were deemed to have a critical impact on the outcome of their projects. For such examples, the respondents also provided a view on whether or not LES have helped or would have helped in avoiding such situations and whether it was deemed to be critical. In addition, many have provided specific examples of special cultural phenomena which they had encountered.

With regards to cultural faux-pas, respondents have provided examples from projects they have managed worldwide. As an example, Respondent #4 had mentioned.

For example, after signing the contract with the client, you send out the first invoice, this is bad timing when you send it out together with the introductory letter. On the one hand a letter introducing the project management team from head office and saying in the attachment, you will find the first invoice. In China this is an absolute no go. You need to wait one or two weeks and then send out the invoice kindly requesting payment. There the local office is extremely helpful, especially when we have new project management colleagues in head office.

This example shows that these are cultural specifics in China, where the local office is advising the head office project manager how to act. These are items which may be covered in a cultural training course but most often, such examples cannot be covered in a text book or course but requires special advise from LES.

This is also confirmed by Respondent #12 who stated:

Things you don't necessarily find in government brochures but only find out from locals, this training is a must. When you behave like a bull in the china shop you are in trouble.

You learn the hard way sometimes. I was also misbehaving at times without knowing. Particularly in Canada with the Indian tribes when you think that the key player is the chief of the tribe but forget it, it is the group of the elders. My first

project, they felt that they didn't get the respect they deserved and I had all the best intentions so I had to do a small repair job there.

Respondent #6, having experienced business and projects in many countries and continents in his professional life has summarised it as follows:

Whenever you are working in foreign countries, the major mistake is to install German personnel with German culture. It doesn't work. When you insist on your culture, on your business culture, you will lose.

Or Respondent #5, providing very similar thoughts:

Yes, it is a different culture and you need to play by those rules. It makes no sense to come in and play your own rules.

Finding #5:

In summary, respondents have provided examples of cultural faux-pas which had occurred to them in their projects and where LES would have been critical to support or advise. Another item closely related to cultural understanding is communication. This will be evaluated in the following section.

4.5.2 Findings on communication

In terms of communication, a majority of respondents have indicated that understanding the clients' needs, being able to communicate with the client and read between the lines is an essential aspect in running international engineering projects.

Respondent #5 mentions at first a problem relatively specific to his project in India:

This brings me now to the point that for example communication and cultural aspects, cultural aspects in India as you know there is a caste system. I have experienced that we have employed local staff for the projects and, unfortunately, our external stakeholder, the customer, he was in a higher caste than the employee we have foreseen. They of course can talk to each other but you see from that point, our staff did not have the power to overcome this. According to the Indian caste system, of course he can talk to the customer but he cannot control the customer in a certain aspect.

However, since it was a project for the Indian navy, Respondent #5 had found a solution to his problem:

It turned out recently that it was a wise decision that we have hired a high ranking ex-navy guy whilst at the customer side there are quite seldom people of such high rank but mostly from a rank below. So we do have quite a lot of power. Our admiral is talking to the customer, a commander, which is lower in ranking. The customer will therefore follow, simply out of the hierarchy. We have an influence of the customer simply by having our guy higher ranked than the person on the customer side. This is still in their minds, even though they no longer belong to the navy.

Whilst this example may be very project specific, it can be generalised to the point that having employed a local liaison who, in the cultural surrounding in which he/ she operates is well connected, will have a beneficial influence on the execution of a project. A finding, which is also supported by the statement made by Respondent #4:

In Shanghai especially, our local representatives went to the shipyard almost weekly and spoke with them what actually needed to be done. In the first place it is the communication with the client.

From a local representative perspective, Respondent #8 mirrored this perception and confirmed this with the following statement and example from his project in Croatia, where Respondent #8 was the local representative for an American project organisation:

We spoke the same language and understood the culture and therefore could operate as an "in-between". We were also international enough to be able to communicate with the Americans. We spoke English and we all knew how international companies operate or at least had an idea. That is the value I could bring at those times.

Finding #6:

It was identified and confirmed by most respondents, that communication is not only in general paramount to the success of an international engineering project but also involving local project team members in the communication with local stakeholders in order to ensure an overall cultural understanding is necessary.

4.5.3 Findings on empowerment

When reviewing the responses provided on the topic of empowerment, the following three topics stood out in the discussions:

- Trust
- Having to establish a framework or ground rules
- Compliance (i.e. bribery)

In terms of trust, Respondent #5 for example stated:

Otherwise it would not work. But trust comes with time. If you hire someone you still have an escape clause in the contract. Trust comes with time, in all cases.

Also Respondent #2 stated clearly that empowerment is a matter of trust.

Respondent #1 mentioned that you need to have trust in your local team and especially your local liaison but you have to establish the boundary conditions at the beginning:

You cannot really judge or limit the responsibilities but you pre-discuss, you communicate well, you agree internally and then you go ahead and let the things somehow happen, of course trusting those guys but on the other hand having seen your guys which you really know. That's also a key that you have people involved as liaison engineers, who you know.

Similarly Respondent #2 mentions:

If you have some ground rules saying that is my expectation, if you follow that expectation you can run... that is always the better way.

I guess you still need the company's base philosophy to be taken into consideration otherwise the local guy develops a life on his own and then that is difficult to control.

In Respondent #5's project, the head office PM has also clarified the limit of responsibility of the local staff in which they can operate:

So we set up a responsibility matrix at the beginning of the project. This is a hard skill, we have simply distributed tasks to local staff and by distributing tasks, you have also underlined resources and competence and decisions and they should run by themselves.

Respondent #6 also mentioned this boundary condition or frame, as he calls it:

You can install a frame, but not more. And within that frame you have to let the people work on their own. Sometimes they also, they will leave the frame and then it is your decision to accept that or not. You can correct it, but in most of the cases it is too late and then it is a big experience and decision how to react on the situation when they leave the frame, and then it is a question how wide is your frame and how far is he leaving it.

It is interesting to note that the respondents from local entities did not mention this concept of established boundary conditions. In fact, as described earlier, Respondent #7 mentioned an example in which the head office head of order management actually left the entire project lead to the local staff, also including negotiations with the client.

When transferring power to the local staff and removing control, often the topic of compliance comes into play. Respondents were asked about their views on compliance and how this can be ensured as for a western company, the upholding of compliance standards is a must.

Respondent #5 explained his views rather extensively:

You mean in which way we may control our local staff. That we are following all the rules and regulations which we have set up on our own or is doing something not in the right way. This is a good topic and a hot topic. Control ends at a certain point because you cannot control them at all times on all topics. They have been trained what they are allowed to do, also within the boundaries of compliance because it is really important for us in the headquarter that they transfer of course our standpoint to the customer as well. We have certain elements in our company behaviour which they should transfer also to the client and follow that. But as I said, you cannot control the local staff each and every second.

That might become a conflict. I have already experienced that in a certain way it may come to a conflict. We gave to them the responsibility for certain budgets to find a local supplier but on the other hand we found out that they are good friends. One of the suppliers are inviting them for lunch and dinner. It is quite complicated and you are not aware about that, that they did it. They have their own cost centre where they can book it, of course they have received the responsibility for their budgets so what they do with that is their business. Actually we want that they take decision by themselves so it is a conflict.

Respondent #12 provided his view, similar to that of Respondent #5:

Another thing is they must understand the working style of the owner or the company they are working for. Particular, and that is the major problem, the ethical aspect such as corruption issues. This is key so you avoid one clan only provides jobs to his buddies. So the ethical style and how the bidding process is being conducted including tendering and those elements so that is key.

But if you do this, the project manager or director will always have to have a close look at the ethical behaviour of your locals. That is not easy.

However, it is to be noted that from the viewpoint of the local coordinator in Russia, Respondent #9 states that:

In the companies I have worked with, I have not experienced this directly. I have also not seen this in the Russian Federation. I was the head of all consolidated business development of 13 companies within a Kazakhstan construction Consortium, and we have never had a single example where we would have been in an awkward position. Of course I am aware that some of the competitors in Kazakhstan were using every possible shortcut. This is subject which cannot be eliminated by people's will but depends much on the overall corporate culture.

However, his side note is also important to be mentioned:

In terms of Russia, my statement is true for the last 15 to 20 years. The 90's in Russia and Kazakhstan were an absolute storm of unclear practices which has changed drastically since the beginning of the 2000's.

Finding #7:

Many respondents, when asked about ensuring compliance, came back to the topic of trust in addition to ensuring that certain ground rules are clarified and local personnel are trained accordingly. It is this balance between allowing local staff to take decisions freely and thereby having to loosen the control, whereas on the other side still being overall responsible for the project, which has to be managed. This common theme was shown in the responses by a majority of the respondents, both from local personnel as well as from head office project managers.

However, in terms of responsibility and transfer of power, Respondent #3 stated clearly:

The project manager is the project manager and is the only person who actually takes the last decision. For me this is really imperative and a straight requirement. Of course it needs to be in place that there is an immediate direct communication with the local person and there needs to be of course a good relationship with that local person.

If a decision needs to be taken by tomorrow or within one hour, you just pick up the phone and discuss, otherwise the decision needs to be taken in ten hours.

With regards to the final sentence of Respondent #3's statement, Respondent #9 has a different view as he believes that clients more and more demand immediate attention to their project and require a local contact person to deal with issues immediately. His view, from the position of the local coordinator, is:

Now the world has changed. A majority of serious clients want local presence. They do not want to wait even for an hour of time difference between the zones. Even though the world has become so small and we can communicate via Skype or WhatsApp, but on a contractual level some of the important and well established clients have the right to demand local presence wherever they want.

4.6 Findings on local knowledge, knowledge management and training

The following hierarchy chart gives an overview of the nodes and sub-nodes identified during the evaluation of the interview transcripts with relation to local knowledge, knowledge management and training in international projects.

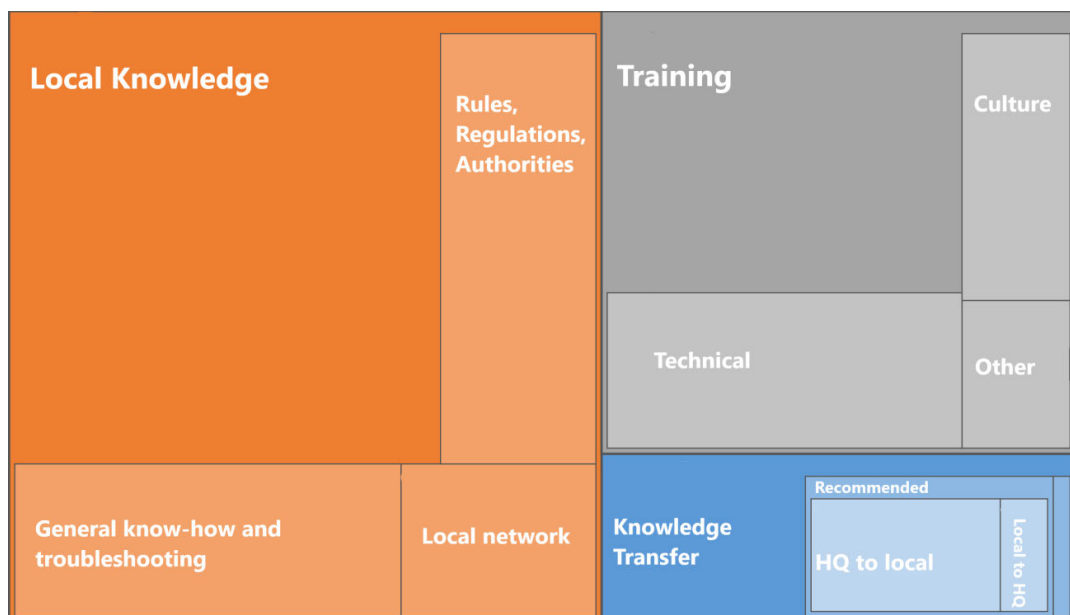


Figure 15: Hierarchy chart of nodes and sub-nodes for local knowledge, knowledge management and training in international engineering projects

As can be seen from the above chart, respondents found it easiest to discuss the topic of local knowledge and shared their views on the benefits of specific local knowledge when brought in to the project team. With regards to knowledge transfer, respondents did not provide relatively large amount of insight as will be discussed in the following section.

4.6.1 Local knowledge

The topic of local knowledge was found common amongst all interviews. In general, this topic was discussed in three directions.

1. Having a local network of people or companies who can be beneficial to the project
2. Having knowledge of local rules, regulations and contacts to authorities
3. General understanding of local customs or conventions as well as overall conditions

In terms of the local network, there are situations in projects where local personnel are better set up to perform a specific task. Respondent #12 mentions such an example from a health and safety aspect:

One aspect here is also Health and Safety. Typically I like to have that as a local manager. Not so much making sure that the design meets the safety standards but that the execution planning and preparation is done by a local. He knows all the local fire brigades, hospitals and geography so that is typically where I would go for a local manager within the project team.

Respondent #10 provided an example from his time as an expat in Nigeria, where he required local personnel for simple but in the end, critical tasks:

Who to talk to for simple questions, for example, in Nigeria you need your own power supply as the local grid is very poor and there are times when no diesel is available. So you need to know somebody who knows somebody to help you out of this situation. You wouldn't know that if you weren't in the country for a couple of years so for this, we took advantage of the Nigerians of course.

The aspect of procurement or sourcing of parts was mentioned particularly by Respondent #4 and Respondent #5 as a solution to be provided locally. Respondent #4 mentioned for example:

On the technical side starting with the local to check for local parts or spares which may be sourced on the local market instead of ordering them from head office. There you need the local to be creative and take responsibility and source the items locally.

Also Respondent #5 mentioned that the local representatives have been trained on the general sourcing procedures and then it was expected, as they are aware of the local suppliers and have best connections, that LES manages the procurement for a project, including supplier event for networking but also typical purchasing tasks.

In addition to the examples of relatively common tasks in a project which can be best performed locally, unforeseen issues may arise in a project. In such cases, a quick and effective solution is required. According to the respondents, such so-called fire-fighting tasks are most often or best performed by the local coordinator. Respondent #11 has found a rather nonchalant name which however describes the task very clearly as he said:

A fixer so to speak in the positive sense of that term. Somebody who could resolve and "fix" the problem at the local level, find a fit for purpose solution.

According to Respondent #2, LES are required for finding a quick solution to a problem as it is not always possible to fly specialists in on short notice.

Never mind finding a specialist... this is even worse. When you suddenly need to solve an immediate problem which requires immediate expertise which is ideally local because by the time you fly somebody in, even in Iraq, then you have the problem of visa and that sort of stuff that would add weeks and weeks on top of the schedule which doesn't work so the better your local network and knowing who and what is available on the market is actually key to success because you would actually need to plan contingencies from day 1. Like in the Iraqian project a few years back, the construction manager knew his local way around. We are back to compliance potentially but he didn't tell anybody how he did manage to go from A to B.

Also Respondent #7 has described this role or task during the interview from the local representative point of view:

You know, we are called order managers but our background is trouble shooters. Once the customer can solve it himself, he will not come to us but if he has trouble, he will come to us and tell us to do the trouble shooting. Some trouble shooting can be resolved by the guys in headquarter and some could not. For that part, we have to find a way locally.

It is a form of sourcing. We all worked in a shipyard, a design institute or even with competitors before we came to this company and we all have our resources at hand. We know a lot of sub suppliers who can provide components in the marine business.

Everyone has their own human resource circle and we have nine members in our team so you can imagine how big the human circle around us is. Even if I cannot deal with an issue, I can ask my team members and we will find a way to do that. We are in discussions with headquarter how to do it. At the end of the day, we showed them the result. We have the local resource and the human circle and we can use it.

Also Respondent #1 described the benefits of understanding the local market in that context.

He knows the local market, the local conditions, the culture, how the things work, he even has better contacts. He has channels, therefore projects in such an environment require local liaison.

In addition to the local network of suppliers or personnel, local staff were found to be particularly critical in the dealings with other local stakeholders, in particular local authorities. Respondent #11 mentioned that:

Then even in terms of the environmental and social, in terms of managing the stakeholders, that input has to come locally and that just requires it. You have to hold community meetings and review of that, you have to get the local stakeholders to sign off on something or at least to be subject to these meetings so that requires interfacing with the local stakeholders and you need good local people to do that properly.

Very similar, the response provided by Respondent #12:

One important thing regarding local authorities is access to land. In US and Canada they are called the land-men. Anywhere in the world it is the same, you not only deal with authorities but with the local families so key is that you have

local people who know how to deal with the locals how to have the right language, the right style and rather than sending someone from overseas or even the capital it is much better to send someone local. So gaining access to land is very important skill by some local employees.

Also Respondent #9, from a local representative perspective, mentioned the benefits of local contacts to the authorities:

Governmental or regulatory authorities a consortium of 2 international engineering companies was forced to establish a joint venture with some local design institutes because the international experience of the engineers failed to provide the required level of detail. They did not have an understanding as to what level of detail the drawings should actually outline for the specific country's approval. So there's an example of an invited international consortium of companies which had to establish a full-scale local workforce due to the magnitude and scope of the project which required good local presence.

In addition to the planned and unplanned tasks which required local knowledge, some respondents have provided special examples where knowledge of local conventions or logistics was required in order to fulfil the task. Respondent #8, during his time as a local representative for an American organisation in Croatia mentioned:

It is not project related but it helps the job and they would do it. Such as organizing accommodation, organizing a supplier to come see you, organize many things that are not strictly related to their scope. They are flexible.

Respondent #3 for example mentioned that:

It makes sense also that you have someone, especially if you are the directly related entity contracted to the local entity, that you have someone who knows the whereabouts of this country, the way it works and the way possibly that his employer works.

As in the end, it may even come down to very simple things, as Respondent #10 had explained:

That also applies to the simple things like what will the traffic be like in the morning or evening, what would be an alternative route.

Finding #8:

In summary, respondents have found it critical for the success of an international project that a local liaison or coordinator is part of the project team. His/ her local knowledge and network can be particularly critical in so-called fire-fighting tasks, when an unforeseeable event occurs and has to be fixed immediately. In addition, contacts to local authorities and knowledge of local regulations are important in order to ensure an efficient permitting process.

4.6.2 Knowledge transfer and training

The findings related to the local knowledge critical to the success of projects are presented in the previous section. In this section, the topic of knowledge sharing, transfer of knowledge and training are presented. Most respondents had a clear understanding and view on this topic and had provided project examples along with ideas on how to ideally conduct knowledge transfer.

With regards to transfer of knowledge, there are two directions which were discussed during the interviews.

1. Knowledge from head office to the local office
2. Transfer of local knowledge to head office

Most respondents had found it critical to transfer knowledge from head office to the LES in order to ensure that they are working in accordance with the requirements of the head office project team. Respondent #1 mentioned that:

Unfortunately it's a must, when you want to be successful. The local guys need to nearly have the same knowledge as yourself.

Of course they have to be made familiar with our software, with our reporting tools with our things. You start usually with a kick-off meeting and then you agree on further sessions where you update and inform the people about the details, the so called discipline sessions, this is what we usually do.

Respondent #9, from the point of view of a local representative, had brought in the aspect of loyalty in his response and advocated that transferring information

from head office to the local staff ensured that locals identified better with the corporate culture which enhanced their loyalty.

Training of local staff is very important to maintain the loyalty of personnel and extend from head office the culture of the company. Especially the successful experiences and best cases, exchanging the knowledge which might be driving the company.

Respondent #5 has provided his view on knowledge transfer to the local office and has shared an example from his project in India. In this case, a mentoring programme was set up allowing LES to have a direct counterpart in the head office who would transfer the knowledge out to the local counterpart:

We built up in the beginning a local project management office and each of the functions they had, they had a kind of mentor in head office, who took the Indian guy at the hand, trained them and exchanged from a functional point of view the knowledge to bring the Indian guy to another degree of knowledge. That works quite well so right from the beginning we said there is a dedicated purchaser in India, a local staff, and there is one mentor sitting in head office and they exchange with each other frequently.

From the perspective of the LES in China, Respondent #7 had pointed out the importance of knowledge transfer to his office and how it is handled in his projects:

Previously we had one person who was nominated as the technical coordinator who would update us on recent technology. Right now, we do not have such coordinator and so now we have four fixe meetings in head office but it is always too late. It is always 7pm or 8pm Shanghai time but we receive the memo from this meeting. We can review this and when we have a question, we can always contact the team in head office and we will get an answer. That is very important knowledge update for us and about 90% is from this. For some other, software update, we will get it by email.

As was found in the literature review, head office staff may not always be willing to share their knowledge with local personnel. However, a positive example was provided by Respondent #5.

I think that the behaviour of these mentors is different if they are a mentor of a freelancer or mentor of your own colleague. Because a sub-supplier or a freelancer you treat in a different way. I mean from a psychological point of view, you treat a freelancer different to a colleague. You are more open, you are more

wide, you do maybe more support than needed and I think this is a big advantage, having not a freelancer but a known colleague or your own staff.

With regards to transfer of local knowledge to head office, only a few respondents provided examples or views on what that may entail. In all cases, the focus was on technical aspects and not on how the previously described local knowledge would be transferred back to the head office. Respondent #1 provided one of the few examples.

At the onset of the project you collect the local standards and regulations and give then certain trainings from the locals to our international engineers on how to apply and what to consider.

However, most respondents did not discuss the topic of knowledge transfer from local to head office much further. A possible reason for this may be, that respondents did not believe that it needed to be transferred to head office as this knowledge already resides in the local office. Respondent #10 had mentioned this:

I think that the knowledge lies mainly in the country and I don't see any requirement to transfer that to the head office. I found it doesn't make sense to transfer that to the head office because in the next project you also need the Russians again to work on the same issues so the knowledge needs to be there and I think very special local knowledge needs to stay in the country and general knowledge is in the head office. This is just a personal opinion but what I found is that this is the reality and it is a good share of knowledge. Keep the details where they belong.

Closely related to knowledge sharing is the topic of training. When asked about the importance of training and how this may be best handled, some respondents had found that local personnel need to be aware of the way the head company or head project team operates. In that sense, local staff needed to be trained accordingly. According to Respondent #6:

You have train them, for sure. We have all our foreign people or our people in foreign countries we have them every year in our mother company in Germany for training.

Also Respondent #3 mentioned this requirement:

The values of the company and how it works as a strategy with clients and the way it conducts is quite important to train. The rest you get while working with this person because you are not going to employ some interface managers or local coordinators and the next day he represents you point blank.

All respondents provided examples related to technical or commercial training of local staff.

Respondent #7 provided an example for his team of LES:

First we decided who will do what and received a list from our local commissioning team, who will do the commissioning for the product in the coming future. Then we said that for these guys we will make a plan with the commissioning team in head office and maybe they will do a safety training first, a gas related training and then in the test bed and in the product design. That is the practical training.

The focus of responses related to training of head office staff on the other hand, was mostly related to cultural awareness training.

The importance of this type of training was highlighted particularly by Respondent #9:

Unfortunately in this world people underestimate the importance of cultural preparation, historical background, religious background and understanding of the features of the particular region. If people from head office are sent out without a proper understanding of where they go and understanding of culture and religion of those parts then it becomes difficult. Unfortunately I've seen situations where international project managers would come to the country without a proper understanding of the consequences with some of their decisions might lead to.

On the other hand, Respondent #2 believes that this training was not very effective or necessary.

On one project I got official cultural awareness training, but only on one and that was actually already too late for me because I was already in country. I do think it's important because you can easily overstep, and there we are back to the soft skills, if you don't know how to behave in a country, no matter how good you are, you are out immediately. So they would take you off the job for no technical reason but because you can't behave.

Also Respondent #4 was not very convinced that cultural awareness training was effective but rather the drive of the individuals to learn about other cultures was critical.

Intercultural trainings are being offered but it is half-hearted. It is nothing which supports the head office project manager. As far as I am concerned, this is only an alibi training which is being offered. Intercultural training for China or India only so that something is being offered but in the end the project manager has to take care of it himself to become acquainted with the different culture. I think in the first place the project manager also needs to take the initiative and has to want to learn about a new culture. This starts off with literature you can read on intercultural working relationships.

Respondent #4 points out that intercultural training in an international project setup should go both ways (i.e. both LES as well as home office project team members need to be trained about each other's culture):

It would be nice if also the local staff would also have that self-initiative to learn about the intercultural relationships. This I haven't seen yet. I cannot say if our colleagues in China would be willing to read a book about it in the evening or visit a seminar, I cannot judge that but it would be advantageous.

Also Respondent #10 mentioned the benefits of intercultural training for head office project staff:

Expats in countries like Nigeria. Even those expats that are in the country for years still require training on how to behave in such a country. A soft skill training.

Similar to Respondent #4, also Respondent #10 mentioned the wish for local staff to be trained on the project culture:

On the other hand, they can also transfer some training and issues also on the soft skill level, like punctuality and typical European soft skill norms which are not very Nigerian. So it is a give and take.

Respondent #5 mentioned his experiences with such trainings but also questioned the effectiveness:

There are training courses they are offering for the staff members in terms of this international communication, or international culture.

It can only be a basic training because you learn only with practice. Practice means I was in India 3 times, it is completely different each time. My employee is a

technical project manager he was down in India as well. What we learnt in this intercultural training was this hierarchy, this ranking of people, here we experience it quite a lot.

Respondent #1 saw this from a more pragmatic point of view.

I would say for the home-based staff, or managers, that's the usual training in the company, education program, so therefore maybe there is a kind of intercultural and behaviour training required, however you need to listen on your local guys on how to behave and how to act. It is not a must but would be nice to have for the international guys.

But in this case you have the local support and you follow the local representative and let him first and listen and observe and then you step in at the right time. I think that's the way how to do it.

On a very practical level, Respondent #11 clarified that it in the end, the decision to train LES mostly comes down to cost.

I think it is an investment. I am believer in that but it is not as easy when it comes to taking someone out for three months and sending him to an office for training. Hopefully he can do some useful things in the process but it is a cost issue. Then he is not available at least in the host country to execute but you have to take a longer term view of it.

Also the training which Respondent #5 had mentioned required a specific dedication from head office.

That is the reason why we put more priority on the setup in this India project because we do not have only in focus this specific project but long term goals in this country. That is the reason we put more energy in terms of training. It costs money as well to assign a mentor from head office for each position. They really have regular exchange and communication and even travelling down to India. It was a long term strategy decision where we said we want to win the contracts in India.

In terms of cost and willingness to spend, the respondents have shown that if a project has a longer duration or the project company has a long term goal, then there is a higher willingness to spending the money on training of LES. For a one-off or short duration project, it is dependent on the budget whether it is affordable to train local team members. As Respondent #12 had mentioned:

It depends on the duration. If it is only for six months then there is not much you can do but if it takes three years, then you can train them over time and the bigger projects typically have more money that allows you to do this type of training.

Finding #9:

All in all, a majority of respondents had stated that the transfer of knowledge from head office to the local team is critical in order to ensure a common understanding and project culture within the team. Rather surprisingly, given the strong views on the importance of local knowledge, most respondents did not provide a large number of examples or views on the transfer of knowledge from local staff to head office. Throughout the interviews, the examples in knowledge transfer from local to head office, were very engineering specific (e.g. local environmental conditions or local regulations as a basis for the design). With regards to training of project staff, the respondents were critical of the effectiveness of intercultural training. Whilst most respondents found the general notion of cultural understanding important to project success, the feeling towards the training of such was rather negative. Most respondents rather focused on technical or commercial training for local staff rather than intercultural training for project team members.

4.7 Findings on organisation of international project teams

With regards to project organisation, respondents were asked to describe the project setup of the examples which they had mentioned. During this discussion, most of the respondents also elaborated on what their ideal setup would be. This is also how the sub-nodes were structured, which can be seen in the following hierarchy chart.



Figure 16: Hierarchy chart for nodes and sub-nodes of project organisation

The majority of respondents provided examples with the local team consisting of local nationals and no or only a few expats. Whilst Respondent #6 employs technical and marketing personnel locally, Respondent #2 for example had a team of key lead engineers in the head office supported by local engineers in Russia.

Respondent #7, from the local representative point of view, sees that his team of project managers and engineers can take over the entire project, with only minimal support from head office staff. When speaking with the respondents about local organisations, in many cases the topic of local content requirement came up. The local content requirement is typically a governmental stipulation which requires local companies to make sure that their contractors employ a minimum number of local nationals on a project. So for instance, an engineering contractor will have the contractual requirement that minimum 50% of his project staff are local nationals. The respondents have provided examples of how this issue is typically handled in projects. Respondent #10 for example described his team setup in Nigeria:

Also, very important, wherever you work in Nigeria, you have your local communities and by law you have to hire some people of the communities to make sure that you do not have any so called problems. So we had cleaning staff or

people supporting the offices, hired from local communities, not because we needed that but because that was stipulated.

This solution to the local content requirement presented by Respondent #10 is of course not entirely the original intention of the local governments. Typically, the intention is for local, qualified staff to be employed and to be able also to learn from the international companies who are executing projects. To complete the project team with tea servants or cleaners may keep the ratio of project employed staff in accordance with regulations but it is not the original intention as such.

Also Respondent #11 mentioned this issue whilst talking about his projects in Kazakhstan as the managing director of the local office and explains the importance of upholding this requirement:

Many of these contracts you have to show your local content and it is a factor in the award decision. So in addition to the local staff helping you to execute a project and plan it because they have the local experience and know the lay of the land locally, it then becomes a commercial or technical reality that you have to present how much local content you have and you are compared to other companies so it is not a simple situation.

A similar issue was mentioned by Respondent #5 in his example project. In this case, it was a strategic decision to set up a local project entity for a series of expected projects. The local content requirement was one of the decisive factors for employing local staff.

It was a long term strategic decision where we said we want to win the contracts in India, we know there is for sure from the beginning a local staff needed because of certain aspects, cultural aspects and communication aspects. In addition, this localisation ratio which we need to fulfil and this you can only handle locally.

The importance and added value of having a mix of nationalities in the project team was highlighted by many respondents. Respondent #8 provided an example which showed, that in some cases it may not be wise to staff a project team solely with local personnel.

For example selling a product in any country, people are expecting made in Germany so the sensitivity of how the client see this is an aspect to consider. Therefore appearing in front of the client cannot always be your local representative, you have to accompany him sometimes so that the client believes he is buying this international product.

Also Respondent #3, similar to the responses provided by Respondent #10, Respondent #2 and Respondent #1, provided an example where selected expats were required to move to the local project office:

The team that was set up locally is mostly mobilised expats but there was always either a general manager or in the interim manager who was a local. In the couple of recent years, there is also a local who is on the side of sales but he provides also support in other issues. Not in technical issues but in interface issues with the client when it is necessary.

It is to be noted that, from the point of view of Respondent #11, who has spent the majority of his lifetime abroad, the integration of the international team members with the local team is not a simple task and is of critical importance:

Each nationality approaches culturally the project execution somewhat differently just based on their history and culture and that element should be factored in and taken into account when you are talking about integrating a team of international experts, engineers, staff with local staff, engineers and technicians as well and experts. So that factor should be because everyone comes with their own national baggage and experience so that is a factor to be taken into account and has an effect on the ultimate success.

Then there are circumstances in a project, which require a certain shift from expat or international staff to local staff. Respondent #10 mentioned such an example, similar to Respondent #4 and Respondent #3:

During the preparatory phase, the project team was all Hamburg staff. Later when we moved to Nigeria it switched over. This switchover was from end of design to beginning of construction. When construction started, all the key roles were switched over from German or UK expat staff to Nigerian staff.

In terms of the ideal setup, all respondents mentioned that a local liaison or a local coordinator is required. Also, the majority of respondents mentioned that

key engineering positions shall be allocated to LES, with head office staff remaining in the background as mentors or key experts. This setup, however, is not easy to staff as was mentioned by many respondents. LES are not always trained sufficiently, are not aware of the company or project culture which they should embrace and quite often, the required staff are not easy to source.

As Respondent #10 had mentioned:

This strongly depends on the type of local office you have or the manpower available. Certainly not 100% if you have a small branch office with 20-30 people you cannot have the same knowledge there as in the head office with 300 people. Therefore it has to thoroughly be decided what to do where.

In order to counteract the potential problem of local staff not representing the company or project culture adequately, Respondent #2 mentioned the following example:

Ideally you have somebody, and we have a few examples, where the local guy was basically working in the main offices, taking the way of thinking of the company (headquarters) and taking that out to the local company. Then that becomes a win-win situation because you have somebody there who knows exactly how the company thinks, still understands the client but keeps an eye on the contract.

From the point of view of the local team, Respondent #7 has described his team setup in which capabilities and responsibilities have shifted very much to the LES, with head office staff in the background for final alignment.

The local team can process a lot of things, more or less the same as the project managers in head office. Once our sales managers have signed a contract in China, we will execute the project and proceed with order management. For our engineering team, they will proceed with the engineering tasks, prepare planning documentation, explain all technical issues to the customers and perform troubleshooting when required. Meanwhile our project management team, we have the same setup and we can align with head office management team very well.

5 DISCUSSION

5.1 Introduction

This section summarises and discusses the main findings of the research. Based on the main findings, answers to the research questions will be provided. The section concludes by presenting a proposed framework for determining the contribution of local personnel in international engineering projects.

With regards to the analysis and discussion of the findings it should be noted that the responses provided by local staff were in some examples significantly different to the views of the international project managers. Some of the respondents have spent a significant amount of time abroad, i.e. in-country, and also their views were in some cases aligned with the international project managers and in some cases aligned with local staff. The details of this will be shown within the following section, structured in terms of the main findings.

5.2 Specific contributions of locally employed project team members

This section discusses the findings related to skills set of locally employed project team members and the contribution these bring to the project. At first, the hard skills of locally employed staff are analysed and discussed. In particular, the level of engineering skills of local personnel was a controversial issue amongst the respondents.

Thereafter, the views of the respondents with regards to the soft skills of local personnel and especially the benefits this may bring to the success of a project are analysed and discussed.

5.2.1 *Hard skills of locally employed staff*

The respondents, when talking about the required hard skills of locally employed staff, spoke mainly about the engineering skills of local staff as well as the importance and difficulties in translations due to differing languages. The findings had shown that there were differing views amongst the respondents with regards to these hard skills. These will be further discussed and analysed within this section.

5.2.1.1 Technical engineering skills of locally employed staff

With regards to the technical, engineering skills of local personnel, it became evident that there is a significant difference in opinion between the international project managers and the locally employed staff. Respondent #7, Respondent #8 and Respondent #9, as local representatives, provided clear examples in projects where local staff were fully engaged in engineering tasks. The example of Respondent #9, indicating the unfounded arrogance of home-office engineers in their technical superiority over local staff, was very dominating. As a reminder, Respondent #9 stated:

People from the Netherlands came to Turkmenistan and claimed for every visit that they will bring their magical knowledge from abroad. But every time they came they provided knowledge which was based on the knowledge from the local persons.

This statement provides an example of the pretentiousness in which foreigners arrived in the local country, propagating their supposed “magical knowledge”. According to Respondent #9, this knowledge was however only based on already available local knowledge showing that there was a difference in perception between the local and the home office engineers. The locals did not value the knowledge brought from abroad and the international staff believed that they were bringing in brilliant new skills. The dominating factor behind this is the question of who the knowledge holder is and therefore where the superiority or the power in terms of engineering knowledge lies? Or, as also needs to be considered, who is more confident to take advantage of this power? As Respondent #8 had stated,

I found some really smart people, switched on, modern and educated people and their only issue was that they used to lack confidence in dealing with westerners and embracing this western style.

So, not only having the power of knowledge but also having the confidence in one’s own ability and taking this stance within a project was a key factor identified for successful project completion identified in this research.

Before stating the contrary views of the home office based international project managers, it is worth exploring the responses provided by the project managers

who have spent a significant part of their working life abroad, as expats in the project country.

Respondent #10, Respondent #11 and Respondent #12 identified advantages which local engineers have over foreign, home office project engineers and project management and that this needs to be utilised in projects. This is in line with findings from the literature review indicating that the knowledge of specific local requirements for example may be critical for a project but may easily be overlooked (Cleland & Gareis, 2010). However, “employees in engineering firms will most frequently rely on existing in-company knowledge, either from local offices or others with prior experience in the area, to obtain local institutional knowledge” (Javernick-Will, 2009, p. 795).

Respondent #12, similar to Respondent #10, described, in an extensive answer, the importance of local information and local knowledge when performing an engineering design. Weather conditions, special rules and regulations as well as information about logistics and suppliers were items mentioned by Respondent #12, that are crucial in the engineering of an international project. This information lies within the country and therefore local engineers have an advantage over foreigners. Also Respondent #11, an American national who has been a managing director of a local office in Kazakhstan as well as in Russia, has mentioned similar benefits. As a reminder, Respondent #11 stated:

The input of the local team is critical because they know the local regulatory environment.

However, all three have also stated that in terms of level of engineering skills, foreign or home office engineers are needed. Respondent #12 stated that the technical, engineering skills of locals are not up to the required standard. This statement is considered and analysed further. Respondent #12 has, similar to all the other respondents who are international project managers, mainly experienced projects where the home office was based in a first world, western country and projects were executed in third-world or non-western countries. It may be the arrogance of the western engineers to claim superiority in their engineering skills but it is certainly necessary to take the difference in engineering approaches into consideration. This thesis will not provide an answer to whether western engineers are more qualified than eastern, a question which does not have a generic or simple answer. However, when

discussing the quality and style of engineering between home office and local office, the underlying assumption is that the project team consists of (at least) two different cultures and mostly two different approaches to engineering. Of course, there are also international projects when a German company takes on a project in France for example, but here the discussion about differing engineering levels or approaches would be hair-splitting and tedious.

This general rule of differing styles and cultures with regards to engineering is also the basis for discussing the responses from the majority of home office based, international project managers. Contrary to the view of the local representatives, it became evident that the majority of international project managers believed that local staff are not as well educated or not as well versed in engineering design or at least, as mentioned by Respondent #2, had their own approach to engineering which did not fit into the overall, Western style of engineering required by the project.

From a technical perspective, project managers relied mainly on international experts to either teach the locals or simply perform the tasks themselves. The primary factor mentioned by the respondents was quality of engineering. Whilst simple engineering tasks may be performed locally, the more complex engineering tasks were to be performed by home office staff. Simple training of such specialist skills was not necessarily deemed to be a viable option by the respondents. Whilst the literature review has shown that knowledge transfer is important for internationally dispersed projects, it was also found that specialist skills or tacit knowledge are not easily transferrable (Szulanski, 1996).

Therefore it is often the case that the core technical knowledge remains within the project head office to the disadvantage of the project. Whilst Burström & Jacobsson highlight the necessity of glue people to “informally function in a liaison way but without having either a formal position or authority or power” (Burström & Jacobsson, 2011, p. 8), the solution presented in the findings of this research lies in the implementation of formally defined mentors, who ensure close contact and information exchange between home office engineers and local engineers. It was found to be of paramount importance to bring together the knowledge holders and ensure effective interaction and knowledge transfer. It is the role of the project manager at first but certainly of all project team

members to bring together the variety of available knowledge and ensuring a constant personal interaction within the project team.

Other factors were also considered by the respondents when discussing the aspect of local engineers vs. foreign engineers. From a budgetary perspective, respondents had mentioned the cost benefit of employing local staff who are, most of the time, cheaper than home office engineers. However, as Respondent #3 had mentioned, it is not so easy to source qualified, local engineers who can be trusted to deliver the same quality as home office staff. Again, here the underlying assumption is that the international project is being executed in a country with different education levels or at least engineering styles than that of the head organisation.

With regards to the technical, engineering aspect, the differing views have been discussed in this section. It has become evident that in order to formulate a generic solution to this issue, a compromise has to be found. If checking carefully the answer of Respondent #7 for example, it becomes evident that the local team has, at initial setup, experienced an extensive training from home office engineers in order to become acquainted with the style of engineering required by the project. Also the solution presented by Respondent #5 has shown that involving so called mentors from home office, was critical in setting up the technical staff in the local office. Therefore it shall be considered that for long term projects or in organisations with a longer term vision of executing projects in the local country, such training or mentoring scenarios are critical to the success in setting up a local engineering team. For short term, short duration or low budget projects, this may not be possible and therefore a compromise needs to be found between home office engineering team and the local engineering team. Nonetheless, the (usual) cost benefit of involving local engineers needs to be considered closely and may cover the cost of the initial training or even be less expensive than full time engineering of home office staff.

It needs to be taken into consideration that local, less expensive engineering is often required in order to stay within the project budget or in order to win contracts (i.e. low and attractive price) in the first place. Most respondents mentioned the clear and critical advantage of local personnel typically having

lower rates than personnel from head office. Therefore, for cost saving reasons, project managers would most likely prefer to shift a large portion of engineering work to local countries. However, this of course means that the quality of engineering needs to be up to the required standard, as discussed in this section.

Summary of criticality of Local Involvement (LI) identified in this sub-section:

LI #1	It is critical to know and understand local laws, norms and standards when executing an international project. Local personnel are most familiar and have a strong advantage over home office engineers
LI #2	It is important to have knowledge of the local market and conditions when executing projects. This includes an understanding of local logistics and environmental conditions

Table 11: Summary of critical aspects for local involvement – engineering skills

Summary of Key Factors for Success (KFS) identified in this sub-section:

KFS #1	Local engineers should have an adequate level of engineering ability and the self-confidence to implement this in the project. Then, the lower cost of local engineering is a strong advantage.
KFS #2	Local engineers have knowledge of local conditions, local logistics and local suppliers all relevant to engineering for local circumstances
KFS #3	Local engineers should have the willingness to learn from home office engineers who will act as mentors to the local engineers. Home office engineers should be supportive of this mentoring scheme and foster an open and direct communication with local engineers.

Table 12: Summary of KFS for local involvement – engineering skills

5.2.1.2 Language and translation skills of locally employed staff

Another set of skills which was discussed by the respondents was language or translation skills. Whilst the literature reviewed focused mainly on the language skills of the project teams and communication within the team ((Nicholas & Steyn, 2012); (Lientz & Rea, 2011; Moran & Youngdahl, 2008)), the respondents to this research focused on external aspects such as the language of documentation as well as discussions with local stakeholders.

The reason for this may lie in the fact that for project team members with experience in international projects, the requirement to be able to communicate in a common language within a project team was a given and not questionable. The respondents had focused their thoughts and examples on harder facts such as documentation or direct conversation with external project stakeholders and therefore discussed the involvement of translators in such situations.

Whilst all project managers agreed on the importance of having strong translators in the team, not all project managers agreed on how to best implement this in the project. Whilst the project language may be generally agreed to be English, very often certain engineering documents have to be provided in the local language. This may be for the purpose of authority approvals or for documentation required by operational staff, who in many countries prefer to have the documentation available in their native language. The translation of these documents needs to be absolutely perfect as in many engineering projects, a wrong interpretation or a wrong wording may cause catastrophic failures. On top of the quality of translation, the respondents also referred to the duration for translation to be a critical aspect which needs to be considered when managing a project. In many engineering projects, a large number of documents and drawings are produced, which all needs to be translated. The time it takes for translators to perform such tasks needs to be included in the schedule of a project and is often underestimated, as referred to by Respondent #2.

When discussing on how best to handle the topic of translations and languages, the respondents have provided differing views. Particularly the foreign project managers did not seem to agree on the best solution to the issue of translation.

Whilst, as discussed in the previous section, involving locally employed engineers to perform the design was for many home office project managers not a workable option, the alternative (i.e. translation by translators) was also viewed critically by the home office respondents. Both in terms of content as well as duration required for translating documentation, respondents have found that engineering via translators is far from ideal. So in the end, the solution presented by most home office project managers was related to a technical translator, who can speak the project language. By project language, it is not necessarily only meant to speak English but to actually know the terms used in the project to be able to translate correctly. Whilst that may sound like a workable solution in theory, it is certainly difficult to find such persons who are familiar with a project and only focus on translation. The solution presented by Respondent #9 and Respondent #7 as local representatives, was different to that. They, based on their understanding of involving local engineering in the project, presented similar solutions which included the local engineers being able to translate for the most part or at least support the translators in their tasks. This ensures that the project specific terms are translated correctly. The difficulty of this solution was discussed by Respondent #10, a home office project manager who had spent many years as an expatriate. Respondent #10 had stated that whilst the translation to be performed by local engineering staff is a workable solution, it is an enormous task and a lot of work as everything had to be translated back and forth.

Summary of criticality of Local Involvement (LI) identified in this sub-section:

LI #3	Language problems of foreign personnel require local personnel to support in order to avoid misunderstandings and speed up the entire project processes.
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Table 13: Summary of critical aspects for local involvement – language skills

Summary of Key Factors for Success (KFS) identified in this sub-section:

KFS #4	Local engineers should have a strong command of the project language (most often English) in order to avoid or at least improve translation effectiveness.
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Table 14: Summary of KFS for local involvement – language skills

5.2.2 Soft skills of locally employed staff

With regards to the soft skills of locally employed staff, respondents have provided varying views and statements covering wider range of soft skills. This includes the management or relationship with the client, contacts to local authorities, cultural awareness as well as the importance of a local network during project execution. This section will structure and discuss these varying aspects in order to highlight the potential benefits as well as risks in the involvement of locally employed staff.

5.2.2.1 Cultural awareness

It is interesting to note that the topic of cultural awareness and the required support from locally employed staff in supporting foreigners on a cultural level, was approached very differently by the home office project managers when compared to the local representatives. Whilst most home office project managers focused on understanding of local customs, the local representatives concentrated mainly on the ability to communicate with the locals, on a cultural level.

For example, home office project managers mentioned aspects such as cultural faux-pas, where local representatives had helped them or would have helped them to avoid such situations. This includes aspects such as a culturally inappropriate corporate gift or not understanding who the decision makers are from a cultural perspective. Also in terms of training, home office project managers saw mostly a benefit in cultural awareness training in order to have a basic understanding of the do's and don'ts in a certain country or region and understanding the local customs.

The local representatives, however, focused their responses much more on the communication aspect of cultural awareness. After all, “intercultural

communication is the management and transmission of messages for creating meaning across cultures. Intercultural communication difficulties are the cause of many problems in global business contexts” (Wibbeke, 2009, p. 70). Respondent #7 provided a significant example where he highlighted a critical situation in the project, where the home office representative was not able to find an agreement with the customer due to an aggressive and inappropriate communication style. The situation was then saved when Respondent #7 took over the negotiations with the client and brought the discussion to a level, where the client found a common ground for communicating and eventually found an agreement. The example from Respondent #7 was fully in line with the findings from the literature review which showed that “problems occur because managers from the developed country tend to assume the responses and behaviour of their clients in the developing country without really understanding what they want and what they can offer” (Pheng & Leong, 2000, p. 310). Also Respondent #9 provided a significant example, where the home office project manager was communicating too aggressively and thereby caused extreme disturbances within the project team, leading to unmotivated and in some cases infuriated staff. Also here, the instalment of a local liaison saved the situation and the project team had found an amicable solution on how to proceed.

Also Respondent #8 had mentioned his general opinion that some foreign project managers “behave too imperialistic and that didn't work. That would stifle communication and they would achieve less”. So also in Respondent #8s point of view, the communication style and behaviour of home office project managers was too aggressive and thereby had harmed the working environment within the project team. It is to be considered that “cross-cultural communication provides the invisible glue which can hold a dislocated multicultural project team together” (Ochieng & Price, 2010, p. 459). Communicating with other cultures is a critical and difficult aspect of international project management and may be the most important component when managing international project teams (Mayer, 2010),.

When considering this discussion on cultural awareness and the responses provided by local representatives and home office project managers, it is evident that the local representatives had the general opinion, that in order to succeed locally, the communication with local project staff or also with clients,

needs to be taken over by local personnel as they have that basic understanding of how to approach the local people.

Examples provided by the respondents reflect a lack of common human skills and understanding but they are real life examples, where home-office project team members were not able to communicate correctly with the locals and thereby harmed the project.

Home office project managers on the other hand, did not consider this soft skill at all, perhaps because it is rather difficult to judge whether one communicates correctly within a cultural scenario. The answer can lie in the topic of self-reflection. It is most unlikely for project managers to question themselves and to reflect on their own communication style. The topics which the home office project managers had picked up on were tangible cultural issues. A corporate gift or the wrong addressee on the client side are cultural mistakes, which are simple to understand and learn from. A wrong approach to communication is a form of learning which is more difficult to grasp and certainly more difficult to correct. All home office project managers are experienced project managers who are self-confident enough to believe in their style of working. Therefore a correction on communication style is firstly difficult to understand from their perspective, and secondly difficult to correct.

For home office project managers, receiving this advice from local representatives and taking it on-board would be the ideal solution in avoiding cultural misunderstandings.

Summary of criticality of Local Involvement (LI) identified in this sub-section:

LI #4	Cultural misunderstandings of foreign personnel cause critical problems in project execution and can be avoided when involving local colleagues for guidance and support.
LI #5	Negotiation and communication is best performed by locals or at least with the advice of locals as they understand their counterpart and are able to read between the lines.

Table 15: Summary of critical aspects for local involvement – cultural awareness

Summary of Key Factors for Success (KFS) identified in this sub-section:

KFS #5	The local coordinator should support the overall project manager in avoiding cultural faux-pas and advise on a cultural level. This requires the overall project manager to be willing to listen and learn.
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Table 16: Summary of KFS for local involvement – cultural awareness

5.2.2.2 Management of local stakeholders

Another soft skill aspect which was discussed extensively by the respondents was the management or handling of local stakeholders, these being mainly the clients and the local authorities.

Managing the client

With regards to managing and coordinating with the client, respondents had in particular two dominating aspects which were mentioned and highlighted:

- 1) Managing by influencing
- 2) Managing by common understanding

These two aspects will be focused on in this section.

When talking about international projects and the involvement of a local liaison or coordinator in a project, many respondents focused on ways to influence a client, be able to match the strength and understand how to manage the client representatives. In this aspect, particularly home office project managers mentioned the benefits of a local liaison or local coordinator who would potentially be able to put pressure on a client. Respondent #5 stating that

“we have an influence of the customer simply by having our guy higher ranked than the person on the customer side”,

or Respondent #4 stating that the local colleagues

“know how to influence the client”

showed this aspect very clearly. The responses of the locally employed staff were much more subtle or reserved. Respondent #7, Respondent #8 as well as Respondent #9 did mention their importance in dealing with the client but did

not mention that they had power over a client as opposed to home office project managers. Instead they had presented examples in which their form of negotiation and communication was more successful in influencing a client's decision. Respondent #7 had found a way to convince a client, both through the right form of presentation and communication. Respondent #9 mentioned the client's actual request to have a local counterpart present for direct communication and also Respondent #8 had stated the advantage of a local representative dealing directly with the client, acting as a "catalyst" to foster communication and be able to satisfy the client requirements immediately.

This shows that home office project managers and local coordinators approached this topic entirely differently, both providing examples and ways to manage, satisfy but also influence the clients. Home office project managers saw in this more a power struggle, looking for that specific aspect from their local coordinator and valuing specifically this possibility to overpower or influence the client. Local coordinators see it not as drastic or extreme but rather simply understand that it is part of their task to understand the client's way of doing business and therefore more easily being able to influence and manage the client.

However, there is a counter side to the local coordinator or liaison managing the client directly. Some respondents mentioned that the clients specifically requested a direct contact to a local coordinator whilst others had different experiences. Respondent #8, for example, mentioned that "appearing in front of the client cannot always be your local representative, the home office project manager has to accompany him sometimes so that the client believes he is buying this international product".

On the other hand, it is sometimes the case that a local contact person or even a specified local content is required by the client or the local government. Local content meaning that a specified percentage of project team members have to be local nationals. Respondent #3 as well as Respondent #1 put it in plain terms. Both mentioned that a local liaison may be necessary and perhaps required also from the client side but in the end, the decision maker is the project manager and if that is the home office project manager, then that is the person who ultimately communicates to the client and takes decisions. This aspect will be further discussed in the section on empowerment and

compliance, however, it is worth noting this aspect also here in the discussion on management of the local stakeholders as it shows the differing views with regards to management of the client by local coordinators.

In addition to the influencing factor, respondents also focussed on the importance on having a similar understanding as the client, in particular related to understanding of contracts and scope. One major problem in international projects was highlighted by several respondents being a different understanding of the contract scope, leading to difficulties with the client and ultimately in inefficiencies in executing the project. As also shown in the reviewed literature, in case of a “substantial difference between their respective cultural frames of reference, it is common for negotiations to take a legalistic stance to compensate for ambiguities and misunderstandings. While technical legalities may seem to fill the ambiguity gap momentarily, these only serve to diminish trust” (Pheng & Leong, 2000, p. 314).

This problem was also raised by both home office project managers as well as by the local representatives within this research. As was mentioned by most, it is not only the written word that counts but rather understanding the culture of the client and how the client would read the passages within the contract. It is often the reading between the lines which may make the difference in interpretations of the scope. Respondent #11, a local representative in Kazakhstan and Russia mentioned the requirement to involve local personnel when drafting a contract and in particular the scope of work in order to avoid any misunderstandings during project execution. Also Respondent #6, owner of a company with local offices mentioned the differences in understanding not only of scope but also of contractual, legal stipulations such as waiving certain warranties. In the end, he followed the advice of his local representation and had only positive experiences in that regard. This was supported also by Respondent #3 stating that only local coordinators know how “owners or the contractual counterparts react to the stipulations of the contract. How strict they are, how relaxed will they be”. Therefore, involving a local representative early on during the proposal and contract negotiation phase will help clear out any misunderstanding or differences in contractual interpretations before the project is commenced and the budgets are set.

Managing the local authorities

The second stakeholder to require local support in managing, was the local authority. All respondents mentioned this aspect of local understanding and coordination and particularly highlighted the importance of a local representative, who has the right contacts, understands the bureaucratic procedures and documentation and of course, is fluent in the local language. All these aspects are required to effectively and efficiently deal with the local authorities, according to a majority of the respondents. The importance of dealing with local authorities and governments was also established in the literature review. "Some government agencies have strict regulations regarding procurement of goods and services, and in some countries, the rule of law is not yet fully established. It is a wonderfully challenging and complex environment. For this reason, each project will be unique and will have its own set of challenges" (Grisham, 2010, p. 6). However, how to best manage this aspect was not elaborated in the reviewed literature but was extensively discussed by the respondents.

For example, Respondent #10, Respondent #11 and Respondent #12, long term expats and local representatives, mentioned this specific importance to involve local nationals when dealing with governmental bodies. Respondent #12 even mentioned the specifics of a Canadian project, in which the so-called landmen had to be approached. It was, in such cases, not only sufficient to have the support from a Canadian national. In that case, a local from that specific region had to support the project as he knew the right families and chose the correct words and procedural steps. Respondent #10 mentioned that the entire task of local permitting in his projects in Nigeria was outsourced to a 100% local company. According to Respondent #10, "as an expat you wouldn't be accepted in the same manner as a local would be so we had a local person who was taking care of all the local content, local requirements issues".

Also Respondent #8 and Respondent #9, local nationals and representatives for projects, mentioned their advantages in dealing with the local governmental bodies. Respondent #8 mentioned that international staff would not have the correct understanding on how to communicate and bring across the issue and thereby would send a wrong message. Respondent #9 put it even more plainly,

stating it from the point of view of the local authority, who would surely prefer to speak to a national who is fully aware of the procedural steps and also understands the requirements, culturally and language wise. This is a very specific skill, which is not necessarily related to being an excellent engineer or project manager. In the end, it is very often down to who you know, which contacts the local representative has in order to cut some bureaucratic corners and achieve approval of the specific project item most efficiently and effectively. Also the home office project managers shared this view of the locals. Respondent #1, Respondent #2, Respondent #3 had all provided cases and reasons for involving locals for permitting purposes. Also, Respondent #6 has put it into very clear terms when stating:

You need a manager of your local office, he needs to know the laws and also he has to build up communication with all the local authorities. You cannot do it from far away. It is not possible. You can go with this person, maybe in specific cases, you can go with this person to visit the authorities but on a practical, daily operational work you cannot do this from a mother company or generally as a German not knowing the local laws and practices.

All these responses show that it is deemed essential to involve local representatives for the purpose of permitting or governmental approvals. However, also the specific cultures and regions in which projects are executed need to be taken into account and considered when sourcing local support or representation for permitting (authority approval) purposes. It may not be sufficient to hire simply a local national but the regional contacts of the local representative need to be given. An option may be to subcontract the entire task of authority contacts as was suggested and experienced by one respondent.

Summary of criticality of Local Involvement (LI) identified in this sub-section:

LI #6	Foreign personnel often have a difference in understanding of contractual terms, both commercial and technical creating critical differences with the client. These can be avoided if local personnel are involved early on.
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LI #7	It is critical to know and understand local procedural steps e.g. customs clearance or permitting.
LI #8	Local personnel are able to establish closer connections and contacts to local authorities or other third party stakeholders than foreign personnel.
LI #9	There is often a contractual requirement by the client to have a local counterpart and direct contact within country or a certain requirement for local content

Table 17: Summary of critical aspects for local involvement – managing local stakeholders

Summary of Key Factors for Success (KFS) identified in this sub-section:

KFS #6	The local coordinator should build up a strong relationship to the client on a local level (meaning taking advantage of the common culture and common understanding).
KFS #7	The local coordinator should have close contacts with local authorities and fully understand the procedural steps required to be taken by the project.
KFS #8	The local coordinator should have a strong understanding of contractual terms and understanding of the deeper, cultural meaning of specific clauses (technical and commercial) and advise the overall project manager accordingly.

Table 18: Summary of KFS for local involvement – managing local stakeholders

5.2.2.3 Local knowledge and understanding

A topic which was discussed by all respondents in a rather similar fashion was the importance of local knowledge when executing an international project.

Specifically, the respondents referred to the importance of a local liaison or colleague who has a network of suppliers or contacts who may support during an unexpected event in a project. As discussed in the literature review, Javernick-Will (2009) defined this type of knowledge as normative knowledge

which is best acquired by pioneering (i.e. sending in project staff to assess the local market).

The respondents to this research, however, focused in that position only on own, local project staff and defined the reasons for this. Respondent #11, for example, titled such a person “a fixer”, someone who gets things done locally. Also Respondent #7 confirmed that the local representatives all have contacts in the industry who again know certain people and therefore the local knowledge is easily multiplied. Respondents mentioned occasions in projects where certain fire-fighting tasks need to be done quickly, i.e. an unexpected event occurred in a project and a solution needs to be found locally to the problem. In such instances, the local personnel are able to react more quickly and certainly have a much better network of people, consultants or local suppliers who are possibly the solution to the occurred problem.

As Respondent #2 mentioned, one aspect is certainly the time it often takes to fly out persons/ experts to a project location to fix a problem. Not only the travel time but often also administrative issues such as visa applications limit the response time and often, projects do not allow for such delays in an unexpected situation. In such instances, a local, quick fix solution needs to be found and this is where the network of persons or suppliers from local project representatives comes into full force.

However, not only the more complex issues which perhaps require a creative solution from local representatives need to be covered by local knowledge. Particularly home office project managers and the long term expatriate representatives also mentioned a somewhat banal advantage of local knowledge in that the local project team members understand the day to day operation in a project country much better. Examples such as traffic avoidance, sourcing of diesel for the generators or knowledge of local fire brigades or hospitals were mentioned by the home office project managers but also the long term expatriates.

Such tasks as described above and mentioned by the respondents require a certain amount of flexibility and creativity from local personnel. This cannot be summarised in a job description but comes with experience and a certain amount of self-confidence of the local colleagues. When it comes to supporting in simple, administrative tasks such a hotel reservations or organisation of local

transport, it is important that the local representatives do not see that as tasks which are beneath them. Of course, this is in the end often performed and finalised by local team assistance but it requires organisation and thoroughness from the local project team. When it comes to the “fixing” or “fire-fighting” in problematic, unforeseen situations, a local coordinator and his or her network is seen as an essential ingredient to project success in an international setting.

Summary of criticality of Local Involvement (LI) identified in this sub-section:

LI #10	Local personnel have a strong network of local suppliers or potential short notice local supporters to the project which are necessary during normal project execution but even more so during fire-fighting type situations.
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Table 19: Summary of critical aspects for local involvement – local knowledge

Summary of Key Factors for Success (KFS) identified in this sub-section:

KFS #9	Local personnel should have a strong local knowledge and network of persons and companies to support the project for normal execution tasks and also for quick-fix, fire-fighting types of tasks.
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Table 20: Summary of KFS for local involvement – local knowledge

5.3 Knowledge transfer, training and the effect on power

The responses provided on the topic of transfer of knowledge between the local office and the home office project team focused mainly on a one-directional transfer, from head office to the local team. Whilst that is very much in line with the general assumption that the core knowledge is with the home-office team and needs to be spread outwards to the local teams, it seems as though it is missing the second direction of knowledge transfer, from local back to head office. This is also very much in line with the findings from the literature review, which showed that that vital knowledge lies with the project manager or within the core team at the central location and has to be communicated or transferred out to the globally dispersed organisations or team members. In terms of

knowledge transfer in the opposite direction, Javernick-Will (2009) provided one of the few researches identified in this literature review on how to acquire local knowledge which needed to be transferred back into the project team.

As was also established throughout this research, vital project information is available within the local office and it is worth questioning whether it would be beneficial to the success of a project that this information is fed back to the home office project team. After all, the project organisation "has to combine its normative top-down global knowledge with the emergent bottom-up local knowledge" (Ramaprasad & Prakash, 2003, p. 204).

Respondents did mention technical aspects which are fed back to the home office engineers as this is critical input to their design work. Other local information, however, was not mentioned. For example, why is it not vital for the home office project management team to fully understand the procedural steps for authority approvals or being taught some of the tacit cultural understanding of the local personnel to be able to manoeuvre better and more effectively in the local project market? In the end, the answer may be that certain things simply cannot be taught. It is not possible or even economical to teach a home office project team the ins and outs of a local culture and correct ways of communication prior to executing a project. The budgets and schedules are set and most often very tight, requiring the local team to perform their tasks without teaching home office project members or ensuring the transfer of that knowledge. In the end, it may also not be entirely required for the home office project team to understand and entirely master the cultural aspects which are to be considered. Nevertheless, respondents did state that a general understanding of the local culture should be trained to the home office project team.

Respondent #9 was very adamant that intercultural training should be mandatory for foreign project managers. In fact, team members should be interested enough in the local project country to study this themselves, according to another respondent. However, the effectiveness of such trainings was questioned by most of the respondents. A basic intercultural training should be offered to project team members but the actual understanding comes by learning on the job, listening to the local colleagues and following their lead.

On the other hand, it was also stated that local teams should be trained on the culture of the head office in order to ensure an understanding of each other's approaches and methods. This is an interesting factor, as typically intercultural training focuses on the country of the project, not of the head office. Also the literature reviewed on the topic of intercultural training mostly focused on training of expatriates on the culture of the project country, not vice versa. Littrell and Salas (2005) in fact acknowledge this focus on the expatriates by stating that "the overall purpose of cross-cultural training is to improve an expatriate's probability of success on the foreign assignment" (Littrell & Salas, 2005, p. 308). Nonetheless, as project team members need to work together, an understanding of each other's cultures is an aspect which needs to be considered in an international project setting. Also this finding is in line with the literature of Duarte and Snyder (2006) who have found that utilising cultural differences to create synergy can be a competitive advantage. Project managers and team members who understand and are sensitive to cultural differences can become more robust than teams of the same culture, who think and act alike.

Rather than cultural understanding and tacit knowledge transfer, respondents of this research focused mainly on the technical training of local personnel to ensure that standards of the project head office are upheld. Respondent #9 mentioned, that this continuous training also ensures that local team members stay loyal to the project and company whilst Respondent #5 mentioned an interesting concept of mentoring, where specific head office team members were assigned mentoring roles for the local team. This ensured a uniform and continuous flow of information and was deemed an effective way of training local staff on technical aspects. This mentoring aspect particularly ensured that head office members were willing to share their information and train local personnel rather than feeling that locals are taking away their know-how and therefore their importance in projects. Mentoring positions actually lifted their status and ensured openness towards the local team.

Summary of Key Factors for Success (KFS) identified in this sub-section:

KFS #10	Cultural awareness training must go both ways. Home office personnel must be aware of the culture of the project location. However, also local engineers must have the willingness to learn and understand the home office culture (both company culture and country) possibly in training sessions but also self-motivated learning.
KFS #3 (repeated/ emphasized)	Local engineers should have the willingness to learn from home office engineers who will act as mentors to the local engineers. Home office engineers should be supportive of this mentoring scheme and foster an open and direct communication with local engineers.

Table 21: Summary of KFS for local involvement – knowledge transfer and training

5.4 Who is in charge – Local staff or the international project manager?

According to the discussion points raised in previous sections, it has become apparent that the respondents see a clear advantage in many cases to actively involve local personnel when executing an international project and that the local coordinator is deemed to be a key position within a project. The terms local coordinator, local liaison or local project manager have been raised by the respondents to describe a focal point in the local project organisation. For the sake of uniformity in this section, the term local coordinator will be utilised to describe this position. In the literature reviewed, research mainly focused on a knowledge sharing broker ((Julian, 2008); (Pemsel & Wiewiora, 2013)) to act as a local coordinator. It is noted that this position in the literature focuses mainly on ensuring information exchange between locals and foreign project team members whereas the local coordinator defined by the respondents has a much wider variety of responsibilities and skills.

However, this leads to a very basic question which is important in project management, the question of who is ultimately in charge? The topics of empowerment, trust and compliance will be discussed within this section in

order to analyse the role and importance of the local coordinator and the relationship to the home office or overall project manager.

As an underlying factor of managing the local stakeholders, particularly home office project managers had differing views on empowering local personnel to take decisions and communicating directly with the client. The majority of respondents stated that local personnel have to be empowered and that trust in the ability and judgement of the local colleague is essential. However, not all respondents were clear in what way and to what level the local coordinator is to be empowered to take project specific decisions. Most home office project managers, in that context, did mention that certain ground rules or boundaries of decision taking need to be established from the outset to ensure that not all decisions are taken locally at free will, whilst the accountable project manager is in the home office and either unaware or only informed after a decision has been taken. Therefore, respondents such as Respondent #1 or Respondent #3 stated clearly that the ultimate decision is to be taken by the overall project manager, mostly situated in head office.

The responses provided by locally employed staff, however, were somewhat contrary to that. Respondent #7 mentioned specific projects which have been transferred to the local project team entirely (in that case, however, also making the local team accountable for the outcome of the project) and the home office project manager is supporting only in an advisory role. Respondent #9 did not go into such extensive organisational change but did mention that “ultimately the person who represents the company at local level talks to the client same as the person from head office” and that this is demanded by many clients.

As is so often the case, the real solution is, in the opinion of the researcher, a compromise of the two positions shown here. The local coordinator needs to have a certain power to take decisions because otherwise he or she would be a “lame duck” in front of the client, having to deal with them directly but in the end not being able to make any promises to the clients without prior consultation with the head office project manager. This, in many cases with a certain time delay due to time differences or unavailability. Therefore, the solution presented by many, establishing ground rules or a frame for decisions at the very outset, ensures the direct contact between the local coordinator and the local third party and at the same time gives the overall project manager the confidence of

being able to take important decision if so required. This requires a certain amount of trust which needs to be established between the local coordinator and the head office project manager. This trust comes with time and perhaps by having worked together on a previous project. Without it, however, all decisions have to be brought back to head office and the advantages of the local coordinator, which have been presented throughout the previous discussion sections, are minimised.

An item which is associated with empowerment in projects and has been discussed by respondents very openly is the topic of regulatory compliance. It is probably true to state that all project organisations have a clear stance on regulatory compliance to operate within the given laws, regulations and policies. Certainly the law of the individual project countries requires such compliance. Respondents have stated very openly their views on the relation between empowerment and compliance. There is a line of argument presented by some of the respondents that possibly, the more the local personnel are empowered to take their own decisions and act locally, the higher the risk of possible compliance infringements. Local colleagues, as explained by Respondent #5, have been trained accordingly by the head office to ensure that the rules of the project company are known to everybody involved in the project. It is to be noted that only few of the respondents have presented examples where possible infringements had taken place or actually mentioned that they see compliance to be a problem. Respondent #5 and Respondent #12 mentioned specific examples and did see that particularly a close relationship to a local supplier had been a cause for concern. This is in line with some of the findings of the literature review, where Grisham stated that “an offering of baksheesh, a gratuity for a service, in one country could be a bribe in a second country and a tax deduction in a third” (Grisham, 2010, p. 16)

However, most of the remaining respondents actually stated very clearly that they did not see this as a major issue. Respondent #9 stated clearly that this was never an issue in any of his assignments and also home office project managers such as Respondent #1, Respondent #2 or Respondent #3 mentioned clearly that this was not a problem.

Therefore, according to the responses provided, there does not seem to be a clear link between empowerment of the locals and possible infringements of

regulatory compliance. It may not be surprising to state that local personnel have been acting compliant with rules and regulations, however, the temptation is of course much higher considering the close relationships and networks which have to be established by the local coordinator. This may lead to situations where certain favours may be due. However, as presented by Respondent #5, compliance training from head office clarifying the views and values of the project organisation is sufficient to set a basis for most projects. This will not rule out a possible “bad apple” as experienced by two of the respondents but this cannot be avoided proactively.

Summary of Key Factors for Success (KFS) identified in this sub-section:

KFS #11	The local coordinator must be empowered by the overall project manager whilst accepting pre-defined boundaries of decision making. In addition, the local coordinator strictly upholds regulatory compliance boundaries.
KFS #12	There must be a strong trust between the local coordinator and the home office project manager

Table 22: Summary of KFS for local involvement – empowerment, trust and compliance

5.5 Summary of Findings on Local Involvement and Key Factors for Success

The following tables summarise the key aspects of local involvement (LI) and key factors for success (KFS) which were presented throughout the previous chapters. These are then further discussed and brought into relation with the research questions in the next chapter.

Local Involvement

LI #1	It is critical to know and understand local laws, norms and standards when executing an international project. Local personnel are most familiar and have a strong advantage over home office engineers
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LI #2	It is important to have knowledge of the local market and conditions when executing projects. This includes an understanding of local logistics and environmental conditions
LI #3	Language problems of foreign personnel require local personnel to support in order to avoid misunderstandings and speed up the entire project processes.
LI #4	Cultural misunderstandings of foreign personnel cause critical problems in project execution and can be avoided when involving local colleagues for guidance and support.
LI #5	Negotiation and communication is best performed by locals or at least with the advice of locals as they understand their counterpart and are able to read between the lines.
LI #6	Foreign personnel often have a difference in understanding of contractual terms, both commercial and technical creating critical differences with the client. These can be avoided if local personnel are involved early on.
LI #7	It is critical to know and understand local procedural steps e.g. customs clearance or permissions.
LI #8	Local personnel are able to establish closer connections and contacts to local authorities or other third party stakeholders than foreign personnel.
LI #9	There is often a contractual requirement by the client to have a local counterpart and direct contact within country or a certain requirement for local content
LI #10	Local personnel have a strong network of local suppliers or potential short notice local supporters to the project which are necessary during normal project execution but even more so during fire-fighting type situations.

Table 23: Summary of all findings on local involvement

Key Factors for Success

KFS #1	Local engineers should have an adequate level of engineering ability and the self-confidence to implement this in the project. Then, the lower cost of local engineering is a strong advantage.
KFS #2	Local engineers have knowledge of local conditions, local logistics and local suppliers all relevant to engineering for local circumstances
KFS #3	Local engineers should have the willingness to learn from home office engineers who will act as mentors to the local engineers. Home office engineers should be supportive of this mentoring scheme and foster an open and direct communication with local engineers.
KFS #4	Local engineers should have a strong command of the project language (most often English) in order to avoid or at least improve translation effectiveness.
KFS #5	The local coordinator should support the overall project manager in avoiding cultural faux-pas and advise on a cultural level. This requires the overall project manager to be willing to listen and learn.
KFS #6	The local coordinator should build up a strong relationship to the client on a local level (meaning taking advantage of the common culture and common understanding).
KFS #7	The local coordinator should have close contacts with local authorities and fully understand the procedural steps required to be taken by the project.
KFS #8	The local coordinator should have a strong understanding of contractual terms and understanding of the deeper, cultural meaning of specific clauses (technical and commercial) and advise the overall project manager accordingly.

KFS #9	Local personnel should have a strong local knowledge and network of persons and companies to support the project for normal execution tasks and also for quick-fix, fire-fighting types of tasks.
KFS #10	Cultural awareness training must go both ways. Home office personnel must be aware of the culture of the project location. However, also local engineers must have the willingness to learn and understand the home office culture (both company culture and country) possibly in training sessions but also self-motivated learning.

Table 24: Summary of all findings on key factors for success

6 CONCLUSION

6.1 Introduction

This section concludes the research and provides summarised answers to the research questions and a proposal for organisational setup based on the findings of this research. Also, a framework for maximising the contribution of local personnel was developed and is presented in this concluding chapter. It further provides a final clarification on the gap in available knowledge which is being closed by this research and thereby summarises the contributions to theory as well as to practice. Furthermore, this section provides an overview of the limitations of this research and gives an outlook and recommendation for further research to be conducted.

6.2 Concluding answers to the research questions

This section discusses the link to the objectives of this research which have been set out at the beginning of this thesis and will, based on the discussion shown previously, provide answers to the research questions posed.

As a reminder, the previously defined objectives and research questions were:

Objectives:

- Identify and analyse the importance of local personnel to the success of international projects in the engineering sector.
- Identify and define specific contributions of local personnel when executing international engineering projects.

Research Questions:

- RQ1: To what extent is the contribution of local personnel critical to the success of international, engineering related projects?
- RQ2: What contributions can be provided by and can be transferred to local personnel for the successful execution of international engineering projects?

This research, the insights provided by the respondents as well as the subsequent analysis and discussion have supported in answering the research questions posed.

6.2.1 RQ1: Criticality of involving local personnel in international engineering projects

All respondents have provided statements and responses which indicate that the involvement of local personnel is highly critical and essential to the successful execution of an international engineering project. Respondents have provided various reasons to justify this statement, which have been presented and discussed within the previous sections and have been summarised in the tables at the end of each subsection, marked with a Local Involvement (LI) number. The justification is summarised and combined in Table 25. Here it is to be mentioned that the justifications were grouped into the main categories defined by Javernick-Will (2009) in her study on acquiring local knowledge in international projects. As was discussed in the literature review, the types of local knowledge were summarised by Javernick-Will as follows:

1. **Regulative** elements such as local laws, norms or standards which tend to be explicit knowledge
2. **Normative** elements such as social contacts, knowledge of the local market, logistics or locally available resources
3. **Cultural** cognitive elements such as local social norms or cultural practices

These three categories have been utilised as a basis for grouping the justifications in a logical manner. Specific reasons have been added to justify the importance of involving local personnel in international projects and thereby providing an answer to research question #1.

LI #	Knowledge Type	Justification for criticality of involving local personnel in international engineering projects
3	Cultural	Language problems of foreign personnel require local personnel to support in order to avoid misunderstandings and speed up the project processes.
4	Cultural	Cultural misunderstandings of foreign personnel cause critical problems in project execution and can be avoided when involving local colleagues for guidance and support.
5	Cultural	Negotiation and communication is best performed by locals or at least with the advice of locals as they understand their counterpart and are able to read between the lines.
9	Cultural/ Regulative	There is often a contractual requirement by the client to have a local counterpart and direct contact within country or a certain requirement for local content.
6	Cultural/ Regulative	Foreign personnel often have a difference in understanding of contractual terms, both commercial and technical creating critical differences with the client. These can be avoided if local personnel are involved early on.
1	Regulative	It is critical to know and understand local laws, norms and standards when executing an international project. Local personnel are most familiar and have a strong advantage over home office engineers
7	Regulative	It is critical to know and understand local procedural steps e.g. customs clearance or permissions.
8	Normative	Local personnel are able to establish closer connections and contacts to local authorities or other third party stakeholders than foreign personnel.
2	Normative	It is important to have knowledge of the local market and conditions when executing projects. This includes an understanding of local logistics and environmental conditions.
10	Normative	Local personnel have a strong network of local suppliers or potential short notice local supporters to the project which are necessary during normal project execution but even more so during fire-fighting type situations.

Table 25: Justification for importance of involving local personnel, based on knowledge types defined by Javernick-Will (2009)

However, it is to be noted, that many respondents have also provided examples and reasons to show the limitations of local personnel and these also were evaluated within the discussion section and need to be taken into consideration. Such limitations include:

- Potential lack in technical engineering capabilities
- Availability of or difficulty in sourcing of required personnel
- Complications related to empowerment and decision taking authority
- Larger potential for compliance related infringement

Nonetheless, all respondents had highlighted the criticality and importance of involving local personnel in international engineering projects and whilst taking the limitations into consideration, research question #1 has been answered clearly.

Having established the importance of involving local personnel, the following section provides a summary of specific contributions of local personnel, thereby providing an answer to research question #2 as well as a framework for maximising such contribution in an international engineering project.

6.2.2 RQ2: Contribution of local personnel in international engineering projects

This research has shown that local personnel can provide significant positive input to a project and thereby provide a major contribution to the success of an international engineering project. The following tables summarise these key factors for success (KFS) identified throughout this discussion section and are grouped to show the key contributions of the local coordinator and local engineers.

Local coordinator

The local coordinator (or local liaison or local project manager) is deemed to be a key position within the project team. The following points need to be considered:

KFS #	Key contribution of local coordinator
5	The local coordinator should support the overall project manager in avoiding cultural faux-pas and advise on a cultural level. This requires the overall project manager to be willing to listen and learn.
6	The local coordinator should build up a strong relationship to the client on a local level (meaning taking advantage of the common culture and common understanding).
7	The local coordinator should have close contacts with local authorities and fully understand the procedural steps required to be taken by the project.
8	The local coordinator should have a strong understanding of contractual terms and understanding of the deeper, cultural meaning of specific clauses (technical and commercial) and advise the overall project manager accordingly.
11	The local coordinator should be empowered by the overall project manager whilst accepting pre-defined boundaries of decision making. In addition, the local coordinator strictly upholds regulatory compliance boundaries.
12	There should be a strong trust between the local coordinator and the home office project manager

Table 26: Summary of key contributions of the local coordinator

Local engineers

Whilst possibly difficult to source, it is essential to involve local engineers who:

KFS #	Key contribution of local engineers
1	Local engineers should have an adequate level of engineering ability and the self-confidence to implement this in the project. Then, the lower cost of local engineering is a strong advantage.
2	Local engineers have knowledge of local conditions, local logistics and local suppliers all relevant to engineering for local circumstances.
3	Local engineers should have the willingness to learn from home office engineers who will act as mentors to the local engineers. Home office engineers should be supportive of this mentoring scheme and foster an open and direct communication with local engineers.
4	Local engineers should have a strong command of the project language (most often English) in order to avoid or at least improve translation effectiveness.
10	Cultural awareness training must go both ways. Home office personnel should be aware of the culture of the project location. However, also local engineers should have the willingness to learn and understand the home office culture (both company culture and country) possibly in training sessions but also self-motivated learning.

Table 27: Summary of key contributions of local engineers

All local personnel:

Based on the Key Factor for Success #9, it is derived that local knowledge is of paramount importance and this includes for the local team to have a strong network of relevant local contacts including:

- Clients at all project levels
- Local authorities for permitting related tasks and negotiations

- Suppliers who may be supporting locally with repair tasks, spare parts or shorter delivery times if required.
- Local contractors who may be supporting in executing special tasks, finding quick fix solutions or, due to their local presence, offer a more low cost price.
- Other engineers who may need to be recruited for the project on short notice
- Specialised consultants who may be able to support on specialised, “fire-fighting” like tasks.

6.3 Framework for contribution of local personnel

A framework for maximising the contribution of local personnel has been developed based on the summary tables for key factors for success provided in the previous chapter. It is to be noted that these summary tables are the result of the analysis of the responses provided within this research. Hence, the framework was developed based on the responses received in this research.

This framework is recommended to be taken into consideration and implemented by the project manager and the main project organisation in order to facilitate the execution of successful international engineering projects.

The following subsections focus on specific aspects of the framework and provide a clear link to the key factors for success identified during data analysis.

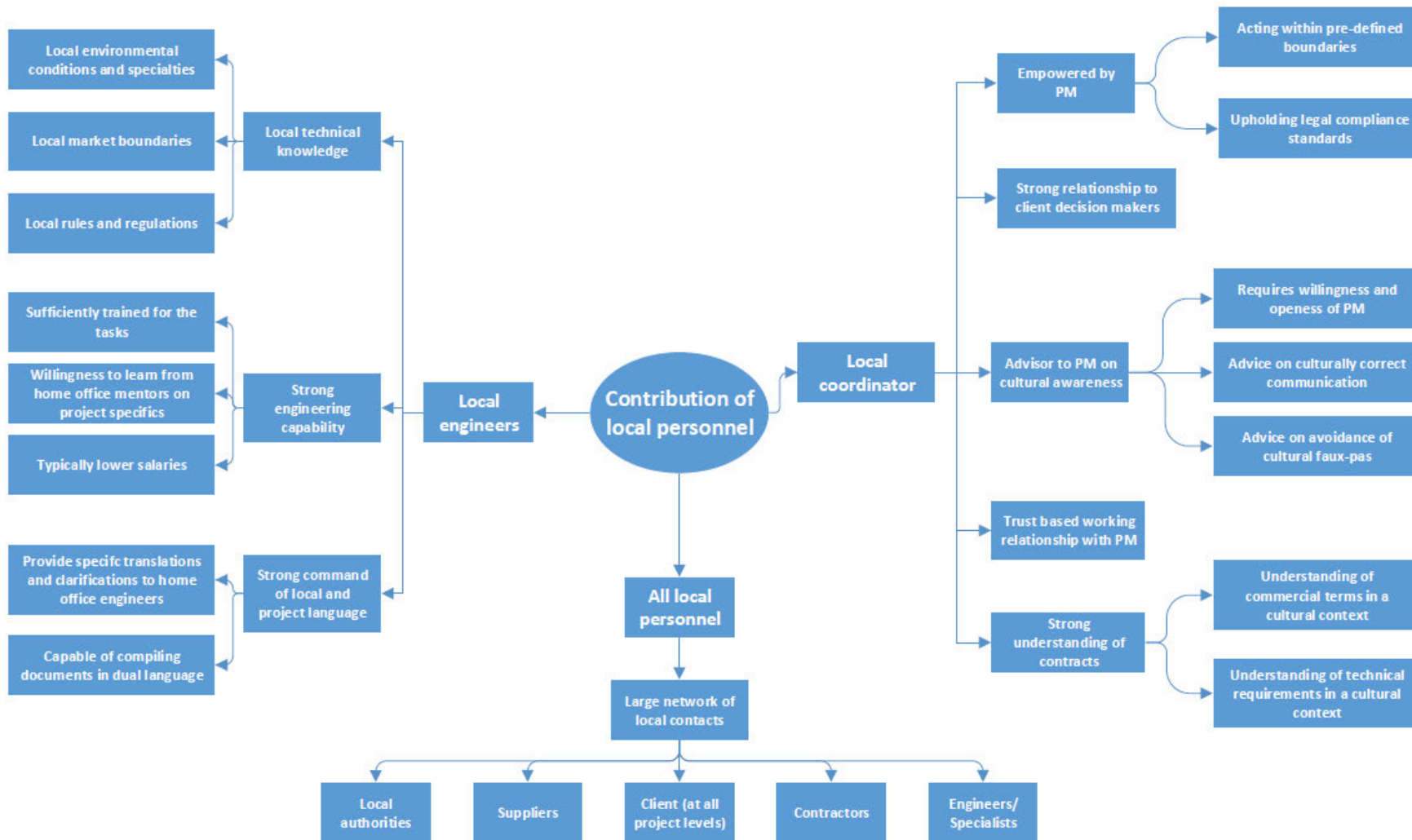


Figure 17: Framework for contribution of local personnel in international engineering projects

6.3.1 Framework specific to local engineers

When focussing on the local engineers, the main following main contributions are to be considered in a project team:

- Local technical knowledge (KFS #2)
- Strong engineering capabilities (KFS #1, KFS #3 and KFS #10)
- Strong command of local and project language (KFS #4)

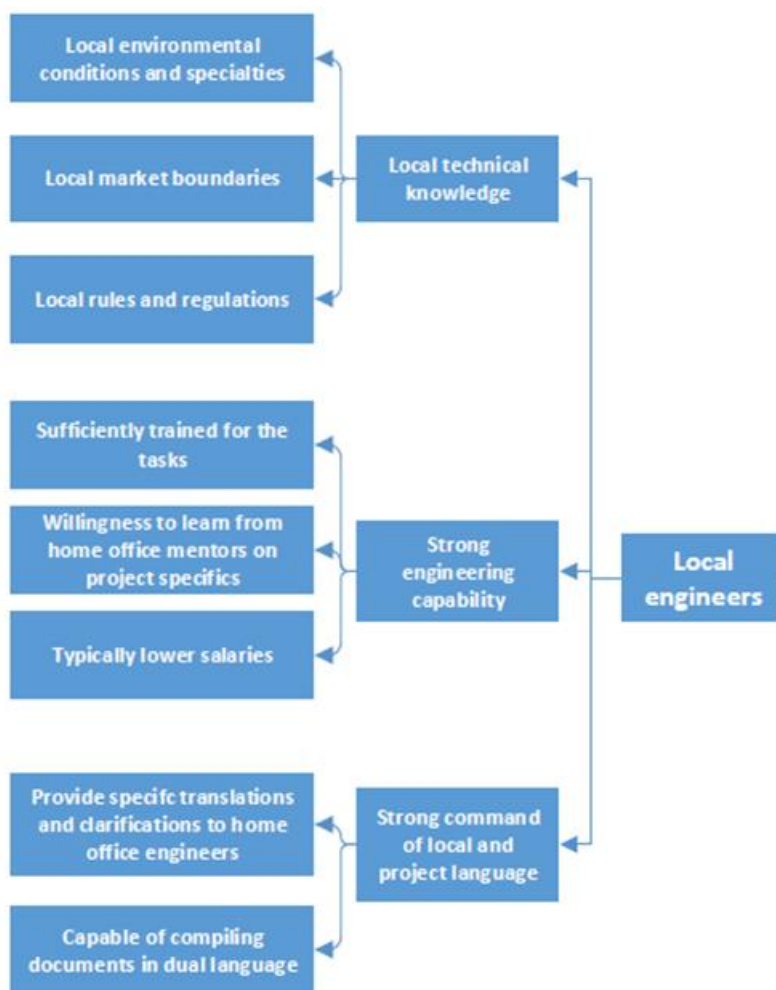


Figure 18: Framework with focus on local engineers

6.3.2 Framework specific to local coordinators

The importance of the local coordinator was particularly highlighted by the respondents. For this, the following main contributions are to be considered when executing international projects:

- Empowered by the project manager (KFS #11)
- Strong relationship to client decision makers (KFS #6)
- Advisor to project manager on cultural issues (KFS #5)
- Trust based working relationship with the project manager (KFS #12)
- Strong understanding of contracts (KFS #8)

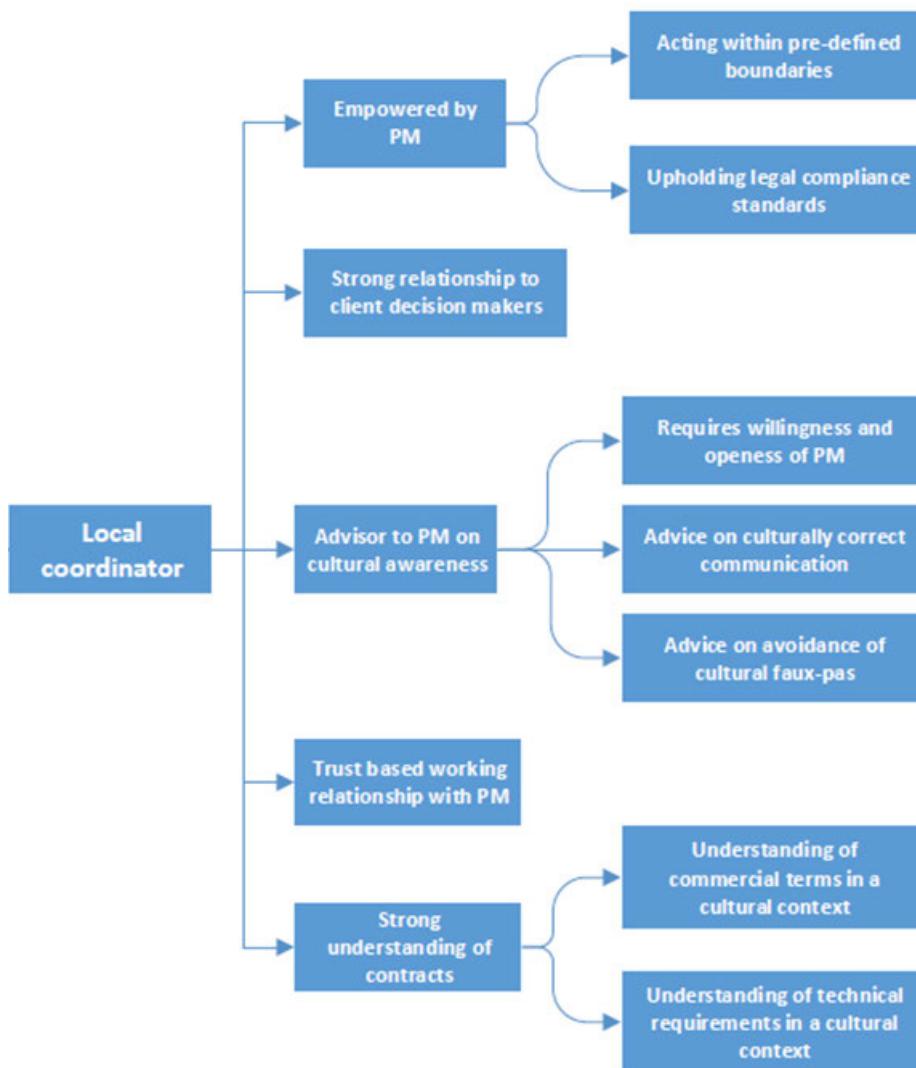


Figure 19: Framework with focus on local coordinator

6.3.3 Framework for contributions of all local personnel

With regards to contributions which all local project team members may bring to the project, the local network and contacts to various local stakeholders (KFS #7 and KFS #9) were items mentioned by the respondents and identified as critical.

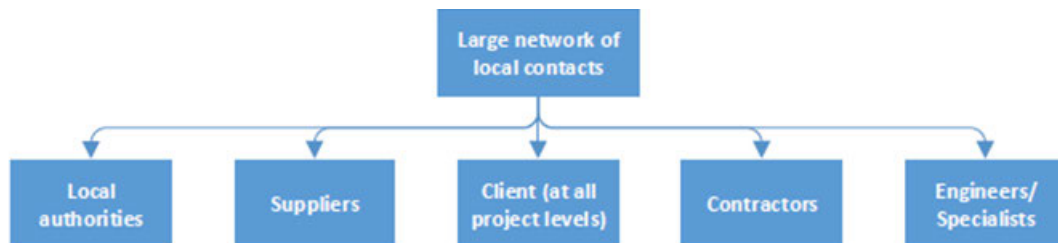


Figure 20: Framework for contributions of all local personnel

6.4 Proposed organisational setup in international projects

In order to be able to implement the framework and guidelines highlighted in the previous section, the project should be structured and organised in a way in which the full potential of locally employed staff can be exploited for the benefit of project success. This section provides a guideline on potential organisational arrangements and structures in international projects and is based on the framework for local contribution defined earlier as well as the specific findings presented in section 4.7 of this thesis. The following organisational charts are higher level depictions of very often complex organisational structure. Their purpose is to show the position of the local team within a project and how such structures are to be set up.

According to this research, the role of the local coordinator and the local team is critical for success. Therefore there are three main variations possible based on this finding. The first chart shows the arrangement in which the local team is managed by the local coordinator, engineering is executed mainly locally and supported on an expertise/ mentoring basis from home office engineers.

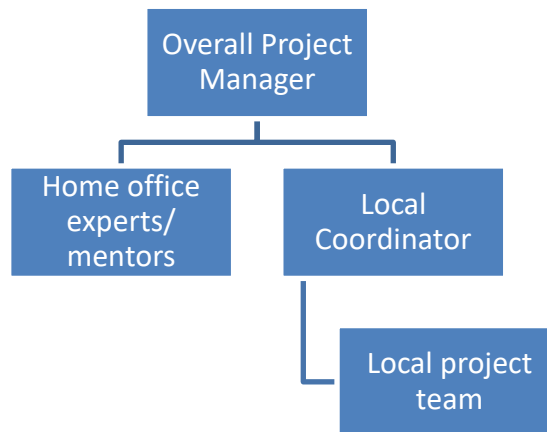


Figure 21: Proposed organisation chart – Option 1

This is the preferred setup of international engineering projects when taking the findings of this research and the resulting framework into consideration. The contribution of local personnel is maximised in this setup. The local coordinator is available as a local advisor to the project and is supported by a multitude of local engineers who contribute to the success of the project with local knowledge on an engineering level. In addition, the local network and contacts to project stakeholders is maximised in this setup. As discussed during this research, sourcing of an adequately trained local team is a challenge in this setup which needs to be taken into consideration. In addition, a strong level of trust has to be built up between the home office team, in particular the project manager, and the local organisation. On a technical level, the local engineers are supported by home office experts or mentors who fulfil dedicated, specialised tasks and act as mentors to the local engineering team.

The second variation would require a split of activities or responsibilities between the local engineering team and the home office engineering team. It would be essential to manage interfaces and avoid duplication of activities which would mean a strong alignment and coordination between the two office coordinators. Knowledge management in both directions is a key factor to success in this form of project organisation. This arrangement would come into force in the case of difficulties in sourcing specific persons locally or in case expertise in specific areas is split across the two locations.

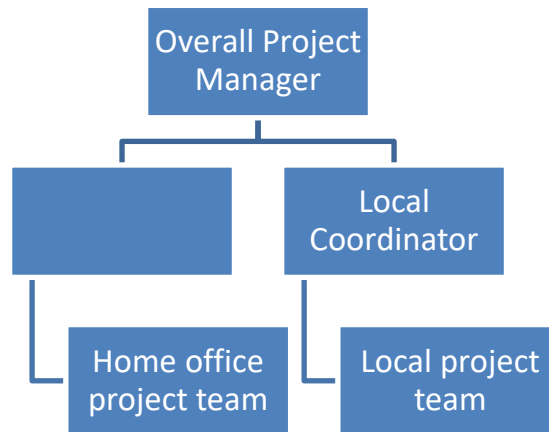


Figure 22: Proposed organisation chart – Option 2

The third option foresees only a local coordinator reporting directly to the project manager and advising the international project team on local aspects which need to be taken into consideration. This minimises the size of the local team and requires extensive knowledge build up on local technical requirements by the international project team. The advantage of lower cost of local engineering is not given in this scenario. Also, contacts to local suppliers, contractors or specialists is minimised in this scenario and is fully reliant on the local coordinator. The coordinator is the only local focal point for the client and all engineering related discussions will have to be mediated and coordinated by the local person. On the other hand, this scenario minimises the administrative efforts in the local organisation as it is a very slim local organisational setup.

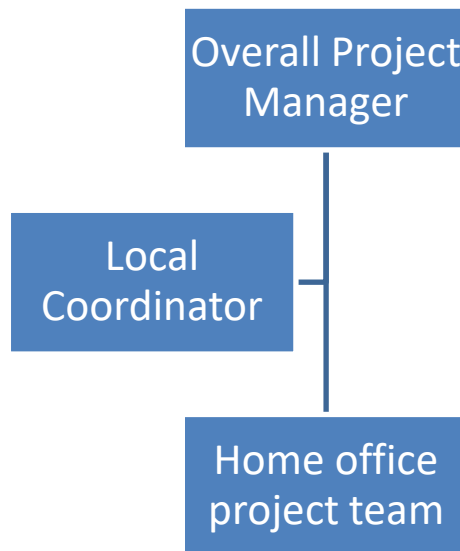


Figure 23: Proposed organisational chart – Option 3

There is of course also the option to situate the entire project team locally, have a local project manager and only an advisor from the international perspective. However, this is not deemed to be an international project in the traditional sense of this research and is therefore not considered relevant for the purpose of this study. It does not mean that this is not an option, only that in that case it is rather a local project than an international project.

6.5 Meeting the aim and objectives of this research

The aim of this research was to explore and identify the contributions of local personnel when managing engineering related projects in an international environment. This aim has been achieved and a framework was designed and presented in section 6.3 of this research. This framework shows the various aspects in which local personnel can specifically contribute to a successful project execution. In combination with the presented options for project organisations, an answer on how these contributions can be implemented in projects has been provided. This framework as well as organisational structures present a contribution to knowledge in the field of international project management and have a practical applicability for the execution of engineering projects in an international environment.

The objectives of this doctorate research were to:

- Identify and analyse the importance of local personnel to the success of international projects in an engineering sector.
- Identify and define the specific contributions that can be executed by local personnel when executing international engineering projects.

This research has shown that the involvement of local personnel is critically important to the success of an international engineering project. Various reasons were provided by the respondents, analysed and summarised within this research. These justifications have been broken down into detailed examples which have been summarised in Table 25 of section 6.2.1.

With regards to the specific contributions, respondents have provided a multitude of examples highlighting the importance of local personnel and in what manner the project team members have contributed to the success of an international engineering project. These responses were presented in the findings section of this research (section 4) and analysed and discussed in relation to theory and practice in the discussion section of this research (section 5). A key contributor to the success of a project was found to be the role of the local coordinator, who can act as an advisor to the home office project manager and is able to support locally as a direct contact person for the client, all within pre-defined decision making boundaries and legal compliance limitations.

The answers to the research questions have been provided extensively in chapters 6.2.1 and 6.2.2

6.6 Reflection on the chosen methodology

The methodology of qualitative research through semi-structured interviews was, in the eyes of this researcher, a correct choice. As stated by Galletta (2013, p. 2), semi-structured interviews are “sufficiently structured to address specific dimensions of the research question while also leaving space for the study participants to offer new meanings to the topic of study”. The data generated in approximately 1-hour interviews was structured sufficiently to allow for meaningful analysis ensuring a concentration on the research aim and

objectives. At the same time, respondents were allowed to provide examples from past experiences through which they explored specific aspects of local involvement and were able to provide meaningful insights as well as establishing valuable theories.

Interviewing key experts in international engineering projects was an enlightening and highly interesting task. Respondents were very quickly able to grasp and understand the questions being asked and became highly interested in providing their insights throughout the discussion type interview.

Data analysis by coding in accordance with Thomas (2003) resulted in a clear structure of nodes, which allowed the transcripts to be broken down into the three main grand themes established during the literature review. Having been confronted with the large amount of data after transcribing 12 interviews, utilising NVIVO as a software tool and using the inductive analysis method of creating nodes was a logical and sense-making activity, allowing for a structured analysis and discussion of the generated data.

6.7 Contribution to knowledge

Relevant project management literature has been systematically reviewed and a gap in knowledge has been identified. Whilst the challenges of managing projects in an international environment have been researched extensively, the involvement of local personnel and their specific contributions has not been studied to date. This research focused on the criticality of involving local personnel when executing international projects in the engineering sector and identified the contribution of local project team members to the success of such projects.

The literature review that has been performed in this research has identified 3 grand themes specific for international project management.

1. Hard skills and soft skills of project management and their relevance when managing international projects
2. Management of cultural aspects, cultural awareness and communication
3. Knowledge management and knowledge transfer

In accordance with these three grand themes, the contributions to knowledge are summarised in the following subchapters.

6.7.1 Grand theme 1: Hard skills and soft skills in international projects

The literature review has shown that the majority of available literature on project management focused on the hard skills ((Ibbs & Kwak, 1997); (Kerzner, 2002); (T. Cooke-Davies, 2002); (Project Management Institute, 2008)) whereas literature specific to international projects highlighted the importance and criticality of the soft skills of project team members ((Gillard, 2009); (Grisham, 2010; Sapsed & Salter, 2004; White & Fortune, 2002)).

It had become evident in the interviews that a majority of the respondents believe that the hard skills of project management are important and need to be in place. However, it also became clear that most respondents deemed that this is a given or the basics for running projects and does not require more focus in international projects as opposed to national projects. With the understanding that all respondents have over 10 years of project management experience, the respondents were clear that a certain structure and organisation is the bread and butter of the job. However, the soft skills are the distinguishing factor in international projects and therefore were deemed by most respondents to be most important, or the decisive factor. This is deemed to be a contribution to knowledge as the available literature does not make such a clear statement and does not highlight the criticality. Researchers such as Grisham (2010) have mostly highlighted the necessity of a certain balance between the two sets of skills but not the clear statement regarding soft skills.

The respondents to this research however, focused mainly on the soft skills of the international project manager and mentioned examples where particularly communication in a cultural context caused concerns and problematic situations with local personnel and clients. Here, the clear advantage of a local coordinator was highlighted but this person has to be empowered by the project manager to take decisions within pre-defined boundaries. This coordinator needs to have the required hard skills as a basis (contractual understanding, familiar with the project requirements) but much more important, is familiar with

the local culture and therefore already has a clear soft skill advantage over foreign personnel.

This position of the local coordinator and the great importance to the success of international projects was not mentioned in any of the literature available to date and therefore deemed another contribution to knowledge.

6.7.2 Grand theme 2: Culture and communication

This research has confirmed the idea that “culture plays a decisive role in international project management” (Köster, 2009, p. 26) and that trust, culture and communication is critical to an effective international project team (Hydari, 2012). Whilst Moran and Youngdahl (2008) also state that culture is the critical aspect of international project management and Lientz and Rea (2011) acknowledge that the project manager cannot be aware of all cultural intricacies when managing an international project, the currently available literature did not cover the aspect of the local project team members and their potential contribution to solve this issue.

The contribution to knowledge and closing of a previously existing gap is therefore the clear finding that the involvement of local personnel is a critical factor to support the overcoming of cultural and communication barriers. The resulting framework highlights the benefits of involving local team members to avoid or overcome potential cultural hurdles, improve communication with local 3rd party stakeholders and advise the foreign personnel in specific cultural issues.

6.7.3 Grand theme 3: Knowledge management and transfer

With regards to knowledge management and transfer, the literature review has established that “the ability to share and use knowledge across borders has become one of the central competitive concerns for many multinational corporations” (Adenfelt, 2010, p. 535) but that “establishing shared knowledge in a transnational project is a cumbersome issue as members are geographically dispersed, as well as being functionally and culturally diverse” (Adenfelt, 2010, p. 536). Respondents have agreed with these findings but have

filled the gap in available knowledge by stating particular measures that are to be put in place in a project to overcome this cumbersome issue.

Local engineering with dedicated support from home office mentors was a viable solution presented within the framework of this research. Specific skills and knowledge of local engineers can be taken advantage of (knowledge of local rules and regulations, engineering standards, availabilities in local market etc.) and specialist skills and know-how can be transferred and trained to local engineers through dedicated mentors of home office. In case this is very specialised, then of course the more practicable solution would be to involve home office engineers to perform such specialised tasks, with the support of the local engineers regarding local matters or aspects.

With regards to inter-cultural training, respondents stated that it is a good basis for foreign personnel to have a basic understanding but that real training is then on the job. Local personnel would need to support foreign project team members specifically to avoid cultural faux-pas. Available literature had in general mirrored this understanding that cross-cultural training can be an effective tool if implemented carefully and tailor-made (M. A. Morris & Robie, 2001). In that sense, the research had confirmed the findings of the literature review but the contribution to knowledge lies in the important role of the local coordinator to support the on-the-job learning of the project manager and facilitate in culturally sensitive situations.

6.7.4 Summary on contribution to knowledge

The three grand themes found during the literature review were confirmed also by this research to be critical for international projects. However, the gap in available knowledge was in the fundamental question with regards to the importance of local personnel to the success of an international project and how best to implement the requirements in international projects by taking advantage of local personnel. In particular, is the involvement of local personnel critical to implement the requirements and if so, what are the specific contributions of local personnel which have to be taken into consideration by the project organisation. This focus on local personnel and in particular, the

identifications of their major contributions was the gap in available knowledge identified during the literature review which has been closed by this research.

6.8 Contributions to business practice

This research has shown that the involvement of local personnel when managing an international engineering project is critical to the success of the project. The contributions such local persons can bring to the project were found to be multi-faceted.

Practitioners are able to utilise the framework and the associated organisational setup when setting up their own project organisation for an international engineering project. The key importance of a local coordinator and the required capabilities can be used as a guideline when sourcing such local persons for the project team. In addition, a team of local engineers is recommended with the sets of skills and benefits clearly visible from the framework. It has been clearly stated that it is not recommended to execute an international project without the involvement of local personnel. Project organisations will have to take this into consideration when bidding for certain projects and setting them up at the beginning. Project managers in an international environment will have to take certain aspects into consideration in their daily routines of the project. Open communication with the local team, empowering local persons and fully trusting the local counterpart are only a few aspects which have been shown in the framework.

Therefore, this research gives a clear indication that involving local personnel is essential and it provides an overall guideline on aspects to consider when involving local personnel. Thereby it brings a new understanding to the practice of international engineering projects.

6.9 Reflections on limitations and generalizability

As mentioned also by Cole et al. (2011), the qualitative approach to research leaves room for interpretation and is not free of influence by the researcher. This is to be taken into consideration when discussing the limitations and generalizability of this research.

With regards to the influence of the researcher, it is to be stated that all respondents were experienced project managers who have worked in an international environment for more than 10 years. By nature, these persons are self-confident and have clear opinions which are a basic requirement when leading project teams in projects with a budget over €1m. Therefore, the degree of influence of the researcher is by nature very limited. In addition, the semi-structured questions were asked in order to direct the interview into the areas to be covered and to ensure a certain guideline. The answers provided by the respondents were almost always backed up by specific examples from past projects, thereby giving credibility to the responses much more so than simple statements of opinion. Nonetheless, it is also to be considered that respondents tend to focus on the positive aspects of their work and “may be prone to exaggeration or over-enthusiasm and this needs to be taken into consideration in any analysis” (Cole et al., 2011, p. 147). This research has of course highlighted mainly the benefits of involving local personnel, however, in many instances also the downsides or negative aspects of local involvement have been raised by the respondents and are highlighted within this research. Nonetheless, in cases where certain opinions or examples outweighed the counter-arguments, these were discussed and opinion was formed by the researcher. This is a limitation which may need to be considered.

Furthermore, the sample size may be considered a limitation of this qualitative research. Guest et al. (2006), state that theoretical saturation is a criterion to justify adequate sample sizes. Theoretical saturation is reached when a majority of common codes and theories have been found and any further interviews brought only minor amounts of new information.

As evaluated in chapter 3.2.3, this saturation point was reached within this research after 10 interviews and was finalised after the 12th interview. Of course it may be criticised that the samples were not sufficiently diverse to receive further new theories which may be a valid limitation. However, as was presented in chapter 3.3.4, the respondents have experienced engineering projects in varying industries, in a large spread of countries and over many years of experience. Therefore, the sample size and selection of respondents is deemed adequate to ensure trustworthiness of results.

However, a limitation to this research is that all 12 respondents have been male project managers. There is no real explanation to this other than that this was the sample which was accessible to the researcher and perhaps not seen as a differentiating factor. Nevertheless, it may be necessary to repeat a similar study with a large representation of female project managers or female local representatives to perhaps uncover additional aspects to be considered.

With regards to generalizability, it is clear that a research on international projects will have to state the limitation with regards to applicability across all countries or regions in the world.

Generalizability can be tested by asking the question: "Is the sample sufficiently diverse to allow inferences to other contexts" (Easterby-Smith et al., 2012, p. 71). In the opinion of the researcher, this can be answered with yes, for the following reasons. Respondents have been chosen to represent both the foreign personnel as well as the local personnel (presented in section 3.3.4) to provide their respective views and consensus and disagreements were highlighted from both sides to come to a conclusion.

With regards to the application to various cultures and countries, the wide variety of international experience of respondents has been highlighted and presented in section 3.3.4. However, it is of course to be noted that respondents did not provide statements and examples of all project locations they had experienced. Respondents drew their experiences from specific examples and whilst one statement was true for an example in one region, another statement or topic was true for another region.

Therefore, as mentioned earlier, it is not possible to state that this framework is true or fully applicable to all regions and cultures of the world. However, it is sufficiently general to allow for project managers to take into consideration and utilise as a guideline in various cultures and countries of the world.

The general statement that local personnel are required to be involved and beneficial when executing international projects is considered to be correct for a large majority of international engineering projects.

6.10 Potential future research

With regards to possible further studies, a well-known project life-cycle chart showing the influence of stakeholders related to the project stages is shown in the chart below.

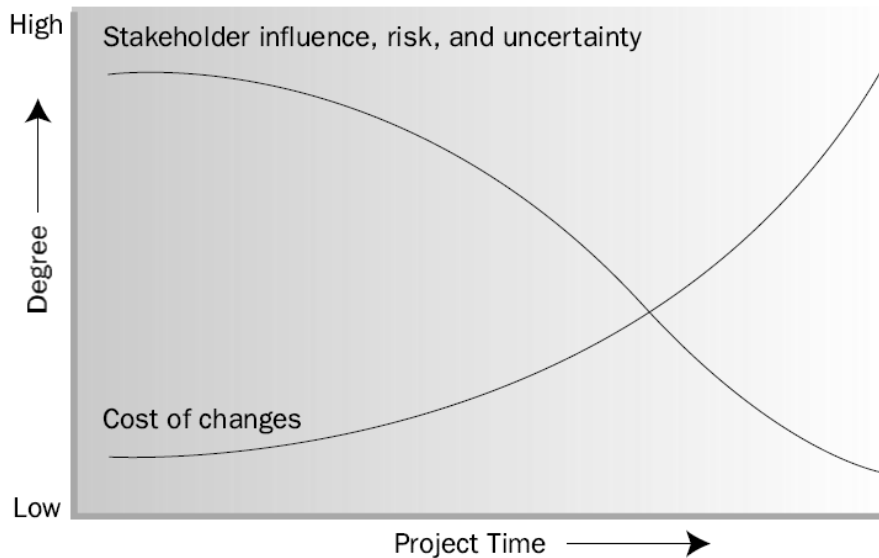


Figure 24: Degree of Influence vs. Project Time (Project Management Institute, 2008, p. 17)

It shows that at the beginning of a project life cycle, the degree of influence of, for example engineering, is high whilst the cost of any change to the design basis is still low. As the project progresses, any change to a project design will cost more money and the degree of influence of engineering reduces.

This research has not covered the aspect of project phases and the degree of influence of local personnel depending on the phase. Is there a timing in a lifetime of a project in which local involvement is more critical? Is it during the project acquisition phase, the start of engineering or is it most critical when construction has started and quick, local responses are required in crisis or “fire-fighting” situations? All these examples have been raised by the respondents to show the criticality of local involvement, however, it was not put into direct context of the project phases to evaluate if at a specific point in time of a project, the local support is most critical.

Further potential future research may be to focus on a specific country or a specific part of the world and explicitly study the specific advantages of personnel from that region, using a case study approach. This would facilitate the exploration not only of the technical capabilities from an engineering perspective but also the situation of the local market conditions i.e. perhaps in some regions of the world, the personal contacts to local stakeholders may be more important than in others or easier/ harder to establish. It would therefore be a focus on the lower part of the framework chart related to the large network of local contacts.

6.11 Final personal reflections

After conducting extensive research on international project management and the involvement of local project team members, the researcher is able to academically justify a certain perception he has had over many years of managing projects in an international setting. Colleagues and team members from local organisations have, for the most part, been extremely helpful and critical when managing projects. In a world where certain authorities are propagating a fear of foreign cultures and a focus on inner strengths, the findings of this research, at least on a project level, indicate the exact opposite. Project managers are encouraged to institute an openness to local cultures and facilitate an active involvement of international team members in order to apply the particular strengths of each individual in a multi-cultural setting.

7 BIBLIOGRAPHY

- Adenfelt, M. (2010). Exploring the performance of transnational projects: Shared knowledge, coordination and communication. *International Journal of Project Management*, 28(6), 529-538.
- Ahsan, K., & Gunawan, I. (2010). Analysis of cost and schedule performance of international development projects. *International Journal of Project Management*, 28(1), 68-78.
- Alam, M., Gale, A., Brown, M., & Khan, A. I. (2010). The importance of human skills in project management professional development. *International Journal of Managing Projects in Business*, 3(3), 495-516.
- Alin, P., Iorio, J., & Taylor, J. E. (2013). Digital Boundary Objects as Negotiation Facilitators: Spanning Boundaries in Virtual Engineering Project Networks. *Project Management Journal*, 44(3), 48-63.
- Association for Project Management. (2006). *APM Body of Knowledge* (5th Edition ed.): Association for Project Management.
- Audi, R. (2010). *Epistemology: A contemporary introduction to the theory of knowledge*: Routledge.
- Azim, S., Gale, A., Lawlor-Wright, T., Kirkham, R., Khan, A., & Alam, M. (2010). The importance of soft skills in complex projects. *International Journal of Managing Projects in Business*, 3(3), 387-401.
- Bandura, A. (1977). *Social learning theory*: Prentice Hall.
- Barriball, L. K., & While, A. (1994). Collecting Data using a semi-structured interview: a discussion paper. *Journal of advanced nursing*, 19(2), 328-335.
- Bazeley, P. (2013). *Qualitative data analysis: Practical strategies*: Sage.
- Bender, M. B. (2009). *A Manager's Guide to Project Management: Learn how to Apply Best Practices*: FT Press.
- Birasnav, M. (2014). Knowledge management and organizational performance in the service industry: The role of transformational leadership beyond the effects of transactional leadership. *Journal of Business Research*, 67(8), 1622-1629. doi:<http://dx.doi.org/10.1016/j.jbusres.2013.09.006>
- Black, J. S., & Mendenhall, M. (1990). Cross-cultural training effectiveness: A review and a theoretical framework for future research. *Academy of Management Review*, 15(1), 113-136.
- Bluhm, D. J., Harman, W., Lee, T. W., & Mitchell, T. R. (2011). Qualitative research in management: a decade of progress. *Journal of Management Studies*, 48(8), 1866-1891.
- Booth, A., Sutton, A., & Papaioannou, D. (2016). *Systematic approaches to a successful literature review*: Sage.
- Bredillet, C., Yatim, F., & Ruiz, P. (2010). Project management deployment: The role of cultural factors. *International Journal of Project Management*, 28(2), 183-193.
- Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology? *British Journal of Sociology*, 75-92.
- Burgess, R. G. (2003). *Field research: A sourcebook and field manual*: Routledge.
- Burnard, P., Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Analysing and presenting qualitative data. *British dental journal*, 204(8), 429.
- Burström, T., & Jacobsson, M. (2011). The Role and Importance of 'Glue People' in Projects. *IUP Journal of Soft Skills*, 5(1), 7-15.
- Business Dictionary. (2019). Knowledge Management. Retrieved from <http://www.businessdictionary.com/definition/knowledge-management.html>
- Clarkson, M. B. E. (1999). *Principles of stakeholder management*: Clarkson Centre for Business Ethics, Joseph L. Rotman School of Management, University of Toronto.

- Cleland, D., & Gareis, R. (2010). *Global Project Management Handbook: Planning, Organizing and Controlling International Projects, Second Edition: Planning, Organizing, and Controlling International Projects*: McGraw-Hill Education.
- Cole, C., Chase, S., Couch, O., & Clark, M. (2011). Research Methodologies and Professional Practice: Considerations and Practicalities. *The Electronic Journal of Business Research Methods*, 9(2), 141-151.
- Cooke-Davies, T. (2002). The "real" success factors on projects. *International Journal of Project Management*, 20(3), 185-190.
- Cooke-Davies, T., & Arzymanow, A. (2003). The maturity of project management in different industries: An investigation into variations between project management models. *International Journal of Project Management*, 21(6), 471-478.
- Curlee, W. (2008). Modern virtual project management: The effects of a centralized and decentralized project management office. *Project Management Journal*, 39(S1), S83-S96.
- Daim, T. U. (2012). Performance challenges in virtual teams: a comparative case analysis. *International Journal of Project Organisation and Management*, 4(3), 218-230.
- Denton, D. K. (2006). Using intranets to make virtual teams effective. *Team Performance Management: An International Journal*, 12(7/8), 253-257.
- Deshpande, S. P., & Viswesvaran, C. (1992). Is cross-cultural training of expatriate managers effective: A meta analysis. *International Journal of Intercultural Relations*, 16(3), 295-310.
- Dey, I. (2003). *Qualitative data analysis: A user friendly guide for social scientists*: Routledge.
- Duarte, D. L., & Snyder, N. T. (2006). *Mastering virtual teams: Strategies, tools, and techniques that succeed*: John Wiley & Sons.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2012). *Management research* (4th ed.): Sage.
- Emes, M., & Griffiths, W. (2018). Systems thinking: How is it used in project management? Retrieved from https://www.apm.org.uk/media/17308/systems-thinking_final.pdf
- Evaristo, R. (2003). The management of distributed projects across cultures. *Journal of Global Information Management (JGIM)*, 11(4), 58-70.
- Francisco de Oliveira, G., & Rabechini Jr, R. (2019). Stakeholder management influence on trust in a project: A quantitative study. *International Journal of Project Management*, 37(1), 131-144.
doi:<https://doi.org/10.1016/j.ijproman.2018.11.001>
- Freedman, S., & Katz, L. (2007). Critical success factors for international projects. *PM World Today*, 9(10), 1-8.
- Galletta, A. (2013). *Mastering the semi-structured interview and beyond: From research design to analysis and publication*: NYU Press.
- Gemuenden, H. G., & Lechler, T. (1997). *Success factors of project management: the critical few-an empirical investigation*. Paper presented at the Innovation in Technology Management-The Key to Global Leadership. PICMET'97: Portland International Conference on Management and Technology.
- Gillard, S. (2009). Soft skills and technical expertise of effective project managers. *Issues in Informing Science and Information Technology*, 6(7).
- Grisham, T. W. (2010). *International project management: Leadership in complex environments*: John Wiley & Sons.
- Gronwald, K.-D. (2017). *Global Communication and Collaboration*: Springer.
- Grosse, C. U. (2002). Managing communication within virtual intercultural teams. *Business Communication Quarterly*, 65(4), 22-38.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2, 163-194.

- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, 18(1), 59-82.
- Hall, E. T., & Hall, M. R. (2000). *Understanding cultural differences*: Intercultural press.
- Harris, S. (2000). Reconciling positive and interpretative international management research: a native category approach. *International Business Review*, 9(6), 755-770.
- Hendarman, A. F., & Tjakraatmadja, J. H. (2012). Relationship among soft skills, hard skills, and innovativeness of knowledge workers in the knowledge economy era. *Procedia-Social and Behavioral Sciences*, 52, 35-44.
- Henderson, L. S., Stackman, R. W., & Lindekilde, R. (2018). Why cultural intelligence matters on global project teams. *International Journal of Project Management*, 36(7), 954-967. doi:<https://doi.org/10.1016/j.ijproman.2018.06.001>
- Hertel, G., Geister, S., & Konradt, U. (2005). Managing virtual teams: A review of current empirical research. *Human Resource Management Review*, 15(1), 69-95.
- Hinds, P. (2002). *Distributed work*: MIT Press.
- Hofstede, G. (1980). Motivation, leadership, and organization: do American theories apply abroad? *Organizational dynamics*, 9(1), 42-63.
- Hofstede, G. (1983). The cultural relativity of organizational practices and theories. *Journal of international business studies*, 14(2), 75-89.
- Hofstede, G. (1993). Cultural constraints in management theories. *The Academy of Management Executive*, 7(1), 81-94.
- Hofstede, G. (2001). *Culture's consequences*: SAGE Publications, Incorporated.
- Hofstede, G., & Hofstede, G. J. (2005). Cultures and organizations, software of the mind, intercultural cooperation and its importance for survival. Revised and expanded 2nd edition. In: New York: McGraw-Hill.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (1991). *Cultures and organizations*: McGraw-Hill London.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organizations*. In. Retrieved from <http://public.eblib.com/choice/publicfullrecord.aspx?p=4658311>
- Hogan, J. (2014). *The People Side of Project Management*. In.
- Holden, M. T., & Lynch, P. (2004). Choosing the appropriate methodology: understanding research philosophy. *The marketing review*, 4(4), 397-409.
- Hydari, H. (2012). The Virtual Project Management Office: Best Practices, Proven Methods. *Project Management Journal*, 43(5), 102-102.
- Ibbs, C. W., & Kwak, Y.-H. (1997). *The Benefits of Project Management: Financial and Organization Rewards to Corporations*. USA: Project Management Institute.
- Ika, L. A., Diallo, A., & Thuillier, D. (2012). Critical success factors for World Bank projects: An empirical investigation. *International Journal of Project Management*, 30(1), 105-116.
- Javernick-Will, A. (2009). Organizational learning during internationalization: acquiring local institutional knowledge. *Construction Management & Economics*, 27(8), 783-797.
- Javernick-Will, A. (2013). Local Embeddedness and Knowledge Management Strategies for Project-Based Multi-National Firms. *Engineering Management Journal*, 25(3), 16-26.
- Julian, J. (2008). How project management office leaders facilitate cross-project learning and continuous improvement. *Project Management Journal*, 39(3), 43-58.
- Kealey, D. J., Protheroe, D. R., MacDonald, D., & Vulpe, T. (2006). International Projects: Some Lessons on Avoiding Failure and Maximizing Success. *Performance Improvement*, 45(3), 38-46.
- Kerzner, H. (2002). *Strategic planning for project management using a project management maturity model*: John Wiley & Sons.

- Kerzner, H. (2009). *Project management: a systems approach to planning, scheduling, and controlling*: Wiley.
- Kerzner, H. (2010). *Project Management: Best Practices: Achieving Global Excellence* (Vol. 4): Wiley.
- Kerzner, H. (2017). *Project management : a systems approach to planning, scheduling, and controlling*. In.
- Kirkman, B. L., Rosen, B., Gibson, C. B., Tesluk, P. E., & McPherson, S. O. (2002). Five challenges to virtual team success: Lessons from Sabre, Inc. *Academy of Management Perspectives*, 16(3), 67-79.
- Kirkman, B. L., Rosen, B., Tesluk, P. E., & Gibson, C. B. (2004). The impact of team empowerment on virtual team performance: The moderating role of face-to-face interaction. *Academy of Management Journal*, 47(2), 175-192.
- Kiznyte, J., Ciutiene, R., & Dechange, A. (2015). Applying Cultural Intelligence in International Project Management. *Practice and Perspectives*, 202.
- Klimkeit, D. (2012). Organizational context and collaboration on international projects: The case of a professional service firm. *International Journal of Project Management*.
- Köster, K. (2009). *International project management*. London, UK: Sage Publications Limited.
- Kurupparachchi, P. R. (2009). Virtual team concepts in projects: A case study. *Project Management Journal*, 40(2), 19-33.
- Kwak, Y. H. (2002). *International Development Project Management*. Paper presented at the 10th Symposium Construction Innovation and Global Competitiveness.
- Kwak, Y. H., & Ibbs, C. W. (2002). Project management process maturity (PM) 2 model. *Journal of management in engineering*, 18(3), 150-155.
- Lagerström, K., & Andersson, M. (2003). Creating and sharing knowledge within a transnational team—the development of a global business system. *Journal of World Business*, 38(2), 84-95.
- Lee, J. S. K. (1992). Quantitative versus Qualitative Research Methods - Two Approaches to Organisation Studies. *Asia Pacific journal of management*, 9(1), 87-94.
- Leonard, D., & Sensiper, S. (1998). The role of tacit knowledge in group innovation. *California management review*, 40(3), 112-132.
- Lewis, J. P. (2002). *Fundamentals of project management: developing core competencies to help outperform the competition*: AMACOM Div American Mgmt Assn.
- Lientz, B. P., & Rea, K. P. (2011). *International Project Management*. New York, NY: Routledge.
- Lindeblad, P. A., Voytenko, Y., Mont, O., & Arnfalk, P. (2016). Organisational effects of virtual meetings. *Journal of Cleaner Production*, 123, 113-123.
- Littrell, L. N., & Salas, E. (2005). A Review of Cross-Cultural Training: Best Practices, Guidelines, and Research Needs. *Human Resource Development Review*, 4(3), 305-334.
- Marshall, M. N. (1996). Sampling for qualitative research. *Family practice*, 13(6), 522-526.
- Mathieu, J. E., Gilson, L. L., & Ruddy, T. M. (2006). Empowerment and Team Effectiveness: An Empirical Test of an Integrated Model. *Journal of Applied Psychology*, 91(1), 97-108.
- Maxwell, J. (1992). Understanding and validity in qualitative research. *Harvard educational review*, 62(3), 279-301.
- Mayer, M. (2010). *The Virtual Edge: Embracing Technology for Distributed Project Team Success* (2nd ed.). Newton Square, PA: Project Management Institute.
- McNiff, J. (2013). *Action research: Principles and practice*: Routledge.

- McSweeney, B. (2002). Hofstede's model of national cultural differences and their consequences: A triumph of faith-a failure of analysis. *Human relations*, 55(1), 89-118.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*: sage.
- Missonier, S., & Loufrani-Fedida, S. (2014). Stakeholder analysis and engagement in projects: From stakeholder relational perspective to stakeholder relational ontology. *International Journal of Project Management*, 32(7), 1108-1122.
- Mo, X., Abdelnaser, O., & Abdul Hamid, K. P. (2012). Factors affecting Malaysia- China construction joint venture (MCCJV) projects. *Economics, Management & Financial Markets*, 7(4), 666-677.
- Moran, R. T., & Youngdahl, W. E. (2008). *Leading Global Projects: For Professional and Accidental Project Leaders*: Butterworth-Heinemann/Elsevier.
- Morris, M. A., & Robie, C. (2001). A meta-analysis of the effects of cross-cultural training on expatriate performance and adjustment. *International Journal of Training and Development*, 5(2), 112-125.
- Morris, P. (1997). *The management of projects*: Thomas Telford.
- Müller, R., & Turner, R. (2007). The Influence of Project Managers on Project Success Criteria and Project Success by Type of Project. *European Management Journal*, 25(4), 298-309.
- Mulrow, C. D. (1994). Rationale for systematic reviews. *BMJ: British Medical Journal*, 309(6954), 597.
- Munns, A., & Bjeirmi, B. F. (1996). The role of project management in achieving project success. *International Journal of Project Management*, 14(2), 81-87.
- Murphy, O. J. (2005). *International project management*: Thomson.
- Nauman, S., Khan, A. M., & Ehsan, N. (2010). Patterns of empowerment and leadership style in project environment. *International Journal of Project Management*, 28(7), 638-649.
- Nesheim, T., & Hunskaar, H. M. (2015). When employees and external consultants work together on projects: Challenges of knowledge sharing. *International Journal of Project Management*, 33(7), 1417-1424.
- Nicholas, J. M., & Steyn, H. (2012). *Project Management for Engineering, Business and Technology*. Boston: Butterworth-Heinemann.
- Ochieng, E. G., & Price, A. (2010). Managing cross-cultural communication in multicultural construction project teams: The case of Kenya and UK. *International Journal of Project Management*, 28(5), 449-460.
- Opendakker, R. (2006). *Advantages and disadvantages of four interview techniques in qualitative research*. Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research.
- Owusu, R. A., Sandhu, M., & Sören, K. (2007). Project business: a distinct mode of internationalization. *International Marketing Review*, 24(6), 695-714.
- Pádár, K., Pataki, B., & Sebestyén, Z. (2011). A Comparative Analysis of Stakeholder and Role Theories in Project Management and Change Management. *International Journal of Management Cases*, 13(4), 252-260.
- Pant, I., & Baroudi, B. (2008). Project management education: The human skills imperative. *International Journal of Project Management*, 26(2), 124-128.
- Pemsel, S., & Wiewiora, A. (2013). Project management office a knowledge broker in project-based organisations. *International Journal of Project Management*, 31(1), 31-42.
- Pheng, L. S., & Leong, C. H. Y. (2000). Cross-cultural project management for international construction in China. *International Journal of Project Management*, 18(5), 307-316.
- Prasad, S., & Babbar, S. (2000). International operations management research. *Journal of Operations Management*, 18(2), 209-247.

- Project Management Institute. (2008). *A Guide to the Project Management Body of Knowledge: PMBOK Guide* (4th Edition ed.): Project Management Institute.
- Project Management Institute. (2016). Foundational Standards. Retrieved from <https://www.pmi.org/pmbok-guide-standards/foundational/pmbok>
- Ramaprasad, A., & Prakash, A. (2003). Emergent project management: how foreign managers can leverage local knowledge. *International Journal of Project Management*, 21(3), 199-205.
- Ramazani, J., & Jergeas, G. (2015). Project managers and the journey from good to great: The benefits of investment in project management training and education. *International Journal of Project Management*, 33(1), 41-52. doi:<https://doi.org/10.1016/j.ijproman.2014.03.012>
- Reich, B. H., Gemino, A., & Sauer, C. (2014). How knowledge management impacts performance in projects: An empirical study. *International Journal of Project Management*, 32(4), 590-602.
- Sapsed, J., & Salter, A. (2004). Postcards from the edge: local communities, global programs and boundary objects. *Organization Studies*, 25(9), 1515-1534.
- Saunders, M., Lewis, P., & Thornhill, A. (2015). *Research Methods for Business Students* (7th ed.): Pearson Education M.U.A.
- Schein, E. H. (2003). On dialogue, culture, and organizational learning. *Reflections*, 4(4), 27-38.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action* (Vol. 5126): Basic books.
- Sergi, V., & Hallin, A. (2011). Thick performances, not just thick descriptions: the processual nature of doing qualitative research. *Qualitative Research in Organizations and Management*, 6(2), 191-208.
- Seweryński, M. (2003). Contract and labour relations: the Polish case. *Managerial Law*, 45(3/4), 119-134.
- Shore, B., & Cross, B. J. (2005). Exploring the role of national culture in the management of large-scale international science projects. *International Journal of Project Management*, 23(1), 55-64.
- Silverman, D. (2016). *Qualitative research* (2 ed.): Sage.
- Smith, N.-J. (2008). *Achieving your professional doctorate*: McGraw-Hill International.
- Zsulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic management journal*, 17, 27-43.
- Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative research*, 4(2), 161-178.
- Thomas, D. R. (2003). A general inductive approach for qualitative data analysis. *School of Population Health, University of Auckland*.
- Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American journal of evaluation*, 27(2), 237-246.
- Thomsett, R. (2002). *Radical project management*: Prentice Hall Professional.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, 14(3), 207-222.
- Tuli, F. (2011). The Basis of Distinction Between Qualitative and Quantitative Research in Social Science: Reflection on Ontological, Epistemological and Methodological Perspectives. *Ethiopian Journal of Education and Sciences*, 6(1).
- Turkulainen, V., Ruuska, I., Brady, T., & Artto, K. (2015). Managing project-to-project and project-to-organization interfaces in programs: Organizational integration in a global operations expansion program. *International Journal of Project Management*, 33(4), 816-827.
- Turner, J. R., & Huemann, M. M. (2000). Current and future trends in the education in project managers. *Project Management*. Vol, 6, 20-26.

- Turner, R., Ledwith, A., & Kelly, J. (2010). Project management in small to medium-sized enterprises: Matching processes to the nature of the firm. *International Journal of Project Management*, 28(8), 744-755.
- Tuuli, M. M., & Rowlinson, S. (2007). *Empowering project teams: Toward an integrative conceptualization of empowerment*. Paper presented at the Fourth International Conference on Construction in the 21st Century (CITC-IV), Gold Coast, Australia.
- Tuuli, M. M., & Rowlinson, S. (2009). Empowerment in project teams: a multilevel examination of the job performance implications. *Construction Management and Economics*, 27(5), 473-498.
- Ubell, R. (2010). *Virtual Teamwork : Mastering the Art and Practice of Online Learning and Corporate Collaboration*. Hoboken, N.J.: Wiley.
- Van Ness, R., Seifert, C., Franko, G., & Buff, C. (2005). Hofstede's cultural dimensions: Are individual differences important. *International Journal of Business Research*, 2(1), 161-166.
- Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the Qualitative - Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems. *MIS Quarterly*, 37(1), 21-54.
- Verzuh, E. (2003). *The portable MBA in project management*: John Wiley & Sons.
- White, D., & Fortune, J. (2002). Current practice in project management — an empirical study. *International Journal of Project Management*, 20(1), 1-11.
- Wibbeke, E. (2009). *Global Business Leadership*. Oxford: Routledge.
- Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. *The qualitative report*, 4(3), 4.
- Youker, R. (1999). Managing international development projects: lessons learned. Retrieved from <http://www.pmi.org/learning/managing-international-development-projects-2015>
- Zein, O. (2015). *Culture and Project Management : Managing Diversity in Multicultural Projects*. Farnham, Surrey: Routledge.
- Zwikael, O., Shimizu, K., & Globerson, S. (2005). Cultural differences in project management capabilities: A field study. *International Journal of Project Management*, 23(6), 454-462.

Appendix 1: Consent Form

Name Michel Kneller
Company Student at University of Gloucestershire
City
Date

Dear Mr. XXXX,

As a part of my Doctorate Study at University of Gloucestershire, UK, I am conducting a research into international project management in order to develop a theoretical framework that identifies the contribution of local personnel when managing international engineering projects. The planned research involves in-depth one-to-one interviews with 12 to 15 selected participants across the engineering sector, having minimum 10 years of professional experience in international projects. Considering our past cooperation, I was free to select you as a potential 'elite' participant to my interview study. I would be grateful if you accept to participate in my research as an interviewee. Through the interview I would like to record your valuable expert opinion related to the research topic. The proposed interview will last approximately 1 hour and will be arranged at your best convenience.

I would like to confirm the following:

- Your personal and organisational information will not be disclosed in the research report or to other research participants, and your privacy will be protected
- It is anticipated that the interview will be recorded for achieving better quality of data, and an audio file will be stored on my computer for transcript. Upon your request I will e-mail you this file and I will delete it permanently after completion of transcript.
- All interview materials (e.g. notes, transcripts) will be kept confidential during the research, and will be destroyed after the research has been assessed by the University of Gloucestershire
- You may withdraw the interview information at any time without providing a specific reason for such withdrawal
- You will be provided with a transcript and/or recording (whichever appropriate) of your interview
- Upon your request, you will be provided with the final research report after it has been assessed by the University of Gloucestershire

If you accept to be interviewed and are in agreement with the above terms, could you please sign and date this Document on the space provided below, and return the signed copy of this Document to my e-mail address. By signing this Document you also accept that your participation is voluntary.

I wish to thank you in advance for your time and input. Please contact me on the above phone number or e-mail address if you may need any additional information regarding this research.

Kind regards,

Michel Kneller

Name of Interviewee, Date

Appendix 2: Detailed breakdown of identified nodes

Nodes			
Name	Sources	References	
Culture		11	50
Benefits		10	19
Communication		5	18
Cultural No Go's		9	14
Special examples		10	30
Empowerment		12	45
Compliance		7	13
Framework		4	8
Trust		7	10
Hard and Soft Skills		9	24
Combination		4	6
Pro Hard Skills		5	9
Pro Soft Skills		9	23
Knowledge Transfer		6	12
Not required		1	1
Recommended		0	0
From HQ to local		6	12
From Local to HQ		2	3

Name	Sources	References
Local Knowledge	11	68
General Know How and Troubleshootin	12	23
Local network	8	11
Rules, Regulations, Authorities	10	28
Organisation	11	78
Expats in local organisation	5	9
Ideal Setup	9	28
Local staff in local organisation	10	27
Local Content Requirement	5	9
Project Examples	8	26
Skill set of locals	12	72
Commercial	2	5
Contractual Issues	6	10
General and low skills	7	18
Liaison or coordinator or local PM	7	10
Client relationship	7	14
Technical	12	36
Translation or Language	10	19
Training	12	36
Cultural Training	9	12
Other	4	7
Technical Training	10	21

Appendix 3: Semi-structured interview questions

- Could you please briefly introduce yourself and describe your professional background/ experience in managing international projects
- In general, there are hard skills and soft skills of project management. With regards to specifically international projects and given your experience in past international projects, which would you consider most important and why?
 - Can you give examples?
 - How would local personnel be able to support you in that?
- What specific capabilities are you looking for in local staff?
 - i.e. What makes local staff so specific
 - Is there specific local knowledge that you found was necessary in your projects?
- Would you consider the contribution of local personnel to be essential or critical?
 - How so.. do you have examples from your experience?
- Looking at the typical main stages of a project (from an initial concept idea to the detailed execution phase), what type of contribution would you typically look for in local staff for each step?
- Of the international projects you have worked on, how were they organised and what did you feel was the best setup?
- Looking at both the training of the expats on the local environment as well as training of the locals. Can you give examples of each if you have come across and your opinion on the value of such training.
- In terms of skill or capabilities, could you name what you would consider to be the most essential?

Appendix 4: Sample Transcript

Background Information

Interviewer:

Can you please explain a little about your background and your experience in international projects

Respondent:

Petroleum engineer by trade, worked in all continents around the world, initially in operations, then to a major oil company in drilling operations. There each well is a project which has all elements and aspects of a project. Later moved to process engineering supporting first smaller projects as a technical specialist, then specialist in larger projects and then move into the role as project manager, then moved to Canada to a mid-sized company and then to majors such as XX, YY and ZZ managing major projects in the oil sand of Fort McMurray. 10 years in between I managed projects in South America, Australia and other parts of the world. Later I became an independent consultant and supported projects as project director in Russia primarily and subsequently worked as a global project director in a major oil services company in middle east and Malaysia. My background is primarily oil and gas with over 30 years of experience.

Interviewer:

This shows your international experience in particular

Respondent:

Yes

Soft skills/ Project Organisation

Interviewer:

Research has shown that a factor specific to international project management are the soft skills of management such as motivation, communication or knowledge transfer. Would you confirm this finding?

Respondent:

Important to define the term local. Sometimes it means a person from a country, sometimes from the specific area, town or village where the project takes place. Sometimes both could mean local. Sometimes governments demand that a certain percentage of the project team have to be local. This means you have to hire a certain percentage of Nigerians for example. Sometimes you hire the people from the very town perhaps as employees or even as sub-suppliers. You want to cover both?

Interviewer:

Correct, sometimes though it depends on the situation. The local in terms of country has a certain aspect that gives me a broader range to focus on my research and show their advantages but sometimes it is a requirement to have even from a certain tribe people involved in your team from that specific area who could give you a very specific advantage in a project but let's talk first the general advantage of local nationals and later to go further towards the area locals

Skills/ Training/ Local Knowledge

Respondent:

A general observation, typically certainly in major projects the technical skills of the locals are not up to a level which is required but that can be boosted so you have to find the right people who have the right technical skills. Key is as you said the communication. Language barriers so English skills are usually an issue. The other ability is for the locals to understand the project and its requirements, what is important, schedule, certain quality aspects and many more. So they have to understand the business objectives at least the key aspects of the projects. Another thing is they must understand the working style of the owner or the company they are working for. Particular, and that is the major problem, the ethical aspect such as corruption issues. This is key so you avoid one clan only provides jobs to his buddies. So the ethical style and how the bidding process is being conducted including tendering and those elements so that is key. Then a big element for country issues is the local authorities aspects where local people are key such as customs clearance processes. This

is where local knowledge is extremely important and here local knowledge means how to deal with the authorities. This goes further to other authorities and understanding the permitting process, which authorities are involved in giving a work permit or project permit so the local village mayor or which government agencies are involved.. what is the sequence of permits that is required and how to deal with them. How to prepare applications properly. In some jurisdictions it is straight forward to understand but in many it is not and developing countries there's usually an adventure there but even in developed countries it is often not clear. So authority management and particularly importing are areas where locals are required.

Local knowledge

Interviewer:

So local stakeholders such as authorities or customs clearance these kind of aspects for sure.

Respondent:

Yes and general permitting is a key one. For bigger projects you need up to 200 permits so you need to know how to get them, how to follow up to go the right path.

Skills/ Local Knowledge

Interviewer:

Researchers experience showed that a local team of assistant project managers who were extremely helpful in so called fire fighting cases, when things go wrong and you need to quickly find a local improvised solution. Is this also something you have come across.

Respondent:

Yes, I wanted to come to those later. One important thing first regarding local authorities is access to land. In US and Canada they are called the land-men. Anywhere in the world it is the same, you not only deal with authorities but with the local families so key is that you have local people who know how to deal with the locals how to have the right language, the right style and rather than

sending someone from overseas or even the capital it is much better to send someone local. So gaining access to land is very important skill by some local employees. Now coming to what you said is the knowledge of local companies that could provide services. For me that is very often a logistics partner or staff providing equipment, know how to improvise at times. Having the knowledge of the local businesses. Very often the local businesses come to you at the beginning of the project. When you make it public they come but sometimes not. Another important aspect is understanding the ambient condition. The climate from temperatures to humidity, understanding the geography and geology. You can look at a map but when you want to do your process design, this is where local knowledge is important. For example, designing your coolers/ heat exchangers to local conditions this is where you need local knowledge. Also when it comes to legal aspects such as building codes, construction specifications. I have experienced this with XX where the European engineers refused to believe that the European codes and standards are not valid in North America. So this is also applicable to many mechanical issues. This is authority related but you need people who understand this. Also you need people with local practical experience who know how the pump works under the local conditions or what the water properties typically are in a certain area.

Training

Interviewer:

You mentioned earlier that the technical skill sets of locals are sometimes not sufficient so you need the main engineers from home office but your example has shown that you need a local input to the design and the local understanding which is given by the local team. You said that technical skills of locals can be boosted so I am looking at training and knowledge transfer from head office to locals. Have you come across this and any experience in training local personnel

Respondent:

Yes, one typical thing, forgetting about the engineers but the trades people on construction sites, certifying welders with international standards, also seen in Russia. Wherever you go in the world, from Ecuador to Nigeria, you see

welders in so called car shops who want to work on pipeline projects, you have to train them and certify them so that your project meets all the aspects. Your project not only has to be built to local standards but to international standards, depending also on who is financing it. So those trades, welders and boilermakers for example, they require most training. Electricians or steelworkers also. This may make the project take longer as you send these workers for training early on which takes a while.

Project Organisation/ Local Knowledge

Interviewer:

The examples you mentioned are tradesmen, but looking at project management, have you experienced in other projects that a project has used for example an assistant project manager or a "right hand man" from the local country to coordinate locally or take decisions locally or have you always done that by travelling or moving to the country and managing from local area.

Respondent:

This is a good example, where you often in construction teams, you may have an international home office construction manager but the two or three guys reporting to him, often team leaders or deputy construction managers are from the local area. They know how to deal with the trades. This I have seen. You do not need to go to exotic places, you have this also in Canada. You want this that some key team leaders are local. One aspect here is also HSE, Health and Safety. Typically I like to have that as a local manager. Not so much making sure that the design meets the safety standards but that the execution planning and preparation is done by a local. He knows all the local fire brigades, hospitals and geography so that is typically where I would go for a local manager within the project team.

Empowerment

Interviewer:

A term that has come across in the last interviews and in my research is empowerment. Giving the local persons the power to make a judgement call

and take decisions. Do you have experience or examples where you have delegated such decisions.

Respondent:

There are problems with that sometimes. When you look at your project management team, you may have thirty percent locals. They may do things differently than the rest of the team from local offices and this can cause misunderstandings and conflict within the team. Empowerment comes in when you as a manager in principle want to empower your people. You hire them because you think they are qualified for the job, otherwise you should fire them anyways. If you think that a person is qualified for their job, you still have to observe them. So I always tried not to look like I am micromanaging but step back and see how that person is performing. My main problem is sometimes the ethical aspects not handled properly. How to treat a woman or how to deal with people from another tribe and the conflicts there. Again, sometimes it is just a question who you give a certain task so yes, in principle my management style is always that I empower the people who I have on my team. It may be tricky when someone is imposed on you. You may take on a local person because it is a requirement from local pressure groups or local authorities and you know that person is incompetent. Yes I have seen this. Then it depends on how that person is. When you go to the middle east, then the local Arabs are absolutely happy to talk to their families on the phone all day. It may sound like a cliché but it really happened. But this is an easy case because you give them a deputy who you trust. But if that local person is one who really wants to work and show it but has an attitude that doesn't match the company's way of working or ethics, it may be very much a local style that may not be acceptable for an international company, then you have to be careful and be on your toes and talk to the person. Maybe give him some training, put him three months overseas on a different project and see how that works. This is a case where you will find the limitations of empowerment.

Project Organisation

Interviewer:

I have not come across the case where a local is imposed on you but you seem to have this before.

Respondent:

I have worked for a major oil company in Canada on the company's largest project. This is a state owned company and has the attitude never to fire anybody. They have 30000 employees and if someone doesn't perform, they move them from one office to another. I got some guys, my lead cost estimator and planner, was a completely incompetent person. Also my HSE manager was incompetent so I added two competent local guys to the team to support.

Interviewer:

So this time you got imposed international guys but would have preferred the locals

Respondent:

Yes and in Ecuador I had a case where I had to take on certain managers from local area and the question is how do you give them a job with high visibility, which gives them a lot of respect amongst their friends and families, without disturbing the project progress. For many years in projects in Africa and South America, we added a local person into safety and into quality. Safety people were driving in important cars with sirens, quality also gave them visibility but internally you had the backup of the people you trusted. It really happened for many years that this was done.

Interviewer:

I have come across the aspect of locals gaining respect within their families, a status with a job titles over and above what they are doing which seems you have come across this method of motivation.

Respondent:

Yes, ideally as a project manager you want as many locals as you can because they are also usually cheaper than the international staff. So if you get a qualified locals, I always go with the locals. Qualified in soft skills or

communication skills as well as technical skills. I didn't mention one thing regarding what type of projects do you need locals. In principle you need them for any project that has an environmental impact. Mining, oil and gas or whatever. Whenever you are working in beautiful area and there is risk of pollution. There you need the locals. One side aspect is when you have more locals depending on the visibility of your projects, it may be easier to deal with the NGOs such as Greenpeace where it is easier to deal with them if you can show your local content. It is a big thing in North America, where the native Americans, Indians, they often use your project as a pawn in their struggle with the regional or federal governments. A government want a pipeline or mining projects to go ahead as it gives them a lot of tax revenue but the local tribe, they have other political interests that have nothing to do with money or your project. They however delay your project until they get their issue sorted out with the local government. Now, you need to have sufficient employees or give sufficient business opportunities to the locals and show them all the benefits. Then it is easier to get your approvals and also easier for you as an international company to deal with the NGOs who make real or sometimes false claims.

Skills/ Local knowledge

Interviewer:

You touched upon looking at the main stages of a project, concept to execution phase, many of your examples have been the construction phase. Environmental impact is mostly at an early stage. Are there any other contributions during the concept phase where you may use local input

Respondent:

Yes, certainly in your initial planning where local knowledge is important, is when it comes to logistics. What can you transport and how do you do it. That would define the layout of your plant, how you design it from stick built to modular, what sizes can you plan with. Can you pass with your trucks through the narrow roads. So logistics is a key element as it impacts your project planning and your design. Then also the basic things such as is there sufficient electricity or power supply in the region. This impacts your design. Then the knowledge of the ambient conditions there such as temperatures, winter and

summer extremes, rainfall. Practical knowledge which impacts your design and what type of equipment you chose. Then we talked about the codes and standards. Certain things may not be allowed in the area. Also with regards to pollution, water effluents which impacts your design. Sometimes local codes and standards are not available or only very vague so you have to decide what to use. You can go with international standards but then you need to know more about local practice. How polluted is the area. In Albania is a similar story where regulations are not there and you need to have local knowledge to understand what is typically done there, particularly from an environmental aspect.

Interviewer:

What also comes to my mind is local stakeholders and interest groups which can be identified at an early stage

Respondent:

Yes, that is particularly when you go into North America, the Indian reservations, you have to deal with the elders, with the chiefs and you have to manage them very carefully. This is typically the job of the landman, the local guy, your community affairs manager. This is the person who is typically dealing with local stakeholders, particularly with local tribes. You are always better off if you use a local person as your community affairs manager. If you can trust him. It is not easy to find someone you trust. You can also have a problem when your landman supports on tribe over another for example and this may cause more trouble than what it is worth. I have seen this also in Nigeria for example. So yes, identifying your local stakeholders and how to deal with them is key.

Interviewer:

What do you see as key skills from local persons.

Respondent:

An extreme case was the project in Russia in terms of translations. It is easy to translate a technical document. But if you come to softer things such as contracting or project management strategies, anything that is not expressed in numbers or figures, then it is most critical to have good translators. Sometimes I

have seen it where a meaning of a word has been translated completely wrong. So yes, such elements of communication for sure are important. Having the right type of translators, who understand your project language is important. One other thing, you may have in your project team a top local guy with all the skills you want and sometimes you are in trouble because he is from the wrong tribe. Particularly when you have tribes struggling for power in an area. So you have a competent guy but the tribe will not deal with him. I have seen this in Saudi Arabia with differing families. So you have to make sure that in your management positions you have the right persons. This is also true within your team, where one person will not work with another person simply because they are from the wrong family clan.

Project Organisation

Interviewer:

Yes that is also something to consider. You mentioned a composition of project management team with thirty percent locals, is this your experience or a fixed figure in your mind.

Respondent:

No this was just an example, it really depends on your situation where you are and in which location. When you look at your management team, with the project manager and the engineering manager, an operations manager, Safety, Cost and Planning in your team, procurement and logistics and you may have few more supporting staff. Then you look at the qualifications. Your engineering manager comes from head office but may have local knowledge guys supporting him. The operations manager could be local. HSE, quality, admin could be locals. Logistics could be locals so it really depends on how remote you are and how much access you have to resources. Then of course I didn't mention your interface manager or manager for communities who is local. So having twenty to thirty percent of your team is a minimum. It is definitely better than having your one token local. So I would think that thirty percent would be a really good mix if you can get that. Over time you may want to shift that and phase out the international guys but that all depends on the duration of your project.

Empowerment

Interviewer:

If you have the trust and they have the skillset then you have the chance to phase out the expats and hand over to the local guys.

Respondent:

Yes, it depends on the duration. If it is only for six months then there is not much you can do but if it takes three years, then you can train them over time and the bigger projects typically have more money that allows you to do these type of trainings. But if you do this, the project manager or director will always have to have a close look at the ethical behaviour of your locals. Of course, sometimes the unethical behaviour comes from the international guys who look down at the locals so you have to watch for both. The international guys you typically know better, perhaps from the past so you have to be very careful because they sometimes can be very clever. I had a case in Argentina where our finance guys together with the storage guys declared all equipment as worthless and instead sold it on the side for some million dollars. So key are the ethical standards where you have to make sure that they can work with their local contacts and customs but still work to international standards. That is not easy.

Training

Interviewer:

You mentioned foreigners who do not have the cultural awareness and have stepped over the line. Have you found that certain training or cultural training in advance to project was offered or would have been useful when sending out the expats to the countries.

Respondent:

Bigger companies do this more often. They don't always do it right but more often. Smaller companies do not have the finances. Usually you find in the local regions the organisations which have a lot of information which they can give you. Certainly for project managers and other key players in a team, the cultural awareness training or workshops, specific to that region, things you don't

necessarily find in government brochures but only find out from locals, this training is a must. When you behave like a bull in the china shop you are in trouble.

Interviewer:

Some of this may even be down to the personality

Respondent:

Yes, you learn the hard way sometimes. I was also misbehaving at times without knowing. Particularly in Canada with the Indian tribes when you think that the key player is the chief of the tribe but forget it, it is the group of the elders. My first project, they felt that they didn't get the respect they deserved and I had all the best intentions so I had to do a small repair job there.

Interviewer:

Thank you very much